

BIOLOGICAL RESOURCES ASSESSMENT

Terrestrial and Aquatic Wildlife and Botanical Resources

Crystal Creek Aggregate Mine

Shasta County, California

October 2022 (Revised July 27, 2023)



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Crystal Creek Aggregates

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BIOLOGICAL RESOURCES ASSESSMENT

Crystal Creek Aggregate Mine

Project Location:

Shasta County, California
Sections 29 & 30, Township 32N, Range 05W

INTRODUCTION

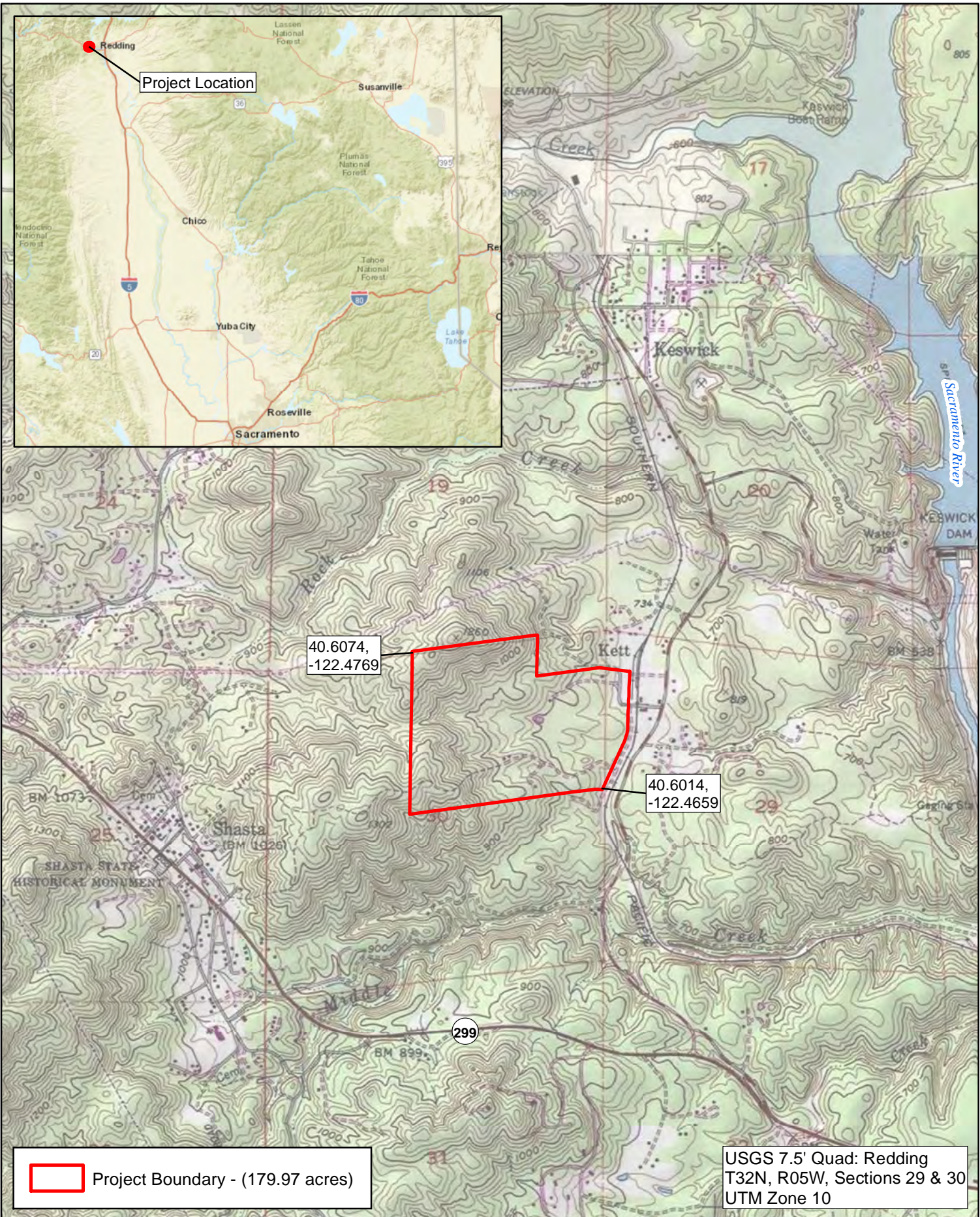
Purpose and Overview


The purpose of this biological resources assessment (BRA) is to document the endangered, threatened, sensitive, and rare species and their habitats that occur or may occur in the approximately 179.97-acre biological survey area (BSA) of the Crystal Creek Aggregate Mine Use Permit Amendment project (Project), located west of Redding in unincorporated Shasta County, California (**Figure 1**). The BSA includes the active mine including the aggregate plant (Mine), approximately 110 acres, and adjacent Mineral Resource Area (MRA), approximately 70 acres (**Figure 2**). This BRA also describes potential Project-related impacts to sensitive biological resources, including wetlands and waters. The Mine is located off of Iron Mountain Road, just east of Whiskeytown Lake.

The BSA is the area where biological surveys are conducted (**Figure 2**). Gallaway Enterprises conducted biological and botanical habitat assessments in the BSA to evaluate site conditions and potential for biological and botanical species to occur. Other primary references consulted include species lists and information gathered from the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB), the California Native Plant Society (CNPS) inventory of rare and endangered plants, and literature review. The results of the BRA are the findings of habitat assessments and surveys and recommendations for avoidance and minimization that have incorporated the measures found within the existing Reclamation Plan Amendment and Use Permit.

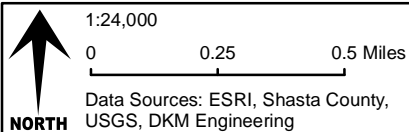
Project Location and Environmental Setting

The BSA is located within the United States Geological Survey (USGS) Redding quadrangle, Assessor Parcel Numbers (APNs) 065-250-002, 065-250-024, 065-250-025, and 065-260-010, within Sections 29 and 30 of Township 32N, Range 05W (latitude 40.603699, longitude -122.468794), and is positioned within the foothills at the transition between the northern Sacramento Valley and the Klamath Mountains in unincorporated Shasta County. The BSA is located approximately 2 miles west of the City of Redding. The site can be reached via State Route 299 West to Iron Mountain Road, then following Iron Mountain Road



 Project Boundary - (179.97 acres)

USGS 7.5' Quad: Redding
T32N, R05W, Sections 29 & 30
UTM Zone 10



Crystal Creek Aggregate Mine
Regional Location
Figure 1



- Project Boundary - (179.97 acres)
- Biological Survey Area - (179.97 acres)
- Mineral Resource Area - (69.28 acres)
- Permitted - (110.69 acres) Use Permit Area 07-020; LSAA No. 1600-2010-0018-R1

approximately 1 mile north to the property entrance on the west side of the road. To the west of the BSA is the Whiskeytown National Recreation Area and to the east is the City of Redding, California. The BSA is located within the burn scar of the Carr Fire and is composed of the barren, active aggregate mine and surrounding natural land. The surrounding natural land is composed of hilly to very steep mixed chaparral and montane hardwood-conifer habitat that is still currently in a state of regeneration after the fire. Incidental to the existing and historic mining operation on the site was the construction of multiple excavated ponds and pits. Further, numerous drainages occur on the site, the majority of which are ephemeral drainages that form along the steep hillsides. A steep ridgeline occurs along the western and northern boundary; as such, all but a few ephemeral drainages located in the southwestern corner of the site boundary flow to the east and into the controlled mining ponds.

The average annual precipitation is 63.24 inches, and the average annual temperature is 60.75° F in the region where the BSA is located (WRCC 2022). The elevation of the BSA ranges from 740 to 1190 feet above sea level. The site contains slopes ranging from 0 to 50 percent. Soils within the BSA are rocky and sandy loams with a restrictive bedrock layer ranging from 0 to 54 inches deep.

Project Description

The Crystal Creek Aggregates (CCA) mining operation is an existing aggregate quarry in Shasta County, California, initially established in 1990. The Mine was established and operated by Jerry Comingdeer, owner of Crystal Creek Aggregate, Inc. In October 2021, he sold the 179.97 acres of land and associated Mine to Tullis, Inc. (Tullis), who renamed the operation to Crystal Creek Aggregates. Existing land uses within the Mine include an aggregate processing facility, along with numerous material stockpiles located on the eastern side of the Mine. Ancillary activities to these uses include, but are not limited to, an office, scales, equipment storage area, recycle ponds, and settling ponds. Currently, in the southern portion of this area there is a recycle site for the storing and processing of used concrete and rubble from the Carr Fire. This is a temporary use, whereby the concrete and rubble are crushed into a road base product. This activity will cease when all the used concrete and rubble is processed.

The current mining activities within the Mine area are permitted under Shasta County Use Permit Amendment 07-020 and Reclamation Plan Amendment 07-002. An amendment to these existing documents is currently proposed. The goal of the proposed Use Permit and Reclamation Plan Amendments is to increase the life of the Mine and to be an all-round aggregate extraction and materials processing operation. The Mine must be diverse enough to meet the needs of most construction projects requiring aggregate products. The Reclamation Plan Amendment does not propose any changes to the limits of the currently approved Mine area. The Use Permit Amendment expands the existing approved Use Permit area from 110.69 acres by 69.28 acres for a total of 179.97 acres; however, the additional 69.28 acres is proposed as a Mineral Resource Area (MRA). Proposed uses within the MRA include, but are not limited to, providing limited existing access to and from the mining area, particularly for vegetation clearance and fire protection services; providing a shaded fuel break; and partially serving to buffer lands to the south, west, and north from noise, light, and other mining-related activities.

The Mine operator has found that he cannot provide significant amounts of aggregate for large construction projects since the current Use Permit limits the annual tonnage of processed aggregate to 250,000 tons (125,000 cubic yards). The operator must have the ability to satisfy both existing clients and also large projects that require tens of thousands of tons of aggregate material, which is not feasible under current permit conditions.

The need for future increased mine production decreases the life of the Mine under current permit conditions. The Mine owner needs a sufficient quantity of available material to meet demand without having to periodically apply to the County for additional use permit and reclamation plan amendments to meet anticipated demand. This location is an identified and proven source of concrete grade aggregate close to main population centers and highways in Shasta County. The Mine is a valuable resource to the community at a countywide level. Permitting a longer mining life that increases the volume of material assures that this resource is available to meet future County construction needs.

The total area of the property on which the Mine is located is 179.97 acres which is the BSA for the project. The acreage of the Mine currently approved under the Use Permit and Reclamation Plan is 110.69 acres, which includes a 53.38-acre plant area and a 57.31-acre active mining area. These acreages will remain unchanged in the amended Reclamation Plan. The maximum anticipated depth of mining at the lowest point in the finished quarry will be 640 feet mean sea level (MSL) at the bottom of the proposed pond. The maximum yearly extraction is expected to be 500,000 cubic yards of aggregate.

As previously noted, the mining operation began in 1990. The ending date for the proposed Use Permit and Reclamation Plan Amendments is estimated to be December 31, 2101. The actual termination date of the mining operation is when the 12,680,000 cubic yards of material are extracted. Proposed land uses after reclamation are "Industrial" and "Mineral Resource."

Summary of Major Changes to Existing Approved Reclamation Plan

The following is a list of the major changes to the existing Reclamation Plan.

1. The volume of aggregate to be extracted is increasing from 7,960,000 cubic yards to 12,680,000 cubic yards, an increase of 4,720,000 cubic yards.
2. Pond #6 as depicted in the proposed Use Permit and Reclamation Plan Amendment in the quarry is increasing in surface area from 23.49 surface acres to 32.67 surface acres, an increase of 9.18 acres.
3. The depth of the active mining area is increased by 60 feet from a bottom elevation of 700 feet to 640 feet in Pond #6.
4. The typical quarry benches are increasing from 24 feet high and 30 feet wide to 40 feet high and 40 feet wide. However, around the pond perimeter the maximum quarry bench size will be 44 feet high and 60 feet wide. The quarry face between benches is going from 1⁻¹A:1 to 1:1.

5. The Revegetation Plan is revised to make the Mine more resistant to wildland fires. The Mine was in one of the main paths of the Carr Fire, which burned 229,651 acres in Shasta and Trinity Counties.
6. Increase in permitted blasting days from 12 to 24 per year.

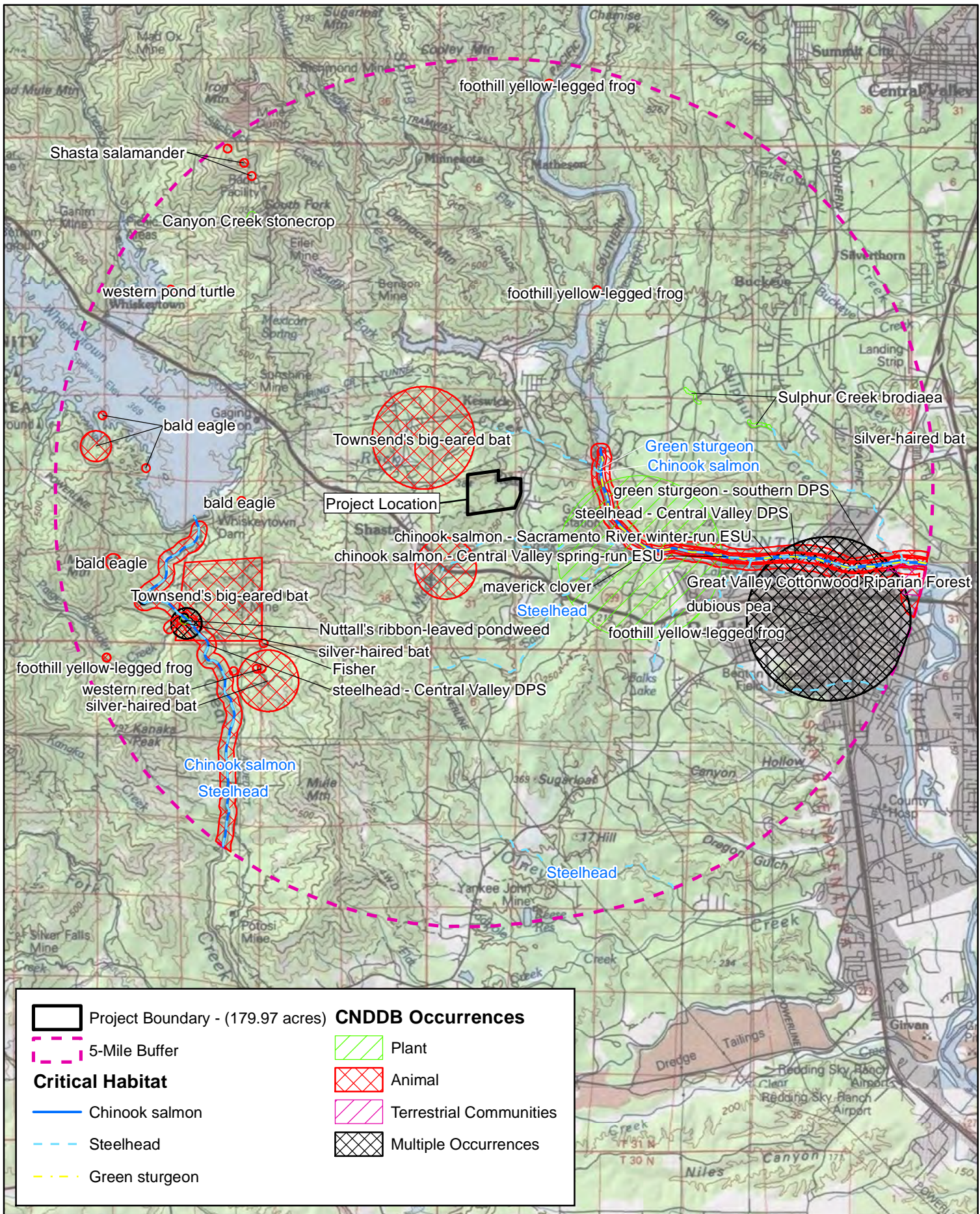
The Use Permit Amendment prepared for CCA includes a Comprehensive Project Plan Overview, the existing and proposed Use Permit Plans, and Use Permit Details such as the existing office, scales, and the crushing, screening and wash plant. The Reclamation Plan Amendment includes the existing and proposed Mining Plan, Phasing Plan, Mining area cross-sections, and proposed Reclamation Plan. A detailed, phased re-vegetation plan with associated success criteria are also included in the Mining and Reclamation Plan Amendment.

METHODS

References Consulted

Gallaway Enterprises obtained lists of special-status species that occur in the vicinity of the BSA. The CNDDDB Geographic Information System (GIS) database was also consulted and showed special-status species within a 5-mile radius of the BSA (**Figure 3**). Other primary sources of information regarding the occurrence of state or federally listed threatened, endangered, proposed, and candidate species and their habitats within the BSA used in the preparation of this BRA are:

- The USFWS IPaC Official Species List for the Project area, July 8, 2020, Consultation Code 08ESMF00-2020-SLI-2334 and updated on May 13, 2022, Project Code: 2022-0042796 (**Appendix A: Official Species Lists**);
- The results of a species record search of the CDFW CNDDDB, RareFind 5, for the 7.5-minute USGS Whiskeytown (4012265), Shasta Dam (4012264), Project City (4012263), Igo (4012255), Redding (4012254), and Enterprise (4012253) quadrangles (**Appendix A: Official Species Lists**);
- The CNPS Inventory of Rare and Endangered Vascular Plants of California for the 7.5-minute USGS Whiskeytown (4012265), Shasta Dam (4012264), Project City (4012263), Igo (4012255), Redding (4012254), and Enterprise (4012253) quadrangles (**Appendix A: Official Species Lists**);
- USFWS Critical Habitat Portal, June 1, 2020 and May 13, 2022;
- Results from North State Resources 2006 botanical surveys and 2007 wildlife assessments for the Mine site;
- Results from multiple field surveys conducted by Wildland Resource Managers (WRM) within the Mine site between April and June 2019;
- Results from the protocol-level surveys and habitat assessment conducted by Gallaway Enterprises on May 21 and 27 and June 2 and 4, 2020 and April 28, 2022 (**Appendix B: Observed Species Lists**); and
- Results from the Delineation of Aquatic Resources conducted by Gallaway Enterprises on May 21 and 27 and June 2 and 4, 2020 and April 28, 2022.



Special-Status Species

Special-status species that are considered in this BRA are those that fall into one of the following categories:

- Listed as threatened or endangered, or are proposed or candidates for listing under the California Endangered Species Act (CESA, 14 California Code of Regulations 670.5) or the Federal Endangered Species Act (ESA, 50 Code of Federal Regulations 17.12);
- Listed as a Species of Special Concern (SSC) by CDFW or protected under the California Fish and Game Code (CFGC) (i.e., Fully Protected Species);
- Ranked by the CNPS as 1A, 1B, or 2;
- Protected under the Migratory Bird Treaty Act (MBTA);
- Protected under the Bald and Golden Eagle Protection Act; or
- Species that are otherwise protected under policies or ordinances at the local or regional level as required by the California Environmental Quality Act (CEQA, §15380).

Critical Habitat

The ESA requires that critical habitat be designated for all species listed under the ESA. Critical habitat is designated for areas that provide essential habitat elements that enable a species' survival, and which are occupied by the species during the species' listing under the ESA. For the purposes of designating critical habitat only, habitat is the abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species.

The USFWS Critical Habitat Portal was accessed on June 1, 2020 and May 13, 2022 to determine if critical habitat occurs within the BSA. Appropriate Federal Registers were also used to confirm the presence or absence of critical habitat.

Sensitive Natural Communities

Sensitive Natural Communities (SNCs) are monitored by CDFW with the goal of preserving these areas of habitat that are rare or ecologically important. Many SNCs are designated as such because they represent a historical landscape and are typically preserved as valued components of California's diverse habitat assemblage.

Waters of the United States

A delineation of waters of the United States was conducted within the BSA on May 27 and June 2 and 4, 2020 and April 28, 2022. The delineation is pending a jurisdictional determination from the US Army Corps of Engineers (Corps).

Habitat Assessments

Habitat assessments were conducted by Gallaway Enterprises staff on May 21 and 27 and June 2 and 4, 2020 and April 28, 2022. A wildlife habitat assessment was conducted by Senior Biologist Dan Machek on June 4, 2020. Senior Botanist Elena Gregg conducted a botanical habitat assessment and protocol-level rare plant surveys within the BSA on May 21 and 27 and June 2 and 4, 2020 and was assisted by Botanist

Constantin Raether. An additional site visit was conducted on April 28, 2022 by Elena Gregg, and assisted by Botanist Chris Belko, to reassess habitat conditions.

Habitat assessments for botanical and wildlife species were conducted to determine the suitable habitat elements for special-status species within the BSA. The habitat assessment was conducted by walking the entire BSA, where accessible, and recording specific habitat types and elements (**Figure 4**). If habitat was observed for special-status species it was then evaluated for quality based on vegetation composition and structure, physical features (e.g., soils, elevation), micro-climate, surrounding area, presence of predatory species and available resources (e.g., prey items, nesting substrates), and land use patterns. A list of wildlife species observed within the BSA is included in **Appendix B**.

Rare Plant Survey

Protocol-level rare plant surveys and habitat evaluations for rare plants were conducted on May 21 and 27 and June 2 and 4, 202 and April 28, 2022. The surveys and evaluations were conducted by walking meandering transects through the entire BSA and taking inventory of observed botanical species. The protocol-level surveys were conducted for species with blooming periods that overlapped the survey dates. Complete lists of the plant species observed within the BSA is included in **Appendix B**.

RESULTS

Habitats

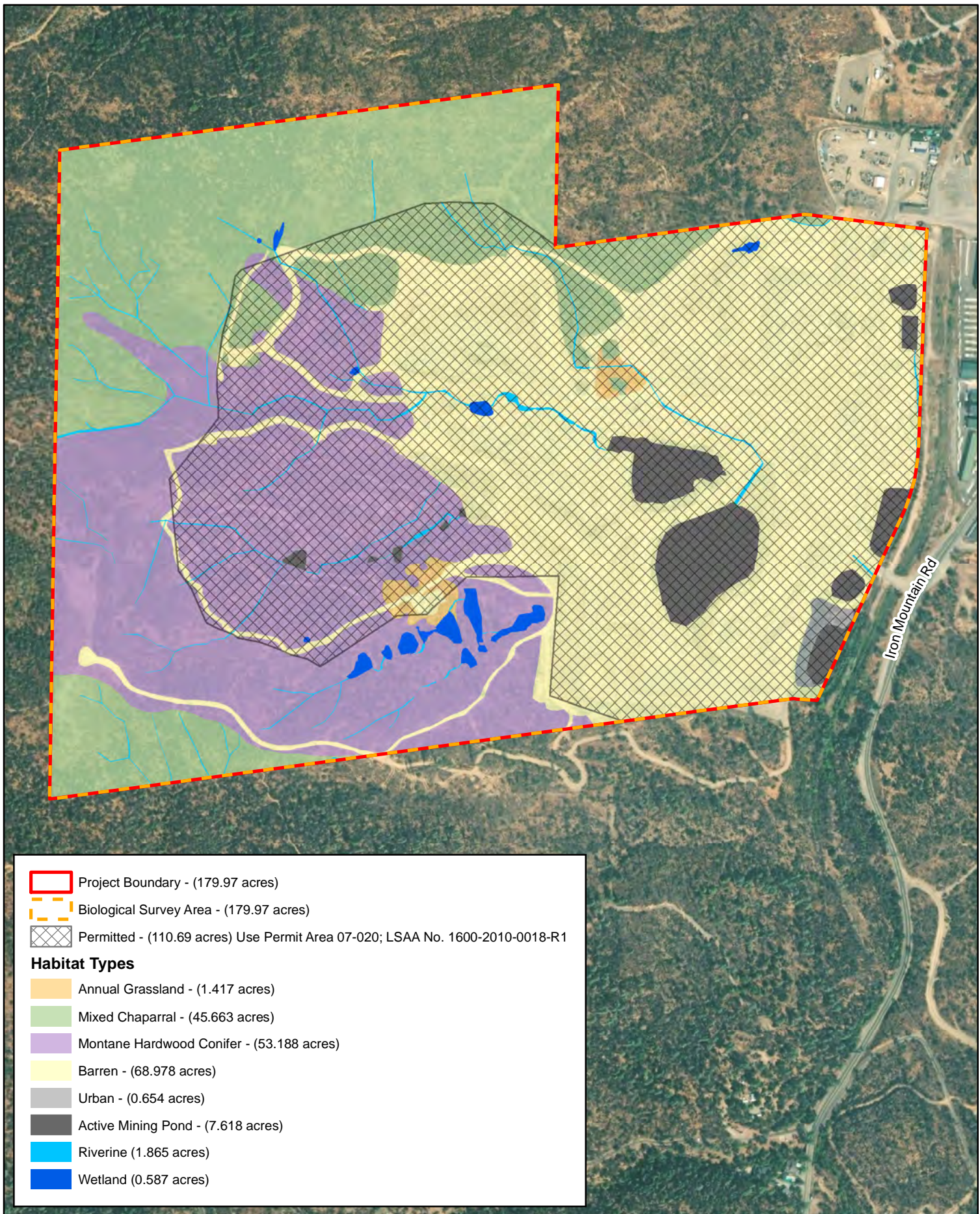
A map depicting the different habitat types present as of the date of this report within the BSA is provided as **Figure 4**. These habitat types are described further below. The habitats depicted within the existing Use Permit area of the Mine are actively being altered pursuant to the Use Permit. The proposed Amendments to the Use Permit and Reclamation Plan will not alter or expand the existing limits of impact.

Montane Hardwood-Conifer

The MRA and areas currently outside of the active mining area are co-dominated by montane hardwood-conifer woodland. This habitat type is typically diverse in structure, with a mix of hardwoods, conifers, and shrubs. Historically the tree canopy varied from moderately dense to sparse but following the Carr Fire, the tree canopy has been decimated and is now fairly sparse with many standing dead trees. The tree layer present is composed of black oaks (*Quercus kelloggii*), knobcone pine (*Pinus attenuata*) and ponderosa pine (*Pinus ponderosa*). The shrub component is composed of toyon (*Heteromeles arbutifolia*), whiteleaf manzanita (*Arctostaphylos vicida*), coffeeberry (*Frangula californica*) and snowdrop bush (*Styrax redivivus*).

Mixed Chaparral

The MRA and areas currently outside of the active mining area are co-dominated by mixed chaparral habitat. Prior to the Carr Fire, it was evident that the mixed chaparral habitat present was dominated by a dense shrub layer of whiteleaf manzanita; however, post-fire, the dominant shrub observed was toyon. Whiteleaf manzanita, coffeeberry and snowdrop bush were also present with an understory layer comprised of lemmon's ceanothus (*Ceanothus lemmonii*), poison oak (*Toxicodendron diversilobum*), silver



Project Boundary - (179.97 acres)
 Biological Survey Area - (179.97 acres)
 Permitted - (110.69 acres) Use Permit Area 07-020; LSAA No. 1600-2010-0018-R1

Habitat Types

- Annual Grassland - (1.417 acres)
- Mixed Chaparral - (45.663 acres)
- Montane Hardwood Conifer - (53.188 acres)
- Barren - (68.978 acres)
- Urban - (0.654 acres)
- Active Mining Pond - (7.618 acres)
- Riverine (1.865 acres)
- Wetland (0.587 acres)

1:6,000
 0 250 500 Feet
 Data Sources: ESRI, Shasta County,
 Maxar 09/15/2021

Crystal Creek Aggregate Mine
 Habitat Types
 Figure 4

hairgrass (*Aira caryophyllea*), goldwire (*Hypericum concinnum*), medusahead (*Elymus caput-medusae*), tall willowherb (*Epilobium brachycarpum*), Spanish lotus (*Acmispon americanus*), wild oats (*Avena barbata*), six-weeks fescue (*Festuca myuros*), winter vetch (*Vicia villosa*) and prickly lettuce (*Lactuca serriola*). Mixed chaparral habitat provides escapement and nesting areas, and food, shelter, and water for a variety of species of resident and migrating wildlife species.

Annual Grassland

Annual grassland habitat occurs in only a few small areas within the BSA where a historic residence was once located and where the area was disturbed from historic mining activities. Annual grassland habitats and species composition depend largely on annual precipitation, fire regimes, and grazing practices (Mayer and Laudenslayer 1988). Species observed in the annual grasslands in the BSA include rip-gut brome (*Bromus diandrus*), wild oat, silver hairgrass, soft chess (*Bromus hordeaceus*), Spanish lotus, six-weeks fescue, winter vetch, prickly lettuce and medusahead. Most wildlife species use grassland habitat for foraging, but generally require some other habitat characteristic such as rocky outcrops, cliffs, caves, or ponds in order to find shelter and cover for escapement. Some rodents, such as ground squirrels (*Otospermophilus beecheyi*), utilize annual grasslands for burrowing.

Riverine

Riverine habitat is characterized by intermittent or continually running water. There are many ephemeral drainages within the BSA as well as three intermittent drainages. The ephemeral drainages only function to convey precipitation during the wet season. The three intermittent drainages are seep fed and convey water during winter and into the early summer months. Later in the year, flows subside and only portions of these drainages contain low amounts of water while other sections dry completely. All of the drainages converge from the north and south into a central channel which flows east into Pond #4. Its substrate is composed of stone and cobble, and abundant vegetation, including patches of riparian vegetation, was present within the streambed of only the intermittent drainages. Riverine habitat provides food for waterfowl, herons (*Ardeidae* sp.), and many species of insectivorous birds, hawks, and their prey.

Lacustrine – Wetlands and Active Mining Ponds

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water (Cowardin 1979 cited in Mayer and Laudenslayer 1988). Within the BSA lacustrine habitat includes natural wetlands, historic mining ponds and active mining ponds. The natural wetlands observed included seeps and seasonal wetlands. The historic mining ponds are small ponds that were constructed as part of the historic mining operations that took place on the site in the 1960s and have since been undisturbed and function currently as naturalized wetlands. All of the active mining ponds are man-made incidental to the ongoing mining operations and either have controlled outfalls or have no direct or natural connection to a tributary and are completely isolated. Some of the ponds are perennial while some dry during the summer months. There is 1.58 acres of wetlands, including the historic mining ponds, within the BSA and 6.95 acres of active mining ponds. The typical dominant vegetation found within the various wetlands present within the Mine included a variety of rushes (*Juncus* sp.), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), perennial ryegrass (*Festuca perennis*), hawkbit (*Leontodon saxatilis*), seep monkeyflower (*Erythranthe guttata*), sweet vernal grass (*Anthoxanthum odoratum*), Fremont

cottonwood (*Populus fremontii*) saplings and various willow species (*Salix* sp.). Lacustrine habitat provides breeding and foraging habitat for a number of amphibians, reptiles, and birds.

Barren

Barren habitat is typified by non-vegetated soil, rock, and gravel. The entire active mine area as well as the various dirt access roads within the BSA are barren. The barren habitat type typically provides low quality habitat to wildlife. Some ground-nesting birds, such as killdeer (*Charadrius vociferus*), will nest in gravelly, barren substrate.

Critical Habitat

There is no designated critical habitat within the BSA. Although the one controlled outfall present within the BSA is hydrologically connected to an unnamed tributary of Middle Creek, which is designated as critical habitat for steelhead, none of the drainages within the BSA can support anadromous fishes and there are barriers present which prevent occurrences, even during high flow events.

Sensitive Natural Communities

No CDFW-designated SNCs occur within the BSA.

Wildlife Migration Corridors

Although CDFW has several riparian corridors mapped adjacent to the BSA; there are no CDFW designated corridors that overlap the BSA (**Appendix D: CDFW Designated Wildlife Corridors**). California Department of Fish and Wildlife-mapped riparian corridors are named water features from the National Hydrography Dataset (NHD) that connect landscape blocks for the northern Sierra Nevada foothills wildlife connectivity project. The existing reclamation area is actively being mined and thus has continuously and regularly been disturbed. The additional mining activities proposed in Use Permit and Reclamation Plan Amendments will not expand the existing Mine boundary; therefore, there will be no impacts to adjacent wildlife corridors. Proposed activities in the currently-undisturbed MRA will be limited to access and fuel reduction, with no lasting impacts anticipated.

Special-Status Species

A summary of special-status species assessed for potential occurrence within the BSA based on the USFWS IPaC Species List, NOAA-NMFS species list, CNDDDB species list, and the CNPS inventory of rare and endangered plants within the Whiskeytown (4012265), Shasta Dam (4012264), Project City (4012263), Igo (4012255), Redding (4012254), and Enterprise (4012253) USGS 7.5-minute quadrangles, and their potential to occur within the BSA are described in **Table 1**. Potential for occurrence was determined by reviewing database queries from federal and state agencies and performing field surveys to evaluate habitat characteristics.

Table 1. Special-status species and Sensitive Natural Communities and their potential to occur in the BSA of the Crystal Creek Aggregate Mine, Shasta County, CA

Common Name (Scientific Name)	Status Fed/State/CNPS	Associated Habitats	Potential for Occurrence
SENSITIVE NATURAL COMMUNITIES			
Great Valley Cottonwood Riparian Forest	_/_SNC/_	Riparian forest.	<u>None</u> . There is no designated Great Valley Cottonwood Riparian Forest within the BSA.
Great Valley Valley Oak Riparian Forest	_/_SNC/_	Riparian forest.	<u>None</u> . There is no designated Great Valley Oak Riparian Forest within the BSA.
Great Valley Willow Scrub	_/_SNC/_	Riparian scrub.	<u>None</u> . There is no designated Great Valley Willow Scrub within the BSA.
PLANTS			
Canyon Creek stonecrop (<i>Sedum obtusatum</i> ssp. <i>paradisum</i>)	_/_/1B.3	Rock faces and in crevices of exposed granite. (Blooming Period [BP]: May – Jun)	<u>None</u> . No suitable rock habitat present and not observed during protocol-level surveys.
Dubious pea (<i>Lathyrus sulphureus</i> var. <i>argillaceus</i>)	_/_/3	Cismontane woodland. (BP: Apr – May)	<u>None</u> . Not observed during protocol-level surveys.
Henderson’s bent grass (<i>Agrostis hendersonii</i>)	_/_/3.2	Moist places in grassland or vernal pool habitat. (BP: Apr – Jun)	<u>None</u> . Not observed during protocol-level surveys.
Legenere (<i>Legenere limosa</i>)	_/_/1B.1	Vernal pools. (BP: Apr – Jun)	<u>None</u> . There is no vernal pool habitat present and not observed during protocol-level surveys.
Maverick clover (<i>Trifolium piorkowskii</i>)	_/_/1B.2	Shallow vernal depressions on volcanic flats or the open banks of intermittent or perennial streams in the foothills of Shasta County. (BP: Apr – May)	<u>None</u> . Not observed during protocol-level surveys.
Nuttall’s ribbon-leaved pondweed (<i>Potamogeton epihydrus</i>)	_/_/2B.2	Assorted shallow freshwater marshes and swamps. (BP: [Jun]Jul – Sep)	<u>None</u> . Not observed during protocol-level surveys.

Common Name (Scientific Name)	Status Fed/State/CNPS	Associated Habitats	Potential for Occurrence
PLANTS			
Red Bluff dwarf rush (<i>Juncus leiospermus</i> var. <i>leiospermus</i>)	_/_/1B.1	Vernal pools and vernal mesic sites. (BP: Mar – Jun)	<u>None</u> . There is no vernal pool habitat present and not observed during protocol-level surveys.
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)	_/_/1B.2	In standing or slow-moving freshwater ponds, marshes, and ditches. (BP: May – Oct [Nov])	<u>None</u> . Not observed during protocol-level surveys.
Shasta huckleberry (<i>Vaccinium shastense</i> ssp. <i>shastense</i>)	_/_/1B.3	Microhabitat is acidic, mesic; often streambanks; sometimes seeps, rocky outcrops, roadsides, and disturbed areas. (BP: Dec – May [Sep])	<u>None</u> . Not observed during protocol-level surveys.
Shasta snow-wreath (<i>Neviusia cliftonii</i>)	_/_/SC/1B.2	In the mountains around Lake Shasta on shaded, north facing, or sheltered canyons. Often found by stream sides, sometimes on limestone or volcanic soils. (BP: Apr – Jun)	<u>None</u> . Not observed during protocol-level surveys.
Silky cryptantha (<i>Cryptantha crinita</i>)	_/_/1B.2	Gravelly streambeds and wetland swales. (BP: Apr – May)	<u>None</u> . There is no suitable habitat within the drainages present and not observed during protocol-level surveys.
Slender Orcutt grass (<i>Orcuttia tenuis</i>)	FT/SE/1B.1	Deep vernal pools. (BP: May – Sep [Oct])	<u>None</u> . There is no vernal pool habitat present within the BSA and the species was not observed during the protocol-level rare plant survey.
Sulphur Creek brodiaea (<i>Brodiaea matsonii</i>)	_/_/1B.1	Streambanks. In cracks and crevices of metamorphic amphibolite schist. (BP: May – Jun)	<u>None</u> . Not observed during protocol-level surveys.
INVERTEBRATES			
Monarch butterfly (<i>Danaus plexippus</i>)	FC/_/_	Egg and larval stage dependent upon milkweed. Adults migrate seasonally, amassing in dense tree canopies; e.g., eucalyptus.	<u>None</u> . There is no suitable habitat within the BSA. No milkweed plants were observed within the BSA.

Common Name (<i>Scientific Name</i>)	Status Fed/State/CNPS	Associated Habitats	Potential for Occurrence
INVERTEBRATES			
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT/_/_	Blue elderberry shrubs; usually associated with riparian areas.	<u>None</u> . No elderberry shrubs were observed within the BSA.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT/_/_	Vernal pools and seasonally ponded areas.	<u>None</u> . There are no vernal pools nor features with suitable hydrology within the BSA.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE/_/_	Deep vernal pools.	<u>None</u> . There are no vernal pools nor features with suitable hydrology within the BSA.
FISH			
Chinook salmon Central Valley spring-run Evolutionarily Significant Unit (ESU) (<i>Oncorhynchus tshawytscha</i>)	FT/ST/_	Sacramento River and its tributaries.	<u>None</u> . None of the intermittent drainages in the BSA contain suitable habitat elements for this species and barriers to fish are present in the form of controlled outfalls/culverts.
Chinook salmon Sacramento River winter-run ESU (<i>Oncorhynchus tshawytscha</i>)	FE/SE/_	Sacramento River and its tributaries.	<u>None</u> . None of the intermittent drainages in the BSA contain suitable habitat elements for this species and barriers to fish are present in the form of controlled outfalls/culverts.
Green sturgeon Southern Distinct Population Segment (DPS) (<i>Acipenser medirostris</i>)	FT/_/_	Spawns in the Sacramento, Feather and Yuba Rivers, site fidelity. Non spawning adults occupy marine/estuarine waters. Delta Estuary is important for rearing juveniles.	<u>None</u> . None of the intermittent drainages in the BSA contain suitable habitat elements for this species and barriers to fish are present in the form of controlled outfalls/culverts.
Steelhead Central Valley DPS (<i>Oncorhynchus mykiss irideus</i>)	FT/_/_	Sacramento and San Joaquin rivers and their tributaries.	<u>None</u> . None of the intermittent drainages in the BSA contain suitable habitat elements for this species and barriers to fish are present in the form of controlled outfalls/culverts.

Common Name (Scientific Name)	Status Fed/State/CNPS	Associated Habitats	Potential for Occurrence
FISH			
Delta smelt (<i>Hypomesus transpacificus</i>)	FT/SE/_	Found only from the San Pablo Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties.	<u>None</u> . None of the intermittent drainages in the BSA contain suitable habitat elements for this species and barriers to fish are present in the form of controlled outfalls/culverts.
HERPTILES			
Foothill yellow-legged frog Northwest/North Coast Clade (<i>Rana boylei</i>)	_/SSC/_	Perennial, shallow streams and riffles with rocky substrates and partial shade; commonly found in canyons and narrow streams.	<u>None</u> . The drainages within the BSA do not provide the sufficient hydroperiod for breeding, nor suitable habitat components for overwintering (i.e., woody debris, root wads, undercut banks, clumps of sedges, and large boulders) (USFWS 2021).
Pacific tailed frog (<i>Ascaphus truei</i>)	_/SSC/_	Perennial montane streams. Tadpoles require water below 15 degrees Celsius.	<u>None</u> . The intermittent drainages within the BSA are too shallow and warm to support this species.
Shasta salamander (<i>Hydromantes shastae</i>)	_/ST/_	Occurs in rocky, limestone talus near Lake Shasta.	<u>None</u> . No suitable habitat occurs within the BSA and the BSA is located outside of the known range of this species (Gogol-Prokurat 2016).
Western pond turtle (<i>Emys marmorata</i>)	_/SSC/_	Bodies of water with deep pools, emergent vegetation for foraging and cover, and locations for basking and nesting.	<u>Known</u> . Species has been observed in one of the historic perennial ponds present in the BSA.
Western spadefoot (<i>Spea hammondi</i>)	_/SSC/_	Occurs primarily in grassland habitats. Vernal pools and seasonal drainages are typically used for breeding and egg-laying.	<u>None</u> . A sizeable bullfrog (<i>Lithobates catesbeianus</i>) population was observed within the active mining ponds in the BSA. The ponds are regularly disturbed, and the adjacent uplands are highly compacted and/or heavily vegetated (USFWS 2005). There are no CNDDDB occurrences within 5 miles of the BSA.

Common Name (Scientific Name)	Status Fed/State/CNPS	Associated Habitats	Potential for Occurrence
BIRDS			
Tricolored blackbird (<i>Agelaius tricolor</i>)	_/ST/_	Colonial nester in large freshwater marshes. Requires open, accessible water source and does most of its foraging in open habitats such as farm fields, pastures, cattle pens, large lawns.	<u>None</u> . There is a lack of nesting habitat due to the vegetation management activities conducted in the mining ponds and no suitable foraging habitat with abundant insect prey populations within or adjacent to the BSA.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	_/SE, FP/_	Coasts, large lakes, and river systems with open forests with large trees and snags.	<u>None</u> . There is no suitable habitat present within the BSA.
Bank swallow (<i>Riparia riparia</i>)	_/ST/_	Requires vertical banks or cliffs with fine-textured sandy soils near streams, rivers, lakes, ocean to dig nesting burrow.	<u>None</u> . There is no suitable habitat present within the BSA.
Northern spotted owl (<i>Strix occidentalis caurina</i>)	FT/ST/_	Forests characterized by dense canopy closure of mature and old-growth trees, abundant logs, standing snags, and live trees with broken tops.	<u>None</u> . There is no suitable habitat present within the BSA.
MAMMALS			
Fisher West Coast DPS (<i>Pekania pennanti</i>)	_/SSC/_	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	<u>None</u> . There is no suitable habitat present within the BSA.

Common Name (Scientific Name)	Status Fed/State/CNPS	Associated Habitats	Potential for Occurrence
MAMMALS			
Pallid bat (<i>Antrozous pallidus</i>)	_/SSC/_	Rocky outcroppings to open, sparsely vegetated grasslands with nearby water source. Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., cavities and exfoliating bark), and various human structures (i.e., bridges).	Low. Mature trees with exfoliating bark and large cavities within the BSA could potentially provide day-roosting habitat within the BSA. There are no CNDDB occurrences of this species within 5 miles of the BSA.
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	_/SSC/_	Roost in caves and cave-like cavities, occasionally in bridges.	Low. One small historic mine tunnel occurs within the BSA that could potentially provide marginal habitat for this species.
Western red bat (<i>Lasiurus blossevillii</i>)	_/SSC/_	Riparian areas dominated by walnuts, oaks, willows, cottonwoods, and sycamores where they roost in these broad-leaved trees.	None. Few broad-leaved trees occur within the BSA, the majority of which were burned in the Carr Fire.

CODE DESIGNATIONS	
FE or FT = Federally listed as Endangered or Threatened FC = Federal Candidate Species SE or ST = State Listed as Endangered or Threatened SC = State Candidate Species SSC = State Species of Special Concern FP = State Fully Protected Species SNC = CDFW Sensitive Natural Community	CNPS California Rare Plant Rank (CRPR): CRPR 1B = Rare or Endangered in California or elsewhere CRPR 2 = Rare or Endangered in California, more common elsewhere CRPR 3 = More information is needed CRPR 4 = Plants with limited distribution 0.1 = Seriously Threatened 0.2 = Fairly Threatened 0.3 = Not very Threatened
<p>Potential for Occurrence: for plants it is considered the potential to occur during the survey period; for birds and bats it is considered the potential to breed, forage, roost, or over-winter in the BSA during migration. Any bird or bat species could fly over the BSA, but this is not considered a potential occurrence. The categories for the potential for occurrence include:</p> <p>None: The species or natural community is known not to occur and has no potential to occur in the BSA based on sufficient surveys, the lack suitable habitat, and/or the BSA is well outside of the known distribution of the species.</p> <p>Low: Potential habitat in the BSA is sub-marginal and/or the species is known to occur in the vicinity of the BSA.</p> <p>Moderate: Suitable habitat is present in the BSA and/or the species is known to occur in the vicinity of the BSA. Pre-construction surveys may be required.</p> <p>High: Habitat in the BSA is highly suitable for the species and there are reliable records close to the BSA, but the species was not observed. Pre-construction surveys required, with the exception of indicators for foraging habitat.</p> <p>Known: Species was detected in the BSA, or a recent reliable record exists for the BSA.</p>	

Endangered, Threatened, and Rare Plants

There were no endangered, threatened, or rare plants observed within the BSA during the protocol-level rare plant surveys conducted on May 21 and 27 and June 2 and 4, 2020 and April 28, 2022. A complete list of plant species observed within the BSA during protocol-level surveys can be found in **Appendix B**. Additionally, no special-status botanical species were observed within the site during surveys conducted by North State Resources in 2006, nor during surveys conducted by WRM in 2019.

Endangered, Threatened, and Special Status Wildlife

A wildlife habitat assessment was conducted within the BSA on June 4, 2020. The following special-status species have potential to occur within the BSA based on the presence of suitable habitat and/or known records of species occurrence within the vicinity of the BSA.

One SSC, the western pond turtle, was observed within the BSA. Additionally, potentially suitable habitat was identified for pallid bat, Townsend's big-eared bat, and various avian species protected under the MBTA. A complete list of wildlife species observed within the BSA can be found in **Appendix B**. No special-status wildlife species were observed within the site by North State Resources in 2007 nor by WRM in 2019.

Western pond turtle

The western pond turtle is a SSC in California. Western pond turtles are drab, darkish-colored turtles with a yellowish to cream colored head. They range from the Washington Puget Sound to Baja California. Suitable aquatic habitats include slow-moving to stagnant water, such as backwaters and ponded areas of rivers and creeks, semi-permanent to permanent ponds, and irrigation ditches. Preferred habitats include features such as hydrophytic vegetation for foraging and cover and basking areas to regulate body temperature. In early spring through early summer, female turtles begin to move over land in search for nesting sites. Eggs are laid on the banks of slow-moving streams and are known to travel up to 400 meters from aquatic habitat into upland areas to nest (Reese and Welsh 1997). The female digs a hole approximately 4 inches deep and lays up to eleven (11) eggs. Afterwards, the eggs are covered with sediment and are left to incubate under the warm soils. Eggs are typically laid between March and August (Zeiner et al. 1990). Current threats facing the western pond turtle include loss of suitable aquatic habitats due to rapid changes in water regimes and removal of hydrophytic vegetation.

CNDDB occurrences

There are two (2) CNDDB occurrences of western pond turtle within 5 miles of the BSA (#605, #713), the closest being located approximately 3.5 miles southwest of the BSA.

Status of western pond turtle occurring within the BSA

Western pond turtles are known to bask on banks and woody debris, such as logs, along the sides of perennial aquatic features. They are also known to travel up to 400 meters from aquatic habitat into upland areas to nest (Reese and Welsh 1997), and they may aestivate in upland areas along intermittent drainages for several months during dry periods (Belli 2015). During the field surveys conducted, a few western pond turtles were observed within the perennial historic created ponds in the MRA (where no

mining or project related impacts will occur), including PO15 and PO16 (**Appendix C: Draft Delineation of Aquatic Resources Impacts Map**). When water is present all of the manmade ponds in the BSA provide suitable habitat for western pond turtles; however, due to regular disturbance and steeply engineered banks, the active mining ponds do not provide high-quality habitat for western pond turtles.

Pallid bat

Pallid bats are designated as a CDFW SSC. Pallid bats roost alone, in small groups (2 to 20 bats), or gregariously (hundreds of individuals). Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of coast redwoods and giant sequoias, bole cavities of oaks, exfoliating Ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards), and various human structures such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and human-occupied as well as vacant buildings. Roosts generally have unobstructed entrances and exits, are high above the ground, warm, and inaccessible to terrestrial predators. However, this species has also been found roosting on or near the ground under burlap sacks, stone piles, rags, and baseboards. Lewis (1996) found that pallid bats have low roost fidelity and both pregnant and lactating pallid bats changed roosts an average of once every 1.4 days throughout the summer. Overwintering roosts have relatively cool, stable temperatures and are located in protected structures beneath the forest canopy or on the ground, out of direct sunlight. In other parts of the species' range, males and females have been found hibernating alone or in small groups, wedged deeply into narrow fissures in mines, caves, and buildings. At low latitudes, outdoor winter activity has been reported at temperatures between -5 and 10 °C.

CNDDB Occurrences

There are four (4) CNDDB occurrences of pallid bat in Shasta County. Three (3) of the occurrences positively identify bridges as the known roost sites and the fourth occurrence does not describe a roost site or type. The nearest CNDDB occurrence (#111) is just over 5 miles to the west of the BSA, under the Brandy Creek bridge on Kennedy Memorial Drive.

Status of pallid bat occurring in the BSA

Mature oak trees within the BSA that contain suitable habitat elements (e.g., cavities, peeling bark) may provide suitable day-roosting habitat; however, there very few large oak trees present, and the few large oak trees present have largely been impacted by the Carr Fire, resulting in poor quality of habitat within the site. Due to the small amount of potentially suitable habitat present and the lack of CNDDB occurrences within 5 miles, there is low potential for pallid bats to occur within the BSA.

Townsend's big-eared bat

Townsend's big-eared bat is designated as a SSC. This bat is distinguished by its bilateral nose bumps and large ears (WBWG 2022). This bat requires large cavities for roosting; these may include abandoned buildings and mines, caves, and basal cavities of trees. During the summer, males and females occupy separate roosting sites; males are typically solitary, while females form maternity colonies, where they raise their pups. Maternity colonies form between March and June (based on local climactic factors), with a single pup born between May and July (WBWG 2022). A maternity colony may range in size from 12 bats

to 200, although in the eastern United States, colonies of 1,000 or more have been formed. During the winter, these bats hibernate, often when temperatures are around 32 to 53°F. Hibernation occurs in tightly packed clusters, which could possibly help stabilize body temperatures against the cold. Males often hibernate in warmer places than females and are more easily aroused and active in winter than females. This species has 2-3 feeding periods between dark and dawn, with periods of rest in between. They rest in areas different from where they roost during the day (Schwartz et al. 2016).

CNDDDB Occurrences

The nearest CNDDDB occurrence (#494) is located just northwest of the BSA and was observed in 1997 at the Rock Creek Mine.

Status of Townsend's big-eared bat occurring within the BSA

The BSA is the site of a historic and active mining operation. The historic mining activities included some tunneling and excavation. One (1) small tunnel was observed within the Mine during the field survey (**Appendix E: Site Photos**). Due to the small size of the tunnel and the noise and disturbance from the adjacent active mining, there is a low potential for Townsend's big-eared bats to occur within the tunnel in the BSA.

Migratory birds and raptors

Nesting birds are protected under the MBTA (16 USC 703) and the CFGC (§3503). The MBTA (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e., exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.

The CFGC (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFGC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto."

CNDDDB occurrences

The majority of migratory birds and raptors protected under the MBTA and CFGC are not recorded on the CNDDDB because they are abundant and widespread.

Status of migratory birds and raptors occurring in the BSA

There is suitable nesting habitat for avian species within and adjacent to the BSA.

REGULATORY FRAMEWORK

The following describes federal, state, and local environmental laws and policies that may be relevant if the BSA were to be developed or modified.

Federal

Waters of the United States, Clean Water Act (§404)

The US Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into jurisdictional waters of the United States, under the Clean Water Act (§404). The term “waters of the United States” is an encompassing term that includes “wetlands” and “other waters.” Wetlands have been defined for regulatory purposes as follows: “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3). Wetlands generally include swamps, marshes, bogs, and similar areas.” Other waters of the United States are seasonal or perennial water bodies, including Lake, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (i.e., hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4).

The Corps may issue either individual permits on a case-by-case basis or general permits on a program level. General permits are pre-authorized and are issued to cover similar activities that are expected to cause only minimal adverse environmental effects. Nationwide permits are general permits issued to cover particular fill activities. All nationwide permits have general conditions that must be met for the permits to apply to a particular project, as well as specific conditions that apply to each nationwide permit.

Clean Water Act (§401)

The Clean Water Act (§401) requires water quality certification and authorization for placement of dredged or fill material in wetlands and Other Waters of the United States. In accordance with the Clean Water Act (§401), criteria for allowable discharges into surface waters have been developed by the State Water Resources Control Board, Division of Water Quality. The resulting requirements are used as criteria in granting National Pollutant Discharge Elimination System (NPDES) permits or waivers, which are obtained through the Regional Water Quality Control Board (RWQCB) per the Clean Water Act (§402). Any activity or facility that will discharge waste (such as soils from construction) into surface waters, or from which waste may be discharged, must obtain an NPDES permit or waiver from the RWQCB. The RWQCB evaluates an NPDES permit application to determine whether the proposed discharge is consistent with the adopted water quality objectives of the basin plan.

Migratory Bird Treaty Act

The MBTA (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e., exotic) species (50 Code of Federal Regulations §10.13).

Federal Endangered Species Act

The United States Congress passed the ESA in 1973 to protect species that are endangered or threatened with extinction. The ESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

Under the ESA, species may be listed as either “endangered” or “threatened.” Endangered means a species is in danger of extinction throughout all or a significant portion of its range. Threatened means a species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. All species of plants and animals, except non-native species and pest insects, are eligible for listing as endangered or threatened. The USFWS also maintains a list of “candidate” species. Candidate species are species for which there is enough information to warrant proposing them for listing, but that have not yet been proposed. “Proposed” species are those that have been proposed for listing but have not yet been listed.

The ESA makes it unlawful to “take” a listed animal without a permit. Take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” Through regulations, the term “harm” is defined as “an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.”

State of California Regulations

California Endangered Species Act

The CESA is similar to the ESA but pertains to state-listed endangered and threatened species. The CESA requires state agencies to consult with the CDFW when preparing documents to comply with the CEQA. The purpose is to ensure that the actions of the lead agency do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species. In addition to formal listing under the federal and state endangered species acts, “Species of Special Concern” (SSC) receive consideration by CDFW. Species of Special Concern are those whose numbers, reproductive success, or habitat may be threatened.

California Fish and Game Code (§3503.5)

The CFGC (§3503.5) states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (all owls except barn owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFGC (§3503) also states that “it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.”

California Migratory Bird Protection Act

The CMBPA amends the CFGC (§3513) to mirror the provisions of the MBTA and allow the State of California to enforce the prohibition of take or possession of any migratory nongame bird as designated in the federal MBTA, including incidental take.

Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance have the potential to affect bird species protected by the MBTA and CFGC. Thus, vegetation removal and ground disturbance in areas with breeding birds should be conducted outside of the breeding season (approximately March 1 through August 31). If vegetation removal or ground-disturbing activities are conducted during the breeding season, then a qualified biologist must determine if there are any nests of bird species protected under the MBTA and CFGC present in the Project area prior to commencement of vegetation removal or ground-disturbing activities. If active nests are located or presumed present, then appropriate avoidance measures (e.g., spatial or temporal buffers) must be implemented.

California Environmental Quality Act Guidelines (§15380)

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines §15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled based on the definition in the ESA and the section of the CFGC dealing with rare, threatened, and endangered plants and animals. The CEQA Guidelines (§15380) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (e.g. candidate species, species of concern) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

Lake and Streambed Alteration Agreement, CFGC (§1602)

The CDFW is a trustee agency that has jurisdiction under the CFGC (§1600 et seq.). The CFGC (§1602), requires that a state or local government agency, public utility, or private entity must notify CDFW if a proposed Project will “substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, except when the department has been notified pursuant to §1602.” If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures.

Rare and Endangered Plants

The CNPS maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS California Rare Plant Rank (CRPR) plants receive consideration under CEQA review. The CNPS CRPR categorizes plants as follows:

- Rank 1A: Plants presumed extinct in California;
- Rank 1B: Plants rare, threatened, or endangered in California or elsewhere;
- Rank 2A: Plants presumed extirpated or extinct in California, but not elsewhere;
- Rank 2B: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
- Rank 3: Plants about which we need more information; and
- Rank 4: Plants of limited distribution.

The California Native Plant Protection Act (CFGF §1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered as defined by CDFW. An exception to this prohibition allows landowners, under specific circumstances, to take listed plant species, provided that the owners first notify CDFW and give the agency at least 10 days to retrieve (and presumably replant) the plants and/or seeds before they are destroyed. CFGF §1913 exempts from the 'take' prohibition "the removal of endangered or rare native plants from a canal, lateral channel, building site, or road, or other right of way."

CONCLUSIONS AND RECOMMENDATIONS

Endangered, Threatened, and Rare Plants

There are no special-status botanical species present within the BSA; therefore, there will be no effects to botanical species or their habitats and no further avoidance and minimization measures are proposed.

Endangered, Threatened, and Special-status Wildlife

The following are the recommended and existing minimization and mitigation measures to reduce or eliminate current and future Mine-associated impacts to special-status wildlife species. These proposed measures are based on the existing Reclamation Plan Amendment and Use Permit conditions and comments received from CDFW on October 29, 2019 and may be amended or superseded by the Mine expansion-specific permits issued by the regulatory agencies.

Western pond turtle

- To the extent practicable, project activities in western pond turtle habitat shall be conducted during the dry season to reduce the likelihood of the presence of western pond turtles in project areas.
- If a western pond turtle is encountered, activities in the vicinity shall cease until appropriate protective measures have been implemented or it has been determined that the turtle will not be harmed. Any western pond turtles encountered shall be allowed to move away on their own or shall be relocated to suitable habitat by a qualified biologist.
- Any trapped, injured, or killed pond turtles shall be reported immediately to the California Department of Fish and Wildlife.

- Escape ramps shall be installed on all reclamation ponds to allow wildlife to exit the steep walled ponds. The ramps will be mechanically cut into the banks of the ponds using heavy equipment. Dimensions of the ramps will be a minimum of 12 inches wide and will not exceed a 2:1 slope.

Pallid bat

- Mature trees shall be removed and/or felled between September 1 and March 15, outside of the bat maternity season. Trees should be removed at dusk to minimize impacts to roosting bats.

Townsend's big-eared bat

- If Mine expansion activities include disturbance, demolition, or removal of any existing historic tunnels within the BSA, this work shall be initiated outside of the bat maternity season (March 16 – August 31).
- Prior to conducting any Mine expansion activities within the existing tunnels, a qualified biologist will conduct a roosting bat pre-construction survey, where accessible, within 7 days prior to the start of mining activities.
- If Townsend's big-eared or other bat species are observed utilizing the Mine expansion area, CDFW will be consulted before construction activities commence. Bats may need to be humanely evicted if adverse impacts are anticipated to occur.

Migratory birds and raptors

- Activities including site-grubbing and vegetation removal shall be initiated outside of the bird nesting season (February 1 – August 31).
- If site-grubbing and/or vegetation removal cannot be initiated outside of the bird nesting season, then the following will occur:
 - A qualified biologist will conduct a pre-construction survey within 250 feet of the proposed disturbance area, where accessible, within 7 days prior to the start of mining activities.
 - If an active nest (i.e., containing egg[s] or young) is observed within the proposed disturbance area or adjacent to the area where impacts could occur, then the qualified biologist will establish a species protection buffer. The species protection buffer will be defined by the qualified biologist based on the species, nest type, and tolerance to disturbance. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails as determined by a qualified biologist. Nests shall be monitored by a qualified biologist once per week and a report submitted to the CEQA lead agency weekly.

Water Quality

The Mine operates under a General Industrial Stormwater Permit (Order No. 2014-0057- DWQ) issued by the State Water Resources Control Board. The permit requires the operator to perform stormwater quality monitoring, water testing, and reporting certain stormwater discharges from the property. Since permitted, CCA has undertaken required water quality monitoring and testing in compliance

with National Pollutant Discharge Elimination System (NPDES) permit conditions. Stormwater flows from the amendment area contain industrial activities and are therefore covered under the General Industrial Stormwater Permit.

Other Natural Resources

Oak Woodland

Oaks within the BSA were largely devastated by the Carr Fire. The few live black oaks remaining on the site are in various states of health. If protected oaks will be removed as a part of vegetation removal activities, then mitigation for impacts to living oaks within the BSA may be required by Shasta County.

Waters of the United States and Waters of the State

Per the active Use Permit (07-020) and the previous Lake and Streambed Alteration Agreement obtained for the Mine (LSAA No. 1600-2012-0018-R1), onsite mitigation was approved to compensate for impacts to wetlands. Since the Use Permit Amendment is not proposing any changes to the previously approved limits of mining activities, no changes to the proposed onsite mitigation previously approved is anticipated. No impacts to aquatic resources are anticipated within the Mineral Resource Area (**Appendix C: Draft Delineation of Aquatic Resources Impacts Map**). Two on-site mitigation measures are proposed. The first is creating a meandering intermittent drainage course within the bench area around proposed Pond #6 with planting of riparian vegetation within and along the drainage course which also extends into the edges of Pond #6, creating 4.45 acres of riparian habitat. Secondly, Pond #6 will create a 32.67-acre freshwater body. The new pond area is 32.23 acres larger than the existing 0.438 acres of ponds being removed via excavation. Pond #6 will have a shallow edge environment transitioning into the deeper pond water area.

Activities that occur within the ordinary high-water mark and/or result in fill or discharge to any waters of the U.S will need to comply with all applicable CWA and CFGC regulations. This will require the following permits to be obtained, unless already obtained or approved under the existing mining permits:

- Authorization under a Nationwide Permit or Individual Permit from the Corps (Clean Water Act §404) must be obtained prior to any discharge of fill material into waters of the U.S.
- A Lake and Streambed Alteration Agreement must be obtained from the CDFW (CFGC §1602) prior to any activities that would obstruct the flow of or alter the bed, channel, or bank of any perennial, intermittent or ephemeral creeks. The active Lake or Streambed Alteration Agreement (No. 1600-2010-0018-R1) for this project expired on December 31, 2014. A current Lake and Streambed Alteration Agreement will need to be obtained if there are any ongoing impacts to CDFW jurisdictional drainage features.
- Authorization under a water quality certification must be obtained by the Regional Water Quality Control Board (Clean Water Act §401) prior to any discharge of dredged or fill material into waters of the State.

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LIST OF PREPARERS

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Elena Gregg. Senior Botanist. B.S. in Environmental Biology and Management, University of California, Davis. Mrs. Gregg has more than 16 years' experience conducting rare plant surveys, habitat assessments, wetland delineations, and preparing reports.

Appendix A

Official Species Lists



Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Whiskeytown (4012265) OR Shasta Dam (4012264) OR Project City (4012263) OR Igo (4012255) OR Redding (4012254) OR Enterprise (4012253))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>	IICOL49020	None	None	G1	S3	
bald eagle <i>Haliaeetus leucocephalus</i>	ABNKC10010	Delisted	Endangered	G5	S3	FP
bank swallow <i>Riparia riparia</i>	ABPAU08010	None	Threatened	G5	S2	
California linderiella <i>Linderiella occidentalis</i>	ICBRA06010	None	None	G2G3	S2S3	
Canyon Creek stonecrop <i>Sedum paradisum ssp. paradisum</i>	PDCRA0A0U3	None	None	G3G4T3	S3	1B.3
chinook salmon - Central Valley spring-run ESU <i>Oncorhynchus tshawytscha pop. 11</i>	AFCHA0205L	Threatened	Threatened	G5T2Q	S2	
chinook salmon - Sacramento River winter-run ESU <i>Oncorhynchus tshawytscha pop. 7</i>	AFCHA0205B	Endangered	Endangered	G5T1Q	S1	
dubious pea <i>Lathyrus sulphureus var. argillaceus</i>	PDFAB25101	None	None	G5T1T2Q	S1S2	3
Fisher <i>Pekania pennanti</i>	AMAJF01020	None	None	G5	S2S3	SSC
foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050	None	Endangered	G3	S3	SSC
great egret <i>Ardea alba</i>	ABNGA04040	None	None	G5	S4	
Great Valley Cottonwood Riparian Forest <i>Great Valley Cottonwood Riparian Forest</i>	CTT61410CA	None	None	G2	S2.1	
Great Valley Valley Oak Riparian Forest <i>Great Valley Valley Oak Riparian Forest</i>	CTT61430CA	None	None	G1	S1.1	
Great Valley Willow Scrub <i>Great Valley Willow Scrub</i>	CTT63410CA	None	None	G3	S3.2	
green sturgeon - southern DPS <i>Acipenser medirostris pop. 1</i>	AFCAA01031	Threatened	None	G2T1	S1	
Henderson's bent grass <i>Agrostis hendersonii</i>	PMPOA040K0	None	None	G2Q	S2	3.2
kneecap lanx <i>Lanx patelloides</i>	IMGASL7030	None	None	G2?	S2	
legenere <i>Legenere limosa</i>	PDCAM0C010	None	None	G2	S2	1B.1
long-eared myotis <i>Myotis evotis</i>	AMACC01070	None	None	G5	S3	



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
maverick clover <i>Trifolium piorkowskii</i>	PDFAB40410	None	None	G2	S2	1B.2
northern clarkia <i>Clarkia borealis ssp. borealis</i>	PDONA05062	None	None	G4T4	S4	4.3
Nuttall's ribbon-leaved pondweed <i>Potamogeton epihydrus</i>	PMPOT03080	None	None	G5	S2S3	2B.2
Oregon shoulderband <i>Helminthoglypta hertleini</i>	IMGASC2280	None	None	G3Q	S1S2	
Pacific tailed frog <i>Ascaphus truei</i>	AAABA01010	None	None	G4	S3S4	SSC
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G4	S3	SSC
Red Bluff dwarf rush <i>Juncus leiospermus var. leiospermus</i>	PMJUN011L2	None	None	G2T2	S2	1B.1
Sacramento anthicid beetle <i>Anthicus sacramento</i>	IICOL49010	None	None	G1	S4	
Sanford's arrowhead <i>Sagittaria sanfordii</i>	PMALI040Q0	None	None	G3	S3	1B.2
Shasta chaparral <i>Trilobopsis roperi</i>	IMGASA2030	None	None	G2	S1	
Shasta hesperian <i>Vespericola shasta</i>	IMGASA4070	None	None	G3	S3	
Shasta huckleberry <i>Vaccinium shastense ssp. shastense</i>	PDERI181Z1	None	None	G4T3	S3	1B.3
Shasta salamander <i>Hydromantes shastae</i>	AAAAD09030	None	Threatened	G3	S3	
Shasta snow-wreath <i>Neviusia cliftonii</i>	PDR0S14020	None	Candidate Endangered	G2	S2	1B.2
silky cryptantha <i>Cryptantha crinita</i>	PDBOR0A0Q0	None	None	G2	S2	1B.2
silver-haired bat <i>Lasionycteris noctivagans</i>	AMACC02010	None	None	G3G4	S3S4	
slender Orcutt grass <i>Orcuttia tenuis</i>	PMPOA4G050	Threatened	Endangered	G2	S2	1B.1
slender silver moss <i>Anomobryum julaceum</i>	NBMUS80010	None	None	G5?	S2	4.2
steelhead - Central Valley DPS <i>Oncorhynchus mykiss irideus pop. 11</i>	AFCHA0209K	Threatened	None	G5T2Q	S2	
Sulphur Creek brodiaea <i>Brodiaea matsonii</i>	PMLIL0C0H0	None	None	G1	S1	1B.1
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	AMACC08010	None	None	G4	S2	SSC



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database








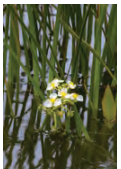

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	IICOL48011	Threatened	None	G3T2T3	S3	
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp <i>Lepidurus packardii</i>	ICBRA10010	Endangered	None	G4	S3S4	
Wawona riffle beetle <i>Atractelmis wawona</i>	IICOL58010	None	None	G3	S1S2	
western pearlshell <i>Margaritifera falcata</i>	IMBIV27020	None	None	G4G5	S1S2	
western pond turtle <i>Emys marmorata</i>	ARAAD02030	None	None	G3G4	S3	SSC
western red bat <i>Lasiurus blossevillii</i>	AMACC05060	None	None	G4	S3	SSC
western spadefoot <i>Spea hammondi</i>	AAABF02020	None	None	G2G3	S3	SSC
Wintu sideband <i>Monadenia troglodytes wintu</i>	IMGASC7092	None	None	G1G2T1T2	S1S2	
Yuma myotis <i>Myotis yumanensis</i>	AMACC01020	None	None	G5	S4	





Record Count: 51

Search Results

11 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [1A:1B:2A:2B] , Quad is one of [4012265:4012264:4012254:4012263:4012255:4012253]

SCIENTIFIC NAME	▲ COMMON NAME	BLOOMING PERIOD	FED LIST	STATE LIST	CA RARE PLANT RANK	PHOTO
<u><i>Sedum paradisum</i> ssp. <i>paradisum</i></u>	Canyon Creek stonecrop	May-Jun	None	None	1B.3	 <p>©2018 Julie Kierstead Nelson</p>
<u><i>Legenere limosa</i></u>	legenere	Apr-Jun	None	None	1B.1	 <p>©2000 John Game</p>
<u><i>Trifolium piorkowskii</i></u>	maverick clover	Apr-May	None	None	1B.2	 <p>©2018 Al Keuter</p>
<u><i>Potamogeton epihydrus</i></u>	Nuttall's ribbon-leaved pondweed	(Jun)Jul-Sep	None	None	2B.2	 <p>Louis-M. Landry, 2010</p>
<u><i>Juncus leiospermus</i> var. <i>leiospermus</i></u>	Red Bluff dwarf rush	Mar-Jun	None	None	1B.1	 <p>©2016 Dylan Neubauer</p>
<u><i>Sagittaria sanfordii</i></u>	Sanford's arrowhead	May-Oct(Nov)	None	None	1B.2	 <p>©2013 Debra L. Cook</p>
<u><i>Vaccinium shastense</i> ssp. <i>shastense</i></u>	Shasta huckleberry	(Jun-Sep)Dec-May	None	None	1B.3	 <p>© 2016 Steve</p>

<i>Neviusia cliftonii</i>	Shasta snow-wreath	Apr-Jun	None	CC	1B.2	
						©2008 Steve Matson
<i>Cryptantha crinita</i>	silky cryptantha	Apr-May	None	None	1B.2	
						©2009 Sierra Pacific Industries
<i>Orcuttia tenuis</i>	slender Orcutt grass	May-Sep(Oct)	FT	CE	1B.1	
						© 2013 Justy Leppert
<i>Brodiaea matsonii</i>	Sulphur Creek brodiaea	May-Jun	None	None	1B.1	
						©2016 Len Lindstrand III

Showing 1 to 11 of 11 entries

Suggested Citation:

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CONTACT US

Send questions and comments to rareplants@cnps.org.



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CONTRIBUTORS

[The Calflora Database](#)
[The California Lichen Society](#)
[California Natural Diversity Database](#)
[The Jepson Flora Project](#)
[The Consortium of California Herbaria](#)
[CalPhotos](#)

From: [Brittany Reaves](#)
To: [NMFS SpeciesList - NOAA Service Account](#)
Subject: Crystal Creek Aggregate Mine
Date: Wednesday, May 25, 2022 3:23:26 PM

Crystal Creek Aggregate Mine

Quad Name **Redding**

Quad Number **40122-E4**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) -

CC Chinook Salmon ESU (T) -

CVSR Chinook Salmon ESU (T) - **X**

SRWR Chinook Salmon ESU (E) - **X**

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) -

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) - **X**

Eulachon (T) -

sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -

CC Chinook Salmon Critical Habitat -

CVSR Chinook Salmon Critical Habitat - **X**

SRWR Chinook Salmon Critical Habitat - **X**

NC Steelhead Critical Habitat -

CCC Steelhead Critical Habitat -

SCCC Steelhead Critical Habitat -

SC Steelhead Critical Habitat -

CCV Steelhead Critical Habitat - **X**

Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat - **X**

ESA Marine Invertebrates

Range Black Abalone (E) -

Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

- East Pacific Green Sea Turtle (T) -
- Olive Ridley Sea Turtle (T/E) -
- Leatherback Sea Turtle (E) -
- North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

- Blue Whale (E) -
- Fin Whale (E) -
- Humpback Whale (E) -
- Southern Resident Killer Whale (E) -
- North Pacific Right Whale (E) -
- Sei Whale (E) -
- Sperm Whale (E) -

ESA Pinnipeds

- Guadalupe Fur Seal (T) -
- Steller Sea Lion Critical Habitat -

Essential Fish Habitat

- Coho EFH -
- Chinook Salmon EFH - **X**
- Groundfish EFH -
- Coastal Pelagics EFH -
- Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office

562-980-4000

- MMPA Cetaceans -
- MMPA Pinnipeds -

Brittany Reaves

Associate Biologist/GIS Analyst I

Gallaway Enterprises
(530) 332-9909



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Project Code: 2022-0042796
Project Name: Crystal Creek Aggregate Mine

August 12, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Project Code: 2022-0042796
Project Name: Crystal Creek Aggregate Mine
Project Type: Surface Extraction - Non Energy Materials
Project Description: mining
Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@40.60422895,-122.47072967435363,14z>



Counties: Shasta County, California

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardi</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Gallaway Enterprises

Name: Brittany Reaves

Address: 117 Meyers Street, Suite 120

City: Chico

State: CA

Zip: 95928

Email: brittany@gallawayenterprises.com

Phone: 5303329909

Appendix B

Observed Species Lists

Plant Species Observed within the BSA on May 21 & 27 and June 2 & 4, 2020	
Scientific Name	Common Name
<i>Acmispon americanus</i>	Spanish lotus
<i>Aesculus californica</i>	California buckeye
<i>Agoseris grandiflora</i>	Large-flowered agoseris
<i>Agrostis avenacea</i>	Pacific bentgrass
<i>Ailanthus altissima</i>	Tree-of-heaven
<i>Aira caryophyllea</i>	Silver hairgrass
<i>Alisma lanceolatum</i>	Lance-leaved water plantain
<i>Allium amplexans</i>	Clasping onion
<i>Anaphalis margaritacea</i>	Pearly everlasting
<i>Anthoxanthum odoratum</i>	Sweet vernal grass
<i>Arctostaphylos manzanita ssp. manzanita</i>	Big manzanita
<i>Arctostaphylos viscida ssp. viscida</i>	White-leaved manzanita
<i>Aspidotis densa</i>	Lace fern
<i>Avena barbata</i>	Wild oats
<i>Avena fatua</i>	Wild oats
<i>Brachypodium distachyon</i>	False brome
<i>Briza maxima</i>	Greater quaking-grass
<i>Briza minor</i>	Lesser quaking-grass
<i>Brodiaea coronaria</i>	Harvest brodiaea
<i>Bromus spp.</i>	Brome
<i>Bromus diandrus</i>	Rip-gut brome
<i>Bromus hordeaceus</i>	Soft chess
<i>Bromus madritensis ssp. rubens</i>	Red brome
<i>Calycanthus occidentalis</i>	Western spicebush
<i>Calystegia occidentalis ssp. occidentalis</i>	Western morning glory
<i>Carex barbarae</i>	Valley sedge
<i>Castilleja attenuata</i>	Valley tassels
<i>Ceanothus lemmonii</i>	Lemmon's ceanothus
<i>Centaurea solstitialis</i>	Yellow star thistle
<i>Centaureum tenuiflorum</i>	June centauray
<i>Cercis occidentalis</i>	Western redbud
<i>Chlorogalum pomeridianum var. pomeridianum</i>	Wavyleaf soap-plant
<i>Cichorium intybus</i>	Chicory
<i>Cirsium occidentale</i>	Western snowy thistle
<i>Cirsium vulgare</i>	Bull thistle
<i>Convolvulus arvensis</i>	Bindweed
<i>Crassula aquatica</i>	Aquatic pygmyweed
<i>Crucianella angustifolia</i>	Crosswort
<i>Cryptantha intermedia</i>	Common cryptantha
<i>Cynodon dactylon</i>	Bermuda grass
<i>Cyperus eragrostis</i>	Tall nutsedge
<i>Cytisus scoparius</i>	Scotch broom
<i>Daucus carota</i>	Queen Anne's-lace

Scientific Name	Common Name
<i>Dichelostemma multiflorum</i>	Round-toothed ookow
<i>Drymocallis glandulosa</i>	Sticky cinquefoil
<i>Dysphania botrys</i>	Jerusalem oak goosefoot
<i>Eleocharis macrostachya</i>	Pale spike-rush
<i>Elymus caput-medusae</i>	Medusahead
<i>Elymus multisetus</i>	Big squirreltail grass
<i>Epilobium brachycarpum</i>	Tall willowherb
<i>Erigeron canadensis</i>	Canada horseweed
<i>Eriophyllum lanatum</i> var. <i>grandiflorum</i>	Large-flowered wooly sunflower
<i>Erodium botrys</i>	Long-beaked stork's-bill
<i>Erythranthe guttata</i>	Seep monkeyflower
<i>Euphorbia maculata</i>	Spotted spurge
<i>Euthamia occidentalis</i>	Western goldentop
<i>Festuca bromoides</i>	Six-weeks fescue
<i>Festuca myuros</i>	Rattail fescue
<i>Festuca perennis</i>	Rye-grass
<i>Frangula californica</i>	California coffeeberry
<i>Galium aparine</i>	Bedstraw
<i>Galium parisiense</i>	Wall bedstraw
<i>Galium porrigens</i>	Climbing bedstraw
<i>Gastridium phleoides</i>	Nitgrass
<i>Githopsis specularioides</i>	Common bluecup
<i>Gnaphalium palustre</i>	Western marsh cudweed
<i>Gratiola ebracteata</i>	Common hedge hyssop
<i>Heteromeles arbutifolia</i>	Toyon
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley
<i>Hordeum murinum</i>	Wall hare barley
<i>Hypericum concinnum</i>	Gold wire
<i>Hypericum perforatum</i>	Klamathweed
<i>Hypochaeris glabra</i>	Smooth cat's ear
<i>Iris</i> spp.	Iris
<i>Juncus balticus</i> ssp. <i>ater</i>	Baltic rush
<i>Juncus bufonius</i>	Toadrush
<i>Juncus effusus</i>	Pacific rush
<i>Juncus oxymers</i>	Pointed rush
<i>Juncus xiphioides</i>	Iris-leaved rush
<i>Lactuca serriola</i>	Prickly lettuce
<i>Leontodon saxatilis</i>	Hawkbit
<i>Linum bienne</i>	Pale flax
<i>Logfia gallica</i>	Narrowleaf cottonrose
<i>Lonicera interrupta</i>	Chaparral honeysuckle
<i>Lupinus bicolor</i>	Annual lupine
<i>Lysimachia arvensis</i>	Scarlet pimpernel
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife
<i>Madia gracilis</i>	Slender tarweed

Scientific Name	Common Name
<i>Mentha pulegium</i>	Pennyroyal
<i>Minuartia douglasii</i>	Douglas' sandwort
<i>Mollugo verticillata</i>	Indian chickweed
<i>Navarretia intertexta</i> ssp. <i>intertexta</i>	Needle-leaved navarretia
<i>Odontostomum hartwegii</i>	Hartweg's odontostomum
<i>Panicum acuminatum</i>	Western panicgrass
<i>Papaver rhoeas</i>	Corn poppy
<i>Paspalum dilatatum</i>	Dallisgrass
<i>Pellaea mucronata</i>	Bird's foot fern
<i>Pentagramma triangularis</i> ssp. <i>triangularis</i>	Gold-backed fern
<i>Petrorhgia dubia</i>	Grass-pink
<i>Pinus attenuata</i>	Knobcone pine
<i>Pinus ponderosa</i>	Ponderosa pine
<i>Pinus sabiniana</i>	Gray pine
<i>Plagiobothrys stipitatus</i> var. <i>micranthus</i>	Small-flowered popcornflower
<i>Plantago lanceolata</i>	English plantain
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass
<i>Populus fremontii</i>	Fremont's cottonwood
<i>Quercus berberidifolia</i>	Scrub oak
<i>Quercus douglasii</i>	Blue oak
<i>Quercus kelloggii</i>	California black oak
<i>Ranunculus aquatilis</i>	Broad-leaved water buttercup
<i>Robinia pseudoacacia</i>	Black locust
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rumex crispus</i>	Curly dock
<i>Rumex pulcher</i>	Fiddle dock
<i>Salix exigua</i>	Sandbar willow
<i>Salix lasiandra</i>	Pacific willow
<i>Salix lasiolepis</i>	Arroyo willow
<i>Scutellaria siphocampyloides</i>	Gray leaved skullcap
<i>Senecio vulgaris</i>	Old-man-in-the-Spring
<i>Silene gallica</i>	Common catchfly
<i>Solanum parishii</i>	Parish's nightshade
<i>Solidago velutina</i> ssp. <i>californica</i>	California goldenrod
<i>Sonchus asper</i>	Sow thistle
<i>Spergularia rubra</i>	Ruby sandspurry
<i>Spiranthes porrifolia</i>	Creamy ladies tresses
<i>Stipa pulchra</i>	Purple needlegrass
<i>Styrax redivivus</i>	California snowdrop bush
<i>Torilis arvensis</i>	Hedge parsley
<i>Toxicodendron diversilobum</i>	Poison oak
<i>Tragopogon</i> sp.	Salsify
<i>Trifolium arvense</i>	Rabbitfoot clover
<i>Trifolium glomeratum</i>	Sessile-headed clover
<i>Trifolium hirtum</i>	Rose clover

Scientific Name	Common Name
<i>Trifolium willdenovii</i>	Wildcat clover
<i>Typha latifolia</i>	Cattails
<i>Verbascum blattaria</i>	Moth mullein
<i>Verbascum thapsus</i>	Woolly mullein
<i>Veronica peregrina</i> ssp. <i>xalapensis</i>	Purslane speedwell
<i>Vicia sativa</i>	Garden vetch
<i>Vicia villosa</i>	Winter vetch
<i>Vitis californica</i>	Wild grape
<i>Woodwardia fimbriata</i>	Giant chain fern
<i>Wyethia</i> spp.	Narrow leaf mule ears

Wildlife Observed within the BSA	
Common Name	Scientific Name
Birds	
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Brown headed cow bird	<i>Molothrus ater</i>
Turkey vulture	<i>Cathartes aura</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>
California quail	<i>Callipepla californica</i>
American crow	<i>Corvus brachyrhynchos</i>
Red-tail hawk	<i>Buteo jamaicensis</i>
American goldfinch	<i>Spinus tristis</i>
Band-tailed pigeon	<i>Patagioneas fasciata</i>
Scrub Jay	<i>Aphelocoma californica</i>
White breasted nuthatch	<i>Sitta carolinensis</i>
Oak titmouse	<i>Baeolophus inornatus</i>
Insects	
Honey bee	<i>Apis mellifera</i>
Amphibians/Reptiles	
Western pond turtle	<i>Emys marmorata</i>
Northwestern fence lizard	<i>Sceloporus occidentalis occidentalis</i>
American bullfrog	<i>Lithobates catesbeianus</i>
Northern pacific treefrog	<i>Pseudacris regilla</i>
Fish	
Bass	<i>Micropterus spp.</i>
Mammals	
Coyote	<i>Canis latrans</i>
Black-tailed jackrabbit	<i>Lepus californicus</i>

Appendix C

Draft Delineation of Aquatic Resources Impacts Map

Project Boundary - (179.97 acres)

25 Foot Contours

Limits of Final Grading

Erosional - ER# - (0.253 acres)

Active Mining - (75.89 acres)

Mineral Resource Area - (69.28 acres)

Permitted- (110.69 acres)

Aquatic Resources - (10.070 acres)

Other Waters - OW# - (9.483 acres)

Ditch - D# - (0.066 acres)

Ephemeral - E# - (1.217 acres)

Intermittent - OW# - (0.529 acres)

Intermittent (Isolated) - I# - (0.053 acres)

Pond - PO# - (7.618 acres)

Wetland Features - WF# - (0.587 acres)

Seasonal Wetland - WF# - (0.587 acres)

Impacts to Aquatic Resources - (0.747 acres)

Other Waters - OW# - (0.725 acres)

Ephemeral - E# - (0.301 acres)

Intermittent - OW# - (0.186 acres)

Intermittent (Isolated) - I# - (0.044 acres)

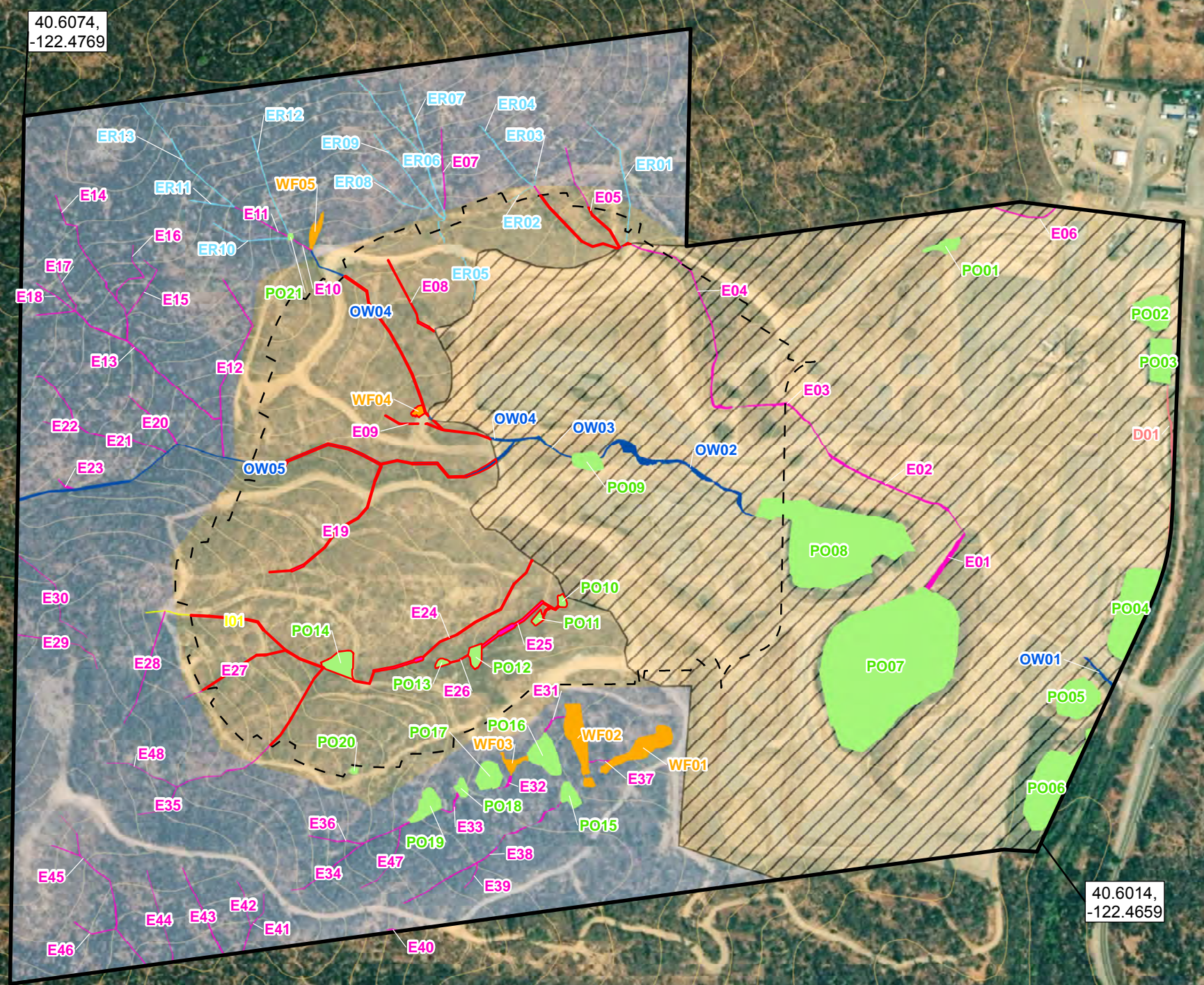
Pond - PO# - (0.243 acres)

Wetland Features - WF# - (0.022 acres)

Seasonal Wetland - WF# - (0.022 acres)

Impacts to Aquatic Resources								
Wetland Features								
Label	Cowardin	Description	Location (Lat, Long)		Width*	Length (ft)	Area (sq ft)	Acres
WF04	PEM	Seasonal Wetland	40.605013	-122.472637	N/A	N/A	962.9	0.022
Wetland Features Impact Totals =							962.9	0.022
Other Waters								
E04	R6	Ephemeral	40.606527	-122.470952	65.1	308.6	1143.8	0.026
E05	R6	Ephemeral	40.606532	-122.470637	14.8	153.0	593.8	0.014
E08	R6	Ephemeral	40.605905	-122.47272	29.3	254.7	738.9	0.017
E09	R6	Ephemeral	40.604914	-122.472702	19.3	179.1	429.4	0.010
E19	R6	Ephemeral	40.604039	-122.473521	71.1	465.4	2110.9	0.048
E24	R6	Ephemeral	40.603152	-122.472362	73.6	647.4	2956.0	0.068
E25	R6	Ephemeral	40.603277	-122.471557	45.7	263.6	2604.3	0.060
E26	R6	Ephemeral	40.602975	-122.472182	6.7	59.2	117.5	0.003
E27	R6	Ephemeral	40.602912	-122.474508	27.4	274.2	862.1	0.020
E35	R6	Ephemeral	40.602574	-122.473929	11.8	282.8	796.2	0.018
I01	R4	Intermittent (Isolated)	40.603178	-122.474354	60.4	428.8	1756.7	0.040
OW04	R4	Intermittent	40.605444	-122.472783	101.2	656.0	2646.9	0.061
OW05	R4	Intermittent	40.604598	-122.473021	88.5	734.2	4697.0	0.108
PO10	PUB	Pond	40.603459	-122.471078	N/A	N/A	880.3	0.020
PO13	PUB	Pond	40.602946	-122.472371	N/A	N/A	803.9	0.018
PO14	PUB	Pond	40.602934	-122.473461	N/A	N/A	5265.5	0.121
PO18	PUB	Pond	40.603314	-122.471337	N/A	N/A	915.5	0.021
PO19	PUB	Pond	40.603006	-122.472007	N/A	N/A	2251.5	0.052
Other Waters Impact Totals =							31570.2	0.725
Aquatic Resources Impact Totals =							32533.1	0.747

*Widths are represented as averages



The features represented on this graphic are considered preliminary until written verification by the USACE.

Coordinate System: NAD 1983 California State Plane I (Feet)
 Projection: Lambert Conformal Conic
 Datum: North American 1983
 Vertical Datum: NAVD 88

Made in accordance with the Updated Map & Drawing Standards for the South Pacific Division Regulatory Program

1:4,800 1 inch = 400 feet

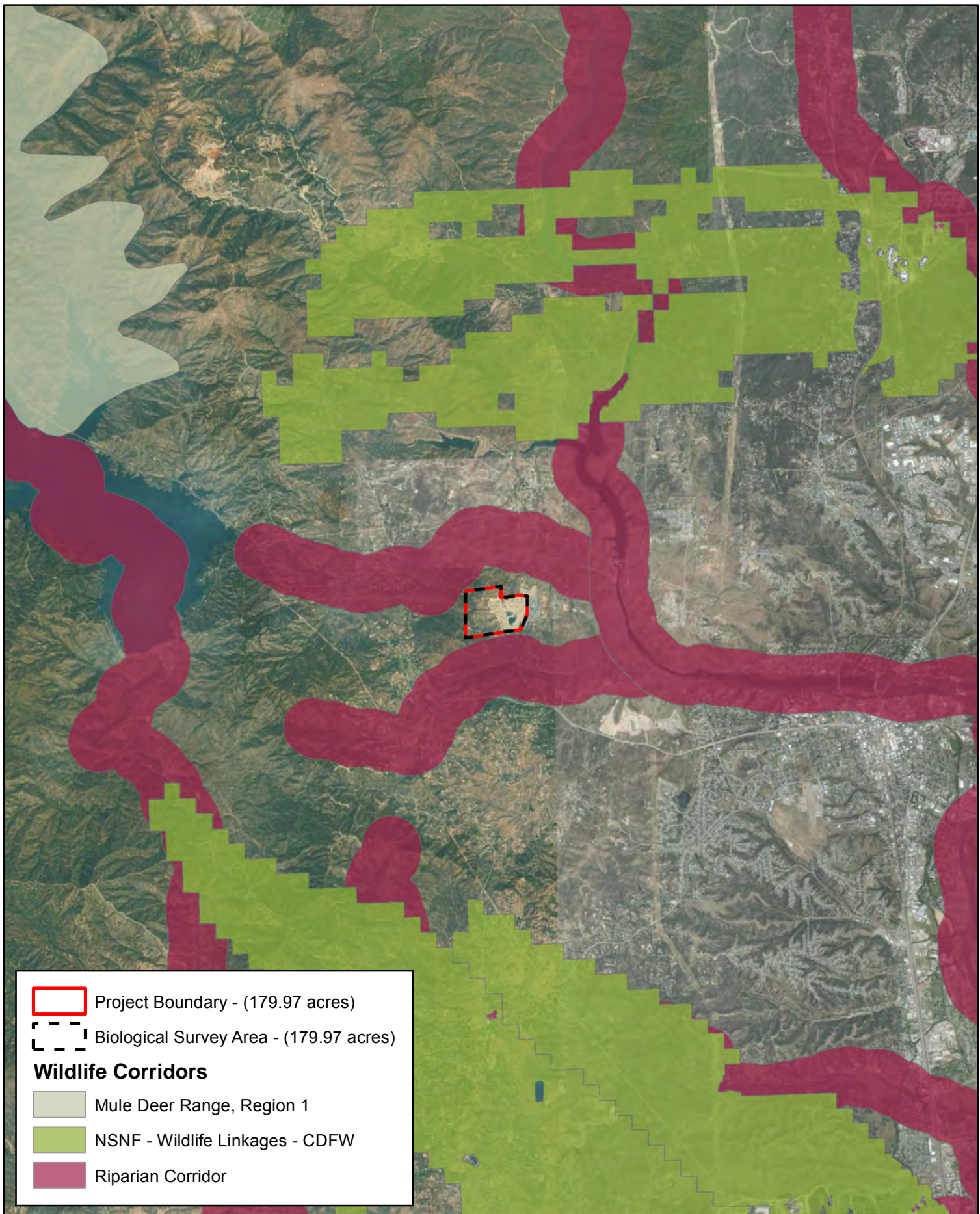
0 200 400 Feet






↑ NORTH

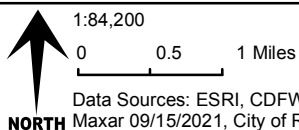
Data Sources: ESRI, Shasta County, Maxar 09/15/2021

Appendix D

CDFW-Designated Wildlife Corridors



 Project Boundary - (179.97 acres)
 Biological Survey Area - (179.97 acres)
Wildlife Corridors
 Mule Deer Range, Region 1
 NSNF - Wildlife Linkages - CDFW
 Riparian Corridor



Crystal Creek Aggregate Mine
 CDFW-Designated Wildlife Corridors
 Appendix D

Appendix E

Site Photos Taken June 2 and 4, 2020

Project Site Photographs Taken June 2 and 4, 2020



Pond where western pond turtle was observed



Overview of intermittent drainage



One of the patches of black oaks that were decimated by the Carr Fire



Overview of active mine area



Overview of mixed chaparral habitat



Historic mine tunnel in BSA

Project Site Photographs Taken April 28, 2022



Mining area with active mining ponds



Barren roadway adjacent to burnt trees



Regenerating mixed chaparral