



— BUREAU OF —  
RECLAMATION

# **Draft- Environmental Assessment**

## **East Side Road Fuelwood Reduction Project, Lake Berryessa**

**California Great Basin – Interior Region 10**

**CGB-ED-2025-040**

The U.S. Bureau of Reclamation (Reclamation) has considered several key factors mandated by the National Environmental Policy Act (NEPA). This Environmental Assessment (EA) represents Reclamation's expert judgement and good-faith effort to prioritize analysis and documentation of the most important factors required by the statute and fulfills NEPA's requirements within the congressionally mandated page limits. Any factors addressed briefly or unaddressed were, in Reclamation's judgement, comparatively not of a substantive nature that meaningfully informed the environmental effects and the resulting decision on how to proceed.

**U.S. Department of the Interior  
Region 10 California-Great Basin**

**Central California Area Office**

**August 2025**

## **Mission Statements**

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; honors its trust responsibilities or special commitments to American Indians, Alaska Natives, Native Hawaiians, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

## Contents

|                                                                   |    |
|-------------------------------------------------------------------|----|
| Mission Statements.....                                           | 2  |
| Section 1 Introduction.....                                       | 1  |
| 1.1 Background.....                                               | 1  |
| 1.2 Purpose and Need .....                                        | 2  |
| Section 2 Proposed Action .....                                   | 5  |
| 2.1 No Action .....                                               | 5  |
| 2.2 Proposed Action .....                                         | 5  |
| 2.2.1 Vegetation Removal.....                                     | 5  |
| 2.2.2 Mastication.....                                            | 5  |
| 2.2.3 Herbicide Use .....                                         | 6  |
| 2.2.4 Goat Grazing .....                                          | 7  |
| 2.2.5 Prescribed Fire.....                                        | 8  |
| 2.2.6 Conservation Measures .....                                 | 8  |
| Section 3.....Affected Environment and Environmental Consequences | 10 |
| 3.1 Resources Eliminated from Further Review.....                 | 10 |
| 3.2 Required Resource Discussions.....                            | 11 |
| 3.2.1 Indian Sacred Sites .....                                   | 11 |
| 3.2.2 Indian Trust Assets.....                                    | 11 |
| 3.3 Resources Analyzed.....                                       | 12 |
| 3.3.1 Cultural Resources .....                                    | 12 |
| 3.3.2 Biological Resources .....                                  | 14 |
| 3.3.3 Air Quality .....                                           | 19 |
| 3.3 Cumulative Effects.....                                       | 23 |
| Section 4..... Consultation & Coordination.                       | 23 |
| 4.1 Agencies and Persons Consulted .....                          | 23 |
| Section 5..... References                                         | 25 |

# Section 1 Introduction

## 1.1 Background

In conformance with the National Environmental Policy Act of 1969, as amended, and Department of Interior Regulations (43 CFR Part 46), the Bureau of Reclamation (Reclamation)

prepared this Environmental Assessment (EA) to evaluate and disclose potential environmental impacts associated with performing fuel reduction activities on Federal land along the east side of Lake Berryessa, located in Napa County, California (Figure 1.). Reclamation proposes a ten-year **East Side Road Fuels Management Project** (Project) that includes various methods strategically implemented to mitigate fire risk and promote a resilient ecosystem on approximately 645-acres in seven paddocks (Figure 2).

## 1.2 Purpose and Need

Wildfires in California have become an increasing topic of concern for Californians, including those who live along the East Side Road of Lake Berryessa, where houses intermingle with natural areas on private and Federal land. This interface between houses and the oak-chaparral ecosystem area can be highly combustible and exposed to higher frequency of wildland fires due to the increase in long term dry conditions in California.

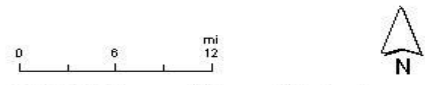
The Purpose of the Project is to help reduce the risk of wildfires along the east side of Lake Berryessa and adjacent communities. The project is needed to reduce the amount of fuel load and thereby, the potential for uncontrolled wildfires and enhanced overall landscape health. In 2018 and 2020, wildfires devastated the area around Lake Berryessa, and as a result, CAL FIRE has suggested increasing prescribed burns and other methods for reducing fuelwood in the interest of public safety.

# Lake Berryessa - East Side Road



**Legend**

- California
- Napa County
- Lake Berryessa
- East Side Road 



DISCLAIMER: This map and data are provided as-is and are intended for general reference only. None of the parties involved in preparing the map or data contained herein warrant or represent the data to be complete and accurate.

Date: 5/31/2023

Figure 1. Project Vicinity Map

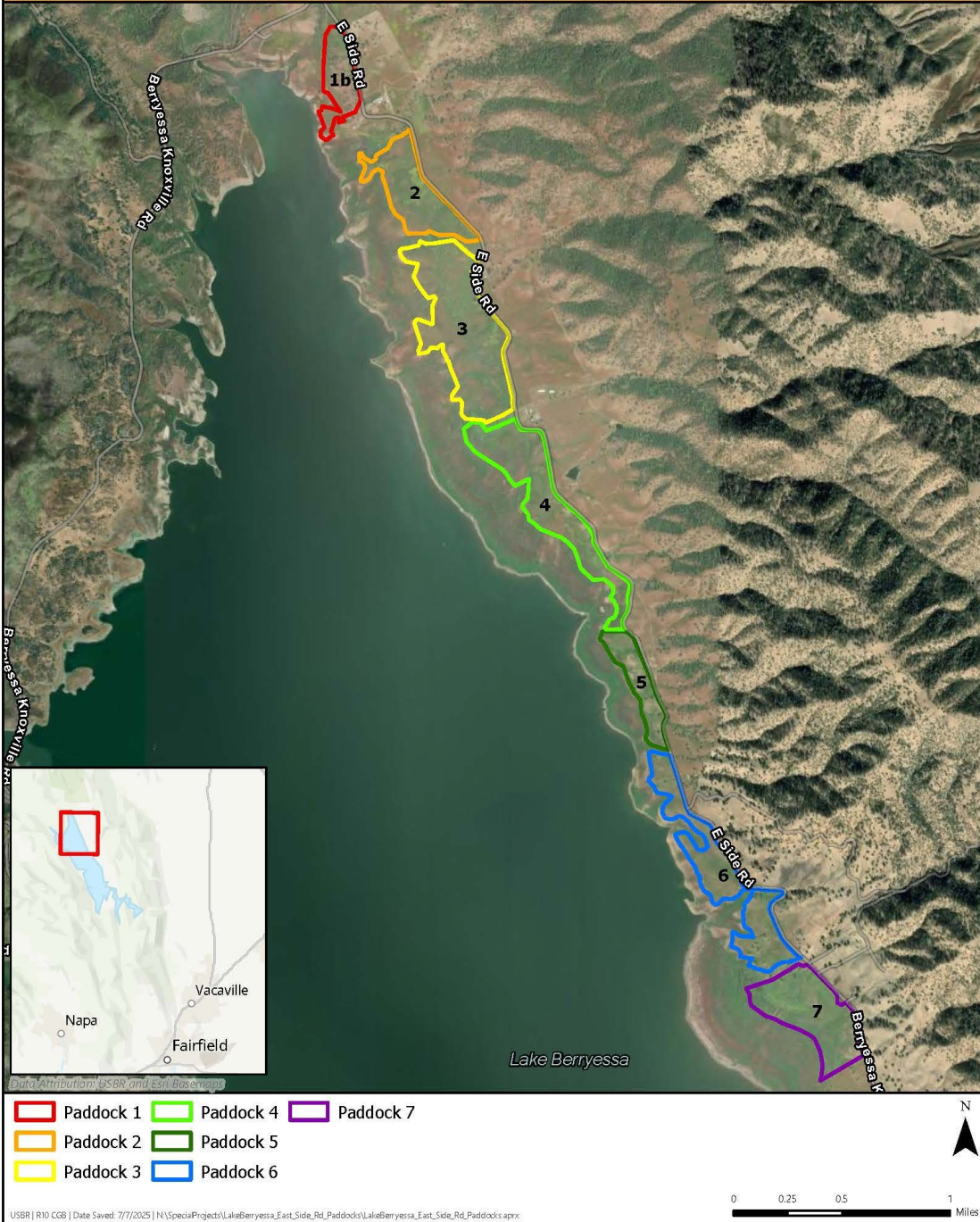


Figure 2. Map of East Side Road Paddocks.

# Section 2 Proposed Action

## 2.1 No Action

Under the No Action Alternative, Reclamation would leave fuels unmanaged and hazardous conditions would persist.

## 2.2 Proposed Action

Reclamation would implement fuelwood reduction using manual removal of vegetation using hand crews, mastication, herbicide application, goat grazing, prescribed fire (broadcast and piles), and strategically implemented controlled burns on the seven paddocks along the East Side Road. The Proposed Action is expected to be implemented, as needed, over 10 years. The number of treatments that could occur at one time would vary based on the time of year, availability of funding and crews, landscape conditions, and size/complexity of individual treatments. The goal of Project implementation is a resultant thinning of trees, shrubs, brush, and other vegetative growth within the Project area to reduce the intensity and spread of potential wildfires. The Proposed Action includes conservation measures developed to reduce the potential for adverse impacts to the environment.

### 2.2.1 Vegetation Removal

Hand crews would utilize a variety of tools, such as chainsaws, loppers, and hand saws, to cut and remove vegetation. The focus would be on removing flammable materials, such as dry brush, dead trees, and ladder fuels. Crews would work systematically to clear designated areas, ensuring that the vegetation is cut at the base to minimize soil disturbance. Hand crews may use engine powered chippers to reduce cut vegetation to ground fuels (chips).

### 2.2.2 Mastication & Chipping

A rubber-tracked mechanical masticator would be utilized to grind, chip, and shred vegetation on site. There are various types of masticators that might be used for this project, but they generally include a rubber tracked heavy equipment chassis with the masticator being mounted on an articulation arm. Some masticator mechanisms are mounted on a skid steer chassis, and some are mounted on an excavator chassis that have a turret that can rotate. The masticated vegetation would be broadcast as a mulch layer across the Project area, leaving an altered fuel type. Ladder fuels would be reduced to masticated ground fuel to minimize the risk of crown fire. Maximum depth for masticate material is 12-inches with an average depth of two to seven inches; this will control erosion and suppress vegetative resprouting. The following are the working parameters for mastication:

- Mechanical mastication of brush, hardwoods, and conifers <12-inch diameter at breast height (dbh) – standing or downed.

- Seventy-five percent (75%) of the vegetation treated by mechanical mastication would be ground into shreds <12-inches in length. The shreds would be spread as evenly as possible to suppress the re-growth of brush. The maximum allowable mulch depth is 12-inches. When removing trees by mastication, the stumps would be ground to surface level.
- Limbs of residual trees would be pruned up to 12-feet from ground level or 50% of the tree height, whichever comes first, and then masticated.
- Trees, limbs, and shrubs on or overhanging roads, including road cuts, would be cut, and removed, chipped, or masticated. Brush, shrubs, and trees growing on the outside bank will be masticated as far as the boom of the masticator can reach. All vegetation will be removed from the inside ditch.
- Remove shreds from public roads and residential driveways at the end of each workday.
- Rock outcroppings, metal T-posts, and barbed wire will be avoided.
- Mastication will be used only on slopes less than 35%.
- Motorized vehicles will remain within the project area or on the main road.

Chipping of cut vegetation can be accomplished with a towed chipper or a tracked chipper. Tracked chippers can be configured similar to masticators. Chipped vegetation will be broadcast across the project area in appropriate locations. Chip depth will not exceed 1-foot and will generally vary between 4 and 12 inches. As a result of chipping, ladder fuels would be reduced to chipped ground fuel to minimize the risk of crown fire.

Mastication and chipping do not reduce the volume of on-site vegetation fuels, they rearrange them as a mulch on the ground instead of standing fuel. The option to leave the mechanically ground chips and shreds on the ground as mulch helps to retain soil moisture, control erosion, and suppress brush regeneration.

### **2.2.3 Herbicide Use**

Herbicide would be used to assist with maintaining the land after the dense vegetation has been removed. Unwanted vegetation would be treated using EPA registered and Reclamation approved herbicides, following label guidelines. Only certified applicators, and those working under a certified applicator are authorized to apply herbicides and pesticides. Vegetation could be treated with Triclopyr, Tmazapyr, Glyphosate, or other suitable herbicides. These herbicides are classified as general use products that can be purchased by the public. Herbicides would be applied by hand using backpack sprayers or by the "hack and squirt" method. The hack and squirt method means workers would carry a small bottle of concentrated herbicide, make a small incision in the vegetation, and then squirt a few milliliters of spray into the plant. Herbicides would not be applied near water or drainages, and no one project area would be treated more than three times during the calendar year.

#### **2.2.4 Goat Grazing**

Project activities will consist of using goat herds for grazing accumulated plant matter. The Project area will be treated using targeted grazing for fuels reduction maintenance. Vegetation to be grazed may include grasses, shrubs, brush, and other vegetative overgrowth within the Project area to reduce the intensity and spread of potential wildfires. Proper grazing techniques, such as temporary electric fencing, pasture rotation, regular monitoring, and avoidance of overstocking or overgrazing would be implemented.

Grazing could occur year- round; however, the most beneficial time for goat grazing for fuel reduction is generally during the spring and early summer, when grasses and forbs are highly nutritious and palatable. This period would allow for efficient grazing and would help reduce the overall amount of available fuel. Grazing in late spring and summer could also be effective, especially for targeting specific plants that remain green longer or for controlling regrowth after other fuel treatments.

Grazing in each area could occur one to three grazing sessions per season. Balancing the Project's goals while preventing over grazing will be paramount. Adjustments to stocking rates and grazing periods would occur if a change in the intensity, frequency, timing, duration, and distribution of grazing is needed to meet the planned objectives for the unit. Livestock movements would be based on rate of plant growth, available forage, and identified objects such as utilization, plant height or standing biomass, residual dry matter, and animal performance. Grasses, weedy forbs, and woody brush species, including live oak, shrubs, and invasive weeds, would be targeted to the extent possible for fuels maintenance and weed reduction.

A herder and livestock dogs would be on site to manage the livestock, directing them to different grazing areas. This would help ensure uniform grazing throughout the Project area and ensure that the prescribed grazing is adhered to. Without herding, livestock may congregate in one area and ignore another area. This could lead to overgrazing in one area and not enough grazing in another.

The length of time the livestock would stay in any area would depend on the type and volume of targeted fuels/weeds. Some areas may require only a few hours' worth of grazing while others may require several days' worth. Effectively grazing several days' worth of vegetation may require the use of temporary electric fencing. The fence posts are pushed into the soil and pulled up as the herder moves the heard into the next section to graze. The herder would install temporary poly-wire electric fence lines as they move over the flat and steep hilly area going around brush and trees on the rocky, sandy, or firm soils, pushing the posts into soil. Most modern electric fences energizers send a very brief (less than 3/10,000 of a second), high voltage (2000-6000 volts), low power (less than 0.5 joules) pulse down the conductor every 1-2 seconds. Though powerful enough to deter animals, a pulse this brief and infrequent doesn't pose a fire risk when the conductor is near combustible material. There simply isn't enough time for heat to build and allow ignition to occur.

The herder would be responsible for hauling water to the livestock in a water truck and providing for the herd in a stock tank. The water truck would stay on established roads. Watering would take place from the road or road shoulder. The herder may live on-site in a self-contained mobile housing unit. In coordination with Reclamation and adjacent homeowners, the unit could be placed just off the established road system near areas where the livestock are grazing or parking lots. No ground preparation would be allowed to set the mobile housing unit, and it would not be placed within 50-feet of aquatic features or wetlands.

## **2.2.5 Prescribed Fire**

### **Pile Burns**

Pile burning would be used to dispose of forest fuels that have been removed during the proposed treatments. Piles are created by hand crews cutting vegetation and piling it for burning. Piles are required to dry or “cure” before ignition, with pile burning restricted to permissive burn days as regulated by the Napa County Air Quality Management District (NCAQMD) or Napa County Air Pollution Control District (NCAPCD). Pile burning would be conducted in accordance with DOI policy as well as State of California and Napa County and/or Napa County rules and ordinances. A burn management plan approved by CALFIRE within the applicable air district would also be required. Hand crews would pile and prepare cut vegetation in small piles, generally less than six-feet by six-feet, for burning. Burn piles would not be placed within 100-feet of the edge of any perennial or intermittent streams or special aquatic feature or within 25-feet of any ephemeral stream channel. This would reduce the potential for ash deposits to be washed in during rain events. Burn piles would not be placed within 25-feet of tree canopy to reduce the chance of fire spread.

### **Control Burns**

Landscape-level broadcast fire may be used to remove dead or live vegetation in the Project area. Controlled burns for the Project will be one to two acres in size at a time. The construction of fire control lines would likely be needed. The construction of fire control lines would be done by a hand crew. Fire control lines for controlled burns are generally no more than six feet wide. After the fire control lines have been established, the portions of the Project area enclosed by these lines would be subjected to broadcast burns. Broadcast burning would be used where enough fuel exists to carry fire, where a fire can be managed safely, and where conditions are good for achieving the objective of safely and efficiently reducing the fuel hazard. Any landscape level broadcast burning would be conducted in accordance with an approved DOI burn plan and any other applicable state and county and CALFIRE policy.

## **2.2.6 Conservation Measures**

To minimize or avoid potential resource impacts, the following measures would be implemented:

- If work is to be done during the nesting season (March 1 – August 31), a qualified biologist will survey the Project area not more than five days ahead of the crews and flag nest(s) site.

- All nests will be avoided at a distance consistent with the United States Fish and Wildlife Service (USFWS) protocols and left undisturbed.
- Trees eligible for removal are to be cut at the base of the trunk, with the root ball left in place.
- Ground fuels and grasses would be cut to just above ground level in a manner that does not result in soil disturbance.
- Off-road traffic would be limited to the Project area and the gravel road.
- Reclamation staff and the contractors would monitor the grazing animals, install electrified fencing, where needed, and post notification signs for residents and guests.
- Proper grazing techniques such as temporary fencing, rotation of pastures, regular monitoring, and avoidance of overstocking or overgrazing would be implemented (Lovreglio 2014).
- Herbicides would be applied according to label, federal, and state regulations.
- Herbicides would not be applied in or within 20-feet of aquatic habitats, perennial drainages or intermittent or ephemeral streams when water is present.
- Construction of burn piles will not occur within 100-feet from the edge of any perennial or intermittent stream or special aquatic feature or within 25-feet of any ephemeral stream channel.
- No Project activities are allowed outside the designated access and work areas.
- A qualified biologist will complete a survey of the Project area for any protected species immediately prior to activities. Any special-status species found by the biologist (or any other crew member) will be allowed to leave the area on their own volition (i.e., no handling or harassing).
- Environmental awareness information will be provided to all project personnel. It would include: species descriptions and habitat needs, species status and protection under the Endangered Species Act, definition of take, reporting requirements, conservation measures to reduce project impacts, and instructions for encountering CRLF in areas where take could occur.
- All Project personnel will be informed of the Action Area boundaries for Project activities. If necessary, flagging and/ or staking may be used to define the Project area limits.

- To reduce the potential for Project vehicles striking CRLF, a 10-mile-per-hour speed limit will be enforced at the site. All work will occur during daylight hours (30 minutes before sunrise through 30 minutes after sunset).
- No work will occur during or 24-hours following a rain event. A rain event is to be considered precipitation of 1/4-inch or more within a 24-hour period.
- All Project personnel will have the authority to stop work if potential CRLF are identified in an area where take could occur. The stop work would only occur in the immediate area of the project where take could be likely. If a potential CRLF is encountered and stop work is invoked, a picture of the animal(s) will be taken (if it can be done without threatening the animal) and a qualified biologist will be contacted to confirm species identification (either in-person or via photograph, if possible). Once the potential for take passes (the animal leaves on its own volition), or the animal is identified as other than a listed species, the work may resume.
- If CRLF are identified during Project implementation, Reclamation will be notified, and the occurrence will be relayed to the US Fish and Wildlife Service. In order to heighten awareness, all Project personnel will be made aware of the occurrence and location. Reclamation will ensure that the occurrence is entered into the California Natural Diversity Database.

## Section 3 Affected Environment and Environmental Consequences

### 3.1 Resources Eliminated from Further Review

Reclamation analyzed the affected environment and determined that the Proposed Action did not have the potential to cause effects to the resources listed in Table 1. Brief explanations for their elimination from further consideration are provided.

**Table 1. Resources Eliminated from Detailed Analysis.**

| Resource | Reason Eliminated                                                             |
|----------|-------------------------------------------------------------------------------|
| Energy   | The Proposed Action would have no impact on the energy resources in the area. |

|                              |                                                                                                                                                                                                                                                                                           |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Noise                        | There may be brief noise disturbances from hand tool operations used to trim and clear vegetation. This would take place during daytime hours. Localized noise impacts would be temporary.                                                                                                |
| Recreation and Public Safety | Surrounding areas are mostly rural and away from major population centers. Any prescribed burn activities would be posted for public awareness and to discourage access within the sites receiving treatment. The proposed treatment area is not a high use or developed recreation area. |
| Socioeconomic Impacts        | CAL FIRE would be conducting the fuels management actions in cooperation with Reclamation. Funds to complete the work are allocated in current budget and are to protect resources and communities in the wildland/urban interface.                                                       |
| Visual Resources             | The Proposed Action would not permanently alter visual resources, and most fuels management actions would be limited in duration and scope.                                                                                                                                               |

## 3.2 Required Resource Discussions

Federal Regulation, Executive Orders, and Department of Interior and Reclamation policies require a discussion of Indian sacred sites and Indian Trust Assets (ITAs) when preparing environmental documentation.

### 3.2.1 Indian Sacred Sites

*Indian Sacred Sites.* Sacred sites are defined in Executive Order 13007 (May 24, 1996) as “any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, and Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.” The nature of the Project is temporary and ephemeral; therefore, this Project would not inhibit use or access to any Indian Sacred Sites.

### 3.2.2 Indian Trust Assets

*Indian Trust Assets.* ITAs are legal interests in assets that are held in trust by the U.S. for federally recognized Indian tribes or individuals. The closest ITAs to the Proposed Action are the Rumsey, at 7.75-miles to the east, and Middletown, at 20.97-miles to the northwest (Appendix A). Based on the location and nature of the planned work, the Proposed Action is not in an area that would impact Indian hunting or fishing resources or water rights. It is reasonable to assume that the Proposed Action would not have any impacts on ITAs.

## 3.3 Resources Analyzed

### 3.3.1 Cultural Resources

#### ***Affected Environment***

Cultural resources are a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Title 54 USC § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA), and its implementing regulations found at 36 CFR Part 800, is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (National Register). Cultural resources are historic properties if they are on or eligible for inclusion in the National Register.

Compliance with the Section 106 of the NHPA, as outlined in the Federal regulations at 36 CFR § 800, follows a series of steps that are designed to identify cultural resources and the level of effect that the proposed undertaking would have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the APE, determine if historic properties are present within that APE, determine the effect that the undertaking would have on historic properties, and consult with the State Historic Preservation Officer (SHPO) to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

Other applicable Federal cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPRA), and the Archaeological Resources Protection Act (ARPA).

In an effort to identify historic properties, Reclamation contracted Cogstone Resource Management (Cogstone) to prepare a resources inventory for a broader fuels reduction effort which encapsulates the current project. Cogstone identification efforts included a records search, pedestrian survey, resource recordation, and evaluation. While several cultural resources, both pre-contact and historic are recorded in the vicinity of the APE, the project footprint was designed specifically to avoid these resources. As a result, Reclamation has not identified any cultural resources or historic properties within the APE.

Pursuant to 36 CFR § 800.3(f)(2), Reclamation identified the Cachil Dehe Band of Wintun Indians, Guidiville Indian Rancheria of California, Kletsel Dehe Wintun Nation of the Cortina Rancheria, Middletown Rancheria of Pomo Indians, Yocha Dehe Wintun Nation, as federally recognized Indian tribes who may attach religious and cultural significance to historic properties in the APE. We contacted these tribes by letter notifying them of our undertaking and invited their

participation in the Section 106 process pursuant to 36 CFR § 800.4(a)(4). This letter provided project information and requested their assistance in identifying historic properties which may be affected by the proposed undertaking. While the Yocha Dehe Wintun Nation responded to our letter and requested to consult, no historic properties or resources of concern were identified within the APE.

## ***Environmental Effects***

### **No Action Alternative**

The No Action alternative will not result in impacts to the Cultural Resources on cultural resources.

### **Proposed Action**

The National Historic Preservation Act (NHPA) sets forth government policy and procedures regarding “historic properties” – that is, districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires that Federal agencies consider the effects of their actions on such properties, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations [CFR] 800). No new construction or ground-disturbing activities would occur as part of the Proposed Action options. The Proposed Action is the type of undertaking that does have the potential to cause effects to historic properties, should such properties be present, pursuant to the Title 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA) regulations codified at 36 CFR § 800.3(a)(1)(Appendix B). No historic properties were identified in the APE through the efforts described above and, pursuant to 36 CFR § 800.4(d)(1), Reclamation made a determination of no historic properties affected for the proposed undertaking. As such, proposed project would not result in impacts to cultural resources listed, or eligible for listing, on the National Register of Historic Properties.

### **Post-Review Discovery**

In the event that previously unidentified cultural resources are encountered during project implementation, that work will be halted and/or redirected in the area of discovery until a qualified archaeologist can assess the significance of the find and make appropriate recommendations. Reclamation Cultural Resource Staff would be notified and consulted on how to proceed. Reclamation would follow the procedures for post-review discoveries on Federal lands as described in the regulations at 36 CFR § 800.13. Additionally, if archaeological deposits are encountered and cannot be avoided by the Projects, it will be necessary to formally evaluate the resource(s) to determine if they meet the criteria of significance and eligibility for listing in the NRHP or CRHR. Work may not continue in the area of the discovery until Reclamation issues a notice to proceed.

In the even that human remains are identified during the course of the proposed project on Federal lands, all construction activities would cease, and a Reclamation Archaeologist would be consulted on how to proceed. Note that all Native American human remains identified on lands

owned by the federal government are subject to the Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC 3001). Under the NAGPRA and implementing regulations 43 CFR Part 10, Reclamation is responsible for the protection of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony that are discovered on Reclamation lands. All human remains and potential human remains must be treated with respect and dignity at all times. In the event that suspected human remains are discovered during proposed project activity on Reclamation land, all activities in the immediate area will cease, and appropriate precautions will be taken to protect the remains and any associated cultural items from further disturbance. Reclamation will follow the procedures outlined in 43 CFR § 10.4 Inadvertent Discoveries. The Reclamation Region 10 Regional Environmental Officer will be immediately notified by telephone and will take responsibility for the discovery by contacting the appropriate law enforcement and Reclamation officials. Within three (3) working days of confirmation of the discovery [see 43 CFR Part 10.4(d)(1)(iii)], the Regional Cultural Resource Officer will ensure that Indian tribes likely to be affiliated with the discovered human remains (e.g., lineal descendant, culturally affiliated Indian tribe, Indian tribe with other cultural relationship, and Indian tribe that aboriginally occupied area) are notified by telephone or in person, with written confirmation. Treatment and handling of the remains will be determined through consultation between Reclamation and consulting tribes. Project implementation in the vicinity of the discovery would not resume until Reclamation complies with the 43 CFR § 10 regulations and provides notification to proceed.

All work, including fieldwork, must be carried out by or under the direct supervision of a qualified professional who meets professional qualifications as defined in the Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation as published at 36 CFR Part 61 ([http://www.nps.gov/history/local-law/arch\\_stnds\\_9.htm](http://www.nps.gov/history/local-law/arch_stnds_9.htm)).

### **3.3.2 Biological Resources**

#### ***Affected Environment***

The Project area is characterized by oak/foothill pine vegetation, primarily dominated by gray pine (*Pinus sabiniana*) and blue oak (*Quercus douglasii*). This vegetation transitions into California mixed chaparral, which includes species such as buckbrush (*Ceanothus cuneatus*), toyon (*Heteromeles arbutifolia*), scrub oak (*Quercus berberidifolia*), Whiteleaf Manzanita (*Arctostaphylos viscida*), and a shrub form of interior live oak (*Quercus wislizenii* var. *frutecens*) (McLaughlin).

In spring, a variety of wildflowers can be observed, including Indian paintbrush (*Castilleja tenuis*), larkspur (*Delphinium californicum*), lupine (*Lupinus hirsutissimus*), California poppy (*Eschscholzia californica*), Douglas iris (*Iris douglasiana*), purple Chinese houses (*Collinsia heterophylla*), shooting stars (*Dodecatheon* sp.), golden fairy lanterns (*Calochortus amabilis*), and Ithuriel's spear (*Triteleia laxa*).

Common wildlife species in the habitat include:

- Mammals: Black tailed deer (*Odocoileus hemionus*), rabbits (*Sylvilagus bachmani*), raccoons (*Procyon lotor psora*), opossums (*Didelphis virginiana*), gray foxes (*Urocyon cinereoargenteus*), coyotes (*Canis latrans*), black bears (*Ursus americanus californiensis*), rattlesnakes (*Crotalus oreganus*), mountain lions (*Puma concolor*) and bobcats (*Lynx rufus*).
- Birds: Quails (*Callipepla californica*), canyon wrens (*Catherpes mexicanus*), red-tailed hawks (*Buteo jamaicensis*), bald eagles (*Haliaeetus leucocephalus*), turkey vulture (*Cathartes aura*), Canada goose (*Branta canadensis*), osprey (*Pandion haliaetus*), and wild turkey (*Meleagris gallopavo*).

This area holds a significant biological value, providing a variety of habitats and providing the continued presence of wildlife corridors, which are crucial for maintaining genetic diversity by allowing species to access different habitats for feeding, breeding, and shelter. It is a prime location for wildlife viewing, attracting nature enthusiasts and bird watchers, and supports feral pig (*Sus scrofa*) populations, which are often hunted to manage their numbers, mitigate their environmental impact, and provide recreational opportunities for hunters.

Reclamation conducted site visits on May 20, 2024, and April 15, 2025, to assess conditions for wildfire potential, presence of native and invasive species, riparian areas, and other biological factors. Included in these visits were visual surveys for elderberry shrubs and other habitat conditions related to species listed as threatened or endangered under the Endangered Species Act of 1973, as amended. A significant amount of invasive weeds, such as exotic medusa head (*Taeniatherum caput-medusae*) and star thistle (*Centaurea solstitialis*), were found in the understory among native blue oaks (*Quercus douglasii*).

The California Natural Diversity Database Rarefind and U.S. Fish and Wildlife Services Information for Planning and Conservation (IPAC) resource was reviewed on July 11, 2025, for endangered, threatened, or listed species, or designated critical habitat within or near the project area. The CNDDDB database did not list any Federal Status species as having been observed in, or near, the project area. However, The IPAC database lists a potential for presence of the Valley Elderberry Longhorn Beetle (VELB) (*Desmocerus californicus dimorphus*), Northern Spotted Owl (NSO) (*Strix occidentalis caurina*), the California Red Legged Frog (CRLF) (*Rana draytonii*), and Keck's Checker-mallow (*Sidalcea keckii*) to occur within the project area.

Valley Elderberry Longhorn Beetle (VELB) VELB is endemic to California's Central Valley and watersheds that drain into the Central Valley. Its presence is entirely dependent on the presence of its host plant, the elderberry shrub (*Sambucus sp.*). Elderberry grows in upland riparian forests or savannas adjacent to riparian vegetation but can also occur in oak woodlands and savannas and in disturbed areas.

The Project is within the eastern most extent of the VELB range. The nearest recorded occurrence of VELB dates back to 1982, approximately two miles east of the project area, below Monticello Dam in Solano County on Putah Creek, at an elevation roughly 200 feet lower than the project site. Targeted surveys of the project area revealed no elderberry shrubs.

Consequently, without the presence of elderberry, there is no likelihood that VELB will be found onsite.

Northern Spotted Owl (NSO) NSO resides in structurally complex forests from northern California to southwest British Columbia (USFWS 2022). Breeding and roosting occurs in dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats, from sea level up to approximately 7600-feet. Its breeding range extends west of the Cascade Range through the North Coast Ranges, the Sierra Nevada, and localized areas of the Transverse and Peninsular Ranges. NSOs may move downslope in winter along the eastern and western slopes of the Sierra Nevada and other areas.

NSOs typically require blocks of 20-240 hectares of mature forest with permanent water and suitable nesting trees and snags (Forsman 1976). In northern California, they prefer narrow, steep-sided canyons with north-facing slopes. Due to the lack of complex tree structure, the Project area is not in a suitable habitat, is not a steep-sided canyon, and is west-facing. Therefore, it is unlikely that the NSO will occur onsite.

California Red-Legged Frog (CRLF) CRLF is the largest native frog in the western United States. The species was once found in 46 counties stretching from southern Mendocino County, California, inland to Shasta County, California and south to Baja California, Mexico (US Fish and Wildlife Service (USFWS), 2022). This species has disappeared from an estimated 70% of its range and is now only found in about 256 streams or drainages in 28 counties of California (USFWS 2022). However, the species is still common along the coast, and most of their population declines are in Sierra Nevada and Southern California.

The CRLF spends the bulk of its life in or near water sources like streams or stock ponds, which the species uses for breeding. Shallow freshwater features not suitable for breeding (e.g., seasonal streams, springs, and ponds with insufficient hydroperiods for metamorphosis) can provide aquatic non-breeding habitat. Cover and refugia are an important habitat component for CRLF and can include many natural and manmade features such as rodent burrows, leaf litter, woody debris, undercut banks, dense vegetation, buildings, discarded items such as metal or wood siding, etc. The amount of edge and emergent cover within breeding habitat can vary widely. Adult frogs have also been observed in shallow sections of streams and other aquatic features lacking or with minimal riparian or emergent vegetation (USFWS 2025). The frog moves into neighboring upland areas to feed and shelter when stream flow levels are high.

Research shows that dispersal distances vary based on environmental conditions. Dispersal usually occurs on rainy nights. Only 10 to 30 percent of CRLF disperse long-distances in any given year (USFWS 2022). Of the CRLF that disperses from breeding habitat, the median travel distance is generally 150 meters. Significantly longer dispersal distances have been observed in forested (cool and moist) portions of the species range than in warm, dry portions (USFWS 2022). Dispersal of up to two miles has been recorded in wet coastal environments (Fellers and Kleeman 2007). During summer, CRLF often disperse from their breeding habitat to forage and seek summer refugia in upland habitat if water is not available. Adult CRLF are largely nocturnal while juveniles are active both day and night. Frogs are inactive in the cold winter months and

during hot, dry temperatures in the late summer. CRLF may be active all year in coastal areas where temperatures do not fluctuate as much.

Males typically reach reproductive maturity at two years, while females reproduce at three years of age and are often prolific breeders. Breeding occurs from late November through May, depending on the location, and lasts for only a week or two. Breeding adults are commonly found in sites with deep (more than two feet), still or slow-moving water with shoreline or emergent vegetation from sea level to about 5,000 feet elevation (Hayes and Jennings 1988). CRLF egg masses are usually deposited in slow-moving to standing water that is less than 1.3 feet deep (UFWS 2025). Each egg mass contains about 300 to 4,000 eggs, but fewer than one percent of eggs laid survive the tadpole phase (UFWS 2025). Breeding sites may be seasonal but must hold sufficient water from the start of the breeding season into late summer or early fall to support tadpoles and metamorphosis (approximately 20 weeks) (UFWS 2025). The amount of time necessary for metamorphosis can vary greatly depending on site specific conditions.

The diet of adult CRLF consists of a wide variety of invertebrates, and occasionally small vertebrates such as fish, mice, voles, frogs and salamander larvae. Typical of most frogs, the prey is located by vision, then a large sticky tongue is used to catch the prey and bring it into the mouth to eat. Tadpoles most likely feed on algae, diatoms, and detritus by grazing the surface of rocks and plants.

There is an effort to restore the California Red-Legged Frog (CRLF) population near Lake Berryessa at the Wragg Ridge Preserve wetlands, located approximately 12-miles south of the Project area. However, the probability of CRLF occurrence in the Project area is considered low, as it includes a 100-foot buffer from the lake shore and other riparian areas. CRLFs require slow-moving or standing water for egg mass deposition. Nonetheless, since CRLFs are known to use upland habitats for dispersal, traveling distances of more than two miles, the Project area could serve as dispersal and upland refugia habitat.

Keck's Checker-mallow. Keck's Checker-mallow is a dicot, an annual herb that is native and endemic to California. It is federally listed as endangered. The bloom period is April and May. This species grows on grassy slopes, sometimes on serpentine. It is known primarily from northern California. While the project footprint was surveyed for the presence of elderberry shrubs, targeted surveys for Keck's did not occur.

In May 1952, Keck's Checker-mallow was observed approximately two miles south of the project area, on the north slope of Portuguese Canyon near the north shore of Lake Berryessa. The soil types within the project area could contain outcrops of serpentine. Therefore, due to the potential for suitable soils, lack of presence absence surveys, and the species being documented about 2 miles away, Reclamation can't rule out the potential for this species to occur in the project area.

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). Both eagles are known to use the Lake Berryessa area. The Lake Berryessa Field Office conducts annual surveys to locate potential eagle nests. The

closest known bald eagle nest (as of 2025) is approximately one mile north from the project site, while the closest known golden eagle nest is about five miles southwest. The Project site doesn't contain suitable nesting habitat for either eagle, but there is suitable habitat for scavenging, roosting, and hunting. However, it is expected that such use would be occasional. Based on distance to up-to-date nest locations and the fact that eagles aren't expected in the Project area more than occasionally, and their tendency to avoid human activities, Reclamation has determined that the Project will not result in adverse impacts to eagles.

## ***Environmental Effects***

### **No Action Alternative**

Under the No Action Alternative, Reclamation would leave fuels unmanaged and hazardous conditions would persist. The Project area would continue to provide habitat for various species; however, the growing amount of unmanaged fuels, such as dry vegetation and dead trees, would significantly increase the risk of wildfire. If a fire were to occur, it could be catastrophic for biological resources by causing widespread destruction of habitats, leading to the loss of plants and animals. Additionally, the fire could disrupt ecological processes, such as nutrient cycling and soil formation, destruction of seed bank, and degrade water quality in nearby streams and rivers due to increased sedimentation and runoff. The loss of vegetation would also reduce the availability of food and shelter for surviving species, further impacting the ecosystem's resilience and recovery.

### **Proposed Action**

The Proposed Action would reduce the wildfire hazard along the wildland-urban interface by removal of flammable vegetation, especially in proximity to residential and nonresidential structures owned by Reclamation, the public, and private entities.

Implementation of the Proposed Action would have temporary impacts to habitat availability for multiple wildlife species by making the area inhospitable while hand crews work, or prescribed fires occur. Additionally, a physical change in habitat will likely result in areas of the Project due to thinning and cutting of vegetation. Maintenance of the Project area will likely result in habitat conditions similar to those in an environment with a natural fire frequency regime, thereby benefitting native flora and fauna in the long run. The Project is expected to benefit flora and fauna by reducing the potential for catastrophic fires which could result in high mortality of individuals and reduction in native seed bank. Benefits would extend beyond the Project site as lower fire risk conditions would assist fire suppression efforts and protect adjacent lands. Additionally, the surrounding lands will retain their current habitat values, thereby being available for animals moving away from project activities.

Although the activities involve minimal ground disturbance, precautions will be taken to minimize potential impacts on sensitive resources during fuel reduction work, all the conservation measures would be implemented that are outlined in Conservation Measures Section 2.2.6. These include conducting nesting season surveys by qualified biologists to identify and protect active nests, ensuring tree removal practices minimize soil disturbance, and managing ground fuels and grasses in a way that preserves soil integrity. Off-road traffic will be

limited to the Project area and established roads to prevent habitat damage, and proper grazing techniques will be employed to avoid overgrazing and protect native vegetation. Herbicides will be applied following strict regulations to control invasive species without harming aquatic habitats, and burn piles will be constructed at safe distances from water bodies to prevent contamination and fire spread.

These measures collectively aim to protect the diverse habitats and species within the Project area while effectively managing wildfire risk. By maintaining ecological functions (post treatment) and supporting biodiversity, the Project area will continue to provide valuable habitats for wildlife and offer recreational opportunities such as wildlife viewing and feral pig hunting. Project implementation is expected to benefit the long-term conservation of the area's natural resources and enhance its ecological resilience.

Based on information from surveys, literature database searches, and a desktop review, Reclamation has determined that the Project has the potential to affect the CRLF. Reclamation is in the process of preparing an informational package with which to enter into Section 7, of the Endangered Species Act, as amended, consultation with the USFWS

### **3.3.3 Air Quality**

#### ***Affected Environment***

*The General Conformity Rule is used to determine if federal actions comply with the requirements of the Clean Air Act (CAA). This ensures that air emissions related to federal actions do not:*

- Cause or contribute to new violations of the National Ambient Air Quality Standards (NAAQS).
- Increase the frequency or severity of any existing violations of NAAQS.
- Delay timely attainment of NAAQS or interim emission reductions.

The Project is located in Napa County, which falls within the San Francisco Bay Air Basin under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

#### **Current Air Quality Status**

Napa County is currently classified as being in non-attainment with the NAAQS for:

- Ozone
- Fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less (PM<sub>2.5</sub>)

Commonly measured air pollutants that serve as indicators of ambient air quality include:

- Ozone (using surrogates such as oxides of nitrogen (NOX) and reactive organic gases (ROG))
- Carbon monoxide (CO)
- Sulfur dioxide (SO<sub>2</sub>)
- Respirable particulate matter (PM<sub>10</sub>) and PM<sub>2.5</sub>, often produced by smoke
- Lead

Since 2015, smoke from regional wildfires has significantly impacted air quality and public health in Napa County. These pollutants are known to be harmful to human health and are referred to as criteria air pollutants (CAPs), as summarized in Table 1.

**Table 1. Attainment State for Criteria Air Pollutants in BAAD**

| <b>Criteria Pollutant</b> | <b>National Designation</b> | <b>State Designation</b> |
|---------------------------|-----------------------------|--------------------------|
| Ozone (NOX)               | Nonattainment               | Nonattainment            |
| Ozone (ROG)               | Nonattainment               | Nonattainment            |
| PM10                      | Unclassified                | Nonattainment            |
| PM2.5                     | Nonattainment               | Nonattainment            |
| CO                        | Unclassified/Attainment     | Attainment               |
| NO2                       | Unclassified/Attainment     | Attainment               |
| SO2                       | Unclassified/Attainment     | Attainment               |
| Lead (Particulate)        | Unclassified/Attainment     | Attainment               |

Napa County is designated as a nonattainment area for ozone and 24-hour PM2.5 under national standards, and for O3, PM10, and PM2.5 under California standards.

CAPs typically not associated with activities at Lake Berryessa include sulfur dioxide (SO2) which is produced by such stationary sources as coal and oil combustion, steel mills, refineries, and pulp and paper mills; PM10 and PM2.5 occurs usually as smoke and lead (a metal found naturally in the environment and in manufactured products). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. Stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

### **Regulatory Framework**

The U.S. Environmental Protection Agency (EPA) implements national air quality programs under the CAA, which was enacted in 1970 and amended in 1990. The CAA mandates the establishment of NAAQS and requires each state to prepare a State Implementation Plan (SIP) to achieve and maintain these standards.

The 1990 amendments to the CAA necessitate that federal actions conform to the applicable SIP, as outlined in the General Conformity Rule (40 C.F.R., Part 93). Any federal agency responsible for an action in a nonattainment area must determine whether that action conforms to the applicable SIP or is exempt from the General Conformity Rule.

### **Conformity Determination**

Napa County is designated as a nonattainment area for ozone (marginal) and 24-hour PM2.5 (moderate) under national standards, and as nonattainment for O3 and PM10 and PM2.5 under California standards. Therefore, the General Conformity Rule applies to the proposed action,

requiring a conformity determination for each criteria air pollutant or precursor if the total direct and indirect emissions equal or exceed the General Conformity de minimis thresholds, as shown in Table 2.

**Table 2. Federal General Conformity De Minimis Levels**

| <b>Pollutant</b>                                    | <b>Emission Level (tons/year)</b> |
|-----------------------------------------------------|-----------------------------------|
| Ozone (VOC's and NOx)                               |                                   |
| Serious Non-Attainment Areas (NAAs)                 | 50                                |
| Severe NAAs                                         | 25                                |
| Extreme                                             | 10                                |
| Other Ozone NAA's outside an ozone transport region | 100                               |
| Other O3 NAA's inside an ozone transport region     |                                   |
| VOC                                                 | 50                                |
| NOx                                                 | 100                               |
| Carbon Monoxide: All maintenance areas              | 100                               |
| SO2 or NO2: All NAA's                               | 100                               |
| PM10:                                               |                                   |
| Moderate NAA's                                      | 100                               |
| Serious NAA's                                       | 70                                |
| PM2.5 (direct emissions, SO2, NOx, VOC & Ammonia):  |                                   |
| Moderate NAA's                                      | 100                               |
| Serious NAA's                                       | 70                                |
| Pb: All NAA's                                       | 25                                |

EPA, 2024; [De Minimis Tables | US EPA](#).

**Class I Airsheds**

Class I airsheds, established by the CAA, are areas where visibility contributes to the aesthetic quality of the region. The closest Class I airshed to the Project is Point Reyes National Seashore, located more than 75 miles southwest of the Project area. (Title 40 CFR Part 81, §405 (2011); [www3.epa.gov/region9/air/maps/ca\\_cls1.html](http://www3.epa.gov/region9/air/maps/ca_cls1.html)).

Manual and mechanical treatment and pile burning would generate greenhouse gas (GHG) emissions. GHG emissions from pile burning and broadcast fires would vary depending on the composition and number of piles burned over the course of a year. Pile burning and broadcast fires have relatively low GHG emissions as compared to GHG emitted from catastrophic wildfires. Use of vehicles to haul equipment or for chipping cut debris will generate some but not significant or unusual quantities of GHG emissions. Crew sizes would be small and associated vehicle use would be minor. Understory vegetation thinning can result in greater sequestration of carbon in the remaining vegetation by reducing competition for the larger, more resilient trees on the landscape (Forest Climate Action Team 2018).

**Environmental Effects**

### **No Action Alternative**

Under the No Action Alternative, Reclamation would leave fuels unmanaged and hazardous conditions would persist.

Without active management, the accumulation of dry vegetation and dead trees would increase the risk of catastrophic wildfires. These wildfires can release large amounts of smoke and particulate matter (PM2.5 and PM10) into the air, leading to severe air quality degradation.

Additionally, the intense heat and rapid spread of wildfires can cause widespread destruction of vegetation that could lead to increased soil erosion, which can result in more dust and particulate matter being released into the air during windy conditions. This can further degrade air quality and pose health risks to the local population.

Overall, the absence of fuelwood reduction efforts could result in more frequent and severe wildfires, leading to prolonged periods of poor air quality and increased health risks for residents and guests in the area.

### **Proposed Action**

Under the Proposed Action, Reclamation would implement fuelwood reduction methods using removal of vegetation using mastication, herbicide application, selective cattle grazing, prescribed burns, and strategically implemented controlled burns.

This EA incorporates, by reference, the 2017 EA on Lake Berryessa Infrastructure Development including the General Conformity Rule review that was performed and concluded that no Conformity Rule Determination was necessary. This review is applicable to the Project as analyzed in the 2005 *Future Recreation Use and Operation of Lake Berryessa; Final Environmental Impact Statement* (Bureau of Reclamation, 2005).

The project involves manual and mechanical treatment and pile burning, which will generate greenhouse gas (GHG) emissions. However, these emissions are expected to be relatively low compared to those from catastrophic wildfires. Proper management practices, such as understory vegetation thinning, will enhance carbon sequestration by reducing competition among trees. Additionally, the use of vehicles for hauling equipment and chipping debris will generate minimal GHG emissions due to the small crew sizes and limited vehicle use.

Gas powered chainsaws and chippers may be operated for a portion of the work contributing to the primary air quality impacts along with the pile burning activities. Based on a comparison to the construction activities air quality analysis prepared by Reclamation for the development of all recreation areas at Lake Berryessa, and the fact that this current Proposed Action would be of a much lesser magnitude, Reclamation does not expect the thresholds of significance established by the BAAD for Criteria Air Pollutants to be exceeded (Bureau of Reclamation, 2017).

Understory vegetation thinning could result in greater sequestration of carbon in the remaining vegetation by reducing competition for the larger, more resilient trees on the landscape (Forest Climate Action Team 2018). These emissions would be short-term, temporary, and insignificant in the regional context.

### **3.3 Cumulative Effects**

Per Council on Environmental Quality regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as *the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time* (40 CFR 1508.7).

Reclamation determined that the Proposed Action would significantly reduce wildfire hazards, enhance habitat quality, and improve air quality, supporting the ecological resilience of the area and protecting public health. While there are some negative impacts, such as emissions from controlled burns and disturbances from mechanical treatments, these are generally short-term and manageable with proper mitigation measures. Overall, the Project would provide valuable habitats for wildlife and ensure the long-term conservation of the area's natural resources, contributing to a healthier, more sustainable environment for both wildlife and the local community.

## **Section 4 Consultation & Coordination.**

### **4.1 Agencies and Persons Consulted**

Reclamation has invited to consultation the Cachil Dehe Band of Wintun Indians, Guidiville Indian Rancheria of California, Kletsel Dehe Wintun Nation of the Cortina Rancheria, Middletown Rancheria of Pomo Indians, and the Yocha Dehe Wintun Nation.

Reclamation is preparing to consult with the State Historic Preservation Officer and notifying her of our determination on 'no historic properties affected'. Upon receipt of that determination the SHPO has 30 days to comment. The proposed project will not be implemented until Section 106 is complete.

Reclamation is preparing a biological assessment to support Endangered Species Act, Section 7, consultation with the USFWS for potential effects of the Project on the California red-legged frog (*Rana draytonii*: CRLF) and Keck's Checker-mallow (*Sidalcea keckii*). Reclamation has

determined that the proposed action may affect, but is not likely to adversely affect, these two species and will be requesting USFWS concurrence with our determination.

## Section 5 References

**California Department of Fish and Wildlife.** (n.d.). Natural Diversity Database Rarefind. Available: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data> Accessed: 03 September 2023.

**Forest Climate Action Team.** (2018). \*California Forest Carbon Plan: Managing our forest landscapes in a changing climate\*. Sacramento, CA.

**Georgescu, M., & Huber, M.** (2018). \*The role of land-atmosphere interactions in the climate response to land use change\*. \*Nature Climate Change\*, 8(1), 1-7. <https://doi.org/10.1038/s41558-017-0030-0>

**Green, L. R.** (1977). Fuel breaks and other fuel modification for wildland fire control. USDA Agr. Hdbk. 499.

**Lovreglio, R., Meddour-Sahar, O., & Leone, V.** (2014). Goat grazing as a wildfire prevention tool: A basic review. \*iForest\*, 7, 260-268. <https://doi.org/10.3832/ifer1112-007>

**Ojerio, R., Moseley, C., Lynn, K., & Bania, N.** (2011). Natural Hazards Review, 12(1). [https://ascelibrary.org/doi/abs/10.1061/\(ASCE\)NH.1527-6996.0000027](https://ascelibrary.org/doi/abs/10.1061/(ASCE)NH.1527-6996.0000027)

**State Parks and Reclamation.** (2019). \*Auburn State Recreation Area General Plan/Auburn Project Lands Resource Management Plan Environmental Impact Report/Environmental Impact Statement\*.

**United States Department of Interior, Bureau of Reclamation.** (2022). Bureau of Reclamation. <https://usbr.gov>

United States Department of Interior, U.S. Department of Agriculture, Department of Energy, Department of Defense, Department of Commerce, U.S. Environmental Protection Agency, **Federal Emergency Management Agency, & National Association of State Foresters.** (2001). \*Review and update of the 1995 Federal Wildland Fire Management Policy\*.

**U.S. Environmental Protection Agency.** (1969). National Environmental Policy Act (NEPA). <https://ceq.doe.gov>

**U.S. Environmental Protection Agency.** (n.d.). California Federal Class 1 Areas. Available: [https://www3.epa.gov/region9/air/maps/ca\\_cls1.html](https://www3.epa.gov/region9/air/maps/ca_cls1.html). Accessed: February 10, 2025.

**U.S. Environmental Protection Agency.** (n.d.). De Minimis Tables. Available: <https://www.epa.gov/general-conformity/de-minimis-tables>. Accessed: February 10, 2025.

**USFWS.** (2022). Information for Planning and Consultation (IPaC). Available: <https://ecos.fws.gov/ipac/>. Accessed: August 12, 2025.

**USFWS.** (2022). Species Assessment and Listing Priority Assignment Form. August 12, 2025.