# INITIAL STUDY
# MITIGATED NEGATIVE DECLARATION

## MALAKOFF DIGGINS STATE HISTORIC PARK
## PRESCRIBED FIRE AND FOREST MANAGEMENT PROGRAM

**November 2022**

State of California
**California State Parks**

# MITIGATED NEGATIVE DECLARATION

**PROJECT:** **PRESCRIBED FIRE AND FOREST MANAGEMENT PROGRAM**

**LEAD AGENCY:** California State Parks, Department of Parks and Recreation (DPR)

**AVAILABILITY OF DOCUMENTS:** The Initial Study for this Mitigated Negative Declaration is available for review at:

- Sierra District Headquarters
  California State Parks
  7360 West Lake Blvd.
  PO Box 266
  Tahoma, CA 96142

- Madelyn Helling County Library
  980 Helling Way
  Nevada City, California 95959

- Malakoff Diggins State Historic Park
  Visitor Center
  23579 North Bloomfield Road
  Nevada City, CA 95959

**PROJECT DESCRIPTION:**

In 2021, the California Department of Parks and Recreation (DPR) received funding from the California Wildfire and Forest Resilience Package in the 2022/2023 state budget to develop a strategic and programmatic Prescribed Fire and Forest Management Program at Malakoff Diggins State Historic Park (Malakoff). The proposed forest management effort at Malakoff will treat approximately 1,866 acres of high-risk parkland including a Public Safety and Historic Core Protection Zone and use prescribed fire to conduct understory burning in new and historic burn plots. The entirety of Malakoff lies within an historic district with significant cultural resources dating back to before California's gold rush era. These actions will not only protect irreplaceable historic and prehistoric resources and park staff but will also reduce wildfire hazards along the San Juan Ridge and populated areas of western Nevada County. This forest management program directly supports Governor Newsom's 2021 California Wildfire and Forest Resilience Action Plan which calls for increased use of prescribed fire to restore ecosystem function for long-term forest health and resilience. This stewardship effort also supports the mission of California State Parks to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

A copy of the Initial Study is attached. Questions or comments regarding this Initial Study/Mitigated Negative Declaration may be addressed to:

Rich Adams
Senior Environmental Scientist, Supervisory
RPF#2741
California State Parks
Sierra District
PO Box 266
Tahoma, CA 96142

Pursuant to Section 21082.1 of the California Environmental Quality Act, the California Department of Parks and Recreation (DPR or California State Parks) has independently reviewed and analyzed the Initial Study and Draft Negative Declaration for the proposed project and finds that these documents reflect the independent judgment of DPR. DPR, as lead agency, also confirms that the project mitigation measures detailed in these documents are feasible and will be implemented as stated in the Negative Declaration.

DocuSigned by:
Dan Canfield
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12/1/2022
Date

District Superintendent

DocuSigned by:
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# CHAPTER 1
# INTRODUCTION

## 1.1 INTRODUCTION AND REGULATORY GUIDANCE

The Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Prescribed Fire and Forest Management Program at Malakoff Diggins State Historic Park (Malakoff), Nevada County, California. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 *et seq*., and the State CEQA Guidelines, California Code of Regulations (CCR) §15000 *et seq*.

An Initial Study is conducted by a lead agency to determine if a project may have a significant effect on the environment [CEQA Guidelines §15063(a)]. If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the lead agency determines that revisions in the project plans or proposals made by or agreed to by the applicant mitigate the potentially significant effects to a less-than-significant level, a Mitigated Negative Declaration may be prepared instead of an EIR [CEQA Guidelines §15070(b)]. The lead agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This IS/MND conforms to the content requirements under CEQA Guidelines §15071.

## 1.2 LEAD AGENCY

The lead agency is the public agency with primary approval authority over the proposed project. In accordance with CEQA Guidelines §15051(b)(1), "the lead agency will normally be an agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." The lead agency for the proposed project is DPR. The contact person for the lead agency regarding specific project information is:

Rich Adams, Senior Environmental Scientist, Supervisory, RPF#2741
California State Parks, Sierra District
PO Box 266
Tahoma, CA 96142
530-525-7232
rich.adams@parks.ca.gov

Questions or comments regarding this Initial Study/Mitigated Negative Declaration should be submitted to:

Rich Adams
(530) 525-7232
rich.adams@parks.ca.gov

Submissions must be in writing and postmarked or received by fax or email no later than March 10, 2023. The originals of any faxed document must be received by regular mail within ten working days

following the deadline for comments, along with proof of successful fax transmission. Email or fax submissions must include full name and address. All comments will be included in the final environmental document for this project and become part of the public record.

## 1.3 PURPOSE AND DOCUMENT ORGANIZATION

The purpose of this document is to evaluate the potential environmental effects of the proposed Prescribed Fire and Forest Management Program at Malakoff. Mitigation measures have also been incorporated into the project to eliminate any potentially significant impacts or reduce them to a less-than-significant level.

This document is organized as follows:

- Chapter 1 - Introduction.
  This chapter provides an introduction to the project and describes the purpose and organization of this document.

- Chapter 2 - Project Description.
  This chapter describes the reasons for the project, scope of the project, and project objectives.

- Chapter 3 - Environmental Setting, Impacts, and Mitigation Measures.
  This chapter identifies the significance of potential environmental impacts, explains the environmental setting for each environmental issue, and evaluates the potential impacts identified in the CEQA Environmental (Initial Study) Checklist. Mitigation measures are incorporated, where appropriate, to reduce potentially significant impacts to a less than significant level.

- Chapter 4 - Mandatory Findings of Significance.
  This chapter identifies and summarizes the overall significance of any potential impacts to natural and cultural resources, cumulative impacts, and impact to humans, as identified in the Initial Study.

- Chapter 5 - Summary of Mitigation Measures.
  This chapter summarizes the mitigation measures incorporated into the project as a result of the Initial Study.

- Chapter 6 - References.
  This chapter identifies the references and sources used in the preparation of this IS/MND.

- Chapter 7 - Report Preparation
  This chapter provides a list of those involved in the preparation of this document.

## 1.4 SUMMARY OF FINDINGS

Chapter 3 of this document contains the Environmental (Initial Study) Checklist that identifies the potential environmental impacts (by environmental issue) and a brief discussion of each impact resulting from implementation of the proposed project.

Based on the IS and supporting environmental analysis provided in this document, the proposed Prescribed Fire and Forest Management Program would result in less than significant impacts for the following issues: aesthetics, agricultural resources, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire.

In accordance with §15064(f) of the CEQA Guidelines, a MND shall be prepared if the proposed project will not have a significant effect on the environment after the inclusion of mitigation measures in the project. Based on the available project information and the environmental analysis presented in this document, there is no substantial evidence that, after the incorporation of mitigation measures, the proposed project would have a significant effect on the environment.

# CHAPTER 2
# PROJECT DESCRIPTION

## 2.1 INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Prescribed Fire and Forest Management Program at Malakoff Diggins State Historic Park (Malakoff; Park), Nevada County, California. In 2021, DPR received funding from the California Wildfire and Forest Resilience Package in the 2022/2023 state budget to develop a strategic and programmatic Prescribed Fire and Forest Management Program at Malakoff. The proposed forest management effort at Malakoff would treat approximately 1,866 acres of high-risk parkland including a Public Safety and Historic Core Protection Zone and use prescribed fire to conduct understory burning in new and historic burn plots. The entirety of Malakoff lies within an historic district with significant cultural resources dating back to before California's gold rush era. These actions would not only protect irreplaceable historic and prehistoric resources, visitors, and park staff, but also reduce the wildfire hazards along the San Juan Ridge and populated areas of western Nevada County. This forest management program directly supports Governor Newsom's 2021 California Wildfire and Forest Resilience Action Plan which calls for increased use of prescribed fire to restore ecosystem function for long-term forest health and resilience. This stewardship effort also supports the mission of California State Parks to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

## 2.2 PROJECT LOCATION

Malakoff is located in Nevada County, California in the western foothills of the Sierra Nevada. The Park is 26 miles northeast of Nevada City, 63 air miles northeast of Sacramento, and an approximately 3 1/2-hour drive from the San Francisco Bay metropolitan area. The Park encompasses approximately 3,200 acres and ranges in elevation from 2,500 to 4,500 feet. Malakoff is home to one of largest historic mine sites from California's 19$^{th}$ century gold rush era. Hydraulic gold mining in the 1860s drastically altered the landscape, resulting in the first environmental law enacted in the nation. Known as the Sawyer Decision, this 1884 injunction imposed strict regulations on discharging debris into rivers in the Sierra Nevada and resulted in the end of California's hydraulic mining era. Along with the historic town of North Bloomfield, the Diggins mine pit is one of the main attractions of the Park today. Approximately 3,200 forested acres dominated by second growth ponderosa pine as well as incense cedar, black oak, Douglas fir, and sugar pine surround the mine pit. A small number of old growth trees occur in areas where the original forest was not completely logged or decimated (Cahill, 1979). Malakoff is located within the Humbug Creek watershed. Humbug Creek flows through the southeastern section of the park and drains into the South Yuba River. In addition to multiple historic buildings in the townsite of North Bloomfield, other infrastructure includes the Chute Hill Campground, access roads, trails, park buildings, and employee residences. Park parcels are interspersed with property owned by the Bureau of Land Management (BLM), U.S. Forest Service (USFS), and private property. The northernmost boundary of the park is contiguous with USFS land.

From Sacramento, the Park can be reached by following U.S. Interstate 80 east to Auburn, then State Highway 49 to Nevada City. From Nevada City, continue 11 miles north on State Highway 49 toward Downieville. Turn right onto Tyler Foote Road, and continue on Cruzon Grade Road, Backbone Road, and Derbec Road to reach the Park's entrance. An alternative (unpaved) route from Nevada City/State Highway 49 can be taken following the North Bloomfield Road.

## 2.3 BACKGROUND AND NEED FOR THE PROJECT

*California is facing a growing forest and wildfire crisis. Decades of fire suppression, coupled with the increasing impacts of climate change, have dramatically increased wildfires' size and intensity throughout the state. The 2020 fire season broke numerous records. Five of California's six largest fires in modern history burned at the same time, destroying thousands of buildings, forcing hundreds of thousands of people to flee their homes, and exposing millions of residents to dangerously unhealthy air. More than 4 million acres burned across the state, double the previous record*. - Governor Newsom's 2021 California Wildfire and Forest Resiliency Action Plan

Governor Newsom issued Executive Order N-82-20 in October 2020, directing state agencies to accelerate actions to combat climate change, protect biodiversity, and build resilient nature-based solutions, including improved forest management. This proposed Prescribed Fire and Forest Management Program will take a proactive approach to restore the health and resilience of California forests and improve the fire safety of local communities. The intent of this program is to continue and maintain forest treatments in the Public Safety and Historic Core Protection Zone and enhance and restore the health of the forest ecosystem in Malakoff through manual and mechanical thinning, mastication, pile burning, and by prescribed understory burning.

In California's Strategic Plan for Expanding the Use of Beneficial Fire (2022), Governor Newsom defines prescribed fire as "the intentional application of fire to land for wildland management goals, including the prevention of high intensity wildland fires, watershed management, range improvement, vegetation management, forest improvement, wildlife habitat improvement, restoring ecological integrity and resilience, community wildfire protection, carbon resilience, enhancement of culturally important resources, and maintenance of air quality." Prescribed fires undertaken for any of these reasons are considered "public purpose" burns pursuant to state law (Public Resources Code § 4491(a)). Prescribed fires are typically conducted in compliance with a written prescribed fire plan that outlines the conditions necessary for the burn to be "within prescription."

Prescribed fire is now well-recognized as one of the most versatile and cost-effective tools available to reduce fuels buildup in forests and the risk of catastrophic wildfires while increasing climate resilience (Newson 2021). Controlled burns also support native plants, boost soil health, and increase ecosystem function. Fire is among the most critical ecological treatment methods for maintaining a myriad of functions that collectively contribute to maintaining healthy and resilient forests (Newsom 2021). Prior to European settlement, Native American tribes applied fire to the landscape for a multitude of purposes, including to recycle nutrients, manage plant and wildlife habitat, provide community protection, control insects and disease, and engage in

cultural and spiritual practices (Newsom 2022). These practices helped to maintain healthy forest and grassland ecosystems. A long-term goal of DPR's Prescribed Fire and Forest Management Program is to include co-management approaches that incorporate Traditional Ecological Knowledge (TEK) on the landscape, including cultural burning.

Due to a long history of human disturbance, including the clearcutting of large areas, some recovering forests in the Sierra Nevada are in the mid-seral, dense, self-thinning stage of forest stand development. In many cases, these dense recovering forests require certain pre-treatment prescriptions before fire can be safely applied to the landscape. Thinning is a treatment method that is often used in proximity to the Wildland Urban Interface or in other areas where prescribed fire is not a feasible option, such as near historic buildings. The thinning process removes understory trees and certain hazard trees to reduce the overall tree density of the area. Pile burning involves gathering surface fuels, such as those produced from thinning projects, into a concentrated pile and igniting these piles under favorable weather conditions. This treatment method can be used in areas of concentrated fuels and often is used prior to an understory burn. Mastication is a mechanical fuels treatment technique that is performed by a tracked excavator equipped with a masticating head which shreds and chips surface debris, brush, and small trees. This management tool can increase access and effectiveness of fire suppression vehicles and techniques. Masticated material can be scattered onsite or removed. In areas with sensitive natural or cultural resources that cannot safely be treated mechanically, hand crews are often employed. Full suspension cable yarding or end-line yarding are treatment methods that are typically used where steep slopes do not allow ground-based extraction equipment to operate safely, or where ground conditions do not permit travel by ground-based extraction equipment, such as in riparian areas.

Another treatment method that DPR has a long history of successfully employing is prescribed understory burning. Dense stands of trees are initially thinned if necessary to reduce the fuel load, followed by intentionally setting low-intensity fire under prescribed conditions to reduce surface fuels, and reintroduce or reestablish fire as an important ecological contributor. These fires induce mortality in smaller understory and shade tolerant tree species, seedlings, and weaker trees.

The landscape of what is now Malakoff endured devastating historic impacts associated with hydraulic gold mining that resulted in a nearly denuded landscape. The proposed Prescribed Fire and Forest Management Program intends to support long-term forest and watershed recovery processes by promoting large tree growth, assisting with restoration of tree species composition and diversity, and protecting hardwood stands from overtopping by shade tolerant conifers. These program actions are intended to help protect irreplaceable historic and prehistoric resources, visitors, park staff, and surrounding communities from high intensity wildfire.

Malakoff has a rich history in the use of prescribed fire as a management tool to restore ecosystem function for long-term forest health and resilience. DPR conducted the first prescribed burn at Malakoff in the 1980s on the Marten Ranch burn plot (20 acres) located in the southeast portion of the park. In 1993, the San Juan Ridge Coordinated Resource Management Plan (CRMP) was developed by a multiagency task force, to develop guidelines for reducing the risk of wildfire in western Nevada County, including Malakoff. The plan's objectives were to utilize prescribed burns to reduce hazardous fuel buildups, restore the health and vigor of native

plant communities, improve range forage conditions, and enhance wildlife habitat for all successional species. The proposed long-term Prescribed Fire and Forest Management Program will complement actions taken under the CRMP.

Beginning in 2004, DPR conducted a forest management project using a variety of management tools including manual and mechanical thinning, mastication, and pile burning, in preparation for prescribed understory burning. In January 2007, DPR successfully conducted a prescribed understory burn on over 1,000 acres at Malakoff at the Chute Hill Burn Plot (~300 acres) and the Backbone Burn Plot (~700 acres). The completed project was in conjunction with fuels treatment activities on adjacent USFS land, providing added wildfire protection for the USFS designated urban core on Cruzon Grade Road, the communities of Lake City and North Bloomfield, and the Chute Hill campground. The 2007 forest management project was also in conjunction with other fuel reduction efforts on the San Juan Ridge, creating a more defensible area for at-risk communities across western Nevada County, including Grass Valley, Nevada City, Penn Valley, Lake Wildwood, Cedar Ridge, Rough and Ready, Peardale, Smartsville, Timbuctoo, and Washington.

Previous forest treatments and prescribed understory burning at Malakoff have been successfully implemented; however, forest treatments, including understory burning, need to be repeated over time in order to maintain effectiveness and protect prior investments. Forest restoration actions and approaches that focus on the retention of large trees and removal of small trees (i.e., 'ladder' fuels) and surface fuels can be effective in reducing overall tree mortality and fire severity in this region (Brown et al. 2004; Safford et al. 2012). Management approaches that promote naturally recovering landscapes may also complement ongoing and planned forest treatments (Zachman et al. 2018).

## 2.4 PROJECT OBJECTIVES

The mission of DPR is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality recreation. The intent of the proposed Prescribed Fire and Forest Management Program is to:

- Decrease wildfire hazards to irreplaceable historic resources and park staff in Malakoff and to neighboring communities.
- Continue forest restoration practices: thin overcrowded forest stands; reduce competition for water, minerals, and sunlight; reestablish low intensity fires to thin the understory, reduce surface fuels, and provide ecosystem services missing over the last 100+ years of fire suppression.
- The long-term goal of this program is to apply prescribed fire to the landscape on a variable rotation that mimics the natural fire regime, requires minimal pre-treatment, and ultimately restores ecosystem function and forest resilience.

These objectives will be met primarily by manual thinning and understory burning. In areas absent of sensitive natural and cultural resources, mechanical thinning, mastication, and pile burning may also be employed. In order to achieve program objectives, standard and specific project requirements will be incorporated to avoid potential adverse impacts to sensitive natural

and cultural resources at Malakoff. Mitigation measures will be implemented to reduce all potentially adverse impacts to a less than significant level. This program is intended to cover a long-term period of maintenance treatment and promote natural recovery of the landscape.

## 2.5 PROJECT DESCRIPTION

DPR proposes to move forward with the overall goal of using prescribed fire as a means of restoring fire to its essential role in the ecosystems within California State Parks, and to improve wildfire resilience. Fire history research in western North America indicates that frequent, low intensity fires shaped forest structure, composition, and resilience prior to European settlement (Agee 1989; Barnhart et al. 1996). These frequent fires served a number of critical roles in ecosystem function within the mixed conifer forest. Traditional burning by Native Americans prior to European settlement also helped to promote critical forest ecosystem function. During the past 100+ years, logging, grazing, fire suppression, mining, and other human activities have greatly altered the fire regime and increased fuel loading in Sierra Nevada forests. Much of the Park and surrounding area was clear-cut in the second half of the 19th century. This logging resulted in a wide divergence from historic forest conditions, and current conditions at Malakoff consist of a variety of habitat types including oak forest, mature Douglas fir (*Pseudotsuga menziesii*) forest, and second growth pine dominated forest. California black oaks (*Quercus kelloggii Newberry*) are ecologically and culturally significant to California's forests with their mast providing an important food source for a variety of mammalian and avian species (Bowyer and Bleich 1980; McDonald 1990; Koenig et al. 2008; Purcell and Drynan 2008), and they play an important role in cultural transmission and rituals, including dances, festivals, and ceremonies for many Native American tribes. The Nisenan Native American tribe inhabited the Park at the time of European contact, and their favored staple food consisted of black oak acorns which were supplemented by berries, seeds, and roots (DPR 2015).

More recently, ecologists and land managers have attempted to reintroduce fire into forested systems with forest management techniques that include prescribed burning as a tool to reduce fuel load, stocking levels, and competition for moisture and nutrients, while stimulating growth of oak and pine species. DPR encourages the use of prescribed fire as a means to restore the function of fire to ecosystems. Restoring fire processes in existing fuel complexes requires substantial care and preparation due to past land management practices detailed above. The fuel loads are often too high to treat with prescribed fire safely without pre-treating the stands to reduce biomass, especially surface fuel loads and dense Douglas fir and incense cedar stands. The second entry with prescribed fire may also require some pre-treatment, but the long-term goal is to understory burn treatment plots on a variable rotation, which will mimic the natural fire regime and require minimal pre-treatment.

The critical objective of this program is to continue the implementation of a long-term prescribed fire and forest management program, in both areas that have been previously thinned and/or received understory burning and in areas that have not received previous treatments. Both intermediate and initial entry treatment(s) are components of this program.

Under this program, the following criteria are used to select areas for treatment:

<u>Previous management history</u>

Previously treated areas receive high priority for selection under this program to continue the process of moving fire back into the ecosystem, because forest management projects require follow-up understory treatment, and because these stands have already undergone environmental review from resources specialists and regulatory agencies. In the absence of a natural fire cycle, forest treatment areas need to be periodically maintained or the treatment loses its effectiveness in terms of resistance to high intensity wildfire. Some evidence suggests forest treatments may lose effectiveness within 10 years (Omi and Martinson 2007). Treatment of surface fuels appears to be the most effective tool to reduce fire spread and intensity, and light understory burning is likely the most effective tool to accomplish this goal as well as achieve the ecosystem services provided by fire.

Low level natural and cultural resources concerns

Areas selected for treatment under this program are reviewed by natural and cultural resources specialists. Locations where standard or specific project requirements and/or mitigations do not alleviate impacts to natural and cultural resources will not be included in this program. Examples of excluded areas include meadows, wetlands, high gradient slope locations, roadless areas, wildlife movement corridors, and core nesting areas for sensitive raptors. These excluded areas will not reduce the overall effectiveness of the proposed parkwide forest management program.

Proximity to the Wildland Urban Interface and historic resources

Areas in the Wildland Urban Interface receive high priority for selection under this program. Reducing fuel loads in proximity to residences and other urban facilities allows better access for firefighting equipment and fire suppression tactics (such as fire-retardant drops) in the event of a wildfire. Forest treatments along access roads is also a priority as these are potential locations for human caused wildfire and require maintenance for emergency access and evacuation routes. The improvement and maintenance of the Service Road that leads to Humbug Creek in the southwestern section of the Park will serve multiple purposes including promoting public safety, resource protection, forest management, and fire access. Finally, preservation of historic buildings is of high priority in this historic district, and program actions and approaches will be tailored to safely treat areas with sensitive cultural resources.

Slope and aspect

South slopes likely have lower tree densities due to higher temperatures, more solar exposure, and higher chances of fire moving upslope. In contrast, north slope areas, wetter areas, and colder pockets and concave areas likely have longer spans between fire due to colder and wetter conditions, resulting in higher canopy closure and more dense forest stands (North et al. 2009). Where feasible, south aspects will receive higher priority for maintenance of forest treatments and site plans will consider topographic conditions.

Wildlife habitat and movement corridors

This program will ensure that management activities are strategically located on the landscape in a discontinuous layout so that movement corridors and a mosaic of habitat patches for wildlife and plant seeds remain. In the absence of a strategic management plan, there is a risk of creating homogenous stand characteristics across the landscape, which could potentially be a threat to species that require closed canopy, dense vegetation, a variety of forage and breeding habitats, and cover when moving across the landscape. In addition, many sensitive species occur more

frequently in densely forested areas and this habitat type should remain well represented in the landscape of the Sierra Nevada.

Riparian montane hardwood forest

To reduce conifer encroachment and restore montane hardwood forest habitat, this program will use hand crew treatments in riparian areas for hardwood enhancement. Heavy equipment and pile burning will not be used or occur in riparian areas. Hand crew removal, full suspension cable yarding, or end line yarding are treatment techniques that can be safely implemented to protect areas with sensitive resources or habitats.

Acreage Goals

This program is intended to increase the pace and scale of restoration and ecological stewardship within Malakoff. This program aims to achieve the goals of moving selected forest stands toward more open conditions dominated by large trees, continuing to reestablish fire and its benefits in the Park, and reducing wildfire hazard. This program will not only maintain previous forest treatment investments, but also allow for new initial entry treatments to promote long-term parkwide forest health and resilience. This program is intended to maintain wildlife movement corridors, maintain a mosaic of forest condition classes, continue to provide high value plant and wildlife habitat, and maintain the aesthetic appeal of a healthy forest environment for public enjoyment. To achieve these multiple goals, initial acreage targets have been developed:

Backbone Prescribed Fire Burn Plot (700 acres)
Chute Hill Prescribed Fire Burn Plot (300 acres)
Marten Ranch Prescribed Fire Burn Plot (20 acres)
Public Safety and Historic Core Protection Zone (846 acres)
Total Treatment Acreage: 1,866 acres

Treatments will take place over a period of time because available resources vary, and because periods between maintenance of stands will depend on conditions in the stand and surface fuel response to past management. This program is a long-term forest management plan that will implement understory burning to achieve the majority of maintenance treatment acreage. Smoke and emissions regulations, weather conditions, the presence of sensitive natural and cultural resources, and cumulative effects of other proposed or ongoing projects may affect the approaches that are ultimately employed.

Program elements include public outreach and notification, forest treatment(s) mapping and quantification, pre-burn treatments, coordination with suppression agencies, and staffing and deployment of adequate resources to safely implement small-scale prescribed burns.

Program methods include:

- Manual and mechanical thinning
- Mastication
- Pile burning
- Prescribed understory burning

These methods will stimulate forest recovery, promote long-term health and resilience, and allow fire to continue to play an important ecological role in forestlands of the Sierra Nevada. In addition, proposed management actions will reduce fire severity as well as reduce the likelihood of a stand replacing wildfire that would have significant adverse impacts on state park forestland, sensitive natural and cultural resources present within Malakoff, and the surrounding communities.

### 2.6 PROJECT REQUIREMENTS

Under the CEQA guidelines, DPR is in a unique role as both the Lead Agency and a Trustee Agency. The Lead Agency is a public agency that has the primary responsibility for carrying out or approving a project and for implementing CEQA. A Trustee Agency is a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California. DPR takes this distinction with responsibility to ensure that its actions protect both cultural and natural resources on all projects.

In addition, DPR is also the project proponent. Because of its unique role as Lead Agency, Trustee Agency, as well as the project proponent, DPR's resources professionals take a prominent and influential role during the project conceptualization, design, and planning process consistent with Section 15004(b)(1) of CEQA. Their early involvement during the planning process enables environmental considerations to influence project programming and design. This approach permits DPR under CEQA Section 15065(b)(1) to incorporate project modifications prior to the start of the public review process of the environmental document, to avoid impacts to a point where clearly no significant effect on the environment would occur.

As part of its effort to avoid impacts, DPR also maintains a list of standard and specific project requirements that are included in project design to reduce impacts to resources. From this list, standard project requirements are assigned, as appropriate to all projects. For example, projects that include ground-disturbing activities, such as trenching would always include standard project requirements addressing the inadvertent discovery of archaeological artifacts. However, for a project that replaces a roof on an historic structure, ground disturbance would not be necessary; therefore, standard project requirements for ground disturbance would not be applicable and DPR would not assign it to the project.

DPR develops specific project requirements to address project impacts for projects that have unique issues but do not typically standardize these for projects statewide. As part of the Initial Study review process, DPR has identified the following standard and specific project requirements that apply to the proposed program to avoid or minimize project related impacts:

## PROJECT REQUIREMENTS:

## *AESTHETICS*

**STANDARD PROJECT REQUIREMENT AES-1: SCENIC VIEWS**

- Do not alter viewscapes to expose structures or undesirable views along scenic highways or scenic viewing locations.
- Avoid extensive tree scorching by conducting all prescribed burning operations under

appropriate fire prescription(s).
- Rake debris away from the base of target old growth trees to reduce scorching.
- Whenever feasible, complete all pile burning within three years of initial treatment. Prioritize piles in the Wildland Urban Interface.

## *AIR QUALITY*

**STANDARD PROJECT REQUIREMENT AIR-1: EMISSIONS OF FUGITIVE DUST AND OZONE**

- Water all construction areas (dirt/gravel roads and surrounding dirt/gravel area) at least twice daily during dry, dusty conditions when large machinery is in use.
- Cover all trucks hauling soil or other loose materials on public roads. Alternatively, require all trucks to maintain at least two feet of freeboard.
- Maintain all construction-related equipment engines in good condition, in proper tune (according to manufacturer's specifications), and in compliance with all state and federal requirements.
- Suspend potential dust producing actions if sustained winds exceed 25 mph, instantaneous gusts exceed 35 mph, or dust from construction might obscure driver visibility on public roads.
- Promptly remove earth or other material that has been transported onto paved roadways by trucks, construction equipment, erosion, or other project-related activity.

**STANDARD PROJECT REQUIREMENT AIR-2: REGULATIONS COMPLIANCE**

- DPR will prepare a smoke management plan (SMP) that includes identifying smoke sensitive areas (i.e., residences, schools, etc. in the project vicinity) and submit it to the appropriate air quality regulator, the Northern Sierra Air Quality Management District (NSAQMD), for approval. The SMP and the air quality regulator will limit the timing, location, amount, and extent of burning at any one time to minimize possible adverse effects to sensitive receptors.
- DPR will inform and cooperate with local fire districts, the United States Forest Service Tahoe National Forest, CalFire, the Bureau of Land Management, and other parties to coordinate burning activities, including providing a copy of the burn plan.
- DPR will inform the public of upcoming prescribed burning operations.
- Comply with air quality regulations for all burning activities.
- Conduct pile burning over a period of time and under environmental conditions that will limit impacts on the public.

**SPECIFIC PROJECT REQUIREMENT AIR-3: PILE BURNING**

- Conduct pile burning in project areas that are outside of riparian habitat and other sensitive natural resource areas.
- Where feasible, chip and remove tree slash and debris.
- Cure (left to dry) piles at least six weeks prior to burning to reduce the amount of smoke emissions.

## *BIOLOGICAL RESOURCES*

**STANDARD PROJECT REQUIREMENT BIO-1: BIOLOGICAL MONITORING**

- Prior to use, a DPR-approved biologist will review and approve all locations used for staging/storage of vehicles, equipment, and/or materials used during the project. Preferred locations include existing roads and adjacent turnouts to avoid post project restoration.
- A DPR-approved natural resources specialist will implement biological monitoring at their discretion throughout the project site.

**SPECIFIC PROJECT REQUIREMENT BIO-2: MAMMALS**

- Retain habitat complexity to the greatest extent possible while achieving project goals and maintaining safe conditions.
- When shrub removal is conducted, use selective treatment techniques that retain nut and berry producing plants such as huckleberry oak (*Quercus vaccinifolia*) and the unique resprouting Indian manzanita (*Arctostaphylos mewukka*).
- In areas not treated following Defensible Fuel Profile Zone (DFPZ) or Shaded Fuel Break prescription:
    1. Achieve snag retention target of 5 to 8 per acre (>14 inch DBH and >20 feet in height) where safe and feasible; retention will favor the largest snags and those with evidence of wildlife use.
    2. Retain downed wood greater than 14 inches in diameter where feasible with a minimum target of 15 tons/acre. These logs will be left intact, with all limbs and root wads protruding to provide habitat complexity for wildlife such as black bear and ringtail.
    3. Maintain a landscape mosaic, including islands of untreated vegetation.
    4. Do not plan late winter or spring burning in plots providing high-quality mammal habitat, as determined by a DPR-approved biologist.

**SPECIFIC PROJECT REQUIREMENT BIO-3: MICROHABITAT PROTECTION (REPRODUCTION, DENNING, ROOSTING, HIBERNATION)**

- Retain large trees, snags, and downed woody material to the greatest extent possible while still achieving project goals and maintaining safe conditions.
- Do not remove large trees or snags (> 30 inch DBH) unless they are deemed a threat to life, property, or safe prescribed burning operations by a DPR-approved arborist, forester, or biologist.
- Only remove large trees and snags (>30 inch DBH) during the breeding season after surveyed and approved by DPR-approved biologist.
- Achieve snag retention target of 5 to 8 per acre (>14 inch DBH and >20 feet in height) where safe and feasible; retention shall favor the largest snags and those with evidence of wildlife use.
- In treatment areas outside of the Public Safety and Historic Core Protection Zone, retain large, downed woody debris in coordination with recommendations of a DPR-approved biologist.
- Do not actively ignite suitable den sites in the interior of prescribed burn plots.

**STANDARD PROJECT REQUIREMENT BIO-4: CALIFORNIA SPOTTED OWL AND NORTHERN GOSHAWK**

- Exclude perennial wet meadows, pond habitat, and select riparian areas along Humbug Creek (i.e., known California spotted owl and northern goshawk core nest areas) from

treatment(s).

- A DPR-approved biologist will conduct protocol level surveys prior to project activities within suitable habitat for California spotted owl or northern goshawk to ensure no reproductively active California spotted owls or northern goshawks are present.
- If an active nest is detected, no project activities will occur within 0.25 miles of a California spotted owl nest or within the best 500 acres of northern goshawk habitat during the limited operating period (February 15 to August 15), or until the young fledge, as determined by a DPR-approved biologist. If a DPR-approved biologist determines a nest has failed, project work may commence in the vicinity prior to August 15.
- No forest thinning activities will take place within 500 feet of a known California spotted owl or northern goshawk nest unless project work is pre-authorized by a DPR-approved biologist and complies with all regulatory rules and regulations (i.e., California Department of Fish and Wildlife; CDFW).
- Low intensity prescribed fire may be implemented within 500 feet of a known nest tree if outside the limited operating period and measures are implemented to avoid impacts to known nest and roost tree(s).
- The snag retention target for areas beyond 500 feet of a known California spotted owl nest but within 0.25 miles of the nest is 5 to 8 snags per acre (>14 inch DBH and >20 feet in height) with a canopy cover managed to at least 50%.
- For areas beyond 500 feet of a known northern goshawk nest but within the best 500 acres, manage forest to promote complexity.

**SPECIFIC PROJECT REQUIREMENT BIO-5: BALD EAGLE AND GOLDEN EAGLE**

- A DPR-approved biologist will conduct surveys within suitable habitat to ensure that no reproductively active bald and/or golden eagles are present prior to project activities.
- If an active nest is detected, no project activities will occur within 0.5 miles of the nest from February 15 to August 15, or until the young fledge, as determined by a DPR-approved biologist. If a DPR-approved biologist determines a nest has failed, project work may commence in the vicinity prior to August 15.

**SPECIFIC PROJECT REQUIREMENT BIO-6: BATS, OTHER NESTING RAPTORS, AND NESTING SONGBIRDS/MIGRATORY BIRDS**

- Retain large trees, snags, and downed woody material to the greatest extent possible while achieving project goals and maintaining safe conditions.
- Do not remove large trees or snags (> 30 inch DBH) unless they are deemed a threat to life, property, or safe prescribed burning operations by a DPR-approved arborist, forester, or biologist.
- Prior to removal, a DPR-approved biologist will survey all large trees and snags (> 30 inch DBH) for cavity dwelling birds and bats. If determined to be actively used for reproduction, roosting, or hibernation, work will be delayed unless the tree poses an imminent hazard to life, property, or safe prescribed burning operations. Do not remove trees during the reproductive season.
- Project activities will not deliberately result in failure of nesting songbirds/migratory birds. A DPR-approved biologist will conduct surveys prior to project activities occurring in spring or summer. Protect all active songbird/migratory bird nests with an

appropriate nest buffer determined at the discretion of a DPR-approved biologist. A DPR-approved biologist will authorize and/or monitor all proposed project activities within nest buffer area(s) to avoid project related nest failure.

- Protect all raptors not specifically addressed in other Project Requirements with a 0.25 mile active nest buffer from April 1 to August 15, or until young fledge, as determined by a DPR-approved biologist. Any proposed project activities within this buffer area must receive prior authorization from a DPR-approved biologist.

**<u>SPECIFIC PROJECT REQUIREMENT BIO-7</u>: CALIFORNIA RED-LEGGED FROG (CRLF), FOOTHILL YELLOW-LEGGED FROG (FYLF), AND WESTERN POND TURTLE (WPT)**

- Exclude perennial wet meadows and pond habitat from treatment(s).
- Exclude Humbug Creek habitat known to be occupied by FYLF and potentially suitable for CRLF and WPT movement from treatment(s).
- A DPR-approved botanist will review and approve any treatment areas outside of road and trail alignments that require heavy equipment operation to ensure avoidance of impacts to sensitive vegetation, including but not limited to, wet meadow and sensitive habitat types.
- Delineate the boundaries of each exclusion zone with temporary, high-visibility flagging to prevent the encroachment of construction personnel and equipment beyond the described project footprint. Only remove the flagging when all construction equipment is removed from the job site, following each construction season.
- To the extent practicable, confine initial ground disturbing activities to between April 15 and October 15 when within one mile of designated CRLF critical habitat or suitable breeding habitat, when the frog should be in aquatic habitat, to avoid the period when CRLF are most likely to be dispersing through upland areas.
- All construction personnel will attend an environmental education program delivered by a DPR-approved biologist with species-specific experience prior to working on the project site. The program will include an explanation of how to best avoid the incidental take of listed species. The field meeting will include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis will be placed on the importance of the habitat and life stage requirements within the context of project maps showing areas where avoidance and minimization measures are to be implemented. The program will include an explanation of applicable Federal and State laws protecting listed species as well as the importance of compliance with DPR and resource agency conditions. Documentation of the training, including the original sign-in sheets, will be sent to the US Fish and Wildlife Service (USFWS).
- The contractor must designate an official point of contact (POC) to be at the Park during program activities in the event that a FYLF, CRLF, or WPT is found. If any of these species are found on-site, all work in that location will be temporarily halted and diverted to another location until a DPR State Representative is contacted and the DPR-approved biologist and USFWS and/or CDFW are consulted for further direction.
- To the extent practicable, all work will occur during daylight hours.
- Construct burn piles in designated project areas outside of riparian habitat and other sensitive natural resource areas.
- Where feasible, tree slash and debris will be chipped and hauled away.
- A DPR-approved biologist will review and accept all locations used for staging/storage

of vehicles, equipment, and/or materials used during the project.
- Design treatment(s) to retain habitat complexity to the greatest extent possible while achieving project goals and maintaining safe conditions.
- Strategically locate management activities on the landscape to ensure that movement corridors and a mosaic of habitat patches for wildlife and plant seeds remain. In the absence of a strategic management plan, there is a risk of creating homogenous stand characteristics across the landscape, which could potentially be a threat to species that require closed canopy, dense vegetation, a variety of foraging and breeding habitats, and cover when moving across the landscape. In addition, many sensitive species occur more frequently in densely forested areas and this habitat type should remain well represented in the landscape of the Sierra Nevada foothills.
- Strategically plan treatments, both spatially and temporally, to avoid any special status species that have potential to be present in the project area.

**STANDARD PROJECT REQUIREMENT BIO-8: SENSITIVE PLANTS**

- Exclude sensitive habitats such as fens and perennial wet meadows from treatment(s).
- Prior to activities in or near habitat which could potentially support sensitive plant species, a DPR-approved botanist will conduct rare and heritage plant surveys during the appropriate time of year.
- Mark all special status, rare, unique, and/or heritage plant species for avoidance.
- Report any new discovery of a sensitive plant species that occurs before or during project implementation to a DPR botanist. If found, these plants will be demarcated and avoided during project work.

**STANDARD PROJECT REQUIREMENT BIO-9: INVASIVE PLANTS**

- To prevent the introduction and spread of invasive plants to uncontaminated areas, all equipment and tools will be cleaned free of plant parts and soil prior to arriving at Malakoff.
- A DPR-approved botanist will survey project areas prior to project work (and during the appropriate season) for the presence of invasive species with potential to spread by project activities.
- Project areas that support weed populations with potential to spread by project activities will be marked for avoidance.
- A DPR-approved biologist will survey all project areas in the first growing season, after project activities are completed, to ensure that no weeds were introduced during project activities.
- Any inadvertent weed introductions or expansions will promptly be treated for removal.
- Post treatment/removal surveys will continue for another growing season if weeds are found and treated during the first growing season.
- Ensure that any imported new fill, such as gravel or soil, is from a certified weed free source where feasible.

**MITIGATION MEASURE BIO-10: WINTER AND/OR SPRING BURNING**

- Most birds in the United States, including nonspecial status native species, are protected by the Migratory Bird Treaty Act of 1918 (MBTA) and the California Fish and Game Code.
- Plan spring burning to only occur in plots that have low shrub nesting value (as determined

by a DPR-approved biologist).
- Conduct pre-project bird surveys no more than seven days prior to any late winter and/or spring burning.
- Protect trees with active nests from burning by raking organic material away from the base of the tree. Protect areas with active ground nests with a fire line.
- Plan spring burning activities to commence prior to June 1 to avoid the peak nesting period. Burning after June 1 will only occur in plots with no active ground or shrub nests.

**MITIGATION MEASURE BIO-11: RIPARIAN HABITAT PROTECTION**

- Forest treatment work in riparian areas will only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of montane hardwood conifer habitat.
- No vehicles or heavy equipment are allowed in riparian areas.
- Exclude perennial wet areas with unusual plants and communities from tree removal, i.e., fens and perennially wet meadows.
- Use hand crews in or adjacent to riparian areas to conduct tree felling and removal.
- Hand crews will conduct work in late summer or fall when riparian soils are driest, and typically the native plant communities have set seed and have begun to senesce. Late summer and fall are also after the sensitive period when wildlife young are mobile and dispersing, and outside of the migratory bird nesting season and bat maternity period.
- Protect special status or other sensitive plant and animal species with pre-project surveys and avoidance.
- Hand crews will not cross streams when manually hauling out trees and associated tree debris.
- Hand crews will directionally fell trees away from streams/creeks as feasible.
- Hand crews will avoid creating permanent trails and take precautions to prevent damage to soil (compaction or erosion) and non-target vegetation in riparian areas.
- Riparian areas will be marked with flagging. Piles of logs and tree debris for prescribed burning will be placed outside of riparian areas and positioned where water-runoff from pile burning will not return directly into the riparian area or waterway.
- Tree marking prescription will allow for some areas of high-density trees as places of refuge and other habitat in riparian corridors and along meadows. The prescription will avoid removing trees that provide shade or cover of aquatic habitats in order to maintain cooler water temperatures.
- Use a tracked chipper to chip material on site as opposed to dragging it through sensitive habitat.

**MITIGATION MEASURE BIO-12: HEAVY EQUIPMENT**

- No vehicles or heavy equipment are allowed in riparian areas.
- A DPR-approved botanist will review and approve all treatment areas outside of road and trail alignments that require heavy equipment operation to ensure avoidance of impacts to sensitive vegetation, including but not limited to, wet meadow and sensitive habitat types.
- A DPR-approved biologist will review and accept all locations used for staging/storage of vehicles, equipment, and/or materials used during the project.
- Full suspension cable yarding or end line yarding in or adjacent to riparian areas may be used to conduct tree felling and removal. These are treatment techniques that can

be safely implemented to protect areas with sensitive resources or habitats, such as riparian areas.

## *CULTURAL RESOURCES*

**STANDARD PROJECT REQUIREMENT CULT-1: PRE-START MEETINGS**

- Prior to beginning project work, the DPR cultural resource specialist, project manager, and hand crew leader(s) and/or burn specialists will meet on the project site to discuss project implementation and conditions in place to protect cultural resources. Meetings will include locations of all cultural resources exclusion zones.

**STANDARD PROJECT REQUIREMENT CULT-2: PROTECTED AREAS**

- All cultural resources are assumed eligible for the National Register and will be protected and avoided when possible throughout the duration of the project. If a cultural resource cannot be avoided, surveying and testing of program treatment areas will occur at the discretion of the DPR-approved cultural resources specialist, who will determine appropriate mitigation measures to reduce potential adverse impacts to the resource.
- The project manager will notify the DPR cultural resource specialist a minimum of three weeks prior to the start of project actions.
- A DPR-approved cultural resources specialist will survey and flag cultural resources/areas for exclusion no more than 30 days prior to commencement of project activities. Designated flagging color will demarcate areas of avoidance. If project delays occur which exceed the 30-day limit to commencement of project activities, a DPR-approved cultural resource specialist and/or DPR registered professional forester will check flagging to assure that it is still visible prior to project activities. Flagging will be removed after the project is completed.

**STANDARD PROJECT REQUIREMENT CULT-3: ARCHAEOLOGICAL DISCOVERY**

- In the event of an unanticipated discovery of previously undocumented cultural resources during project activities (shell, burned animal bone or rock, concentrations of bottle glass or ceramics, etc.), work will be suspended in the area until a DPR cultural resource specialist has assessed the find and has developed and implemented appropriate avoidance, preservation, or recovery measures. If avoidance is required and feasible, the project manager will modify, at the discretion of the DPR cultural resource specialist, project actions to avoid cultural resources.

**SPECIFIC PROJECT REQUIREMENT CULT-4: ARCHAEOLOGICAL MONITOR**

- A DPR-approved archaeologist will monitor all project activity located in sensitive cultural areas to ensure protection and avoidance. In Tribal sensitive areas, a Native American monitor may also be required.
- Archaeological and Tribal monitoring throughout the project site will be implemented at the discretion of a DPR-approved cultural resources specialist. The archaeologist and/or Tribal monitor will have the authority to stop construction work in the area of a find and evaluate it and implement appropriate treatment measures to avoid potential significant impacts to

historical resources per PRC 15064.5.

**SPECIFIC PROJECT REQUIREMENT CULT-5: VEHICLES, HEAVY EQUIPMENT, STAGING, AND STORAGE AREAS**

- Vehicles or heavy equipment are not allowed within cultural resources exclusion zones.
- A DPR cultural resource specialist will review all locations used for staging/storage of vehicles, equipment, and/or materials used during the project.
- No staging or storage will be allowed within cultural resources exclusion zones.

**SPECIFIC PROJECT REQUIREMENT CULT-6: HAND CLEARING**

- Use hand crews and hand-thinning methods (no machines or heavy equipment) for all vegetation removal in areas within and adjacent to recorded archaeological sites, historic buildings, and cultural resource features. Manual removal will take place first in areas of identified resources and work outward to fully identify and protect any newly documented and/or extended resources. Heavy machinery will not be used in these areas. See Appendix F.
- A DPR cultural resource specialist will determine the extent of the hand clearing only zone prior to project implementation.

**SPECIFIC PROJECT REQUIREMENT CULT-7: DEBRIS PILES**

- Locate all debris piles outside of delineated cultural resource exclusion zones or linear feature boundaries. Pile burning within these culturally sensitive areas is prohibited unless otherwise approved by the DPR-approved cultural resource specialist.

**STANDARD PROJECT REQUIREMENT CULT-8: HUMAN REMAINS DISCOVERY**

- In the event that human remains are discovered during project activity, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place. Existing law requires that project managers contact the County Coroner. If the County Coroner determines the remains are of Native American origin, both the Native American Heritage Commission (NAHC) and any identified descendants shall be notified (Health and Safety Code Section §7050.5, Public Resources Code Section §5097.97, and §5097.98 California Native American Graves Protection and Repatriation Act). DPR staff will work closely with the United States Bureau of Reclamation to ensure that its response to such a discovery is also Compliant with federal requirements including the Native American Graves Protection and Repatriation Act.
- Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination. If it is determined the find indicates a sacred or religious site, the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Office and review by the NAHC/Tribal Cultural representatives will occur as necessary to define additional avoidance, preservation, or recovery measures, or further future restrictions.

## *GEOLOGY*

**SPECIFIC PROJECT REQUIREMENT GEO-1: REMEDIATION OF DISTURBED AREAS**

- Rehabilitate all roads, fire line, or other disturbed areas to pre-project conditions or better to restore natural topography and drainage patterns, as directed by a DPR-approved biologist or geologist.
- Remediation may include one or more of the following:
  1) Topsoil and mulch removal and/or replacement for landings and main heavy equipment routes of travel.
  2) Mulch application to a surface cover depth of approximately two inches in areas where bare soil resulted from project activities.
  3) Soil loosening for landings and routes of travel with more than four equipment trips. Use ripping tines attached to a backhoe or similar equipment to increase infiltration.
  4) Redistribute soil and/or mulch to eliminate tracks, ruts, or compressions.
  5) Additional measures as determined by a DPR-approved geologist or natural resource specialist.

## *HAZARDS AND HAZARDOUS MATERIALS*

**STANDARD PROJECT REQUIREMENT HAZMAT-1: SPILL PREVENTION AND REPSONSE**

- Clean all equipment prior to the start of construction and before entering project areas. During the project, clean and repair all equipment (other than emergency repairs) outside of project boundaries. Contain and dispose of all contaminated spill residue, or other hazardous compounds, outside the boundaries of the project at a lawfully permitted or authorized destination.
- Inspect all equipment for leaks prior to the start of construction and regularly inspect thereafter until removed from project areas.
- Prepare a Spill Prevention and Response Plan (SPRP) prior to the start of construction and provide protection to on-site workers, the public, and the environment from accidental leaks or spills of vehicle fluids or other potential contaminants. This plan will include but not be limited to the following:
  - A map that delineates construction staging areas, and where refueling, lubrication, and maintenance of equipment will occur.
  - A list of items required in an on-site spill kit that will be maintained throughout the life of the project.
  - Procedures for the proper storage, use, and disposal of any solvents or other chemicals used during the project.
  - Identification of lawfully permitted or authorized disposal destinations.

**STANDARD PROJECT REQUIREMENT HAZMAT-2: WILDFIRE AVOIDANCE AND RESPONSE**

- Develop a Fire Safety Plan prior to the start of construction.
- Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers are required for all heavy equipment.
- Construction crews are required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, park all heavy equipment over mineral soil, asphalt, or concrete to reduce the chance of fire.

## *HYDROLOGY AND WATER QUALITY*

**STANDARD PROJECT REQUIREMENT HYDRO-1: EROSION AND SEDIMENT CONTROL**

- Implement Best Management Practices (BMPs) in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during any ground disturbing activities as approved by the Regional Water Quality Control Board.
- The DPR Contractor will install long-term erosion control measures for any areas where ground disturbing activities result in bare soil areas. Attain the appropriate soil density required to reduce erosion and optimize revegetation of the appropriate native grass seed, sterile grass seed, and/or duff as approved by a DPR-approved biologist.

## *NOISE*

**STANDARD PROJECT REQUIREMENT NOISE-1: NOISE EXPOSURE**

- Limit project related activities to the daylight hours, Monday through Friday. However, weekend work will be implemented to accelerate construction or address emergency or unforeseen circumstances. If weekend work is necessary, no work will occur before 8:00 a.m. or after 6:00 p.m., except as necessary with prescribed fire operations.
- Equip all internal combustion engines with the muffler recommended by the manufacturer. Equipment and trucks used for project related activities will utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever feasible and necessary.
- Locate stationary noise sources and staging areas as far from visitors as possible. If they must be located near visitors, muffle stationary noise sources to the greatest extent feasible, and/or where practicable, enclose within temporary sheds.

### 2.7 PROJECT IMPLEMENTATION

Manual and mechanical thinning, mastication, and pile construction for the Prescribed Fire and Forest Management Program are projected to begin in the fall of 2022. The prescribed understory burns and pile burning will be conducted when weather, fuels, air quality, and other conditions are appropriate to implement the burning. All appropriate permitting will be completed before any program activities are conducted. Air Pollution Permits will be obtained from the Northern Sierra Air Quality Management District (NSAQMD), and any Waiver of Waste Discharge permits will be obtained from the Central Valley Regional Water Quality Control Board (CVRWQCB).

Work will occur during daylight, weekday hours. However, weekend work may be implemented to accelerate work, especially for winterization needs or to meet management objectives during a limited window of prescription for burning. Prescribed fire may require 24-hour staffing.

DPR will use crews with hand tools and mechanical equipment such as masticator, forwarder, harvester, backhoe, and dump truck, and other rubber-tired/tracked vehicles for hauling and

lifting materials. Vehicles used to transport crews, materials, and equipment will also be present intermittently. A DPR-approved cultural and/or natural resource specialist will authorize all vehicle, equipment, and materials staging/storage areas and limit staging locations to previously disturbed ground, paved parking areas, and other previously impacted areas.

DPR will incorporate BMPs into the project design to ensure that natural and cultural resources in and around program treatment areas are adequately protected during and after forest management activities. DPR will use temporary BMPs to keep sediment on-site throughout the duration of the project. DPR will regularly check, maintain, and modify BMPs as needed. If deemed necessary by the DPR-approved natural or cultural resource specialist, DPR will install permanent BMPs to stabilize project areas and minimize erosion after the project is complete.

All forest treatments conducted in the Wildland Urban Interface will follow prescriptions outlined in Appendix D. Other forest treatment activities will be preparatory work in support of implementation of prescribed fire and would follow prescriptions outlined in Appendix E. Finally, forest treatment work in the Public Safety and Historic Core Protection Zone will follow prescriptions outlined in Appendix F.

## 2.8 VISITATION TO MALAKOFF DIGGINS STATE HISTORIC PARK

There were approximately 3,815 paid day-use visitors counted during 2021. The majority of visitation to Malakoff is unpaid. Paid visitation is relatively consistent throughout the spring and summer months, with high visitation dates associated with special events, such as Humbug Days, when the visitor count has been documented to increase to approximately 500 people per day. There are four to five special event days per year. However, the Park receives very few visitors from November through February.

The work proposed as part of this program is designed to address fuel hazards that could contribute to wildland fires in the Park and surrounding communities. Program activities will have no measurable impact on annual park visitation; however, limited facility closures could reduce some of the daily overnight and day use numbers.

## 2.9 CONSISTENCY WITH LOCAL PLANS AND POLICIES

The proposed forest management program is consistent with the DPR mission and its management directives aimed at preserving the state's extraordinary biological diversity and protecting valued natural and cultural resources. The proposed forest management program directly supports Governor Newsom's 2021 California Wildfire and Forest Resilience Action Plan which calls for increased use of prescribed fire to restore ecosystem function for long-term forest health and resilience. The proposed program is consistent with local plans and policies currently in effect and is being coordinated with other agencies. Please see Chapter 3, Section X, Land Use and Planning, for further details.

## 2.10 DISCRETIONARY APPROVALS

DPR retains approval authority for the proposed Prescribed Fire and Forest Management Program on lands it manages. The program also requires approval from

the following government agencies:

- Conditional Waiver for Timber Harvest Activities on Non-Federal Lands with consultations with Central Valley Water Quality Control Board.
- Smoke Management Plan approval from Northern Sierra Air Quality Management District (NSAQMD).

Additional internal document reviews include compliance with Public Resources Code § 5024; Cultural Resources. DPR will acquire all necessary reviews and permits prior to implementing any project components requiring regulatory review.

## 2.11 RELATED PROJECTS

DPR conducts a maintenance program for routine maintenance activities that are minor in scope and not cumulatively considerable. These activities include minor restoration to existing facilities and installation of interpretive projects planned for the park unit. Any projects proposed in areas that have not been previously discussed will be evaluated under a separate CEQA document. Other proposed projects that may occur include: (1) Initial Study/Mitigated Negative Declaration Malakoff Pit Drainage Runoff Sediment Control Best Management Practices Plan and (2) the South Yuba Rim Fuel Break Project. Please see Chapter 4, Cumulative Effects Analysis, for further details on the projects.

# CHAPTER 3
# ENVIRONMENTAL CHECKLIST

## PROJECT INFORMATION

| | | |
|---|---|---|
| 1. | Project Title: | Prescribed Fire and Forest Management Program |
| 2. | Lead Agency Name & Address: | California Department of Parks and Recreation<br>Sierra District<br>PO Box 266<br>Tahoma, CA 96142 |
| 3. | Contact Person & Phone Number: | Rich Adams (530) 525-7232 |
| 4. | Project Location: | Malakoff Diggins State Historic Park |
| 5. | Project Sponsor Name & Address: | California Department of Parks and Recreation<br>Sierra District<br>PO Box 266<br>Tahoma, CA 96142 |
| 6. | General Plan Designation: | no General Plan |
| 7. | Zoning: | Open Space (Nevada County Land Use Code, Chapter II – Zoning Regulations; 2/28/22) |

8. Description of Project:

In 2021, DPR received funding from the California Wildfire and Forest Resilience Package in the 2022/2023 state budget to develop a strategic and programmatic Prescribed Fire and Forest Management Program at Malakoff Diggins State Historic Park (Malakoff). The proposed forest management effort at Malakoff will treat approximately 1,866 acres of high-risk parkland including a Public Safety and Historic Core Protection Zone and use prescribed fire to conduct understory burning in new and historic burn plots. The entirety of Malakoff lies within a historic district with significant cultural resources dating back to before California's gold rush era. These actions will not only protect irreplaceable historic and prehistoric resources and park staff but will also reduce the wildfire hazards along the San Juan Ridge and populated areas of western Nevada County. The proposed forest management program directly supports Governor Newsom's 2021 California Wildfire and Forest Resilience Action Plan which calls for increased use of prescribed fire to restore ecosystem function for long-term forest health and resilience. This stewardship effort also supports the mission of California State Parks to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

| | | |
|---|---|---|
| 9. | Surrounding Land Uses & Setting: | Refer to Chapter 3 of this document (Section IX, Land Use Planning) |
| 10. | Approval Required from Other Public Agencies | Refer to Chapter 2, Section 2.9 |

## 1. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact", as indicated by the checklist on the following pages.

| | | |
|---|---|---|
| ☐ Aesthetics | ☐ Agricultural & Forest Resources | ☐ Air Quality |
| ☐ Biological Resources | ☐ Cultural Resource | ☐ Energy |
| ☐ Geology and Soils | ☐ Greenhouse Gas Emissions | ☐ Hazards & Hazardous Materials |
| ☐ Hydrology/Water Quality | ☐ Land Use/Planning | ☐ Mineral Resources |
| ☐ Noise | ☐ Population & Housing | ☐ Public Services |
| ☐ Recreation | ☐ Transportation | ☐ Tribal Cultural Resources |
| ☐ Utilities/Service Systems | ☐ Wildfire | |
| ☐ Mandatory Findings of Significance | | ☒ None |

## DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT** have a significant effect on the environment and a **NEGATIVE DECLARATION** will be prepared. ☐

I find that, although the original scope of the proposed project **COULD** have had a significant effect on the environment, there **WILL NOT** be a significant effect because revisions/mitigations to the project have been made by or agreed to by the applicant. A **MITIGATED NEGATIVE DECLARATION** will be prepared. ☒

I find that the proposed project **MAY** have a significant effect on the environment and an **ENVIRONMENTAL IMPACT REPORT** or its functional equivalent will be prepared. ☐

I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated impact" on the environment. However, at least one impact has been adequately analyzed in an earlier document, pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis, as described in the report's attachments. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the impacts not sufficiently addressed in previous documents. ☐

I find that, although the proposed project could have had a significant effect on the environment, because all potentially significant effects have been adequately analyzed in an earlier EIR or Negative Declaration, pursuant to applicable standards, and have been avoided or mitigated, pursuant to an earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, all impacts have been avoided or mitigated to a less-than-significant level and no further action is required. ☐

DocuSigned by:
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12/1/2022

Date

Environmental Coordinator

# ENVIRONMENTAL CHECKLIST

## I. AESTHETICS

### ENVIRONMENTAL SETTING

Malakoff is located 26 miles northeast of Nevada City, nestled in the western foothills of the Sierra Nevada. Malakoff is home to one of largest historic mine sites from California's 19th century gold rush era. Hydraulic gold mining in the 1860s drastically altered the landscape, resulting in the first environmental law enacted in the nation. Known as the Sawyer Decision, this 1884 injunction imposed strict regulations on discharging debris into rivers in the Sierra Nevada and resulted in the end of California's hydraulic mining era. Along with the historic town of North Bloomfield, the Diggins mine pit is one of the main attractions of the park today. This Gold Country location contains over 3,000 dramatic acres of impressive, multicolored cliffs, carved by water cannons used in hydraulic mining; dense pine and oak forests; manzanita groves; streams; ponds; and a 7,847-foot bedrock tunnel. The Diggins mine pit stretches nearly 7,000 feet long, 3,000 feet wide, and, in some areas, almost 600 feet deep. Ranging in elevation from 2,500 to 4,500 feet, the Park terrain varies from meadows to tree- and chaparral-covered slopes and deep canyons. Abundant wildlife can be observed throughout the Park. Nearly all of the annual precipitation occurs between November 1st and April 30th in the form of rain and snow. Summer temperatures range from the mid-80s during the day to the 50s at night. Spring wildflower displays and brilliant fall foliage from scarlet hardwood stands provide colorful seasonal backdrops throughout the Park.

The Park was created in 1965 in order to preserve California's gold mining history. Today Malakoff is often characterized as a place of peace, quiet, and solitude, an ironically drastic shift from the destruction and devastation that created it (DPR 2015). Geologic processes continue to actively reshape the landscape through erosion and weathering. Nature is slowly reclaiming its damaged land through second growth pines, plentiful shrubs, and the unique wetland of the Diggins pond and marsh. The Diggins pit's natural recovery has changed its aesthetic, creating new viewpoints and vistas while obscuring others.

There are three designated scenic vista points for viewing the Diggins hydraulic mining pit. Two of the proposed prescribed understory burn plots (Backbone and Chute Hill) are located uphill from the Diggins pit and are visible from all three scenic vista point locations. Proposed areas for forest treatments encompass the Public Safety and Historic Core Protection Zone, which includes access roads, park infrastructure, and multiple historic buildings. Program treatment areas located along portions of Backbone, North Bloomfield, and Derbec Roads will be visible for those traveling these roadways. North Bloomfield Road is a primary access route for Park visitors but is not a designated scenic road or highway.

| **Except as provided in Public Resources Code Section 21099, would the project**: | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☒ | ☐ |
| b) Substantially damage scenic resources, | ☐ | ☐ | ☒ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| | including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | | | | |
| c) | In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? | ☐ | ☐ | ☒ | ☐ |
| d) | Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | ☐ | ☐ | ☒ | ☐ |

**DISCUSSION**

a) As described in the Environmental Setting, there are three scenic viewing areas that overlook the Park's focal point - the Diggins hydraulic mining pit (pit). Two of the prescribed burn units are located above the rim of the pit and both the pre-treatment clearing activities and understory burning will be visible from all three scenic viewpoints. The views from these scenic vistas and in other viewing areas of the Park have become obscured by dense vegetation that has regrown over time. Proposed forest treatment activities may improve viewing opportunities of the historic mine pit through removal of trees and understory burning. Proposed treatments will temporarily change the close-range scenery in some locations; however, fire is a natural component of the Sierran mixed-conifer forest ecosystem and forested stands in the proposed treatment areas will be managed as a more mature and open system, typical of historic forest conditions in the Sierra Nevada. Because program activities will reduce surface fuel loads and not remove or replace forested areas with some other landscape type, views into the treatment areas from distant viewpoints and/or scenic vistas will remain as forested coniferous and deciduous slopes and canyons surrounding a historic mine pit. Although smoke from understory burning may be visible for some distance, it should not be dense enough to interfere with overall visibility of the viewshed. Previous prescribed burns and wildfires have demonstrated that smoke disperses adequately in the area. Additionally, most work will occur in the off-season when there are fewer visitors to the park. Although program activities may result in some short-term limited changes to close-range viewing locations, these impacts would be temporary and typical of natural forested landscapes and the additional implementation of **STANDARD PROJECT REQUIREMENT AES-1** (Chapter 2) will ensure that any impacts remain less than significant.

b) As discussed in (a) above, there is no designated scenic road or highway within the Park. Program activities may result in temporary changes to close-range scenery, but these changes are typical of expected natural views in Sierran mixed-conifer forests, and scenic resources will remain as forested coniferous and deciduous slopes and canyons. With implementation of **STANDARD PROJECT REQUIREMENT AES-1** (Chapter 2), these impacts will be less than significant.

c) Program treatment areas are characterized by dense stands of evergreen and deciduous trees. Current conditions include large amounts of downed woody debris, standing dead snags, windthrow, and other ground litter. Program actions may increase visibility into forested stands

but will not alter the existing visual character or quality of the sites or surroundings. Densely forested lands will become more open in select locations, but the overstocking is so advanced in these areas that forest treatments will not alter the visual character. The areas proposed for treatment will be managed as late successional mixed-conifer and hardwood forest stands dominated by large trees. With implementation of **STANDARD PROJECT REQUIREMENT AES-1** (Chapter 2), impacts to the visual character or quality of the site will be less than significant.

d) Lighting is not a planned element of this program. It is expected that all work will be conducted during daylight hours, eliminating the need for work lights. However, unavoidable delays or emergency situations could require minimal use of exterior work lights on a limited basis. Glare shields would be used on all light sources and work areas will be confined to a maximum of a few hundred feet at any one time, except during emergency fire response activities. No permanent new light sources will be introduced into the landscape. Less than significant impact.

**STANDARD PROJECT REQUIREMENT:**

**STANDARD PROJECT REQUIREMENT AES-1: SCENIC VIEWS**

- Do not alter viewscapes to expose structures or undesirable views along scenic highways or scenic viewing locations.
- Avoid extensive tree scorching by conducting all prescribed burning operations under appropriate fire prescription(s).
- Rake debris away from the base of target old growth trees to reduce scorching.
- Whenever feasible, complete all pile burning within three years of initial treatment. Prioritize piles in the Wildland Urban Interface.

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

## II. AGRICULTURAL AND FOREST RESOURCES

### ENVIRONMENTAL SETTING

The proposed forest management program is within the boundary of Malakoff and contains no lands zoned for agriculture or in agricultural use. Private land adjacent to the Park boundary, near Lake City, is used for agricultural purposes. However, none of the land within Malakoff or the area impacted by the proposed programmatic Prescribed Fire and Forest Management Program is included in any of the Important Farmland categories, as delineated by the California Department of Conservation, under the Farmland Mapping and Monitoring Program (FMMP).

In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forestland, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

| **Would the project:** | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Convert Prime Farmland, Unique Farmland, or farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☐ | ☒ |
| b) Conflict with existing zoning for agricultural use or a Williamson Act contract? | ☐ | ☐ | ☐ | ☒ |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC section 12220(g)), timberland (as defined in PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | ☐ | ☐ | ☐ | ☒ |
| d) Result in the loss of forestland or conversion of forestland to non-forest use? | ☐ | ☐ | ☐ | ☒ |
| e) Involve other changes in the existing environmental, which, due to their location or nature could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use? | ☐ | ☐ | ☐ | ☒ |

### DISCUSSION

a-e) Land within the boundaries of Malakoff, including the proposed treatment areas, does not support any agricultural operations. All work proposed as part of this program will be confined within Park boundaries. No land adjoining the park, zoned as agricultural land or used for agricultural purposes, as defined by the United States Department of Agriculture land inventory and monitoring criteria (modified for California) or included as agricultural lands under the Nevada County GP/Land Use Code - Zoning Regulations, will be impacted by this program. Therefore, this program will have no effect on any category of California Farmland, conflict with any existing zoning for agricultural use or Williamson Act contract or result in the conversion of farmland to nonagricultural use. No impact.

**STANDARD PROJECT REQUIREMENT: NONE**

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

# III. AIR QUALITY

## ENVIRONMENTAL SETTING

Malakoff is located in the western foothills of the Sierra Nevada in Nevada County approximately 26 miles northeast of Nevada City. The Park encompasses 3,200 acres and ranges in elevation from 2,500 to 4,500 feet. Local sources of air pollutants that threaten air quality in the region consist of suspended particulate matter from woodstoves and fireplaces, residential open burning, dust emissions from construction and earth-moving equipment, forestry management burns, transport from agricultural burns, vehicle traffic, and windblown dust (NSAQMD 2016). Windblown smoke from wildland fires outside of the region also threaten local air quality.

### Climate

Nevada County has a Mediterranean climate with warm, dry summers, and cool, wet winters. Gradual slopes and steep river canyons comprise the western portion of the county. The prevailing wind direction is westerly, and daytime winds blow air from the Sacramento Valley up the slopes of the Sierra Nevada. During the evening, winds generally blow down-canyon. Winds tend to be stronger in the spring and summer. During periods of clear skies and calm winds, ground-based inversion layers form in the mountain valleys. Due to the presence of stable air, pollutants become trapped near the ground and do not readily disperse. These conditions result in in periods of the highest air pollution (Nevada County General Plan 1995).

### Air Quality Designations

Malakoff is within the Mountain Counties Air Basin (MCAB), the Northern Sierra Air Quality Management District (NSAQMD), and United States Environmental Protection Agency (USEPA) Region IX. The proposed forest management program is under jurisdiction of the NSAQMD, which regulates air quality according to the standards established in the Clean Air Acts and amendments to those acts. The NSAQMD comprises three contiguous, mountainous, rural counties in northeastern California (Nevada, Sierra, and Plumas counties) and regulates air quality through its permitting authority and through air quality related planning and review activities over most types of stationary emission sources. The clean air strategy of the NSAQMD includes the following:

- Developing and implementing air quality plans that identify the source, the amount of air pollution, and ways to control it.
- Developing and enforcing rules and regulations that reduce air pollution and protect public health.
- Operating air monitoring equipment to measure and record air pollution levels.
- Evaluating new project proposals that involve installing, altering, or operating equipment that either causes air pollution or is used to control it, issuing permits, conducting compliance inspections, issuing violation notices.
- Implementing transportation control measures to reduce the number of cars on the road and that promote the use of cleaner fuels and vehicles.

The USEPA is responsible for setting National Ambient Air Quality Standards (NAAQS) and established national area designations for six criteria pollutants after the passage of the Clean Air Act of 1970 (USEPA 2008). These pollutants include carbon monoxide (CO), ozone (O3), nitrogen dioxide (NO2), sulfur dioxide (SO2), lead (Pb), particulate matter 10 microns or less in diameter (PM10), and particulate matter 2.5 microns or less in diameter (PM2.5). If an area does not meet (or that contributes

to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant, it is designated as "nonattainment." If an area meets the national primary or secondary ambient air quality standard for the pollutant, it is designated in "attainment." An area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant is designated "unclassified" (USEPA 2008).

The California Air Resources Board (CARB) is the lead state agency responsible setting California Ambient Air Quality Standards (CAAQS) and for assisting local air districts in California. CARB has set California area designations for ten criteria pollutants including ozone, PM10, PM2.5, CO, NO2, SO2, sulfates, Pb, hydrogen sulfide, and visibility reducing particles (VRPs). If a pollutant concentration is lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified" (CARB 2010).

**Nevada County Air Quality**

According to the NSAQMD, most areas within the District enjoy good air quality, with Nevada County designated as attainment or unclassified/attainment for the majority of national (NAAQS) and state (CAAQS) pollutants (Table III-1). However, Nevada County is designated as nonattainment for ozone and PM10 under state standards (CAAQS) and nonattainment for ozone under national standards (NAAQS) (CARB 2015; NSAQMD 2016).

Ozone is a secondary pollutant and is the result of nitrogen and reactive organic gasses reacting with sunlight. Roughly half of the state's ozone is generated by mobile sources that include cars, aircraft, trains, boats, and construction equipment. Ozone is easily transported by wind, and the majority of ozone present in Nevada County is carried in from the broader Sacramento Area and the San Francisco Bay Area (NSAQMD 2016). Ozone is highest in late spring and early fall and has consistently exceeded state and national standards in western Nevada County.

**Table III-1: Air Quality Standards – 2020 Nevada County Air Quality Designations**

| Pollutant | State Designation | National Designation |
|---|---|---|
| Ozone | Nonattainment | Nonattainment |
| PM10 | Nonattainment | Unclassified |
| PM2.5 | Unclassified | Unclassified/Attainment |
| Carbon Monoxide | Unclassified | Unclassified/Attainment |
| Nitrogen Dioxide | Attainment | Unclassified/Attainment |
| Sulfur Dioxide | Attainment | Unclassified/Attainment |
| Sulfates | Attainment | Not Applicable (NA) |
| Lead | Attainment | Unclassified/Attainment |
| Hydrogen Sulfide | Unclassified | NA |
| Visibility Reducing Particles | Unclassified | NA |

(CARB 2020)

**State Implementation Plan**

The NSAQMD prepared a federally enforceable State Implementation Plan (SIP) for western Nevada County in accordance with the Clean Air Act (NSAQMD 2016). The SIP is an air quality attainment

plan which includes various pollution control strategies to reduce emissions of ozone precursors. The SIP anticipates that most reductions in western Nevada County ozone precursors will be the result of motor vehicles becoming cleaner from state regulations. As part of its efforts to attain and maintain CAAQS and NAAQS, the NSAQMD established recommended thresholds of significance for evaluating proposed projects that include a mix of emission level tiers and different levels of mitigation required depending on which tier is exceeded (Table III-2) (NSAQMD 2016). Level A thresholds include emissions of oxides of nitrogen (NOx) and ROG (reactive organic gasses) less than 24 pounds per day (lbs/day) and emissions of PM10 less than 79 lbs/day and require the most basic mitigations (NSAQMD 2016).

**Table III-2: NSAQMD Significance Thresholds**

| Significance Level | Project-Generated Emissions (lbs/day) | | |
|---|---|---|---|
| | **$NO_X$** | **ROG** | **$PM_{10}$** |
| Level A | <24 | <24 | <79 |
| Level B | 24–136 | 24–136 | 79–136 |
| Level C | ≥136 | ≥136 | >136 |

(NSAQMD 2016)

According to the NSAQMD (2016), these thresholds are recommended for use by lead agencies when preparing initial studies. If, during the preparation of the initial study, the lead agency finds that any of these thresholds may be exceeded and cannot be mitigated to Level B, then a determination of significant air quality impact must be made. The NSAQMD rules and regulations applicable to the proposed program include, but are not necessarily limited to, the following:

*Rule 205, Nuisance.* This rule prohibits the discharge of air contaminants or other material from any source which cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or to the public, or which endangers the comfort, repose, health, or safety of any such persons, or the public or which cause to have a natural tendency to cause injury or damage to business or property.

*Rule 226, Dust Control.* This rule requires the submittal of a Dust Control Plan to the NSAQMD for approval prior to any surface disturbance, including clearing of vegetation.

*Rule 300 R, Wildlands Vegetation Management Burning.* Defined as the use of prescribed burning conducted by a public agency, or through a cooperative agreement or contract involving a public agency, to burn land predominately covered with chaparral (as defined in the California Code of Regulations, Title 14, Section 1561.1), trees, grass, or standing brush.

*Rule 307, Wildlands Vegetation Management Burning.* This rule applies to all burning which meets the definition as stated in *Rule 300 R* and the following requirements:

- *Rule 312, Burning Permits*
- *Rule 313, Burn Days*
- *Rule 316, Burn Plan Preparation*
- All open outdoor fires shall be ignited only with approved ignition devices as defined in *Rule 300*
- The Air Pollution Control Officer (APCO) shall regulate total acreage or tonnage that may be burned each day within the District.

- The APCO will regulate burning or require mitigation when the meteorological conditions could otherwise cause smoke to create or contribute to an exceedance of a state or federal ambient air quality standard or cause a public nuisance.
- Vegetation will be in a condition to facilitate combustion and minimize the amount of smoke emitted during combustion.

**Sensitive Receptors**

Sensitive receptors include individuals as well as groups relating to specific land uses. Some individuals are considered to be more "sensitive" than others to air pollutants. The reasons for greater sensitivity than average include health problems, proximity to the emission source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be sensitive receptors to poor air quality because the very young, elderly, and infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive receptors because people in residential areas are often at home for extended periods of time, resulting in potential exposure to pollutants for extended periods. Recreational areas are considered moderately sensitive to poor air quality because vigorous exercise associated with recreation places a high demand on the human respiratory function. Sensitive receptors in proposed program areas include recreational uses (trail-users, park visitors, etc.), park staff and residences, and private residences surrounding the Park. There are no hospitals near Malakoff, and the nearest school, Grizzly Hills School, is in the town of North Columbia, located two to three miles from the Park boundary.

| **Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:** | POTENTIALLY SIGNIFICANT IMPACT | LES S THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☐ | ☒ |
| b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. | ☐ | ☐ | ☒ | ☐ |
| c) Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☒ | ☐ |
| d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people? | ☐ | ☐ | ☒ | ☐ |

**DISCUSSION**

A recent report prepared for the American Lung Association found that prescribed fire is a key fire management strategy that provides ecosystem benefits and can be used to mitigate the negative air quality, health, and safety impacts of largescale wildfires (Hill et al. 2022). Existing research supports

the idea that historical fire suppression policies are insufficient for long-term forest management and that fire suppression has been shown to defer, rather than mitigate, air quality and health burdens associated with smoke (Hill et al. 2022). These suppression strategies result in increased fire intensity and an increase in the number of people exposed in a single smoke event. Prescribed fire can simultaneously reduce fuels to decrease wildland fire risk while supporting ecosystem health and resiliency (Hill et al. 2022).

A 2019 study conducted by Stanford University School of Medicine found that "prescribed burning, because it's so controlled, may expose people to fewer health effects than wildfires." This is because prescribed burns are of lower intensity and are permitted only when weather conditions allow the fire to be contained (Prunicki et al. 2019). Prescribed fires, including understory burning and pile burning, are implemented under planned, predictable circumstances where additional measures are taken to minimize smoke exposure. Prescribed fires are generally conducted when meteorological conditions are favorable, smoke production (fuel consumption) is less, atmospheric conditions support adequate smoke dispersion, and wind patterns allow smoke to move away from populated areas, hospitals, schools, and roadways (Hill et al. 2022). Some evidence suggests that higher particulate matter concentrations coincide with heavier burning activities, indicating that air quality impacts can be reduced by limiting the size and intensity of a prescribed fire event (Hill et al. 2022). The proposed Prescribed Fire and Forest Management Program will only implement controlled burning when specific weather, public health, and safety criteria have been met. All prescribed burning will be in coordination with the NSAQMD, CalFire, and the public and with the appropriate permits and smoke management plans in place.

a) The intent of an air quality plan is to outline pollution control strategies for a city, county, or region that have been designated as a nonattainment area with the goal of bringing the area into attainment status with respect to federal and state air quality standards. The emission inventories used to determine attainment status are primarily based upon point source polluters and vehicle miles traveled (VMT). The SIP anticipates that most reductions in western Nevada County ozone precursors will be the result of motor vehicles becoming cleaner from state regulations (NSAQMD 2016). Growth or development beyond what is outlined in the Nevada County GP may lead to an increase in point source pollution and VMT and could conflict with federal, state, or local air quality plans.

   The emissions intensity of proposed forest management treatment activities can vary widely according to multiple factors including, but not limited to, the amount of vegetation removed or treated per acre, the maturity of the vegetation, the number of workers and equipment needed for each treatment project, and the types of equipment used. The area (acres) of a wildland fire burned or blackened is one of the more important variables required to estimate emissions from wildland fire (NWCG 2020). However, this variable can be one of the more difficult parameters to accurately obtain (Battye and Battye 2002). Large errors may exist in both reporting the total perimeter of a wildland fire and the area within the perimeter where fuel was consumed (Peterson 1987). For example, prescribed fire and smoke management reports often provide correct project size; however, the fuel loading and actual area burned (black acres) may be incorrect (NWCG 2020). Because the proposed forest management program has many areas with sensitive natural and cultural resources that are excluded from treatment as well as the prescription of leaving a mosaic of untreated vegetation intact for wildlife movement corridors, the actual area treated or burned will be less than the total project footprint. Although emissions from prescribed fire may

be estimated after a prescribed burn has been conducted, the accuracy of these estimates can be poor.

Emissions rates from heavy equipment may be estimated by applying CalEEMod, an emission estimation program; however, these estimates can also vary widely due to the reasons described above. In addition, for projects involving fewer than 40 residential units, the NSAQMD does not require modeling or applying CalEEMod, unless the project is located a great distance from goods and services, is within 1,000 feet of sensitive receptors, or is likely to increase an intersection's level of service to D or beyond (NSAQMD 2016). The proposed Prescribed Fire and Forest Management Program has no residential, office, or retail developmental components and consists of forest stewardship land use in rural western Nevada County, therefore it does not meet the criteria for mandatory modeling of emission rates and will not result in a substantial increase in VMT (see Chapter 3, XVII Transportation for a detailed discussion on VMT thresholds). Program activities will not conflict with or obstruct implementation of any applicable air quality management plan for Nevada County, the NSAQMD, or the MCAB. No impact.

b-d) The proposed program would not emit air contaminants at a level that, by themselves, would violate any local, state, or federal ambient air quality standard, or contribute to a permanent or long-term increase in any air contaminant. Because proposed program treatment areas are located within forested areas where wind does not easily penetrate at ground level, any dust that is generated will not be expected to travel far from work sites.

The program would generate intermittent, short-term emissions of smoke and/or fugitive dust (PM10) from vegetation thinning and/or prescribed burning and involve the use of equipment and materials that would emit ozone precursors (e.g., ROG and NOx). Trucks and heavy equipment for this program consist of a backhoe, tracked harvester, forwarder, masticator, and tracked chipper. Not all vehicles and equipment would operate simultaneously, and some equipment would only be operating during certain stages of the program depending on the nature of the work. However, increased emissions of PM10, ROG, and NOx could contribute to existing nonattainment conditions, which could interfere with achieving the projected attainment standards. These temporary emissions could also expose sensitive receptors to increased pollution concentrations and potentially create objectionable smoke odors that could impact neighboring residences. DPR will work closely with the NSAQMD and inclusion of **STANDARD PROJECT REQUIREMENT AIR-1, STANDARD PROJECT REQUIREMENT AIR- 2,** and **PROJECT SPECIFIC REQUIREMENT AIR-3** (Chapter 2) in program design will ensure that any potential impacts will remain at a less than significant level.

**STANDARD PROJECT REQUIREMENT:**

**<u>STANDARD PROJECT REQUIREMENT AIR-1</u>: EMISSIONS OF FUGITIVE DUST AND OZONE**

- Water all construction areas (dirt/gravel roads and surrounding dirt/gravel area) at least twice daily during dry, dusty conditions when large machinery is in use.
- Cover all trucks hauling soil or other loose materials on public roads. Alternatively, require all trucks to maintain at least two feet of freeboard.
- Maintain all construction-related equipment engines in good condition, in proper tune (according to manufacturer's specifications), and in compliance with all state and federal

requirements.
- Suspend potential dust producing actions if sustained winds exceed 25 mph, instantaneous gusts exceed 35 mph, or dust from construction might obscure driver visibility on public roads.
- Promptly remove earth or other material that has been transported onto paved roadways by trucks, construction equipment, erosion, or other project-related activity.

**STANDARD PROJECT REQUIREMENT AIR-2: REGULATIONS COMPLIANCE**

- DPR will prepare a smoke management plan (SMP) that includes identifying smoke sensitive areas (i.e., residences, schools, etc. in the project vicinity) and submit it to the appropriate air quality regulator, the Northern Sierra Air Quality Management District (NSAQMD), for approval. The SMP and the air quality regulator will limit the timing, location, amount, and extent of burning at any one time to minimize possible adverse effects to sensitive receptors.
- DPR will inform and cooperate with local fire districts, the United States Forest Service Tahoe National Forest, CalFire, the Bureau of Land Management, and other parties to coordinate burning activities, including providing a copy of the burn plan.
- DPR will inform the public of upcoming prescribed burning operations.
- Comply with air quality regulations for all burning activities.
- Conduct pile burning over a period of time and under environmental conditions that will limit impacts on the public.

**PROJECT SPECIFIC REQUIREMENT:**

**SPECIFIC PROJECT REQUIREMENT AIR-3: PILE BURNING**

- Conduct pile burning in project areas that are outside of riparian habitat and other sensitive natural resource areas.
- Where feasible, chip and remove tree slash and debris.
- Cure (left to dry) piles at least six weeks prior to burning to reduce the amount of smoke emissions.

**MITIGATION MEASURE: NONE**

# IV. BIOLOGICAL RESOURCES

## ENVIRONMENTAL SETTING

Malakoff is located in Nevada County, California in the western foothills of the Sierra Nevada. The Park lies in the Humbug Creek drainage, a tributary to the South Yuba River. The Park encompasses approximately 3,200 acres dominated by second-growth ponderosa pine, with incense cedar, black oak, Douglas fir, and sugar pine growing on its upper slopes and ranges in elevation from 2,500 to 4,500 feet. Malakoff is home to one of largest historic mine sites from California's 19th century gold rush era. Hydraulic gold mining in the 1860s drastically altered the landscape, resulting in the first environmental law enacted in the nation. Known as the Sawyer Decision, this 1884 injunction imposed strict regulations on discharging debris into rivers in the Sierra Nevada and resulted in the end of California's hydraulic mining era. Seeps and springs trickling from the cliffs of the diggings have created wetlands frequented by the abundant wildlife in the Park. Malakoff is surrounded by public land, managed by the Tahoe National Forest and BLM for timber production and recreation.

### Vegetation

Vegetation types (= natural communities) in the state have been classified by CDFW and published in the Manual of California Vegetation (Sawyer et al. 2009) utilizing standards that comply with the National Vegetation Classification Standard adopted by the U.S. government (USNVC 2022). The classification level/category most commonly used in describing vegetation is Alliance, which is roughly equivalent to the more generic term plant community. Alliances are based on the dominant or less commonly codominant species within the vegetation layer that is most important in defining it. For example, ponderosa pine dominates the canopy of the Ponderosa Pine Forest Alliance. Vegetation types found at Malakoff are represented in Appendix A. The natural vegetation types surrounding program treatment areas are primarily ponderosa pine (*Pinus ponderosa*) and California black oak along with mixed conifer, whiteleaf manzanita (*Arctostaphylos viscida*), annual grassland, and interior live oak (*Quercus wislizenii*). Much of the Park and surrounding area was clear-cut in the second half of the 19th century. This logging resulted in a wide divergence from historic forest conditions, and current conditions at Malakoff consist of a variety of habitat types including oak forest, mature Douglas fir forest, and second growth pine dominated forest. California black oak play a key ecological role in California's forests with their mast providing an important food source for a variety of mammalian and avian species (Bowyer and Bleich 1980; McDonald 1990; Koenig et al. 2008; Purcell and Drynan 2008). Other vegetation types present at Malakoff include chaparral, montane hardwood, lacustrine, and wet meadow.

### Sensitive Natural Plant Communities

Sensitive plant communities are regionally uncommon or unique, unusually diverse, or of special concern to local, state, and federal agencies. Removal or substantial degradation of these plant communities constitutes a significant adverse impact under CEQA. A search of the CNDDB did not show any sensitive natural plant communities near Malakoff or in the general vicinity (CDFW 2022). However, DPR and CDFW have not conducted parkwide surveys for sensitive plant communities within Malakoff, and several natural plant communities are known to be present at Malakoff. Known or discovered sensitive natural plant communities will be excluded from treatment(s).

### Wetlands and Waters of the United States

The federal Clean Water Act (CWA) defines wetlands as lands that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The U.S. Army Corps of Engineers (USACE) has jurisdictional authority of wetlands under provisions found in Section 404 of the CWA. Typically, USACE jurisdictional wetlands meet three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology.

Waters of the U.S. (Other Waters) are regulated by the USACE under Sections 401 and 404 of the CWA. They are defined as all waters used in interstate or foreign commerce, waters subject to the ebb and flow of the tide, all interstate waters including interstate wetlands and all other waters such as: intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds. Waters of the U.S. are under the USACE jurisdiction.

The Nevada County GP, Chapter 11: Water Goal 11.1 is to: "Identify, protect, and manage for sustainable water resources and riparian habitats."

DPRs Watershed Management Policy (DOM 0306.2) states that DPR will "adopt a comprehensive, integrative, and cooperative watershed approach to managing watersheds as complete hydrologic systems, and to minimize human disturbance to the natural upland processes that deliver water, sediment, nutrients, and natural debris to streams."

Additionally, DPRs Stream Management Policy (DOM 0306.3) states that DPR will "manage streams to protect stream processes that create natural habitat features such as floodplains, riparian communities, natural woody debris accumulations, terraces, gravel bars, riffles, and pools."

Lastly, DPRs Wetlands Management Policy (DOM 0306.7) states that DPR will "prevent the destruction, loss, or degradation of wetlands by:

- Identifying wetland resources and determining appropriate uses;
- Preserving and enhancing the natural and beneficial values of wetlands;
- Avoiding direct and indirect construction and actions in wetlands unless the benefits of the facility or activity clearly outweigh the potential adverse impacts, there are no practicable alternatives, and the proposed action includes all practicable measures to minimize harm to wetlands;
- Adhering to and implementing the State's Wetlands Conservation Policy of no net loss of wetlands and a longer-term goal of a net gain of wetlands across the park system through restoration of previously degraded or destroyed wetlands;
- Adhering to and implementing the Keene-Nejedly California Wetlands Preservation Act (PRC § 5810-5818); and
- Avoiding and discouraging offsite mitigation as a means of increasing wetlands when such mitigation would propose the creation of wetlands features in uplands that were not historically and naturally wetlands."

**Special Status Species**

Sensitive biological resources that occur or potentially occur in or near proposed program treatment areas are discussed in this section. Special status species (sensitive species) are defined as plants and

animals that are legally protected or that are considered sensitive by federal, state, or local resource conservation agencies and organizations. Specifically, this includes plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. In addition, CDFW Species of Special Concern (SSC), which are species that face extirpation in California if current population and habitat trends continue, CDFW California Fully Protected (FP) or Protected (P) species, USFWS Birds of Conservation Concern, and CDFW special status invertebrates are considered special status species. Although these aforementioned species generally have no special legal status, they are given special consideration under CEQA. Bat species are also evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity; bats named as a "High Priority" or "Medium Priority" species for conservation by the WBWG are typically considered special status under CEQA. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory with California Rare Plant Ranks (Rank) of 1 through 4 are also considered special status plant species and are considered under CEQA. A description of the CNPS Ranks is provided below in Table IV-1. In addition to regulations for special status species, most birds in the United States, including nonspecial status native species, are protected by the Migratory Bird Treaty Act of 1918 (MBTA) and the California Fish and Game Code, Sections §3503, §3503.5, and §3513. Under these laws, destroying active bird nests, eggs, and/or young is illegal.

Table IV-1. Description of CNPS Ranks and Threat Codes

| **California Rare Plant Ranks (formerly known as CNPS Lists)** | |
|---|---|
| Rank 1A | Presumed extirpated in California and either rare or extinct elsewhere |
| Rank 1B | Rare, threatened, or endangered in California and elsewhere |
| Rank 2A | Presumed extirpated in California, but more common elsewhere |
| Rank 2B | Rare, threatened, or endangered in California, but more common elsewhere |
| Rank 3 | Plants about which more information is needed - A review list |
| Rank 4 | Plants of limited distribution - A watch list |
| **Threat Ranks** | |
| 0.1 | Seriously threatened in California |
| 0.2 | Moderately threatened in California |
| 0.3 | Not very threatened in California |

## Critical Habitat

Critical habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas

that are currently unoccupied by the species, but which are needed for the species' recovery, are protected by the prohibition against adverse modification of critical habitat.

All special status species and their habitats were evaluated for potential impacts from the proposed Prescribed Fire and Forest Management Program. Existing available data were collected and reviewed to determine the proximity of special status plants, animals, and their habitats to proposed program treatment areas. Database searches covered United States Geological Survey (USGS) 7.5 minute topographic quadrangles of Pike, North Bloomfield, Strawberry Valley, Goodyears Bar, Downieville, Alleghany, Washington, Dutch Flat, Chicago Park, Grass Valley, Nevada City, and Camptonville. The following sources were also reviewed to determine which special status plant and wildlife species have been documented to occur in the vicinity of proposed forest management treatment areas:

- CNDDB records (CDFW 2022)
- eBird (online 2022)
- USFWS Information for Planning and Conservation Report (IPaC; USFWS 2019a)
- National Wetlands Inventory (USFWS 2019b)
- CNPS Rare and Endangered Plant Inventory (CNPS 2019b)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "California Bird Species of Special Concern" (Shuford and Gardali 2008)
- CDFW and University of California Press publication California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- Nafis, G. (2000-2020) California Herps - A Guide to the Amphibians and Reptiles of California. Available at: http://www.californiaherps.com/ (Accessed 6 May 2022).

## PLANT SPECIES

The initial review of available information identified 49 special status plant species that could occur in Malakoff or the surrounding vicinity (Appendix B). Of the 49 special status species known from the region, 23 species were determined to have a moderate or high potential to occur within proposed treatment areas. The remaining species documented to occur in the vicinity of the treatment areas are either unlikely to or have no potential to occur due to one or more of the following factors:

- The previously disturbed nature of the Park has diminished local habitat availability for special status plant species, and likely precludes the species from persisting in proposed treatment areas.
- Vegetation communities commonly associated with the special status species (e.g., chaparral, lower montane coniferous forest) are absent from the Park.
- Specific edaphic characteristics, such as gabbroic or serpentine-derived soils, are absent from proposed treatment areas.
- Treatment areas are well below or above the documented elevation range of the species.

All special status plant species determined to have a moderate or high potential to occur in proposed treatment areas are described in detail below. Each species' California Rare Plant Rank (CRPR) is also included.

### Special Status Plant Species that are Known to Occur or Could Potentially Occur Within or Adjacent to Program Treatment Areas

**Congdon's onion (*Allium sanbornii* var. *congdonii*). CRPR 4.3. Moderate Potential.** Congdon's onion is a perennial bulbiferous forb in the onion family (*Alliaceae*) that blooms from April through July. It typically occurs in chaparral or cismontane woodland on serpentine or volcanic soils at elevation ranges from 980 to 3,250 feet (CNPS 2019a). Known associated species include ponderosa pine, incense cedar, sugar pine, Douglas fir, gray pine, manzanita (*Arctostaphylos* spp.), and buck brush (Consortium of California Herbaria [CCH] 2019). Congdon's onion is determined to have moderate potential to occur in program treatment areas due to the presence of chaparral and coniferous forest habitat underlain by volcanic soils and the presence of known associated species.

**True's manzanita (*Arctostaphylos mewukka ssp. truei*). CRPR 4.2. Moderate Potential.** True's manzanita is a perennial shrub in the heath family (*Ericaceae*) that blooms from February through July. It typically occurs in chaparral, lower montane coniferous forest, and sometimes roadsides at elevation ranges from 1,390 to 4,560 feet (CNPS 2019a). Known associated species include Douglas fir, sugar pine, ponderosa pine, incense cedar, black oak, canyon live oak, and whiteleaf manzanita (CCH 2019). True's manzanita is determined to have moderate potential to occur in program treatment areas due to the presence of whiteleaf chaparral and coniferous forest habitat with known associated species.

**Sheldon's sedge (*Carex sheldonii*). CRPR 2B.2. Moderate Potential**. Sheldon's sedge is a perennial graminoid in the sedge family (*Cyperaceae*) that blooms from May through August. It typically occurs in mesic areas within lower montane coniferous forest, freshwater marshes and swamps, and riparian scrub at elevation ranges from 3,940 to 6,600 feet (CNPS 2019a). Known associated species include ponderosa pine, beaked sedge (*Carex utriculata*), green sheathed sedge (*C. feta*), rush (*Juncus* spp.), Pacific willow (*Salix lasiandra*), poison hemlock (*Conium maculatum*), Fuller's teasel (*Dipsacus fullonum*), bulrush (*Scirpus* spp.), and horsetail (CDFW 2019). Sheldon's sedge is determined to have a moderate potential to occur in program treatment areas due to the presence of mesic areas in the lower montane coniferous forest and freshwater emergent marsh with known associated species.

**Fresno ceanothus (*Ceanothus fresnensis*). CRPR 4.3. Moderate Potential**. Fresno ceanothus is a perennial shrub in the buckthorn family (*Rhamnaceae*) that blooms from May through July. It typically occurs in openings in cismontane woodland and lower montane coniferous forest at elevation ranges from 2,950 to 6,900 feet (CNPS 2019a). Known associated species include sugar pine, black oak, Douglas fir, incense cedar, ponderosa pine, and manzanita (CCH 2019). Fresno ceanothus is determined to have moderate potential to occur in program treatment areas due to presence of lower montane coniferous forest with known associated species.

**Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeeae*). CRPR 4.2. High Potential.** Brandegee's clarkia is an annual herb in the evening primrose family (*Onagraceae*) that blooms from May through July. It typically occurs in roadcuts in chaparral, cismontane woodland, and lower montane coniferous forests at elevations ranging from 250 to 3,000 feet (CNPS 2019a). Known associated species include canyon live oak, arroyo willow, Pacific willow, coyote bush (*Baccharis pilularis*), deer grass (*Muhlenbergia rigens*), yampah (*Perideridia* spp.), sedge (*Carex* spp.), mugwort (*Artemisia douglasiana*), self-heal (*Prunella vulgaris*), gray pine, and bracken fern (*Pteridium aquilinum*) (CCH 2019). Brandegee's clarkia is determined to have a high potential to occur in program treatment areas due to the presence of lower montane coniferous forest, and close proximity to numerous documented occurrences.

**Golden-anthered clarkia (*Clarkia mildrediae* ssp. *lutescens*). CRPR 4.2. Moderate Potential.** Golden-anthered clarkia is an annual herb in the evening primrose family that blooms from June through August. It typically occurs in rocky areas, often in roadcuts in cismontane woodland and openings in lower montane coniferous forest at elevation ranges from 900 to 5,740 feet (CNPS 2019a). Known associated species include ponderosa pine, California black oak, Douglas fir, sugar pine, incense cedar, deerbrush, naked buckwheat (*Eriogonum nudum*), California helianthella (*Helianthella californica* var. *nevadensi*s), groundsmoke (*Gayophytum* spp.), Sierran morning glory (*Calystegia malacophylla*), mountain monardella (*Monardella odoratissima*), woolly malacothrix *(Malacothrix floccifera*), and blue field gilia (*Gilia capitata*) (CCH 2019). Golden-anthered clarkia is determined to have a moderate potential to occur in program treatment areas due to presence of lower montane coniferous forest with openings and rocky soil, and many associated species.

**Sierra clarkia (*Clarkia virgata*). CRPR 4.3. Moderate Potential.** Sierra clarkia is an annual forb in the evening primrose family that blooms from May through August. It typically occurs in cismontane woodland and lower montane coniferous forest at elevation ranges from 1,310 to 5,300 feet (CNPS 2019a). Known associated species include ponderosa pine, Sierran mountain misery, and Indian manzanita (*Arctostaphylos mewukka*) (CCH 2019). Sierra clarkia is determined to have moderate potential to occur in program treatment areas due to the presence of lower montane coniferous forest with known associated species.

**Butte County fritillary (*Fritillaria eastwoodiae*). CRPR 3.2. Moderate Potential.** Butte County fritillary is a perennial bulb in the lily family (*Liliaceae*) that blooms from March through June. It typically occurs in openings on dry (sometimes moist) slopes in chaparral, cismontane woodland, and lower montane coniferous forest at elevation ranges from 160 to 4,920 feet (CNPS 2019a). Known associated species include Douglas fir, California yew (*Taxus brevifolia*), incense cedar, canyon live oak, California black oak, ponderosa pine, sugar pine, Hartweg's wild ginger (*Asarum hartwegii*), Pacific starflower, Oregon boxwood (*Paxistima myrsinites*), rattlesnake plantain (*Goodyera oblongifolia*), rose (*Rosa* spp.), and violet (*Viola* spp.) (CCH 2019). Butte County fritillary is determined to have moderate potential to occur in program treatment areas due to the presence of chaparral and lower montane coniferous forest with known associated species and the presence of several known occurrences within five miles (CDFW 2022).

**Finger rush (*Juncus digitatus*). CRPR 1B.1. Moderate Potential.** Finger rush is a perennial forb in the rush family (*Juncaceae*) that blooms from April through June. It typically occurs in vernally damp soils in sunny openings in cismontane woodland and lower montane coniferous forest, and xeric vernal pools underlain by volcanic soils at elevation ranges from 2,170 to 2,590 feet (CNPS 2019a). Known associated species include blue oak (*Quercus douglasii*), annual hairgrass (*Deschampsia danthoides*), Hartweg's odontostomum (*Odontostomum hartwegii*), Jepson's button celery (*Eryngium articulatum*), quillwort (*Isoetes nuttallii*), toad rush (*Juncus bufonius* var. *occidentalis*), and narrow leaved onion (*Allium amplectens*) (CCH 2019). Finger rush is determined to have a moderate potential to occur in program treatment areas due to the presence of vernally damp volcanic-derived soil and seasonal wetlands in the lower montane coniferous forest.

**Dubious pea (*Lathyrus sulphureus* var. *argillaceus*). CRPR 3. Present.** Dubious pea is a perennial forb in the pea (*Fabaceae*) family that blooms from April through May. It typically occurs in cismontane woodland, lower montane coniferous forest, and upper montane coniferous forest at elevation ranges from 490 to 3,050 feet (CNPS 2019). Known associated species include blue oak,

California bay (*Umbellularia californica*), ponderosa pine, incense cedar, California black oak, yarrow (*Achillea millefolium*), Brewer's rock cress (*Boechera breweri*), turpentine cymopterus (*Cymopterus terebinthinus*), canyon larkspur (*Delphinium nudicaule*), silk tassel (*Garrya* spp.), poison oak, and manzanita (CCH 2019). This species was observed in the Park outside of the Diggins by WRA biologists in 2019 (WRA 2020).

**Cantelow's lewisia (*Lewisia cantelovii*). CRPR 1B.2. Moderate Potential.** Cantelow's lewisia is a perennial forb in the miner's lettuce family (*Montiaceae*) that blooms from May through October. It typically occurs on mesic rock outcrops and wet cliffs in broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest at elevation ranges from 1,080 to 4,490 feet (CNPS 2019a). Known associated species include mountain pride (*Penstemon newberryi*), jewelweed (*Streptanthus tortuosus*), Wallace's spike moss (*Selaginella wallacei*), alum root (*Heuchera micrantha*), chain fern (*Woodwardia fimbriata*), waterfall false buttercup (*Ranunculus hystriculus*), Pacific stonecrop (*Sedum spathulifolium*), bigleaf maple, Douglas fir, and lace lip fern (*Cheilanthes gracillima*) (CCH 2019). Cantelow's lewisia is determined to have moderate potential to occur in program treatment areas due to the presence of mesic rock outcrops in the lower montane coniferous forest and several known occurrences within five miles of the Park (CDFW 2022).

**Humboldt lily (*Lilium humboldtii ssp. humboldtii*). CRPR 4.2. High Potential.** Humboldt lily is a perennial bulb in the lily *(Liliaceae*) family that blooms from May through July. It typically occurs in openings in chaparral, cismontane woodland, and lower montane coniferous forest at elevation ranges from 300 to 4,200 feet (CNPS 2019a). Known associated species include ponderosa pine, black oak, incense cedar, sugar pine, Douglas fir, canyon live oak, and whiteleaf manzanita (CCH 2019). Humboldt lily is determined to have a moderate potential to occur in in program treatment areas due to presence of lower montane coniferous forest and chaparral with known associated species.

**Inundated bog club-moss (*Lycopodiella inundata*). CRPR 2B.2. Present.** Inundated bog club-moss is a perennial bryophyte in the club-moss family *(Lycopodiaceae*) that produces gametophytes from June through September. It typically occurs in coastal bogs and fens, mesic areas in lower montane coniferous forest, marshes and swamps along lake margins at elevation ranges from 20 to 3,280 feet (CNPS 2019a). Known associated species include capitate beaked rush (*Rhynchospora capitellata*), grassleaf rush (*Juncus marginatus*), sharp fruited rush (*J. acuminatus*), smooth stem sedge (*Carex laeviculmis*), diffuse rush (*Scirpus diffusus*), Pacific panic grass (*Panicum pacificum*), California oat grass (*Danthonia californica*), sundew (*Drosera rotundifolia*), seaside arrow grass (*Triglochin maritima*), and little green sedge (*Carex viridula*) (CCH 2019). Inundated bog club moss has been documented within the Park and within five miles of the Park boundary in historic mining areas (CDFW 2022).

**Shevock's copper moss (*Mielichhoferia shevockii*). CRPR 1B.2. Moderate Potential**. Shevock's copper moss is a bryophyte in the moss family (*Mielichhoferiaceae*). It typically occurs in cismontane woodlands, on metamorphic rocks containing heavy metals, in mesic sites, and on rocks along roadsides at elevation ranges from 1,198 to 3,642 feet. Shevock's copper moss is determined to have a moderate potential to occur in program treatment areas due to the presence of mesic sites in cismontane woodlands.

**Western waterfan lichen (*Peltigera gowardii*). CRPR 4.2. Moderate Potential.** Western waterfan lichen is a foliose lichen in the *Peltigeraceae* (toadpelt) family. It typically occurs on rocks in cold

water creeks with little sediment at elevation ranges from 3,490 to 8,600 feet (CNPS 2019a). Western waterfan lichen is determined to have a moderate potential to occur in in program treatment areas due to the presence of perennial streams with riparian habitat.

**Sierra blue grass (*Poa sierrae*). CRPR 1B.3. Moderate Potential**. Sierra blue grass is a perennial grass in the grass family (*Poaceae*) that blooms from April through June. It typically occurs on moist, rocky slopes on the edges of openings in lower montane coniferous forest at elevation ranges from 1,200 to 4,920 feet (CNPS 2019a). Known associated species includes Douglas fir, white fir, incense cedar, and oaks (CDFW 2022). Sierra blue grass is determined to have a moderate potential to occur in in program treatment areas due to the presence of mesic lower montane coniferous forest with rocky slopes and associated species.

**Flexuose threadmoss (*Pohlia flexuosa*). CRPR 2B.1. Moderate Potential.** Flexuose threadmoss is moss in the *Mielichhoferiaceae* family and typically occurs on roadsides or rocky seeps in lower montane coniferous forest at elevation ranges from 3,120 to 3,360 feet (CNPS 2019a). Known associated species are not included in the literature (CDFW 2022; CCH 2019). Flexuose threadmoss is determined to have a moderate potential to occur in program treatment areas due to the presence of rocky seeps in lower montane coniferous forests.

**Brownish beaked-rush (*Rhynchospora capitellata*). CRPR 2B.2. Present.** Brownish beaked-rush is a perennial graminoid in the sedge family (*Cyperaceae*) that blooms from July through August. It typically occurs in mesic areas within lower and upper montane coniferous forest, meadows and seeps, and marshes and swamps at elevation ranges from 150 to 6,560 feet (CNPS 2019a). Known associated species include ponderosa pine, pondweed (*Potamogeton* spp.), manna grass (*Glyceria* spp.), fuzzy sedge (*Carex hirtissima*), soft rush, bulrush, whiteleaf manzanita, bog orchid (*Spiranthes* spp.), Bigelow's sneezeweed (*Helenium bigelovii*), tinker's penny (*Hypericum anagalloides*), and mosses (CDFW 2022). Brownish beaked-rush has been documented within the Park and within five miles of the Park in historic mining areas.

**Giant checkerbloom (*Sidalcea gigantea*). CRPR 4.3. Moderate Potential.** Giant checkerbloom is a perennial rhizomatous herb in the mallow family (*Malvaceae*) that blooms from July through October. It typically occurs in mesic areas within lower montane coniferous forest, upper montane coniferous forest, and meadows and seeps at elevation ranges from 2,200 to 6,400 feet (CNPS 2019a). Known associated species include bigleaf maple, white fir, Jeffery pine (*Pinus jeffreyi*), Fremont poplar (*Populus fremontii*), ponderosa pine, California black oak, willow, western coneflower (*Rudbeckia occidentalis*), velvet grass (*Holcus lanatus*), Himalayan blackberry (*Rubus armeniacus*), azalea (*Rhododendron occidentale*), groundsel (*Senecio triangularis*), and seep monkey flower (*Erythranthe guttata*) (CCH 2019). Giant checkerbloom is determined to have a moderate potential to occur in in program treatment areas due to presence of mesic sites in lower montane coniferous forest and perennially wet places with known associated species.

**Scadden Flat checkerbloom (*Sidalcea stipularis*). State Endangered, CRPR 1B.1. Moderate Potential.** Scadden Flat checkerbloom is a perennial rhizomatous herb in the mallow family (*Malvaceae*) that blooms from July through August. It typically occurs in wet montane marshes fed by springs at elevation ranges from 2,300 to 2,400 feet (CDFW 2019; CNPS 2019a). Known associated species include ponderosa pine, blue eyed grass (*Sisyrinchium bellum*), velvet grass, broad-leaved cattail (*Typha latifolia*), rushes, hairy rush (*Luzula* spp.), bulrushes, sedges, and Himalayan blackberry (CDFW

2022). Scadden Flat checkerbloom is determined to have a moderate potential to occur in in program treatment areas due to the presence of freshwater emergent marshes with associated species.

**Long-fruit jewelflower (*Streptanthus longisiliquus*). CRPR 4.3. Moderate Potential.** Long- fruit jewelflower is a biennial herb in the mustard family (*Brassicaceae*) that blooms from April through September. It typically occurs in openings in cismontane woodland and lower montane coniferous forest at elevation ranges from 2,350 to 4,920 feet (CNPS 2019a). Known associated species include canyon live oak, ponderosa pine, mountain mahogany (*Cercocarpus betuloides*), green leaf manzanita (*Arctostaphylos patula*), deer brush, Sierra milkwort (*Polygala cornuta*), mahala mat (*Ceanothus prostratus*), and Hall's rupertia (*Rupertia hallii*) (CCH 2019). Long-fruit jewelflower is determined to have a moderate potential to occur in in program treatment areas due to the presence of openings in lower montane coniferous forest with known associated species.

**True's mountain jewelflower (*Streptanthus tortuosus* ssp. *truei*). CRPR 1B.1. Moderate Potential.** True's mountain jewelflower is a biennial herb in the mustard family that blooms from June through July, and sometimes into September. It typically occurs in partial shade on steep rocky slopes in lower montane coniferous forest at elevation ranges from 2,295 to 2,580 feet (CNPS 2019a). Known associated species includes Douglas fir, interior live oak (*Quercus wislizenii*), incense cedar, mock orange (*Philadelphus lewisii*), Cantelow's lewisia, alum root, diamond petaled clarkia (*Clarkia rhomboidea*), blue field gilia, wooly sunflower (*Eriophyllum lanatum*), and imbricate phacelia (*Phacelia imbricata*) (CDFW 2019). T rue's mountain jewelflower is determined to have a moderate potential to occur in in program treatment areas due to the presence of shady, rocky, steep slopes in lower montane coniferous forest with known associated species.

**Felt-leaved violet (*Viola tomentosa*). CRPR 4.2. Moderate Potential.** Felt-leaved violet is a perennial herb in the violet (*Violaceae*) family that blooms from May through October. It typically occurs in openings on dry, gravelly soils in lower montane coniferous forest, subalpine coniferous forest, and upper montane coniferous forest at elevation ranges from 4,710 to 6,560 feet (CNPS 2019a). Known associated species includes Jeffery pine, ponderosa pine, incense cedar, white fir, huckleberry oak (*Quercus vaccinifolia*), and green leaf manzanita (CCH 2019). Felt-leaved violet is determined to have a moderate potential to occur in in program treatment areas due to the presence of gravelly openings in lower montane coniferous forest.

**Special Status Plant Species Summary**

Two of the 23 plant species have been documented in mesic soil areas within the Park: inundated bog club-moss (*Lycopodiella inundata*) and brownish beaked-rush (*Rhynchospora capitellata*). An additional seven species evaluated as potentially present in or near program treatment areas also occur in mesic soil areas associated with wet meadows, bogs, swamps, fens, springs, seeps, marshes, streams, lake margins, or other wet systems. These species include: Sheldon's sedge (*Carex sheldonii*), finger rush (*Juncus digitatus*), Shevock's copper moss (*Mielichhoferia shevockii*), western waterfan lichen (*Peltigera gowardii*), flexuose threadmoss (*Pohlia flexuosa*), giant checkerbloom (*Sidalcea gigantea*), and Scadden Flat checkerbloom (*Sidalcea stipularis*). Although wetland and meadow habitat are excluded from proposed treatment(s), access through these areas or activities in other mesic soil areas could potentially impact one or more of these species.

The remaining 14 species include: Congdon's onion (*Allium sanbornii* var. *congdonii*), True's manzanita (*Arctostaphylos mewukka* ssp. *truei*), Fresno ceanothus (*Ceanothus fresnensis*), Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeeae*), golden-anthered clarkia (*Clarkia mildrediae* ssp. *lutescens*), Sierra clarkia (*Clarkia virgata*), Butte County fritillary (*Fritillaria eastwoodiae*), dubious pea (*Lathyrus sulphureus* var. *argillaceus*), Cantelow's lewisia (*Lewisia cantelovii*), Humboldt lily (*Lilium humboldtii* ssp. *humboldtii*), Sierra blue grass (*Poa sierrae*), long-fruit jewelflower (*Streptanthus longisiliquus*), True's mountain jewelflower (*Streptanthus tortuosus* ssp. *truei*), and felt-leaved violet (*Viola tomentosa*). These species all have very limited distributions in California and, with the exception of dubious pea, are not known to occur in or near program treatment areas, but suitable habitat may be present. The majority of these species occur in cismontane woodlands, lower montane coniferous forest/openings, chapparal, rocky outcrops or slopes, and along roadsides. Prescribed fire and forest management activities, as well as access and staging, in rocky, open habitats occupied by or suitable for these species could result in significant impacts to these species.

**Heritage Plants**

Non-invasive heritage orchard trees such as English walnut, chestnut, apple, pear, fig, and cherry, introduced by settlers in the 19th century gold rush era, continue to grow in various areas in the Park. Heritage plants are protected as historic resources. Proposed treatments will avoid impacting heritage plants, providing beneficial actions to protect these irreplaceable historic resources.

**Invasive Weeds**

A primary purpose of California State Parks is to preserve the state's extraordinary biological diversity by restoring, maintaining, and protecting native species and natural communities. Invasion by exotic species is a threat to native species and the natural environment. Invasive or non-native plants can quickly inhabit and become established in areas that have been recently disturbed. Some of these invasive species, such as cheatgrass (*Bromus tectorum*), can increase risk of wildfire and rate of fire spread. There are many invasive plant species at Malakoff that act as continuous reminders of the effects that miners and other settlers had on the landscape. These species include Himalayan blackberry (*Rubus armeniacus*), yellow star-thistle (*Centaurea solstitialis*), English ivy (*Hedera* sp.), vinca (*Vinca major*), and scotch broom (*Cytisus scoparius*). Medusa head (*Elymus caput-medusae*), Malta starthistle (*Centaurea melitensis*), and barb goat grass (*Aegilops triuncialis*) are other invasive species present at Malakoff. Ground disturbance associated with heavy equipment use and burning can create conditions that are suitable for some invasive weed species. Weeds can also be introduced to areas of native vegetation on heavy equipment or vehicles. Inadvertent weed introductions need to be promptly treated with a suite of treatment methods including: hand pulling, mechanical removal, herbicides, and other standard weed control methods. Introduction of new weeds, spread of existing infestations, or failure to promptly treat inadvertent introductions could result in a significant impact to the environment.

**WILDLIFE SPECIES**

Mammals and birds use forested areas within Malakoff for movement, cover, nesting, denning, and foraging. Large mammals using this habitat include the American black bear (*Ursus americanus*), black-tailed deer (*Odocoileus hemionus columbianus*), and mountain lion (*Felis concolor*). These large mammals have extensive home ranges that likely extend beyond the Park boundary onto adjacent lands. Medium and small mammals observed in Malakoff include coyote (*Canis latrans*), bobcat (*Lynx rufus*),

ringtail (*Bassariscus astutus*), raccoon (*Procyon lotor*), western gray squirrel (*Sciurus griseus*), Douglas squirrel (*Tamiasciurus douglasii*), and deer mouse (*Peromyscus maniculatus*). Many bat species, including hoary bat (*Lasiurus cinereus*) and silver-haired bat (*Lasionycteris noctivagans*), use the forested habitat for roosting. Townsend's big eared bat (*Corynorhinus townsendii*) can be found roosting in the historic buildings in North Bloomfield. Common bird species include dark-eyed junco (*Junco hymenalis*), mountain chickadee (*Poecile gambeli*), red-breasted nuthatch (*Sitta canadensis*), pygmy nuthatch (*S. pygmaea*), American robin (*Turdus migratorius*), golden-crowned kinglet (*Regulus satrapa*), and acorn woodpecker (*Melanerpes formicivorus*). Many raptor species have been observed within the Park including Cooper's hawk (*Accipiter cooperii*), northern goshawk (*Accipiter gentilis*), and California spotted owl (*Strix occidentalis occidentalis*).

Reptiles, amphibians, and fish are also found in Malakoff. In coniferous forest areas, lizard and snake species that may be found include northwestern fence lizard (*Sceloporus occidentalis occidentalis*) and mountain garter snake (*Thamnophis elegans elegans*). Most amphibians are dependent on streams, ponds, and other water bodies for reproduction and other aspects of their life. Amphibian species using the riparian habitat at Malakoff include the foothill yellow-legged frog (*Rana boylii*), the Sierran treefrog (*Pseudacris sierra*), and the non-native American bullfrog *(Rana catesbeiana)*. Several non-native fish species including rainbow trout (*Oncorhynchus mykiss*), catfish (*Ameiurus nebulosus*), and bluegill (*Lepomis macrochirus*) can be caught in Blair Lake and nearby in the South Yuba River.

The proposed Prescribed Fire and Forest Management Program would occur in and around public day use, hiking, camping, and other recreational use facilities in a mixed conifer forest setting. Special status wildlife species that have been documented in Malakoff or could potentially occur in or near program treatment areas are described below. Other species not known to occur in the region, but included on state or federal database lists, are also discussed.

Based upon a review of the resources and databases listed above, it was determined that 57 special-status wildlife species have been documented within Malakoff and/or the surrounding region. In total, 13 of these special status species were documented in Malakoff by DPR biologists, or in previous studies. These species include: (1) yellow warbler (*Setophaga petechia*), (2) yellow-breasted chat (*Icteria virens*), (3) little willow flycatcher (*Empidonax traillii brewsteri*), (4) olive-sided flycatcher (*Empidonax Contopus cooperi*), (5) California spotted owl, (6) northern goshawk, (7) western pond turtle (*Emys marmorata*), (8) foothill yellow-legged frog, (9) ringtail, (10) fringed myotis (*Myotis thysanodes*), (11) Townsend's big-eared bat, (12) silver-haired bat, and (13) hoary bat. Appendix B summarizes the potential for special status species that occur in the region to occur in program treatment areas.

Of the 57 special-status species known from the region, 22 were determined to be present or have a moderate or high potential to occur within program treatment areas (Appendix B). The remaining species documented to occur in the vicinity of Malakoff are unlikely or have no potential to occur due to one or more of the following factors:

- Program treatment areas are outside of the documented or historical range of the species; or
- Program treatment areas lack suitable habitat (e.g., estuaries, large lakes, grain fields, extensive shallow water, etc.)

Species that were determined to be unlikely or have no potential to occur in program treatment areas are not discussed further here, but their potential determinations are included in Appendix B. While the

aforementioned factors contribute to the absence of many special status wildlife species from program treatment areas in Malakoff, the following species were determined to be present or have a moderate or high potential to occur.

**Special-Status Wildlife Species That Are Present or Have Previously Been Detected in or Immediately Adjacent to Program Treatment Areas**

**Northern Goshawk (*Accipiter gentilis*). CDFW Species of Special Concern. Present.** Holarctic in distribution, goshawks inhabit mature and old-growth coniferous forests and mature aspen forests on the eastern side of the Sierra/Cascade Ranges. Nesting habitat is characterized by larger trees and more open understories than adjacent non-nesting habitat. Nest tree selection generally favors larger trees and occasionally snags, with nests being located predominately in the lower third of the tree, below the forest canopy. Goshawk feed primarily on rodents (especially squirrels), lagomorphs, and birds. Reproduction probability varies from year-to-year and is most significantly correlated with prey abundance. Goshawks require relatively large territories and habitat suitability and prey base dictates the carrying capacity of a given area.

Goshawks have been documented to inhabit and breed in Malakoff. There is one CNDDB occurrence for northern goshawk near the Diggins and two more, less than one mile from the Diggins; south of the South Yuba River, and immediately west of the Diggins, respectively. The occurrence in the Diggins area is an old nesting record from 1980 that is considered extirpated on the basis of failed detections in 2005 and 2006. However, a juvenile goshawk was observed by DPR staff in the vicinity of Blair Lake in 2014, and DPR staff have also observed adult goshawk in the Park. There is an e-bird occurrence approximately five miles south of Malakoff that was documented in 2017 (eBird 2022). It is unknown if goshawks are currently breeding in Malakoff, but the presence of a juvenile and a DPR biologist's observation of a nest that could have been that of a goshawk suggests that the species could be nesting in Malakoff. Suitable nesting habitat is present along Humbug Creek; however, this area is excluded from proposed treatment(s).

Altering, removing, or fragmenting suitable habitat or conducting forest management activities during the breeding season could result in potential impacts to this species. Pre-project surveys for northern goshawk conducted within suitable habitat, limiting forest management activities to habitat enhancement within core nesting areas, and a limited operating period will prevent disturbance to breeding birds and ensure that potential impacts remain less than significant.

**California Spotted Owl (*Strix occidentalis occidentalis*). CDFW Species of Special Concern. Present.** Typical habitats consist of structurally complex, mature coniferous forest and mixed coniferous-hardwood forest. Younger forest with stands of mature trees may also be occupied. High-quality breeding habitat features a tall, multi-tiered, multi-species canopy dominated by big trees, trees with cavities and/or broken tops, and woody debris and space under the canopy. This species is most often associated with deep-shaded canyons. California spotted owls primarily feed on small mammals.

The species has been documented to occur and breed in the vicinity of Blair Lake by DPR staff in 2013 and 2014. Suitable habitat for foraging and nesting is present in program treatment areas, particularly in the Humbug Creek area.

Altering, removing, or fragmenting occupied habitat or conducting forest management activities during the breeding season could result in potential impacts to this species. Pre-project surveys for California spotted owls within suitable habitat, limitations on forest management activities to habitat enhancement within core nesting areas, and a limited operating period for project activities will ensure that these impacts remain less than significant.

**Olive-sided Flycatcher (*Contopus cooperi*). CDFW Species of Special Concern, USFWS Bird of Conservation Concern. Present.** The olive-sided flycatcher is a summer resident in California, wintering in Latin America. It breeds in a variety of forested habitats, typically coniferous forests at higher elevations, but also in mixed forest and woodlands at lower elevations. Breeding habitat is often associated with forest openings and edges, both natural (e.g., meadows, canyons) and man-made (e.g., logged areas). Nests are usually in conifers and are placed at variable heights on the outer portions of branches. This species forages for insects, usually on prominent tree snags. This species was detected in the Diggins area during site visits by WRA biologists in 2019, which corresponded to the time of year when the species would be expected to be nesting. This species was also documented in Malakoff in July 2020 (eBird 2022). Suitable habitat to support nesting is prevalent in program treatment areas and it is assumed that the species nests there.

Suitable habitat is present in program treatment areas and tree removal or loud construction activities during the breeding season could impact this species. Retention of forest complexity will ensure that suitable habitat is retained. Pre-project surveys within suitable habitat for this species will ensure that potential impacts remain less than significant.

**Little willow flycatcher (*Empidonax traillii brewsteri*). California Endangered. Present.** The little willow flycatcher nests in thickets of willow and riparian woodland habitats. Historically, the species nested between 100 feet to 8,000 feet (Grinnell and Miller 1944). Males may establish territories up to almost one acre, though most territories are smaller than 0.5 acres and there is very little overlap with neighboring males. Most of the remaining breeding populations occur in the mountain meadows of the Sierra Nevada and Cascades. Little willow flycatchers are late season migrants and arrive at breeding locations in the Sierra during the latter part of May or in early June (Garrett and Dunn 1981). An open cup nest is usually placed in the fork of a branch with several small-diameter stems supporting the nest. Nests are usually located between one and 2.5 meters above the ground. Nest material in the Sierra consists of fine sedges and grasses (McCabe 1991).

This species was documented in the Diggins area in 2007 and 2011. As of 2019, this species has not been confirmed to breed in Malakoff. However, due to the presence of suitable habitat and occasional documented occurrences, this species has potential to nest in the Diggins area and is assumed to be present.

Prescribed fire and forest management actions are not planned for the Diggins area. However, forest management activities occurring in riparian habitat during the breeding season could impact this species. Forest treatments in riparian areas will only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of riparian montane hardwood habitat. Pre-project surveys for willow flycatcher within suitable habitat, limitations on forest management activities within core nesting areas, and a limited operating period for program activities will ensure that potential impacts remain less than significant.

**Yellow-breasted chat (*Icteria virens*). CDFW Species of Special Concern. Present.** The yellow-breasted chat is a generally uncommon summer resident that occurs throughout California. It is an aberrantly large member of the wood-warbler (*Parulidae*) family. Breeding habitat consists of early succession riparian habitats where a dense understory of thickets and tangles forms below an open canopy. Plant species typically used for nesting include blackberry, wild grape, and willows (Shuford and Gardali 2008). Though males often sing from exposed perches in trees, this species is generally secretive and difficult to observe.

Although Malakoff is somewhat outside of the typical breeding range for this species, DPR staff have documented this species in the Diggins. There are also numerous records for this species west of the Park (eBird 2022). Habitat within riparian areas of the Park provide suitable habitat for this species and it is assumed that yellow-breasted chat has potential to nest in program treatment areas.

Prescribed fire and forest management actions are not planned for the Diggins area. However, forest management activities occurring in riparian habitat during the breeding season could impact this species. Forest treatments in riparian areas will only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of riparian montane hardwood habitat. Pre-project surveys for yellow-breasted chat within suitable habitat, limitations on forest management activities within core nesting areas, and a limited operating period for program activities will ensure that potential impacts remain less than significant.

**Yellow warbler (*Setophaga petechia*). CDFW Species of Special Concern. Present.** The yellow warbler is a neotropical migrant that is widespread in North America but has declined throughout much of its California breeding range. Yellow warblers typically breed in riparian vegetation such as willows or cottonwoods close to water and occasionally in chaparral vegetation (Shuford and Gardali 2008). Insects comprise the majority of their diet. Program treatment areas contain suitable nesting habitat for yellow warblers. The willows in the Diggins are particularly suitable for this species. DPR staff have documented this species within the Park, and WRA biologists detected yellow warbler in the Diggins area during site visits conducted in 2019.

Prescribed fire and forest management actions are not planned for the Diggins area. However, forest management activities in riparian and chaparral habitat during the breeding season could impact this species. Forest treatment work in riparian areas will only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of riparian montane hardwood habitat. Pre-project surveys for yellow warbler within suitable habitat, limitations on forest management activities within core nesting areas, and a limited operating period for program activities will ensure that potential impacts remain less than significant.

**Ringtail (*Bassariscus astutus*). CDFW Fully Protected Species. Present.** Ringtail is an uncommon but widespread resident of California, excluding the Central Valley, south to Mexico. This species is found in remote riparian habitats, rocky canyons, and brush stands of forest and shrub habitats that contain trees, brush, and rock crevices for cover. This species is usually found within 0.6 miles of water (Zeiner et al. 1990). Hollow trees, snags, rock crevices, and other cavities are used for cover and denning. Ringtails are primarily carnivorous and mostly nocturnal.

A deceased ringtail was discovered in the Diggins by DPR staff in 2015. Since this initial discovery, this species has been detected at multiple remote camera stations in forested habitat at Malakoff by DPR biologists.

Removing or fragmenting suitable habitat including removing large trees, snags, and downed woody debris during the reproductive season (February – June) could result in potential impacts to this species. Retention of large trees, snags, and downed woody debris as well as a mosaic of forest complexity will continue to provide suitable habitat for the ringtail following proposed program activities. Implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to this species remain less than significant.

**Townsend's big-eared bat, (*Corynorhinus townsendii townsendii*). CDFW Species of Special Concern, WBWG High Priority. Present.** This species occurs throughout western North America, from British Columbia to central Mexico. The local distribution for this species is strongly associated with the presence of caves, but roosting also occurs within man-made structures, including mines and buildings. While many bat species wedge themselves into tight cracks and crevices, big-eared bats hang from walls and ceilings in the open. Males roost singly during the spring and summer months whereas females aggregate in the spring at maternity roosts to give birth. Females roost with their young until late summer or early fall, until the young become independent, flying and foraging on their own. In central and southern California, hibernation roosts tend to comprise small aggregations of individuals (Pierson and Rainey 1998). Foraging typically occurs along edge habitats near streams and wooded areas, where moths are their primary prey (WBWG 2019).

Malakoff contains trees and rock structures with cavities of sufficient size to provide roosting structures for this species. Manmade structures, including historic buildings, have been documented to support roosts, including maternity roosts. Aquatic features in Malakoff provide an adequate water source for this species. In 2015, DPR biologists documented this species roosting in two structures within the North Bloomfield townsite. One structure housed a maternity roost of approximately 50 to 60 adult females and their pups, and an individual bat was detected roosting in a second structure. In addition, open caves along Humbug Creek between the Diggins and South Yuba River provide suitable habitat for this species; however, these cave areas are excluded from treatment(s).

Removal of large trees or snags or implementation of potentially disruptive program activities during the maternity period could impact these species. Retention of large trees and snags and implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to this species remain less than significant.

**Hoary bat (*Lasiurus cinereus*). WBWG Medium Priority. Present.** Hoary bats are highly associated with forested habitats in the western United States, particularly in the Pacific Northwest. They are a solitary species and roost primarily in the foliage of both coniferous and deciduous trees, near the ends of branches, usually at the edge of a clearing. Roosts are typically 10 to 30 feet above the ground. They have also been documented roosting in caves, beneath rock ledges, in woodpecker holes, in gray squirrel nests (*Sciurus griseus*), under driftwood, and clinging to the side of buildings (though this behavior is not common). Hoary bats are thought to be highly migratory, however, wintering sites and migratory routes have not been well documented. This species tolerates a wide range of temperatures and has been captured at air temperatures between zero and 22 degrees Celsius. Hoary bats likely mate in the fall, with delayed implantation leading to birth from May through July. They

usually emerge late in the evening to forage, typically from just over one hour after sunset to after midnight. This species reportedly has a strong preference for moths, but is also known to eat beetles, flies, grasshoppers, termites, dragonflies, and wasps (WBWG 2019).

Malakoff contains stands of pines and other forest mosaics that are likely to support roosting for hoary bats. Foraging habitat and adequate water are available within Malakoff. In addition, open caves along Humbug Creek between the Diggins and South Yuba River provide suitable habitat for this species; however, these cave areas have been excluded from treatment(s). In 2019 WRA biologists detected this species acoustically in Malakoff.

Removal of large trees or snags or implementation of potentially disruptive program activities during the maternity period could impact these species. Retention of large trees and snags and implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to this species remain less than significant.

**Silver-haired bat (*Lasionycteris noctivagans*). WBWG Medium Priority. Present**. Silver-haired bats occur in temperate forests (i.e., coniferous, deciduous, and mixed) from southern Alaska to northeastern Mexico. Females form maternity roosts almost exclusively inside hollows or under loose bark of large trees and can switch roosts several times (WBWG 2019). Hibernation occurs in trees, rock crevices, leaf litter, in and under buildings, and in caves and mines. Foraging for insects occurs above the tree canopy. Silver-haired bats are known to migrate south in the winter, although overwintering at northern latitudes has also been documented (WBWG 2019).

Malakoff has stands of pines and other forest mosaics that are likely to support roosting for this species. Foraging habitat and adequate water are available within Malakoff. In addition, open caves along Humbug Creek between the Diggins and South Yuba River provide suitable habitat for this species; however, these cave areas are excluded from treatment(s). In 2019 WRA biologists detected this species acoustically in Malakoff.

Removal of large trees or snags or implementation of potentially disruptive program activities during the maternity period could impact these species. Retention of large trees and snags and implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to this species remain less than significant.

**Fringed myotis (*Myotis thysanodes*). WBWG High Priority. Present.** The fringed myotis occurs through much of western North America. Its range extends from southern British Columbia, Canada, south to Chiapas, Mexico and from Santa Cruz Island in California, east to the Black Hills of South Dakota. This species is found in desert scrubland, grassland, sage-grass steppe, old-growth forest, and subalpine coniferous and mixed deciduous forest. Oak and pinyon-juniper woodlands are most commonly used by this species. The fringed myotis roosts in colonies from 10 to 2,000 individuals, although large colonies are rare. Caves, buildings, underground mines, rock crevices in cliff faces, and bridges are used for maternity and night roosts. Hibernation has only been documented in buildings and underground mines. Tree-roosting has also been documented in Oregon, New Mexico, and California (WBWG 2019).

In 2015 DPR biologists detected 15 individual fringed myotis roosting in a horse stable within the North Bloomfield townsite. Malakoff contains suitable roosting and foraging habitat for this species, and

adequate water resources are also available. In addition, open caves along Humbug Creek between the Diggins and South Yuba River provide suitable habitat for this species; however, these cave areas are excluded from treatment(s).

Removal of large trees or snags or implementation of potentially disruptive program activities during the maternity period could impact these species. Retention of large trees and snags and implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to this species remain less than significant.

**Foothill yellow-legged frog (FYLF, *Rana boylii*). California Threatened, CDFW Species of Special Concern. Present.** The Northeast/Northern Sierra clade of FYLF is listed as threatened under the CESA and is a state Species of Special Concern (CDFW 2022). This species historically occurred from southern Oregon to Los Angeles County, but has declined in many parts of this range, particularly in central and southern California. FYLF occurs in a variety of lotic systems, and prefers shallow, flowing water with a rocky substrate. FYLF have an affinity for inundated streams and immediately surrounding habitats. FYLF use stream corridors for movement and are rarely observed far from water (typically less than 10 feet). While FYLF have been documented in upland habitats at greater distances from water, available data suggest that such usage is associated with autumnal rains, higher stream flows, and flood events. Breeding typically occurs in the spring. Aquatic breeding sites are often near stream confluences, with egg masses typically deposited in low-flow areas with cobble and/or gravel. Though some egg masses may be laid in areas with relatively closed canopies, the species prefers to deposit eggs in open areas where shade is reduced.

FYLF have been documented to occur in Humbug Creek during multiple surveys conducted since at least 2000. WRA biologists documented FYLF in Humbug Creek and in some of its tributary confluences in June 2019. In addition to Humbug Creek, the Hiller Tunnel supports movement of FYLF; however, the watercourse running through this dark cave dries and does not provide perennial stream habitat or sunlight necessary for FYLF breeding. Generally, Humbug Creek provides suitable habitat for all life stages of FYLF. However, the population of bullfrogs, which is supported by the numerous anthropogenic, lentic, breeding sites (e.g., perennially inundated shafts, ponds, marshes etc.), likely curtails the FYLF population through competition and direct predation.

Forest management activities in upland and riparian areas could impact this species. Forest treatment work in riparian areas would only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of riparian montane hardwood habitat. Humbug Creek from the Diggins to the South Yuba River, where multiple life stages of FYLF are known to occur, is excluded from treatment(s). Pre-project surveys for FYLF within suitable habitat, limitations on forest management activities within riparian areas, and a limited operating period for program activities will ensure that potential impacts remain less than significant. Avoidance measures through program design (e.g., timing and location) will also be implemented.

**Western pond turtle (WPT, *Emys marmorata*). CDFW Species of Special Concern. Present.** WPT is the only native freshwater turtle in California. This turtle occurs in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and Transverse Ranges. WPT inhabits annual and perennial aquatic habitats, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet. WPT also occupies artificial habitats, such as stock ponds, wastewater storage structures, percolation ponds, canals, and reservoirs. This species requires low-flowing or stagnant freshwater

aquatic habitat with suitable basking structures, including rocks, logs, algal mats, mud banks, and sand. Warm, shallow, nutrient-rich waters are ideal, as they support WPT prey, which include aquatic invertebrates and occasionally fish, carrion, and vegetation. WPT require suitable aquatic habitat for most of the year. However, WPT often occupy creeks, rivers, and coastal lagoons that become seasonally unsuitable. To escape periods of high water flow, high salinity, or prolonged dry conditions, WPT may move upstream and/or take refuge in vegetated upland habitat for up to four months (Rathbun et al. 2002). Although upland habitat is utilized for refuge and nesting, this species preferentially utilizes aquatic and riparian corridors for movement and dispersal.

In 2016 DPR biologists documented WPT in a pond located in the southwestern section of the Park. Since this initial detection, western pond turtle has been documented at this pond four of the last five years surveyed. WPT was also documented in the Diggins pond in 2020 but was not detected there during surveys conducted in previous years. WPT was confirmed present in Blair Pond in 2010 but has not been documented there for the past decade. The Park contains several ponds and other surface water features that could support this species, such as Humbug Creek, its tributaries, and other aquatic features. Humbug Creek from the Diggins to the South Yuba River and the surrounding mature forest, which could provide habitat for seasonal movement by WPT between ponds in Malakoff and the South Yuba River, is excluded from treatment(s). Aquatic features in the Diggins are considered less suitable due to the presence of bullfrogs, whereas the Humbug Creek drainage only has a few locations where bullfrogs are present and could support recruitment of WPT to the area from nearby South Yuba River State Park.

The California Department of Fish and Wildlife has not established a species specific management plan for the WPT. Forest management activities in upland and riparian areas could impact this species. Forest treatment work in riparian areas would only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of riparian montane hardwood habitat. Perennial wet meadows, pond habitat, and select areas along Humbug Creek from the Diggins to the South Yuba River are excluded from treatment(s). Pre-project surveys for WPT within suitable habitat, limitations on forest management activities within riparian areas, and a limited operating period for program activities will ensure that potential impacts remain less than significant. Avoidance measures through program design (e.g., timing and location) will also be implemented.

**Special-Status Wildlife Species with High Potential or Moderate Potential to Occur in Program Treatment Areas**

**Golden eagle (*Aquila chrysaetos*). Bald and Golden Eagle Protection Act, CDFW Fully Protected Species, USFWS Bird of Conservation Concern. Moderate Potential.** The golden eagle is a large raptor that occurs in open and semi-open areas from sea level to high elevation. Typical occupied habitats include grasslands, shrublands, deserts, woodlands, and coniferous forests. Breeding activity occurs broadly from January through August, and in California it is usually initiated from January to March. The large stick nests of this species are reused across years and may be maintained throughout the year. Nests are most often placed on the ledges of steep cliffs but nesting also occurs in trees and on tall manmade structures (e.g., utility towers) (Kochert et al. 2002). Golden eagles forage over wide areas, feeding primarily on medium-sized mammals (e.g., ground squirrels and rabbits), large birds, and carrion.

Malakoff provides some foraging habitat that is typically favored by this species, specifically open expanses of foothills with contiguous grassland interspersed with woodland and rocky outcrops (though these areas are relatively limited in their extent). Some trees may provide suitable nesting habitat. There are no golden eagle nest occurrences within Malakoff or within the 12 surrounding USGS 7.5-minute quadrangles (CDFW 2022). Golden eagle was determined to have a moderate potential to occur and possibly nest in program treatment areas due to the presence of suitable nesting habitat and proximal foraging habitat.

Altering, removing, or fragmenting occupied habitat or conducting forest management activities during the breeding season could result in potential impacts to this species. Retention of large trees and snags, pre-project surveys for golden eagles within suitable habitat, limitations on forest management activities within core nesting areas, and a limited operating period for program activities will ensure that potential impacts remain less than significant.

**Bald eagle (*Haliaeetus leucocephalus*). State Endangered, Bald and Golden Eagle Protection Act, CDFW Fully Protected Species. Moderate Potential.** Bald eagles occur primarily as winter visitors but also as year-round (breeding) residents throughout most of California. Habitat for this species is somewhat variable, but the bald eagle is usually strongly associated with larger bodies of water, including lakes, reservoirs, major river systems, estuaries, and the ocean. Breeding occurs primarily in forested areas near water bodies. Wintering habitat is more general, though water is usually present. Large nests are typically constructed in the upper portions of large living trees that provide expansive views of surrounding areas. Bald eagles are highly opportunistic foragers that favor fish and waterfowl, but a variety of live prey and carrion are consumed.

Malakoff contains several waterbodies that bald eagles could occasionally forage in, though these areas are generally of limited value because they are small in comparison to aquatic features that bald eagles typically occupy for extended periods, such as reservoirs with large fish species. However, larger, more suitable foraging areas are located in the general vicinity and there have been documented occurrences of bald eagles at the Scotts Flat Reservoir, located approximately four miles south of Malakoff (eBird 2022). There are no CNDDB occurrences of this species reported for Malakoff (CDFW 2022). Bald eagle has a moderate potential to nest in Malakoff due to the presence of suitable nesting habitat and proximal foraging habitat.

Altering, removing, or fragmenting occupied habitat or conducting forest management activities during the breeding season could result in potential impacts to this species. Retention of large trees and snags, pre-project surveys for bald eagles within suitable habitat, limitations on forest management activities within core nesting areas, and a limited operating period for project activities will ensure that potential impacts remain less than significant.

**Long-eared owl (*Asio otus*). CDFW Species of Special Concern. Moderate Potential.** This generally uncommon species is a resident throughout much of California, outside of the Central Valley. Long-eared owls breed in a variety of woodland and forest habitats, including coniferous, oak, and riparian communities, as well as in planted tree groves. Nearby open communities with small mammal populations, such as grasslands, meadows, and marshes, are also required for foraging. Breeding typically relies on the presence of old nests made by similar-sized birds, including hawks and crows (Shuford and Gardali 2008). Communal roosting often occurs during the winter.

Suitable habitat for long-eared owl is present in Malakoff. The forests and adjacent open areas could provide suitable nesting and foraging habitat for this species. DPR biologists have not detected this species in Malakoff, and there are no nearby documented occurrences in the CNDDB (CDFW 2022) or eBird (2022). However, Malakoff is within the current breeding range of the species (Shuford and Gardali 2008). This species has a moderate potential to occur in Malakoff due to the presence of suitable habitat.

Tree removal or loud construction activities during the breeding season could impact this species. Retention of forest complexity will ensure that suitable habitat is retained. Pre-project surveys for long-eared owl within suitable habitat will ensure that potential impacts to this species remain less than significant.

**Black swift (*Cypseloides niger*). CDFW Species of Special Concern. Moderate Potential.** Black swift populations are distributed in patches and are restricted by the availability of suitable nesting sites. Nesting sites are located behind or immediately adjacent to waterfalls on perpendicular cliffs near water (Shuford and Gardali 2008). This species has a long incubation and nestling period.

The waterfall along Humbug Creek may be suitable for black swifts; however, this area is excluded from proposed treatment(s). This species would likely have been documented if it occurs in Malakoff because the habitat is unique in the area and is located along a frequently traversed hiking trail. DPR biologists have not detected black swift at Malakoff. However, black swift has a moderate potential to occur in Malakoff because potentially suitable habitat within the breeding range of this species is present (Shuford and Gardali 2008).

Suitable habitat in Malakoff along Humbug Creek is excluded from proposed treatment(s), thus there is no potential to adversely impact this species.

**Pallid bat (*Antrozous pallidus*). CDFW Species of Special Concern, WBWG High Priority. Moderate Potential.** Pallid bats are distributed from southern British Columbia and Montana to central Mexico, and east to Texas, Oklahoma, and Kansas. This species occurs in a number of habitats, ranging from rocky arid deserts and grasslands to higher-elevation coniferous forests. Pallid bats are most abundant in the arid Sonoran life zones below 6,000 feet but have been found up to 10,000 feet in the Sierra Nevada. Pallid bats often roost in colonies of 20 to several hundred. Roosts are typically located in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented in large conifer snags (e.g., ponderosa pine), inside basal hollows of redwoods and giant sequoias (*Sequoiadendron giganteum*), and within bole cavities in oak trees. They have also been reported roosting in stacks of burlap sacks and in stone piles. Pallid bats are primarily insectivorous, feeding on large prey that are usually taken on the ground but sometimes in flight. Prey can include arthropods, such as scorpions, ground crickets, and cicadas (WBWG 2019).

Malakoff contains trees and rock structures with cavities of sufficient size to provide roosting habitat for this species. Manmade structures may also support roosts, and the aquatic features in Malakoff provide an adequate water source for this species. In addition, open caves along Humbug Creek between the Diggins and South Yuba River provide suitable habitat for this species; however, these cave areas are excluded from treatment(s). This species has a moderate potential to occur in Malakoff.

Removal of large trees or snags or implementation of potentially disruptive program activities during the maternity period could impact these species. Retention of large trees and snags and implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to this species remain less than significant.

**Western mastiff bat (*Eumops perotis californicus*). CDFW Species of Special Concern, WBWG High Priority. Moderate Potential**. Western mastiff bat ranges from Central Mexico across the southwestern US. In California, this species roosts at elevations up to 4,600 feet, where significant rock features are present (WBWG 2019). Western mastiff bat roosts are primarily located high on cliffs under exfoliating rock slabs but have also been found in similar crevices in large boulders and buildings. This species forages in groups high above the ground in broad, open areas and is most often found in desert washes, flood plains, chaparral, oak woodland, open pine forest, grasslands, and agricultural areas (WBWG 2019).

Malakoff contains rock structures that could be used by this species, but these areas are limited to the outcroppings along Humbug Creek and are excluded from proposed treatment(s). The cliffs within the Diggins are too friable to support the roosting structures that this species prefers. Manmade structures may also support roosts. In addition, the ponds, wetlands, and streams in Malakoff provide an adequate water source for this species. This species has a moderate potential to occur in Malakoff.

Removal of large trees or snags or implementation of potentially disruptive program activities during the maternity period could impact these species. Retention of large trees and snags and implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to this species remain less than significant.

**Western red bat *(Lasiurus blossevillii*). CDFW Species of Special Concern, WBWG High Priority. Moderate Potential.** This species is highly migratory and broadly distributed, ranging from southern Canada through much of the western United States. Western red bats are believed to make seasonal shifts in their distribution, although there is no evidence of mass migrations (Pierson et al. 2006). Western red bats are typically solitary, roosting primarily in the foliage of broadleaved trees or shrubs. Day roosts are commonly located in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas possibly in association with riparian trees (particularly willows, cottonwoods, and sycamores) (Pierson et al. 2006). Males and females likely maintain different distributions during pupping. Females take advantage of warmer inland areas, whereas males move to cooler areas along the coast.

Malakoff contains several areas that are likely to be suitable for this species, including large willow stands within the Diggins and along Humbug Creek; however, these areas are excluded from proposed treatment(s). Foraging habitat and adequate water resources are also available. Western red bat has a moderate potential to occur in Malakoff due to the presence of suitable habitat.

Removal of large trees or snags or implementation of potentially disruptive program activities during the maternity period could impact these species. Retention of large trees and snags and implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to this species remain less than significant.

**Long-eared myotis (*Myotis evotis*), WBWG Medium Priority. Moderate Potential.** Long-eared myotis is primarily associated with coniferous forests, but it is also found in semiarid shrublands, sage, chaparral, and agricultural areas. This species roosts under loose tree bark, in tree hollows, caves, mines, crevices in rocky outcrops, in buildings, under bridges, and occasionally on the ground. Long-eared myotis primarily consume beetles and moths, gleaning prey from foliage, trees, rocks, and from the ground (WBWG 2019).

Malakoff has stands of pines and other forest mosaics, which are likely to support roosting for this species. Foraging habitat and adequate water are available. In addition, open caves along Humbug Creek between the Diggins and South Yuba River provide suitable habitat for this species; however, these cave areas are excluded from treatment(s). This species has a moderate potential to occur in Malakoff.

Removal of large trees or snags or implementation of potentially disruptive program activities during the maternity period could impact these species. Retention of large trees and snags and implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to this species remain less than significant.

**Long-legged myotis (*Myotis volans*). WBWG High Priority. Moderate Potential.** Long-legged myotis occurs across western North America. Its range extends from southeastern Alaska to Baja California, and east to the Great Plains and central Texas. This species is usually found in coniferous forests, but also occurs seasonally in riparian and desert habitats. This species uses abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark, and hollows within snags as summer day roosts. Caves and mines are used as hibernation roosts. Long-legged myotis forage in and around the forest canopy and feed on moths and other soft-bodied insects (WBWG 2019).

Malakoff contains several areas that are potentially suitable for this species. Foraging habitat and adequate water resources are available. In addition, open caves along Humbug Creek between the Diggins and South Yuba River provide suitable habitat for this species; however, these cave areas are excluded from treatment(s). This species has not been detected by DPR biologists, and there are no records for the species occurring in the immediate vicinity (CDFW 2022). However, this species has a moderate potential to occur in Malakoff due to the proximity of suitable habitat.

Removal of large trees or snags or implementation of potentially disruptive program activities during the maternity period could impact these species. Retention of large trees and snags and implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to this species remain less than significant.

**Nesting Raptors and Migratory Birds** are protected by the federal Migratory Bird Treaty Act (16 U.S.C. 703-712), and by the California Fish and Game Code (Sections §3503, §3503.5, and §3513). Under these laws, all raptors and migratory birds and their nests are protected. A wide variety of migratory birds and several raptor species could potentially occur in program treatment areas, and forest management activities could impact nesting birds if conducted during the breeding season. Cooper's hawk, a CDFW Watch List species, as well as several owl species including northern pygmy owl (*Glaucidium gnoma*), northern saw-whet owl (*Aegolius acadicus*), flammulated owl (*Psiloscops flammeolus*), and western screech owl (*Megascops kennicottii*) have been documented in the Park (eBird

2022). Pre-project surveys for nesting species and appropriate avoidance measures will ensure that potential impacts remain less than significant.

**Species That Are Unlikely to Occur but Are CESA and/or ESA Listed and Have Documented Occurrences Near Program Treatment Areas**

**California red-legged frog (CRLF, *Rana draytonii*). Federally Threatened Species, CDFW Species of Special Concern. Unlikely.** California red-legged frog is dependent on suitable aquatic, aestivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, CRLF disperse from their aestivation sites to seek suitable breeding habitat. Aquatic breeding habitat is characterized by dense, shrubby, riparian vegetation and deep, still, or slow-moving water. Breeding occurs between late November and late April on the coast and during the spring or early summer in the foothills. CRLF aestivate (i.e., period of inactivity) in small mammal burrows, moist leaf litter, incised stream channels, and large cracks in the bottom of dried ponds during the dry months.

Suitable breeding, foraging, dispersal, and aestivation habitat for CRLF is present at Malakoff. However, most aquatic areas have predators of CRLF. Six of seven ponds that would otherwise be suitable for CRLF have high densities of bullfrogs and/or predatory fish species including bluegill, black bass, and catfish. The nearest occurrence of CRLF was documented 2.4 miles southwest of Malakoff's boundary across the South Yuba River in 2007 (CNDDB 2022). This area has been extensively searched for this species due to its rarity in the foothills and its proximity to the only known nearby extant occurrence. Surveys for CRLF were conducted in Malakoff in 1999, 2000, 2004, 2016, and 2019; no CRLF have been detected. CRLF is unlikely to be present in Malakoff due to the quantity of focused surveys that have occurred in this area and the prevalence of bullfrogs and other predators that would deter this species.

| **WOULD THE PROJECT:** | POTENTIALLY SIGNIFICANT IMPACT | LES S THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |
| c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☐ | ☐ | ☒ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| d) | Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☐ | ☒ | ☐ | ☐ |
| e) | Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☐ | ☐ | ☒ |
| f) | Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | ☐ | ☐ | ☐ | ☒ |

**DISCUSSION**

a) As described in the Environmental Setting, the proposed program would continue prescribed fire and forest management activities at Malakoff. Implementation of DPR's standard and specific project requirements, and incorporation of mitigation measures, will reduce potential impacts to sensitive, candidate, or special status species to a less than significant level.

(i) **Ringtail and other mammals** use the forested and meadow habitat in Malakoff for foraging, denning, resting, and cover. Management activities will be strategically located on the landscape to ensure that movement corridors and a mosaic of habitat patches for wildlife remain. In the absence of a strategic management plan, there is a risk of creating homogenous stand characteristics across the landscape, which could potentially be a threat to species that require closed canopy, dense vegetation, a variety of foraging and breeding habitats, and cover when moving across the landscape. In addition, many sensitive species occur more frequently in densely forested areas and this habitat type should remain well represented in the landscape of the Sierra Nevada foothills. Mature forest stands along Humbug Creek from the Diggins to the South Yuba River and mature forest south of Blair Pond are excluded from proposed treatment(s) to protect ringtail and other mammals. Implementation of **PROJECT SPECIFIC REQUIREMENT BIO-2** and **PROJECT SPECIFIC REQUIREMENT BIO-3** (Chapter 2) will ensure that potential effects of program activities on ringtail and other mammal species will remain at a less than significant level.

(ii) **California spotted owl and northern goshawk** are sensitive raptor species that are known to occur in Malakoff. These species frequent mature mixed conifer forest types. Removing nest trees, reducing habitat complexity in a nesting area, or conducting activities during the active nesting season could potentially impact these species by causing nest failure or territory abandonment, or reducing the quality of the habitat. To protect these species, known core nest sites active in recent decades and the highly suitable habitat along Humbug Creek between the Diggins and the South Yuba River are excluded from proposed treatment(s). In addition, retention of large trees and snags in **PROJECT SPECIFIC REQUIREMENT BIO-3** and implementation of **STANDARD PROJECT REQUIREMENT BIO-4** (Chapter 2) will ensure that potential effects of program activities on these species will remain at a less than significant level. All raptor species and their nests are protected under Fish and Game Code §3503.5.

(iii) **Bald eagle and golden eagle** are sensitive raptor species that have potential to use the habitat within Malakoff. Implementation of **PROJECT SPECIFIC REQUIREMENT BIO-3** and **STANDARD PROJECT REQUIREMENT BIO-5** (Chapter 2) will ensure that potential effects of program activities on these species will remain at a less than significant level.

(iv) **Bats, Other Nesting Raptors, and Nesting Songbirds/Migratory Birds.** As described in the Environmental Setting, program treatment areas are within the potential range of several sensitive bat species, some of which are known to roost in tree cavities and underneath foliage. Several sensitive bat species have been documented in the Park including Townsend's big-eared bat, hoary bat, silver-haired bat, and fringed myotis. North American bat species face unprecedented risks from continuing and emerging threats including habitat loss and fragmentation, climate change, large-scale wildfires, and white-nose syndrome, a burgeoning wildlife disease (Rodriguez et al. 2019; NPS 2022). Although large data gaps currently exist regarding what is known about bat behavior and habitat features important for their survival in the Sierra Nevada, management actions including habitat restoration and retention of large trees and snags may mitigate some of these threats. Prescribed fire and other forest treatments may improve bat roosting and foraging habitat by maintaining the health and resilience of forest ecosystems and reducing the frequency of catastrophic wildfires.

To protect roosting bats, it is important to time tree removal and restoration activities when females are not raising their young and when bats are not hibernating. Many of the trees to be removed during proposed forest treatments are immature ladder fuels and do not provide suitable roosting habitat. Large trees, snags, and downed woody material will be retained to the greatest extent possible while achieving program goals and maintaining safe conditions. Large trees or snags (> 30 inch DBH) will not be removed unless they are deemed a threat to life, property, or safe prescribed burning operations by a DPR-approved arborist, forester, or biologist. In addition, the highly suitable habitat consisting of open caves and mature forest along Humbug Creek between the Diggins and South Yuba River is excluded from proposed treatment(s).

Removal of large trees or snags or implementation of potentially disruptive program activities during the maternity period could impact bat species inhabiting the Park. Retention of large trees and snags and implementation of avoidance measures through program design (e.g., timing and location) will ensure that potential impacts to these species remain less than significant.

Malakoff also provides suitable nesting habitat for many songbird species, which are protected under the federal Migratory Bird Treaty Act and California Fish and Game Code. Sensitive songbird species known to occur in or adjacent to program treatment areas include olive-sided flycatcher, little willow flycatcher, yellow warbler, and yellow-breasted chat. Several raptor species including Cooper's hawk, northern pygmy owl, northern saw-whet owl, flammulated owl, and western screech owl have also been documented in the Park. Program impacts to bats, other nesting raptors, and nesting songbirds/migratory birds will remain at a less than significant level with integration of **PROJECT SPECIFIC REQUIREMENT BIO-3** and **STANDARD PROJECT REQUIREMENT BIO-6** (Chapter 2).

**Winter and/or Spring Burning**

Land management agencies have increased the use of prescribed fire in recent decades to reduce

fuel loads and restore ecosystems to desired conditions in dry conifer forests of the western United States (Morgan et al. 1994; Ryan et al. 2013; Stephens et al. 2016). These efforts follow legislative directives designed to reduce fuel loads on public lands, including Governor Newsom's 2021 California Wildfire and Forest Resilience Action Plan which calls for increased use of prescribed fire to restore ecosystem function for long-term forest health and resilience. California's Strategic Plan for Expanding the Use of Beneficial Fire (Newsom 2022) is also in support of several federal mandates including the 2009 National Cohesive Wildland Fire Strategy, the 2009 Collaborative Forest Landscape Restoration Program, the 2019 Exceptional Events Guidance, and the federal 2021 Forest Planning Rule (Newsom 2022).

Attempts to reintroduce fire to the landscape can be limited by concerns for human health and safety, smoke management regulations, burn season restrictions, financial cost, and other factors. For example, air quality concerns from smoke exposure can create public opposition to the use of prescribed fire. The American Lung Association published a recent report in support of the use of prescribed fire as a key fire management strategy that provides ecosystem benefits and can be used to mitigate the negative air quality, health, and safety impacts of large-scale wildfires (Hill et al. 2022).

The seasonal window to successfully conduct prescribed burning in the fall after the first rains and prior to conditions too moist to burn can often be as little as one month long. Climatic conditions, wind directions, and extreme weather events exacerbated by climate change, can further limit this window by challenging appropriate burn prescriptions. Cooperating with different agencies to minimize concurrent burning can limit the burn window even further.

The Birds and Burns Network (Saab 2007) recognized the value of prescribed fire for many bird species and the lack of understanding regarding fire effects on birds. The ecological effect of prescribed fire season has also been analyzed for a variety of wildlife species including birds (Knapp et al. 2009). A key recommendation of both projects was to adopt a strategy of application of fire that is diverse in time and space to ensure a mosaic of habitat conditions to maintain source habitats of native wildlife. Wildlife response can vary depending on burn severity, timing, patch size, forest type, and other factors. Burning only during the current brief fall window will not provide enough post-fire habitat on the landscape for those species dependent on the ecological benefits of fire, nor will it provide diversity in terms of burn seasonality.

Recent research by Saab et al. (2022) indicates that bird populations in historically low-severity fire locations may be relatively unresponsive to prescribed fire because fire there is typically more frequent and regular. Fire management activities intended to reduce fuels and lower the risk of high-severity wildfire can also be effective in creating habitat for some fire specialists at least in the short-term (Saab et al. 2022). Many species, particularly cavity-nesting birds, are dependent on post-fire landscapes.

Fires occurring during the plant growing season can cause direct mortality to nestling and fledgling birds (Lyon et al. 2000) which could potentially violate the Migratory Bird Treaty Act, although it may enhance the reproductive effort of other birds through improved brood habitat (Saab 2007). The main concern with spring burning is the potential direct mortality of nestlings or eggs, regardless of the potential net gain in nesting during the season, or potential future benefits in terms of habitat quality. The published literature on season of burning in western ecosystems

indicates that most wildlife species, including birds, are quite resilient to fire in any season (Knapp et al. 2009). This is presumably due to behavioral adaptations of species that evolved where fire was historically common to enable escape from fire, with some species benefiting or even dependent on the post-fire landscape (Hutto 2008; Knapp et al. 2000).

Bagne and Purcell (2009) found that spring burning in the Sierra Nevada resulted in low nest mortality and they observed continued breeding activities during burning even when up to 85% of the area surrounding the nest was burned. Only four of 23 active nests in the burn plots were destroyed or abandoned, three of which were ground nesters and one in a cavity. The primary bird species which could be impacted by low-intensity spring burning are those that nest in shrubs, on the ground, or in snags which could ignite during spring burning. They also found that birds which were actively setting up nesting sites and defending territories did not shift territories in response to prescribed fire. In another study, dark-eyed juncos (*Junco hyemalis*) often chose nest sites in unburned patches within prescribed burn units (Sperry et al. 2008), a condition which is common during low intensity spring burns when fuel moistures are still fairly elevated.

Even in a grassland setting where all nests were on the ground, nesting birds were resilient to low severity spring burning (Kruse and Piehl 1986). Nearly 70% of ground nests in an extensive spring grassland burn during the peak of nesting were unaffected by the fire. The authors attributed this to the low severity and patchy mosaic resulting from spring burning. Given the low rates of mortality observed in studies where no avoidance measures were employed to protect nests, nest loss from prescribed fire after incorporation of protective management actions would likely make losses negligible.

The long-term goal of the proposed program is to apply prescribed fire to the landscape at Malakoff on a variable rotation, which will mimic the natural fire regime, require minimal pre-treatment, and ultimately restore ecosystem function and forest resilience. The window to safely conduct prescribed burning in the fall is not long enough to successfully maintain fire on the landscape. In select plots, winter and/or spring burning would allow greater acreage under a fire management regime. To conduct winter and/or spring burning and also avoid impacting breeding birds and mammals, project activities need to be carefully planned and allowed only under conditions detailed in **PROJECT SPECIFIC REQUIREMENT BIO-2**, **PROJECT SPECIFIC REQUIREMENT BIO-3** (Chapter 2), and the following measure:

**MITIGATION MEASURE BIO-10: WINTER AND/OR SPRING BURNING**

- Most birds in the United States, including nonspecial status native species, are protected by the Migratory Bird Treaty Act of 1918 (MBTA) and the California Fish and Game Code.
- Plan spring burning to only occur in plots that have low shrub nesting value (as determined by a DPR-approved biologist).
- Conduct pre-project bird surveys no more than seven days prior to any late winter and/or spring burning.
- Protect trees with active nests from burning by raking organic material away from the base of the tree. Protect areas with active ground nests with a fire line.
- Plan spring burning activities to commence prior to June 1 to avoid the peak nesting period. Burning after June 1 will only occur in plots with no active ground or shrub nests.

(v) **Foothill yellow-legged frog, California red-legged frog, and western pond turtle** are special status amphibian or reptile species that breed in riparian and/or aquatic habitat and disperse to upland habitat during certain times of the year. Foothill yellow-legged frog has been documented within the Park in Humbug Creek and western pond turtle has been documented at three ponds within Malakoff. Although California red-legged frog has not been documented within the Park, the nearest occurrence is 2.4 miles from the Park boundary. Forest management activities in upland, riparian, and aquatic areas could impact these species. To protect these species, perennial wet meadows, pond habitat, and the highly suitable habitat along Humbug Creek between the Diggins and the South Yuba River are excluded from proposed treatment(s). Forest treatment work in riparian areas will only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of riparian montane hardwood habitat. Pre-project surveys for foothill yellow-legged frog, California red-legged frog, and western pond turtle within suitable habitat, limitations on forest management activities within riparian areas, and a limited operating period for program activities will ensure that potential impacts to these species remain less than significant. Avoidance measures through program design (e.g., timing and location) will also be employed. Implementation of **STANDARD PROJECT REQUIREMENT BIO-7** (Chapter 2) will ensure that potential effects of program activities on these species will remain at a less than significant level.

(vi) **Special Status Plant Species.** Three special status plant species have been documented within the Park. Suitable to potentially suitable habitat occurs within program treatment areas for an additional 22 special status plant species, as described in the Environmental Setting. Sensitive plant habitats, including fens and perennial wet meadows are excluded from treatment. However, some select habitat features such as small seeps and rocky outcrops could occur in program treatment areas and support sensitive plant species that would potentially be impacted by program activities. Implementation of **STANDARD PROJECT REQUIREMENT BIO-8** (Chapter 2) will ensure that potential effects of program activities on sensitive plants will remain at a less than significant level.

(vii) **Invasive weed species** have been documented within the Park. The introduction of non-native plant species can reduce habitat quality for many native plant and animal species. Introduction of new non-native invasive plants or the spread of existing weed infestations is possible through program operations. Integration of **STANDARD PROJECT REQUIREMENT BIO-9** (Chapter 2) will ensure that the risk of inadvertently introducing invasive species, spread of existing infestations, or failure to promptly treat inadvertent introductions through program activities remains at a less than significant level.

b) Malakoff contains several areas of riparian habitat including Humbug Creek and its tributaries. Tree removal in these riparian corridors has the potential to affect drainage patterns or sediment transport rates and affect surface waters. Forest management activities in riparian areas could also impact sensitive plant and animal species unique to this habitat. Under the proposed program, forest treatment work in riparian areas will only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for the restoration and enhancement of riparian montane hardwood habitat. Sensitive habitat areas adjacent to program activities will be protected with incorporation of **STANDARD PROJECT REQUIREMENT HYDRO-1** and **STANDARD PROJECT REQUIREMENT HAZMAT-1**(Chapter 2). In addition, implementation of **PROJECT SPECIFIC REQUIREMENT BIO-7** and **PROJECT**

**SPECIFIC REQUIREMENT BIO-8** (Chapter 2) will provide protection for sensitive plant and animal species that depend on select habitat features. Lastly, implementation of the following measures will ensure that any impacts to riparian habitat remain at a less than significant level.

**MITIGATION MEASURE BIO-11: RIPARIAN HABITAT PROTECTION**

- Forest treatment work in riparian areas will only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of montane hardwood conifer habitat.
- No vehicles or heavy equipment are allowed in riparian areas.
- Exclude perennial wet areas with unusual plants and communities from tree removal, i.e., fens and perennially wet meadows.
- Use hand crews in or adjacent to riparian areas to conduct tree felling and removal.
- Hand crews will conduct work in late summer or fall when riparian soils are driest, and typically the native plant communities have set seed and have begun to senesce. Late summer and fall are also after the sensitive period when wildlife young are mobile and dispersing, and outside of the migratory bird nesting season and bat maternity period.
- Protect special status or other sensitive plant and animal species with pre-project surveys and avoidance.
- Hand crews will not cross streams when manually hauling out trees and associated tree debris.
- Hand crews will directionally fell trees away from streams/creeks as feasible.
- Hand crews will avoid creating permanent trails and take precautions to prevent damage to soil (compaction or erosion) and non-target vegetation in riparian areas.
- Riparian areas will be marked with flagging. Piles of logs and tree debris for prescribed burning will be placed outside of riparian areas and positioned where water-runoff from pile burning would not return directly into the riparian area or waterway.
- Tree marking prescription will allow for some areas of high-density trees as places of refuge and other habitat in riparian corridors and along meadows. The prescription will avoid removing trees that provide shade or cover of aquatic habitats in order to maintain cooler water temperatures.
- Use a tracked chipper to chip material on site as opposed to dragging it through sensitive habitat.

**MITIGATION MEASURE BIO-12: HEAVY EQUIPMENT**

- No vehicles or heavy equipment are allowed in riparian areas.
- A DPR-approved botanist will review and approve all treatment areas outside of road and trail alignments that require heavy equipment operation to ensure avoidance of impacts to sensitive vegetation, including but not limited to, wet meadow and sensitive habitat types.
- A DPR-approved biologist will review and accept all locations used for staging/storage of vehicles, equipment, and/or materials used during the project.
- Full suspension cable yarding or end line yarding in or adjacent to riparian areas may be used to conduct tree felling and removal. These are treatment techniques that can be safely implemented to protect areas with sensitive resources or habitats, such as riparian areas.

c) Wetlands are excluded from treatment(s) under this program. Sensitive habitat areas adjacent to program activities will be protected with incorporation of **STANDARD PROJECT REQUIREMENT HYDRO-1, STANDARD PROJECT REQUIREMENT HAZMAT-1**, and

**PROJECT SPECIFIC REQUIREMENT GEO-1** (Chapter 2). Incorporation of these project requirements will ensure that any potential impacts remain less than significant.

d) The proposed program would not impede fish passage and no work would occur in any fish bearing stream. Reducing tree density and altering forest structure of large contiguous areas of forested habitat in a brief period of years could result in disruption of wildlife movement corridors. Although limited work is proposed in riparian areas in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for the restoration and enhancement of riparian montane hardwood forest habitat (see discussion b above), riparian habitats do not necessarily provide movement laterally between riparian habitat strips. Implementation of **PROJECT SPECIFIC REQUIREMENT BIO-2**, **PROJECT SPECIFIC REQUIREMENT BIO-3**, **STANDARD PROJECT REQUIREMENT BIO-4**, **PROJECT SPECIFIC REQUIREMENT BIO-5, STANDARD PROJECT REQUIREMENT BIO-6, PROJECT SPECIFIC REQUIREMENT BIO-7,** and **MITIGATION MEASURE BIO-11** (Chapter 2) will require maintenance of forest complexity in areas used by sensitive species. These project requirements and measures will provide a mosaic of habitat types and maintain wildlife movement corridors across the landscape, ensuring that any potential impacts remain less than significant.

e) DPR is not subject to local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; however, DPR policy and Mission Statement incorporate the protection of natural resources into the short-term and long-term management goals for its park units. Furthermore, DPR operates cooperatively with sister agencies and local jurisdictions to ensure natural resources are protected in perpetuity. No impact.

f) This program will not conflict with any Habitat Conservation Plans, Natural Communities Conservation Plans, or other approved habitat conservation plan. No impact.

**STANDARD PROJECT REQUIREMENTS:**

**STANDARD PROJECT REQUIREMENT BIO-1: BIOLOGICAL MONITORING**

- Prior to use, a DPR-approved biologist will review and approve all locations used for staging/storage of vehicles, equipment, and/or materials used during the project. Preferred locations include existing roads and adjacent turnouts to avoid post project restoration.
- A DPR-approved natural resources specialist will implement biological monitoring at their discretion throughout the project site.

**STANDARD PROJECT REQUIREMENT BIO-4: CALIFORNIA SPOTTED OWL AND NORTHERN GOSHAWK**

- Exclude perennial wet meadows, pond habitat, and select riparian areas along Humbug Creek (i.e., known California spotted owl and northern goshawk core nest areas) from treatment(s).
- A DPR-approved biologist will conduct protocol level surveys prior to project activities within suitable habitat for California spotted owl or northern goshawk to ensure no reproductively active California spotted owls or northern goshawks are present.
- If an active nest is detected, no project activities will occur within 0.25 miles of a California spotted owl nest or within the best 500 acres of northern goshawk habitat during the limited operating period (February 15 to August 15), or until the young fledge, as determined by a DPR-approved biologist. If a DPR-approved biologist determines a nest has failed, project

work may commence in the vicinity prior to August 15.

- No forest thinning activities will take place within 500 feet of a known California spotted owl or northern goshawk nest unless project work is pre-authorized by a DPR-approved biologist and complies with all regulatory rules and regulations (i.e., California Department of Fish and Wildlife; CDFW).
- Low intensity prescribed fire may be implemented within 500 feet of a known nest tree if outside the limited operating period and measures are implemented to avoid impacts to known nest and roost tree(s).
- The snag retention target for areas beyond 500 feet of a known California spotted owl nest but within 0.25 miles of the nest is 5 to 8 snags per acre (>14 inch DBH and >20 feet in height) with a canopy cover managed to at least 50%.
- For areas beyond 500 feet of a known northern goshawk nest but within the best 500 acres, manage forest to promote complexity.

**STANDARD PROJECT REQUIREMENT BIO-8: SENSITIVE PLANTS**

- Exclude sensitive habitats such as fens and perennial wet meadows from treatment(s).
- Prior to activities in or near habitat which could potentially support sensitive plant species, a DPR-approved botanist will conduct rare and heritage plant surveys during the appropriate time of year.
- Mark all special status, rare, unique, and/or heritage plant species for avoidance.
- Report any new discovery of a sensitive plant species that occurs before or during project implementation to a DPR botanist. If found, these plants will be demarcated and avoided during project work.

**STANDARD PROJECT REQUIREMENT BIO-9: INVASIVE PLANTS**

- To prevent the introduction and spread of invasive plants to uncontaminated areas, all equipment and tools will be cleaned free of plant parts and soil prior to arriving at Malakoff.
- A DPR-approved botanist will survey project areas prior to project work (and during the appropriate season) for the presence of invasive species with potential to spread by project activities.
- Project areas that support weed populations with potential to spread by project activities will be marked for avoidance.
- A DPR-approved biologist will survey all project areas in the first growing season, after project activities are completed, to ensure that no weeds were introduced during project activities.
- Any inadvertent weed introductions or expansions will promptly be treated for removal.
- Post treatment/removal surveys will continue for another growing season if weeds are found and treated during the first growing season.
- Ensure that any imported new fill, such as gravel or soil, is from a certified weed free source where feasible.

**STANDARD PROJECT REQUIREMENT HYDRO-1: EROSION AND SEDIMENT CONTROL**

- Implement Best Management Practices (BMPs) in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during any ground disturbing activities as approved by the Regional Water Quality Control Board.
- The DPR Contractor will install long-term erosion control measures for any areas where

ground disturbing activities result in bare soil areas. Attain the appropriate soil density required to reduce erosion and optimize revegetation of the appropriate native grass seed, sterile grass seed, and/or duff as approved by a DPR-approved biologist.

**STANDARD PROJECT REQUIREMENT HAZMAT-1: SPILL PREVENTION AND REPSONSE**

- Clean all equipment prior to the start of construction and before entering project areas. During the project, clean and repair all equipment (other than emergency repairs) outside of project boundaries. Contain and dispose of all contaminated spill residue, or other hazardous compounds, outside the boundaries of the project at a lawfully permitted or authorized destination.
- Inspect all equipment for leaks prior to the start of construction and regularly inspect thereafter until removed from project areas.
- Prepare a Spill Prevention and Response Plan (SPRP) prior to the start of construction and provide protection to on-site workers, the public, and the environment from accidental leaks or spills of vehicle fluids or other potential contaminants. This plan will include but not be limited to the following:
  - A map that delineates construction staging areas, and where refueling, lubrication, and maintenance of equipment will occur.
  - A list of items required in an on-site spill kit that will be maintained throughout the life of the project.
  - Procedures for the proper storage, use, and disposal of any solvents or other chemicals used during the project.
  - Identification of lawfully permitted or authorized disposal destinations.

**PROJECT SPECIFIC REQUIREMENTS:**

**SPECIFIC PROJECT REQUIREMENT BIO-2: MAMMALS**

- Retain habitat complexity to the greatest extent possible while achieving project goals and maintaining safe conditions.
- When shrub removal is conducted, use selective treatment techniques that retain nut and berry producing plants such as huckleberry oak (*Quercus vaccinifolia*) and the unique resprouting Indian manzanita (*Arctostaphylos mewukka*).
- In areas not treated following Defensible Fuel Profile Zone (DFPZ) or Shaded Fuel Break prescription:
  1. Achieve snag retention target of 5 to 8 per acre (>14 inch DBH and >20 feet in height) where safe and feasible; retention will favor the largest snags and those with evidence of wildlife use.
  2. Retain downed wood greater than 14 inches in diameter where feasible with a minimum target of 15 tons/acre. These logs will be left intact, with all limbs and root wads protruding to provide habitat complexity for wildlife such as black bear and ringtail.
  3. Maintain a landscape mosaic, including islands of untreated vegetation.
  4. Do not plan late winter or spring burning in plots providing high-quality mammal habitat, as determined by a DPR-approved biologist.

**SPECIFIC PROJECT REQUIREMENT BIO-3: MICROHABITAT PROTECTION (REPRODUCTION, DENNING, ROOSTING, HIBERNATION)**

- Retain large trees, snags, and downed woody material to the greatest extent possible while still achieving project goals and maintaining safe conditions.
- Do not remove large trees or snags (> 30 inch DBH) unless they are deemed a threat to life, property, or safe prescribed burning operations by a DPR-approved arborist, forester, or biologist.
- Only remove large trees and snags (>30 inch DBH) during the breeding season after surveyed and approved by DPR-approved biologist.
- Achieve snag retention target of 5 to 8 per acre (>14 inch DBH and >20 feet in height) where safe and feasible; retention shall favor the largest snags and those with evidence of wildlife use.
- In treatment areas outside of the Public Safety and Historic Core Protection Zone, retain large, downed woody debris in coordination with recommendations of a DPR-approved biologist.
- Do not actively ignite suitable den sites in the interior of prescribed burn plots.

**SPECIFIC PROJECT REQUIREMENT BIO-5: BALD EAGLE AND GOLDEN EAGLE**

- A DPR-approved biologist will conduct surveys within suitable habitat to ensure that no reproductively active bald and/or golden eagles are present prior to project activities.
- If an active nest is detected, no project activities will occur within 0.5 miles of the nest from February 15 to August 15, or until the young fledge, as determined by a DPR- approved biologist. If a DPR-approved biologist determines a nest has failed, project work may commence in the vicinity prior to August 15.

**SPECIFIC PROJECT REQUIREMENT BIO-6: BATS, OTHER NESTING RAPTORS, AND NESTING SONGBIRDS/MIGRATORY BIRDS**

- Retain large trees, snags, and downed woody material to the greatest extent possible while achieving project goals and maintaining safe conditions.
- Do not remove large trees or snags (> 30 inch DBH) unless they are deemed a threat to life, property, or safe prescribed burning operations by a DPR-approved arborist, forester, or biologist.
- Prior to removal, a DPR-approved biologist will survey all large trees and snags (> 30 inch DBH) for cavity dwelling birds and bats. If determined to be actively used for reproduction, roosting, or hibernation, work will be delayed unless the tree poses an imminent hazard to life, property, or safe prescribed burning operations. Do not remove trees during the reproductive season.
- Project activities will not deliberately result in failure of nesting songbirds/migratory birds. A DPR-approved biologist will conduct surveys prior to project activities occurring in spring or summer. Protect all active songbird/migratory bird nests with an appropriate nest buffer determined at the discretion of a DPR-approved biologist. A DPR-approved biologist will authorize and/or monitor all proposed project activities within nest buffer area(s) to avoid project related nest failure.
- Protect all raptors not specifically addressed in other Project Requirements with a 0.25 mile active nest buffer from April 1 to August 15, or until young fledge, as determined by a DPR-approved biologist. Any proposed project activities within this buffer area must receive prior authorization from a DPR-approved biologist.

**SPECIFIC PROJECT REQUIREMENT BIO-7: CALIFORNIA RED-LEGGED FROG, FOOTHILL YELLOW-LEGGED FROG, AND WESTERN POND TURTLE**

- Exclude perennial wet meadows and pond habitat from treatment(s).
- Exclude Humbug Creek habitat known to be occupied by FYLF and potentially suitable for CRLF and WPT movement from treatment(s).
- A DPR-approved botanist will review and approve any treatment areas outside of road and trail alignments that require heavy equipment operation to ensure avoidance of impacts to sensitive vegetation, including but not limited to, wet meadow and sensitive habitat types.
- Delineate the boundaries of each exclusion zone with temporary, high-visibility flagging to prevent the encroachment of construction personnel and equipment beyond the described project footprint. Only remove the flagging when all construction equipment is removed from the job site, following each construction season.
- To the extent practicable, confine initial ground disturbing activities to between April 15 and October 15 when within one mile of designated CRLF critical habitat or suitable breeding habitat, when the frog should be in aquatic habitat, to avoid the period when CRLF are most likely to be dispersing through upland areas.
- All construction personnel will attend an environmental education program delivered by a DPR-approved biologist with species-specific experience prior to working on the project site. The program will include an explanation of how to best avoid the incidental take of listed species. The field meeting will include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis will be placed on the importance of the habitat and life stage requirements within the context of project maps showing areas where avoidance and minimization measures are to be implemented. The program will include an explanation of applicable Federal and State laws protecting listed species as well as the importance of compliance with DPR and resource agency conditions. Documentation of the training, including the original sign-in sheets, will be sent to the US Fish and Wildlife Service (USFWS).
- The contractor must designate an official point of contact (POC) to be at the Park during program activities in the event that a FYLF, CRLF, or WPT is found. If any of these species are found on-site, all work in that location will be temporarily halted and diverted to another location until a DPR State Representative is contacted and the DPR-approved biologist and USFWS and/or CDFW are consulted for further direction.
- To the extent practicable, all work will occur during daylight hours.
- Construct burn piles in designated project areas outside of riparian habitat and other sensitive natural resource areas.
- Where feasible, tree slash and debris will be chipped and hauled away.
- A DPR-approved biologist will review and accept all locations used for staging/storage of vehicles, equipment, and/or materials used during the project.
- Design treatment(s) to retain habitat complexity to the greatest extent possible while achieving project goals and maintaining safe conditions.
- Strategically locate management activities on the landscape to ensure that movement corridors and a mosaic of habitat patches for wildlife and plant seeds remain. In the absence of a strategic management plan, there is a risk of creating homogenous stand characteristics across the landscape, which could potentially be a threat to species that require closed canopy, dense vegetation, a variety of foraging and breeding habitats, and cover when moving across the landscape. In addition, many sensitive species occur more frequently in densely forested areas and this habitat type should remain well represented in the landscape of the Sierra Nevada foothills.

- Strategically plan treatments, both spatially and temporally, to avoid any special status species that have potential to be present in the project area.

**SPECIFIC PROJECT REQUIREMENT GEO-1: REMEDIATION OF DISTURBED AREAS**

- Rehabilitate all roads, fire line, or other disturbed areas to pre-project conditions or better to restore natural topography and drainage patterns, as directed by a DPR-approved biologist or geologist.
- Remediation may include one or more of the following:
  1) Topsoil and mulch removal and/or replacement for landings and main heavy equipment routes of travel.
  2) Mulch application to a surface cover depth of approximately two inches in areas where bare soil resulted from project activities.
  3) Soil loosening for landings and routes of travel with more than four equipment trips. Use ripping tines attached to a backhoe or similar equipment to increase infiltration.
  4) Redistribute soil and/or mulch to eliminate tracks, ruts, or compressions.
  5) Additional measures as determined by a DPR-approved geologist or natural resource specialist.

**MITIGATION MEASURE**:

**MITIGATION MEASURE BIO-11: RIPARIAN HABITAT PROTECTION**

- Forest treatment work in riparian areas will only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of montane hardwood conifer habitat.
- No vehicles or heavy equipment are allowed in riparian areas.
- Exclude perennial wet areas with unusual plants and communities from tree removal, i.e., fens and perennially wet meadows.
- Use hand crews in or adjacent to riparian areas to conduct tree felling and removal.
- Hand crews will conduct work in late summer or fall when riparian soils are driest, and typically the native plant communities have set seed and have begun to senesce. Late summer and fall are also after the sensitive period when wildlife young are mobile and dispersing, and outside of the migratory bird nesting season and bat maternity period.
- Protect special status or other sensitive plant and animal species with pre-project surveys and avoidance.
- Hand crews will not cross streams when manually hauling out trees and associated tree debris.
- Hand crews will directionally fell trees away from streams/creeks as feasible.
- Hand crews will avoid creating permanent trails and take precautions to prevent damage to soil (compaction or erosion) and non-target vegetation in riparian areas.
- Riparian areas will be marked with flagging. Piles of logs and tree debris for prescribed burning will be placed outside of riparian areas and positioned where water-runoff from pile burning will not return directly into the riparian area or waterway.
- Tree marking prescription will allow for some areas of high-density trees as places of refuge and other habitat in riparian corridors and along meadows. The prescription will avoid removing trees that provide shade or cover of aquatic habitats in order to maintain cooler water temperatures.
- Use a tracked chipper to chip material on site as opposed to dragging it through sensitive habitat.

**MITIGATION MEASURE BIO-12: HEAVY EQUIPMENT**

- No vehicles or heavy equipment are allowed in riparian areas.
- A DPR-approved botanist will review and approve all treatment areas outside of road and trail alignments that require heavy equipment operation to ensure avoidance of impacts to sensitive vegetation, including but not limited to, wet meadow and sensitive habitat types.
- A DPR-approved biologist will review and accept all locations used for staging/storage of vehicles, equipment, and/or materials used during the project.
- Full suspension cable yarding or end line yarding in or adjacent to riparian areas may be used to conduct tree felling and removal. These are treatment techniques that can be safely implemented to protect areas with sensitive resources or habitats, such as riparian areas.

# V. CULTURAL RESOURCES

## ENVIRONMENTAL SETTING

Malakoff, which encompasses the Malakoff Diggins-North Bloomfield National Register Historic District (Historic District, MDNBHD), is an expansive hydraulic gold-mining landscape situated in the rural hills approximately 26 miles northeast from the town of Nevada City, a small, gold rush-era community located at the snow line of the Sierra Nevada's western slope. The Historic District encompasses the large portion of the Humbug Creek watershed that was historically known as Humbug Cañon, a major tributary to the wild and scenic South Fork Yuba River. The canyon drains a swath of the San Juan Ridge's southern slope. The geology of the ridgeline includes deep deposits of auriferous gravel that are vestiges of an ancient course of the Yuba River in the Tertiary Period, tens of millions of years ago, some of it capped by a younger impervious volcanic flow known as the Mehrten Formation (Mac Boyle 1919). The underlying bedrock is mostly slate. Much more recent incised drainages have cut through and exposed portions of the Tertiary deposits. Today, stands of pine, fir, cedar, oak, and manzanita cover the slopes and ridgelines, and dense riparian forests line the waterways and soggy bottoms of abandoned hydraulic mine pits. Mid-slope meadows with natural springs are interspersed across the slopes below the Mehrten Formation.

### Existing Conditions

Malakoff is home to one of largest historic mine sites from California's 19th century gold rush era. Hydraulic gold mining in the 1860s drastically altered the landscape, resulting in the first environmental law enacted in the nation. Known as the Sawyer Decision, this 1884 injunction imposed strict regulations on discharging debris into rivers in the Sierra Nevada and resulted in the end of California's hydraulic mining era. Along with the historic town of North Bloomfield, the Diggins mine pit is one of the main attractions of the Park today.

The National Register of Historic Places (NRHP) is the nation's inventory of historic places and the national repository of documentation on the variety of historic property types, significance, abundance, condition, ownership, needs and other information. It is the start of a national census of historic properties. The California Register recognizes properties that are significant to the local area or to California.

Malakoff was nominated to the NRHP in 1972 (Welts 1972) and listed on the Register as the Malakoff Diggins-North Bloomfield Historic District in 1973. This NRHP listing was based on a cluster of 18 standing historic buildings at North Bloomfield and on the adjacent famous Malakoff Mine, with its "crenellated spires which fringe the canyon, creating what amounts to a miniature Grand Canyon or Bryce Canyon" (Welts 1972). No other buildings, structures, objects, sites, or landscapes were identified or evaluated in the 1972 NRHP nomination. The District boundary incorporated approximately 865 acres, even though Malakoff was already larger than that and has increased in size substantially since that time. Malakoff is 3,200 acres today.

The Anthropological Studies Center (ASC) of Sonoma State University recently conducted a cultural resources inventory of Malakoff (Selverston 2019). The inventory begins with a historic overview situating historical activities that occurred at Malakoff within a broad assessment of gold mining across the state to identify potential historical associations and assign them to identified cultural resources. Inventory efforts include a records search and intensive field survey of approximately 1,400 acres to

locate archaeological and historic-era elements that may contribute to the historical significance of the District or may be significant for their own individual merits. The inventory identified thousands of above-ground archaeological and historic-era cultural resources at 326 discrete sites, of which 311 contain historic-era components. These components are parts of a dense mosaic of cultural resources that the 1972 Historic District documentation fails to consider. An evaluation study (Selverston 2020) evaluates the historic-era elements as contributors to the significance of the Historic District. The inventory also lists dozens of sites in Malakoff that contain Native American resources that do not pertain to the Historic District. Although some of the Native American sites were previously nominated to the NRHP as an archaeological district distinct from the Historic District, they have not been listed.

The Historic District contains 311 distinct cultural resources within its boundary that contribute to its significance. These resources are associated with the historical context of gold mining in the Sierra Nevada, 1848–1950. Many of them contribute evocative vernacular and designed landscape elements to the Historic District's significance. They range in size and complexity from the vast Malakoff Diggins hydraulic landscape itself, containing hundreds of gold mining resources across more than 400 acres, to the numerous intertwining ditches crisscrossing the Park; from the picturesque townsite of North Bloomfield, containing many buildings, structures, objects, and archaeological resources, to the scattered utility posts and insulators associated with the world's first successful long-distance telephone line. Abandoned mining operations and dwelling ruins exist throughout Malakoff. Many of the identified properties contribute to the Historic District's ability to convey a sense of its gold mining past and are capable of conveying to the viewer facets of a complex historical process. All of them have yielded, or have the potential to yield, data important to understanding the full breadth of that history. Malakoff also includes 31 sites containing Native American resources.

**Prehistoric Context**

The prehistory of the foothill belt between the Sierra Nevada highlands and Central Valley lowlands shares elements of both the Sierra Nevada and the Central Valley regions. Delacorte and Basgall (2006) conclude that there was some occupation on the South Fork Feather River in the foothills approximately 900 feet in elevation between 7,000 and 6,000 years ago, with extensive sustained occupation by 4,000 years ago. Prehistoric sites in these lower elevations of the western slope of the Sierra often consist of darkened midden soils containing deposits of ash, heat-affected rock, flaked stone and groundstone artifacts, and basalt, chert, or obsidian debris ("debitage") from making tools. Dishes made from steatite are not uncommon. Bedrock milling features are present on some outcrops. Bone does not preserve well on the west slope, so that evidence is generally missing.

In the Eldorado National Forest, in the foothills south of Malakoff, Jackson (1994) observed a pattern in the locations of what he referred to as key-sites: sites with concentrations of both flaked and groundstone lithic artifacts and milling features with 14 or more milling surfaces. He found key-sites in subalpine settings on slopes of less than 30 percent within 600 feet of a water source and on stream terraces twice as often as in any other setting. Jackson further observed that below the snowline and in resource-rich areas, at least two key-sites are located within a 3,000-foot radius, and that each has an average minimum of eight sites associated with it, of which at least two contain one to six bedrock mortar cups, and the others are deposits of flaked-stone debitage. Given the similar ecological and topographic setting, it is reasonable to expect a similar pattern of prehistoric sites along Humbug Creek.

Studies in the Park and surrounding foothills provide more detail of the local prehistoric archaeological evidence. Elsasser's (1960) early work examining the archaeology of the Sierra Nevada incorporated extensive excavations at CA-NEV-15, located approximately seven miles west of the Park at 2,400 feet in elevation, as well as surface data from three sites he recorded within the Park. The study at CA-NEV-15 involved excavation of about 140 cubic yards of soil from 75 5 × 5 foot test units, and probing the soil with hand tools to locate artifacts. Only a portion of the soil was screened, and debitage was not collected. The effort resulted in a collection of 876 artifacts, most of which are projectile points, scrapers, and hand-stones, with smaller quantities of other flaked-stone tools such as drills, blades, choppers, and worked cores, and other stone tools such as hammerstones and grinding slabs. A still smaller portion of the assemblage includes pestles, a hopper mortar, a granite bowl, and various steatite items. The findings were interpreted as evidence of a wide geographic distribution of early and late phase Martis traditions, as well as presence of the Kings Beach Complex.

Many years after Elsasser's work, White and Origer (1987) examined three sites, including CA-NEV-251 approximately one mile from the Park, at the request of the Bureau of Land Management as part of a damage-assessment program. All three sites had been looted. Work at CA-NEV-251 involved excavation of two deep 1 × 2 meter test units examining a total of 4.4 cubic meters of soil, and resulting in a collection of 9,047 items. The majority of the items are debitage, but 334 more formal artifacts were also collected, and 193 pieces are of obsidian. Of note was the collection of 209 bone fragments, indicating that faunal remains may be found in foothill sites with favorable conditions. White and Origer compared their findings with Elston's (1977) high Sierra work, Ritter's work at the proposed Auburn Reservoir area on the American River, and Elsasser's (1960) work at CA-NEV-15 to determine a better understanding of chronology and temporal markers. They proposed three occupation horizons or phases in concordance with observations by Elsasser, Elston, and Ritter. According to this synthesis, initial use of the foothills began around 4,000 to 3,500 years ago (2000 to 1500 B.C.) with trends that continued until about 2,500 years ago (500 B.C.). During this period, it appears the sites were used as temporary hunting bases, but they also contain numerous milling tools (White and Origer 1987) that suggest processing of plant foods. This first phase is similar to what Elsasser called early Martis. The second phase of occupation began after about 2,400 years ago (400 B.C.) following a brief hiatus and appears to have involved sustained occupation and continued hunting, but with a decrease in milling activities. This second phase is similar to Elsasser's late Martis. The third and final phase of occupation began about 1,200 years ago (A.D. 800) and reflects a gradual decrease of use and eventual abandonment of the site. This last phase is similar to Elsasser's Kings Beach phase. Arrowheads replaced large projectile points, and the use of nearby bedrock mortars during this period is inferred (White and Origer 1987).

Investigations within the Park noted the similarity between its assemblage and the Martis material, (Felton et al. 1979), and recovery of 16,898 prehistoric items, not including the limited number of animal-bone fragments, carbonized seeds, and charcoal samples (Payen 1989). Approximately 300 obsidian samples and a single composite charcoal sample indicated a prehistoric occupation between 4,478 and 1,625 years ago (2528 B.C. to A.D. 325). The oldest component appears to begin about 2,500 years ago (500 B.C.). A single hydration band suggests use of the site may have begun as early as 4,500 years ago (2500 B.C.), but individual hydration measurements are notoriously variable and must be interpreted with caution. The Middle component dates from 1,500 to 800 years ago (A.D. 500 to 1200), and the Late from 800 to about 160 years ago (A.D. 1200 to 1840). Investigations determined sustained intensive habitation in the region extends back at least 4,500 years, beginning at about 2500 B.C.

Several important investigations carried out elsewhere in the foothill belt of the North Central Sierra Nevada further ground the prehistoric archaeology of the Park in the broader region. These studies indicate that people likely settled the Sierra Nevada western slope foothills in a substantial way between about 4,500 and 3,200 years ago (2500 to 1200 B.C.). Prior to that, the region appears to have been used only intermittently by small mobile groups for some 2,500 years. This settlement of the foothills seems to correspond roughly with the establishment of the Martis tradition on the Sierra Nevada crest about 5,000 to 3,000 years ago (3000 to 1000 B.C.), and with the emergence of the Windmiller tradition in the Central Valley that lasted from about 4,500 to 3,500 years ago (2500 to 1500 B.C.). Archaeological findings indicate that site populations grew and declined during subsequent millennia, sometimes dramatically. The intensity of use of the region appears to have fluctuated somewhat, and various subsistence technologies were introduced, refined, and replaced. Most obviously to archaeologists, technology for launching projectiles shifted from initial use of atlatls to later adoption of bows, and technology for processing plant foods changed from portable grinding slabs and mortars to a greater emphasis on bedrock milling features. Ways in which these changes may have related to population density and movements; changes in seasonality, sedentism, settlement patterns, and the use of regions and resources; and evolving subsistence practices and social complexity are subjects of archaeological inquiry.

**Ethnographic Background**

Malakoff is within the territory of the Nisenan (Johnson 2018; Wilson and Towne 1978). They are linguistically associated with the Maidu, or Mai'Deh, historically described as a "large nation, extending from the Sacramento to Honey Lake, and from Big Chico Creek to Bear River" (Powers 1877). Kroeber (1929) disagreed, arguing that "Nisenan is not a specific tribal or group name. The word means merely people or Indian." Stephen Powers' ethnographic work in the 1870s indicates *nishinam* means "our people" and notes the settlements along the Yuba River "could be classed indifferently with the Nishinam or the Maidu" (Powers 1877). This is in part because the people living in the Yuba River watershed spoke a dialect transitional between the Maidu to the north and the Nisenan to the south (Blount et al. 2008). Powers (1877) identifies three settlements on the Yuba River, *Yú-ba* on the Feather River opposite the mouth of the Yuba River, *Us-tó-ma* at Nevada City, and *Pan'-pa-kan* between them. Those living in these settlements add the word *maidu*, thus Ustoma Maidu. In his study of the Northern Maidu, the people north of the Yuba River, Dixon (1905) provides a map depicting the settlements of Yupu, Yamakö, and Wokodot in the Yuba River watershed, all downstream from Malakoff.

Alfred Kroeber's (1925) *Handbook of the Indians of California* provides seven Southern Maidu settlement names and locations along the Yuba River watershed, including *Kushna*, located within four miles of North Bloomfield on the same side of the Yuba River, in the vicinity of the modern town of Washington. *Kushna* is the only ethnographically known village in the vicinity of Malakoff. Blount et al. (2008) found an article printed in the *Sacramento City Daily Transcript* about this group: "Cush-nas, – located on the Rio Chino, near Bidwell's and Potter's, on the south branch of the Yuba." Blount et al. (2008) concluded that Cush-nas referred to a tribelet group that would have consisted of multiple settlements scattered across the San Juan Ridge, the land between the South and Middle Forks of the Yuba River. Chino Creek is a tributary of the Feather River, upstream from the now-inundated town of Bidwell's Bar and Potters Ravine, indicating some geographical confusion at this early date. Adam Johnston confirmed this group while visiting tribal communities in the Sacramento Valley and adjacent Sierra Nevada in 1850 while working as a sub-agent to the federal government's California Indian Agents. His report, contained in the Annual Report of the Commissioner of Indian Affairs (1850) to the

31st U.S. Congress, describes his visits to ten tribes in the mountains of the South Yuba, including the Cush-nas, numbering about 600. The *History of Yuba County* repeats Johnston's observations regarding the Cush-nas, as well as two additional "authorities" confirming Cush-nas on the South Fork Yuba River, as well as south of the Yuba (Chamberlain and Wells 1879).

Informants interviewed by Hugh Littlejohn in 1928 named many additional settlements of the Hill Nisenan (Carlson 1986). Dick Childs, who is from Nevada City, recognized the group north of Yuba River as distinct from his own, but also reported that tribal members from his group went to the "mountains around Bloomfield and Washington to hunt" (Blount et al. 2008). Presumably the two groups were on good terms. Volume 8 of the Smithsonian's *Handbook of North American Indians* places Kushna in the hills to the south of South Fork Yuba River, lending support to their full range encompassing the upriver portion of the South Fork watershed (Wilson and Towne 1978).

Still other sources report that the word *nisenan* means "people," "from among us," and "of our side" (Carlson 1986; Chalmers 2006; Gardner 1968). Lizzie Enos, whose life was chronicled in Richard Simpson's 1977 book *Ooti: A Maidu Legacy*, and who is well known to both the Native American and anthropological communities, preferred the term Maidu, insisting, "Maidu is the name for man" (Matney 2008). The former Chairman of the Nisenan Tribe of the Nevada City Rancheria, Richard Johnson (2018), prefers Nisenan for his people in recognition of their unique identity and language in the Yuba River watershed. The Nisenan defined in this way occupied the Yuba, Bear, and American river watersheds, extending from the Sierra Nevada summit to the Sacramento River (Matson 1972). Chairman Johnson further divides the Nisenan into Southern and Northern Foothill and Valley sub-groups (Johnson 2018). The Cush-na living on the San Juan Ridge and at Malakoff share the Northern Foothill distinction with Nevada City and other people living along the Yuba River.

The Nisenan-Maidu spoke three distinct dialects: the Northern Hill dialect in the Yuba and Bear watersheds (Northern Foothill Nisenan); the Southern Hill dialect on the American River (Southern Foothill Nisenan); and the Valley dialect by the Sacramento River, with further dialectical subdivisions evident. Nisenan as a linguistic category is a member of the Maiduan language family (attributed to the Penutian language stock), which also includes the languages spoken in large nations to the north, including the Konkow Maidu, Chico Maidu, and Mountain Maidu. The Maiduan languages were spoken throughout an area extending from the American River watershed northward to the Feather River, Lassen Peak, and Honey Lake (Riddell 1978). Linguist Victor Golla (2007) proposed that Maiduan speakers migrated from the northwestern Great Basin into the Sierra Nevada, where they were separated from speakers of Great Basin languages about 1,200 to 1,000 years ago, and that these Penutian speakers integrated elements of the preceding Hokan language into their own speech. Other Penutian-speaking people form a contiguous block extending along the west slope of the Sierra Nevada, across the Central Valley, and into the San Francisco and Monterey Bay areas, with linguistic relatives in Oregon and as far north as southeastern Alaska.

The Northern and Southern Foothill Nisenan based themselves in the foothills. Groups moved into the mountains during the spring and summer, and returned in fall to below the snowline, where they stayed through the winter. At lower elevations they harvested acorns and took advantage of the salmon runs (Carlson 1986). Their settlements were transitory, with villages being relocated within a decade, and individual lodges frequently being moved, especially on the death of one of the inhabitants. They preferred locations with southerly exposure on open, flat ridgetops, gentle slopes, or mid-slope benches, and on large flats along major streams (Carlson 1986; Wilson and Towne 1978). Boundaries of village

communities were not sharply defined, and various factions shared resource areas. Groups from Auburn, Colfax, and Foresthill apparently maintained relations with the tribelet around Grass Valley, evidenced by all these groups using burial grounds between Grass Valley and Nevada City (Carlson 1986). The groups centered on Nevada City shared hunting grounds with the Cush-na across the South Fork Yuba River (Blount et al. 2008). The Maidu and Washoe reportedly shared the headwaters of the Yuba and Bear drainages above the snowline for hunting, although some informants reported that Hill Nisenan would attack small hunting parties of Washoe (Carlson 1986).

The basic social unit was the nuclear monogamous family, with grandparents and unmarried relatives sharing a single dwelling. Six or so conical pit-house dwellings with one or more acorn granaries formed a settlement (Matson 1972). It was not uncommon for a family group to live away from the main settlement. About a dozen settlements were united under a headman, often called chief or captain; each such grouping, or tribelet, typically acted as a unit. The chief's settlement had a large semi-subterranean circular earth-covered building that functioned as a large assembly or dance house (Matson 1972). Away from the villages were seasonal camps, quarries, ceremonial grounds, trading sites, fishing stations, hunting grounds, cemeteries, river crossings, and battlegrounds (Wilson and Towne 1978).

Based on interviews with Lizzie Enos (ca. 1881 to 1968) conducted between 1957 and 1963 and notes from conversations with Mr. Kelly of Nevada City, Norman Wilson (1972) compiled detailed information on the traditional foodways of the Maidu. Enos learned traditional knowledge when she was a girl directly from her grandparents. Her memories of those days at the close of the 19th century are of "an open country systematically utilized by her group in search of food" (Wilson 1972). Recollections from an immigrant family descendent, Calvin Oest (Oest 1988), confirm that a group of Maidu living on what became the Sisson Ranch, on the Bear River, would bring food from the mountains and "in the wintertime, they would mostly go to the Feather River to bring back salmon."

Acorns, especially of the California black oak, were a staple food of the Nisenan Maidu. They relied on five species of oak that occur between 1,000 and 3,000 feet in elevation. Erskian and Ritter (1972) suggest that population centers were probably located within this elevation band, where there would have been the greatest availability of utilizable plant material. Located mostly above 3,000 feet in elevation, Malakoff is just above the upper limit of this optimal zone. Matson (1972) argued that the resources most valuable to the Nisenan Maidu are oak, pine (particularly gray and sugar pine), and salmon, because these are concentrated and fixed geographically, and can all be procured at about the same elevation. Oak, pine, and salmon were supplemented with other types of fish, as well as deer, rabbits, fowl, grasshoppers, seeds, grass, geophytes such as bulbs and corms, hazel nuts, manzanita berries, and mushrooms (Wilson 1972).

**Historical Background**

Starting in the 1850s, a thriving industry of hydraulic and drift mining evolved over 50 years in the canyon. In 1854, prospectors named the area the Virgin Valley Mining District, the boundary of which closely matches Malakoff. Erwin Gudde (1975) noted in his California Gold Camps that the Malakoff Mine west of North Bloomfield "was one of the richest and best known mines, named after the Malakoff tower near Sebastopol during the Crimean War" that ended in 1855. The venture is remembered for its many innovations, including adaptive applications of deep bedrock tunnels, electric light, and the world's first successful long-distance telephone line to manage the expansive water system needed to operate the mine.

What is now the Malakoff Diggins-North Bloomfield Historic District was the setting for many extraction and milling operations of various sizes and eras, ranging from solitary prospectors to joint-stock or heavily-capitalized companies. The successful Derbec Drift Mine operated within the Historic District alongside Malakoff Diggins and supported the area after the larger hydraulic mine downsized. Competing interests concentrated large tracts of mineral rights over time, eventually creating vast mineral holdings. The communities of North Bloomfield, originally named Humbug, Lake City, and Derbec, all grew and faded within the Historic District alongside the mining industry.

The Malakoff Hydraulic Mine Complex left a monumental open scar in the landscape more than 6,000 feet long by 2,500 feet wide. The Diggins had reached a depth of approximately 600 feet, although much of that is now filled by sediment, both intentionally to impound mine debris and naturally from a century of erosion. Nearly 250 feet of picturesque cliff continues to rise above the pit floor, its walls showcasing the colorful hues of the ancient Tertiary gravels. Abandoned tunnels, channels, piles of rock, and scattered industrial material convey the magnitude of this once-expansive operation. North Bloomfield is an impressive and well-maintained townsite located just east of the Diggins. A number of buildings, fences, and shade trees line both sides of North Bloomfield Road. The cemetery that served the local community, and continues to do so, is sandwiched between the town and the Diggins mine pit. To a modern visitor, the little mining town illustrates rural settlement dating to the 1880s boom era of the local hydraulic industry, and it is dotted with National Folk and other architectural styles dating to between the 1850s and 1930s. The expansive industrial landscape of the Diggins mine pit and the rustic setting of North Bloomfield combine to anchor the Historic District.

Smaller villages, ranches, and many other hydraulic and drift mines surround the Diggins and North Bloomfield sites. Although largely abandoned and in various states of decay, hundreds of resources, including several additional contributing historic buildings, clearly convey the District's relationship to its gold mining legacy, particularly when considered in concert. A dense assortment of archaeological property types, from dwellings to complex mines, is interconnected by transportation features and extensive water conveyance structures. Combined, they form a recognizable and comprehensible mining landscape. Some areas are traversed by a lone wagon road snaking through a heavily prospected gully or across a hillside. Colorful cliffs, rock-lined channels, and lengths of riveted iron pipe are not uncommon.

Little development has occurred since the mine and settlements were abandoned in the early 20th century. The spectacular hydraulic mine setting and charming gold rush town receive light visitation, and together with the Park facilities and staff residences, continue to exemplify a living rural settlement. Recreational trails and service roads still lead away from North Bloomfield. Some incorporate historic alignments that pass cemeteries and ruins, while others wind their way past abandoned machinery through pits of mining features and landscapes. Original town buildings are supplemented by period re-creations. Modern alterations include signage at some of the historic properties, fencing at some areas where hazardous conditions exist, and modern comfort stations, campgrounds, and water and power systems.

## ARCHITECTURAL AND ARCHAEOLOGICAL RESOURCES

The Historic District contains 311 distinct cultural resources within its boundary that contribute to its significance (Selverston 2020). These resources are associated with gold mining in the Sierra Nevada, 1848–1950. Many of them contribute evocative vernacular and designed-landscape elements to the

Historic District's significance. They range in size and complexity from the massive Malakoff Diggins hydraulic mine landscape itself, containing hundreds of gold-mining resources across more than 400 acres, to the numerous intertwining ditches crisscrossing the Park. The contributing elements range in emotional and aesthetic appeal from the picturesque townsite of North Bloomfield, containing many buildings, structures, objects, and archaeological resources, to the scattered utility posts and insulators associated with the world's first successful long-distance telephone line. Abandoned mining operations and ruins of dwellings exist throughout Malakoff. Many of the identified resources contribute to the Historic District's ability to convey a sense of its gold mining past and are capable of interpreting for the viewer facets of a complex historical process. All of them have yielded, or have the potential to yield, data important to understanding the full breadth of that history. No other property listed on the NRHP conveys the history of hydraulic mining as clearly and extensively as do the Malakoff Diggins-North Bloomfield Historic District and its namesake, the Malakoff Hydraulic Mine Complex.

Native American resources at Malakoff are concentrated between 3,400 and 3,600 feet in elevation, as well as around the North Bloomfield (approximately 3,300 feet in elevation) area and the saddle separating Humbug Creek and Pan Ravine (approximately 3,350 feet in elevation). Native American resources are found more sporadically elsewhere in the Park. In some cases, historic placer mining has impacted prehistoric archaeological sites. For example, a toppled bedrock milling feature located in the Malakoff Hydraulic Mine Complex at approximately 3,040 feet in elevation appears to have been dislodged from its original location somewhere upslope by shallow placer mining that occurred long ago. DPR specialists previously nominated several prehistoric sites to the NRHP as an archaeological district, but they abandoned the effort mid-process, and the district was never listed. Nevertheless, the prehistoric resources at Malakoff appear to have the potential to contribute important data for understanding prehistory.

In accordance with NRHP guidelines, a contributing resource is one that adds to the historic associations (in this case, gold mining in the Sierra Nevada), historic architectural qualities, or archaeological values for which the District is significant because it was present during the period of significance (1848–1950), relates to the documented significance of the property, and possesses historic integrity or is capable of yielding important information about the period. A noncontributing resource does not add any of these assets to the District because it has no relationship to the historic context, lacks the integrity to convey their significance, or dates to after the period of significance. The 37 contributing buildings are all elements of identified sites, mostly within the North Bloomfield townsite, rather than buildings recorded on their own. These range from commercial and industrial buildings, residential dwellings, and outbuildings. The MDNBHD inventory identified only a single resource that failed to meet the threshold to be considered a contributing element: a modern water-treatment facility on the slope above Blair Pond. Although many resources contribute to the Historic District's significance, they do so at variable scales and under different NRHP criteria.

Summary of Contributing and Non-contributing Resources in the Malakoff Diggins-North Bloomfield Historic District.

| NRHP Resource Category | Contributing | Non-Contributing |
|---|---|---|
| Buildings* | (37) | (12) |
| Sites | 311 | 0 |
| Structures | 0 | 1 |
| Objects | 0 | 0 |

| | | |
|---|---|---|
| Total | 311 | 13 |

*Includes 37 contributing buildings within eight sites and 12 non-contributing buildings within two sites.

## CALIFORNIA ENVIRONMENTAL QUALITY ACT AND PUBLIC RESOURCE CODE

The California Environmental Quality Act (CEQA) requires that projects financed by, or requiring the discretionary approval of, public agencies in California must consider the effects that a project has on historical and unique archaeological resources (Public Resources Code [PRC] Section 21083.2). Historical resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural or scientific importance (PRC Section 50201). The CEQA Guidelines (Section 15064.5) define three cases in which a property may qualify as a historical resource for the purpose of CEQA review (A through C):

A. The resources are listed in or determined eligible for listing in the California Register of Historical Resources (CRHR). The CRHR is a statewide list of Historical Resources with qualities assessed significant in the context of the state's heritage. The CRHR functions as an authoritative guide that is intended to be used by state and local agencies to indicate types of cultural resources that require protection, to a prudent and feasible extent, from project-related substantial adverse changes. Properties that are listed in the NRHP, or are eligible for listing, are considered eligible for listing in the CRHR, and thus are significant historical resources for the purpose of CEQA (PRC Section 5024.1(d)(1)).

   PRC Section 5024.1 defines eligibility requirements and states that a resource may be eligible for inclusion in the CRHR if it:

   1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
   2. Is associated with the lives of persons important in our past;
   3. Embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values; or
   4. Has yielded, or may be likely to yield, information important in prehistory or history.

   Properties must retain integrity to be eligible for listing on the CRHR.

B. The resource is included in a local register of historic resources, as defined in Section 5020.1(k) of the PRC, or is identified as significant in a historical resources survey that meets the requirements of Section 5024.1(g) of the PRC (unless the preponderance of evidence demonstrates that the resource is not historically or culturally significant).

C. The lead agency determines that the resource may be a historical resource as defined in PRC Section 5020.1(j), 5024.1, or significant as supported by substantial evidence in light of the whole record.

PRC Section 21083.2 governs the treatment of *unique archaeological resources*, which must be afforded consideration in the assessment of impacts under CEQA. A unique archaeological resource is defined as "an archaeological artifact, object, or site about which it can be clearly demonstrated" as meeting any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

As defined by the California State Health and Safety Code, Section 7050.5, and PRC Section 5097.98, the inadvertent discovery of human remains requires cessation of project work relative to the find until an assessment of the remains, including determination of origin and deposition, is completed by the County Coroner, in consultation with the Native American Heritage Commission (NAHC) and/or appropriate Tribal representative(s). In the event of inadvertent discoveries, an on-going program of Native American consultation provides an opportunity for such groups to participate in the identification, evaluation, and mitigation of impacts to human remains and funerary objects.

When a project will affect state-owned historical resources, as described in PRC Section 5024, and the lead agency is a state agency, the lead agency will consult with the California State Historic Preservation Officer prior to approval of a proposed project (14 California Code of Regulations [CCR] Section 15064.5(b)(5)).

**EXECUTIVE ORDER W-26-92**

Executive Order W-26-92 requires all state agencies, including Parks, in furtherance of the purposes and policies of the state's environmental protection laws and historic resource preservation laws, to the extent prudent and feasible within existing budget and personnel resources, to preserve and maintain the significant heritage (cultural and historical) resources of the state. Each state agency, including Parks, is directed to:

1. Administer the cultural and historic properties under its control in a spirit of stewardship and trusteeship for future generations;
2. Initiate measures necessary to direct its policies, plans, and programs in such a way that state-owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the people;
3. Ensure the protection of significant heritage resources are given full consideration in all of its land use and capital outlay decisions; and
4. Institute procedures to ensure that state plans and programs that contribute to the preservation and enhancement of significant non-state owned heritage resources in consultation with the Office of Historic Preservation (OHP) (Executive Order W-26-92 Section 1).

| **WOULD THE PROJECT**: | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? | ☐ | ☐ | ☒ | ☐ |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? | ☐ | ☐ | ☒ | ☐ |
| c) Disturb any human remains, including those interred outside of dedicated cemeteries? | ☐ | ☐ | ☒ | ☐ |

**DISCUSSION**

a-b) Program activities that have potential to impact historic and/or archaeological resources pursuant to § 15064.5 include ground disturbance, tree and vegetation removal, and prescribed fire. Heavy equipment and vehicles could potentially impact cultural resources if they were driven beyond existing roads or out of authorized program treatment areas during the spring/summer/fall work seasons. Heavy equipment and vehicles could possibly impact cultural resources if there is not adequate snowpack depth, snow hardness, and cold temperatures for over-snow operations. Implementation of **STANDARD PROJECT REQUIREMENT CULT-1, STANDARD PROJECT REQUIREMENT CULT-2,** and **PROJECT SPECIFIC REQUIREMENT CULT-5** (Chapter 2) will notify workers of sensitive resources, delineate areas to avoid, and establish allowable areas for vehicles, heavy equipment, staging, and storage of materials. **PROJECT SPECIFIC REQUIREMENT CULT-4** (Chapter 2) provides for on-site archaeological monitoring to ensure compliance with these requirements during program activities. These requirements will ensure that potential impacts of ground disturbance from tree removal and heavy equipment operation will remain at a less than significant level. Additionally, implementation of **PROJECT SPECIFIC REQUIREMENT CULT-6** provides adequate protections for archaeological sites, historic buildings, and cultural resource features through the use of hand crews in these sensitive areas.

Potential impacts of fire on cultural resources vary depending on temperature and duration of exposure to heat. Generally, higher temperatures and/or longer duration of exposure to heat increase the potential for damage to cultural resources. Variables that affect temperature and duration include type of fuel, fuel load and distribution, moisture content of fuels, soil type, soil moisture, weather, and terrain. Under most conditions, fire does not affect buried cultural materials. Studies show that even a few centimeters of soil cover (10 cm) are sufficient to protect cultural materials. However, there are occasions when conditions can carry heat below the surface, with the potential to affect buried materials. These conditions include:

1. stumps that smolder and burn may affect buried materials that are in the vicinity;
2. heavy duff, surface logs, and roots that smolder and burn may expose subsurface materials to heat over a period of time.

Fires that burn hot and fast through a site may have less of an effect on certain types of cultural materials than fires that smolder in the duff or burn in large woody material over a period of time.

Piling of tree debris and burning the piles on top of known cultural resources could damage those cultural resources if on or near the surface of the soil. **PROJECT SPECIFIC REQUIREMENT CULT-7** (Chapter 2) along with the project requirements above will ensure that potential impacts from pile and understory burning remain at a less than significant level. The Sacred Lands Inventory review by the NAHC did not identify any recorded sacred sites, native plant gathering locations, traditional cultural properties, or other special resources that may be affected by the proposed program. The Sacred Lands Inventory review, although appropriate, is not an exhaustive review of all knowledge in regard to sacred areas and sites. In addition, proposed treatment areas with potential cultural resource concerns are excluded from this program. However, not all sensitive cultural resources are known or have been mapped. Implementation of **STANDARD PROJECT REQUIREMENT CULT-3** and **STANDARD PROJECT REQUIREMENT CULT-8** (Chapter 2) will provide protection in the case of an unanticipated discovery and ensure that potential impacts to these resources remain at a less than significant level.

c) Burials have not been documented or recorded in Malakoff; however, there is always a potential of unanticipated discoveries of human bone. If any human remains or burial artifacts are identified, implementation of **STANDARD PROJECT REQUIREMENT CULT-8** will reduce the impact to a less than significant level.

**STANDARD PROJECT REQUIREMENTS:**

**STANDARD PROJECT REQUIREMENT CULT-1: PRE-START MEETINGS**

- Prior to beginning project work, the DPR cultural resource specialist, project manager, and hand crew leader(s) and/or burn specialists will meet on the project site to discuss project implementation and conditions in place to protect cultural resources. Meetings will include locations of all cultural resources exclusion zones.

**STANDARD PROJECT REQUIREMENT CULT-2: PROTECTED AREAS**

- All cultural resources are assumed eligible for the National Register and will be protected and avoided when possible throughout the duration of the project. If a cultural resource cannot be avoided, surveying and testing of program treatment areas will occur at the discretion of the DPR-approved cultural resources specialist, who will determine appropriate mitigation measures to reduce potential adverse impacts to the resource.
- The project manager will notify the DPR cultural resource specialist a minimum of three weeks prior to the start of project actions.
- A DPR-approved cultural resources specialist will survey and flag cultural resources/areas for exclusion no more than 30 days prior to commencement of project activities. Designated flagging color will demarcate areas of avoidance. If project delays occur which exceed the 30-day limit to commencement of project activities, a DPR-approved cultural resource specialist and/or DPR registered professional forester will check flagging to assure that it is still visible prior to project activities. Flagging will be removed after the project is completed.

**STANDARD PROJECT REQUIREMENT CULT-3: ARCHAEOLOGICAL DISCOVERY**

- In the event of an unanticipated discovery of previously undocumented cultural resources during project activities (shell, burned animal bone or rock, concentrations of bottle glass or ceramics, etc.), work will be suspended in the area until a DPR cultural resource specialist has

assessed the find and has developed and implemented appropriate avoidance, preservation, or recovery measures. If avoidance is required and feasible, the project manager will modify, at the discretion of the DPR cultural resource specialist, project actions to avoid cultural resources.

**STANDARD PROJECT REQUIREMENT CULT-8: HUMAN REMAINS DISCOVERY**

- In the event that human remains are discovered during project activity, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place. Existing law requires that project managers contact the County Coroner. If the County Coroner determines the remains are of Native American origin, both the Native American Heritage Commission (NAHC) and any identified descendants shall be notified (Health and Safety Code Section §7050.5, Public Resources Code Section §5097.97, and §5097.98 California Native American Graves Protection and Repatriation Act). DPR staff will work closely with the United States Bureau of Reclamation to ensure that its response to such a discovery is also Compliant with federal requirements including the Native American Graves Protection and Repatriation Act.
- Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination. If it is determined the find indicates a sacred or religious site, the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Office and review by the NAHC/Tribal Cultural representatives will occur as necessary to define additional avoidance, preservation, or recovery measures, or further future restrictions.

**PROJECT SPECIFIC REQUIREMENTS:**

**SPECIFIC PROJECT REQUIREMENT CULT-4: ARCHAEOLOGICAL MONITOR**

- A DPR-approved archaeologist will monitor all project activity located in sensitive cultural areas to ensure protection and avoidance. In Tribal sensitive areas, a Native American monitor may also be required.
- Archaeological and Tribal monitoring throughout the project site will be implemented at the discretion of a DPR-approved cultural resources specialist. The archaeologist and/or Tribal monitor will have the authority to stop construction work in the area of a find and evaluate it and implement appropriate treatment measures to avoid potential significant impacts to historical resources per PRC 15064.5.

**SPECIFIC PROJECT REQUIREMENT CULT-5: VEHICLES, HEAVY EQUIPMENT, STAGING, AND STORAGE AREAS**

- Vehicles or heavy equipment are not allowed within cultural resources exclusion zones.
- A DPR cultural resource specialist will review and accept all locations used for staging/storage of vehicles, equipment, and/or materials used during the project.
- No staging or storage will be allowed within cultural resources exclusion zones.

**SPECIFIC PROJECT REQUIREMENT CULT-6: HAND CLEARING**

- Use hand crews and hand-thinning methods (no machines or heavy equipment) for all vegetation removal in areas within and adjacent to recorded archaeological sites, historic

buildings, and cultural resource features. Manual removal will take place first in areas of identified resources and work outward to fully identify and protect any newly documented and/or extended resources. Heavy machinery will not be used in these areas. See Appendix F.

- A DPR cultural resource specialist will determine the extent of the hand clearing only zone prior to project implementation.

**SPECIFIC PROJECT REQUIREMENT CULT-7: DEBRIS PILES**

- Locate all debris piles outside of delineated cultural resource exclusion zones or linear feature boundaries. Pile burning within these culturally sensitive areas is prohibited unless otherwise approved by the DPR-approved cultural resource specialist.

**MITIGATION MEASURE: NONE**

## VI. ENERGY

### ENVIRONMENTAL SETTING

State Title 20 and Title 24, under the California Code of Regulations, state new buildings constructed in California must comply with the standards contained in Title 20, Public Utilities and Energy, and Title 24, Building Standards Code, of the California Code of Regulations. These efficiency standards apply to new construction of both residential and nonresidential buildings, and they regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in Title 24 guidelines.

In addition to California's building energy efficiency standards, Nevada County has adopted an Energy Action Plan (EAP) that provides an analysis of the energy use in the unincorporated area of the county, and a roadmap for accelerating energy efficiency, water efficiency, and renewable energy efforts (Nevada County GP 2020). Community members and the county have opportunities to save energy by addressing inefficiencies of current energy-consuming systems, operations, and behaviors. The Nevada County EAP was developed to provide a broad view of energy use in the county, to set energy and water energy saving goals, to recommend actions that result in short and long-term energy savings, and to educate the community on existing resources designed to save utility customers energy (Nevada County GP 2020). Efforts to implement the Nevada County EAP are in place by working groups.

| WOULD THE PROJECT: | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? | ☐ | ☐ | ☐ | ☒ |
| b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? | ☐ | ☐ | ☐ | ☒ |

### DISCUSSION

a) Forest management activities would consume energy through the operation of heavy equipment, trucks, and worker traffic. The Contractor and/or park forestry crews would use only as much heavy equipment as needed to treat the program treatment areas, thus would not result in wasteful, inefficient, or unnecessary consumption of energy resources during program implementation. Additionally, the proposed program is in support of the Nevada County EAP. No impact.

b) As described in the Environmental Setting, Nevada County has developed an EAP (Sierra Business Council 2019). The Nevada County EAP has three goals: (1) improve energy efficiency in buildings, facilities, and county operations; (2) expand the use of local renewable energy and resilience measures; and (3) encourage the efficient and safe transportation and use of water resources (Sierra Business Council 2019). The proposed program will not conflict with or obstruct any state or local plan, including the Nevada county EAP, for renewable energy or energy efficiency. No impact.

**STANDARD PROJECT REQUIREMENT: NONE**

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

## VII. GEOLOGY AND SOILS

### ENVIRONMENTAL SETTING

Malakoff and the town of North Bloomfield are located in the Mother Lode region of the Sierra Nevada Geomorphic Province. The Sierra Nevada is a northwest-trending tilted fault block with a steep eastern face and gentle western slope. The Sierra range consists of Cretaceous-age granitic rocks (batholith) that are overlain in areas by younger (Tertiary) volcanic flows. The Mother Lode region in the Sierra foothills consists of a complex of tectonostratigraphic terranes that have been accreted onto the North American continent during the Paleozoic and Mesozoic eras, then intruded by the Sierra Nevada batholith.

Because human interests at Malakoff have historically focused on gold, there is extensive knowledge about the geology of the area. The bedrock is Paleozoic-aged metamorphosed igneous and sedimentary rock, overlain by Eocene-aged auriferous gravels (fluvial sedimentary rocks containing gold), overlain by Mio-Pliocene volcanic breccia and conglomerate (mudflows). Surrounding the Diggins pit, there are Quaternary colluvial deposits, which are mostly derived from the Tertiary volcanic rocks that cap the San Juan Ridge.

The mapped geology of North Bloomfield (Bowen & Crippen, 1997) shows Eocene (~ 40 million years old) auriferous stream channel deposits overlying metamorphic basement rocks of Paleozoic age (> 245 million years) described as mélange, mostly metamorphosed igneous and sedimentary rocks. A small diorite intrusion occurs to the northeast.

Topography of the area is mountainous, concave, and generally sloping in a southerly direction with elevations ranging from approximately 4,500 feet at the northern boundary of the Park to approximately 2,200 feet at the southern boundary of the Park, where Humbug Creek flows into the South Yuba River. Malakoff lies along the San Juan Ridge, a prominent east-west trending ridgeline. The topography of the Diggins has been significantly altered from its original state due to hydraulic mining conducted between approximately 1852 to 1884. Hydraulic mining resulted in the formation of the concave mine pit.

**Soils**

Web Soil Survey (NRCS 2022) indicates that proposed program treatment areas within Malakoff contain 35 mapping units, consisting of 11 soil series including Aiken, Alluvial, Cohasset, Horseshoe, Iron Mountain, Josephine, Mariposa, Jocal, McCarthy, Rock Land, Deadwood, and tailings and water. Soil mapping units within program treatment areas include: (1) Aiken loam, 2 to 9 percent slopes; (2) Aiken loam, 9 to 15 percent slopes; (3) Aiken loam, 15 to 30 percent slopes; (4) Aiken cobbly loam, 2 to 30 percent slopes; (5) Alluvial land, loamy; (6) Alluvial land, clayey; (7) Cohasset loam, backslopes, 5 to 30 percent slopes; (8) Cohasset cobbly loam, 5 to 30 percent slopes; (9) Cohasset cobbly loam, 15 to 50 percent slopes; (10) Cohasset-McCarthy cobbly loams, 15 to 50 percent slopes; (11) Cohasset-McCarthy cobbly loams, 50 to 75 percent slopes; (12) Horseshoe gravelly loam, 9 to 15 percent slopes; (13) Horseshoe gravelly loam 15 to 30 percent slopes; (14) Iron Mountain cobbly loam, 2 to 50 percent slopes; (15) Horseshoe-Jocal-Mariposa complex, 2 to 30 percent slopes; (16) Josephine cobbly loam, 5 to 30 percent slopes; (17) Josephine-Mariposa complex, 15 to 50 percent slopes, eroded; (18) Mariposa-Josephine complex, 50 to 75 percent slopes, eroded; (19) Josephine-rock Outcrop complex, 15 to 50 percent slopes; (20) Mariposa gravelly loam, 2 to 30 percent slopes; (21) Mariposa-Rock outcrop complex, 2 to 50 percent slopes; (22) McCarthy cobbly loam, 15 to 50 percent slopes; (23) Rock land;

(24) Tailings; (25) Water; (26) Cohasset cobbly loam, 30 to 50 percent slopes; (27) Cohasset-Aiken-Crozier complex, 30 to 50 percent slopes; (28) Deadwood-Rock outcrop-Hurlbut complex, 30 to 70 percent slopes; (29) Horseshoe gravelly loam, 9 to 15 percent slopes; (30) Horseshoe-Jocal-Mariposa complex, 2 to 30 percent slopes; (31) Pits, hydraulic; (34) Josephine cobbly loam, 5 to 30 percent slopes; (32) Josephine-Mariposa complex, 15 to 50 percent slopes, eroded; (33) Jocal-Sites-Mariposa complex, 2 to 30 percent slopes; (34) Mariposa-Jocal complex, 2 to 30 percent slopes; and (35) Mariposa-Jocal complex, 30 to 75 percent slopes, N Mid Montane (Appendices A and G).

The majority of the soils mapped in the Backbone and Chute Hill prescribed understory burn plots (1,043 acres) consist of the series Iron Mountain cobbly loam, 2 to 50 percent slopes (265 acres), Cohasset cobbly loam, 15 to 50 percent slopes (245 acres), Rock land (185 acres), and Cohasset cobbly loam, 5 to 30 percent slopes (155 acres) (Appendices A and G). The Iron Mountain cobbly loam, 2 to 50 percent slopes and Rock land soil series have a hydrologic soil group D classification. This indicates that these soils have a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission (NRCS 2022).

The Cohasset soil series has a hydrologic soil group C classification. This indicates that these soils have a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission, and therefore a moderately low to moderately high runoff potential (NRCS 2022).

The majority of soils mapped in the Public Safety and Historic Core Protection Zone (846 acres) consist of the series Cohasset cobbly loam, 5 to 30 percent slopes (197 acres), Cohasset cobbly loam, 15 to 50 percent slopes (90 acres), Cohasset-Aiken-Crozier complex, 30 to 50 percent slopes (78 acres), and Horseshoe-Jocal-Mariposa complex, 2 to 30 percent slopes (70 acres) (Appendices A and G).

The Cohasset-Aiken-Crozier complex, 30 to 50 percent slopes and Horseshoe-Jocal-Mariposa complex, 2 to 30 percent slopes soil series have a hydrologic soil group B classification. This indicates that these soils have a moderately low runoff potential when thoroughly wet and water transmission through the soil is generally unimpeded (NRCS 2022).

**Seismicity**

North Bloomfield is located within the Foothills Fault System, five miles west of the Melones Fault. The Melones Fault has not shown displacement in Quaternary time (1.6 million years to present) but is not considered inactive. Recent earthquakes have occurred on some faults within the Foothills Fault System. The California Geological Survey has determined that this fault system is capable of generating an earthquake with a Maximum Moment Magnitude of 6.5 (CGS 1996). According to the U.S. Geological Survey, western Nevada County including the San Juan Ridge falls within the low intensity earthquake severity zone (8-20 % gravity) (Nevada County GP 2020; Nevada County 2016).

**Liquefaction and Landslide Hazards**

Secondary seismic hazards, such as liquefaction and landslides, may occur during an earthquake. Liquefaction could occur in loose, granular materials (alluvium) below the water table, such as along stream channels and in unconsolidated, disturbed materials. It takes place when a granular material is

transformed from a solid state to a liquid state during earthquake events. The potential for liquefaction as a result of seismic events is high in areas of unconsolidated and saturated fine-grained alluvium such as at the mouth of creeks. Both clayey and loamy alluvial soil series are present within program treatment areas at Malakoff (NRCS 2022). Liquefaction and seismic landslide hazards have not been evaluated by the California Geologic Survey for this area (California Department of Conservation 2022).

Malakoff and Nevada County in general contain many historic hydraulic mining sites. Because of the extreme methods used in hydraulic mining to wash away hillsides in the mid to late nineteenth century, the remaining slopes are very steep and are capped by very expansive clay soils (Nevada County GP 2020). The result is that these areas are prone to damaging landslides. In addition to presenting risks to human life and property, landslides also present risks to the integrity of infrastructure such as water, sewer, gas lines, and transportation corridors (Nevada County GP 2020). Despite this risk, the townsite of North Bloomfield has not been subjected to landsliding in the past.

**Regulations**

There are regulatory laws governing geologic protection and safety from geological hazards. For geologic and topographic features, the key federal law is the Historic Sites Act of 1935 which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the CEQA.

Other federal regulations include the Earthquake Hazard Reduction Act of 1977, Executive Order 12699 on Seismic Safety of Federal Buildings, and the Uniform Building Code (superseded in California by the 2001 California Building Code). State regulations include the Alquist-Priolo Earthquake Zone Act, the Field Act, the 2001 California Building Code, the Seismic Hazards Mapping Act, and the Historic Structures Act (California Public Resources Code Section 5028). Some state agencies have their own regulations covering seismic and geologic hazards.

In the Nevada County General Plan (1995) Chapter 12, Goal 12.1 states "Minimize adverse impacts of grading activities, loss of soils, and soil productivity." This goal is to maintain soil productivity and existing vegetation cover and prevent excessive sediment and nutrient transport to streams and rivers.

The largest threat of erosion in the Park is the chance of catastrophic wildfire. If catastrophic wildfire occurred in the Park there would be considerable soil loss and impact to the waterways.

| **WOULD THE PROJECT:** | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: | ☐ | ☐ | ☒ | ☐ |
| i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | ☐ | ☐ | ☐ | ☒ |

| | | | | | |
|---|---|---|---|---|---|
| ii. | Strong seismic ground shaking? | ☐ | ☐ | ☒ | ☐ |
| iii. | Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ☒ | ☐ |
| iv. | Landslides? | ☐ | ☐ | ☒ | ☐ |
| b) | Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ☒ | ☐ |
| c) | Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | ☐ | ☐ | ☐ | ☒ |
| d) | Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? | ☐ | ☐ | ☒ | ☐ |
| e) | Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems, where sewers are not available for the disposal of wastewater? | ☐ | ☐ | ☐ | ☒ |
| f) | Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ☐ | ☒ |

**DISCUSSION**

a) As discussed in the Environmental Setting, although the overall risk is low, seismic ground shaking is possible from earthquake events. Due to the presence of alluvial soils, some program treatment areas may be susceptible to liquefaction during strong ground-shaking events. Although the Diggins pit has been excluded from treatments, the forested landscape surrounding the Diggins is proposed for forest treatments, including prescribed understory burning.

i) The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was implemented to regulate development near active faults and to prevent construction of buildings for human occupancy on or near active faults (i.e., that have ruptured within the past 11,000 years). The designated zone extends from 200 to 500 feet on both sides of known active fault traces. Under the Act, no buildings intended for human occupancy may be constructed on or within fifty feet of an active fault trace. Program treatment areas are not located within an Alquist-Priolo Earthquake Fault Zone as designated by the California Geological Survey (CGS 2016). Although the area surrounding structures in the Public Safety and Historic Core and Protection Zone are proposed for treatment, these structures are not located within an Alquist-Priolo Earthquake Fault Zone, and no new structures are proposed as part of this program. Therefore, there is no expected adverse effect on people or structures with regard to earthquake rupture as a result of implementation of this program. No impact.

ii) All portions of proposed program treatment areas are located within the Foothills Fault

System, which defines the Mother Lode region. The California Geological Survey has determined that the nearest fault (Melones Fault) is capable of generating an earthquake with a Maximum Moment Magnitude of 6.5. This would result in ground acceleration on the order of 0.2-03 g (CGS 2016) and would not result in strong seismic shaking. Program activities will not increase the risk of exposure of employees or contractors working in the forest and open space to a seismic event. Therefore, the potential risk of effects to staff, contractors, or the public is considered to be less than significant.

iii) Seismic-induced ground failure, such as liquefaction, usually occurs in unconsolidated granular soils that are water saturated. During seismic-induced ground shaking, pore water pressure in the soil could increase in loose soils, causing the soils to change from a solid to a liquid state (liquefaction). Any potential for liquefaction in the program treatment areas would not increase as a result of the program. Therefore, the potential risk of effects to staff, contractors, or the public is considered to be less than significant.

iv) The townsite of North Bloomfield has not been subjected to landsliding in the past. Some landslides have occurred in the unstable slopes within the Diggins pit, due to oversteepening during the mining process; however, this is an existing condition, and the proposed program would not increase this potential hazard as treatments will not occur in this area. Therefore, the potential risk of effects to staff, contractors, or the public is considered to be less than significant as a result of project implementation.

b) Soil erosion could occur during program related ground disturbing activities, such as mechanical thinning. To minimize the potential for erosion during or after construction activities, implementation of **STANDARD PROJECT REQUIREMENT HYDRO-1** and **PROJECT SPECIFIC REQUIREMENT GEO-1** (Chapter 2) will reduce the potential impact to a less than significant level.

c) Program treatment locations are selected to avoid sensitive habitats including those with unstable soils, or those that could become unstable. Therefore, there will be no impact from this program.

d) Expansive soils are those soils that have high clay content that swell when wet and shrink when dry. As described in the Environmental Setting, some of the soils mapped in the program treatment areas, particularly in the Backbone and Chute Hill prescribed burn plots, have a hydrologic soil group D classification. This indicates that these soils have a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material (NRCS 2022). Additionally, many historic hydraulic mining pits in Nevada County, including the Diggins, have steep slopes capped by very expansive clay soils (Nevada County GP 2020). To minimize the potential for erosion and/or runoff during or after program activities, implementation of **STANDARD PROJECT REQUIREMENT HYDRO-1** and **PROJECT SPECIFIC REQUIREMENT GEO-1** (Chapter 2) will reduce potential impacts to a less than significant level. Furthermore, the proposed program is a resource management project, and no new buildings or other structures are proposed as part of this program.

e) The proposed program does not involve the installation of any waste disposal systems. Therefore, there would be no impact to onsite soils from this program.

f) There are no known unique paleontological or geological resources at program treatment areas which could potentially be impacted by program activities. No impact.

**STANDARD PROJECT REQUIREMENT:**

**STANDARD PROJECT REQUIREMENT HYDRO-1: EROSION AND SEDIMENT CONTROL**

- Implement Best Management Practices (BMPs) in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during any ground disturbing activities as approved by the Regional Water Quality Control Board.
- The DPR Contractor will install long-term erosion control measures for any areas where ground disturbing activities result in bare soil areas. Attain the appropriate soil density required to reduce erosion and optimize revegetation of the appropriate native grass seed, sterile grass seed, and/or duff as approved by a DPR-approved biologist.

**PROJECT SPECIFIC REQUIREMENT:**

**PROJECT SPECIFIC REQUIREMENT GEO-1: REMEDIATION DISTURBED AREAS**

- Rehabilitate all roads, fire line, or other disturbed areas to pre-project conditions or better to restore natural topography and drainage patterns, as directed by a DPR-approved biologist or geologist.
- Remediation may include one or more of the following:
  1) Topsoil and mulch removal and/or replacement for landings and main heavy equipment routes of travel.
  2) Mulch application to a surface cover depth of approximately two inches in areas where bare soil resulted from project activities.
  3) Soil loosening for landings and routes of travel with more than four equipment trips. Use ripping tines attached to a backhoe or similar equipment to increase infiltration.
  4) Redistribute soil and/or mulch to eliminate tracks, ruts, or compressions.
  5) Additional measures as determined by a DPR-approved geologist or natural resource specialist.

**MITIGATION MEASURE: NONE**

## VIII. GREENHOUSE GAS EMISSIONS

### ENVIRONMENTAL SETTING

Greenhouse gases (GHG) such as carbon dioxide and methane trap heat in the earth's atmosphere. Increased concentrations of these gases over time produce an increase in the average surface temperature of the earth. The rising temperatures can in turn produce changes in precipitation patterns, storm severity, and sea level, resulting in climate change.

Greenhouse Gas Emissions and Climate Change

Some GHG such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes and through human activities. Naturally occurring greenhouse gasses include water vapor, carbon dioxide, methane, nitrous oxide, and ozone.

- *Water Vapor* - Water Vapor is the most abundant GHG in the atmosphere. Changes in its concentration are considered a result of climate feedback loops related to the warming of the atmosphere rather than a direct result of human activities. The feedback loop that involves water is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the absolute humidity can be higher (in essence, the air is able to 'hold' more water when it's warmer), leading to more water vapor in the atmosphere. As a greenhouse gas, the higher concentration of water vapor is then able to absorb more thermal energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on. This is referred to as a 'positive feedback loop'. However, scientific uncertainty exists in defining the extent and importance of this feedback loop. As water vapor increases in the atmosphere, more of it would eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

- *Carbon Dioxide* - The natural production and absorption of carbon dioxide (CO2) is achieved through the terrestrial biosphere and the ocean. Carbon dioxide also enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Carbon dioxide was demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century.

- *Methane* – Methane (CH4) has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands (at the roots of the plants). Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. Methane is an extremely effective absorber of radiation, though its atmospheric concentration is less than CO2 and its lifetime in the atmosphere is brief (10-12 years), compared to some other greenhouse gases (such as CO2, N2O, CFCs).

- *Nitrous Oxide* - Nitrous Oxide (N2O) is produced naturally from a wide variety of biological

sources in soil and water, particularly microbial action in wet tropical forests. Concentrations of nitrous oxide began to rise at the beginning of the industrial revolution, and it is understood to be produced by reactions that occur in fertilizer containing nitrogen. Increasing use of these fertilizers has occurred over the last century (NOAA).

- *Ozone* – Ozone (O3) is a gas present in both the upper stratosphere, where it shields the Earth from harmful levels of ultraviolet radiation, and at lower concentrations in the troposphere, the air closest to the Earth's surface, where it forms through chemical reactions between pollutants from vehicles, factories, fossil fuels combustion, evaporation of paints and many other sources. Key pollutants involved in ozone formation are hydrocarbon and nitrous oxide gases (CARB 2008). Sunlight and hot weather cause the ground-level ozone to form in harmful concentrations and is the main component of anthropogenic photochemical "smog" (USEPA).

Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities.

- *Fluorinated Gases*: Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases (USEPA).

The Global Warming Solutions Act of 2006 requires the State to implement a series of actions to achieve a reduction in GHG emissions to 1990 levels by 2020 (California Air Pollution Control Officers Association 2008). The statewide cap for 2020 GHG emissions was set at 431 million metric tons of carbon dioxide equivalents. In 2019, emissions from GHG emitting activities statewide were 418.2 million metric tons of carbon dioxide equivalents. Since 2000, California's GDP has grown by approximately 60 percent while its GHG emissions per GDP has decreased by approximately 45 percent (CARB 2022).

As part of the implementation of actions to reduce GHG emissions, DPR has developed a "Cool Parks" initiative to address climate change and GHG emissions. Cool Parks proposes that DPR, as well as resources under its care, adapt to the environmental changes resulting from climate change. In order to fulfill the Cool Parks initiative, DPR is dedicated to using alternative energy sources, low emission vehicles, recycling and reusing supplies and materials, and educating staff and visitors on climate change (DPR 2022).

Additionally, the Air Quality Element (1995) and the Circulation Element (2010) of the Nevada County General Plan includes several goals, objectives, and policies with respect to GHG emissions and sustainability.

The proposed forest management effort at Malakoff would treat approximately 1,866 acres of high-risk parkland including a Public Safety and Historic Core Protection Zone and use prescribed fire to conduct understory burning in new and historic burn plots. The proposed program is under jurisdiction of the Northern Sierra Air Quality Management District (NSAQMD), which regulates air quality according to the standards established in the Clean Air Acts and amendments to those acts. The NSAQMD

comprises three contiguous, mountainous, rural counties in northeastern California (Nevada, Sierra, and Plumas counties) and regulates air quality through its permitting authority and through air quality related planning and review activities over most types of stationary emission sources. The NSAQMD has not yet established significance thresholds for greenhouse gas emissions from project operations.

| **WOULD THE PROJECT:** | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | ☐ | ☐ | ☐ | ☒ |

**DISCUSSION**

a) According to recommendations by the Association of Environmental Professionals in *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* (2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." (CEQA Guidelines §15064(i)(1) and §15130).

In 2011, the CEQA Guidelines, Section 15064.4 Appendix G was modified to include thresholds of significance for GHG. The project would have potential significant impacts if the project:

> a) Generates greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment;
>
> b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Due to the nature of the proposed program, DPR has determined that it is appropriate to assess potential GHG impacts qualitatively – as determined by CEQA Guidelines §15064.4(a)2.

The proposed forest management program could alter sinks of GHG by removing vegetation such as trees, saplings, shrubs, and herbaceous plants that currently grow in proposed treatment areas. However, the program's goals include promoting long-term forest health and resilience to reduce chances of stand-replacing wildfire in the future, and to promote old-growth forest characteristics and decrease competition for resources for the mature tree component of forest stands. Attaining these goals could reduce the long-term potential for emissions from stand-replacing forest fires and promote a carbon sink in the form of a healthy mature forest. Old-growth forests in particular act

as important global carbon sinks (Luyssaert et al. 2008). Additionally, the number of trees that would be removed as a result of the program would be a small proportion relative to the number of trees in the park unit and the region.

The proposed program could produce GHG during fuel combustion. Trucks and heavy equipment for this program consist of a backhoe, tracked harvester, forwarder, masticator, and tracked chipper. However, not all vehicles and equipment will operate simultaneously. Some equipment will only be operating during certain stages of the program depending on the nature of the work. Forest treatment related GHG emissions will be short-term. Additionally, Malakoff is state park land whose mission is to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation. Implementation of **STANDARD PROJECT REQUIREMENT AIR-1** will ensure that potential impacts remain less than significant.

b) The state of California has not developed specific GHG thresholds of significance for use in preparing environmental analyses under CEQA, and the Nevada County GP as well as the NSAQMD have not yet established significance thresholds for greenhouse gas emissions from project operations. However, the Association of Environmental Professionals' document *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* states that "emissions for criteria pollutants tend to follow similar patterns as the emissions for GHG emissions" (AEP 2007). Therefore, it is reasonable to assume that if all other pollutants from the proposed program are determined to be less than significant, the CO2 emissions will also be less than significant. The proposed program will not violate Nevada County's air quality standards and will not result in a cumulatively considerable increase in emissions. Additionally, the proposed program complies with Nevada County's Energy Action Plan (2019). Therefore, the proposed program will not generate significant GHG emissions and will not conflict with the current state and local guidelines or any applicable plans, policies or regulations concerning GHG emissions. No impact.

**STANDARD PROJECT REQUIREMENT:**

**STANDARD PROJECT REQUIREMENT AIR-1: EMISSIONS OF FUGITIVE DUST AND OZONE**

- Water all construction areas (dirt/gravel roads and surrounding dirt/gravel area) at least twice daily during dry, dusty conditions when large machinery is in use.
- Cover all trucks hauling soil or other loose materials on public roads. Alternatively, require all trucks to maintain at least two feet of freeboard.
- Maintain all construction-related equipment engines in good condition, in proper tune (according to manufacturer's specifications), and in compliance with all state and federal requirements.
- Suspend potential dust producing actions if sustained winds exceed 25 mph, instantaneous gusts exceed 35 mph, or dust from construction might obscure driver visibility on public roads.
- Promptly remove earth or other material that has been transported onto paved roadways by trucks, construction equipment, erosion, or other project-related activity.

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

# IX. HAZARDS AND HAZARDOUS MATERIALS

## ENVIRONMENTAL SETTING

Malakoff is home to one of largest historic mine sites from California's 19th century gold rush era. Hydraulic gold mining in the 1860s drastically altered the landscape, resulting in the first environmental law enacted in the nation. Known as the Sawyer Decision, this 1884 injunction imposed strict regulations on discharging debris into rivers in the Sierra Nevada and resulted in the end of California's hydraulic mining era. Along with the historic town of North Bloomfield, the Diggins mine pit is one of the main attractions of the Park today. In addition to hydraulic mining, other recovery processes historically used for extracting gold in the region included placer and hard rock mining. The latter required separation of the gold from a body of rock. Pollutants, such as mercury, were commonly used in the extraction process and traces may be present in areas of historically heavy mining activity.

Relatively high concentrations of pollutants including total suspended solids, copper, mercury, and nickel have been detected on the western pit floor at the 1922 Shaft during water quality sampling (Golder Associates Inc. 2020). The elevated concentration of these constituents may be attributed to the historic mining activities related to the 1922 Shaft (Golder Associates Inc. 2020). Additionally, all of the pollutants except mercury are naturally occurring and can be traced to the geology of the Malakoff Diggins Basin (Golder Associates Inc. 2020). Copper and nickel are a product of erosion and weathering of the mineralized rock. Pollutants can be transported through sediment runoff during rain events and deposited in the downstream environment. Identifying the source of potential pollutants from historic mining activities is problematic as subsurface waterflow in the Malakoff Diggins Basin is not well understood.

The Initial Study/Mitigated Negative Declaration Malakoff Pit Drainage Runoff Sediment Control Best Management Practices Plan is addressing sediment runoff by minimizing constituent concentrations in surface water discharges from the Diggins Pit. The Diggins Pit has a total contributing drainage area of approximately 1,220 acres and is referred as the Malakoff Diggins Basin. Runoff from the Malakoff Diggins Basin discharges from the Pit through the Hiller Tunnel, a historic mine drainage tunnel, into Diggins Creek, which drains to Humbug Creek and then to the South Yuba River (Golder Associates Inc. 2020). As water comes in from above the Pit, it travels down the Pit walls and causes erosion, resulting in turbidity and sediment runoff. As discussed in Chapter 3, Malakoff's soil has high clay content. The clay has a negative charge and thus attracts the positively charged metals. These constituents are sediment-bound that have become uncovered during hydraulic mining. Historic hydraulic mining and erosion of the Pit walls can create runoff discharges which do not meet water quality objectives, thus requiring BMPs and long-term mitigation or control strategies to be developed to reduce adverse impacts to the downstream environment (Golder Associates Inc. 2020). Cumulative effects of the Initial Study/Mitigated Negative Declaration Malakoff Pit Drainage Runoff Sediment Control Best Management Practices Plan and the proposed forest management program are discussed in Chapter 4.

The proposed forest management effort at Malakoff would treat approximately 1,866 acres of high-risk parkland including a Public Safety and Historic Core Protection Zone and use prescribed fire to conduct understory burning in new and historic burn plots. The entirety of Malakoff lies within a historic district with significant cultural resources dating back to before California's gold rush era. These actions would not only protect irreplaceable historic and prehistoric resources, visitors, and park staff, but reduce the wildfire hazards along the San Juan Ridge and populated areas of western Nevada County. This forest

management program directly supports Governor Newsom's 2021 California Wildfire and Forest Resilience Action Plan which calls for increased use of prescribed fire to restore ecosystem function for long-term forest health and resilience. Proposed program actions include thinning dense understory trees in overstocked forest stands, pile burning debris, and conducting understory burning to reduce surface fuels and restore fire to the ecosystem. Motorized vehicles, heavy equipment, small, motorized equipment such as chainsaws, and hand tools would be used to meet program objectives.

**Hazardous Materials**

Hazardous materials are items or substances which are flammable, reactive, corrosive, or toxic, which because of these properties, pose potential harm to the public or environment. The California Department of Toxic Substances Control (DTSC) has the responsibility of compiling information on hazardous material sites, pursuant to Government Code Section 65962.5(a). The collective list of hazardous material sites is known as the "Cortese" List. The Cortese list is accessible through the DTSC Envirostor data management system. There are no hazardous materials cleanup sites listed by the DTSC in or near proposed program treatment areas at Malakoff (DTSC 2022).

The types of materials used and stored at Malakoff that could be identified as hazardous include fluids such as motor vehicle and mechanical equipment fuels, oils, small quantities of paint, herbicides, and other lubricants. DPR maintains storage facilities for fuels and lubricants within the park unit. Two above-ground storage tanks store bulk diesel supplying the town generators: one located adjacent to the townsite generator building, and one at the solar array. Limited quantities of motor oil are stored in the storage shed near the townsite generator building, as well as in the generator building for the solar array. Pesticides and paint are stored at the maintenance shed, and propane tanks are located throughout the Park to supply various facilities and well sheds.

**Hazards**

Other hazards at Malakoff are limited to natural hazards and may include severe weather (e.g., wind, lightening, snow/blizzards, freezing, heavy rain, drought), falling tree limbs, insect stings, ticks, poison oak, rattlesnakes, and mountain lions. The ground is often uneven as a result of past mining activities.

**Airports**

There are no airports or private airstrips in the general vicinity.

**Schools**

The nearest school is Grizzly Hill School located in North Columbia (two to three miles from Malakoff's boundary). Nevada Union High School is located in Grass Valley (approximately 50 minutes' drive). Malakoff School, the only school in the general vicinity, has been closed since April 2006 due to lack of enrollment.

**Fire**

The California Department of Forestry and Fire Protection (CalFire) has a legal responsibility to provide fire protection on all State Responsibility Area lands, which are defined based on land ownership, population density, and land use. Malakoff is within a State Responsibility Area. CalFire categorizes wildfire hazard severity for Malakoff as "Very High" (CalFire 2022). Fire hazards at Malakoff are managed by DPR's Malakoff Diggins State Historic Park Wildfire Management Plan (2005). Wildfire management involves all aspects of eliminating and containing unwanted fires including prevention, pre-suppression, and suppression activities. Additionally, DPR has proposed this long-term Prescribed Fire

and Forest Management Program to reduce the risk of catastrophic wildfire in the Park and surrounding area. A main component of this program includes forest treatments in the Public Safety and Historic Core Protection Zone, which includes all historic buildings and roads. Forest treatments along access roads is a priority as these are potential locations for human caused wildfire and require maintenance for emergency access and evacuation routes. The improvement and maintenance of the Service Road that leads to Humbug Creek in the southwestern section of the Park will serve multiple purposes including promoting public safety, resource protection, forest management, and fire access (Appendix I).

Proposed program treatment areas are also located in mixed conifer forest stands. Treatment methods include chainsaws to fell trees and cut tree slash and debris into smaller pieces. Improperly outfitted exhaust systems or friction between metal parts and/or rocks could generate sparks that could result in wildfire. Additionally, pile burning and/or prescribed understory burning could result in wildfire if the fire prescription is not adequately followed or due to an unpredicted weather event. Wildfire exposes people or structures to a significant risk of loss, injury, or death.

| **WOULD THE PROJECT:** | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☒ | ☐ |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, substances, or waste into the environment? | ☐ | ☐ | ☒ | ☐ |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☐ | ☒ |
| d) Be located on a site which is included on a list of hazardous materials sites, compiled pursuant to Government Code §65962.5, and, as a result, create a significant hazard to the public or environment? | ☐ | ☐ | ☐ | ☒ |
| **e)** For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? | ☐ | ☐ | ☐ | ☒ |
| f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ☒ |

| | | | | |
|---|---|---|---|---|
| g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death from wildland fires? | ☐ | ☐ | ☒ | ☐ |

**DISCUSSION**

a) Construction activities associated with the proposed Prescribed Fire and Forest Management Program could require the use of certain hazardous materials, such as fuels, oils, lubricants, or other fluids associated with the operation and maintenance of vehicles and equipment. Generally, these materials would be contained within vessels engineered for safe storage. Large quantities of these materials would not be stored at or transported to program treatment areas; however, spills, upsets, or other construction related accidents could result in an inadvertent release of fuel or other hazardous substances into the environment. Implementation of **STANDARD PROJECT REQUIREMENT HAZMAT-1** and **STANDARD PROJECT REQUIREMENT HYDRO-1** (Chapter 2) will ensure that potential adverse impacts from these incidents will remain at a less than significant level.

b) During the proposed forest management program, hazardous substances could be released to the environment from forest treatment-related vehicle or equipment fluid spills or leaks. Implementation of the **STANDARD PROJECT REQUIREMENT HAZMAT-1** and **STANDARD PROJECT REQUIREMENT HYDRO-1** (Chapter 2) will ensure that the risk to on-site workers, the public, and the environment will remain at a less than significant level.

c) There are no active schools within one-quarter mile of program treatment areas. As noted in the Environmental Setting, the nearest school is Grizzly Hill School located in North Columbia (two to three miles from Malakoff's boundary). No impact.

d) The proposed action would not occur on or near any hazardous materials sites compiled pursuant to Government Code § 65962.5. No area within proposed program treatment areas is currently restricted or known to have hazardous materials present. No impact.

e) As discussed in the Environmental Setting, proposed program activities would not occur within two miles of a public airport. No impact.

f) The proposed forest management program would not impair or interfere with an adopted emergency response plan or emergency evacuation plan. No impact.

g) Program treatment areas are within forested portions of the Park which are subject to dry and warm to hot conditions from late spring through autumn. Pile burning and understory burning could result in wildfire if the prescribed fire prescription is not adequately followed, or due to an unpredicted weather event. Wildfire exposes people or structures to a significant risk of loss, injury, or death. Heavy equipment and chainsaws necessary to complete program activities could become hot with extended use and would be in close proximity to flammable vegetation. Improperly outfitted exhaust systems or friction between metal parts and/or rocks could generate sparks, resulting in a fire. Implementation of **STANDARD PROJECT REQUIREMENT HAZMAT-2** (Chapter 2) will ensure that the potential for adverse impacts from wildland fire will remain at a less than significant

level.

**STANDARD PROJECT REQUIREMENTS:**

**STANDARD PROJECT REQUIREMENT HAZMAT-1: SPILL PREVENTION AND REPSONSE**

- Clean all equipment prior to the start of construction and before entering project areas. During the project, clean and repair all equipment (other than emergency repairs) outside of project boundaries. Contain and dispose of all contaminated spill residue, or other hazardous compounds, outside the boundaries of the project at a lawfully permitted or authorized destination.
- Inspect all equipment for leaks prior to the start of construction and regularly inspect thereafter until removed from project areas.
- Prepare a Spill Prevention and Response Plan (SPRP) prior to the start of construction and provide protection to on-site workers, the public, and the environment from accidental leaks or spills of vehicle fluids or other potential contaminants. This plan will include but not be limited to the following:
  - A map that delineates construction staging areas, and where refueling, lubrication, and maintenance of equipment will occur.
  - A list of items required in an on-site spill kit that will be maintained throughout the life of the project.
  - Procedures for the proper storage, use, and disposal of any solvents or other chemicals used during the project.
  - Identification of lawfully permitted or authorized disposal destinations.

**STANDARD PROJECT REQUIREMENT HAZMAT-2: WILDFIRE AVOIDANCE AND RESPONSE**

- A Fire Safety Plan will be developed prior to the start of construction.
- Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers will be required for all heavy equipment.
- Construction crews will be required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, heavy equipment will be parked over mineral soil, asphalt, or concrete to reduce the chance of fire.

**STANDARD PROJECT REQUIREMENT HYDRO-1: EROSION AND SEDIMENT CONTROL**

- Implement Best Management Practices (BMPs) in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during any ground disturbing activities as approved by the Regional Water Quality Control Board.
- The DPR Contractor will install long-term erosion control measures for any areas where ground disturbing activities result in bare soil areas. Attain the appropriate soil density required to reduce erosion and optimize revegetation of the appropriate native grass seed, sterile grass seed, and/or duff as approved by a DPR-approved biologist.

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

# X. HYDROLOGY AND WATER QUALITY

## ENVIRONMENTAL SETTING

While the hydrology of Malakoff has been largely shaped by human intervention and manipulation during the active mining period, the Humbug Creek watershed remains one of the Park's most valuable natural resources. Humbug Creek drains a watershed of approximately 10 square miles (6,400 acres) and flows into the South Yuba River (Cahill 1979). The historic townsite of North Bloomfield is bordered on the east and southeast by Humbug Creek. Precipitation in the region averages 60 inches annually, 86% of which occurs from November to April (DPR 2015).

Permanent water features from the mining era include Blair Lake, Diggins Lake, Catfish Pond, and several ephemeral streams. Today these water components support plant and wildlife resources and foster recreational opportunities. However, the creation of extensive ditches and flumes in the Park has had far-reaching and lasting impacts on local and regional ecosystems.

When the North Bloomfield Gravel Mining Company began its large-scale hydraulic mining efforts at Malakoff in 1866, the Company bought local reservoirs, constructed dams, and built over 100 miles of canals and ditches to direct and redirect the area's natural water sources to serve its purposes (DPR 2015). The giant water monitors used in the Diggins pit went through 25 million gallons of water in a 24-hour period of continuous use. The water needed to operate the monitors was stored in 11 principal reservoirs that encompassed 11,600 acres. Overall, mine operations consumed over 100 million gallons of water per day.

The North Bloomfield Gravel Mining Company not only controlled the water coming into the mine but also as it left the mine. Ditches, flumes, and tunnels were constructed to direct massive quantities of mining debris into the rivers and streams below. One of the earliest debris drainage tunnels, the 557-foot-long Hiller Tunnel, was built between 1851 and 1856. It was used until it became too shallow to handle the huge volume of debris produced by the hydraulic mine. In 1872 a much longer and deeper tunnel was built below Hiller Tunnel. The 7,847 foot long North Bloomfield Tunnel drained tailings from the Diggins pit into Humbug Creek.

The debris that flowed into Humbug Creek continued downstream into the Yuba and Sacramento rivers transporting sediment and sediment-bound metals that killed fish, impaired navigation by obstructing transport waterways, and flooded farms and valley towns (DPR 2015). The mine impacted water systems as far away as the San Francisco Bay. After countless floods destroyed property and took human lives, an effort to regulate mining operations began which eventually led to the passage of the nation's first environmental regulation. Known as the Sawyer Decision, this 1884 injunction imposed strict regulations on discharging debris into the Yuba River and other rivers in the Sierra Nevada region. These restrictions greatly limited the production of mining companies like the North Bloomfield Gravel Mining Company and were essentially responsible for ending the era of large-scale hydraulic mining.

The water elements that remain serve as reminders of the crucial role water played in shaping and creating what is now Malakoff (DPR 2015). They are also important examples of water management and treatment problems that still exist today. Downstream from the North Bloomfield townsite, the Diggins hydraulic mine pit still releases fine sediments into Humbug Creek. In previous years, this sediment runoff has resulted in yearly fines paid by DPR to the Central Valley Regional Water Quality Control Board (CVRWQCB), which regulates the water quality in the Yuba River and its tributaries.

Although DPR is not currently under fines to the CVRWQCB, DPR is required to follow the Waste Discharge Requirement Order (WDR; Order No. R5-2017-0086) and Time Schedule Order (TSO; Order No. R5-2017-0087) to reduce sediment runoff from the Diggins Pit.

The Initial Study/Mitigated Negative Declaration Malakoff Pit Drainage Runoff Sediment Control Best Management Practices Plan is addressing sediment runoff by minimizing constituent concentrations in surface water discharges from the Diggins Pit. The Diggins Pit has a total contributing drainage area of approximately 1,220 acres and is referred as the Malakoff Diggins Basin. Runoff from the Malakoff Diggins Basin discharges from the Pit through the Hiller Tunnel, a historic mine drainage tunnel, into Diggins Creek, which drains to Humbug Creek and then to the South Yuba River (Golder Associates Inc. 2020). As water comes in from above the Pit, it travels down the Pit walls and causes erosion, resulting in turbidity and sediment runoff. As discussed in Chapter 3, Malakoff's soil has high clay content. The clay has a negative charge and thus attracts the positively charged metals. These constituents are sediment-bound that have become uncovered during hydraulic mining. Historic hydraulic mining and erosion of the Pit walls can create runoff discharges which do not meet water quality objectives, thus requiring BMPs and long-term mitigation or control strategies to be developed to reduce adverse impacts to the downstream environment (Golder Associates Inc. 2020). Cumulative effects of the Initial Study/Mitigated Negative Declaration Malakoff Pit Drainage Runoff Sediment Control Best Management Practices Plan and the proposed forest management program are discussed in Chapter 4.

The proposed Prescribed Fire and Forest Management Program would conduct limited work in riparian areas in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of riparian montane hardwood conifer habitat. No work would occur in the streambed and wetland areas, and sensitive areas along Humbug Creek are excluded from treatment.

| **WOULD THE PROJECT:** | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | ☐ | ☐ | ☒ | ☐ |
| b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | ☐ | ☐ | ☐ | ☒ |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: | ☐ | ☒ | ☐ | ☐ |
| (i) result in substantial erosion or siltation on- or off-site; | ☐ | ☒ | ☐ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| | (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; | ☐ | ☒ | ☐ | ☐ |
| | (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or | ☐ | ☒ | ☐ | ☐ |
| | (iv) impede or redirect flood flows? | ☐ | ☒ | ☐ | ☐ |
| d) | In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | ☐ | ☐ | ☐ | ☒ |
| e) | Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | ☐ | ☐ | ☐ | ☒ |

**DISCUSSION**

a) As described in the Environmental Setting, there are currently excessive levels of discharge from Diggins Creek into Humbug Creek, with violations of waste discharge requirements that occur every year with respect to sediment load and potential pollutants from the Diggins mining pit. However, this is an existing condition that is a result of historic hydraulic mining operations during California's gold rush era. While the proposed forest management program does not contain a waste discharge component of any kind, there is potential to cause surface water contamination from the release of sediment during ground disturbing activities. The proposed forest management program will comply with all applicable water quality standards and waste discharge requirements. Along with **STANDARD PROJECT REQUIREMENT HAZMAT-1** (Chapter 2) that will minimize the impact of vehicle or equipment fluid spills, implementation of **STANDARD PROJECT REQUIREMENT HYDRO-1** and **PROJECT SPECIFIC REQUIRMENT GEO-1** (Chapter 2) will reduce the potential impact to water quality to a less than significant level.

b) The proposed forest management program will not deplete groundwater supplies or interfere with groundwater recharge. Potable water for the townsite of North Bloomfield and program requirements is supplied by a well located upslope (up-gradient) of the townsite and the program treatment areas, and current production is sufficient for projected use. No impact.

c) The proposed forest management program will not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flow. Any potential erosion or siltation caused by access or forest management activities will be less than significant, provided that **STANDARD PROJECT REQUIREMENT HYDRO-1**, **PROJECT SPECIFIC REQUIRMENT GEO-1,** and **MITIGATION MEASURE BIO-11** (Chapter 2) are implemented.

d) The proposed program is not located within flood hazard, tsunami, or seiche zone(s). Although the South Yuba River (to which Humbug Creek drains just south of the Park) is subject to 100-year flooding events due to its steep canyon walls, Humbug Creek is not located within a flood hazard zone (Nevada County GP 2020). Seiches are seismically induced waves in bodies of water that can be particularly hazardous where lakes and reservoirs are bordered by campgrounds or other facilities on flat banks. Most recorded seiches in Nevada County have not been of significant magnitude (Nevada County GP 2020), and the only water bodies in Malakoff consist of seven small to medium sized ponds. Considering the low seismic risk in western Nevada County, seiche risk should also be considered low. No impact.

e) The Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region for the Sacramento and San Joaquin River Basins ("Basin Plan") (Fifth Edition, revised February 2019, with approved amendments) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The proposed Prescribed Fire and Forest Management Program will not conflict with or obstruct implementation of this plan. No impact.

**STANDARD PROJECT REQUIREMENT:**

**STANDARD PROJECT REQUIREMENT HAZMAT-1: SPILL PREVENTION AND REPSONSE**

- Clean all equipment prior to the start of construction and before entering project areas. During the project, clean and repair all equipment (other than emergency repairs) outside of project boundaries. Contain and dispose of all contaminated spill residue, or other hazardous compounds, outside the boundaries of the project at a lawfully permitted or authorized destination.
- Inspect all equipment for leaks prior to the start of construction and regularly inspect thereafter until removed from project areas.
- Prepare a Spill Prevention and Response Plan (SPRP) prior to the start of construction and provide protection to on-site workers, the public, and the environment from accidental leaks or spills of vehicle fluids or other potential contaminants. This plan will include but not be limited to the following:
  - A map that delineates construction staging areas, and where refueling, lubrication, and maintenance of equipment will occur.
  - A list of items required in an on-site spill kit that will be maintained throughout the life of the project.
  - Procedures for the proper storage, use, and disposal of any solvents or other chemicals used during the project.
  - Identification of lawfully permitted or authorized disposal destinations.

**STANDARD PROJECT REQUIREMENT HYDRO-1: EROSION AND SEDIMENT CONTROL**

- Implement Best Management Practices (BMPs) in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during any ground disturbing activities as approved by the Regional Water Quality Control Board.
- The DPR Contractor will install long-term erosion control measures for any areas where ground disturbing activities result in bare soil areas. Attain the appropriate soil density

required to reduce erosion and optimize revegetation of the appropriate native grass seed, sterile grass seed, and/or duff as approved by a DPR-approved biologist.

**PROJECT SPECIFIC REQUIREMENT:**

**SPECIFIC PROJECT REQUIREMENT GEO-1: REMEDIATION OF DISTURBED AREAS**

- Rehabilitate all roads, fire line, or other disturbed areas to pre-project conditions or better to restore natural topography and drainage patterns, as directed by a DPR-approved biologist or geologist.
- Remediation may include one or more of the following:
  1) Topsoil and mulch removal and/or replacement for landings and main heavy equipment routes of travel.
  2) Mulch application to a surface cover depth of approximately two inches in areas where bare soil resulted from project activities.
  3) Soil loosening for landings and routes of travel with more than four equipment trips. Use ripping tines attached to a backhoe or similar equipment to increase infiltration.
  4) Redistribute soil and/or mulch to eliminate tracks, ruts, or compressions.
  5) Additional measures as determined by a DPR-approved geologist or natural resource specialist.

**MITIGATION MEASURE:**

**MITIGATION MEASURE BIO-11: RIPARIAN HABITAT PROTECTION**

- Forest treatment work in riparian areas will only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of montane hardwood conifer habitat.
- No vehicles or heavy equipment are allowed in riparian areas.
- Exclude perennial wet areas with unusual plants and communities from tree removal, i.e., fens and perennially wet meadows.
- Use hand crews in or adjacent to riparian areas to conduct tree felling and removal.
- Hand crews will conduct work in late summer or fall when riparian soils are driest, and typically the native plant communities have set seed and have begun to senesce. Late summer and fall are also after the sensitive period when wildlife young are mobile and dispersing, and outside of the migratory bird nesting season and bat maternity period.
- Protect special status or other sensitive plant and animal species with pre-project surveys and avoidance.
- Hand crews will not cross streams when manually hauling out trees and associated tree debris.
- Hand crews will directionally fell trees away from streams/creeks as feasible.
- Hand crews will avoid creating permanent trails and take precautions to prevent damage to soil (compaction or erosion) and non-target vegetation in riparian areas.
- Riparian areas will be marked with flagging. Piles of logs and tree debris for prescribed burning will be placed outside of riparian areas and positioned where water-runoff from pile burning will not return directly into the riparian area or waterway.
- Tree marking prescription will allow for some areas of high-density trees as places of refuge and other habitat in riparian corridors and along meadows. The prescription will avoid removing trees that provide shade or cover of aquatic habitats in order to maintain cooler water temperatures.

- Use a tracked chipper to chip material on site as opposed to dragging it through sensitive habitat.

## XI. LAND USE AND PLANNING

### ENVIRONMENTAL SETTING

The proposed forest management program is located within and adjacent to the historic townsite of North Bloomfield at Malakoff; no General Plan (GP) currently exists for this park unit. The Park is classified as a State Historic Park in the Public Resources Code, Section 5001.5(e); the purpose of land under this classification is to preserve objects of historical and scientific interest, and places commemorating important persons or historic events. Land use zoning under the existing Nevada County GP designates proposed program treatment areas as a Forest District, with the remaining portion of Park designated as an Open Space District. Land surrounding the Park is zoned as Forest, Open Space, and Timberland Production Zone Districts. Three in-holdings are located within North Bloomfield, and Main Street, the primary road through town, is owned and maintained by Nevada County.

The primary theme for this Park unit is to educate visitors on the history associated with the growth and decline of hydraulic gold mining operations occurring in northern California beginning in the 1850s and continuing into the early 20th century. Secondary themes include the Native American history of the area and the character of region's natural resources, including geology and terrestrial flora and fauna. The Chute Hill Campground, located outside of the Park's Zone of Primary Cultural Interest, offers 30 regular campsites and one group campsite for recreational purposes. Several trails and three separate picnic areas located throughout Park offer additional passive recreational opportunities for visitors. All forest management activities associated with this program will occur within the boundaries of Malakoff.

Surrounding the Park, there is an assortment of public lands, held primarily by the Bureau of Land Management (BLM) and the USFS -Tahoe National Forest, and private property. Some of the private land is industrial forestry land, while other parcels are zoned for residential/agriculture or recreation. For park units within the California State Parks System, DPR creates general plans, which are broad policy documents that set the direction for park development and management for the next 20 years or more. Not all parks have general plans, but other DPR guidelines and directives help to ensure appropriate operations and management are achieved. Other such guidance documents include the DPR cultural resource management directives and the DPR Operations Manual 0300, Natural Resources. Both documents provide DPR policy direction, definitions, processes, and procedures to guide the management of the natural and cultural resources on DPR lands. There are also local and regional level plans such as the San Juan Ridge Coordinated Resource Management Plan (CRMP) (1993). The San Juan Ridge CRMP was developed in 1993 to provide guidelines for the use of prescribed fire as a planning and forest management tool. Participants included the USDA Forest Service, Tahoe National Forest, USDI BLM, California State Parks, CDF, DFG - Region 2, U.S. Soil and Conservation Service, NSAQMD, and the Yuba Watershed Institute. The proposed program treatments areas are within the San Juan Ridge CRMP planning area.

Although no general plan currently exists for Malakoff, the proposed program is consistent with the DPR cultural resource management directives and the DPR Operations Manual 0300, Natural Resources. This program is also complementary with the Sierra District Wildfire and Forest Resiliency Program, whose goal is to commit to completing initial entry forest treatments on strategically planned forest lands to achieve effective and expanded restoration based on best available science and establishing sustainable and achievable ongoing acreage targets that can be maintained for protection of life, property, resources, and prior investments into the future. This program directly supports Governor

Newsom's California Wildfire and Forest Resiliency Action Plan (2021) that calls for the use of prescribed fire to restore ecosystem function.

Although DPR is not subject to local jurisdictions, the proposed program is also consistent with Policy FP-10.10.1 in the Nevada County General Plan which states that the "County shall encourage the use of prescribed burning as a management tool for hazardous fuel reduction, timber management, livestock forage production, and enhancement of wildlife habitat, consistent with seasonal and state regulations" (Nevada County GP 2020).

Government Code 51175-89 directs the California Department of Forestry and Fire Protection (CalFire) to identify the fire hazard severity within State Responsibility Areas. Malakoff and the surrounding area are classified as a "Very High Fire Hazard Severity Zone" (CalFire 2022).

Land use in the area will remain generally the same in the future (10-20 years); small towns surrounded by resource management lands with high quality recreation and a healthy natural environment.

| **WOULD THE PROJECT:** | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Physically divide an established community? | ☐ | ☐ | ☐ | ☒ |
| b) Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☐ | ☐ | ☒ |

**DISCUSSION**

a) The proposed forest management program is within the state park boundary, which is used for recreation and contains no residential or commercial development. No impact.

b) As noted in the Environmental Setting and Discussion (a) above, proposed program treatment areas are located within the state park boundary. No program elements conflict with applicable land use plans, policy, or regulation that has been adopted for mitigation purposes. All appropriate interagency coordination, consultation, and permits will be completed or obtained, in compliance with all applicable local, state, and federal requirements. No impact.

**STANDARD PROJECT REQUIREMENT: NONE**

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

## XII. MINERAL RESOURCES

### ENVIRONMENTAL SETTING

There are currently no important mineral resources identified in Malakoff per the Nevada County General Plan (1995).

Malakoff is home to one of largest historic mine sites from California's 19th century gold rush era. Hydraulic gold mining in the 1860s drastically altered the landscape, resulting in the first environmental law enacted in the nation. Known as the Sawyer Decision, this 1884 injunction imposed strict regulations on discharging debris into rivers in the Sierra Nevada and resulted in the end of California's hydraulic mining era. Recreational gold panning still occurs along Park streams, but there is no commercial extraction at proposed program treatment areas or within the Park boundary.

DPR policy does not permit the commercial extraction of mineral resources due to impacts to resources and in accordance with the Public Resources Code § 5001.65.

| WOULD THE PROJECT: | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Result in the loss of availability of a known mineral resource that is or would be of value to the region and the residents of the state? | ☐ | ☐ | ☐ | ☒ |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? | ☐ | ☐ | ☐ | ☒ |

### DISCUSSION

a-b) No significant mineral resources have been identified within the boundary of Malakoff and all program actions will occur within DPR lands. The proposed forest management program will not change land use activities on the site and will therefore not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site. As stated in the Environmental Setting above, under PRC § 5001.65, mining within any unit of the State Park System is prohibited. No impact.

**STANDARD PROJECT REQUIREMENT: NONE**

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

## XIII. NOISE

### ENVIRONMENTAL SETTING

Malakoff is located in a rural, sparsely populated area of western Nevada County, with low levels of traffic and little industrial noise. The primary access road for the Park and the North Bloomfield townsite is Tyler Foote Road, a two-lane county road, off State Route 49, approximately 17 miles to the west. The road changes names several times and becomes North Bloomfield Road before it enters the Park townsite. The last section of the road is unpaved for approximately one mile. The community of North Columbia is two to three miles from Malakoff's boundary and Nevada City, the largest nearby town, is a 45-minute drive southwest of the Park.

Prior to 2019, the Park was powered by diesel generators that produced a background hum that could be heard throughout the townsite. These diesel generators in North Bloomfield operated continuously, 24 hours a day, seven days a week. In 2019, a new solar array was constructed to provide a sustainable energy source for the entire Park. The new solar array substantially reduced and/or eliminated background noise in the townsite created by the older generators. Other sources of ambient noise include logging trucks that pass by on Derbec Road, Backbone Road, North Bloomfield Road, and Cruzon Grade Road, creating intermittent noise throughout year. Airplanes occasionally fly overhead, but there are no airports or private air strips in the vicinity of program treatment areas.

There are no schools or hospitals close to Malakoff. The nearest school, Grizzly Hill School, is two to three miles from the Park boundary in North Columbia. Sensitive receptors to proposed program activities include Park staff and residences, recreational visitors, and private residences in the vicinity of the Park boundary.

Sound is any detectable fluctuation in air pressure and generally is measured on a logarithmic scale in decibels (dB). When unwanted sound (i.e., noise) is measured, an electronic filter is used to de-emphasize extreme high and low frequencies to which human hearing has decreased sensitivity. Resulting noise measurements are expressed in weighting frequencies called A-weighted decibels (dBA). While zero dBA is the low threshold of human hearing, a sustained noise equal or greater than 90 dBA is painful and can cause hearing loss (Table XIII-1; Bearden 2000).

**Table XIII-1: Sound Levels Generated by Various Sources of Noise**

| **Sound Level** | **dBA** |
|---|---|
| Quiet library, soft whispers | 30 |
| Living room, refrigerator | 40 |
| Light traffic, normal conversation, quiet office | 50 |
| Air conditioner at 20 feet, sewing machine | 60 |
| Vacuum cleaner, hair dryer, noisy restaurant | 70 |
| Average city traffic, garbage disposals, alarm clock at 2 feet | 80 |
| **Constant exposure to the following sound levels can lead to hearing loss** | |
| Subway, motorcycle, truck traffic, lawn mower | 90 |
| Garbage truck, chain saw, pneumatic drill | 100 |
| Rock band concert in front of speakers, thunderclap | 120 |
| Gunshot blast, jet plane | 140 |
| Rocket launching pad | 180 |

(Bearden 2000)

Noise is further described according to how it varies over time and whether the source of noise is moving or stationary. Background noise in a particular location gradually varies over the course of a 24-hour period with the addition and elimination of individual sounds. Several terms are used to describe noise and its effects. The equivalent sound level (Leq) describes the average noise exposure level for a specific location during a specific time period, typically over the course of one hour. The Community Noise Equivalent Level (CNEL) is a twenty-four-hour average of Leq with an additional 5 dBA penalty for noise generated between the hours of 7:00 p.m. and 10:00 p.m. and a 10 dBA penalty during the hours of 10:00 p.m. and 7:00 a.m. The penalties account for how much more pronounced a noise is at night when other sounds have diminished. Federal, state, and local governments have defined noise and established standards to protect people from adverse health effects such as hearing loss and disruption of certain activities. Noise is defined in the California Noise Control Act, Health and Safety Code, California Code of Regulations (CCR) § 46,022 as excessive or undesirable sound made by people, motorized vehicles, boats, aircraft, industrial equipment, construction, and other noise-producing objects.

The Nevada County General Plan (2014) has established noise standards. See Appendix H for the Nevada County Noise Standard Table. Noise events are classified by land use category. The noise standards for land use category "rural" and zoning district "open space" are 55 Leq and 75 Lmax during the operating hours of 7 a.m. and 7 p.m.; 50 $L_{eq}$ and 65 $L_{max}$ during the operating hours of 7 p.m. and 10 p.m.; and 40 Leq and 55 Lmax during the operating hours of 10 p.m. and 7 a.m. (Nevada County GP 2014).

Proposed program treatment areas are characterized by natural, quiet settings. Typical sounds include bird song, wind through the trees, and water running in Humbug Creek and other tributaries to the South Yuba River. Throughout the year, out-of-town visitors and local residents are likely to be heard within the Park, particularly in the townsite of North Bloomfield, along the numerous Park trails, and in the Chute Hill Campground. Motor vehicles traveling along access roads to Malakoff are also audible in some locations.

| **WOULD THE PROJECT**: | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☐ | ☐ | ☒ | ☐ |
| b) Generation of excessive groundborne vibration or groundborne noise levels? | ☐ | ☐ | ☒ | ☐ |
| c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the | ☐ | ☐ | ☐ | ☒ |

project area to excessive noise levels?

**DISCUSSION**

a) Trucks and heavy equipment such as a backhoe, tracked harvester, forwarder, and masticator would operate during materials delivery and forest treatment activities. Chainsaws would be used to remove trees and cut slash and tree debris. Program related noise levels would fluctuate, depending on the type and number of vehicles and equipment in use at any given time.

   Many program activities would occur outside of the peak summer visitation season and program treatment areas would be closed during operations. Visitors and residents driving past program treatment areas on Backbone and Derbec Roads, or recreating in the vicinity, could hear noises related to forest management activities until they pass the site. Depending on the specific project-related activities being performed, short-term increases in ambient noise levels could result in speech interference near the project site and could bother Park visitors and residents. Under these circumstances, Park visitors and local residents will be directed to alternative areas of the Park to recreate where no such activities were occurring, or seek out other nearby parks and recreation facilities.

   Generally, program related work will not occur on weekends or holidays when visitation is higher than during the week. Noise associated with the proposed program is considered to have a potentially significant short-term impact to nearby noise-sensitive receptors. Implementation of **STANDARD PROJECT REQUIREMENT NOISE-1** for noise exposure will ensure that potential impacts of the program remain at a less than significant level.

b) Program related activities would not involve the use of explosives, pile driving, or other intensive construction techniques that could generate significant ground vibration or noise. Minor vibration adjacent to mechanized equipment, such as the masticator, during construction work would be generated only on a short-term basis. Therefore, groundborne vibrations and noises would have a less than significant impact.

c) As discussed in the Environmental Setting, the proposed forest management program is not located within two miles of any privately owned airstrip or public airport. No impact.

**STANDARD PROJECT REQUIREMENT:**

**STANDARD PROJECT REQUIREMENT NOISE-1: NOISE EXPOSURE**

- Project related activities will generally be limited to the daylight hours, Monday through Friday. However, weekend work will be implemented to accelerate construction or address emergency or unforeseen circumstances. If weekend work is necessary, no work will occur before 8:00 a.m. or after 6:00 p.m., except as necessary with prescribed fire operations.
- Internal combustion engines used for any purpose in the project areas will be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for project related activities will utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever feasible and necessary.
- Stationary noise sources and staging areas will be located as far from visitors as possible. If

they must be located near visitors, stationary noise sources will be muffled to the extent feasible, and/or where practicable, enclosed within temporary sheds.

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

## XIV. POPULATION AND HOUSING

### ENVIRONMENTAL SETTING

Malakoff is located on approximately 3,200 acres along the San Juan Ridge in northwest Nevada County. According to the 2020 U.S. Census, the population of Nevada County was 102,241 and the nearby communities of Grass Valley and Nevada City combined were 16,005 (U.S Census Bureau 2021; Nevada County 2022). The Park is surrounded by rural, unincorporated communities that were primarily established in the latter half of the nineteenth century to house and supply the miners who worked in nearby placer and hydraulic operations. Privately held parcels adjacent to the Park boundaries are typically between five and 160 acres in size. The community of North Columbia is two to three miles from Malakoff's boundary and Nevada City, the largest nearby town, is a 45-minute drive southwest of the Park.

The restored historic mining town of North Bloomfield, located in the southeast portion of the Park, is within the Public Safety and Historic Core Protection Zone of the proposed program. In 1880, at the height of hydraulic mining operations at Malakoff, the townsite had 1,229 residents, a population that quickly declined after 1890 due to the passing of the first environmental law enacted in the nation. Known as the Sawyer Decision, this 1884 injunction imposed strict regulations on discharging debris into rivers in the Sierra Nevada and resulted in the end of California's hydraulic mining era. Today, state park employees occupy four of five historic residences year-round in the North Bloomfield townsite.

Malakoff also receives recreational visitors throughout the year. There were approximately 3,815 paid day use visitors counted during 2021. Most visitation to Malakoff is unpaid, however, and Park visitation records may account for only 10 percent of the actual visitation to Malakoff. Unlike more renowned park units in the state or national park system, Malakoff has no entrance station where visitation can be easily regulated. Paid visitation does remain relatively consistent throughout the spring and summer months, with high visitation dates associated with special events, such as Humbug Days, when the visitor count has been documented to increase to approximately 500 people per day. Prior to the Covid-19 pandemic beginning in March 2020, four to five special event days were held per year. Due to Covid-19 restrictions, special events were cancelled at Malakoff during 2020-2021. Humbug Days recently resumed in June 2022 with a visitor count of 400 people in attendance. Overnight accommodations are also available at Malakoff and include 30 regular campsites, a group camp area, and three guest cabins. Campsites and cabins are typically available Memorial Day weekend through October, and the Museum is open year-round. Tours of the townsite and its multiple historic buildings as well as guided hiking programs are available on the weekends.

| WOULD THE PROJECT: | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☐ | ☐ | ☐ | ☒ |

| | | | | |
|---|---|---|---|---|
| b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

**DISCUSSION**

a-b) The proposed Prescribed Fire and Forest Management Program does not have a housing component and all work will take place within the boundaries of Malakoff, with no additions or changes to existing local infrastructure. The program will neither modify nor displace existing housing and will not displace people, either temporarily or permanently. All jobs created by the program will be tied to short-term project related activities and will be temporary in nature. Visitation to the area is not expected to change as a result of the program. No impact.

**STANDARD PROJECT REQUIREMENT: NONE**

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

## XV. PUBLIC SERVICES

### ENVIRONMENTAL SETTING

The public services in and around Malakoff are typical for a rural area removed from any city.

**Fire Protection**

Malakoff is located on State Responsibility Land in Nevada County. The California Department of Forestry and Fire Protection (CalFire) has primary jurisdiction for fire suppression in State Responsibility Areas including units of the State Park System (CalFire 2007). DPR also coordinates with CalFire during prescribed burn activities within DPR lands (CalFire 2005). The nearest CalFire Station is located in Columbia Hill approximately 10 miles from North Bloomfield. Malakoff is also within the response area of the North San Juan Volunteer Fire Department. Within the Park boundary, including the townsite of North Bloomfield, DPR Rangers provide emergency communication and coordination.

**Police Protection**

DPR Rangers assigned to Malakoff are Peace Officer Standards and Training (POST) certified law enforcement officers and provide year-round law enforcement within the Park unit boundary. The Nevada County Sheriff's Department responds to emergency calls and assists with criminal investigations. Sheriff deputies drive from their office in Nevada City approximately 45 minutes away.

**Schools**

The nearest school is Grizzly Hill School located in North Columbia (two to three miles from Malakoff's boundary). Nevada Union High School is located in Grass Valley (~50 minutes' drive). Malakoff School, the only school in the general vicinity, has been closed since April 2006 due to lack of enrollment.

**Parks and Other Public Facilities**

There are no other parks or public facilities, other than those associated with Malakoff, within proposed program treatment areas. Other recreational facilities in the area include: the South Yuba River Campground (BLM) 2+ miles from Malakoff, the Missouri Bar Trail (USFS) 1+ mile from Malakoff, the South Yuba River (mixed ownership) 1.5+ miles from Malakoff, and the private Camp Ross Relles (Optimists) whose facilities are mostly ~0.5 miles from Malakoff.

| WOULD THE PROJECT: | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | ☐ | ☐ | ☒ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| i. | Fire protection? | ☐ | ☐ | ☒ | ☐ |
| ii. | Police protection? | ☐ | ☐ | ☐ | ☒ |
| iii. | Schools? | ☐ | ☐ | ☐ | ☒ |
| iv. | Parks? | ☐ | ☐ | ☐ | ☒ |
| v. | Other public facilities? | ☐ | ☐ | ☐ | ☒ |

**DISCUSSION**

The proposed Prescribed Fire and Forest Management Program will utilize various treatments to restore forest health and increase resilience to catastrophic wildfire.

ai) Fire Protection: No components of the proposed Prescribed Fire and Forest Management Program will contribute to an increase of visitation and the long-term level of required public services is expected to remain relatively static; however, program activities could present an increased risk of fire that could result in additional demands on CalFire and local fire response teams. Program actions are intended to reduce the threat of wildfire after completion of forest management activities. Any impact on services will be temporary and nothing in the project scope would contribute to the need for an increase in the level of fire protection after program activities are complete. Implementation of **STANDARD PROJECT REQUIREMENT HAZMAT-2** (Chapter 2) will ensure that the potential impact to fire protection services remains at a less than significant level.

aii) Police Protection: As noted in the Environmental Setting, DPR Rangers with law enforcement authority patrol DPR land in Malakoff with emphasis on the Chute Hill campground, the historic townsite of North Bloomfield, and public use areas. DPR Rangers have full law enforcement authority and only require assistance from local police as backup for unusual situations. No additional demands on Rangers or local police are expected as a result of this program. No impact.

aiii-v) Schools, Parks and Other Public Facilities: There will be no impacts to schools, other parks, or other public facilities as a result of the proposed program and no need for new or physically altered governmental facilities. The program will improve long-term forest health and reduce the threat of stand-replacing wildfire. No impact.

**STANDARD PROJECT REQUIREMENT:**

**STANDARD PROJECT REQUIREMENT HAZMAT-2: WILDFIRE AVOIDANCE AND RESPONSE**

- A Fire Safety Plan will be developed prior to the start of construction.
- Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers will be required for all heavy equipment.
- Construction crews will be required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, heavy equipment will be parked over mineral soil, asphalt, or concrete to reduce the chance of fire.

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

## XVI. RECREATION

### ENVIRONMENTAL SETTING

Malakoff is located on the western slope of the Sierra Nevada in rural Nevada County. Malakoff offers visitors a variety of recreational opportunities. The most popular activities are hiking, mountain biking, camping, picnicking, and recreational gold panning. Two trailheads in the Park provide access to the South Yuba National Trail and the Wild & Scenic South Yuba River Recreational Area. There are over 20 miles of hiking trails within the Park. There are also overnight accommodations that include 30 regular campsites, a group camp area, and three guest cabins. Most sites are available throughout the year, although the North Bloomfield townsite's historic buildings are only open on weekends during the winter.

The entirety of Malakoff lies within a historic district with significant cultural resources dating back to before California's gold rush era. Historic Park attractions include the hydraulic mining pits (e.g., Diggins Pit) and the townsite of North Bloomfield, a restored mining town with educational and interpretive programs and passive recreational use. The proposed forest management program will be conducted within the boundaries of Malakoff in: (1) new and historic prescribed fire burn plots and (2) the Public Safety and Historic Core Protection Zone which includes the townsite of North Bloomfield and all access roads.

Visitation is relatively consistent at the Park throughout the spring and summer months, although the park is open year-round. High visitation dates are associated with special events, such as Humbug Days, when the visitor count has been documented to increase to approximately 500 people per day. There are four to five special event days per year.

There are no other parks or public facilities, other than those associated with Malakoff, within proposed program treatment areas. Other recreational facilities in the immediate vicinity include: the South Yuba River Campground (BLM) 2+ miles from Malakoff, the Missouri Bar Trail (USFS) 1+ mile from Malakoff, the South Yuba River (mixed ownership) 1.5+ miles from Malakoff, and the private Camp Ross Relles (Optimists) whose facilities are mostly ~0.5 miles from Malakoff.

Portions of some Park roads and trails will be temporarily closed for short durations to complete program activities. However, Visitor Services and the project manager will coordinate trail closures to ensure recreation continues and alternate routes are available.

| WOULD THE PROJECT: | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☐ | ☒ | ☐ |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an | ☐ | ☐ | ☐ | ☒ |

adverse physical effect on the environment?

**DISCUSSION**

a) The proposed forest management program will not be likely to displace Park visitors during program activities to an alternate existing neighborhood or regional park, or other recreational facility such that substantial physical deterioration of the facilities would occur or be accelerated. Temporary and limited work areas and durations, smoke management, and coordination with Visitor Services will allow work to occur without affecting major portions of state park land to the degree that visitors would be displaced. With these standard management practices, this impact will remain less than significant.

b) The proposed forest management program does not involve the expansion of existing or the construction of new recreational facilities. No impact.

**STANDARD PROJECT REQUIREMENT: NONE**

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

## XVII. TRANSPORTATION

### ENVIRONMENTAL SETTING

Malakoff is located approximately 26 miles northeast of Nevada City in rural western Nevada County. Proposed forest treatment areas are located in and around the historic North Bloomfield townsite as well as throughout the Park. There are two routes that are typically used to access the Park:

1) Highway 49: to access the Park from Highway 49, turn east onto Tyler Foote Road. At the fork with Cruzon Grade Road, bear right (go straight) onto Cruzon Grade Road. At the fork with Backbone Road, bear left onto Backbone Road. At the fork with Derbec Road, bear right onto Derbec Road. When Derbec Road ends (at a T intersection), make a right onto North Bloomfield Road, which will travel downhill into the Park. There are signs directing travelers to Malakoff beginning on Highway 49. This route is paved the entire length and eventually traverses around the north and east rim of the Diggins Mine Pit. It enters the North Bloomfield townsite from the north.

2) North Bloomfield Road: the other main route to the Park is the North Bloomfield Road which begins on Highway 49 in Nevada City. One right turn is required 0.5 miles north of Nevada City at the stop sign and intersection with Lake Vera Purdon Crossing Road. The North Bloomfield Road accesses the Park from the southwest. It is paved from Nevada City to the South Yuba River crossing and is unpaved from the river to Malakoff. It traverses around the south rim of the Diggins Mine Pit from the southwest and is paved within the Park boundaries. This route enters the North Bloomfield townsite from the south. There are two additional unpaved roads that can be used to egress from the eastern Park boundary in the event of an emergency.

Although the North Bloomfield Road is the most direct route to the Park, this is the least favored route due to steep grades and an unpaved road surface for nearly half the distance. Roads into and around proposed program treatment areas are gravel or partially paved and very narrow. Slow-moving logging trucks regularly use all public roads and heavy snow may temporarily close or make travel on local roads treacherous.

There is no public transportation available from the Nevada City/Grass Valley area to the Park, but private bus companies occasionally bring tour groups to the area. The area receives very little through traffic, even during the summer months. According to recent average daily trip (ADT) data, roads that access the Park typically experience low traffic volumes. The most recent (2018) ADT count for the segment of Tyler Foote Crossing Road indicate an ADT of 2,578. The most recent ADT counts for other access road segments are Cruzon Grade Road with an ADT of 517 (year 2013), Derbec Road with an ADT of 89 (year 2019), and North Bloomfield Road (south of Derbec Road) with an ADT of 42 (year 2014) (Nevada County Transportation Commission 2022; Nevada County Traffic Counts as of March 30, 2021). The Park and the townsite of North Bloomfield are primarily a destination location, although they do serve as a trailhead for hikers and bicyclists recreating in the area. The Park has high visitation days associated with four to five special events per year. No significant increase in visitation is anticipated as a result of the proposed forest management program.

California Senate Bill 743 (SB 743), adopted in 2013, changes how transportation impacts are measured in the review of land use and transportation plans and projects under CEQA. SB 743 represents a new paradigm in land use development and transportation planning across the state. The legislation removes automobile delay as the primary measure of transportation impacts of environmental significance,

typically measured by traffic level of service (LOS) and replaces it with vehicle miles traveled (VMT). The Governor's Office of Planning and Research (OPR) provides guidance on implementation of the VMT thresholds, and in acknowledgement of the unique characteristics, implementation challenges, and the limited application of VMT mitigation measures, provides additional flexibility in rural non-Metropolitan Planning Organization areas.

Nevada County recently developed a VMT Implementation Strategy (Fehr and Peers 2020) pursuant to the passage of SB 743 and CEQA Guidelines section 15064.3, subdivision (b)(1). However, all of the VMT project examples in the Fehr and Peers (2020) Implementation Strategy refer to residential, office, or retail development projects. "Other land uses are not addressed and guidance for cumulative impacts is limited to avoiding inconsistencies with the relevant Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS). In general, work-related land uses could use the OPR recommendations, and consistency with the RTP VMT forecasts could substitute for RTP/SCS consistency." – Fehr and Peers 2020

Because the proposed Prescribed Fire and Forest Management Program has no residential, office, or retail developmental components and consists of forest stewardship land use in rural western Nevada County, it is acceptable to use the OPR's recommendations to determine transportation impacts. According to the technical guidance provided in the OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018), a project may be presumed to have a less than significant impact with regard to VMT if it results in the generation of less than 110 trips per day.

| **WOULD THE PROJECT:** | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? | ☐ | ☐ | ☐ | ☒ |
| b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)? | ☐ | ☐ | ☒ | ☐ |
| c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | ☐ | ☐ | ☐ | ☒ |
| d) Result in inadequate emergency access? | ☐ | ☐ | ☒ | ☐ |

**DISCUSSION**

a) The proposed project is a resource management project and will not conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. No impact.

b) CEQA Guidelines Section 15064.3, subdivision (b)(1) focuses on VMT, adopted pursuant to SB 743 for determining the significance of transportation impacts. Pursuant to SB 743, the focus of transportation analysis now uses the VMT metric. According to the technical guidance provided in the Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018), a project may be presumed to have a less than significant impact with regard to VMT if it results in the generation of less than 110 trips per day. As discussed in the Environmental Setting, the proposed forest stewardship and management program has no residential, office, or retail developmental components and will not result in the generation of more than 110 trips per day. On the contrary, most of the work will be conducted on site with minimal new trips generated per day. As such, the program would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)(1), and impacts will remain less than significant.

c) No transportation-related change or increase in hazards will result from this program. No impact.

d) All project related activities associated with the program will occur within the boundary of Malakoff and work will not restrict access to or block any road outside the immediate tree removal or fire line area. Although minor delays may occur along interior Park roads during transport of equipment and chipping of tree debris and waste, minimum access requirements for emergency vehicles will be maintained at all times. Therefore, the impact of this program on emergency access or response would be less than significant.

**STANDARD PROJECT REQUIREMENT: NONE**

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

## XVIII. TRIBAL CULTURAL RESOURCES

### ENVIRONMENTAL SETTING

DPR is required to consult with Native American tribes regarding projects that may impact tribal cultural resources under PRC 21080.3.1(b)(d) (as established in Assembly Bill 52). Additionally, DPR has requirements to consult tribes under E.O. W-26-92.

Under PRC 21074, tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, or objects with cultural value to a tribe. Important tribal cultural resources can include, but are not limited to, archaeological resources. Other places and landscapes can be considered tribal cultural resources. If tribal cultural resources are identified during consultation, the agency should evaluate them for the California Register of Historical Resources (PRC 21080.3.2(a)).

| WOULD THE PROJECT: | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: | ☐ | ☐ | ☒ | ☐ |
| i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | ☐ | ☐ | ☒ | ☐ |
| ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | ☐ | ☐ | ☒ | ☐ |

### DISCUSSION

a) Tribal cultural resources are present within proposed program treatment areas. The Park locality is generally important to the Nevada County Rancheria tribe for its plant and animal resources. Malakoff is situated within the traditional territory of the Nisenan people. The Nisenan ancestral lands included the drainages of the Yuba (*Uba Seo*), Bear and American rivers, as well as the lower drainages of the Feather River. Their boundary was bordered by the west bank of the Sacramento River from approximately the mouth of the Feather River southward to the confluence with the American River, to the lands between the American and the Cosumnes rivers in the south, the crest of the Sierra Nevada to the east and roughly the Sierra Buttes and upper

Feather River to the north. The Nisenan continue to live in the communities of the Yuba and Bear River watersheds and maintain their connection with the river and land despite the effects of the gold rush and genocide had on their people. Today, Nisenan tribal members identify with several political representative entities including the Nevada City Rancheria of Nisenan, the United Indian Auburn Community, and Shingle Springs Band of Miwok.

The Sierra District Archaeologist and Tribal Liaison, Scott Green, initiated consultation with the Nevada City Rancheria's spokesperson, Shelly Covert, during a site visit to Malakoff on Monday, May 16, 2022. During the site visit which included visitation to several prehistoric archaeological sites within the Park, Ms. Covert acknowledged that Nisenan inhabited the Park since time immemorial. Ms. Covert also shared personal memories of visiting the Park in her youth with her family and Tribal elders and that the landscape, although altered by the gold rush, still retains a strong connection to her and other Nisenan. Ms. Covert relayed to Mr. Green that for the purpose of compliance with California AB-52, all the prehistoric sites within the ancestral lands of the Nisenan are considered Tribal Cultural Resources (TCR).

Definitions of Nisenan Tribal Cultural Resources (TCR):

a. Sites

(1) Defined as Archaeological sites; archaeological sites and the associated are all considered important to the identity of the Nisenan people. Archaeological sites establish our presence and tell a story of what we did there. Landscapes, sacred places, place names, habitation sites, burial sites, plant gathering sites, hunting sites, and fishing sites.

(2) Defined as Objects of Cultural Affiliation: Associated Funerary Objects: Objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later [25 USC 3001 (3)(A)].

b. Sacred Objects

(1) Specific ceremonial objects which are needed by traditional Native American religious leaders for the practice of traditional Native American religions by their present day adherents [25 USC 3001 (3)(C)].

c. Object of Cultural Patrimony

(1) An object having ongoing historical, traditional, or cultural importance central to the Native American group or culture itself, rather than property owned by an individual Native American, and which, therefore, cannot be alienated, appropriated, or conveyed by any individual regardless of whether or not the individual is a member of the Indian tribe or Native Hawaiian organization and such object shall have been considered inalienable by such Native American group at the time the object was separated from such group [25 USC 3001 (3)(D)].

Descriptions:

a. Nisenan objects of cultural affiliation:

i. Regalia
1. Beads - Clamshell, olivella, abalone, glass, steatite, magnesite, slate, or bone
2. Pendants – abalone or bone
3. Bird bone tubes – these are often incised
4. Bone whistles
5. Netting or basketry fragments
6. Clapper sticks
7. Rattles
ii. Ochre
iii. Burial Matrix
iv. Offerings – Any artifact or ecofact, especially one that is burned, at a burial/cry site is a funerary object. Because of the practice of continuing to visit a cry site and to leave offerings and because these offerings vary considerably, such objects can include many types of items. Qualified Tribal Monitors can determine whether an item is an offering, and such items can include but not limited to:
1. Any of the sacred objects or objects of cultural patrimony listed below:

a) Basketry
b) Textiles
c) Bone gambling dice
d) Bone awls
e) Flaked stone – including projectile points, blades, and debitage
f) Acorns (often carbonized)
g) Plants – wormwood, sage, and tobacco
h) Historic objects – may include metal tools, glassware, or ceramics
i) Faunal bones or shell
j) Contemporary offerings – please be aware that offerings are still made at burial/cry sites and do not disturb any contemporary offerings, which often include wormwood, sage, or tobacco

2. Diagnostic Sacred Objects (may also occur as funerary objects):
   a) Charmstones
   b) Quartz crystals
   c) Quartz projectile points
3. Diagnostic Objects of Cultural Patrimony
   a) Stone mortars, pestles, acorn anvils, hammerstones or other ground-stone used for food processing
   b) Steatite pipes
   c) Stone or baked clay net weights
   d) Rabbit fences or nets

DPR proposes to move forward the overall goal of using prescribed fire as a means of restoring fire to its essential role in the ecosystems within California State Parks, and to improve wildfire resilience. Fire history research in western North America indicates that frequent, low intensity fires shaped forest structure, composition, and resilience prior to European settlement (Agee 1989; Barnhart et al. 1996). These frequent fires served several critical roles in ecosystem function within the mixed conifer forest. Traditional burning by Native Americans prior to European settlement also helped to promote critical forest ecosystem function. This program is

a long-term forest management plan that will reduce fire severity as well as reduce the likelihood of a stand replacing wildfire that would have significant adverse impacts on state park forestland, sensitive natural and cultural resources present within Malakoff, and the surrounding communities.

Nevada City Rancheria supports projects of natural resource restoration and ecological stewardship within Malakoff and concurs with the listed **STANDARD AND SPECIFIC PROJECT REQUIREMENTS** for Cultural Resources **(CULT-1-8)**. This forest management program will improve the quality and abundance of those resources. Implementing **STANDARD PROJECT REQUIREMENT CULT-3, STANDARD PROJECT REQUIREMENT CULT-8,** and **PROJECT SPECIFIC REQUIREMENT CULT-4** will ensure that the proposed program will not impact tribal cultural resources.

**STANDARD PROJECT REQUIREMENTS:**

**STANDARD PROJECT REQUIREMENT CULT-3: ARCHAEOLOGICAL DISCOVERY**

- In the event of an unanticipated discovery of previously undocumented cultural resources during project activities (shell, burned animal bone or rock, concentrations of bottle glass or ceramics, etc.), work will be suspended in the area until a DPR cultural resource specialist has assessed the find and has developed and implemented appropriate avoidance, preservation, or recovery measures. If avoidance is required and feasible, the project manager will modify, at the discretion of the DPR cultural resource specialist, project actions to avoid cultural resources.

**STANDARD PROJECT REQUIREMENT CULT-8: HUMAN REMAINS DISCOVERY**

- In the event that human remains are discovered during project activity, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place. Existing law requires that project managers contact the County Coroner. If the County Coroner determines the remains are of Native American origin, both the Native American Heritage Commission (NAHC) and any identified descendants shall be notified (Health and Safety Code Section §7050.5, Public Resources Code Section §5097.97, and §5097.98 California Native American Graves Protection and Repatriation Act). DPR staff will work closely with the United States Bureau of Reclamation to ensure that its response to such a discovery is also Compliant with federal requirements including the Native American Graves Protection and Repatriation Act.
- Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination. If it is determined the find indicates a sacred or religious site, the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Office and review by the NAHC/Tribal Cultural representatives will occur as necessary to define additional avoidance, preservation, or recovery measures, or further future restrictions.

**PROJECT SPECIFIC REQUIREMENT:**

**SPECIFIC PROJECT REQUIREMENT CULT-4: ARCHAEOLOGICAL MONITOR**

- A DPR-approved archaeologist will monitor all project activity located in sensitive cultural areas to ensure protection and avoidance. In Tribal sensitive areas, a Native American monitor may also be required.
- Archaeological and Tribal monitoring throughout the project site will be implemented at the discretion of a DPR-approved cultural resources specialist. The archaeologist and/or Tribal monitor will have the authority to stop construction work in the area of a find and evaluate it and implement appropriate treatment measures to avoid potential significant impacts to historical resources per PRC 15064.5.

**MITIGATION MEASURE: NONE**

## XIX. UTILITIES AND SERVICE SYSTEMS

### ENVIRONMENTAL SETTING

Malakoff is located approximately 26 miles northeast of Nevada City in rural western Nevada County. Water service for the Park is provided exclusively by a DPR-owned and operated well and 110,000-gallon capacity treatment and distribution system, which services the campground and the North Bloomfield townsite, located within the northeastern section of the Park. Wastewater management for most of North Bloomfield is through a centralized septic system, while outlying wastewater (campground bathrooms and the Blair residence) is managed by self-contained septic systems. Waste Management of Grass Valley provides refuse collection and disposal. Water and sewer service is provided by the state. Prior to 2019, DPR-owned and operated diesel generators provided energy service for the Park. In 2019, a new solar array was constructed to provide a sustainable energy source for the entire Park. Additionally, one of the older diesel generators was replaced with an Environmental Protection Agency (EPA) approved diesel generator that meets current emission regulations. Telephone service is provided by SBC Communications. Most program treatment areas outside North Bloomfield have no water, electrical, or other services.

DPR has proposed this long-term Prescribed Fire and Forest Management Program to reduce the risk of catastrophic wildfire in the Park and surrounding area. A main component of this program includes forest treatments in the Public Safety and Historic Core Protection Zone, which includes all historic buildings, park facilities and infrastructure, and roads. Maintaining defensible space around Park infrastructure is also a primary goal behind the Facility Ignition Prevention Program (FIPP). Forest treatments along access roads is a priority as these are potential locations for human caused wildfire and require maintenance for emergency access and evacuation routes. The improvement and maintenance of the Service Road that leads to Humbug Creek in the southwestern section of the Park will serve multiple purposes including promoting public safety, resource protection, forest management, and fire access (Appendix I).

| WOULD THE PROJECT: | POTENTIALLY SIGNIFICANT IMPACT | LES S THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | ☐ | ☐ | ☐ | ☒ |
| b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? | ☐ | ☐ | ☐ | ☒ |
| c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing | ☐ | ☐ | ☐ | ☒ |

commitments?

| | | | | | |
|---|---|---|---|---|---|
| d) | Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | ☐ | ☐ | ☐ | ☒ |
| e) | Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | ☐ | ☐ | ☐ | ☒ |

**DISCUSSION**

a-c) The proposed Prescribed Fire and Forest Management Program is a resource management project. Because it does not include or induce further development of Park facilities, this program would not require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. No impact.

d-e) It is not anticipated that the proposed program would increase solid waste disposal at a local landfill. The tree debris will be piled and burned in appropriate locations within designated treatments areas within the Park that are without vehicle access or in areas with slope and/or environmental sensitivity that preclude vehicle access. In areas with vehicle access adjacent to treatment areas, the tree debris will be chipped and/or hauled away. As proposed, this program will comply with federal, state, and local statutes and regulations as they relate to solid waste. No impact.

**STANDARD PROJECT REQUIREMENT: NONE**

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

## XX. WILDFIRE

### ENVIRONMENTAL SETTING

Malakoff is located in a semi-remote area of western Nevada County, approximately 26 miles northeast of Nevada City. The Park encompasses the restored historic townsite of North Bloomfield, a large hydraulic mining pit from California's gold rush era, the Chute Hill Campground, and over 20 miles of hiking trails. Some of the most valuable cultural resources in the Park are located in North Bloomfield. All of the restored historic wooden structures in the townsite are extremely susceptible to wildfire. Due to a long history of human disturbance, including the clearcutting of large areas, the vegetation in the Park and surrounding vicinity consists of dense second-growth of chaparral and lower montane hardwood and coniferous forests. These densely forested habitats support a diverse array of wildlife. Nearly all of the annual precipitation occurs between November 1st and April 30th, while the months of July through October become increasingly drier, making wildfires a greater threat. A particular risk is if a wildfire started in the South Yuba River Canyon below Malakoff, the prevailing summer (southwest) winds could drive the fire uphill through heavy fuels, and the wildfire could become very large by the time it reached the Park. Throughout the Sierra Nevada foothills and mountains there is a significant risk of large catastrophic fire driven by extreme weather conditions exacerbated by climate change.

Government Code 51175-89 directs the California Department of Forestry and Fire Protection (CalFire) to identify the fire hazard severity within State Responsibility Areas. Malakoff and the surrounding area are classified as a "Very High Fire Hazard Severity Zone" (CalFire 2022). Sources of wildfire in Malakoff and the surrounding area can be from natural and human causes. Naturally caused wildfires originate from lightning strikes. Lightning is associated with thunderstorms that occur in the summer and fall seasons. Unnatural sources of wildfire are generally human caused and occur in the Wildland Urban Interface from escaped campfires, smoking, target shooting, etc. (CSP 2005).

Fire hazards at Malakoff are managed by DPR's Malakoff Diggins State Historic Park Wildfire Management Plan (2005). Wildfire management involves all aspects of eliminating and containing unwanted fires including prevention, pre-suppression, and suppression activities. Additionally, DPR has proposed this long-term Prescribed Fire and Forest Management Program to reduce the risk of catastrophic wildfire in the Park and surrounding area. A main component of this program includes forest treatments in the Public Safety and Historic Core Protection Zone, which includes all historic buildings, park facilities and infrastructure, and roads. Forest treatments along access roads is a priority as these are potential locations for human caused wildfire and require maintenance for emergency access and evacuation routes. The improvement and maintenance of the Service Road that leads to Humbug Creek in the southwestern section of the Park will serve multiple purposes including promoting public safety, resource protection, forest management, and fire access (Appendix I).

| WOULD THE PROJECT: | POTENTIALLY SIGNIFICANT IMPACT | LES S THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| a) Substantially impair an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ☒ |
| b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby | ☐ | ☐ | ☒ | ☐ |

| | | | | |
|---|---|---|---|---|
| expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? | | | | |
| c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? | ☐ | ☐ | ☐ | ☒ |
| d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? | ☐ | ☐ | ☐ | ☒ |

**DISCUSSION**

a) The proposed program will have no impact on the Wildfire Management Plan for Malakoff Diggins State Historic Park, which includes emergency response and/or emergency evacuation plans. Implementation of **STANDARD PROJECT REQUIREMENT HAZMAT-2** during program activities will be in accordance with DPR's Wildfire Management Plan for Malakoff Diggins State Historic Park. No Impact.

b) The proposed program will have a less than significant impact on wildfire risks. Implementation of **STANDARD PROJECT REQUIREMENT HAZMAT-2** during program activities requires the contractor to prepare a Fire Safety Plan for review and approval by a DPR-approved forester prior to the start of treatment activities. Less Than Significant Impact.

c) The proposed program does not include installation of infrastructure. Additionally, implementation of **STANDARD PROJECT REQUIREMENT HAZMAT-2** during program activities will be in accordance with DPR's Wildfire Management Plan for Malakoff Diggins State Historic Park. No Impact.

d) The proposed Prescribed Fire and Forest Management Program will likely reduce the risk of a stand-replacing wildfire and associated fire effects that would have negative impacts on the Park and neighboring communities. Implementation of **STANDARD PROJECT REQUIREMENT HAZMAT-2** during program activities will be in accordance with DPR's Wildfire Management Plan for Malakoff Diggins State Historic Park. No Impact.

**STANDARD PROJECT REQUIREMENT:**

**STANDARD PROJECT REQUIREMENT HAZMAT-2: WILDFIRE AVOIDANCE AND RESPONSE**

- A Fire Safety Plan will be developed prior to the start of construction.
- Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers will be required for all heavy equipment.
- Construction crews will be required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, heavy equipment will be parked over mineral

soil, asphalt, or concrete to reduce the chance of fire.

**PROJECT SPECIFIC REQUIREMENT: NONE**

**MITIGATION MEASURE: NONE**

# CHAPTER 4
# MANDATORY FINDINGS OF SIGNIFICANCE

| | POTENTIALLY SIGNIFICANT IMPACT | LESS THAN SIGNIFICANT WITH MITIGATION | LESS THAN SIGNIFICANT IMPACT | NO IMPACT |
|---|---|---|---|---|
| **WOULD THE PROJECT:** | | | | |
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal? | ☐ | ☒ | ☐ | ☐ |
| b) Have the potential to eliminate important examples of the major periods of California history or prehistory? | ☐ | ☐ | ☒ | ☐ |
| c) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probably future projects?) | ☐ | ☒ | ☐ | ☐ |
| d) Have environmental effects that will cause substantial adverse effects on humans, either directly or indirectly? | ☐ | ☐ | ☒ | ☐ |

**DISCUSSION**

a) DPR Natural Resource Specialists evaluated the proposed Prescribed Fire and Forest Management Program for potential significant adverse impacts to the natural environment and its plant and wildlife communities. Proposed program treatment areas support certain special status plant and animal species. DPR has determined that the proposed program will have the potential to degrade the quality of the habitat and/or reduce the number of or restrict the range of sensitive plants and animals. The program will also have the potential to degrade water quality by causing erosion, sedimentation, and release of pollutants, such as vehicle fluids and elevated metal concentrations into the environment. However, full implementation of standard and specific project requirements and mitigation measures incorporated into this program will reduce those impacts, both individually and cumulatively, to a less than significant level.

b) The proposed Prescribed Fire and Forest Management Program at Malakoff will treat approximately 1,866 acres of high-risk parkland including a Public Safety and Historic Core Protection Zone and use prescribed fire to conduct understory burning in new and historic burn plots. The entirety of Malakoff lies within a historic district with significant cultural resources dating back to before California's gold rush era. These actions will not only protect irreplaceable historic and prehistoric resources and park staff, but also reduce the wildfire hazards along the San Juan Ridge and populated areas of western Nevada County. This forest management program directly supports Governor Newsom's 2021 California Wildfire and Forest Resilience Action Plan which calls for

increased use of prescribed fire to restore ecosystem function for long-term forest health and resilience. This stewardship effort also supports the mission of California State Parks to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation. Preservation of historic buildings is of high priority in this historic district, and program actions and approaches will be tailored to safely treat areas with sensitive cultural resources. Incorporation of standard and specific project requirements will ensure that important examples of the major periods of California's history and prehistory remain protected, and any potential impacts resulting from the proposed program will be less than significant.

c) DPR conducts a maintenance program for routine maintenance activities that are minor in scope and not cumulatively considerable. These activities include minor restoration to existing facilities and installation of interpretive projects planned for the park unit. Any projects proposed in areas that have not been previously discussed will be evaluated under a separate CEQA document. Other proposed or ongoing projects that could occur in conjunction with the proposed Prescribed Fire and Forest Management Program at Malakoff include (1) the South Yuba Rim Fuel Break Project and (2) the Initial Study/Mitigated Negative Declaration Malakoff Pit Drainage Runoff Sediment Control Best Management Practices Plan.

Other land managers in western Nevada County, including along the San Juan Ridge, also have prescribed burn programs which require information sharing and coordination between local fire districts and land management agencies in coordination with air quality regulators to limit the timing, location, amount, and extent of burning at any one time. For example, the San Juan Ridge CRMP was developed in 1993 to provide guidelines for the use of prescribed fire as a planning and forest management tool. Participants included the USDA Forest Service, Tahoe National Forest, USDI BLM, California State Parks, CDF, DFG - Region 2, U.S. Soil and Conservation Service, NSAQMD, and the Yuba Watershed Institute. The proposed program treatment areas are within the San Juan Ridge CRMP planning area.

Another example of regional coordination between local firefighting districts and land management agencies is the **South Yuba Rim Fuel Break Project.** This project is a partnership between the South Yuba River Citizens League (SYRCL), CalFire, and several land management agencies. This landscape scale fuel break concept, spanning 21 miles of the northern rim of the South Yuba River, consists of several smaller scale projects. A series of pre-fire projects have been planned to create a contiguous area of hazardous fuel reduction to effectively create a shaded fuel break from Bridgeport extending east up the San Juan Ridge to North Bloomfield.

These projects include the completed Bridgeport prescribed Vegetation Management Plan (VMP) burns, the completed VMP prescribed burn at French Corral, Browning property, the completed Malakoff Diggins VMP project, and the completed Montezuma Fuel Break. This landscape scale project also includes the proposed Bunker Hill VMP, Bunker Hill Fuel Break, Shady Creek Fuel Break, Columbia Hill Fuel Break, Jackass Flat/Montezuma Ridge Fuel Break, Reader Ranch Fuel Break, and the Reader Ranch/Birchville VMP.

These projects have been developed to create strategic locations where firefighting resources may more effectively attempt fire suppression activities on potential costly and damaging megafires such as the 49'er fire of 1988.

As described in Chapter 2, Malakoff has a rich history in the use of prescribed fire and conducting forest management treatments to restore ecosystem function for long-term forest health and resilience. DPR conducted the first prescribed burn at Malakoff in the 1980s on the Marten Ranch burn plot (20 acres) located in the southeast portion of the Park. Beginning in 2004, DPR conducted a forest management project using a variety a management tools including manual and mechanical thinning, mastication, and pile burning, in preparation for prescribed understory burning. In January 2007, DPR successfully conducted a prescribed understory burn on over 1,000 acres at Malakoff at the Chute Hill Burn Plot (300 acres) and the Backbone Burn Plot (700 acres). The completed project was in conjunction with fuels treatment activities on adjacent USFS land, providing added wildfire protection for the USFS designated urban core on Cruzon Grade Road, the communities of Lake City and North Bloomfield, and the Chute Hill campground. The 2007 forest management project was also in conjunction with other fuel reduction efforts on the San Juan Ridge, creating a more defensible area for at-risk communities across western Nevada County, including Grass Valley, Nevada City, Penn Valley, Lake Wildwood, Cedar Ridge, Rough and Ready, Peardale, Smartville, Timbuctoo, and Washington.

Previous forest treatments and prescribed understory burning at Malakoff have been successfully implemented; however, forest treatments, including understory burning, need to be repeated over time in order to maintain effectiveness and protect prior investments. The multiple forest treatments implemented since at least the 1980s and the proposed Prescribed Fire and Forest Management Program will have the beneficial cumulative effect of reducing the risk of catastrophic wildfire impacting this region and restoring ecosystem function for long-term forest health and resilience.

Potential adverse impacts from environmental issues addressed in this evaluation do not overlap in such a way as to result in cumulative impacts that are greater than the sum of the parts. Long-term coordination between local fire districts and land management agencies in coordination with air quality regulators, and incorporation of standard and specific project requirements and/or mitigations measures will ensure that any adverse impacts to aesthetics, air quality, noise, greenhouse gases, safety, and biological, cultural, and tribal cultural resources will not be cumulatively considerable and remain at a less than significant level.

**The Initial Study/Mitigated Negative Declaration Malakoff Pit Drainage Runoff Sediment Control Best Management Practices Plan** is another ongoing project that could occur concurrently with the proposed Prescribe Fire and Forest Management Program. The Initial Study/Mitigated Negative Declaration Malakoff Pit Drainage Runoff Sediment Control Best Management Practices Plan is in the planning phase and will be evaluated under a separate CEQA document. As discussed in Chapter 3, minimizing constituent concentrations in surface water discharges from the Diggins Pit is required in order to reduce adverse impacts to the downstream environment. DPR is required to follow the Waste Discharge Requirement Order (WDR; Order No. R5-2017-0086) and Time Schedule Order (TSO; Order No. R5-2017-0087) issued by the CVRWQCB to reduce sediment runoff from the Diggins Pit. The Diggins Pit has a total contributing drainage area of approximately 1,220 acres and is referred as the Malakoff Diggins Basin (Golder Associates Inc. 2020). Runoff from the Malakoff Diggins Basin discharges from the Pit through the Hiller Tunnel, a historic mine

drainage tunnel, into Diggins Creek, which drains to Humbug Creek and then to the South Yuba River (Golder Associates Inc. 2020). As water comes in from above the Pit, it travels down the Pit walls and causes erosion, resulting in turbidity and sediment runoff. As discussed in Chapter 3, Malakoff's soil has high clay content. The clay has a negative charge and thus attracts the positively charged metals. These constituents are sediment-bound that have become uncovered during hydraulic mining. Historic hydraulic mining and erosion of the Pit walls can create runoff discharges which do not meet water quality objectives, thus requiring BMPs and long-term mitigation or control strategies to be developed to reduce adverse impacts to the downstream environment (Golder Associates Inc. 2020). Phase I of this Plan is expected to commence in 2023.

It is currently anticipated that temporary construction activities, ongoing BMP maintenance activities, and the presence of the recommended BMPs would not substantially change or otherwise adversely affect the aesthetics of the Diggins Pit or Park user experience (Golder Associates Inc. 2020). During the BMP design phase, measures to avoid and minimize potential effects on visual character and Park user experience (e.g., use of materials for BMPs consistent with the visual character of the Pit, placement of new trail markers and interpretive signage for informing Park visitors of the BMP components and their purpose, measures to minimize construction noise and air pollutants) and safety (e.g., temporary construction area public access exclusion) will be developed and integrated to the BMP Plan as standard project requirements and/or mitigation measures (Golder Associates Inc. 2020). Coordination between program managers for both projects and Visitor Services will limit the timing, location, and extent of project activities so they do not overlap in such a way that would reduce Park visitor experience, nor have an adverse impact on natural or cultural resources. Both projects are resource management projects whose long-term goal is to protect and restore ecosystem function. Incorporation of all standard and specific project requirements and mitigation measures will reduce potential impacts to a less than significant level and will not be cumulatively considerable.

d) Most program related environmental effects have been determined to pose a less than significant impact on humans. However, possible impacts from fugitive dust (Air Quality), construction accidents, spills, and wildfire (Hazards and Hazardous Materials), construction-generated noise (Noise), though temporary in nature, have the potential to result in significant adverse effects on humans. These potential impacts will remain at a less than significant level through incorporation of standard and specific project requirements.

# CHAPTER 5
# SUMMARY OF MITIGATION MEASURES

The following mitigation measures will be implemented by DPR as part of the Prescribed Fire and Forest Management Program at Malakoff.

## AESTHETICS

### MITIGATION MEASURES

- **NO MITIGATION MEASURES REQUIRED**

## AGRICULTURAL RESOURCES

### MITIGATION MEASURES

- **NO MITIGATION MEASURES REQUIRED**

## AIR QUALITY

### MITIGATION MEASURES

- **NO MITIGATION MEASURES REQUIRED**

## BIOLOGICAL RESOURCES

### MITIGATION MEASURES

**MITIGATION MEASURE BIO-10: WINTER AND/OR SPRING BURNING**

- Most birds in the United States, including nonspecial status native species, are protected by the Migratory Bird Treaty Act of 1918 (MBTA) and the California Fish and Game Code.
- Plan spring burning to only occur in plots that have low shrub nesting value (as determined by a DPR-approved biologist).
- Conduct pre-project bird surveys no more than seven days prior to any late winter and/or spring burning.
- Protect trees with active nests from burning by raking organic material away from the base of the tree. Protect areas with active ground nests with a fire line.
- Plan spring burning activities to commence prior to June 1 to avoid the peak nesting period. Burning after June 1 will only occur in plots with no active ground or shrub nests.

**MITIGATION MEASURE BIO-11: RIPARIAN HABITAT PROTECTION**

- Forest treatment work in riparian areas will only occur in the designated Public Safety and Historic Core Protection Zone for the purpose of protecting life and property and for restoration and enhancement of montane hardwood conifer habitat.
- No vehicles or heavy equipment are allowed in riparian areas.

- Exclude perennial wet areas with unusual plants and communities from tree removal, i.e., fens and perennially wet meadows.
- Use hand crews in or adjacent to riparian areas to conduct tree felling and removal.
- Hand crews will conduct work in late summer or fall when riparian soils are driest, and typically the native plant communities have set seed and have begun to senesce. Late summer and fall are also after the sensitive period when wildlife young are mobile and dispersing, and outside of the migratory bird nesting season and bat maternity period.
- Protect special status or other sensitive plant and animal species with pre-project surveys and avoidance.
- Hand crews will not cross streams when manually hauling out trees and associated tree debris.
- Hand crews will directionally fell trees away from streams/creeks as feasible.
- Hand crews will avoid creating permanent trails and take precautions to prevent damage to soil (compaction or erosion) and non-target vegetation in riparian areas.
- Riparian areas will be marked with flagging. Piles of logs and tree debris for prescribed burning will be placed outside of riparian areas and positioned where water-runoff from pile burning will not return directly into the riparian area or waterway.
- Tree marking prescription will allow for some areas of high-density trees as places of refuge and other habitat in riparian corridors and along meadows. The prescription will avoid removing trees that provide shade or cover of aquatic habitats in order to maintain cooler water temperatures.
- Use a tracked chipper to chip material on site as opposed to dragging it through sensitive habitat.

**MITIGATION MEASURE BIO-12: HEAVY EQUIPMENT**

- No vehicles or heavy equipment are allowed in riparian areas.
- A DPR-approved botanist will review and approve all treatment areas outside of road and trail alignments that require heavy equipment operation to ensure avoidance of impacts to sensitive vegetation, including but not limited to, wet meadow and sensitive habitat types.
- A DPR-approved biologist will review and accept all locations used for staging/storage of vehicles, equipment, and/or materials used during the project.
- Full suspension cable yarding or end line yarding in or adjacent to riparian areas may be used to conduct tree felling and removal. These are treatment techniques that can be safely implemented to protect areas with sensitive resources or habitats, such as riparian areas.

## CULTURAL RESOURCES

### MITIGATION MEASURES

- **NO MITIGATION MEASURES REQUIRED**

## ENERGY

### MITIGATION MEASURES

- **NO MITIGATION MEASURES REQUIRED**

## GEOLOGY AND SOILS

**MITIGATION MEASURES**

- **NO MITIGATION MEASURES REQUIRED**

## GREENHOUSE GAS EMISSIONS

**MITIGATION MEASURES**

- **NO MITIGATION MEASURES REQUIRED**

## HAZARDS AND HAZARDOUS MATERIALS

**MITIGATION MEASURES**

- **NO MITIGATION MEASURES REQUIRED**

## HYDROLOGY AND WATER QUALITY

**MITIGATION MEASURES**

- **MITIGATION MEASURE BIO-11: RIPARIAN HABITAT PROTECTION**

## LAND USE AND PLANNING

**MITIGATION MEASURES**

- **NO MITIGATION MEASURES REQUIRED**

## MINERAL RESOURCES

**MITIGATION MEASURES MINERAL-1**

- **NO MITIGATION MEASURED REQUIRED**

## NOISE

**MITIGATION MEASURES**

- **NO MITIGATION MEASURED REQUIRED**

## POPULATION AND HOUSING

**MITIGATION MEASURES**

- **NO MITIGATION MEASURED REQUIRED**

## PUBLIC SERVICES

**MITIGATION MEASURES**

- **NO MITIGATION MEASURED REQUIRED**

## RECREATION

**MITIGATION MEASURES**

- **NO MITIGATION MEASURED REQUIRED**

## TRANSPORTATION

**MITIGATION MEASURES**

- **NO MITIGATION MEASURED REQUIRED**

## TRIBAL CULTURAL RESOURCES

**MITIGATION MEASURES**

- **NO MITIGATION MEASURED REQUIRED**

## UTILITIES AND SERVICE SYSTEMS

**MITIGATION MEASURES**

- **NO MITIGATION MEASURED REQUIRED**

## WILDFIRE

**MITIGATION MEASURES**

- **NO MITIGATION MEASURED REQUIRED**

# CHAPTER 6
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Chapter 4

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# CHAPTER 7
# REPORT PREPARATION

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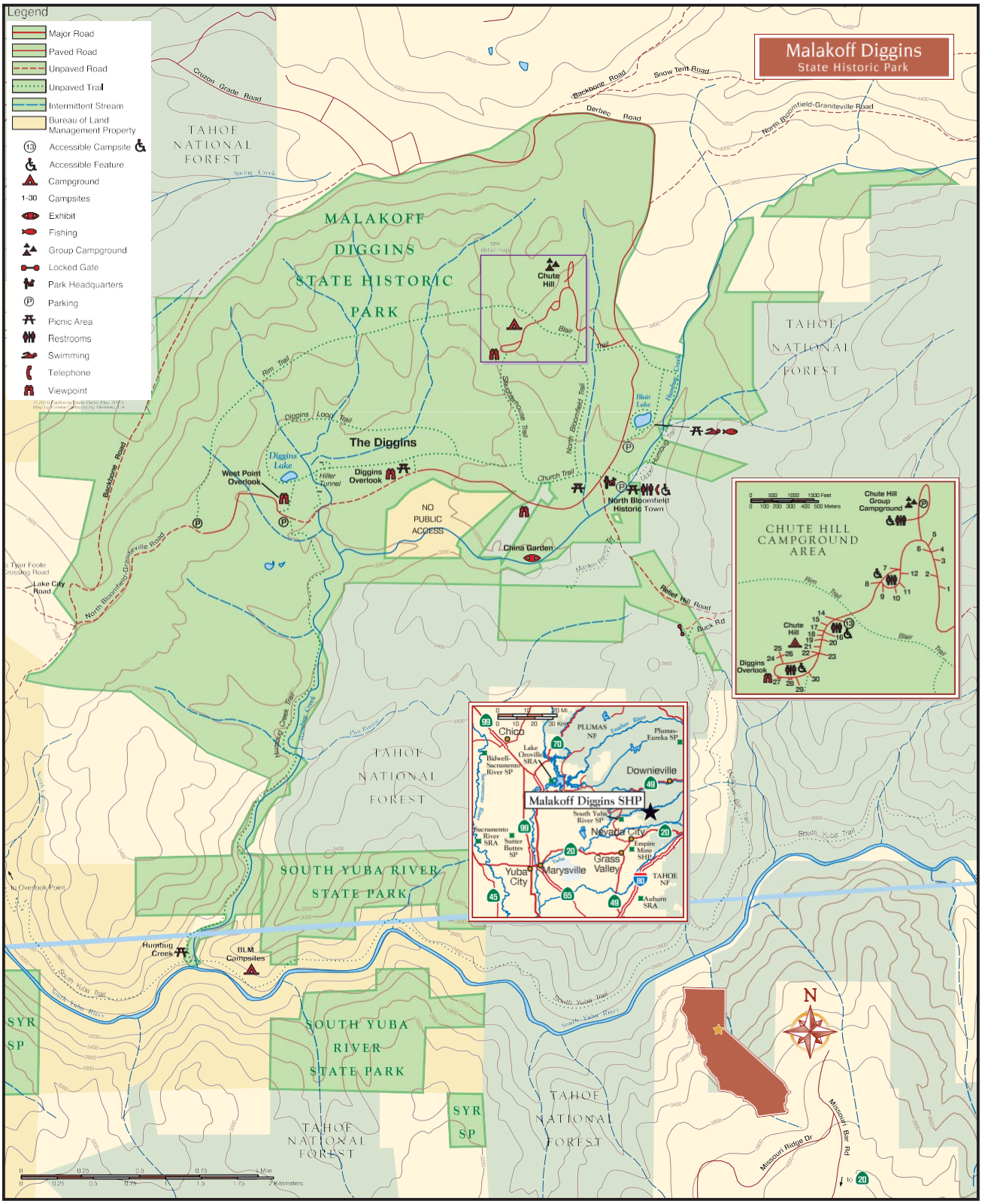
# APPENDICES

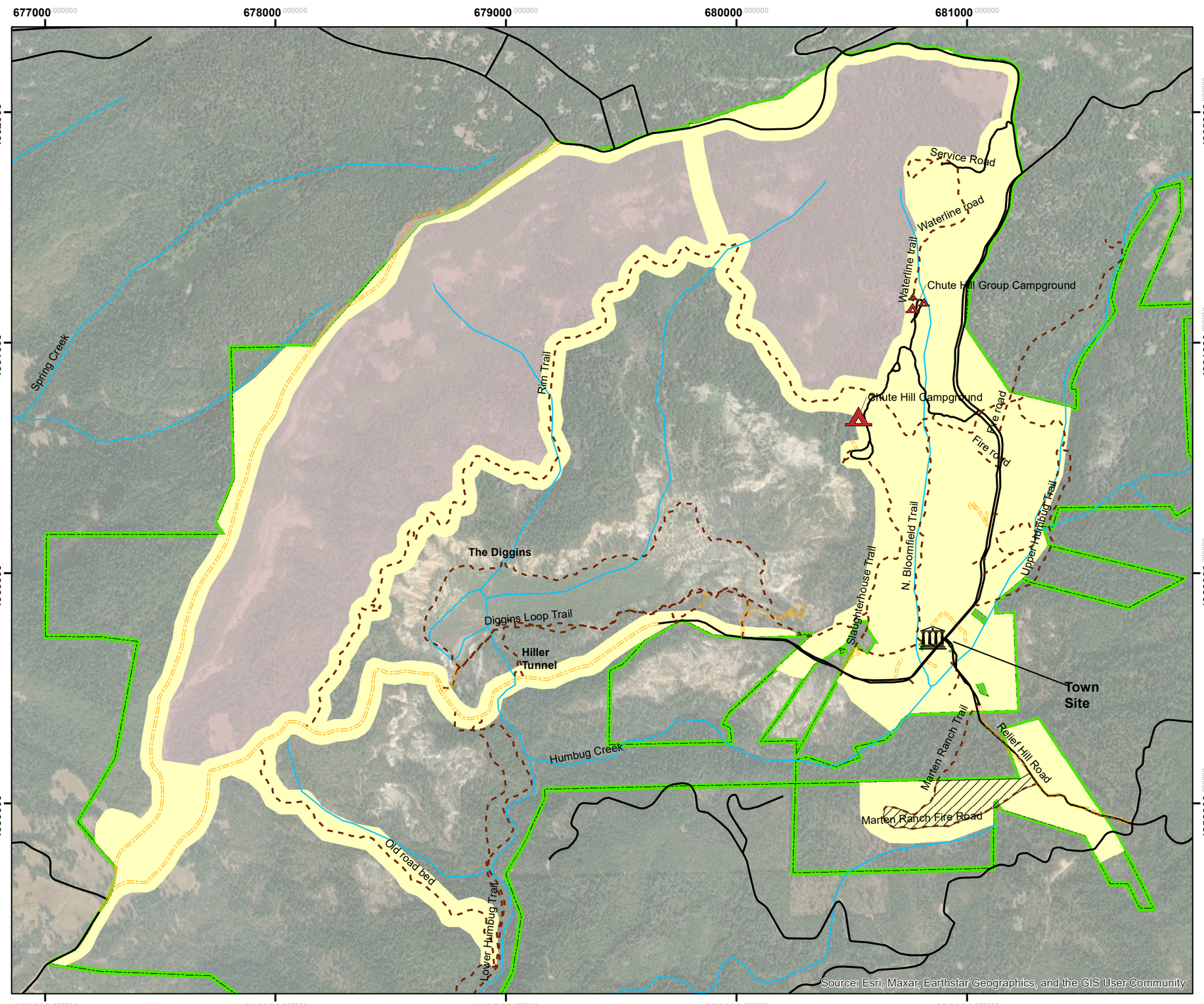
# APPENDIX A
# MAPS




Map of Malakoff Diggins State Historic Park, Eureka Cartography, Berkeley, © 2010 California State Parks.

# Prescribed Fire and Forest Management Program Proposed Treatment Areas

California State Parks
Malakoff Diggins
State Historic Park




N

0 0.125 0.25 0.5 Miles

- State Park Boundary
- Public Safety & Historic Core Protection Zone
- Backbone & Chute Hill Burn Plots
- Marten Ranch Burn Plot

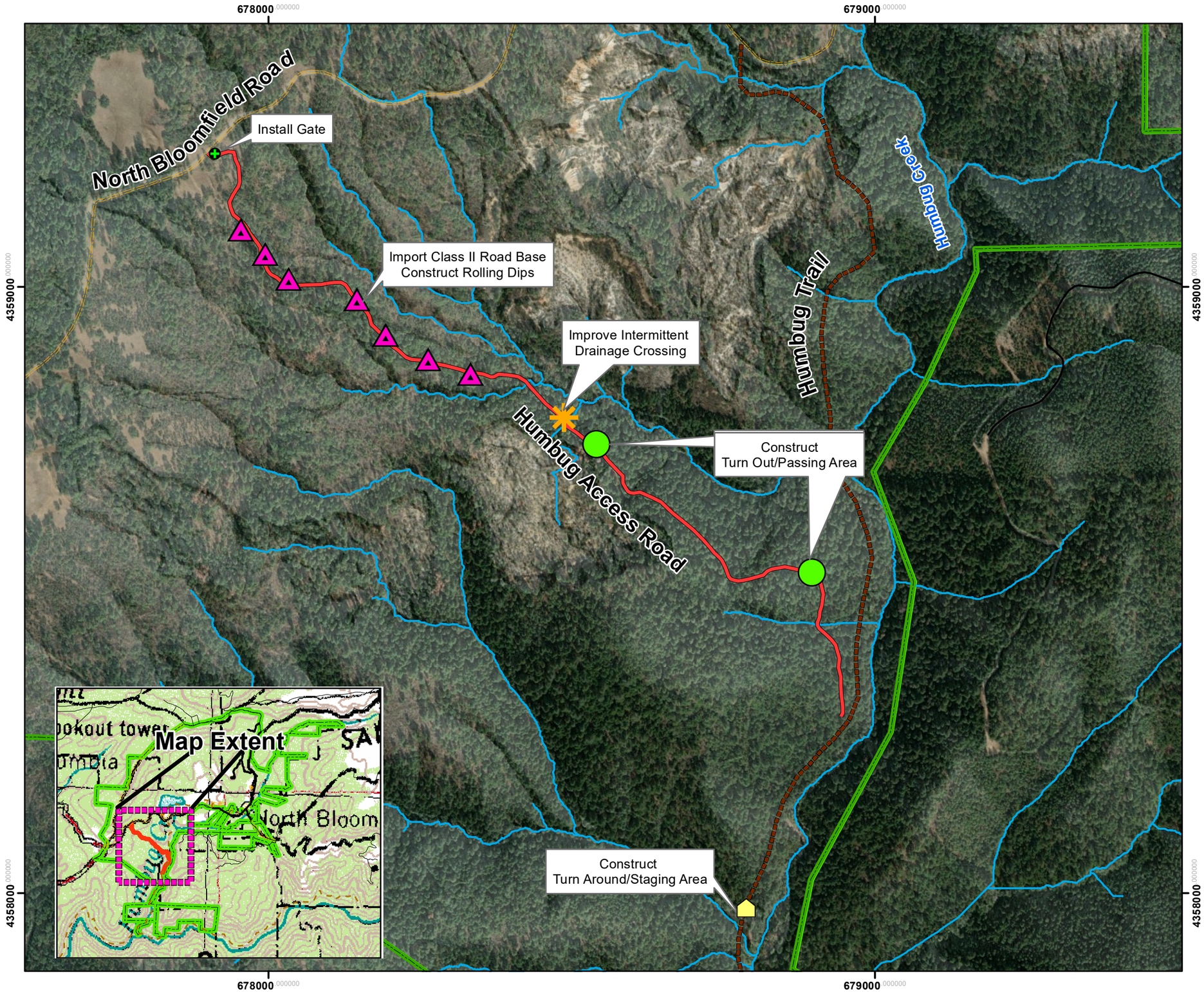
**Roads and Trails**

- trail
- dirt road
- paved
- Waterways

| | |
|---|---|
| **DATE:** 13 June 2022 | **PRODUCED BY:** Lindsay Cline |
| **FILENAME:** | |
| **DATA SOURCE/PROJECTION:** **UTM, Zone 10, NAD83** | |

# Humbug Creek Service Road Maintenance and Improvements

California State Parks
Malakoff Diggins
State Historic Park



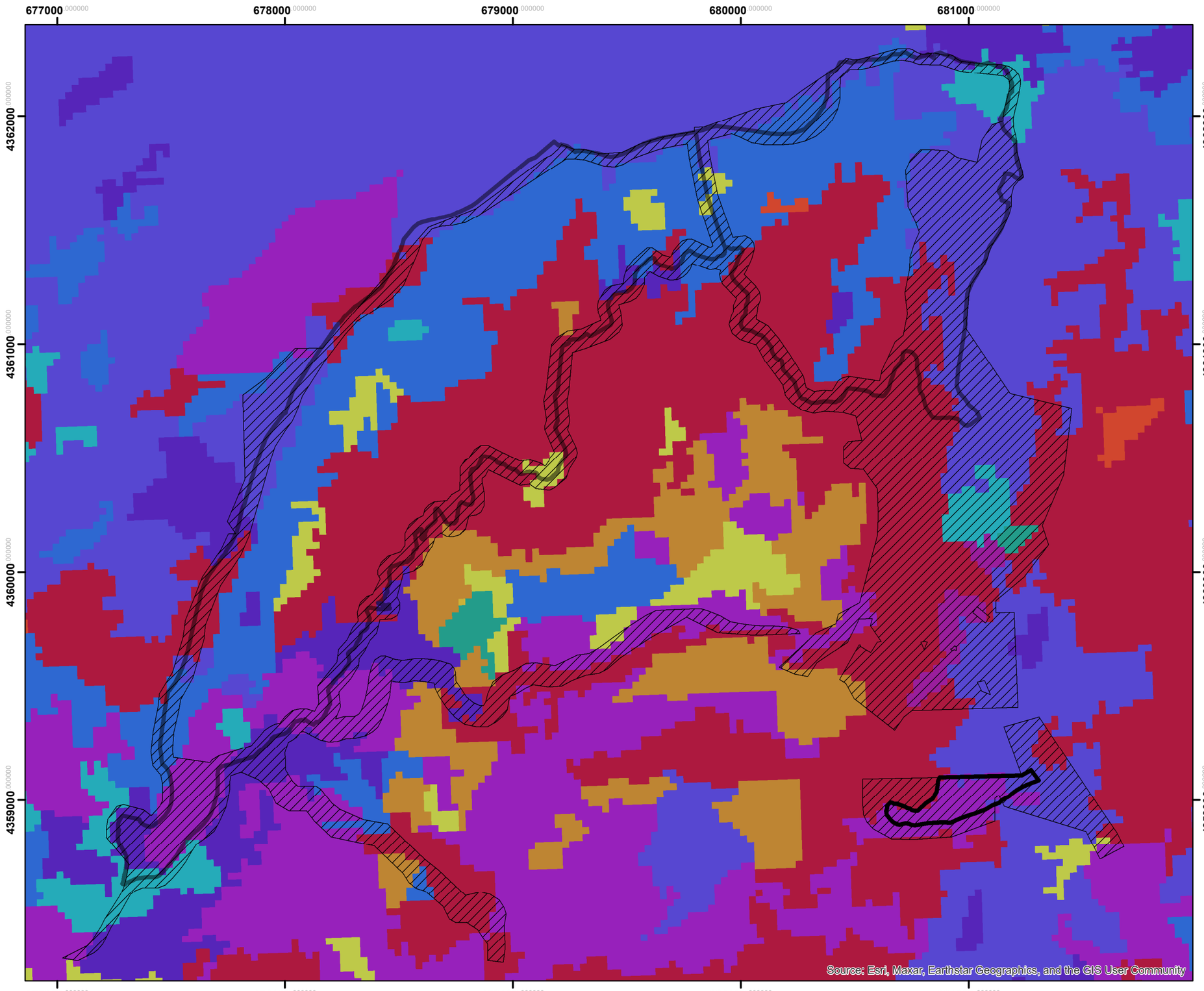

## LEGEND

- Humbug_Service_road
- Dirt Road
- Paved Road
- Watercourse
- State Park Boundary

| | |
|---|---|
| **DATE:** 01 August 2022 | **PRODUCED BY:** Nathan Shasha |
| **FILENAME:** | |
| **DATA SOURCE/PROJECTION:** UTM, Zone 10, NAD83 | |

# Prescribed Fire and Forest Management Program CWHR Vegetation Types

California State Parks
Malakoff Diggins
State Historic Park



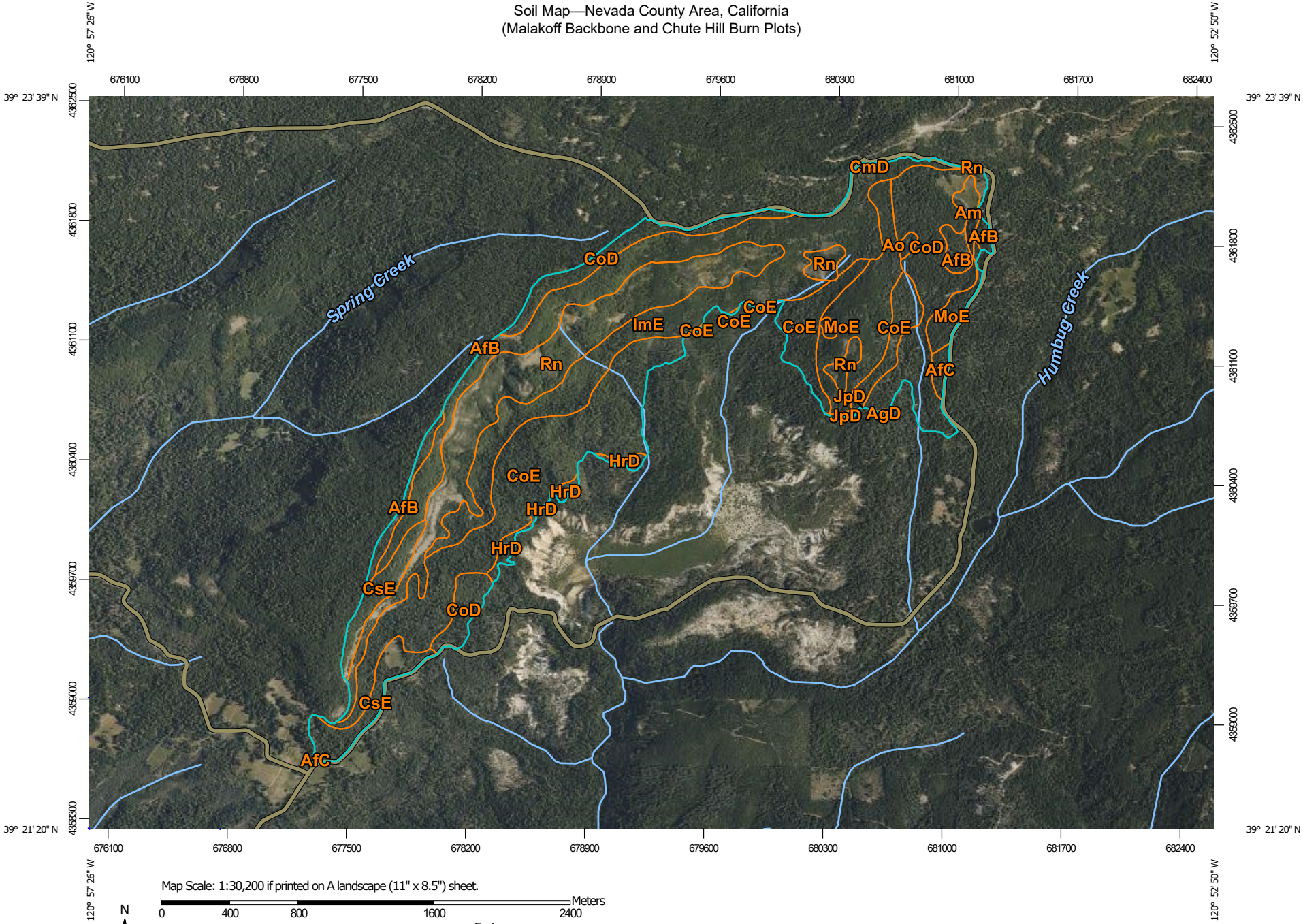

N

0 0.125 0.25 0.5 Miles

- Public Safety & Historic Core Protection Zone
- Backbone & Chute Hill Burn Plots
- Marten Ranch Burn Plot
- Annual Grassland
- Barren
- Douglas Fir
- Lacustrine
- Mixed Chaparral
- Montane Chaparral
- Montane Hardwood
- Montane Hardwood-Conifer
- Ponderosa Pine
- Sierran Mixed Conifer
- Urban
- Wet Meadow

| | |
|---|---|
| **DATE:** November 2022 | **PRODUCED BY:** Lindsay Cline |
| **FILENAME:** | |
| **DATA SOURCE/PROJECTION:** **UTM, Zone 10, NAD83** | |

Soil Map—Nevada County Area, California
(Malakoff Backbone and Chute Hill Burn Plots)



## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Nevada County Area, California
Survey Area Data: Version 14, Sep 3, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

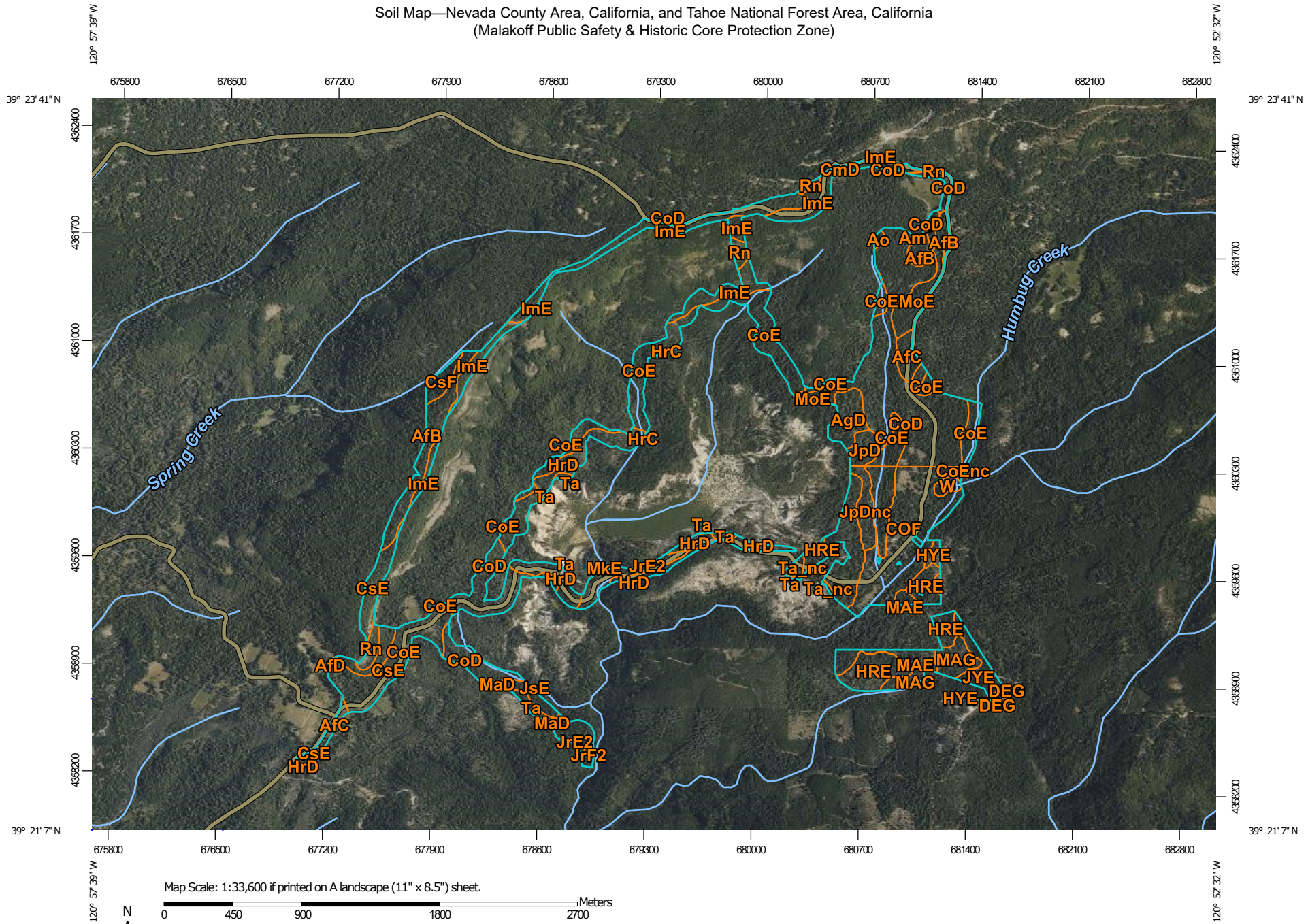
Date(s) aerial images were photographed: Jun 8, 2019—Jun 21, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| AfB | Aiken loam, 2 to 9 percent slopes, N Low-Mid Montane | 23.5 | 2.3% |
| AfC | Aiken loam, 9 to 15 percent slopes, high precip | 6.1 | 0.6% |
| AgD | Aiken cobbly loam, 2 to 30 percent slopes | 0.3 | 0.0% |
| Am | Alluvial land, loamy | 8.6 | 0.8% |
| Ao | Alluvial land, clayey | 2.7 | 0.3% |
| CmD | Cohasset loam, backslopes, 5 to 30 percent slopes | 1.5 | 0.1% |
| CoD | Cohasset cobbly loam, 5 to 30 percent slopes | 154.9 | 14.8% |
| CoE | Cohasset cobbly loam, 15 to 50 percent slopes | 245.2 | 23.5% |
| CsE | Cohasset-McCarthy cobbly loams, 15 to 50 percent slopes | 53.4 | 5.1% |
| HrD | Horseshoe gravelly loam, 15 to 30 percent slopes | 12.1 | 1.2% |
| ImE | Iron Mountain cobbly loam, 2 to 50 percent slopes | 264.9 | 25.4% |
| JpD | Josephine cobbly loam, 5 to 30 percent slopes | 1.3 | 0.1% |
| MoE | McCarthy cobbly loam, 15 to 50 percent slopes | 84.4 | 8.1% |
| Rn | Rock land | 184.6 | 17.7% |
| **Totals for Area of Interest** | | **1,043.7** | **100.0%** |

Soil Map—Nevada County Area, California, and Tahoe National Forest Area, California
(Malakoff Public Safety & Historic Core Protection Zone)




Map Scale: 1:33,600 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 450 900 1800 2700

Feet
0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Nevada County Area, California
Survey Area Data: Version 14, Sep 3, 2021

Soil Survey Area: Tahoe National Forest Area, California
Survey Area Data: Version 15, Sep 8, 2021

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 8, 2019—Jun 21, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| AfB | Aiken loam, 2 to 9 percent slopes, N Low-Mid Montane | 38.7 | 4.6% |
| AfC | Aiken loam, 9 to 15 percent slopes, high precip | 12.3 | 1.5% |
| AfD | Aiken loam, 15 to 30 percent slopes, N Low Mid Montane | 0.1 | 0.0% |
| AgD | Aiken cobbly loam, 2 to 30 percent slopes | 16.0 | 1.9% |
| Am | Alluvial land, loamy | 3.1 | 0.4% |
| Ao | Alluvial land, clayey | 1.1 | 0.1% |
| CmD | Cohasset loam, backslopes, 5 to 30 percent slopes | 1.7 | 0.2% |
| CoD | Cohasset cobbly loam, 5 to 30 percent slopes | 196.9 | 23.3% |
| CoE | Cohasset cobbly loam, 15 to 50 percent slopes | 90.3 | 10.7% |
| CsE | Cohasset-McCarthy cobbly loams, 15 to 50 percent slopes | 55.9 | 6.6% |
| CsF | Cohasset-McCarthy cobbly loams, 50 to 75 percent slopes | 7.2 | 0.9% |
| HrC | Horseshoe gravelly loam, 9 to 15 percent slopes | 0.3 | 0.0% |
| HrD | Horseshoe gravelly loam, 15 to 30 percent slopes | 52.9 | 6.3% |
| ImE | Iron Mountain cobbly loam, 2 to 50 percent slopes | 47.8 | 5.7% |
| JpD | Josephine cobbly loam, 5 to 30 percent slopes | 14.4 | 1.7% |
| JrE2 | Josephine-Mariposa complex, 15 to 50 percent slopes, eroded | 14.2 | 1.7% |
| JrF2 | Mariposa-Josephine complex, 50 to 75 percent slopes, eroded | 2.6 | 0.3% |
| JsE | Josephine rock-Outcrop complex, 15 to 50 percent slopes | 7.0 | 0.8% |
| MaD | Mariposa gravelly loam, 2 to 30 percent slopes | 1.0 | 0.1% |
| MkE | Mariposa-Rock outcrop complex, 2 to 50 percent slopes | 13.6 | 1.6% |

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| MoE | McCarthy cobbly loam, 15 to 50 percent slopes | 16.8 | 2.0% |
| Rn | Rock land | 10.1 | 1.2% |
| Ta | Tailings | 8.0 | 0.9% |
| **Subtotals for Soil Survey Area** | | **612.2** | **72.4%** |
| **Totals for Area of Interest** | | **845.5** | **100.0%** |

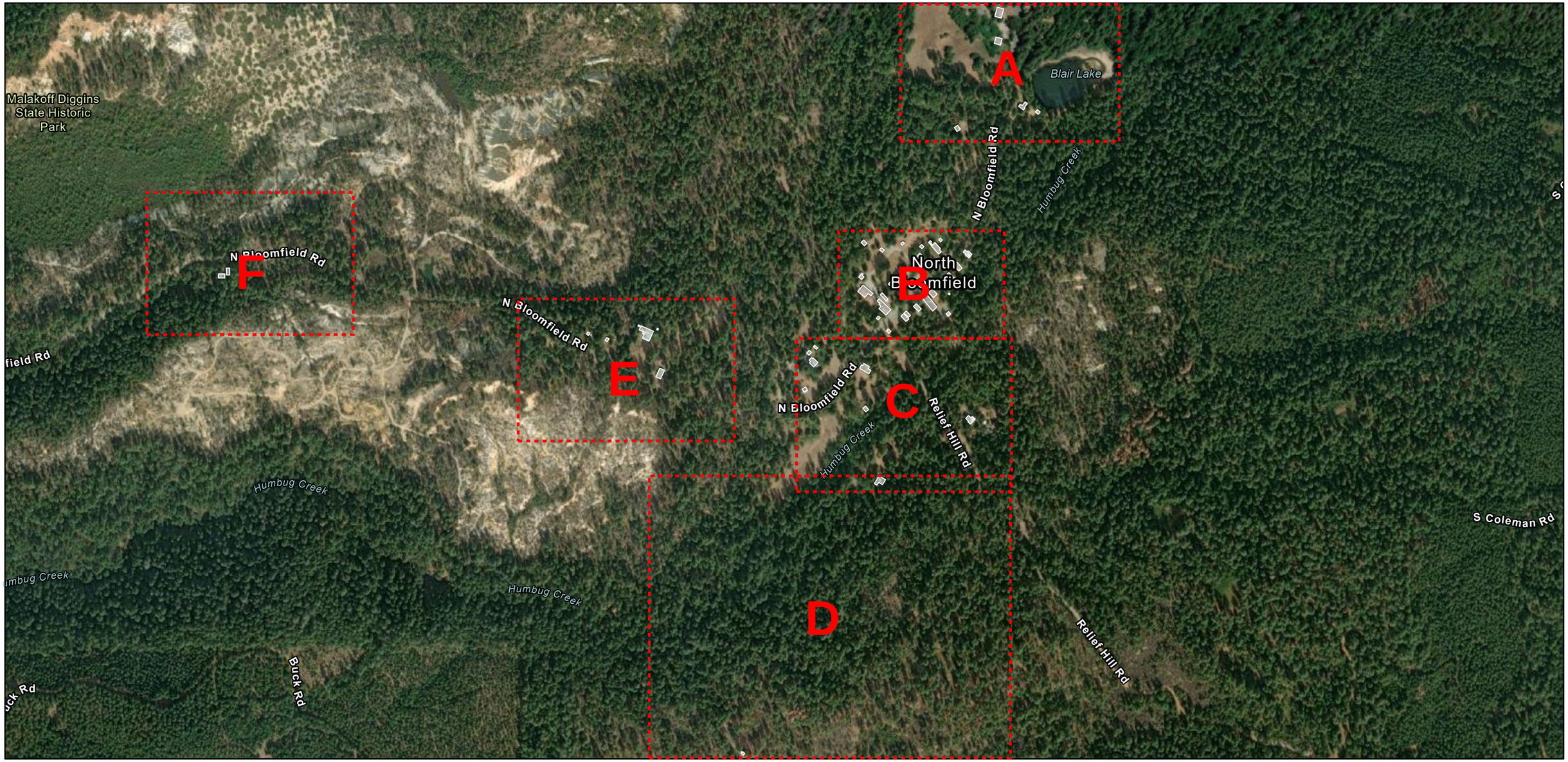
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| CoEnc | Cohasset cobbly loam, 30 to 50 percent slopes | 16.9 | 2.0% |
| COF | Cohasset-Aiken-Crozier complex, 30 to 50 percent slopes | 77.5 | 9.2% |
| DEG | Deadwood-Rock outcrop-Hurlbut complex, 30 to 70 percent slopes, N Mid Montane | 0.2 | 0.0% |
| HRE | Horseshoe-Jocal-Mariposa complex, 2 to 30 percent slopes | 69.6 | 8.2% |
| HYE | Pits, hydraulic | 5.9 | 0.7% |
| JpDnc | Josephine cobbly loam, 5 to 30 percent slopes | 12.4 | 1.5% |
| JYE | Jocal-Sites-Mariposa complex, 2 to 30 percent slopes | 13.7 | 1.6% |
| MAE | Mariposa-Jocal complex, 2 to 30 percent slopes | 20.2 | 2.4% |
| MAG | Mariposa-Jocal complex, 30 to 75 percent slopes, N Mid Montane | 12.2 | 1.4% |
| Ta_nc | Tailings | 1.0 | 0.1% |
| W | Water | 3.8 | 0.4% |
| **Subtotals for Soil Survey Area** | | **233.3** | **27.6%** |
| **Totals for Area of Interest** | | **845.5** | **100.0%** |

**Architectural Resources within Malakoff Diggins State Historic Park subject to Historic Building Protection**

| Map # | Common Name(s) | Architectural Family | Date (est.) |
|---|---|---|---|
| 1 | Blacksmith shop/garage (recreated) | Front-Gable Blacksmith | 1973 |
| 2 | Carter cabin (modern) | Vernacular Front-Gable National Family | 1969 |
| 3 | Carter house/ ECV hall | National Folk, Front-Gable Family | ca. 1874 |
| 4 | Cummins Hall/ theater (visitor center) | National Folk, Front-Gable Family | 1860s |
| 5 | Du Millieu/Roberts house (private inholding) | National Folk, Cross-Gable Family | ca. 1890 |
| 6 | Fire house | False Front Firehouse | 1930s |
| 7 | Frank Que Condon cabin/memorial (recreated) | Front-Gable Cabin | 1969 |
| 8 | Gaus house/ residence | National Folk, Front-Gable Family | 1913 |
| 9 | Gaus garage | NA | Early 20th Century |
| 10 | Gaus outbuilding and shed | NA | Early 20th Century |
| 11 | Gin Yet Wah/stone cabin | Vernacular Front-Gable Log Cabin | ca. 1900 |
| 12 | Hamilton Smith, Jr. memorial cabin (recreated) | Front-Gable Cabin | 1969 |
| 13 | Hodges/Miguel cabin (private inholding) | National, Massed Plan, Side-Gable Family | 1944 |
| 14 | Kallenberger barbershop (recreated) | False Front Commercial | 1990 |
| 15 | Kallenberger mining building/ruins | Vernacular Industrial | Early 20th Century |
| 16 | Kings Saloon (recreated) | National Folk | 1974 |
| 17 | Landsburg/Sherwood house | Vernacular Queen Anne | 1890s |
| 18 | Lorenzo Haner/Robert's/Trudell cabin (Haner memorial) | National Folk, Side-Gable Family | 1870 |
| 19 | Marshall/Victor/Watson house/restaurant | National-Folk, Front-Gable Family | ca. 1870 |
| 20 | McKillican and Mobley store | National Folk | ca. 1856 |
| 21 | McKillican and Mobley warehouse/barn | Western Barn | ca. 1875 |
| 22 | Ostrom house/residence 1 | National Folk, Front-Gable and Wing Family | ca. 1875 |
| 23 | Ostrom's Livery Stable | Western Livery Stable | ca. 1875 |
| 24 | School house (USFS) | Vernacular Classical Revival | 1872 |
| 25 | School outhouses (USFS) | NA | Early 20th Century |
| 26 | Sherwood house | Queen Anne | 1890s |

| | | | |
|---|---|---|---|
| 27 | Sherwood garage | Front-Gable Garage | 1890s |
| 28 | Sherwood privy | Front-Gable Privy | 1890s |
| 29 | Sherwood shed | Front-Gable Shed | 1890s |
| 30 | Skidmore/Hinton cabin | Vernacular Front-Gable Log Cabin | Early or Mid-20th Century |
| 31 | Skidmore/Kallenberger house | National Folk, Front-Gable Family | ca. 1867 |
| 32 | Smith/Knotwell drugstore/masonic lodge (recreated) | National Folk | 1976 |
| 33 | St. Columcille's Catholic Church (relocated in 1971) | Vernacular Greek Revival | 1860 |
| 34 | Taylor Garages | Vernacular Front-Gable Garage | Early or Mid-20th Century |
| 35 | Taylor Shed/chicken coop | Vernacular Chicken House | Early or Mid-20th Century |
| 36 | Walters/Ziggenheim (Blain?) house | National Folk, Cross-Gable Family | Early 20th Century |
| 37 | Blain/Coombs house | National Folk | ca. 1871 |
| 38 | Blain/Coombs barn | Western Transverse-Crib Hay and Livestock Barn | ca. 1871 |
| 39 | Martens house | National Folk, Front-Gable Family | 1880s (1920s) |
| 40 | Fontz cabin (on BLM) | National Folk, Front-Gable Family | ca. 1930s |
| 41 | Fontz garage (on BLM) | Vernacular Front-Gable Garage | ca. 1930s |
| 42 | Ranger Station (USFS) | Government-Institutional Compound | ca. 1910, 1930s |
| 43 | Cummins/Johnson barn | Board and Batten Western Barn | ca. 1880 |
| 44 | Cummins/Johnson/Francis Blain house and carriage house | National Folk, Cross-Gable Family | ca. 1880 |
| 45 | Rohde/Dr. Rogers/Stark house (private inholding) | National Folk, Front-Gable Family | Late 19th-century |

# Malakoff Diggins historic buildings




10/4/2022

1:9,000

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

# Malakoff Diggins historic buildings (A)


10/4/2022

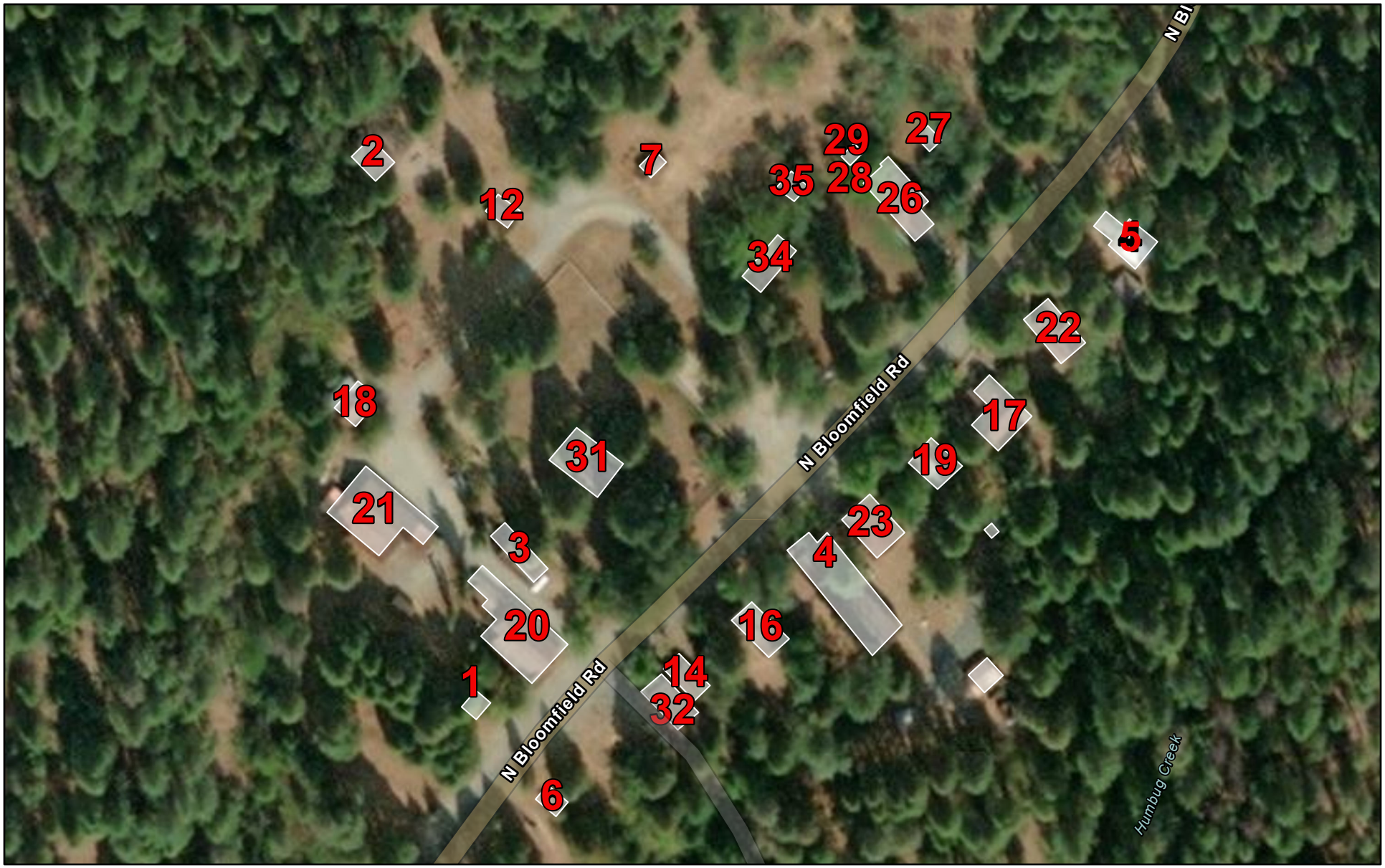
1:2,250

0 0.01 0.03 0.05 mi

0 0.02 0.04 0.09 km

Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph,

# Malakoff Diggins historic buildings (B)




10/4/2022

1:1,750

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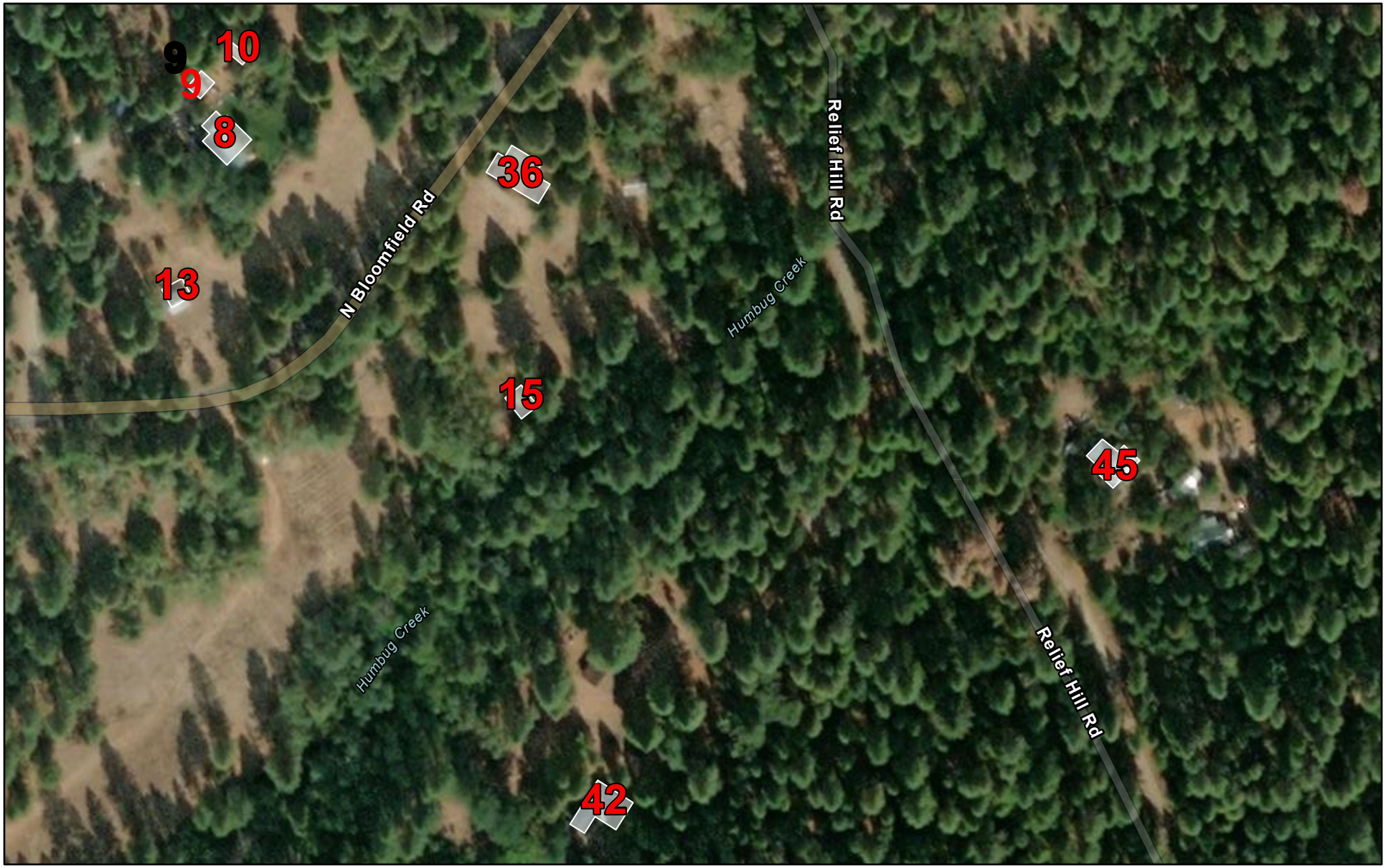
0 0.02 0.04 0.07 km

Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph,

# Malakoff Diggins historic buildings (C)




10/4/2022

1:2,250

0 0.01 0.03 0.05 mi

0 0.02 0.04 0.09 km

Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph,

# Malakoff Diggins historic buildings（D）


10/4/2022

1:4,500

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

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# Malakoff Diggins historic buildings (E)


10/4/2022

1:2,250

0 0.01 0.03 0.05 mi

0 0.02 0.04 0.09 km

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# Malakoff Diggins historic buildings (F)


10/4/2022

1:2,250

0 0.01 0.03 0.05 mi

0 0.02 0.04 0.09 km

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# APPENDIX B
# SENSITIVE SPECIES LIST

| Plants | | | | |
|---|---|---|---|---|
| **SPECIES** | **STATUS*** | **HABITAT** | **POTENTIAL FOR OCCURRENCE**** | **RECOMMENDATIONS** |
| Congdon's onion<br>*Allium sanbornii var. congdonii* | Rank 4.3 | Chaparral, cismontane woodland/serpentine or volcanic. Elevation ranges from 980 to 3250 feet (300 to 990 meters). Blooms Apr-Jul. | **Moderate Potential.** Malakoff contains chaparral underlain by volcanic soils and known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Sanborn's onion<br>*Allium sanbornii var. sanbornii* | Rank 4.2 | Chaparral, cismontane woodland, lower montane coniferous forest/usually serpentine, gravelly. Elevation ranges from 850 to 4950 feet (260 to 1510 meters). Blooms May-Sep. | **Unlikely.** Malakoff does not contain serpentine soils. | No further actions are recommended for this species. |
| stoloniferous pussy-toes<br>*Antennaria flagellaris* | Rank 4.2 | Great basin scrub (vernally mesic). Elevation ranges from 4760 to 7280 feet (1450 to 2220 meters). Blooms (Apr), May-Aug. | **No Potential.** Malakoff does not contain habitat types suitable for this species. | No further actions are recommended for this species. |
| True's manzanita<br>*Arctostaphylos mewukka ssp. truei* | Rank 4.2 | Chaparral, lower montane coniferous forest/sometimes roadside. Elevation ranges from 1390 to 4560 feet (425 to 1390 meters). Blooms Feb-Jul. | **Moderate potential.** Malakoff contains known habitat types, dominated by known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS |
|---|---|---|---|---|
| Sierra foothills brodiaea<br>*Brodiaea sierrae* | Rank 4.3 | Chaparral, cismontane woodland/usually serpentine or gabbroic. Elevation ranges from 160 to 3100 feet (50 to 945 meters). Blooms May-Aug. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| buxbaumia moss<br>*Buxbaumia viridis* | Rank 2B.2 | Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest/fallen, decorticated wood or humus. Elevation ranges from 3200 to 7220 feet (975 to 2200 meters). | **Unlikely**. This species typically occurs in damp forests on humus or peaty soils. While there are some springs and wet artesian spring-fed meadows on the steep slopes at Malakoff, it is uncertain if there are fen type habitats there. | No further actions are recommended for this species. |
| Stebbins' morning-glory<br>*Calystegia stebbinsii* | FE, SE, Rank 1B.1 | Chaparral (openings), cismontane woodland/gabbroic or serpentine. Elevation ranges from 610 to 3580 feet (185 to 1090 meters). Blooms Apr-Jul. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| Van Zuuk's morning-glory<br>*Calystegia vanzuukiae* | Rank 1B.3 | Chaparral, cismontane woodland/gabbro, serpentine. Elevation ranges from 1640 to 3870 feet (500 to 1180 meters). Blooms May-Aug. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| Sheldon's sedge<br>*Carex sheldonii* | Rank 2B.2 | Lower montane coniferous forest (mesic), marshes and swamps (freshwater), riparian scrub. Elevation ranges from 3940 to 6600 feet (1200 to 2012 meters). Blooms May-Aug. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS |
|---|---|---|---|---|
| chaparral sedge<br>*Carex xerophila* | Rank 1B.2 | Chaparral, cismontane woodland, lower montane coniferous forest on serpentine, gabbroic soil. Elevation ranges from 1,320 to 2,310 feet (440 to 770 meters) Blooms Mar-Jun. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| Fresno ceanothus<br>*Ceanothus fresnensis* | Rank 4.3 | Cismontane woodland (openings), lower montane coniferous forest. Elevation ranges from 2950 to 6900 feet (900 to 2103 meters). Blooms May-Jul. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Brandegee's clarkia<br>*Clarkia biloba* ssp*. brandegeeae* | Rank 4.2 | Chaparral, cismontane woodland, lower montane coniferous forest/often roadcuts. Elevation ranges from 250 to 3000 feet (75 to 915 meters). Blooms May-Jul. | **High Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| golden-anthered clarkia<br>*Clarkia mildrediae* ssp*. lutescens* | Rank 4.2 | Cismontane woodland, lower montane coniferous forest (openings)/often roadcuts, often rocky. Elevation ranges from 900 to 5740 feet (275 to 1750 meters). Blooms Jun-Aug. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Mosquin's clarkia<br>*Clarkia mosquinii* | Rank 1B.1 | Cismontane woodland, lower montane coniferous forest/rocky, roadsides. Elevation ranges from 610 to 4450 feet (185 to 1355 meters). Blooms May-Jul (Sep). | **Unlikely**. No known occurrences in Nevada County; nearest known occurrence is 18 miles northwest, near Brownsville, on different geological substrates. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS |
|---|---|---|---|---|
| Sierra clarkia<br>*Clarkia virgata* | Rank 4.3 | Cismontane woodland, lower montane coniferous forest. Elevation ranges from 1310 to 5300 feet (400 to 1615 meters). Blooms May-Aug. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| California lady's-slipper<br>*Cypripedium californicum* | Rank 4.2 | Bogs and fens, lower montane coniferous forest/seeps and streambanks, usually serpentine. Elevation ranges from 100 to 9020 feet (30 to 2750 meters). Blooms Apr-Aug (Sep). | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| clustered lady's-slipper<br>*Cypripedium fasciculatum* | Rank 4.2 | Lower montane coniferous forest, north coast coniferous forest/usually serpentine seeps and streambanks. Elevation ranges from 330 to 7990 feet (100 to 2435 meters). Blooms Mar-Aug. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| northern yellow lady's-slipper<br>*Cypripedium parviflorum var. makasin* | Rank 3.1 | Bogs and fens, meadows and seeps/mesic. Elevation ranges from 0 to 4920 feet (0 to 1500 meters). Blooms May-Aug. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| California pitcherplant<br>*Darlingtonia californica* | Rank 4.2 | Bogs and fens, meadows and seeps/mesic, generally serpentine seeps. Elevation ranges from 0 to 8480 feet (0 to 2585 meters). Blooms Apr-Jul. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| Plumas rayless daisy<br>*Erigeron lassenianus* var. *deficiens* | Rank 1B.3 | Lower montane coniferous forest/gravelly, sometimes serpentine, sometimes disturbed sites. Elevation ranges from 4460 to 6500 feet (1360 to 1980 meters). Blooms Jun-Sep. | **Unlikely**. No known occurrences in Nevada County or south. Nearest occurrence is 16 miles northwest; population centered around Pumas NF. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS |
|---|---|---|---|---|
| Ahart's buckwheat<br>*Eriogonum umbellatum* var. *ahartii* | Rank 1B.2 | Chaparral, cismontane woodland/serpentine, slopes, openings. Elevation ranges from 1310 to 6560 feet (400 to 2000 meters). Blooms Jun-Sep. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| Pine Hill flannelbush<br>*Fremontodendron decumbens* | FE, SR, Rank 1B.2 | Chaparral, cismontane woodland/gabbroic or serpentine, rocky. Elevation ranges from 1390 to 2490 feet (425 to 760 meters). Blooms Apr-Jul. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| Butte County fritillary<br>*Fritillaria eastwoodiae* | Rank 3.2 | Chaparral, cismontane woodland, lower montane coniferous forest (openings)/sometimes serpentine. Elevation ranges from 160 to 4920 feet (50 to 1500 meters). Blooms Mar-Jun. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Yosemite tarplant<br>(*Jensia yosemitana*). | Rank 3.2 | Meadows, sandy sites, yellow pine forest, occasionally wetlands. Elevation ranges from 3050 to 6790 feet (930 to 2070 meters). Blooms May – July. | **Unlikely.** The closest known occurrence is in El Dorado County (CDFW 2022). | No further actions are recommended for this species. |
| finger rush<br>*Juncus digitatus* | Rank 1B.1 | Cismontane woodland (openings), lower montane coniferous forest (openings), vernal pools (xeric). Elevation ranges from 2170 to 2590 feet (660 to 790 meters). Blooms (Apr), May-Jun. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS |
|---|---|---|---|---|
| dubious pea<br>*Lathyrus sulphureus* var. *argillaceus* | Rank 3 | Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest. Elevation ranges from 490 to 3050 feet (150 to 930 meters). Blooms Apr- May. | **Present**. Malakoff contains known habitat types. Synonymous with *L. sulphureus* and not recognized by Jepson eFlora as a taxa. *L. sulphureus* was observed near the Diggins by WRA biologists in 2019. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Cantelow's lewisia<br>*Lewisia cantelovii* | Rank 1B.2 | Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest/mesic, granitic, sometimes serpentine seeps. Elevation ranges from 1080 to 4490 feet (330 to 1370 meters). Blooms May-Oct. | **High Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Hutchison's lewisia<br>*Lewisia kelloggii ssp. Hutchisonii* | Rank 3.2 | Upper montane coniferous forest/openings, ridgetops, often slate, sometimes rhyolite tuff. Elevation ranges from 2510 to 7760 feet (765 to 2365 meters). Blooms (Apr), May-Aug. | **Unlikely.** Mlakoff does not contain slate or rhylotic tuff. | No further actions are recommended for this species. |
| Kellogg's Lewisia<br>*Lewisia kelloggii* ssp. *Kelloggii* | Rank 3.2 | Yellow pine forest, red fir forest, conifer forest, ridges, decomposed granite, volcanic ash, rubble. Elevation ranges from 5610 to 9090 feet (1710 to 2770 meters). Blooms June – Aug. | **Unlikely.** Malakoff does not contain decomposed granite, volcanic ash, and rubble. Program treatment areas are outside of the species' elevation range. | No further actions are recommended for this species. |
| Humboldt lily<br>*Lilium humboldtii ssp. humboldtii* | Rank 4.2 | Chaparral, cismontane woodland, lower montane coniferous forest/openings. Elevation ranges from 300 to 4200 feet (90 to 1280 meters). Blooms May-Jul. | **High Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS |
|---|---|---|---|---|
| inundated bog club-moss<br>*Lycopodiella inundata* | Rank 2B.2 | Bogs and fens (coastal), lower montane coniferous forest (mesic), marshes and swamps (lake margins). Elevation ranges from 20 to 3280 feet (5 to 1000 meters). Blooms Jun-Sep. | **Present**. Inundated bog club moss has been documented within the Park and within five miles of the Park boundary in historic mining areas (CDFW 2022). | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| elongate copper moss<br>*Mielichhoferia elongate* | Rank 4.3 | Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest/metamorphic rock, usually acidic, usually vernally mesic, often roadsides, sometimes carbonate. Elevation ranges from 0 to 6430 feet (0 to 1960 meters). | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| Shevock's copper moss<br>*Mielichhoferia shevockii* | Rank 1B.2 | Cismontane woodlands, moss on metamorphic rocks containing heavy metals, mesic sites, on rocks along roads. Elevation ranges from 1198 to 3642 feet. | **Moderate Potential.** Shevock's copper moss is determined to have a moderate potential to occur in program treatment areas due to the presence of mesic sites in cismontane woodlands. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Layne's ragwort<br>*Packera layneae* | Rank 1B.2 | Cismontane woodlands, openings, disturbed areas, serpentine or gabbroic soils. Elevation ranges from 655 to 3510 feet (200 to 1070 meters). Blooms April – Aug. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS |
|---|---|---|---|---|
| Follett's monardella<br>*Monardella follettii* | Rank 1B.2 | Lower montane coniferous forest (rocky, serpentine). Elevation ranges from 1970 to 6560 feet (600 to 2000 meters). Blooms Jun-Sep. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| western waterfan lichen<br>*Peltigera gowardii* | Rank 4.2 | Riparian forest/on rocks in cold water creeks with little or no sediment or disturbance. Elevation ranges from 3490 to 8600 feet (1065 to 2620 meters). | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Bacigalupi's yampah<br>*Perideridia bacigalupii* | Rank 4.2 | Chaparral, lower montane coniferous forest/serpentine. Elevation ranges from 1480 to 3400 feet (450 to 1035 meters). Blooms Jun-Aug. | **Unlikely.** The Study Area does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| Stebbins' phacelia<br>*Phacelia stebbinsii* | Rank 1B.2 | Cismontane woodland, lower montane coniferous forest, meadows and seeps. Elevation ranges from 2000 to 6590 feet (610 to 2010 meters). Blooms May-Jul. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| Coleman's rein orchid<br>*Piperia colemanii* | Rank 4.3 | Open conifer forest, scrub. Elevation ranges from 1970 to 6660 feet (600 to 2030 meters). Blooms Jun – Aug. | **Unlikely.** Malakoff contains known habitat types associated with this species; however, there are no documented occurrences in the vicinity (CDFW 2022). | No further actions are recommended for this species. |
| Cedar Crest popcornflower<br>*Plagiobothrys glyptocarpus var. modestus* | Rank 3 | Cismontane woodland, valley and foothill grassland (mesic). Elevation ranges from 2850 to 2850 feet (870 to 870 meters). Blooms Apr – Jun. | **Unlikely**. Malakoff contains cismontane woodland and grassland habitat; however, there are no documented occurrences in the vicinity (CDFW 2022). | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS |
|---|---|---|---|---|
| Sierra blue grass<br>*Poa sierrae* | Rank 1B.3 | Lower montane coniferous forest/openings. Elevation ranges from 1200 to 4920 feet (365 to 1500 meters). Blooms Apr-Jun. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| flexuose threadmoss<br>*Pohlia flexuosa* | Rank 2B.1 | Lower montane coniferous forest/roadsides, rocky seeps. Elevation ranges from 3120 to 3360 feet (950 to 1025 meters). | **Moderate Potential**. Malakoff contains rocky seeps within lower montane coniferous forest. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Sierra starwort<br>*Pseudostellaria sierrae* | Rank 4.2 | Meadows, dry understory of mixed oak or conifer forest. Elevation ranges from 4430 to 6955 feet (1350 to 2120 meters). Blooms May – Aug. | **Unlikely.** Malakoff contains known habitat types with known associated species, but the nearest documented occurrence is in the Camptonville quadrangle. | No further actions are recommended for this species. |
| sticky pyrrocoma<br>*Pyrrocoma lucida* | Rank 1B.2 | Great basin scrub, lower montane coniferous forest, meadows and seeps/alkaline clay. Elevation ranges from 2300 to 6400 feet (700 to 1950 meters). Blooms Jul-Oct. | **Unlikely**. Malakoff does not contain alkaline soils or clay soils | No further actions are recommended for this species. |
| brownish beaked-rush<br>*Rhynchospora capitellata* | Rank 2B.2 | Lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest/mesic. Elevation ranges from 150 to 6560 feet (45 to 2000 meters). Blooms Jul-Aug. | **Present**. There are known occurrences within Malakoff. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| giant checkerbloom<br>*Sidalcea gigantea* | Rank 4.3 | Lower montane coniferous forest, upper montane coniferous forest/meadows and seeps. Elevation ranges from 2200 to 6400 feet (670 to 1950 meters). Blooms (Jan), (Jun), Jul-Oct. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS |
|---|---|---|---|---|
| Scadden Flat checkerbloom<br>*Sidalcea stipularis* | SE, Rank 1B.1 | Marshes and swamps (montane freshwater). Elevation ranges from 2300 to 2400 feet (700 to 730 meters). Blooms Jul-Aug. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| long-fruit jewelflower<br>*Streptanthus longisiliquus* | Rank 4.3 | Cismontane woodland, lower montane coniferous forest/openings. Elevation ranges from 2350 to 4920 feet (715 to 1500 meters). Blooms Apr-Sep. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| True's mountain jewelflower<br>*Streptanthus tortuosus* ssp. *truei* | Rank 1B.1 | Lower montane coniferous forest/partial shade on steep rocky slopes. Elevation ranges from 2,295 to 2,580 feet (765 to 860 meters). Blooms Jun-Jul (Sep). | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Siskiyou Mountains huckleberry<br>*Vaccinium coccineum* | Rank 3.3 | Lower montane coniferous forest, upper montane coniferous forest/often serpentine. Elevation ranges from 3590 to 7000 feet (1095 to 2135 meters). Blooms Jun-Aug. | **Unlikely.** Malakoff does not contain serpentine or gabbroic soils. | No further actions are recommended for this species. |
| felt-leaved violet<br>*Viola tomentosa* | Rank 4.2 | Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest/gravelly. Elevation ranges from 4710 to 6560 feet (1435 to 2000 meters). Blooms May-Oct. | **Moderate Potential**. Malakoff contains known habitat types with known associated species. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| Mammals | | | | |
|---|---|---|---|---|
| **SPECIES** | **STATUS*** | **HABITAT REQUIREMENTS** | **POTENTIAL TO OCCUR IN TREATMENT AREAS** | **RECOMMENDATIONS** |
| Sierra Nevada mountain beaver<br>*Aplodontia rufa californica* | SSC | Sierra Nevada and eastern slope. Occurs in areas with dense growth of small deciduous trees and shrubs, wet soil, and abundant forbs. Needs dense understory for food and cover and an abundant supply of water. Burrows in soft soil. | **Unlikely**. Malakoff is on the western edge of the accepted range of this species. The closest documented occurrences are approximately 12 miles to the east and 12 miles to the north (CDFW 2022). | No further actions are recommended for this species. |
| ringtail<br>*Bassariscus astutus* | CFP | Widely distributed throughout most of California, absent from some portions of the Central Valley and northeastern California. Found in a variety of habitats including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests usually under 4,600 ft. in elevation. Typically uses cliffs or large trees for shelter. | **Present.** Malakoff has numerous rock crevices and tree cavities that would provide refuge for ringtail. The species has been detected in the Park by DPR biologists. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| gray wolf<br>*Canis lupus* | FE | A keystone predator and the largest native canid species in North America, this species has a historic range in California. Prey include ungulates and mammals. Since prey species may migrate, wolves are required to migrate as well. A small number of gray wolves have recently returned to California after many years of being extirpated. A gray wolf was documented in Nevada County in June of 2018 and again in 2019. | **Unlikely.** The large home range of this species and few individuals makes their presence in the Park unlikely. Wolves are a highly monitored species and as such, would be unlikely to go undetected. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| California wolverine<br>*Gulo gulo* | ST, CFP | Found in the north coast mountains and the Sierra Nevada. Found in a wide variety of high elevation habitats. Needs water source. Uses caves, logs, burrows for cover and den area. Hunts in more open areas. Can travel long distances | **Unlikely.** Malakoff is outside of the current accepted range of the species in California. Only one wolverine has been known to exist in California in recent years and inhabits the Tahoe National Forest, near Truckee. | No further actions are recommended for this species. |
| Sierra Nevada snowshoe hare<br>*Lepus americanus tahoensis* | SSC | Habitat consists of boreal riparian areas in the Sierra Nevada. Requires thickets of deciduous trees in riparian areas and thickets of young conifers. | **No Potential.** Malakoff lacks boreal forests and is west of the accepted range of occurrence for this species. | No further actions are recommended for this species. |
| fisher, northern California/ southern Oregon DPS<br>*Pekania pennanti* | 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. | **Unlikely**. Malakoff contains coniferous forest, but these areas are less dense and are less mature than the forest types that this species is associated with. No CNDDB records for this species are documented in the vicinity and the species has not been reported to occur in the Park. The nearest historic occurrence is over 10 miles away (CDFW 2022). | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| American badger<br>*Taxidea taxus* | SSC | Most abundant in drier open stages of most shrub, forest, and herbaceous habitats. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents. | **Unlikely**. Malakoff contains contiguous areas of undisturbed ground within open dry habitats and friable soils. No burrows similar to those made by badgers have been documented. No CNDDB records for this species are documented in the vicinity and the species has not been reported to occur in the Park. | No further actions are recommended for this species. |
| Sierra Nevada red fox<br>*Vulpes vulpes necator* | ST | Found from the Cascades south to the Sierra Nevada. Found in a variety of habitats from wet meadows to forested areas. Uses dense vegetation and rocky areas for cover and den sites.<br>Prefers forests interspersed with meadows or alpine fell-fields. | **Unlikely**. The mosaic of habitats in and around Malakoff is suitable for this species. However, there are no recent records for the species in the CNDDB (CDFW 2022); Two historic observations of a fox species were noted to be unreliable (CDFW 2022). Because foxes are conspicuous and Malakoff receives year-round visitation and is occupied by staff, it was determined that Sierra Nevada red fox is unlikely to be present. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| pallid bat<br>*Antrozous pallidus* | SSC, WBWG High | Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees, and various human structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. | **High Potential**. Malakoff has suitable roosting habitat for this species including rock crevices, anthropogenic features, and tree cavities. Suitable foraging habitat and adequate water are also available. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Townsend's big-eared bat<br>*Corynorhinus townsendii* | SSC, WBWG High | This species is associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves and mines and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation. | **Present**. Malakoff has suitable roosting habitat for this species including buildings, rock crevices, and mines. Suitable foraging habitat and adequate water are also available. This species has been documented in several of the buildings in the Park. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| western mastiff bat<br>*Eumops perotis* | SSC, WBWG High | In California this species roosts at elevations up to 4,600 feet where significant rock features are present (WBWG 2022). Western mastiff bat roosts are primarily located high on cliffs under exfoliating rock slabs, but have also been found in similar crevices in large boulders and buildings. This species forages in groups high above the ground in broad, open areas and is most often found in desert washes, flood plains, chaparral, oak woodland, open pine forest, grasslands, and agricultural areas (WBWG 2022). | **Moderate Potential**. Portions of Humbug Creek support large rocky outcroppings that may be suitable roosting for this species. Suitable foraging habitat and adequate water supply are also available. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| western red bat<br>*Lasiurus blossevillii* | SSC, WBWG High | This species is typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores). | **Moderate Potential**. Malakoff has suitable roosting habitat for this species including some large willow stands within the Diggins and along Humbug Creek. Foraging habitat and adequate water are also available. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| hoary bat<br>*Lasiurus cinereus* | WBWG Medium | Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. | **Present.** Malakoff supports stands of pines and other forest mosaics which are likely to support roosting for hoary bats. Foraging habitat and adequate water are also available. This species was detected acoustically in June 2019 by WRA biologists. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| silver-haired bat<br>*Lasionycteris noctivagans*. | WBWG Medium | Primarily a forest dweller, feeding over streams, ponds, and open brushy areas. Summer habitats include a variety of forest and woodland types, both coastal and montane. Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark. | **Present.** Malakoff contains stands of pines and other forest mosaics which are likely to support roosting for this species. Foraging habitat and adequate water are also available. This species was detected acoustically in June 2019 by WRA biologists. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| long-eared myotis<br>*Myotis evotis* | WBWG Medium | Occurs in semiarid shrublands, sage, chaparral, and agricultural areas, but is usually associated with coniferous forests from sea level to 9000 feet. Individuals roost under exfoliating tree bark, and in hollow trees, caves, mines, cliff crevices, and rocky outcrops on the ground. They also sometimes roost in buildings and under bridges. | **Moderate Potential.** Malakoff contains stands of pines and other forest mosaics which are likely to support roosting for this species. Foraging habitat and adequate water are also available. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| fringed myotis<br>*Myotis thysanodes* | WBWG High | Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Buildings, mines and large trees and snags are important day and night roosts. | **Present**. Malakoff contains suitable roosting habitat for this species. Foraging habitat and adequate water are also available. Fifteen individuals of this species were detected roosting in a structure within the Park in 2015. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| long-legged myotis<br>*Myotis volans* | WBWG High | Primarily found in coniferous forests, but also occurs seasonally in riparian and desert habitats. Large hollow trees, rock crevices and buildings are important day roosts. Other roosts include caves, mines, and buildings. | **High Potential**. Malakoff contains suitable roosting habitat for this species. Foraging habitat and adequate water are also available. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| **Birds** | | | | |
| Cooper's hawk<br>*Accipiter cooperii* | WL | Cismontane woodland, riparian forest, riparian woodland, upper montane coniferous forest. Nests sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river floodplains; also live oaks. | **Present.** Suitable nesting and foraging habitat is present in program treatments areas. Cooper's hawk was documented in the Park in June 2019 (eBird 2022). Nearest known nesting occurrence is approximately 5.5 miles south of the Park. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| northern goshawk<br>*Accipiter gentilis* | SSC | Year-round resident in extensive forest habitats, primarily those with old growth or otherwise mature stands of conifer and/or conifer/hardwood. Nests in trees. Preys on birds and mammals. | **Present**. Historic breeding occurrences exist for Malakoff and there is habitat that is suitable to support nesting. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| golden eagle<br>*Aquila chrysaetos* | BCC, CFP | Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas. | **Moderate Potential**. Some adequate nesting habitat is present in Malakoff. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| Swainson's hawk<br>*Buteo swainsoni* | ST, BCC | Summer resident in California's Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season. | **Unlikely**. Malakoff does not contain the open grasslands and agricultural fields that this species is typically associated with. Some nesting records in the Sierra foothills exist, but these are closer to the Valley floor than Malakoff. Additionally, there are no nearby documented nesting occurrences for this species in the CNDDB (CDFW 2022). | No further actions are recommended for this species. |
| northern harrier<br>*Circus cyaneus* | SSC | Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates. | **Unlikely.** Malakoff is outside of the documented breeding range for the species. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| American peregrine falcon<br>*Falco peregrinus anatum* | CFP | Year-round resident and winter visitor. Occurs in a wide variety of habitats, though often associated with coasts, bays, marshes and other bodies of water. Nests on protected cliffs and also on man-made structures including buildings and bridges. Preys on birds, especially waterbirds. Forages widely. | **Unlikely.** Malakoff is not near any documented occurrences for this species (CDFW 2022). The eBird (2022) species list for the Malakoff Diggins "hotspot" does not indicate that this species has ever been detected here. Due to the high-profile nature of the species and frequency of visiting birders to the site, it is unlikely that this species would go undetected if present. | No further actions are recommended for this species. |
| bald eagle<br>*Haliaeetus leucocephalus* | FD, SE, BCC | Occurs year-round in California, but primarily a winter visitor; breeding population is growing. Nests in large trees in the vicinity of larger lakes, reservoirs, and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish. | **Moderate Potential.** Bald eagles are documented to breed in the vicinity, and nesting habitat exists in Malakoff. Waterbodies in Malakoff are too small to support this species long-term, but the species may occasionally forage in them. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| burrowing owl<br>*Athene cunicularia* | SSC, BCC | Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels. | **No Potential**. Areas containing suitable burrows also have a higher density of trees than would be typical for burrowing owl habitat. Due to these potential perches for raptors that prey on owls, it is unlikely that burrowing owls would be present. Malakoff is outside the documented breeding range for the species and there are no documented nearby occurrences in the CNDDB (CDFW 2022). | No further actions are recommended for this species. |
| short-eared owl<br>*Asio flammeus* | SSC | Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles. | **Unlikely.** This species is not documented to breed in Nevada County. Most of the habitat in Malakoff contains more trees than this species is typically associated with. | No further actions are recommended for this species. |
| long-eared owl<br>*Asio otus* | SSC | Occurs year-round in California. Nests in trees in a variety of woodland habitats, including oak and riparian, as well as tree groves. Requires adjacent open land with rodents for foraging, and the presence of old nests of larger birds (hawks, crows, magpies) for breeding. | **Moderate Potential**. Malakoff contains suitable nesting habitat for long-eared owls including forest edges near meadows or grass-dominated habitats. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| great gray owl<br>*Strix nebulosa* | SE | Nests in conifer forests in or on edge of meadows. Requires open meadows for foraging. Preys on birds and mammals. Requires large diameter snags in a forest with high canopy closure, which provide a cool sub-canopy microclimate. | **Moderate Potential**. Malakoff contains stands of large conifers that this species typically favors. Although this species has not been documented within Malakoff, the closest known occurrence is approximately 6 miles from the Park near Camptonville at an elevation of 2800 feet and was documented in 2010 (CDFW 2022). | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| California spotted owl<br>*Strix occidentalis occidentalis* | SSC | Year-round resident in dense, structurally complex forests, including coniferous, hardwood, and mixed forests. Most often found in deep-shaded canyons, on north-facing slopes, and within 1,000 feet of water. Nests on platform-like substrates in the forest canopy. Preys on mammals. | **Present.** This species has been detected by park biologists near Blair Pond. Suitable habitat for foraging and nesting is present in program treatment areas, particularly in the Humbug Creek area. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| American white pelican<br>*Pelecanus erythrorhynchos* | SSC | Non-breeding visitor in most of California. Nests colonially on large interior lakes or rivers; breeding restricted to portions of eastern California. Winters on sheltered inland and estuarine waters with abundant small fishes for forage. | **No Potential to Nest**. Malakoff does not contain the large water bodies associated with nesting habitat for this species and is outside its documented breeding range. However, it may occasionally forage in the smaller ponds in the Park. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| greater sandhill crane<br>*Grus canadensis tabida* | ST, CFP | (Nesting and wintering). Nests in wetland habitats in northeastern California; winters in the Central Valley. Prefer grain fields within 4 miles of a shallow body of water used as a communal roost site; irrigated pasture used as loaf sites. | **No Potential.** Malakoff does not contain grain fields and extensive shallow water or irrigated pasture. There are no documented occurrences of nest sites for this species in the vicinity (CDFW 2022). | No further actions are recommended for this species. |
| California black rail<br>*Laterallus jamaicensis coturniculus* | ST, CFP | Year-round resident in marshes (saline to freshwater) with dense vegetation. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic. | **Unlikely.** Malakoff is located within 15 miles of documented occurrences of a resident foothill breeding population. However, the habitat in Malakoff is marginal and disjointed; atypical nesting habitat for this species. | No further actions are recommended for this species. |
| redhead<br>*Aythya americana* | SSC | Year-round resident and winter visitor. Typically breeds in freshwater emergent marshes, usually with deeper water (>3 ft), and dense cattail and/or tule stands. Typical wintering habitat consists of large, deep bodies of water. | **Unlikely.** Malakoff is outside of the documented breeding range of this species. | No further actions are recommended for this species. |
| Barrow's goldeneye<br>*Bucephala islandica* | SSC | (Nesting). Breeds in the high central and northern Sierra Nevada, near wooded mountain lakes or large streams. Nests in tree cavities, such as a deserted nest-hole of a pileated woodpecker or flicker; also use nest boxes. | **Unlikely to Nest**. This species typically breeds at higher elevations than those present in Malakoff. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| olive-sided flycatcher<br>*Contopus cooperi* | SSC | Summer resident. Typical breeding habitat is montane coniferous forests. At lower elevations, also occurs in wooded canyons and mixed forests and woodlands. Often associated with forest edges. Arboreal nest sites located well off the ground. | **Present.** The edges of coniferous and mixed forests in Malakoff contain suitable habitat for this species. The species was detected by WRA biologists in 2019; on eBird in July 2020; and is documented to breed in the region. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| little willow flycatcher<br>*Empidonax traillii brewsteri* | SE | Summer resident in the Sierra Nevada and Cascades, breeding in extensive thickets of low, dense willows adjacent to wet meadows, ponds, or backwaters at 2,000 to 8,000 feet elevation. Current breeding population small and declining. | **Present.** The dense willow thickets in the Diggins are suitable habitat for this species. DPR biologists detected this species in the Diggins in 2007 and 2011; breeding has not been confirmed. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| black swift<br>*Cypseloides niger* | SSC, BCC | Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas. | **Moderate Potential**. This species has been documented to breed in Nevada County, but has not been detected in Malakoff. The waterfall area at Humbug Creek may be suitable for black swifts. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| bank swallow<br>*Riparia riparia* | ST | Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co. | **No Potential**. Malakoff is outside the documented breeding range for this species. | No further actions are recommended for this species. |
| Vaux's swift<br>*Chaetura vauxi* | SSC | Summer resident, breeding primarily in forested areas. Nests in tree cavities, favoring those with a large vertical extent; also uses chimneys and other man-made substrates. Forages aerially for insects. | **Unlikely.** This species is usually closely associated with old-growth and otherwise large diameter trees for breeding. Furthermore, the species has only rarely been documented to breed in the western Sierra. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| purple martin<br>*Progne subis* | SSC | Inhabits woodlands and low elevation coniferous forests. Nests in old woodpecker cavities and human-made structures. Nest is often located in tall, isolated tree or snag. | **Unlikely**. Purple martins are sporadic breeders in the region and there are no documented occurrences nearby (CDFW 2022). Some potentially suitable habitat exists in the Park, in the form of snags near open water areas in the Diggins. However, this species is conspicuous where it is present and because it has not been documented in the Park, it is unlikely to be present. | No further actions are recommended for this species. |
| loggerhead shrike<br>*Lanius ludovicianus* | SSC, BCC | Year-round resident in open woodland, grassland, savannah and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in dense foliage of shrubs or trees. | **Unlikely.** Malakoff is east of the documented breeding range for this species. | No further actions are recommended for this species. |
| Oregon vesper sparrow<br>*Pooecetes gramineus affinis* | SSC | Winters mostly in California in the lower valleys and plains west of the Sierra. Its winter habitat is open ground with little vegetation or grown to short grass and low annuals, including stubble fields, meadows, and road edges. | **No Potential.** Malakoff is outside of the breeding range and east of the winter range of the species, and wintering habitat within the Park is limited. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| yellow warbler<br>*Setophaga petechia* | SSC | Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting variable, but dense willow growth is typical. Occurs widely on migration. | **Present**. Malakoff has adequate riparian habitat to support nesting by this species around some of the ponds. This species was detected in Malakoff in May 2019 by WRA biologists and has been documented to occur in Malakoff in previous years. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| yellow-breasted chat<br>*Icteria virens* | SSC | Summer resident, occurring in riparian areas along stream courses with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow, blackberry, and wild grape. | **Present**. This species is associated with riparian areas along stream courses and is documented to occur in the Diggins. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |
| **Reptiles and Amphibians** | | | | |
| western pond turtle<br>*Emmys marmorata* | SSC | A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying. | **Present**. Suitable habitat for pond turtles is present at Malakoff. This species has been documented in two of the seven ponds in the Park. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| southern long-toed salamander<br>*Ambystoma macrodactylum sigillatum* | SSC | Occurs in varies habitats including, grassland, sagebrush, woodlands and coniferous forests. Requires permanent bodies of water for breeding and larvae overwintering. Hardwood forests, meadows and granite slopes are used for upland habitat. | **Unlikely.** Malakoff is west of the accepted range of this species at this latitude. Malakoff is lower in elevation than most of this subspecies' range in California. The nearest occurrence is over 15 miles away (CDFW 2022). | No further actions are recommended for this species. |
| Blainville's (Coast) horned lizard<br>*Phrynosoma blainvillii (coronatum)* | SSC | Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Prefers friable, rocky, or shallow sandy soils for burial; open areas for sunning; bushes for cover; and an abundant supply of ants and other insects. | **Unlikely.** Malakoff is on the edge of the accepted range of the species. The nearest documented occurrences for this species are more than 10 miles away (CDFW 2022). | No further actions are recommended for this species. |
| foothill yellow-legged frog, Northeast/Northern Sierra clade<br>*Rana boylii* | ST, SSC | Found in or adjacent to rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates. | **Present.** This species has been documented to occur in Humbug Creek and its tributaries, downstream of the Diggins. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| California red-legged frog; CRLF<br>*Rana draytonii* | FT, SSC | Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development.<br>Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation.<br>Disperses through upland habitats after rains. | **Unlikely**. Pond C, located in the southwestern section of the Park, is a seasonal pond with emergent vegetation and the only pond that lacks predators of CRLF. Although Pond C provides suitable breeding and foraging habitat, it is unlikely that CRLF are present at Malakoff due to: (1) the lack of positive survey results conducted in 1999, 2000, 2004, 2016, and 2019; (2) the closest occurrence of CRLF is located 2.4 miles southwest of Malakoff's boundary; and (3) the presence of bullfrogs and other predators of CRLF including bluegill and/or catfish in six of seven ponds in the Park. | See Chapter 3 for a discussion of standard and specific project requirements to reduce level of impact to less than significant |
| Sierra Nevada yellow-legged frog<br>*Rana sierrae* | FE, ST, SSC | Inhabits high elevation lakes, meadow streams, isolated pools, sunny riverbanks in the Sierra Nevada. Open stream and lake edges with a gentle slope up to a depth of 5-8 cm. are preferred. | **No Potential.** Malakoff is west of the accepted range for this species. | No further actions are recommended for this species. |

| Fishes | | | | |
|---|---|---|---|---|
| **SPECIES** | **STATUS*** | **HABITAT REQUIREMENTS** | **POTENTIAL TO OCCUR IN TREATMENT AREAS** | **RECOMMENDATIONS** |
| riffle sculpin<br>*Cottus gulosus* | SSC | Found in headwater streams with cold water and rocky or gravelly substrate. May occupy riffles or pools, though they tend to favor areas that have adequate cover in the form of rocks, logs, or overhanging banks. Have similar habitat requirements to those of rainbow trout and are often found in association with them. | **No Potential.** Though apparently suitable habitat is currently available in the Diggins, riffle sculpin are considered absent from the South Yuba River Watershed as they have never been detected there. | No further actions are recommended for this species. |
| Chinook salmon - Central Valley fall / late fall-run ESU<br>*Oncorhynchus tshawytscha* | SSC | Populations spawning in the Sacramento and San Joaquin Rivers and their tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean. | **No Potential.** Anadromous fish are blocked from entrance to Malakoff due to the presence of dams in the Yuba River Watershed. | No further actions are recommended for this species. |
| Chinook salmon - Central Valley spring-run ESU<br>*Oncorhynchus tshawytscha* | FT, ST | Occurs in the Feather River and the Sacramento River and its tributaries, including Butte, Mill, Deer, Antelope and Beegum Creeks. Adults enter the Sacramento River from late March through September. Adults migrate upstream to spawn in cool, clear, well- oxygenated streams from mid- August through early October. Juveniles migrate soon after emergence as young-of-the-year or remain in freshwater and migrate as yearlings. | **No Potential.** Anadromous fish are blocked from entrance to Malakoff due to the presence of dams in the Yuba River Watershed. | No further actions are recommended for this species. |

| SPECIES | STATUS* | HABITAT REQUIREMENTS | POTENTIAL TO OCCUR IN TREATMENT AREAS | RECOMMENDATIONS |
|---|---|---|---|---|
| Chinook salmon - Sacramento River winter-run ESU *Oncorhynchus tshawytscha* | FE, SE | Occurs in the Sacramento River below Keswick Dam. Spawns in the Sacramento River but not in tributary streams. Requires clean, cold water over gravel beds with water temperatures between 6 and 14 degrees C for spawning. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles typically migrate to the ocean soon after emergence from the gravel. | **No Potential.** Anadromous fish are blocked from entrance to Malakoff due to the presence of dams in the Yuba River Watershed. | No further actions are recommended for this species. |
| steelhead - central valley DPS *Oncorhynchus mykiss irideus* | FT | Includes all naturally spawned populations (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries, excluding San Francisco and San Pablo bays and their tributaries. Preferred spawning habitat is in cool to cold perennial streams with high dissolved oxygen levels and fast flowing water. Abundant riffle areas for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful breeding. | **No Potential.** Anadromous fish are blocked from entrance to Malakoff due to the presence of dams in the Yuba River Watershed. | No further actions are recommended for this species. |

| Invertebrates | | | | |
|---|---|---|---|---|
| **SPECIES** | **STATUS*** | **HABITAT REQUIREMENTS** | **POTENTIAL TO OCCUR IN TREATMENT AREAS** | **RECOMMENDATIONS** |
| valley elderberry longhorn beetle<br>*Desmocerus californicus dimorphus* | FT | Occurs primarily in the central valley and surrounding foothills of California, in association with blue elderberry (*Sambucus* sp.). Prefers to lay eggs in elderberry 2 to 8 inches in diameter; some preference shown for "stressed" elderberry. | **No Potential**. Malakoff is outside the accepted range of the species. | No further actions are recommended for this species. |

| | |
|---|---|
| FE | Federal Endangered |
| FT | Federal Threatened |
| FC | Federal Candidate |
| SE | State Endangered |
| ST | State Threatened |
| SSC | CDFW Species of Special Concern |
| CFP | CDFW Fully Protected Animal |
| WL | CDFW Watch List |
| WBWG | Western Bat Working Group High or Medium Priority species |
| Rank 1A | CRPR Rank 1A: Presumed extirpated in California and either rare or extinct elsewhere |
| Rank 1B | CRPR Rank 1B: Plants rare, threatened, or endangered in California and elsewhere |
| Rank 2B | CRPR Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere |
| Rank 3 | CRPR Rank 3: Plants about which CNPS needs more information (a review list) |

**Potential to Occur:**
No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

**Results and Recommendations:**
Present. Species was observed on the site or has been recorded (i.e., CNDDB, other reports) on the site recently.
Not Present. Species is assumed to not be present due to a lack of key habitat components.

# APPENDIX C
# ACRONYMS

## LIST OF ACRONYMS AND ABBREVIATIONS

AB – Assembly Bill
ADT – Average Daily Trip
APEFZ - Alquist-Priolo Earthquake Fault Zoning
ASC – Anthropological Studies Center
BGEPA – Bald and Golden Eagle Protection Act
BMP – Best Management Practice
BNSF - Burlington Northern Santa Fe
BP – Before Present
CalFire - California Department of Forestry and Fire Protection (CDF)
CA – California
CAA – Clean Air Act of 1970
Caltrans - California Department of Transportation
CARB – California Air Resources Board
CCAA – California Clean Air Act of 1988
CCR - California Code of Regulation
CCC – California Conservation Corps CE – California Endangered
CDF - California Department of Forestry and Fire Protection (CalFire)
CDFG - California Department of Fish and Game
CDFW – California Department of Fish and Wildlife
CDOC – California Department of Conservation
CDPR or DPR – California Department of Parks and Recreation
CDTSC – California Department of Toxic Substance Control
CEQA - California Environmental Quality Act
CESA – California Endangered Species Act
CFC's - Chlorofluorocarbons
CGS - California Geological Survey CH4 - Methane
CNDDB - California Natural Diversity Database (California Dept. of Fish and Wildlife)
CNEL – Community Noise Equivalent Level
CNPS – California Native Plant Society
CO – Carbon Monoxide
CO2 – Carbon Dioxide
COLD – Cold Freshwater Habitat
CRMP – Coordinated Resource Management Plan
CRPR – California Rare Plant Rank
CRHR - California Register of Historic Resources
CTLFC – Carson Tahoe Lumber and Fluming Company
CVRWQCB – Central Valley Regional Water Quality Control Board
CWA – Clean Water Act
D – FE – Delisted under the Federal Endangered Species Act
dB – Decibels

dBA – Noise Measurement Expressed in Weighting Frequencies
DDT – Dichloro-Diphenyl-Trichloroethane
DFPZ – Defensible Fuel Profile Zone
DPR - California Department of Parks and Recreation
DTSC – Department of Toxic Substance Control
EIR - Environmental Impact Report
EDCAQMD - El Dorado County Air Quality Management District
EPA – United States Environmental Protection Agency
ESA – Federal Endangered Species Act
FMMP – Farmland Mapping and Monitoring Program
FE – Federal Endangered Species Under the Endangered Species Act
FP – Fully Protected Species under the California Dept. of Fish and Wildlife
FT – Federal Threatened Species Under the Endangered Species Act
FC – Federal Candidate Species Under the Endangered Species Act
FSS – Forest Service Sensitive Species
FYLF – Foothill yellow-legged frog
GHG – Greenhouse Gas
GP - General Plan
HCP – Habitat Conversation Plan
HCFC's - Hydrofluorocarbons
IS/MND - Initial Study / Mitigated Negative Declaration
Leq – Equivalent Sound Level
LRWQCB – Lahontan Regional Water Quality Control Board
LOS - Level of Service
LTRTC – Lake Tahoe Railway Transportation Company
MBTA – Migratory Bird Treaty Act
MDNBHD – Malakoff Diggins-North Bloomfield National Register Historic District
MND - Mitigated Negative Declaration
NA – Not Applicable
NAAQS – National Ambient Air Quality Standards
NAHC – Native American Heritage Commission
N2O – Nitrous Oxide
NCCP – Natural Community Conservation Plan
NCR – Nevada City Rancheria
NO2 – Nitrogen Dioxide
NOx - nitrogen oxide
NOAA – National Oceanic Atmosphere Administration
NRHP - National Register of Historic Places
NSAQMD – Northern Sierra Air Quality Management District
NTU – Nephelometric Turbidity Units
NWCG – National Wildfire Coordinating Group
O3 - Ozone

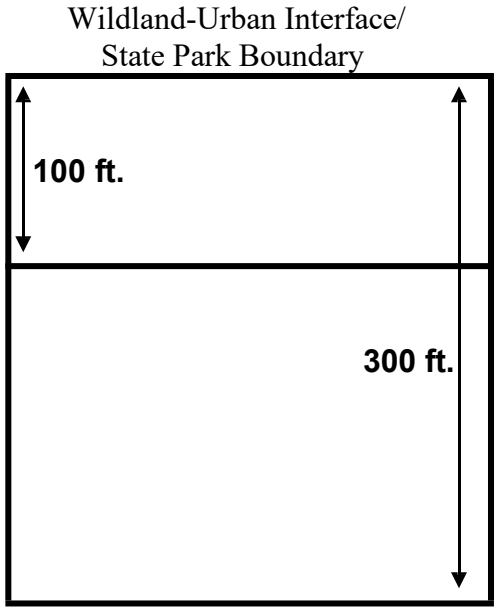
OHR – California Office of Historic Preservation
OPR – Governor's Office of Planning and Research
P – Protected Species under the California Dept. of Fish and Wildlife
Park – Malakoff Diggins State Historic Park
Pb - Lead
PM10 - Particulate Matter (particles with an aerodynamic diameter of 10 Microns or less)
PM 2.5 - Particulate Matter (particles with an aerodynamic diameter of 2.5 Microns or less)
POC – Point of Contact
POST – Peace Officer Standards and Training
PRC - Public Resources Code
Rank – California Rare Plant Ranks
RTP - Regional Transportation Plan
RWQCB – Regional Water Quality Control Board
SB 743 - California Senate Bill 743
SCUBA – Self Contained Underwater Breathing Apparatus
SCS - Sustainable Community Strategy
SE – State Endangered in California
SIP – State Implementation Plan
SMP – Smoke Management Plan
SO2 – Sulfur Dioxide SP – State Park
SPRP – Spill Prevention and Response Plan
SRA – State Recreation Area
SSC – Species of Special Concern under the California Dept. of Fish and Wildlife
ST – State Threatened in California
SYRCL – South Yuba River Citizens League
TEK – Traditional Ecological Knowledge
TSO – Time Schedule Order
U.S. - United States
USACE – United Sates Army Corps of Engineers
USEPA - United States Environmental Protection Agency
USFS – United Stated Department of Agriculture – Forest Service
USFWS – United States Fish and Wildlife Service
USGS – United States Geological Survey
UTV – Utility Terrain Vehicles
VMP – Vegetation Management Plan
VMT – Vehicle Miles Traveled
VRPs – Visibility Reducing Particles
WBWG – Western Bat Working Group
WDR – Waste Discharge Requirement Order
WL –Watch List Species under the California Department of Fish and Wildlife
WPT – Western Pond turtle
WRA – WRA, Inc.

## APPENDIX D
# DEFENSIBLE FUEL PROFILE ZONE DESCRIPTION

# APPENDIX D
# DEFENSIBLE FUEL PROFILE ZONE

**Treatment Specifications for Shaded Fuelbreak and Defensible Fuel Profile Zone (DFPZ)**

**Shaded Fuelbreak-** may be included within the first 100 feet of a DFPZ, or located independently such as along a ridgeline.




**Defensible Fuel Profile Zone (DFPZ)** may extend 300 feet or more in width depending on tie-in with other features or management areas. DFPZ may or may not Include a Shaded Fuelbreak, depending on proximity of values at risk to wildfire.

**Shaded Fuelbreak- approximately 100 feet in width**

**General Objective:** maintain an excellent fire safety zone that will not readily carry crown fire with good representation of native forest composition and structure.
**Typical Treatment Areas:** along wildland-urban interface, next to homes and other structures, along park boundaries, along ridgelines, and along public roads.

Line feature: fixed width, variable length Native
forest species composition represented
Basal target area: 85 to 120 square feet per acre Canopy
closure target: 30 to 39 percent
Snag retention/recruitment target: 0.5 to 2 per acre Downed
logs target: 0.5 to 5 per acre
Snag/log minimum size: 14 inches diameter by 20 feet in height/length
Retain/recruit largest relative diameter and/or snags/logs with evidence of animal use Native
habitat components represented
Stumps cut to within 1 to 6 inches of ground level

**Shaded Fuelbreak- continued:**

Dead limbs pruned up 6 to 8 feet from the ground
Live limbs pruned up 6 to 8 feet from the ground on trees 8 inches diameter at breast height (DBH) and larger.
Thinning of shrubs 5 to 20 feet between plant crowns
Woody debris greater than 1 inch diameter and 3 feet in length treated by pile burning, chipping, mastication, or removal
Appearance of residual cut ends minimized Broadcast chipping is generally acceptable

**DFPZ- approximately 300 feet or variable in width**

**General Objective:** maintain a good fire safety zone that will not readily carry crown fire with excellent representation of native forest composition and structure.
**Typical Treatment Areas:** adjacent to park boundaries, adjacent to high-use corridors, within high-use areas, and to prepare for prescribed fire in general forest areas.

Area feature: variable width, variable length
Native forest species composition well represented Basal target area: 85 to 150 square feet per acre Canopy closure target: 30 to 49 percent
Snag retention/recruitment target: 2 to 5 per acre Downed logs target: 3 to 7 per acre
Snag/log minimum size: 14 inches diameter by 20 feet in height/length
Retain/recruit largest relative diameter and/or snags/logs with evidence of animal use Native habitat components well represented
Stumps cut to within 1 to 6 inches of ground level Dead limbs pruned up 6 to 8 feet from the ground
Minimal live limb pruning as necessary for placement of burn piles Thinning of shrubs 2 to 10 feet between plant crowns
Woody debris greater than 1 inch diameter and 3 feet in length treated by pile burning, removal, or lopping to less than 12 inches above the ground.
Appearance of residual cut ends minimized Broadcast chipping is generally unacceptable

## APPENDIX E
# GENERAL FOREST PRESCRIPTION

# APPENDIX E
# GENERAL FOREST PRESCRIPTION

**Forest Thinning Prescription Mechanical and Hand Crew Treatments**

**Project Goals:** Thin trees and reduce fuels to restore native forest composition and structure, increase average tree diameter, and reduce risk of crown fire. Maintain valuable components of wildlife habitat including large dead trees, large, downed logs, and a multi-layered forest canopy. Promote spatial heterogeneity and variety in forest structures to mimic an active fire regime. Prepare for safe and effective implementation of prescribed fire.

**Mechanical (Tractor) Thinning Prescription:**

Target forest structure will be characterized as clustered with groups of trees separated by sparsely treed or open gap conditions. Spatial heterogeneity of forest structure will be promoted, including clumped tree distribution and canopy gaps such as likely would have been maintained by an active fire regime. Remnant old-growth trees, old-growth candidate trees, an uneven-aged stand structure arranged in multiple canopy layers, select clumps of dense vegetation, snags, and pockets of coarse woody debris will be maintained.

Basal Area target: 90 to 180 sq. ft. per acre, with clumps of higher stocking. Overstory Tree Spacing target: 10 to 30 feet, and clumps with tighter spacing. Retain all old-growth trees except hazards to human life, facilities or firelines.
Thin second-growth trees within dripline of old-growth trees and within potential dripline of old-growth candidate trees to basal area target range, unless retention is desired for species composition.
Improve species composition by thinning of second-growth white fir and retention of healthy and vigorous pine and cedar.

Thin live trees less than 14" DBH to 10 to 30 feet spacing, favoring tree size and health, and pine, cedar and hardwoods over fir.
Retain intermittent dense clumps of small trees approximately 25 to 75 feet across in size with approximately 100 to 300 feet spacing between clumps.
Retain intermittent pockets of heavy surface fuel loading (course woody debris and logs with a congested arrangement) approximately 25 to 75 feet across in size with approximately 100 to 300 feet spacing between pockets.
Dense clumps of small trees and pockets of course woody debris to be retained should be paired together, where pre-existing forest structure will allow.
Size and shape of retained clumps/pockets should be irregular and variable.

Snag (dead tree) retention/recruitment target: 3 to 12 per acre.

Snag minimum size: 14 inches diameter and 20 feet height

Retain/recruit snags with largest relative diameter or with evidence of prior animal use. Downed log

retention/recruitment target: 3 to 12 per acre.
Downed logs to be retained will be left intact, with all limbs and root wads protruding to provide wildlife habitat complexity.

Cleanup of mechanical tree removal operations will include at least one of the following: full removal of vegetative debris, pile and burn, mastication, or scatter in place within fuel management goals. Mastication of brush and vegetative debris will leave no more than 3" of masticated debris on 70% of the masticated area.

Mastication or thinning of brush will reduce ladder fuels around trees, and retain patchy cover in mosaic patterns. Promote retention of oak brush species for wildlife habitat values. Break up continuity of manzanita and whitethorn brush to prepare for safe implementation of prescribed fire.

**Hand Crew Thinning Prescription:**

Most trees targeted for thinning will be less than 14" DBH, due to the physical limitations of hand labor. Overstory stand structure will remain mostly unchanged. Thinning of the forest understory and reduction of surface fuels will reduce potential fire intensity and risk of crown fire.

Retain all old-growth trees except hazards to human life, facilities, or firelines. Retain snags with largest relative diameter or with evidence of prior animal use.
Thin trees 14" to 30" DBH very selectively within the scope of hand crew capabilities. Thin second-growth trees from around pine, cedar, and hardwood species to provide sunlight and growing space for preferred species.

Thin live trees less than 14" DBH to 10 to 20 feet spacing, favoring tree size and health, and pine, cedar and hardwoods over fir.
Adjacent to riparian and hardwood areas, remove or thin encroaching conifer as feasible to promote riparian and hardwood vegetation.

Retain intermittent dense clumps of small trees approximately 25 to 75 feet across in size with approximately 100 to 300 feet spacing between clumps.
Size and shape of retained clumps should be irregular and variable.
In burn pile areas, cleanup surface fuels 1" to 14" diameter by limbing, bucking and piling for burning.
In chipper areas, layout cut vegetation for chipping.
Retain logs greater than 14" diameter, if not using heavy equipment. Minimize the appearance of cut ends on logs to be retained. Remove and cleanup limb wood from downed logs, except leave dead limb wood attached on approximately 3 to 12 of the largest downed logs per acre to achieve a balance between fire fuel and wildlife habitat objectives.

## APPENDIX F
# HISTORIC BUILDING PROTECTION

# APPENDIX F
# HISTORIC BUILDING PROTECTION

**Malakoff Diggins State Historic Park Defensible Space Checklist**

The following specifications shall be applied to these facilities/areas of Malakoff: Buildings, including remains of historic buildings that could be damaged by wildfire, fuel tanks, fire hydrants, fire hose boxes, and parking lots.

All work will be coordinated with a cultural resource specialist. The cultural resource specialist will determine the need for onsite monitoring during work.

0 - 5 feet from all buildings, fuel tanks, fire hydrants, and fire hose boxes:
Remove all grasses by hand clipping and hand collecting to remove only the cut grass. No weed whipping or raking in this zone.
Remove all brush vegetation by hand cutting with loppers and pruners, no power cutting. Collect all cuttings by hand only.

5 - 30 feet from all buildings, fuel tanks, fire hydrants. and fire hose boxes: and 0 - 30 feet from all parking lots:
Trim all grasses to 6 inches height by weed whipping and light raking with a plastic rake to remove only the cut grass. Take care to not scrape any surface with raking. Do not rake any artifacts of any size.
Hand prune all brush vegetation to 16 - 24 inches height by hand cutting with loppers and pruners, no cutting with power tools. Collect cuttings by hand. Hand prune and remove dead portions of brush vegetation.

30 - 150 feet from all buildings, fuel tanks, fire hydrants, fire hose boxes, and parking lots:
Trim all grasses to 6 - 12 inches height by weed whipping and light raking with a plastic rake to remove only the cut grass. Take care to not scrape any surface with raking. Do not rake any artifacts of any size.
Hand prune all brush vegetation to 16 - 32 inches height by hand cutting with loppers and pruners, no power cutting. Collect cuttings by hand.
Hand prune and remove dead portions of brush vegetation.

Weed whipping with personal power equipment will be performed during closed hours from 7:00 am to 9:00 am only. Maintain live brush with good form and take care not to kill brush by over-pruning. Promote variability in brush heights for natural appearance and habitat complexity.

**Residential Firewood**
Subject to approval by both the Malakoff Supervising Ranger and the District Museum Curator II on a case by case basis, Park residents may tarp their firewood piles with fire-resistant welding tarps, which look like brown or black cotton canvas tarps. The intent will be to protect wood piles from ignition by flying embers from a fire, and to blend the covered wood piles in with the historic setting of Malakoff.

## APPENDIX G
# PROJECT SOIL TYPES AND DESCRIPTIONS

# APPENDIX G
# PROJECT SOIL TYPES AND DESCRIPTIONS

The following are descriptions of the soils from Nevada County, California soil survey (NRCS 1975) and Tahoe National Forest, California soil survey (NRCS 2002):

Aiken Series: The Aiken series consists of very deep, well-drained soils formed in material weathered from basic volcanic rocks and underlain by cobbly, andesitic tuff and conglomerate (CSRL 2019; USDA 1975). These soils occur on broad, gently sloping tabular ridges and moderately steep to steep side slopes of 2 to 70 percent. In a representative profile, there is a thin organic layer of partially decomposed forest litter from 0.5 inch to 0 inch. The surface layer (A-horizon) is a medium acid (pH 6.0), dark brown (7.5YR 3/4) loam from 0 to 9 inches. This is underlain by an AB-horizon of medium acid (pH 6.0), dark reddish brown (5YR 3/3) loam from 9 to 20 inches. This is underlain by a BAt-horizon of medium acid (pH 6.0), yellowish red (5YR 3/6) to dark red (2.5YR 3/6) clay loam to heavy clay loam from 20 to 49 inches. This is underlain by a Bt-horizon of medium to very strongly acidic (pH 6.0 to pH 5.0), dark red (2.5YR 3/6) to reddish brown (5YR 4/4) clay from 40 to 92 inches. Finally, this is underlain by a BC-horizon of very strongly acidic (pH 4.8), reddish brown (5YR 4/4) clay loam from 92 to 100 inches. Some pedons contain up to 25 percent rock fragments, with the larger amounts in the uppermost and lowermost horizons (CSRL 2019). Native vegetation communities in areas mapped as containing Aiken series soils are typically conifer forest (e.g., ponderosa pine [*Pinus ponderosa*], white fir [*Abies concolor*], and Douglas fir [*Pseudotsuga menziesii*]) with subdominant hardwoods (CSRL 2019). Aiken cobbly loam, 2 to 30 percent slopes is not considered a hydric soil (USDA 2019).

Alluvial Series: The Alluvial series is a miscellaneous land type consisting of narrow areas of alluvial material deposited along small stream channels and drainageways (NRCS 1975). This moderately well-drained to poorly drained material formed in fine-textured alluvium derived predominately from metabasic and granite rock (clayey series) or from loamy material from different rock sources (loamy series). This land type is nearly level to strong sloping. Slopes range from 0 to 15 percent. Elevation ranges from 300 to 4,000 feet. The surface layer is dark-gray to dark-grayish-brown clay loam to clay overlay in places by 3 to 10 inches of sandy loam or loam (clayey series). Or the land is 30 to 45 inches deep to gravel, cobblestones, or underlying bedrock (loamy series). Vegetation is annual grasses and forbs, including soft chess, ripgut brome, filaree, wild oats, lupine, annual clover, and/or yellow star thistle. Permeability is moderately slow to very slow and runoff is slow. This land is sometimes flooded during the rainy season. The alluvial series, both clayey and loamy, are considered hydric soils (NRCS 2022).

Cohasset Series: The Cohasset series consists of deep and very deep, well-drained soils that formed in material weathered from volcanic rock, which are underlain by a cobbly andesitic conglomerate (CSRL 2019; USDA 1975). These soils occur on volcanic ridges and mountain slopes in mountainous areas and have slopes of 2 to 75 percent. In a representative profile, there is a strongly

acidic (pH 6.1) organic layer of pine and fir needles from 0 to 3 inches. The surface layer (A-horizon) is a slightly acidic (pH 6.1), dark reddish brown (5YR 3/4) loam from 3 to 7 inches. This is underlain by an AB-horizon of moderately acidic (pH 5.9), dark reddish brown (5YR 3/4) loam from 7 to 18 inches. This is underlain by a BA- and Bt-horizon of strongly to very strongly acidic (pH 5.4 to 5.0), dark reddish brown (5YR 3/4) to reddish brown (5YR 4/4) clay and clay loam soil from 18 to 58 inches. This is underlain by light brownish/gray weathered andesitic rock from 58 to 63 inches (CSRL 2019). Native vegetation in areas mapped as containing Cohasset series soils include mixed conifer forest with scattered California black oak, Ceanothus (*Ceanothus* spp.), and manzanita (*Arctostaphylos* spp.) shrubs (CSRL 2019). Cohasset cobbly loam, 5 to 30 percent slopes, and Cohasset cobbly loam, 30 to 50 percent slopes are not considered hydric soils (USDA 2019).

Horseshoe Series: The Horseshoe series consists of very deep, well-drained, shallow soils that formed in material weathered from gravelly tertiary terrace remnants and basic volcanic rocks, principally tuff breccia (CSRL 2019). These soils occur on broad tabular ridges and side slopes with slopes of 2 to 50 percent. In a representative profile, there is an organic layer of litter, duff, leaves, and twigs from 3 to 0 inches. The surface layer (A/AB-horizon) is a medium acid (pH 6.0 to 5.8), dark reddish brown (5YR 3/3 to 2.5YR 3/4) gravelly loam from 0 to 10 inches. This is underlain by a Bt-horizon of medium to very strongly acidic (pH 5.6 to 5.0), dark red to red (2.5YR 3/6 to 2.5YR 4/8) gravelly clay loam from 10 to 43 inches. This is underlain by a BCt and 2BCt horizon consisting of very strongly acidic gravelly clay loam to very gravelly loam from 43 to 59 inches. Finally, this is underlain by a 3C horizon of stratified sands and gravel from 59 to 65 inches (CSRL 2019). Native vegetation in areas mapped as containing the Horseshoe series soils is mainly composed of Ponderosa pine, sugar pine (*Pinus lambertiana*), Douglas fir, California black oak, tanoak (*Notholithocarpus densiflorus*), and whiteleaf manzanita (*Arctostaphylos viscida*) (CSRL 2019). Horseshoe gravelly loam, 9 to 15 percent slopes, Horseshoe gravelly loam, 15 to 30 percent slopes, and Horseshoe-Jocal-Mariposa complex, 2 to 30 percent slopes are not considered hydric soils (USDA 2019).

Iron Mountain Series: The Iron Mountain series consists of somewhat excessively drained soils underlain by weathered andesitic conglomerate (NRCS 1975). These soils are undulating to steep and are on mountainous uplands. Slopes are 2 to 50 percent. The vegetation is mixed conifer and hardwood and an understory of brush, grasses, and forbs. Elevation ranges from 2,500 to 4,600 feet. The annual rainfall is 45 to 55 inches; and the average annual air temperature is approximately 54 degrees F., and the frost-free season is 140 to 230 days. Permeability is moderately rapid in these soils. Effective rooting depth is 12 to 22 inches. Available water holding capacity is 1 to 2.5 inches. Iron Mountain cobbly loam, 2 to 50 percent slopes is not considered hydric (NRCS 2022).

Jocal Series: The Jocal series consists of very deep, well-drained soils formed in material weathered from metasedimentary rocks. These soils occur on mountains with slopes of 2 to 75 percent. In a representative profile, there is an organic layer of decomposing fir needles from 0 to 2 inches. The surface layer (A-horizon) is a moderately acidic (pH 6.0), dark brown (7.5YR 3/4) loam with 10 percent gravel from 2 to 6 inches. This is underlain by an AB layer of moderately acidic (pH 5.8), yellowish red (5YR 4/6) silt loam from 6 to 17 inches. This is underlain by a Bt- horizon of moderately acidic (pH 5.7 to 5.8), yellowish red (5YR 5/6) silty clay loam from 17 to 47 inches. Finally, this is underlain by a C horizon consisting of moderately acidic (pH 5.6), yellowish red (5YR 5/6) sandy clay loam from 47 to 63 inches (CSRL 2019). Vegetation is typically mixed coniferous forest-shrub composed of Ponderosa pine, sugar pine, Douglas fir, California black oak, whiteleaf manzanita (*Arctostaphylos viscida*), and Sierran mountain misery (*Chamaebatia*

*foliolosa*). Horseshoe-Jocal-Mariposa complex, 2 to 30 percent slopes, is not considered a hydric soil (USDA 2019).

Josephine Series: The Josephine series consists of deep, well-drained soils that formed in colluvium and residuum weathered from altered sedimentary and extrusive igneous rocks. These soils occur on broad ridgetops, toeslopes, footslopes, and side slopes of mountains with slopes of 2 to 75 percent. In a representative profile, there is an organic layer of partially decomposing needles and leaves from 2 to 0 inches. The surface layer (A-horizon) is a moderately acidic (pH 6.0), dark brown (7.5YR 3/2) gravelly loam from 0 to 3 inches. This is underlain by a BA horizon of slightly acidic (pH 6.2), brown (7.5YR 4/4) gravelly loam from 3 to 9 inches. This is underlain by a Bt-horizon of slightly to very strongly acidic (pH 6.2 to 5.0), reddish brown (5YR 4/4) to yellowish red (5YR 4/6) loam from 9 to 42 inches. This is underlain by a BC and BCt horizon of very strongly acidic (pH 4.9), yellowish red (5YR 4/6 to 5YR 5/6) gravelly clay loam from 42 to 59 inches. Finally, this is underlain by a Crt horizon consisting of very strongly acidic (pH 4.9) saprolitic siltstone from 59 inches and below (CSRL 2019). Native vegetation is composed of Douglas fir, Ponderosa pine, Pacific madrone (*Arbutus menziesii*), California black oak, tanoak, incense cedar (*Calocedrus decurrens*), and sugar pine (CSRL 2019). Josephine cobbly loam, 5 to 30 percent slopes, Josephine-Mariposa complex, 15 to 30 percent slopes, eroded, and Josephine-Mariposa complex, 50 to 75 percent slopes are not considered hydric (USDA 2019).

Mariposa Series: The Mariposa series consists of moderately deep, well-drained soils that formed in material weathered from metasedimentary rocks. These soils occur on mountains with slopes of 2 to 75 percent. In a representative profile, there is an organic layer of pine needles, duff, and partly decomposed litter from 0 to 1 inch. The surface layer (A-horizon) is a moderately acidic (pH 6.0), reddish brown (7.5YR 7/4) gravelly silt loam from 1 to 9 inches. This is underlain by a Bt horizon of moderately to strongly acidic (pH 5.6 to 5.5), yellowish red (5YR 4/6) gravelly silt loam from 9 to 27 inches. This is underlain by an R (bedrock) horizon of yellowish brown, weathered slate from 27 inches and below (CSRL 2019). Native vegetation is typically composed of mixed coniferous forest-shrub dominated by Douglas fir, white fir, Ponderosa pine, sugar pine, California black oak, tanoak, whiteleaf manzanita and poison oak (*Toxicodendron diversilobum*) (CSRL 2019). Horseshoe-Jocal-Mariposa complex, 2 to 30 percent slopes, Josephine-Mariposa complex, 15 to 30 percent slopes, eroded, Josephine-Mariposa complex, 50 to 75 percent slopes, and Mariposa-Rock outcrop complex, 2 to 50 percent slopes are considered hydric soils (USDA 2019).

McCarthy Series: The McCarthy series consists of moderately deep, well drained soils on tops and sides of flat volcanic ridges (NRCS 2002). These soils formed in residuum weathered from andesitic mudflows (Mehrten Formation). Slope ranges from 2 to 75 percent. The vegetation is mainly mixed conifer and hardwoods, consisting of white fir, ponderosa pine, and black oak with an understory of manzanita and mountain whitethorn. Elevation is 2,000 to 6,000 feet. The average annual precipitation is about 50 to 70 inches, the average annual air temperature is about 50 to 58 degrees F., and the average frost-free season is 130 to 200 days. Permeability is moderately rapid. Available water capacity is low, runoff is medium to rapid, and the erosion potential is high. McCarthy cobbly loam, 15 to 50 percent slopes, is not considered hydric (NRCS 2022).

Rock Land Series: The Rock Land series is a miscellaneous land type consisting of extremely rocky or stony basic, metabasic, metamorphosed, ultrabasic, and sedimentary rock material on hilly or steep

mountainous areas (NRCS 1975). This land type extends through a wide area but is most commonly adjacent to major drainageways. It is undulating and extremely steep. Elevation ranges from 400 to 4,500 feet. Slopes range from 2 to 75 percent but are mostly more than 30 percent. Rock outcrops cover 50 to 90 percent of the surface area. In places a very shallow mantle of soil is between the outcrops. This soil material is less than 10 inches deep. Vegetation consists of brush plants including chemise, scrub oak, manzanita, yerba santa, and poison oak and a sparse understory of annual grasses and forbs. In places, scattered blue oak, live oak, and conifer are present in pockets of soil. The Rock Land series is not considered hydric (NRCS 2022).

Deadwood Series: The Deadwood series consists of shallow, somewhat excessively drained soils on mountainsides. These soils formed in residuum weathered from metasedimentary rock. Slope ranges from 0 to 75 percent. The vegetation is mainly open stands of hardwoods with brush and scattered conifers consisting of live oak, huckleberry oak, Douglas-fir, white fir, Jeffrey pine, and ponderosa pines. Elevation is 2,000 to 6,000 feet. The average annual precipitation is about 40 to 70 inches, the average annual air temperature is 47 to 57 degrees F., and the average frost free season is 110 to 225 days. Permeability is moderately rapid, available water capacity is very low, and runoff is rapid to very rapid. The erosion potential is high. Deadwood-Rock outcrop-Hurlbut complex, 30 to 70 percent slopes, N Mid Montane, is not considered hydric (NRCS 2022).

Tailings: Tailings is a miscellaneous land type consisting of hard-rock mine dumps and hydraulic diggings that are remnants of old tertiary river gravel deposits once containing gold (NRCS 1975). Areas that have been hydraulicly mined and washed with extremely powerful streams of water are very deep and have steep clifflike sides as high as 120 feet in places. Stones, cobblestones, and gravel cover 90 to 100 percent of the bottoms of these areas. The hard-rock mine dumps are generally steep-sided piles of angular or irregularly shaped rock fragments from underground mine shafts. They contain no fines. Slopes range from gently sloping to extremely steep. Elevation ranges from 1,500 to 4,500 feet. Vegetation consists of an occasional ponderosa pine and scattered manzanita. Tailings are considered hydric (NRCS 2022).

## APPENDIX H
# NEVADA COUNTY NOISE STANDARDS

# APPENDIX H
# NEVADA COUNTY NOISE STANDARDS

TABLE 1. NEVADA COUNTY NOISE STANDARDS. NEVADA COUNTY GENERAL PLAN (2014)

**TABLE 9.1 NOISE STANDARDS**

| *Exterior Noise Limits* | | | | |
|---|---|---|---|---|
| **Land Use Category** | **Zoning Districts** | **Time Period** | **Noise Level, dBA** | |
| | | | **$L_{eq}$** | **$L_{max}$** |
| Rural | "A1" "TPZ" | 7 am - 7 pm | 55 | 75 |
| | "AE" "OS" | 7 pm - 10 pm | 50 | 65 |
| | "FR" "IDR" | 10 pm - 7 am | 40 | 55 |
| Residential and Public | "RA" "R2" | 7 am - 7 pm | 55 | 75 |
| | "R1" "R3" | 7 pm - 10 pm | 50 | 65 |
| | "P" | 10 pm - 7 am | 45 | 60 |
| Commercial and Recreation | "C1" "CH" "CS" | 7 am - 7 pm | 70 | 90 |
| | "C2" "C3" "OP" | 7 pm - 7 am | 65 | 75 |
| | "REC" | | | |
| Business Park | "BP" | 7 am - 7 pm | 65 | 85 |
| | | 7 pm - 7 am | 60 | 70 |
| Industrial | "M1" "M2" | any time | 80 | 90 |

## APPENDIX I
# HUMBUG CREEK SERVICE ROAD IMPROVEMENTS

# APPENDIX I
# HUMBUG CREEK SERVICE ROAD IMPROVEMENTS

Malakoff Diggins State Historic Park

**Proposed Humbug Creek Service Road Improvements for Public Safety, Resource Protection, Forest Management, and Fire Access**

The Humbug Creek Service Road proposed for improvement is located in the southwestern section of Malakoff in the Public Safety and Historic Core Protection Zone. The existing roadbed begins on North Bloomfield Road, traverses through a meadow with sensitive cultural and biological resources, and continues down the steep hillside where it connects to the Lower Humbug Creek Trail and Humbug Creek at its terminus. See map in Appendix A. The road has not received annual maintenance and has degraded over time, becoming overgrown with vegetation, with gullying and erosion in some sections. Erosion negatively impacts the downstream environment and likely contributes to ongoing turbidity issues. The road is upslope from an ephemeral stream, and one smaller intermittent drainage crossing intersects with the road. This road is approximately one mile in length and is driven infrequently via utility terrain vehicles (UTV) by District staff to access the Lower Humbug Creek Trail for trail maintenance activities. The road is no longer passable by truck. The improvement and maintenance of this road will serve multiple purposes including promoting public safety, resource protection, forest management, and fire access.

Improvements to the service road will provide a strategic evacuation route in the interest of public safety. Current access to Humbug Creek and this portion of the South Yuba River is via the Humbug Creek Trail. If an emergency occurred on the South Yuba River, those injured would have to be hiked (carried) out via the three-mile Humbug Creek Trail with a 1,000-foot climb out of the South Yuba River Canyon.

A maintained, passable road will also be critical in the event of a wildland fire for accessing this remote area of the Park for suppression activities. Malakoff and the surrounding area are classified as a "Very High Fire Hazard Severity Zone" (CalFire 2022). A particular risk is if a wildland fire started in the South Yuba River Canyon below Malakoff, the prevailing summer (southwest) winds could drive the fire uphill through heavy fuels, and the wildfire could become very large by the time it reached the Park. Throughout the Sierra Nevada foothills and mountains there is a significant risk of large catastrophic fire driven by extreme weather conditions exacerbated by climate change. A strategically located and maintained access road will prevent potential resource damage from hasty bulldozer lines constructed in the event of a wildland fire.

A proposed 1,000-foot section of reroute/realignment will be required at the road entrance to reduce ongoing adverse impacts to sensitive natural and cultural resources present in and adjacent to the wet meadow through which the road currently traverses. This uphill meadow portion of road is not as apparent as an existing road as the lower downhill section and the original roadbed has been lost over time. Multiple routes through the meadow have since been established and used both by park staff and

the public to access the lower portion of road. Public trespass is of concern. Public trespass through this sensitive area will continue to degrade natural and cultural resources.

In addition to the realignment, two small turnouts are proposed to be installed along the lower roadway, and a turn-around/staging area will be installed at the road terminus. All other road improvement work will occur within the footprint of the existing roadbed. Work activities will occur outside of the avian nesting season (February 15 to August 15) and bat maternity season (May 1 to August 31) to ensure there are no adverse impacts to reproductive songbirds/migratory birds, raptors, and bats.

Improvements to the service road include:

- brushing the road corridor to achieve a width of six feet from each roadside edge, and up to 14 feet high
- chipping debris with tracked chipper. Chipped debris will be hauled away as feasible.
- grading the road where outsloped to remove any outside berms to allow for adequate drainage
- repairing one intermittent drainage crossing that intersects with the roadbed. Roadbed will be graded for a low water crossing.
- installing rolling dips where roadbed is cross contoured
- installing two 10 x 20-foot turnouts (200 square feet each) at approved locations
- installing a 20 x 20-foot (400 square feet) turn-around/staging area at the road terminus
- rerouting/realigning a 1,000-foot section currently traversing through sensitive natural and cultural resources at the road entrance. Final alignment is dependent upon approval by DPR natural and cultural resources specialists.
- installing a gate at or near the road entrance consisting of: excavation of four 3 x 3 foot holes or 27 cubic feet per hole, 108 cubic feet total, with concrete fill. Two bearing posts and two tie posts will allow for double swing gates with the capability to be locked in the open position (tie posts). The entrance gate will be set back sufficiently from the road to allow a fire truck to park completely off the North Bloomfield Road to safely access the gate.
- installing a second gate at or near the location of the original gate on the lower downhill portion of road. The second, lower gate will consist of: three 3 x 3 foot holes or 27 cubic feet per hole, 81 cubic feet total, with concrete fill. Two bearing posts and one tie post will allow for a single swing gate with the capability to be locked in the open position (tie post).
- installing boulders along the North Bloomfield Road edge to prevent vehicle access and protect sensitive natural and cultural resources present in the meadow

Materials and equipment include:

- estimated 160 cubic yards of class II aggregate road base
- fabricated metal gates and posts, concrete
- front end loader
- excavator
- bulldozer
- roller
- water truck

- tracked chipper

Maintenance of the road will be conducted by a state parks equipment operator and under the supervision of natural and cultural resources staff to ensure the road meets state parks standards. Heavy equipment will be staged along the North Bloomfield Road or other existing roads. The imported fill will be staged, if necessary, at the top of the road, and fiber rolls and any other necessary BMPs will be installed around the pile to ensure no fill leaves the staging pile. No equipment or material storage will be permitted within the meadow complex.

## PROJECT REQUIREMENTS:

### *AIR QUALITY*

**STANDARD PROJECT REQUIREMENT AIR-1: EMISSIONS OF FUGITIVE DUST AND OZONE**

- Water all construction areas (dirt/gravel roads and surrounding dirt/gravel area) at least twice daily during dry, dusty conditions when large machinery is in use.
- Cover all trucks hauling soil or other loose materials on public roads. Alternatively, require all trucks to maintain at least two feet of freeboard.
- Maintain all construction-related equipment engines in good condition, in proper tune (according to manufacturer's specifications), and in compliance with all state and federal requirements.
- Suspend potential dust producing actions if sustained winds exceed 25 mph, instantaneous gusts exceed 35 mph, or dust from construction might obscure driver visibility on public roads.
- Promptly remove earth or other material that has been transported onto paved roadways by trucks, construction equipment, erosion, or other project-related activity.

### *BIOLOGICAL RESOURCES*

**STANDARD PROJECT REQUIREMENT BIO-1: BIOLOGICAL MONITORING**

- Prior to use, a DPR-approved biologist will review and approve all locations used for staging/storage of vehicles, equipment, and/or materials used during the project. Preferred locations include existing roads and adjacent turnouts to avoid post project restoration.
- A DPR-approved natural resources specialist will implement biological monitoring at their discretion throughout the project site.

**SPECIFIC PROJECT REQUIREMENT BIO-7: CALIFORNIA RED-LEGGED FROG (CRLF), FOOTHILL YELLOW-LEGGED FROG (FYLF), AND WESTERN POND TURTLE (WPT)**

- Exclude perennial wet meadows and pond habitat from treatment(s).
- Exclude Humbug Creek habitat known to be occupied by FYLF and potentially suitable for CRLF and WPT movement from treatment(s).
- A DPR-approved botanist will review and approve any treatment areas outside of road and trail alignments that require heavy equipment operation to ensure avoidance of impacts to sensitive vegetation, including but not limited to, wet meadow and sensitive habitat types.
- Delineate the boundaries of each exclusion zone with temporary, high-visibility flagging to

prevent the encroachment of construction personnel and equipment beyond the described project footprint. Only remove the flagging when all construction equipment is removed from the job site, following each construction season.

- To the extent practicable, confine initial ground disturbing activities to between April 15 and October 15 when within one mile of designated CRLF critical habitat or suitable breeding habitat, when the frog should be in aquatic habitat, to avoid the period when CRLF are most likely to be dispersing through upland areas.
- All construction personnel will attend an environmental education program delivered by a DPR-approved biologist with species-specific experience prior to working on the project site. The program will include an explanation of how to best avoid the incidental take of listed species. The field meeting will include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis will be placed on the importance of the habitat and life stage requirements within the context of project maps showing areas where avoidance and minimization measures are to be implemented. The program will include an explanation of applicable Federal and State laws protecting listed species as well as the importance of compliance with DPR and resource agency conditions. Documentation of the training, including the original sign-in sheets, will be sent to the US Fish and Wildlife Service (USFWS).
- The contractor must designate an official point of contact (POC) to be at the Park during program activities in the event that a FYLF, CRLF, or WPT is found. If any of these species are found on-site, all work in that location will be temporarily halted and diverted to another location until a DPR State Representative is contacted and the DPR-approved biologist and USFWS and/or CDFW are consulted for further direction.
- To the extent practicable, all work will occur during daylight hours.
- Construct burn piles in designated project areas outside of riparian habitat and other sensitive natural resource areas.
- Where feasible, tree slash and debris will be chipped and hauled away.
- A DPR-approved biologist will review and accept all locations used for staging/storage of vehicles, equipment, and/or materials used during the project.
- Design treatment(s) to retain habitat complexity to the greatest extent possible while achieving project goals and maintaining safe conditions.
- Strategically locate management activities on the landscape to ensure that movement corridors and a mosaic of habitat patches for wildlife and plant seeds remain. In the absence of a strategic management plan, there is a risk of creating homogenous stand characteristics across the landscape, which could potentially be a threat to species that require closed canopy, dense vegetation, a variety of foraging and breeding habitats, and cover when moving across the landscape. In addition, many sensitive species occur more frequently in densely forested areas and this habitat type should remain well represented in the landscape of the Sierra Nevada foothills.
- Strategically plan treatments, both spatially and temporally, to avoid any special status species that have potential to be present in the project area.
- To the extent practicable, all work will occur during daylight hours.
- Where feasible, tree slash and debris will be chipped and hauled away. This task will be completed during the specified period (April 15 to October 15) concurrently or after road improvement has occurred.
- A DPR-approved biologist will review and accept all locations used for staging/storage of

vehicles, equipment, and/or materials used during the project.
- Strategically plan treatments, both spatially and temporally, to avoid any special status species that have potential to be present in the project area.

**STANDARD PROJECT REQUIREMENT BIO-8.1: SENSITIVE PLANTS**

- Surveys for special status plant species with a potential to occur in the project area will be conducted by a DPR-approved botanist during the appropriate blooming periods or when identity can be confirmed. All occurrences of special status plant species within the project areas will be recorded on project maps, flagged, or otherwise identified on the ground. Where possible, occurrences of all special status plants will be avoided and protected from construction activities. Those locations where special status plants cannot be avoided will be subject to the following conditions:
- Perennial Species: Prior to construction, plants will be carefully excavated and transplanted nearby in suitable habitat. All transplant work will be conducted under the direction of a DPR-approved environmental scientist. Transplanting will occur during the dormant growing season (i.e., late fall) when the plants are least disturbed and when they can be watered by winter precipitation.
- Annual Species: Seeds from annual special status plant species will be collected during the appropriate season and properly stored prior to ground disturbing activities. Seeds will be sown during the appropriate season in suitable locations identified by a DPR-approved environmental scientist.

**STANDARD PROJECT REQUIREMENT BIO-9: INVASIVE PLANTS**

- To prevent the introduction and spread of invasive plants to uncontaminated areas, all equipment and tools will be cleaned free of plant parts and soil prior to arriving at Malakoff.
- A DPR-approved botanist will survey project areas prior to project work (and during the appropriate season) for the presence of invasive species with potential to spread by project activities.
- Project areas that support weed populations with potential to spread by project activities will be marked for avoidance.
- A DPR-approved biologist will survey all project areas in the first growing season, after project activities are completed, to ensure that no weeds were introduced during project activities.
- Any inadvertent weed introductions or expansions will promptly be treated for removal.
- Post treatment/removal surveys will continue for another growing season if weeds are found and treated during the first growing season.
- Ensure that any imported new fill, such as gravel or soil, is from a certified weed free source where feasible.

## *CULTURAL RESOURCES*

**STANDARD PROJECT REQUIREMENT CULT-1: PRE-START MEETINGS**

- Prior to beginning project work, the DPR cultural resource specialist, project manager, and/or hand crew leader(s) will meet on the project site to discuss project implementation and conditions in place to protect cultural resources. Meetings will include locations of all cultural resources exclusion zones.

**STANDARD PROJECT REQUIREMENT CULT-2: PROTECTED AREAS**

- All cultural resources are assumed eligible for the National Register and will be protected and avoided when possible throughout the duration of the project. If a cultural resource cannot be avoided, surveying and testing of program treatment areas will occur at the discretion of the DPR-approved cultural resources specialist, who will determine appropriate mitigation measures to reduce potential adverse impacts to the resource.
- The project manager will notify the DPR cultural resource specialist a minimum of three weeks prior to the start of project actions.
- A DPR-approved cultural resources specialist will survey and flag cultural resources/areas for exclusion no more than 30 days prior to commencement of project activities. Designated flagging color will demarcate areas of avoidance. If project delays occur which exceed the 30-day limit to commencement of project activities, a DPR-approved cultural resource specialist and/or DPR registered professional forester will check flagging to assure that it is still visible prior to project activities. Flagging will be removed after the project is completed.

**STANDARD PROJECT REQUIREMENT CULT-3: ARCHAEOLOGICAL DISCOVERY**

- In the event of an unanticipated discovery of previously undocumented cultural resources during project activities (shell, burned animal bone or rock, concentrations of bottle glass or ceramics, etc.), work will be suspended in the area until a DPR cultural resource specialist has assessed the find and has developed and implemented appropriate avoidance, preservation, or recovery measures. If avoidance is required and feasible, the project manager will modify, at the discretion of the DPR cultural resource specialist, project actions to avoid cultural resources.

**SPECIFIC PROJECT REQUIREMENT CULT-4: ARCHAEOLOGICAL MONITOR**

- A DPR-approved archaeologist will monitor all project activity located in sensitive cultural areas to ensure protection and avoidance. In Tribal sensitive areas, a Native American monitor may also be required.
- Archaeological and Tribal monitoring throughout the project site will be implemented at the discretion of a DPR-approved cultural resources specialist. The archaeologist and/or Tribal monitor will have the authority to stop construction work in the area of a find and evaluate it and implement appropriate treatment measures to avoid potential significant impacts to historical resources per PRC 15064.5.

**SPECIFIC PROJECT REQUIREMENT CULT-5: VEHICLES, HEAVY EQUIPMENT, STAGING, AND STORAGE AREAS**

- Vehicles or heavy equipment are not allowed within cultural resources exclusion zones.
- A DPR cultural resource specialist will review all locations used for staging/storage of vehicles, equipment, and/or materials used during the project.
- No staging or storage will be allowed within cultural resources exclusion zones.

**SPECIFIC PROJECT REQUIREMENT CULT-6: HAND CLEARING**

- Use hand crews and hand-thinning methods (no machines or heavy equipment) for all vegetation removal in areas within and adjacent to recorded archaeological sites, historic

buildings, and cultural resource features. Manual removal will take place first in areas of identified resources and work outward to fully identify and protect any newly documented and/or extended resources. Heavy machinery will not be used in these areas. See Appendix F.
- A DPR cultural resource specialist will determine the extent of the hand clearing only zone prior to project implementation.

**SPECIFIC PROJECT REQUIREMENT CULT-7: DEBRIS PILES**

- Locate all debris piles outside of delineated cultural resource exclusion zones or linear feature boundaries. Pile burning within these culturally sensitive areas is prohibited unless otherwise approved by the DPR-approved cultural resource specialist.

**STANDARD PROJECT REQUIREMENT CULT-8: HUMAN REMAINS DISCOVERY**

- In the event that human remains are discovered during project activity, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place. Existing law requires that project managers contact the County Coroner. If the County Coroner determines the remains are of Native American origin, both the Native American Heritage Commission (NAHC) and any identified descendants shall be notified (Health and Safety Code Section §7050.5, Public Resources Code Section §5097.97, and §5097.98 California Native American Graves Protection and Repatriation Act). DPR staff will work closely with the United States Bureau of Reclamation to ensure that its response to such a discovery is also Compliant with federal requirements including the Native American Graves Protection and Repatriation Act.
- Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination. If it is determined the find indicates a sacred or religious site, the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Office and review by the NAHC/Tribal Cultural representatives will occur as necessary to define additional avoidance, preservation, or recovery measures, or further future restrictions.

## *HAZARDS AND HAZARDOUS MATERIALS*

**STANDARD PROJECT REQUIREMENT HAZMAT-1: SPILL PREVENTION AND REPSONSE**

- Clean all equipment prior to the start of construction and before entering project areas. During the project, clean and repair all equipment (other than emergency repairs) outside of project boundaries. Contain and dispose of all contaminated spill residue, or other hazardous compounds, outside the boundaries of the project at a lawfully permitted or authorized destination.
- Inspect all equipment for leaks prior to the start of construction and regularly inspect thereafter until removed from project areas.
- Prepare a Spill Prevention and Response Plan (SPRP) prior to the start of construction and provide protection to on-site workers, the public, and the environment from accidental leaks or spills of vehicle fluids or other potential contaminants. This plan will include but not be

limited to the following:

- A map that delineates construction staging areas, and where refueling, lubrication, and maintenance of equipment will occur.
- A list of items required in an on-site spill kit that will be maintained throughout the life of the project.
- Procedures for the proper storage, use, and disposal of any solvents or other chemicals used during the project.
- Identification of lawfully permitted or authorized disposal destinations.

**STANDARD PROJECT REQUIREMENT HAZMAT-2: WILDFIRE AVOIDANCE AND RESPONSE**

- Develop a Fire Safety Plan prior to the start of construction.
- Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers are required for all heavy equipment.
- Construction crews are required to park vehicles away from flammable material, such as dry grass or brush. At the end of each workday, park all heavy equipment over mineral soil, asphalt, or concrete to reduce the chance of fire.

## *HYDROLOGY AND WATER QUALITY*

**STANDARD PROJECT REQUIREMENT HYDRO-1: EROSION AND SEDIMENT CONTROL**

- Implement Best Management Practices (BMPs) in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during any ground disturbing activities as approved by the Regional Water Quality Control Board.
- The DPR Equipment Operator will install long-term erosion control measures for any areas where ground disturbing activities result in bare soil areas. Attain the appropriate soil density required to reduce erosion and optimize revegetation of the appropriate native grass seed, sterile grass seed, and/or duff as approved by a DPR-approved biologist.

## *NOISE*

**STANDARD PROJECT REQUIREMENT NOISE-1: NOISE EXPOSURE**

- Limit project related activities to the daylight hours, Monday through Friday. However, weekend work will be implemented to accelerate construction or address emergency or unforeseen circumstances. If weekend work is necessary, no work will occur before 8:00 a.m. or after 6:00 p.m., except as necessary with prescribed fire operations.
- Equip all internal combustion engines with the muffler recommended by the manufacturer. Equipment and trucks used for project related activities will utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever feasible and necessary.
- Locate stationary noise sources and staging areas as far from visitors as possible. If they must be located near visitors, muffle stationary noise sources to the greatest extent feasible, and/or where practicable, enclose within temporary sheds.