DRAFT Ecological Scoping Assessment
Crescent Mills Industrial Site
15690 California Highway 89 in Crescent Mills, California

This report presents Methods, Ecological Characterizations and Analysis of Plants, Wildlife, their Communities, and Potential for Impact, as part of the Ecological Scoping Assessment (ESA) for the Crescent Mills Industrial Site (the Site) located at 15690 California Highway 89 in Crescent Mills, California (Plumas County Assessor's Parcel Numbers 111-050-065, 111-050-066, and 111-050-067). Surveys were completed at the Site on March 20 and June 5, 2018 by Sierra Streams Institute's (SSI's) Conservation Biologist, Denise R. Della Santina. The purpose of the surveys was to identify special-status plant and wildlife species presence and potential habitat, which may be affected by changes to the current status of the Site.

This section discusses biological resources found within and adjacent to the Site. Biological resources refer to plant and wildlife species and their related habitats. The regulatory setting describes applicable laws and regulations administered by the federal, state, and local governing bodies to protect biological resources. The environmental setting provides general information on the biological communities and resources within and surrounding the Site.

ENVIRONMENTAL SETTING

The Site is located on the southwestern portion of Indian Valley west of Indian Creek, a perennial stream which flows generally from north to south in the vicinity of the Site. According to the 1994 United States Geological Survey, Crescent Mills 7.5 Minute Quadrangle topographic map, the ground surface elevation of the Site is approximately 3,510 feet above mean sea level. Site topography in this portion of Indian Valley is relatively flat, with drainage from the Site to the east towards Indian Creek. Surface drainage at the Site is likely directed towards the creek through overland flow and below the ground surface through storm drains. A small seasonal pond located in the southeastern portion of the Site collects drainage from a former log storage area. Any pond overflow would currently drain to the adjacent wetland property to the east. The Site is currently vacant with the exception of lumber mill remains including stockpiles of wood waste and soil, asphalt paving, concrete floor slabs, building foundations, and residual construction and industrial debris.

REGULATORY SETTING

This evaluation was conducted to meet the requirements of the following Federal and California State requirements.

Federal Endangered Species Act of 1973

The Federal Endangered Species Act (ESA) was passed by Congress in 1973 to protect and recover imperiled species and the habitats upon which they depend. The ESA is administered by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA), which includes the National Marine Fisheries Service (NMFS).

Under the ESA, protected species are either listed as "endangered," in danger of extinction throughout all or a significant region of the species range; or as "threatened," likely to become endangered within the foreseeable future. The ESA also designates "candidate" species as those plants and animals for which the USFWS has sufficient data to propose that they be listed as threatened or endangered, but for which development of a listing regulation is temporarily precluded by other, higher priority listing activities. Candidate species do not receive statutory protection under the ESA, but cooperative conservation activities are encouraged (USFWS 2018).

Pursuant to the Federal ESA, the USFWS and NMFS have authority over projects that may affect the continued existence of a federally listed threatened or endangered species. Section 9 of the ESA and federal regulations prohibit the take of federally listed species. "Take" is defined under the ESA, in part, as killing, harming, or harassing. Under federal regulations, take is further defined to include habitat modification or degradation where it actually results or is reasonably expected to result in death or injury to wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering (USFWS 2018).

In cases where a project action may affect a federally listed threatened or endangered species or its habitat, Sections 7 and 10 of the ESA require consultation with the USFWS and/or NMFS. Section 7 of the ESA outlines procedures for federal interagency cooperation to conserve federally-listed species and designated critical habitat and to ensure that federal agencies are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species. For projects where federal action is not involved and take of a listed species may occur, Section 10(a) of the ESA outlines procedures for consultation with USFWS and/or NMFS, in which a project proponent may seek to obtain an incidental take permit if project impacts are adequately minimized and mitigated by an agency-approved Habitat Conservation Plan (HCP) (USFWS 2018).

Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act

The Migratory Bird Treaty Act (MBTA) (16 USC C Section 703-711) and the Bald and Golden Eagle Protection Act (BAGEPA) (16 USC Section 668) protect specific species of birds and prohibit "take" (i.e., harm or harassment). Both the MBTA and BAGEPA are administered by the USFWS, who review the actions that may affect the species protected. Specifically, the MBTA protects migratory bird species from "take" through the setting of hunting limits and seasons, and protecting occupied nests and eggs. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property. BAGEPA prohibits the take or commerce of any part of the bald or golden eagle (USFWS 2018).

Clean Water Act Section 401

The U.S. Environmental Protection Agency (EPA) regulates surface water quality in waters of the United States (U.S.) under Section 401 of the federal Clean Water Act (CWA). Section 401 of the Clean Water Act, projects that apply for a federal permit for discharge of dredged or fill material into waters of the U.S. must also obtain water quality certification from the Regional Water

Quality Control Board (RWQCB) indicating that the project would uphold water quality standards set forth by the state and by the EPA. Section 401 of the Clean Water Act provides that no federal permits or licenses may be issued for projects that may discharge into waters of the U.S. unless a Water Quality Certification is obtained (EPA 2010). By providing this opportunity to address the aquatic resource impacts of federally issued permits and licenses, a water quality certification provides states and authorized tribes with an effective tool to help protect the physical, chemical, and biological integrity of surface water quality (EPA 2015b)Section 404 of the Federal Clean Water Act (CWA) establishes a requirement for a project applicant to obtain a permit from the U.S. Army Corps of Engineers (USACE) before engaging in any activity that involves any discharge of dredged or fill material into Waters of the U.S. including wetlands, lakes, rivers, streams, and their tributaries. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3). Jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Many surface waters and wetlands in California meet the criteria for waters of the U.S., including intermittent streams and seasonal lakes and wetlands. Fill is defined as any material that replaces any portion of a water of the U.S. with dry land or changes the bottom elevation of any portion of a water of the U.S. (EPA 2010).

The Native Plant Protection Act- CFG Code Section 1900 *et seq*

The Native Plant Protection Act (NPPA) was enacted in 1977 and is administered by CDFW pursuant to Section 1900 et seq. of the CFG Code. The NPPA prohibits "take" of endangered, threatened, or rare plant species native to California, with the exception of special criteria identified in the statute. A "native plant" means a plant growing in a wild, uncultivated state which is normally found native to the plant life of the state. Under the NPPA, species become endangered, threatened, or rare when the plants' prospects of survival and reproduction are in immediate jeopardy for one or more causes (CDFW 2018). "Rare" species can be defined as species that are: broadly disturbed but never abundant where found, narrowly disturbed or clumped yet abundant where found, and/or narrowly disturbed or clumped and not abundant where found. If potential impacts are identified for a proposed project activity, consultation with CDFW, permitting, and/or other mitigation may be required. Endangered, threatened, and/or rare species can be identified through the California Native Plant Society's (CNPS) California Rare Plant Ranks (CNPS 2018).

California Environmental Quality Act- CFG Code Section 15380

The California Environmental Quality Act (CEQA) provides protection for federal- and/or state-listed species, as well as species not listed federally or by the state that may be considered rare, threatened, or endangered. If the species can be shown to meet specific criteria for listing outlined in CEQA Guidelines section 15380 (b). Species that meet these criteria can include "candidate species", species "proposed for listing" and "species of special concern". Plants appearing on CNPS CRPR are considered to meet CEQA's Section 15380 criteria. Impacts to these species would therefore be considered "significant" requiring mitigation (CDFW 2018). Section 15380 was included to address a potential situation in which a public agency is to review a project that may have a significant effect on, for example a "candidate

species", which has not yet been listed by the USFWS or CDFW. Therefore, CEQA enables an agency to protect a species from significant project impacts until the respective government agencies have had an opportunity to list the species as protected, if warranted (CDFW 2018).

Porter-Cologne Water Quality Control Act-Section 401 of the Clean Water Act and National Pollutant Discharge Elimination System

Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to Waters of the U.S. must obtain a state certification administered by the RWQCB that the discharge complies with other provisions of CWA. The RWQCB protects all waters in its regulatory scope, but has special responsibility for isolated wetlands and headwaters that may not be regulated by other programs, such as Section 404 of the CWA. Projects that require a Section 404 CWA permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Section 401 Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge of harmful substances to waters of the State, the RWQCB has the option to regulate such activities under its State authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements (SWRCB 2018).

Special-Status Species

Special-status species include plants and animals that are legally protected or are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. Special-status species addressed in this section include:

- Species listed, proposed for listing, or considered candidates for listing as threatened or endangered under the federal and/or California Endangered Species Acts (ESA or CESA);
- Species identified by CDFW as California Species of Special Concern;
- Animals listed as Fully Protected in California under the California Fish and Game Code;
- Bird species designated by USFWS as Birds of Conservation Concern (BCC);
- Plants listed as Endangered or Rare under the California Native Plant Protection Act;
- Plants designated by the California Native Plant Society (CNPS 2018) as List 1B (plants rare, threatened or endangered in California and elsewhere) or List 2 (plants rare, threatened or endangered in California but more common elsewhere);
- Species that meet the definitions of "rare" or "endangered" under CEQA Guidelines, Section 15380;
- Species designated as "special animals" or plants and animals "of greatest conservation need" by CDFW through the CNDDB.

METHODS AND RESULTS OF EVALUATION

The purpose of this portion of the ecological risk assessment is to review existing information and to prepare a list of special-status plants and animals with potential to occur in the vicinity of the Site. Sources of information included a records search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB 2018), U.S. Fish and Wildlife Service (USFWS) and the California Native Plant Society (CNPS) Electronic Inventory (CNPS 2018) for the USGS Crescent Mills 7.5-minute quadrangle and the eight surrounding quadrangles including Canyondam, Greenville, Moonlight Peak, Quincy, Twain, Taylorsville, Meadow Valley and Spring Garden.

The following methods were used to determine the presence of special-status plant and wildlife species and other biological resources, and to evaluate their potential to be impacted by changes to the Site.

Desktop Analysis

Prior to visiting the Site, background research and desktop analyses were conducted to evaluate local and regional habitats and to identify the biological resources that are known to occur or have the potential occur within or nearby the Site. The following resources were used to identify potential special-status plant and wildlife species within the Site's region.

- A records search of the CDFW California Natural Diversity Database (CNDDB) for special-status species was performed within the Site and within a five-mile buffer around the Site (CDFW 2018)
- The CNPS online Inventory of Rare and Endangered Plants of California was queried in a nine-quad 7.5-minute USGS quad regional search for rare plants in or near Site (CNPS 2018)
- The USFWS list of endangered, threatened, and candidate species and their designated critical habitat were reviewed for the nine USGS 7.5-minute quads surrounding the Site (USFWS 2018)
- The CalFlora online database for the region surrounding the Site was reviewed for additional rare plant species with the potential to occur at the Site (CalFlora 2018)

Table 1-3 list plant and wildlife species that were evaluated, and their potential to occur at the Site, with conclusions based on background research, database searches, and local habitat suitability as assessed in the field. Table 3 lists plants and animals found within the Crescent Mills quad, which includes the Site.

Field Surveys

A reconnaissance-level baseline biological resources field survey was performed by Sierra Streams Institute's Conservation Biologist, Denise R. Della Santina on March 20 and June 5, 2018. Field surveys were conducted to identify general species composition of the on-site biological community, evaluate the extent and quality of the ecological habitats on site, and assess potential for special-status species presence.

Surveys were conducted by walking transects to view all areas of the Site. All distinct habitats occurring within the study area were characterized and evaluated for their potential to support regionally occurring special-status species and other sensitive biological resources. The study area was examined to

characterize the existing vegetation in terms of dominant plant and animal species, including the potential for special-status species. The extent of past disturbance was noted.

Formal wetland delineation was not completed. The Site is within the FEMA/USACOE 100-year flood zone.

ECOLOGICAL CHARACTERIZATION

Plant Communities

Past modifications, including topographic disturbance from previous industrial operations, are evident at the Site. Non-native annual grasses and forbs are abundant and dominate the Site. Native plant species are limited in abundance and location and are species with the ability to compete with the high density of non-native plants and tolerate disturbance and non-native soils. Native plants are found scattered in small patches in disturbed areas and in larger patches were seasonal water is located. No special-status plants were found at the Site during the March 20 and June 5, 2018 field surveys, within the species' flowering time. The surrounding area (5-mile radius) provides adequate habitat for some plant species found in coniferous forests. The immediate area bordering the eastern side of the Site contains wet meadow, willow and riparian vegetation.

Native annual and perennial forb and grass species observed on the Site during field surveys include: *Artemesia douglasiana* (mugwort), *Clarkia* sp. (farewell to spring), *Elymus elymoides* (squirrel tail), *Grindelia* sp. (gumplant), *Hordeum brachyantherum* (meadow barley), *Juncus effuses* (common bog rush), *Panicum* sp. (panic grass), and *Xanthium strumarium* (cocklebur).

Native shrub and tree species observed on the Site include: *Arctostaphylos patula* (green leaf manzanita), *Calocedrus decurrens* (incense cedar), *Ceanothus cordulatus* (whitethorn), *Pinus jefferyi* (Jeffery pine), *Pinus ponderosa* (ponderosa pine), *Populus tremuloides* (aspen), *Salix exigua* (narrow leaved willow), and *Salix lasiolepis* (arroyo willow).

Non-native grass and forb species dominate the Site. Twenty-one non-native species were observed during field surveys and include: *Brassica* sp. (mustard), *Bromus hordeaceus* (smooth brome), *Centaurea solstitialis* (star-thistle), *Chichorium intybus* (chicory), *Circium vulgare* (bull thistle), *Elymus caput-medusae* (medusa head), *Erodium cicutarium* (crane's bill), *Hypericum perforatum* (St. John's wort), *Leucanthemum vulgare* (ox-eye daisy), *Malus* sp. (apple), *Phalaris* sp. (canarygrass), *Plantago lanceolata* (ribwort), *Poa bulbosa* (bulbous blue grass), *Poa pratensis* (Kentucky blue grass), *Rubus armenciacus* (Himalayan blackberry), *Rumex crispus* (curly dock), *Tragopogon* sp. (oyster plant, *Trifolium* sp. (clover), *Trifolium subterraneum* (subterranean clover), and *Verbascum blattaria* (moth mullein).

Wetland indicator plant species (with a Facultative Wet or wetter status, Lichvar, 2016) observed at the Site include native perennial species [*Hordeum brachyantherum* (meadow barley), *Juncus effuses* (common bog rush), *Panicum* sp. (panic grass), and *Xanthium strumarium* (cocklebur)] and native shrub species [*Populus tremuloides* (aspen), *Salix exigua* (narrow leaved willow), and *Salix lasiolepis* (arroyo willow)]. These species were limited to locations where water gathers seasonally, including a

small (approx. 15 ft. x 50 ft.) depression within concrete footings in the northern portion of the Site, and a man-made pond and drainage ditch that runs along the perimeter of the southern portion of the Site.

Table 4 lists plant species observed on March 20 and June 5, 2018 during baseline biological field surveys and habitat assessments

Wildlife Communities

Due to past disturbance and industrial operations at the Site, wildlife habitat, species presence, abundance and diversity is very limited. Species observed are either transient through the Site, can utilize available habitat surrounding the Site, or can rely on the limited resources at the Site. Wildlife habitat values at the Site are limited by proximity to existing industry, residential areas, and Highway 89. The surrounding area (5-mile radius) does provide adequate habitat for some wildlife that may pass through or fly over the Site, including wet meadow, willow and riparian vegetation, coniferous forests, and Round Valley reservoir. No special-status wildlife species were found at the Site during the March 20 or June 5, 2018 field surveys, which included the breeding season.

Bird species observed and heard during field surveys on March 20 and June 5, 2018 include five species found on-Site [*Anas platyrhynchos*, (mallard), *Charadrius vociferous* (killdeer), *Cyanocitta stelleri* (Stellers jay), *Junco hyemalis* (dark-eyed junco), *Turdus migratorius* (American robin)], and seven species found adjacent the Site [*Agelaius phoeniceus* (red-winged blackbird), *Grus canadensis tabida* (greater sandhill crane), *Buteo jamaicensis* (red-tailed hawk), *Colaptes auratus* (northern flicker), *Corvus corax* (common raven), *Pipilo maculatus* (spotted towhee), *Zenaida macroura* (mourning dove)]. All bird species observed in this survey are native species. Breeding evidence was not present for any species and no fledglings were observed.

Native mammal, amphibian and reptile species with potential to live and/or forage at the Site (though not necessarily observed during surveys) would be tolerant of industrial and/or residential areas and human disturbance. One individual *Psuedacaris sierrea* (Sierran chorus frog) was heard calling in the southern portion of the site from a seasonally flooded ditch. Scat from *Odocoileus hemionus californicus* (mule deer) and *Ursus americanus* (bear) was observed also in the southern portion of the Site. No other wildlife species were observed. However, it is possible that other species use the Site such as grey fox, coyote, snakes, reptiles, rodents and insects.

Table 5 lists wildlife species observed on March 20 and June 5, 2018 during baseline biological field surveys and habitat assessments

SPECIAL-STATUS SPECIES EVALUATION

An evaluation of the potential for special-status species to occur within or adjacent to the Site was conducted based on the desktop analysis and field studies described in the Methods Section. A list of regionally occurring special-status species was compiled based on a review of pertinent literature, the results of the field assessment, and the review of the species lists compiled from the databases from

USFWS, CDFW CNDDB, and CNPS. For each plant and wildlife species, habitat requirements were assessed and compared to the habitats at the Site and immediate areas.

Table 1-3 list species that were evaluated and their potential to occur at the Site, with conclusions based on background research, database searches, and local habitat suitability as assessed in the field.

For each evaluated species, the "potential for occurrence" at the Site is defined in the tables as follows:

• *Very Low to Nil:* The Site and/or immediate area does not support suitable habitat for the species and/or the Site is outside the species' known geographic range.
• *Low:* The Site and/or immediate area only provides limited habitat for the species and/or the Site may be outside the species' known geographic range.
• *Moderate:* The Site and/or immediate area provides suitable habitat for the species and the Site is located within the species' known geographic range.
• *High:* The Site and/or immediate area provide ideal habitat conditions for the species and/or known populations occur in the immediate area.
• *Known Occurrence:* Recorded historically and/or observed on the Site during biological surveys

Species with a *Known Occurrence*, *Moderate*, or *High* Potential to occur at the Site area or immediate area are further described in the species accounts below.

Special-status Plants

Based on the desktop analysis, the review of habitat requirements, and the results of field surveys and assessments, 25 special-status plant species were identified from a surrounding nine-quad search (CNDDB, CDFW, USFWS, CNPS 2018, Table 3) to have Potential to occur at the Site and/or immediate area. For each species, habitat requirements were assessed and compared to the habitats on the site and immediate vicinity. Based on this review of habitat requirements and the results of the field assessment, eleven (11) species were determined to have Very Low to Nil potential to occur at the Site/and or immediate area. Eight (8) were determined to have Low potential to occur. Six (6) were determined to have Moderate potential to occur.

Six (6) species with Moderate potential to occur at the Site and/or immediate areas include: *Bruchia bolanderi* (Bolander's bruchia), *Carex sheldonii* (Sheldon's sedge), *Lupinus dalesiae* (Quincy lupine), *Astragalus webberi* (Webber's milk-vetch), *Potamogeton epihydrus* (Nuttall's ribbon-leaved pondweed), and *Solidago lepida* var. *salebrosa* (Rocky Mountains Canada goldenrod).

The Site itself provides Very Low to Nil potential suitable habitat or potential occurrence for special-status plant species, except for *Lupinus dalesiae* (Quincy lupine) and *Astragalus webberi* (Webber's milk-vetch). These species have Moderate potential to have been brought onto the Site from past local logging activities in suitable coniferous habitat and may be able to withstand disturbance on the Site.

The conservation easement that borders the eastern portion of the Site provides suitable habitat for *Bruchia bolanderi* (Bolander's bruchia), *Carex sheldonii* (Sheldon's s edge), *Potamogeton epihydrus* (Nuttall's ribbon-leaved pondweed), and *Solidago lepida* var. *salebrosa* (Rocky Mountains Canada goldenrod). Only one observation/source was found for each *Potamogeton epihydrus* (Nuttall's ribbon-

leaved pondweed), and *Solidago lepida* var. *salebrosa* (Rocky Mountains Canada goldenrod) in the CNDDB search and need verification. This information supports a lower probability of their occurrence at the Site and/or immediate area.

No special-status plants were found at the Site and/or immediate area during the March 20 and June 5, 2018 field surveys, the appropriate time for observation.

Special-status Wildlife

Based on the desktop analysis, the review of habitat requirements, and the results of field surveys and assessments, 25 special-status wildlife species were identified from a surrounding nine-quad search Site (CDFW 2018, USFWS 2018; Table 5) to have Potential to occur at the Site and/or immediate area. Nine (9) species were determined to have Very Low to Nil potential to occur at the Site/and or immediate area. Eight (8) species were determined to have Low potential to occur. Eight (8) species were determined to have Moderate potential to occur. One (1) was determined to have High potential to occur.

The Site itself provides Low to Very Low to Nil suitable habitat or potential occurrence for special-status wildlife species. However, the surrounding area (5-mile radius) provides suitable habitat for some wildlife that may utilize, travel through or fly over the Site and/or immediate area, including wet meadow, riparian vegetation, coniferous forests, and near-by Round Valley reservoir.

Eight (8) species with Moderate potential to occur include: *Accipiter gentilis* (northern goshawk), *Haliaeetus leucocephalus* (bald eagle), and *Pandion haliaetus* (osprey), *Myotis thysanodes* (fringed myotis), *Myotis Volans* (long-legged myotis), and *Empidonax traillii* (willow flycatcher).

No nesting habitat occurs at the Site and/or the immediate area for *Accipiter gentilis* (northern goshawk), *Haliaeetus leucocephalus* (bald eagle), and *Pandion haliaetus* (osprey), but the immediate area may be within the species' hunting territories, including Indian Creek and the surrounding meadows.

Low habitat availability exists at the Site and/or the immediate area for roosts of *Myotis thysanodes* (fringed myotis) and *Myotis Volans* (long-legged myotis), but roosts could occur nearby, and the Site and/or immediate area may be within the species' feeding territory.

Grus canadensis tabida (greater sandhill crane) has Very Low to Nil potential to occur at the Site. However, High potential exists to occur within or near the conservation easement that borders the eastern portion of the Site. A small group of greater sandhill cranes was observed east of the Site near Indian Creek during March 20 and June 5,2018 surveys. They are known to breed and over summer in Indian Valley

Empidonax traillii (willow flycatcher) and other migratory bird species (protected under MBTA) may use meadow and riparian vegetation during the breeding season. *Empidonax traillii* have been observed at near the Site (CNDDB, 2018). There is no habitat on the site but willow thickets adjacent to the Site provide potential habitat.

Wildlife species found at the Site and/or immediate area could be impacted by changes in noise levels, such that feeding and/or breeding activities are negatively affected by human activities.

No special-status wildlife species were found at the Site and/or immediate area during the March 20 and June 5, 2018 field surveys, which included the breeding season.

EXPOSURE PATHWAY ASSESSMENT

The purpose of this assessment was to identify possible direct and indirect pathways of exposure for wildlife under existing conditions and after potential site remediation has been performed.

Representative, resident species that were observed within one mile of the Site during the field surveys were categorized into foraging guilds and possible exposure pathways based on their primary foods and foraging behaviors (Table 6)

Direct exposure pathways could include inhalation of dust, soil or water ingestion, or dermal contact with contaminated soils or surface waters that may include elevated levels of Arsenic, Total Petroleum Hydrocarbons as Diesel (TPH-d), the Dioxin 2,3,7,8-TCDD Toxic Equivalency Quotient (TEQ), or Benzo(a)pyrene.

The most likely groups to experience direct effects include plants, macroinvertebrates, fish and amphibians. Indirect exposure pathways include herbivores and omnivores consuming plants containing elevated levels of these metals, or by insectivores consuming macroinvertebrates that had consumed the plants or that had direct exposure to the soil or water. Most carnivores would probably have only indirect exposure pathways from consuming other animals that may have experienced incidental soil ingestion, dermal contact, or inhalation of airborne particulates or water.

The primary risk driver for potentially exposed future populations under existing Site conditions is total arsenic in soil which exceeds the Site specific background concentration (9.8 mg/kg) in near surface soil over portions of the Site.

The maximum 2,3,7,8-TCDD TEQ concentration in the Site soil dataset is above Construction Worker ESLs and may pose a risk to plants and wildlife.

The representative concentrations of TPH-d with and without silica gel cleanup (604 mg/kg and 205 mg/kg, respectively) are below the Construction Worker ESL. Therefore, based on the available data, TPH-d in soil does not pose a significant risk to future construction and maintenance workers, but impacts to plants and wildlife are unknown.

Benzo(a)pyrene was not detected above laboratory reporting limits, but there were elevated reporting limits, so it is unclear if they pose a risk to plants and wildlife.

Remediation Impacts

The proposed site remediation will reduce erosion of contaminated soil into Indian Creek. Exposed areas of contaminated soil will be covered with clean soil or aggregate and erosion control measures will be implemented. These measures will significantly reduce exposure pathways to biological receptors by reducing impacts to surface water and stream sediments and reducing direct exposure of biological receptors to contamination at the ground surface. Providing clean near-surface soil for re-vegetation would reduce potential accumulation of metals in site vegetation and thus limit exposure through the food chain.

CONCLUSIONS

This assessment identified two (2) special-status plant species with Moderate potential to be found at the Site and/or immediate area. These include *Lupinus dalesiae* (Quincy lupine) and *Astragalus webberi* (Webber's milk-vetch) which have potential to have been brought onto the Site from past local logging activities in suitable coniferous habitats. These species may be able to withstand disturbance on the Site. The conservation easement that borders the eastern portion of the Site provides suitable habitat for *Bruchia bolanderi* (Bolander's bruchia), *Carex sheldonii* (Sheldon's s edge), *Potamogeton epihydrus* (Nuttall's ribbon-leaved pondweed), and *Solidago lepida* var. *salebrosa* (Rocky Mountains Canada goldenrod). No special-status plants were found at the Site and/or immediate area during the March 20 and June 5, 2018 field surveys.

This assessment identified eight (8) wildlife species with Moderate potential to occur at the Site and/or immediate area. No nesting habitat occurs at the Site and/or the immediate area for *Accipiter gentilis* (northern goshawk), *Haliaeetus leucocephalus* (bald eagle), and *Pandion haliaetus* (osprey), but the immediate area may be within the species' hunting territories, including Indian Creek and the surrounding meadows. Low habitat availability exists at the Site and/or the immediate area for roosts of *Myotis thysanodes* (fringed myotis) and *Myotis Volans* (long-legged myotis), but roosts could occur nearby, and the Site and/or immediate area may be within the species' feeding territory.

Grus canadensis tabida (greater sandhill crane) has Very Low to Nil potential to occur at the Site. However, High potential exists to occur within or near the conservation easement that borders the eastern portion of the Site. A small group of greater sandhill cranes was observed east of the Site near Indian Creek during March 20 and June 5, 2018surveys. *Empidonax traillii* (willow flycatcher) and other migratory bird species (protected under MBTA) may use meadow and riparian vegetation during the breeding season. Wildlife species found at the Site and/or immediate area could be impacted by changes in noise levels, such that feeding and/or breeding activities are negatively affected by human activities. No special-status wildlife species were found at the Site and/or immediate area during the March 20 and June 5, 2018 field surveys.

Table 1: Special-status plant species and their potential to occur at the Site

Scientific Name	Common Name	Fed Status	CA Rare Plant Rank	Other Status	Habitats	Potential To Occur at the Site
Astragalus webberi	Webber's milk-vetch	None	1B.2	BLM_S, USFS_S	Broadleaved upland forest, lower montane coniferous forest, meadow and seep, open brushy slopes and flats in xeric pine forest or mixed pine-oak forest. 2,700-4,000 feet	Low: The Site and/or immediate area only provides limited habitat for the species
Boechera constancei	Constance's rockcress	None	1B.1	USFS_S	Chaparral, upper & lower montane coniferous forest, woodland, mostly on open, bare, serpentine slopes and outcrops. 3,780-6,300 feet	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Brasenia schreberi	watershield	None	2B.3	null	Marsh, swamp, wetland. Aquatic from water bodies both natural and artificial in California.	Low: The Site and/or immediate area only provides limited habitat for the species
Bruchia bolanderi	Bolander's bruchia	None	4.2	USFS_S	Cismontane coniferous forest, meadow and seep. Moss grows on damp clay soils. May colonize bare soil along streambanks, meadows, fens and springs. Has an ephemeral nature and is disturbance adapted. 4,000-9,000 feet	Moderate: The Site and/or immediate area provides suitable habitat for the species and the Site is located within the species' known geographic range.
Carex lasiocarpa	woolly-fruited sedge	None	2B.3	null	Sphagnum bogs, freshwater marsh, lake margins. 1,800 - 6,000 feet	Low: The Site and/or immediate area only provides limited habitat for the species
Carex petasata	Liddon's sedge	None	2B.3	null	Broadleaved upland forest, lower montane coniferous forest, meadow and seep, pinon and juniper woodlands	Low: The Site and/or immediate area only provides limited habitat for the species
Carex scoparia var. scoparia	pointed broom sedge	None	2A	null	Great Basin scrub	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Carex sheldonii	Sheldon's sedge	None	2B.2	null	Lower montane coniferous forest, riparian scrub, freshwater marsh, wetland, mesic sites; along creeks and in wet meadows. 3,500 - 6,000	Moderate: The Site and/or immediate area provides suitable habitat for the species and the Site is located within the species' known geographic range.
Corallorhiza trifida	northern coralroot	None	2B.1	null	Lower montane coniferous forest, meadow and seep, open to shaded forest. In California, under firs, in partial shade. 4,000-5,150 feet	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species

Eleocharis torticulmis	California twisted spikerush	None	1B.3	USFS_S	Bog and fen, meadow and seep, lower montane coniferous forest.	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Erigeron lassenianus var. deficiens	Plumas rayless daisy	None	1B.3	null	Lower montane coniferous forest, ultramafic, gravelly, open sites. Sometimes on serpentine; sometimes on disturbed sites. 4,900-5,350 feet	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Eriogonum umbellatum var. ahartii	Ahart's buckwheat	None	1B.2	BLM_S, USFS_S	Chaparral, cismontane woodland, serpentine on slopes, in openings. 900-5,000 feet	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Frangula purshiana ssp. ultramafica	Caribou coffeeberry	None	1B.2	USFS_S	Chaparral, cismontane coniferous forests, meadow and seep, on serpentine. 3,720-5,120 feet	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Ivesia webberi	Webber's ivesia	Threate ned	1B.1	BLM_S, USFS_S	Great Basin scrub, lower montane coniferous forest, pinon and juniper woodland, rocky or gravelly volcanic soils. 3,000-6,000 feet	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Lupinus dalesiae	Quincy lupine	None	4.2	null	Chaparral, cismontane woodland, cismontane coniferous forest, dry open or shaded slopes, summits, trails. Often in disturbed soils. 1,800-7,500 feet	Moderate: The Site and/or immediate area provides suitable habitat for the species and the Site is located within the species' known geographic range.
Monardella follettii	Follett's monardella	None	1B.2	USFS_S	Lower montane coniferous forest, open rocky serpentine slopes. 3,550-5,500 feet	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Oreostemma elatum	tall alpine-aster	None	1B.2	BLM_S, USFS_S	Bog & fen, meadow & seep, upper montane coniferous forest, mesic sites.	Low: The Site and/or immediate area only provides limited habitat for the species
Penstemon personatus	closed-throated beardtongue	None	1B.2	BLM_S, USFS_S	Chaparral, cismontane coniferous forest; usually on north-facing slopes in metavolcanic soils. 5,200 - 6,960 feet,	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Potamogeton epihydrus	Nuttall's ribbon-leaved pondweed	None	2B.2	null	Marsh and swamp, wetland, shallow water, ponds, lakes, streams, irrigation ditches. 900-7,500 feet	Moderate: The Site and/or immediate area provides suitable habitat for the species and the Site is located within the species' known geographic range.
Pyrrocoma lucida	sticky pyrrocoma	None	1B.2	BLM_S, USFS_S	Great Basin scrub, lower montane coniferous forest, meadow and seep, alkaline	Low: The Site and/or immediate area only provides limited habitat for the species

					flats, clay soils. 3,500-5,070 feet	
Rhamnus alnifolia	alder buckthorn	None	2B.2	null	Lower montane coniferous forest, meadow and seep, riparian scrub, upper montane coniferous forest, wetland, mesic sites. 5,400-6,600 feet	Low: The Site and/or immediate area only provides limited habitat for the species
Rhynchospora alba	white beaked-rush	None	2B.2	null	Meadow and seep, wetland, freshwater marshes and sphagnum bogs. 100-5,500 feet	Low: The Site and/or immediate area only provides limited habitat for the species
Rhynchospora capitellata	brownish beaked-rush	None	2B.2	null	Cismontane coniferous forest, marsh and swamp, meadow and seep, wetland, mesic sites. 100-5,500 feet	Low: The Site and/or immediate area only provides limited habitat for the species
Solidago lepida var. salebrosa	Rocky Mountains Canada goldenrod	None	3.2	null	Marsh and swamp, meadow and seep, wetland, moist streambanks, lakesides, meadows. 3,000-4,000 feet	Moderate: The Site and/or immediate area provides suitable habitat for the species and the Site is located within the species' known geographic range.
Stachys pilosa	hairy marsh hedge-nettle	None	2B.3	null	Great Basin scrub, meadow and seep, Mesic sites. 2,400-6,000 feet	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species

Table 2: Special-status wildlife species and their potential to occur at the Site

Scientific Name	Common Name	Fed Status	State Status	Other Status	Habitats	Potential To Occur at the Site
Accipiter gentilis	northern goshawk	None	None	BLM_S, CDF_S, CDFW_SSC, IUCN_LC, USFS_S	North coast, upper montane and subalpine coniferous forest. Usually nests on north slopes, near water. Red fir, lodgepole and Jeffrey pine, and aspens are typical nest trees. 3,500-5,500 feet	Low: The Site and/or immediate area only provides limited habitat for the species
Ambystoma macrodactylum sigillatum	southern long-toed salamander	None	None	CDFW_SSC	Aquatic larvae occur in ponds and lakes. Outside of breeding season adults are terrestrial and associated with underground burrows of mammals and moist areas under logs and rocks and meadows. 4,100-7,200 feet	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species

Antrozous pallidus	pallid bat	None	None	BLM_S, CDFW_SSC, IUCN_LC, USFS_S-, WBWG_H	Chaparral, riparian woodland, upper montane coniferous forest, valley & foothill grassland. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Low: The Site and/or immediate area only provides limited habitat for the species
Aplodontia rufa californica	Sierra Nevada mountain beaver	None	None	CDFW_SSC, IUCN_LC	Riparian forest, scrub and woodland. Dense growth of small deciduous trees and shrubs, wet soil, and abundance of forbs in the Sierra Nevada. Burrows into soft soil. Needs abundant supply of water. 3,500 - 5,600 feet	Low: The Site and/or immediate area only provides limited habitat for the species
Atractelmis wawona	Wawona riffle beetle	None	None	null	Aquatic; found in riffles of rapid, small to medium clear mountain streams; 2,000-5,000 feet	Low: The Site and/or immediate area only provides limited habitat for the species
Bombus morrisoni	Morrison bumble bee	None	None	IUCN_VU	From the Sierra-Cascade ranges eastward across the intermountain west. Food plant genera include *Cirsium, Helianthus, Lupinus, Melilotus. Chrysothamnus*	Low: The Site and/or immediate area only provides limited habitat for the species
Bombus occidentalis	western bumble bee	None	None	USFS_S, XERCES_IM	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	Low: The Site and/or immediate area only provides limited habitat for the species
Corynorhinus townsendii	Townsend's big-eared bat	None	None	BLM_S, CDFW_SSC, IUCN_LC, USFS_S, WBWG_H	Throughout CA in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Low: The Site and/or immediate area only provides limited habitat for the species

Coturnicops noveboracensis	yellow rail	None	None	CDFW_SSC, IUCN_LC, NABCI_RWL, USFS_S, USFWS_BCC	Freshwater marsh, meadow and seep. Summer resident in eastern Sierra Nevada in Mono County.	Low: The Site and/or immediate area only provides limited habitat for the species
Empidonax traillii	willow flycatcher	None	E	IUCN_LC, USFS_S, USFWS_BCC	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters. 2,000-8,000 feet	Moderate: The Site and/or immediate area provides suitable habitat for the species and the Site is located within the species' known geographic range.
Erethizon dorsatum	North American porcupine	None	None	IUCN_LC	Wide variety of coniferous and mixed woodland habitat. 3,500 - 6,800 feet	Low: The Site and/or immediate area only provides limited habitat for the species
Grus canadensis tabida	greater sandhill crane	PT	T	BLM_S, CDFW_FP, USFS_S	Nests in wetland habitats in northeastern California;	High: The Site and/or immediate area provide ideal habitat conditions for the species and/or known populations occur in the immediate area. Observed near Site.
Gulo gulo	California wolverine	PT	T	CDFW_FP, IUCN_NT, USFS_S	Riparian forest, Subalpine coniferous forest, Upper montane coniferous forest, Wetland. Found in a wide variety of high elevation habitats. Uses caves, logs, burrows for cover and den area. Hunts in more open areas. Can travel long distances.	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Haliaeetus leucocephalus	bald eagle	None	E	BLM_S, CDF_S, CDFW_FP-, IUCN_LC, USFS_S, USFWS_BCC	Lower montane coniferous forest, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water in large, old-growth, or dominant live tree with open branches. 4,000 - 5,200 feet	Moderate: The Site and/or immediate area provides suitable habitat for foraging and the Site is located within the species' known geographic range. Nesting habitat is not present.
Margaritifera falcata	western pearlshell	None	None	null	Aquatic, low velocity waters.	Low: The Site and/or immediate area does not support suitable habitat for the species

Myotis thysanodes	fringed myotis	None	None	BLM_S, IUCN_LC, USFS_S-, WBWG_H	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer. Uses caves, mines, buildings or crevices for maternity colonies and roosts.	Moderate: The Site and/or immediate area provides suitable habitat for the species foraging and the Site is located within the species' known geographic range. Roosting habitat is not present at the Site
Myotis volans	long-legged myotis	None	None	IUCN_LC, WBWG_H	Most common in woodland and forest habitats above 4000 ft. Trees are important day roosts; caves and mines are night roosts. Nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.	Moderate: The Site and/or immediate area provides suitable habitat for the species foraging and the Site is located within the species' known geographic range. Roosting habitat is not present at the Site
Pandion haliaetus	osprey	None	None	CDF_S, CDFW_WL, IUCN_LC	Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	Moderate: The Site and/or immediate area provides suitable habitat for foraging and the Site is located within the species' known geographic range. No nesting habitat is found at the Site.
Pekania pennanti	fisher - West Coast DPS	None	CT	BLM_S, CDFW_SSC, USFS_S	Intermediate to large trees of coniferous forests and deciduous-riparian areas with high percent canopy closure.	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Picoides arcticus	black-backed woodpecker	None	None		Recently burned coniferous forest, areas with dense standing dead trees, and less commonly in unburned forests.	Low: The Site and/or immediate area only provides limited habitat for the species
Rana boylii	foothill yellow-legged frog	None	CT	BLM_S, CDFW_SSC, IUCN_NT, USFS_S	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Rana sierrae	Sierra Nevada yellow-legged frog	E	T	CDFW_WL, IUCN_EN, USFS_S	Aquatic. Always encountered within a few feet of water.	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Riparia riparia	bank swallow	None	T	BLM_S, IUCN_LC	Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers,	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species

Taxidea taxus	American badger	None	None	CDFW_SSC, IUCN_LC	Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Very Low to Nil: The Site and/or immediate area does not support suitable habitat for the species
Vulpes vulpes necator	Sierra Nevada red fox	C	T	USFS_S	Uses dense vegetation and rocky areas for cover and den sites. Prefer forests interspersed with meadows or alpine fell-fields.	Low: The Site and/or immediate area provides limited suitable habitat for the species

Federal
E = Listed as Endangered under the federal Endangered Species Act.
T = Listed as Threatened under the federal Endangered Species Act.
C = Candidate for listing as either Threatened or Endangered under the Federal Endangered Species Act.
PE = Proposed for federal listing as endangered under the federal Endangered Species Act.
PT = Proposed for federal listing as threatened under the federal Endangered Species Act.
SC = Species of concern; species for which existing information indicates it may warrant listing but for which substantial biological information to support a proposed rule is lacking.
- = No listing.

State
E = Listed as Endangered under the California Endangered Species Act.
T = Listed as Threatened under the California Endangered Species Act.
R= Rare; although not presently threatened with extinction, it occurs in such small numbers throughout its range that it may become endangered if its present environment worsens.
SSC = Species of Special Concern in California.
- = No listing

Department of Fish & Wildlife (CDFW)
FP= Federally Proposed for listing
SSC= Species of Special Concern
- = No listing

California Native Plant Society
California Rare Plant Rank 1A = Plants presumed extinct in California.
California Rare Plant Rank 1B = Plants rare, threatened, or endangered in California and elsewhere; the majority are endemic to California.
California Rare Plant Rank 2 = Plants rare, threatened, or endangered in California, but more common elsewhere.
California Rare Plant Rank 3 = Plants about which we need more information – A review list.
California Rare Plant Rank 4 = Plants of limited distribution – A watch list.

Table 3: Special-status Plants and Wildlife found in Crescent Mills Quad CNDDB. Highlighted species are those with Potential to Occur within or adjacent to the Site (CNDDB, 2018) No Special-status species were observed during field surveys.

Lupinus dalesiae	Quincy lupine	Dicots	APPROXIMATELY 0.9 MILE NORTHEAST OF PAXTON BETWEEN EAST BRANCH SODA CREEK AND INDIAN CREEK.
Lupinus dalesiae	Quincy lupine	Dicots	APPROXIMATELY 1 MILE SOUTHWEST OF INDIAN FALLS ON HIGHWAY 89.
Astragalus webberi	Webber's milk-vetch	Dicots	MOSTLY ON THE NORTH SIDE OF HIGHWAY 89, FROM ARLINGTON BRIDGE WEST TO 0.5 MILE WEST OF MOCCASIN.

Astragalus webberi	Webber's milk-vetch	Dicots	EMIGRANT ROAD (26N21), WEST OF HOUGH CREEK, APPROXIMATELY 500 FEET FROM INTERSECTION WITH ROAD TO TAYLORSVILLE (A22).
Astragalus webberi	Webber's milk-vetch	Dicots	BOTH SIDES OF HIGHWAY 89, SW OF INDIAN FALLS.
Astragalus webberi	Webber's milk-vetch	Dicots	EAST SIDE OF HIGHWAY 89 APPROXIMATELY ONE MILE NORTH OF INDIAN FALLS.
Astragalus webberi	Webber's milk-vetch	Dicots	SW OF INDIAN FALLS, 0.5 MILE NE OF JUNCTION OF HIGHWAYS 70 AND 89, WEST SIDE OF HIGHWAY 89, WEST OF INDIAN CREEK.
Lupinus dalesiae	Quincy lupine	Dicots	SOUTHEAST OF ROUND VALLEY RESERVOIR IN THE AREA OF DIXIE CREEK, 0.1 TO 1.0 MILE SOUTH OF CHEROKEE MINE.
Empidonax traillii	willow flycatcher	Birds	JUST WEST OF ROUND VALLEY RESERVOIR, 2 MILES SW OF GREENVILLE.
Accipiter gentilis	northern goshawk	Birds	CURTIS RAVINE.
Haliaeetus leucocephalus	bald eagle	Birds	ROUND VALLEY RESERVOIR I TERRITORY, BELLAS FLAT, SOUTH OF ROUND VALLEY RESERVOIR.
Darlingtonia Seep	Darlingtonia Seep	Marsh	BUTTERFLY VALLEY BOTANICAL AREA, ABOUT 1.5 MILES WEST OF KEDDIE. PLUMAS NF POP#11-1.
Darlingtonia Seep	Darlingtonia Seep	Marsh	BUTTERFLY CREEK AT EAST SIDE OF BUTTERFLY VALLEY, ABOUT 1 MILE SW OF KEDDIE. "HOMESTEAD SITE."
Boechera constancei	Constance's rockcress	Dicots	ALONG TRIBUTARY TO INDIAN CREEK, ABOUT 1 MILE EAST OF ROUND VALLEY RESERVOIR AND 1 MI WEST OF CRESCENT MILLS, PLUMAS NF.
Boechera constancei	Constance's rockcress	Dicots	ALONG ROAD ABOUT 0.6 MILE WNW OF ROUND VALLEY RESERVOIR, WEST OF CRESCENT MILLS, PLUMAS NF.
Rhynchospora capitellata	brownish beaked-rush	Monocots	N END OF BUTTERFLY VALLEY BOTANICAL AREA, 1.1 MILES NORTHWEST OF BUTTERFLY VALLEY.
Antigone canadensis tabida	greater sandhill crane	Birds	INDIAN VALLEY, ABOUT 1.0 MI NE OF CRESENT MILLS, WEST OF UNION PACIFIC RAILROAD TRACKS, EAST OF STATE ROUTE 89.
Antigone canadensis tabida	greater sandhill crane	Birds	INDIAN VALLEY, ABOUT 0.8 MI ESE OF CRESENT MILLS, WEST OF INDIAN CREEK.
Oreostemma elatum	tall alpine-aster	Dicots	BUTTERFLY VALLEY BOTANICAL AREA, WEST OF KEDDIE.
Eleocharis torticulmis	California twisted spikerush	Monocots	SWEETWATER MEADOW, IN BUTTERFLY VALLEY BOTANICAL AREA.
Atractelmis wawona	Wawona riffle beetle	Insects	INDIAN CREEK, 1.6 KM NE OF INDIAN FALLS.
Empidonax traillii	willow flycatcher	Birds	ARLINGTON BRIDGE, INDIAN CREEK, 1 MILE SSW OF CRESCENT MILLS.
Rhynchospora alba	white beaked-rush	Monocots	ABOUT 1.5 MILES WEST OF KEDDIE, BUTTERFLY VALLEY BOTANICAL AREA.

Myotis volans	long-legged myotis	Mammals	SPANISH CREEK IN VICINITY OF KEDDIE.
Astragalus webberi	Webber's milk-vetch	Dicots	EMIGRANT ROAD (26N21), WEST OF HOUGH CREEK, APPROX 0.6 AIR MILE SOUTH OF INTERSECTION WITH ROAD TO TAYLORSVILLE (A22).
Potamogeton epihydrus	Nuttall's ribbon-leaved pondweed	Monocots	2 MI S OF CRESCENT MILLS ON HWY 189, S END OF INDIAN VALLEY.
Brasenia schreberi	watershield	Dicots	ROUND VALLEY RESERVOIR, ABOUT 2.5 MILES SW OF GREENVILLE.
Brasenia schreberi	watershield	Dicots	"POND RESERVOIR," BUTTERFLY VALLEY BOTANIC AREA.
Margaritifera falcata	western pearlshell	Mollusks	SPANISH CREEK EAST OF HWY 70 AT KEDDIE.
Riparia riparia	bank swallow	Birds	ALONG INDIAN CREEK, ABOUT 0.2 MI S OF CONFLUENCE WITH WOLF CREEK, 2 MI NE OF CRESCENT MILLS PO.
Riparia riparia	bank swallow	Birds	ALONG INDIAN CREEK, JUST SE OF CRESCENT MILLS.
Vulpes vulpes necator	Sierra Nevada red fox	Mammals	NEAR INDIAN FALLS ALONG HIGHWAY 89.
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	ABOUT 0.4 MI WNW OF OLYMPIC BOULEVARD AT HWY 89 IN INDIAN FALLS (TOWN) AND 1.7 MI NE OF PAXTON.
Aplodontia rufa californica	Sierra Nevada mountain beaver	Mammals	JUST NORTH OF CRESCENT MILLS ABOVE STORAGE HUTS, SE OF LAKE ALMANOR.
Bombus morrisoni	Morrison bumble bee	Insects	2 MILES NORTH OF KEDDIE.
Erethizon dorsatum	North American porcupine	Mammals	ABOUT 2.3 MI WNW OF HWY 89 AT ARLINGTON RD, 3 MI S OF HWY 89 AT MAIN ST, ROUND VALLEY RESERVOIR.
Monardella follettii	Follett's monardella	Dicots	NEAR USFS ROAD 25N14, ABOUT 1.2 AIR MILES NORTHEAST OF PAXTON.
Carex lasiocarpa	woolly-fruited sedge	Monocots	SW END OF POND RESERVOIR ON BUTTERFLY CREEK, BUTTERFLY VALLEY.
Carex sheldonii	Sheldon's sedge	Monocots	ALONG CANAL BANK ABOUT 2 MILES SOUTH (EAST?) OF GREENVILLE, INDIAN VALLEY.
Penstemon personatus	closed-throated beardtongue	Dicots	LONG VALLEY, WEST OF GREENVILLE.
Eleocharis torticulmis	California twisted spikerush	Monocots	HEAD 0F DRAINAGE ENTERING THE E BRANCH N FORK FEATHER RIVER FROM THE SE, 1.1 KM N OF BUTTERFLY VALLEY BOTANICAL AREA.

Table 4: Plants observed at the Site March 20 and June 5, 2018

PLANTS (non-native in bold)	
SCIENTIFIC NAME	**COMMON NAME**

***Acacia* sp.**	**Acacia**
Acmispon americanus	Spanish lotus
Arctostaphylos patula	Green leaf manzanita
Artemesia douglasiana	Mugwort
***Brassica* sp.**	**Mustard**
Bromus hordeaceus	**Smooth brome**
Calocedrus decurrens	Incense cedar
Ceanothus cordulatus	Whitethorn
Centaurea solstitialis	**Star-thistle**
Chichorium intybus	**Chicory**
Circium vulgare	**Bull thistle**
Clarkia sp.	Farewell to spring
Croton setiger	Turkey mullein
Deschampsia sp.	Hairgrass
Elymus caput-medusae	**Medusa head**
Elymus elymoides	Squirrel tail
Erodium cicutarium	**Crane's bill**
Grindelia sp.	Gumplant
Hordeum brachyantherum	Meadow barley
Hypericum perforatum	**St. John's wort**
Juncus effusus	Common bog rush
Leucanthemum vulgare	**Ox-eye daisy**
Lupinus bicolor	Bicolor lupin
Lupinus albifrons	Silver bush lupine
Madia sp.	Tarweed
***Malus* sp.**	**Apple**
***Oenethera* sp.**	**Evening primrose**
***Panicum* sp.**	**Panic grass**
Phacelia sp.	Phacelia
***Phalaris* sp.**	**Canary grass**
Pinus jefferyi	Jeffery pine
Pinus ponderosa	Ponderosa pine
Plantago lanceolata	**Ribwort**
Pleum alpinun	**Timothy grass**
Poa bulbosa	**Bulbous blue grass**
Poa pratensis	**Kentucky blue grass**
Populus tremuloides	Aspen
Rubus armenciacus	**Himalayan blackberry**
Rumex crispus	**Curly dock**
Salix exigua	Narrow leaved willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow

Stipa sp.	Needle grass
***Tragopogon* sp.**	**Oyster plant**
***Trifolium* sp.**	**Clover**
Trifolium subterraneum	**Subterranean clover**
Verbascum blattaria	**Moth mullein**
Xanthium strumarium	Cocklebur

Table 5: Wildlife observed at the Site March 20 and June 5, 2018

Wildlife	
Scientific name	**Common Name**
Amphibians	
Psuedacaris sierrea	Sierran chorus frog (call)
Mammals	
Odocoileus hemionus californicus	Mule deer (scat)
Ursus americanus	Bear (scat)
Birds	**(offsite *)**
Agelaius phoeniceus	Red-winged blackbird*
Anas platyrhynchos	Mallard
Antigone canadensis	Sandhill crane*
Buteo jamaicensis	Red-tailed hawk*
Callipepla californica	California quail
Charadrius vociferus	Killdeer
Colaptes auratus	Northern flicker*
Corvus corax	Common raven*
Cyanocitta stelleri	Steller's jay
Euphagus cyanocephalus	Brewer's blackbird
Haemorhous mexicanus	House finch
Icterus bullockii	Bullock's oriole
Junco hyemalis	Dark-eyed junco
Passerina amoena	Lazuli bunting
Pheucticus melanocephalus	Black-headed grosbeak
Pica hudsonia	Black-billed magpie
Pipilo maculatus	Spotted towhee*
Setophaga townsendi	Townsend's solitaire
Stelgidopteryx serripennis	Northern rough-winged swallow
Turdus migratorius	American robin
Zenaida macroura	Mourning dove*

Table 6. Assessment of Potentially Complete Exposure Pathways by Representative Foraging Guilds for Site

Representative Species (Receptor Guilds)	Chemicals of Potential Ecological Concern	Contaminated Media	Direct Exposure Pathways	Food Web Exposure	Complete Exposure Pathway
Plants (primary producers)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil	Plant uptake from soil	Plant uptake from soil	Yes
Macroinvertebrates (herbivores, carnivores, omnivores)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil, surface water	Incidental soil ingestion, dermal contact	Direct exposure via soil, and possibly surface water	Yes
Bald eagle, (carnivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil	Incidental soil ingestion, dermal contact	Consumption of soil or plant material by herbivores or omnivores by the hawk	Yes
Northern Flicker (omnivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil	Incidental soil ingestion, dermal contact	Consumption of plant material or macroinvertebrates (herbivores, carnivores, or omnivores) by the flicker	Yes
Osprey (picivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil, surface water	Incidental soil ingestion, dermal contact	Consumption of fish or amphibians that have had dermal contact with surface water	Yes
Steller's Jay (omnivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil	Incidental soil ingestion, dermal contact	Consumption of plant material or macroinvertebrates (herbivores, carnivores, or omnivores) by the jay	Yes
American Robin (omnivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil	Incidental soil ingestion, dermal contact	Consumption of plant material or macroinvertebrates (herbivores, carnivores, or omnivores) by the robin	Yes
California Towhee (omnivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil	Incidental soil ingestion, dermal contact	Consumption of plant material or macroinvertebrates (herbivores, carnivores,	Yes

				or omnivores) by the towhee	
Pacific Treefrog (carnivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil, ingestion of surface water	Incidental soil ingestion, dermal contact	Consumption of plant material or macroinvertebrates (herbivores, carnivores, or omnivores) by the frog	Yes
Western Fence Lizard (carnivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil	Incidental soil ingestion, dermal contact	Consumption of plant material or macroinvertebrates (herbivores, carnivores, or omnivores) by the lizard	Yes
Botta's Pocket Gopher (herbivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil	Incidental soil ingestion, dermal contact	Consumption of plants by the gopher	Yes
Mule Deer (herbivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil	Incidental soil ingestion, dermal contact	Consumption of plants by the deer	Yes
Black Bear (Omnivore)	As; TPHd – SG; TPHd – NS, 2,3,7,8-TCDD TEQ (pg/g); Benzo(a)pyrene;	Soil	Incidental soil ingestion, dermal contact	Consumption of plant material, vertebrates, or macroinvertebrates (herbivores, carnivores, or omnivores) that are predated by the bear	Yes

USGS QUAD MAPS

USGS 7.5 Minute Nine Quad Search including Greenville (4012028), Moonlight Peak (4012027), Quincy (3912088), Twain (4012111), Crescent Mills (4012018), Taylorsville (4012017), Meadow Valley (3912181), Spring Garden (3912087)

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Qualifications of Surveyor:

Denise Della Santina: Project Manager and Restoration Ecologist

Education and Training

San Jose State University, Continuing education in Wildlife Ecology 2000-2002
University of Wisconsin, Madison, Bachelor of Science Biological Aspects of Conservation, Botany 1994

Professional Appointments

Sierra Streams Institute: Restoration Ecologist, 11/2015 – present
California Native Plant Society: Botanist and Project Manager - 12/2012 to Present
USFS –Tahoe National Forest: American and Yuba River Districts – Botany Crew Leader 2014, 2015
South Yuba River Citizens League: Field Project Manager *Lower Yuba River Riparian Rehabilitation Project,* 2011, 2013
Save The Bay-San Francisco: Native Plant Nursery Manager and Habitat Restoration - 1/2009 to 3/2011
Golden Gate National Recreation Area: Revegetation Specialist June to Dec 2008
Audubon Canyon Ranch, Bolinas Lagoon Preserve: Habitat Restoration Project Leader- 8/2007 to 11/ 2008
Yosemite National Park: Restoration Specialist - 4/2005 to 10/2007
Lassen Volcanic National Park: Restoration Project Work Leader 2002 and 2003
U.S. Fish and Wildlife Service: San Francisco Bay National Wildlife Refuge Biological Science Intern 2000 – 2001

Products/Publications

- Campbell, L., A. Lincoln, K.H. Strohm, C. Fraser, D. Della Santina, J. Wood, S. Meylor, J. Berkey, J. Sellen, and J. Hild. 2016. Bear River Watershed Disturbance Inventory and Existing Conditions Assessment 2016. Sierra Streams Institute, Nevada City, CA. 307 pgs. Pdf available online at: https://drive.google.com/open?id=0B9mS0Bj1fCWKU1pBLWgtTDllVEE

-Restoration Plan for the Four Canyons Restoration Project, Audubon Canyon Ranch, Bolinas CA. 2008

- Restoration Plan for Yosemite Valley, Glacier Point, and Tioga road construction mitigation, Yosemite National Park. 2006-2007

-Wetland Delineation of El Capitan Meadow, Yosemite National Park. 2007

-Restoration Plan for main park road construction mitigation, Lassen Volcanic National Park. 2003
-Restoration Plan for Marin Headlands road construction mitigation, Golden Gate National Recreation Area. 2008.