



**Feather River Resource Conservation District  
Moonlight Reforestation 2025**

**Herbicide Release**

**Request for Proposals  
May 16, 2025**

**Feather River RCD anticipates soliciting bids for multiple reforestation projects in 2025. Bidders are encouraged to bid on multiple projects. Projects may occur at different times due to elevation and climate differences. Planting season may overlap depending on environmental conditions, bidders should indicate ability to scale planting crew size as needed. Feather River RCD reserves the right to award contracts on a partial or per line item basis.**

## **1. PROJECT DESCRIPTION**

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The purpose of this Request for Proposals is to solicit potential contractor's interest in providing services for herbicide release of conifer crop trees within areas burned by wildfire in 2007, and 2021. The release treatment will consist of a seven-foot radial foliar herbicide application in units that have been mechanically cleared of vegetation and previously treated with herbicide.

The District reserves the option, and may decide at its discretion, to cancel (see Section 10.M. and Section 11) or postpone the herbicide release item in this contract dependent on the response of competing vegetation following the initial herbicide application. Since the vegetation in those units was previously treated, it may be necessary to postpone herbicide release until later in the growing season or beyond – when competing vegetation is clearly visible above the soil surface, increasing the effectiveness of the treatment.

This project is in collaboration with the United States Forest Service, Plumas National Forest and Sierra Nevada Conservancy, therefore will adhere to Federal and State regulation and Best Management Practices that are outlined in the contract and identified in State and Federal environmental compliance documentation (see **Attachment E\_MMRP**).

## **2. PROJECT LOCATION**

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The project is located within the Moonlight Fire footprint on the Mt. Hough Ranger District of the Plumas National Forest, in Plumas County, California. The legal description of the project units is

Re- Release: T27N R11E S 11, 13, 14, 15; T28N R11E S 4, 5, 31, 32; T28N R12E S 28, 29, 32, 33

See maps for details.

*Description:* Units boundaries are virtual and available via georeferenced PDF maps. Portions of the work units may be flagged with "SILVICULTURE BOUNDARY" tape and/or verbally designated by Contracting Officer's personnel on site at the time of treatment. Boundaries will generally be identifiable features on the ground, such as roads, topographic ridges, drainage buffers, or residual tree line, and within areas that have been mechanically cleared of brush. Excluded portions (non-treatment areas) of

units will include riparian buffers, control areas, and steep slopes not adequately prepared for planting by mechanical equipment.

*Accessibility:* All units are accessible via Plumas National Forest system roads by 2-wheel drive vehicle during field season, but may require 4-wheel drive during wet conditions. All off-road equipment used on this project shall be washed before moving into the project area so that the equipment is free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds.

### **3. DEFINITIONS**

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**Acceptable Quality Level (AQL)** - The maximum allowable deviation from the Quality Standard established by the Government for work performed in this contract before the Government will invoke payment deductions. The AQL does not allow a Contractor to knowingly offer or perform defective services below the Quality Standard, but limits reduced payments to circumstances in which defective performance results in a measurable reduction in the value of services received by the Government.

**Brush** - A brush or scrub tree with broad leaves rather than needles. Examples: Manzanita, Deer brush and Gooseberry.

**Brushcutting:** To sever all competing vegetation within a 5 foot radius around each crop tree based on an approximate spacing designated in the table that is less than or equal to ½-inch in diameter below the root collar or where no definite root collar is present, ½-inch below the original soil level. Vegetation larger than ½-inch in diameter will be severed at no greater than 2 inches above ground level or root collar. The vegetation may be pulled or cut out.

**Competing Vegetation:** Refers to any of several woody shrubs and hardwoods with broad leaves that are potential competitors for established crop trees which may be encountered in this contract.

**Conifer** - A cone-bearing tree with needles or leaf scales. Examples: Pine, True-fir, Incense Cedar and Douglas fir.

**Cotyledon Scar** - Lowest point on stem from which branches will grow. Marked by a distinct ring in the bark of most species of tree seedlings.

**Crop Tree** - A well growing, healthy, vigorous, planted or comparably sized natural tree that contributes to average spacing requirements and overall count of trees per acre, is superior or equal to the immediately adjacent tree(s) in terms of height, live crown ratio and overall vigor, is free from damage to the bole or terminal leader and the foliage is healthy green and not faded. Crop trees are trees intended to become a component of the future forest stand. A crop tree is determined by both spacing and vigor. Crop trees shall generally be those trees that are of the tallest height, largest crown, straightest stem and fastest growth that are free of damage. If no healthy, undamaged tree exists at the desired spacing, then a tree with minor damage may be selected as a crop tree. Planted trees shall be considered first for selection as crop trees, then natural trees.

**Damage** - Any injury to the main stem or branches of treated trees from release efforts. Injuries include severing, scraping, stripping, or breaking of any portion of the tree.



**Damaged Trees:** Any injury or damage caused by the contractor's performance of work exposing the cambium (ie., the bole, cut limbs in the upper 50% of the tree, cut tops) and/or any conifer buried or partially buried by soil, rock, humus, litter, or slash in the top 50% of the crown of the tree caused by the contractor's performance of work. Potential crop trees which are uprooted are also considered damaged trees.

**DBH, Diameter at Breast Height -** The measurement of bole width through the center of a tree, taken at four and a half feet above ground line on uphill side.

**Dominant Tree -** A tree that is noticeably taller, more vigorous, having a fuller crown, and bearing fewer signs of physical damage or disease than adjacent trees.

**Drip Line -** An imaginary perimeter or circle existing on the ground beneath the outer limbs of an over story tree. It is the area on the ground where rainfall being shed by outermost limbs of a tree would land.

**Fertilizer pack:** A "teabag" sized packet of controlled release fertilizer to be placed adjacent to the planted tree to assist with growth and vegetative competition.

**Foreign Material in Planting Hole:** Dry soil, ash, organic matter, rock or any other material other than moist soil that could hinder the growth or survival of the planted seedling.

**Former Burn Piles:** The blackened earth and ash that exists following the burning of debris piles within planting prior to planting.

**Excess Tree:** A tree that is left but should have been cut to meet spacing standards or trees-per-acre requirements

**Green Vegetation:** Includes all living vegetation including but not limited to woody shrubs, grasses and ferns.

**Grub Circle-** A circle with a specified radius that is centered on planted or native conifers. All vegetation shall be removed from this circle except the selected leave tree(s). The radius is measured on a horizontal plane, NOT slope distance.

**Grubbing -** The cutting of specified vegetation below its first lateral root or a minimum of six inches below the surface within a specified distance from a selected leave tree.

**Hardwood Trees -** Trees with broad leaves rather than needles. Example; Oak, Madrone, and Maple.

**Hardwood Clumps:** Stems of California black oak, live oak, tanoak, maple, and Pacific madrone originating from a common stump or root collar.

**Herbaceous Vegetation -** Any plant that does not develop persistent wood tissue above ground, i.e. grasses, forbs, ferns, mountain rose, and snowberry.

**Herbicide:** The concentrate before mixing occurs (53.8% Glyphosate active ingredient)

**Herbicide mixture:** The combination of herbicide, water, surfactant, and dye

**Insect Infested or Diseased Trees:** **Insect Signs:** A tree pitching sap from the bark in multiple spots on the bole, dead tops, single trees or a group fading from yellow to red. **Disease Signs:** For all conifers, fading, loss of foliage and the presence of conks on the bole are most likely signs of a root disease. Leafless yellow-green mistletoe shoots (approx. 3-8 inches long) and stem cankers appear on trees infected with Dwarf Mistletoe. On ponderosa pine, small to large pear shaped galls on branches or stems is a sign of Western Gall Rust. On sugar pine, stem/branch canker, yellow to red flagging of branches and tops are signs of White Pine Blister Rust.

**Interplants** - These are stands being planted, but containing various amounts of residual or previously planted seedlings/saplings.

**Lateral Root** - A root that extends horizontally from the primary root and serves to anchor the plant securely into the soil

**Leave Tree** - Tree(s) to be left standing and undamaged that comprise the stand following planting operations. May include conifers or hardwoods.

**Limited Operating Period (LOP)** – A designated period in which time work within a given unit or area may be worked. This period is variable based on the species being protected. See the Schedule of Treatments for the definition of each LOP.

**Microsite Planting** - The planting of tree seedlings in plantable spots most favorable to seedling survival and growth. Examples of favorable micro site features that provide protection from sun, wind, animals, and other damaging agents are spots located adjacent to the following: down dead logs, log round debris, conifer tree stumps.

**Mineral Soil** - A soil consisting mostly of, and having its properties determined predominantly by, mineral matter, usually containing less than 20 percent organic matter but sometimes containing an organic surface layer up to 12 inches deep.

**Natural** - A living conifer seedling that germinated from seed within the treatment area (versus a seedling grown in the nursery and artificially planted within the work unit)

**NNIP's** - Non-native invasive plants. For the purpose of this contract this refers to, French broom (*Cytisus monspessulanus*), Scotch broom (*Cytisus scoparius*), Spanish broom (*Spartium junceum*), and yellow starthistle (*Centaurea solstitialis*). French broom, Scotch broom, and Spanish broom may be collectively referred to as “broom”.

**Plantable Spot** - An area from which vegetation, ash, duff, snow and debris has been or can be removed and a tree seedling can be planted as specified elsewhere herein.

**Quality Standard** - The established standard against which all of the Contractor's performance shall be measured.

Release - The removal of competing vegetation and excess trees from a tree selected to become a leave tree. A treatment that aims to increase the growth rate of existing trees. A treatment designed to free young trees from undesirable, usually overtopping, competing vegetation.

Resource Conservation Area (RCA): Riparian area protected during logging and site preparation activities. This area may contain slash and vegetation and is normally to be planted and released unless specified otherwise in the Schedule of Treatments.

Riparian Conservation Area (RCA) – Areas primarily adjacent to streams, ponds, and springs protected by restricting treatments in some situations

Riparian Buffers – Areas within RCAs where work is restricted to no treatment. These buffers are as follows: If an applicable RCA is within a unit it will be noted in the schedule of treatments.

Rocky Ground - Where soil content is greater than 70% coarse rock fragments greater than 1 inch in size.

Root Collar - The point on the stem of the tree seedling where the ground line was when the tree was grown in the nursery. This is usually distinguished on the stem of the seedling by a change in color from green to yellow or brown. In grasses and shrubby vegetation this is usually noted by the presence of roots growing at a point below ground level.

Root Collar: The swelling on the stem of a tree seedling, above the roots and below the needles, indicating the original position of the tree in respect to the ground line.

Root Crown. - The transition zone between stem and root usually located at or below the ground surface.

Root Length - Root length will be measured from the root tips to the cotyledon scar.

Satisfactorily Planted Seedling/tree - A seedling planted in full accordance with all planting specifications set forth in this contract.

Scalp - To remove all ash, duff, sod, crowns of living plants and roots to moist mineral soil. Spacing - The horizontal distance between two adjacent crop trees.

Seed scalp - Removal of duff, litter, and the top 1” of mineral soil where a planting attempt is made. For the purposes of this contract: The planter shall remove up to 3” of mineral soil until moist soil is reached and the seed scalp shall be approximately 17” in diameter at a minimum

Slash - Competing vegetation cut during performance of this contract and any other woody debris in the work area.

Special Aquatic Features – wet meadows, seeps, and ponds.

Stand - The measured area to be planted.

Stem Diameter - Thickness of the stem on brush measured one inch above ground level.

Stump Sprout - Growth originating from a hardwood stump.

Suitable Tree - A tree of good form and vigor which shows no physical damage and which conforms to the size, characteristics, and species specified.

Take Tree: Any tree that is to be cut per the specifications.

Target vegetation: All vegetation except crop trees and other excluded vegetation

Tree bole: The trunk or stem of a tree.

Tree Wall - An existing tree stand along the perimeter of a plantable unit.

Triple rinse: Filling the empty container at least 1/10 full of clean water, replacing the container lid, shaking vigorously for at least 15 seconds, and immediately pouring contents from the container into the batch tank, and repeating this for a total of three times.

Uncut Vegetation: A single piece of green vegetation that is above a single root crown.

Unplantable Spot - An area within the specified spacing limits in which it is not possible to plant a seedling according to specifications. Berms and mounds of soil, as well as standing water, are unplantable spots. Unplantable spots will be recognized as areas of mounds of loose soil subject to unusual drying or erosion, abnormal small depressions subject to filling with soil or debris, rock outcrops, permanent roadways, active stream courses, meadow seeps, areas where snow or slash depth is more than 12 inches in depth, and where greater than 75 percent of the soil profile to a depth of 12 inches is composed of rock greater than ½ inch in diameter.

Unsatisfactorily Planted Seedling/tree - A planted seedling, which fails to meet one or more of the specifications for a satisfactorily planted seedling.

Wasted Seedlings - Seedlings which are lost, damaged, destroyed, or handled contrary to the specifications for care of seedlings. Planted seedlings in excess of the maximum number of seedlings creditable as specified elsewhere herein are also considered to be wasted seedlings.

Weed Wrench - a manually operated tool used for pulling shrubs and other vegetation out of the ground with the roots still intact.

Woody Vegetation -Vegetation over one inch in height that has stems and branches that are composed mostly of a hard fibrous substance over one inch in height. Blackberry and raspberry vines are considered as woody vegetation for the purposes of this contract.

Woody Shrubs: also referred to as brush. Species that have woody stems but are not trees examples include manzanitas, bitter cherry, whitethorn, and chinquapin.

#### 4. SPECIFIC WORK REQUIREMENTS

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##### Work Item – Herbicide Re-Release

- Approximately **814** acres of foliar application of herbicide mixture around conifer crop trees, seven-foot radial shielded directed spray around all seedling and sapling-size conifers surviving within the treatment areas. This item will encompass the treatment units that were planted and previously released in 2023.

##### Herbicide Release Requirements

(A) The herbicide mixture for this task order shall consist of the following:

- (1) Glyphosate 5%
- (2) Non-ionic surfactant 1%
- (3) “Colorfast” purple dye 0.25%

Equivalent materials may be substituted upon approval by the Contracting Officer or his/her Representative.

(B) The Contractor shall evenly apply the herbicide mixture to all target vegetation in each stand. The spray-to-wet application shall be uniform. All surfaces of the target vegetation shall be covered, including the interior of dense brush species. See Exhibit C for examples of acceptable and unacceptable application coverage.

(C) Conifer trees, Oak trees, Elderberry in all units shall be protected from herbicide mixture by directed spray application. Additionally, conifer trees including natural regeneration shall be protected during the application of the herbicide mixture using a protective shield or cone (no less than 6” and no greater than 8” in diameter at the base) by placing it over the trees to prevent the mixture from coming into contact with the conifer trees. Protective shields for Work Item #2 should be adequately sized to protect the larger seedlings present in those units. Any and all conifer trees that are contaminated with the herbicide mixture shall be immediately rinsed with fresh water. Individual spray bottles will be allowed for rinsing of contaminated conifers. Other excluded vegetation species shall also be protected by directed spray application. If an object placed near planted conifers for the purpose of providing shade/protection are moved for the application of herbicide, the object will be replaced immediately after application.

(D) In the event that planted trees are not present, natural stocking that meets crop tree specification will be released at the planted spacing.

(E) The Contractor shall keep equipment in good operating condition maintaining flow rate and nozzle pressure. Application of herbicide mixture will be made with a nozzle pressure of 15 psi. The spray tip shall be kept 12 to 24 inches from target vegetation during application.

(F) Application of herbicide mixture must be discontinued if the following critical weather parameters exist:

- (1) Precipitation or a 50% or greater chance of measurable precipitation (greater than 0.1 inch) predicted within 48 hours.
- (2) Wind speed exceeds the herbicide label requirements or 10 mph.
- (3) Temperature cold enough to freeze the herbicide mix in the nozzles.

(G) The Contractor is responsible for washing and cleaning out all equipment at the end of each work day. The exact location for cleanup will be designated by the Contracting Officer or his/her Representative.

(H) The Contractor shall use soft material brushes to clean the nozzles. Wire or other material that could damage or alter the spray nozzle shall not be used.

(I) Under no circumstances shall sprayers, containers, clothing, personal or other contaminated materials be washed in any stream, lake or other water source.

(J) Each stand shall be completed prior to moving on to the next stand. The contractor shall flag a line delineating the sprayed portion of any partially completed stand at the end of each day using a bright colored flagging.

(K) The Contractor shall keep his/her crew organized so that units are covered systematically without skipped areas. The Contractor shall not scatter his/her crew over different parts of the stands.

(L) The Contractor is responsible for training his/her employees in the proper techniques to be used during application of herbicides and the safety procedures to be followed when handling herbicides.

#### Batching of Herbicide Mix

(A) Contractor shall do all batching of herbicide mixture and conform to label instructions and safety requirements.

(B) A graduated container of at least one-half gallon in size shall be used to measure chemicals and surfactants during the batching operation.

(C) All batching of the herbicide mix will be done in the presence of the Contracting Officer or his/her Representative at the work site. The batching location will be designated by the Contracting Officer or his/her Representative.

Batching sequence is as follows:

- (1) One half of the water for the mixture shall be put in the batch tank.
- (2) The herbicide and colorants shall be put in the batch tank next.
- (3) Begin agitating.
- (4) Add the remaining water in the batch tank while continuing to agitate.
- (5) The last ingredient to be added to the tank will be the surfactant.

(D) The herbicide mixture shall be under constant agitation in the batch tank to prevent separation. All herbicide mixture shall be sprayed out. The herbicide mixture shall not sit overnight in the batch tank or other equipment unless permitted by the Contracting Officer or his/her Representative.

(E) When drafting water into the clean water tank, the batch tank and any containers of herbicide concentrate will remain at the approved batching location. The Contractor shall use only water sources approved by the Contracting Officer or his/her Representative. Approved water sources are shown on contract unit maps. Drafting requirements: Contractors shall use the Forest Service approved suction strainer (FSM 5161) or other foot valves with screens having openings less than 2mm in size secured at the end of drafting hoses. The suction strainer shall be inserted close to the substrate in the deepest water available; the suction strainer shall be placed on a shovel, over plastic sheeting, or in a bucket to avoid uptake of substrate or aquatic biota. "Mucked out" debris, bedload sediment, etc. shall be transported to an appropriate disposal site (to be designated) if no apparent site is feasible.

#### Storing and Transporting Herbicides

(A) All unattended herbicide concentrate shall be stored in a lockable storage area in its original container.

(B) The Contractor shall work with the Contracting Officer or his/her Representative to insure a minimal amount of herbicide mixture is moved between units.

#### Disposal of Containers

The Contractor shall dispose of the empty containers in the following manner:

(A) All containers shall be triple rinsed, with clean water, on the work site. The rinse water shall be disposed of by placing it in the batch tank.

(B) Used containers, except those that are returnable, shall be punctured on the top and bottom to render them unusable.

(C) A log of the containers and how they were rinsed and where they were disposed of shall be made available to the Contracting Officer.

(D) Certification of disposal at an approved dump or receipt from a point of redemption on returnable containers is required.

#### Herbicide Spills

If a spill occurs, the Contractor shall:

(A) Act immediately to contain the spill.

(B) Notify the Contracting Officer's Representative on site.

(C) Be under the control of the Contracting Officer or his Representative during the spill cleanup.

(D) Be liable for all costs of damages, clean-up, and decontamination.

Contractor shall be responsible for compliance with the Herbicide Transportation, Handling, and Emergency Response Spill Plan (**see Attachment F**), including, but not limited to, providing spill kits for each contractor vehicle during herbicide application, providing contractor personnel with personal protective equipment (PPE), and responding appropriately in the case of an herbicide spill.

### Licensing and Safety Requirements

(A) The Contractor shall have a current State of California Department of Pesticide Regulation Qualified Applicator License including the Category “E” (Forest), and Pest Control Business License, prior to the award of contract. The Contractor shall register this License with the appropriate County Agriculture Commissioner(s) prior to beginning work. The Contractor shall be required to provide the following:

- (1) Required permits.
- (2) Complete and file all reports, with a copy to the Contracting Officer.
- (3) Complete any other incidental requirements.

(B) The Contractor shall comply with the State of California Safety Orders found under the California Administrative Code and with the requirements of the Federal Worker Protection Standards (40 CFR, part 170). For further information regarding licensing requirements contact California Department of Pesticide Regulation, Licensing and Certification Program, (916) 445-4038 or [licenseemail@cdpr.ca.gov](mailto:licenseemail@cdpr.ca.gov).

(C) The Contractor’s authorized representative(s) on site must, at a minimum, be State of California Certified Pesticide Applicator.

### Calibration and Equipment Check

(A) Prior to and during work the Contracting Officer or his/her Representative reserves the right to inspect, test, and approve equipment. For example, the Contracting Officer or his/her Representative will check for cracked hoses, worn seals, and leaks.

(B) Prior to and during work the Contracting Officer or his/her Representative reserves the right to test and inspect the herbicide concentrate and mix.

(C) Prior to and during work the Contractor shall be required to calibrate his/her equipment in the presence of the Contracting Officer or his/her Representative.

### Contractor-Furnished Critical Items

The Contractor shall provide all labor, housing, supervision, transportation, tools, and material (except District-furnished Property) necessary to perform the requirements of the contract. Specifically, but not necessarily inclusive, the Contractor shall furnish:

- (A) Glyphosate Herbicide (Roundup Custom, Rodeo or equivalent). Herbicide mixture specifications assume use of a concentrate with 53.8% glyphosate active ingredient.
- (B) Hasten (or equivalent) non-ionic surfactant
- (C) “Colorfast” purple dye (or equivalent)

All herbicides and adjuvants shall be provided in the original factory sealed containers no larger than 2.5 gallons each. Equivalent herbicides, adjuvants, and dye may be substituted if approved by the Contracting Officer. Contractor shall provide clean water for the wash down of all equipment including backpack sprayers.

### Equipment - Herbicide Application



- (1) Backpack sprayers- shall have an adjustable pressure regulator or a pressure gauge mounted on the spray wand. All sprayers shall be equipped with a “TeeJet” XR80-04VS spray tip or equivalent, with a 50 mesh screen. Plastic, brass, or aluminum spray tip nozzles shall not be used.
- (2) Batch tank- shall be a mixing tank equipped with a constant agitator, a sight level in good condition to measure tank volume, and a leveling gauge which will be adequate for leveling a tank in all directions. The filler hose from the batch tank shall be equipped with a self-closing nozzle. The batch tank shall be in good condition, meeting all State requirements. The batch tank shall be mounted such that it can be moved and operated separately from the clean water tank; for example, mounted on a separate vehicle from the clean water tank, or mounted on a trailer. All valves capable of emptying herbicide from the batch tank must be lockable.
- (3) Clean water tank- shall be a tank exclusively for clean water, having a back flow prevention device or the proper air gap filling apparatus. The water tank and all drafting equipment must be free of pesticides and dye residue. Pesticides and dyes shall not be stored or transported in the same vehicle used to transport the clean water tank.
- (4) Tree protection shields/cones sufficiently tall enough to completely cover and or completely shield trees from contamination of herbicide mixture spray drift. Shields and or cones shall not be less than 6” diameter and no greater than 8” diameter at the opening.
- (5) Locked storage area for herbicide and containers
- (6) Spill Kit- Shall contain a minimum of 25 pounds of absorbent material such as kitty litter, two 30 gallon 4-mil polyethylene garbage bags with ties, and two shovels.
- (7) Trailer hitches used to tow equipment and trailers shall be securely mounted directly to the vehicle frame. Bumper hitches shall not be used unless specifically designed and rated for towing heavy loads.
- (8) Contractor shall provide all other supplies and incidentals necessary to accomplish the required contract work while complying with herbicide label directions, pesticide application license requirements, and worker safety protection standards.

## **5. INSPECTION AND ACCEPTANCE**

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### **5.1 Inspection Procedures**

Criteria: At least one percent of each treatment area will be sampled by a random series of plots distributed over the entire area. Plot size will be 1/50 acre (16.7 feet radius).

The District will conduct informal compliance inspections in addition to formal inspection by plot sampling to determine compliance with the contract and Quality Standard. The formal inspections will be a systematic random sampling across the treated area, and will measure both quantity (spacing for planting; and releasing all seedlings, at 5-foot radius) and the quality of work (above and below ground for planting; coverage for release). All plots sampled will represent the final result in meeting the Quality Standard or Acceptable Quality Level (AQL). Units may be sampled in entirety or partially, as work progresses, for final acceptance of the unit. Therefore, the inspection process may inspect only part of a unit, but once that part has been inspected and meets the Quality Standard the area inspected will be deemed to be acceptable. However, full acceptance and payment of a unit is reserved until the entire unit is completed, the final inspection of treated area is complete, and all inspections for the unit have passed. Inspection results will be averaged per unit and payment calculated on a per unit basis.

Application Quantities: A target of 20 gallons/ acre to be applied across the project area is expected with an AQL minimum of 15 gallons/ acre averaged for all units. Contractor will be required to rework units if the daily application total is less than 15 gallons/ acre.

Evaluation: Work on this contract will be deemed acceptable when the District's final inspection meets the Quality Standard or AQL without dispute by the Contractor, or when the Contractor accepts the District's final inspection at a lesser AQL as specified below.

Quality Standard: Work with a quality of 90% or greater, as determined by District inspections, will be accepted at full payment, less any deductions for wasted trees.

Acceptable Quality Level: Units that have a District inspection quality of 80-90% may be reworked at the Contractor's expense. If inspection results are below 90 percent, a deduction will be made equal to 2 percent for every 1 percent below 90. For example, if inspection results are 87 percent, the bid price would be reduced by 6 percent.

Minimum Quality Level: Quality below 80% on any unit within an item is not acceptable, and may not be paid for, or shall require rework at the Contractor's expense.

Remeasurement: The contractor may request remeasurement of any quality or quantities, when the units are acres or any linear measurement. The request must be made in writing and must be made within 10 calendar days of completing work on the unit in question. If remeasurement indicates a variance of five percent or less from the stated quality or quantity, the Contractor shall pay for the actual cost of remeasurement and no adjustment will be made in the quality or quantity. If remeasurement indicates a variance more than five percent from the stated quantity, payment will be based on the remeasured quality or quantity, and the Contractor will not be liable for the costs of remeasurement. All remeasurements will be done by the District. Remeasurement of acreage will be done with two people using a hand compass and ground measurement or by means of a Global Positioning System. This clause is not applicable to quantities listed as estimated quantities.

## **5.2 Final inspection**

Work on individual units may be accepted following the final inspection by the CO or his Representative. Work with a quality of equal to or greater than the AQL will be accepted at full payment, less deductions for other items as identified in the contract.

## **5.3 Quality Control Inspector**

This contract requires a full time Quality Control Inspector/Safety Officer for each crew. It is the duty of the Quality Control Inspector to closely monitor the planting quality of his crew and notify the foreman and planters of any issues regarding planting quality, so that deficient trends may be remedied before becoming a detriment to the overall unit quality. The Quality Control Inspector shall keep written records of his crew's planting quality and provide the record to the COR as each planting unit is completed.

## **6. ESTIMATED CONTRACT START AND TIMING OF WORK**

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This contract is anticipated to commence June 2025, depending on weather and snowpack. The duration of work under this contract is estimated as such (approximating 16 person crew):

- 22 days of chemical release in site prepped units (814 acres)

## **7. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK**

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The Contractor shall be required to (a) commence work under this contract within three (3) calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than July 1, 2025.

Pre-work conference - Before work begins on service contracts, a pre-work conference is held to discuss the contract--especially the specifications, labor provisions, plan of work, and selected standard clauses. The pre-work meeting should be attended by an officer of the firm or someone designated in writing to act on behalf of the firm. The pre-work meeting may be waived at the discretion of the Contracting Officer.

The length of workday shall not exceed 10 hours per day and no later than 5:00 p.m. with no work on Sundays or holidays unless agreed upon by the Contracting Officer.

## **8. DISTRICT FURNISHED PROPERTY**

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The District will deliver to the Contractor the following listed materials, supplies, property, and/or services (hereinafter referred to as "District-furnished property"). The Contractor shall be liable for all loss or damage of such District-furnished property until completion and final acceptance of all work required under the contract. The Contractor shall sign a Transfer of District property receipt upon acceptance of District-furnished property.

## **9. SAFETY**

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In addition to the inherently hazardous conditions associated with working in the woods, e.g.: sharing the road with log trucks, private and District vehicles; ticks, snakes, and bees; the planting blocks burned by wildfire contain standing dead trees that are susceptible to wind throw which could lead to serious injury or loss of life. A Job Hazard Analysis (JHA) and the Plumas National Forest Safety Plan for Post-fire Reforestation and Release Projects is included as District Furnished Property. District employees will not be allowed to work in the field when the Contracting Officer (or her designated representative) has determined that hazardous conditions make fieldwork an unacceptable risk. (See the Plumas NF Safety Plan for Post-fire Reforestation and Release Projects for details.) The Contractor shall provide a full time Project Safety Officer and non-planting Crew Safety Officer who shall be responsible for enforcing the Contractor's safety plan. If there is only one crew working on the project, the Project Safety Officer and Crew Safety Officer requirement may be served by one individual. The Project Safety Officer is responsible to get input from the Crew Safety Officers and the District's Inspectors and to consult with the Contracting Officer's Representative on any and all issues related to safety. The Project Safety Officer shall remove the Contractor personnel from the field when conditions are unsafe.

## **10. GENERAL CONDITIONS**

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### **A. Worker's Compensation Clause**

Contractor agrees to comply with provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in

accordance with the provisions of that Code, before commencing the performance of the work under this Contract. Contractor will make its subcontractors aware of this provision and determine that they have complied with it before commencing work on the project. Volunteer laborers are exempt from the worker's compensation provision of the California Labor Code.

**B. National Labor Relations Board Clause**

In accordance with Public Contract Code Section 10296, Contractor declares under penalty of perjury that no more than one final, unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two-year period because of Contractor's failure to comply with an order of a federal court which orders Contractor to comply with an order of the National Labor Relations Board.

**C. Nondiscrimination Clause**

During the performance of this Contract, Contractor, its contractors, and subcontractors shall not deny the Contract's benefit to any person on the basis of religion, color, ethnic group identification, sex, age, physical or mental disability, nor shall they discriminate unlawfully against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, mental disability, medical condition, marital status, age (over 40), or sex. Contractor shall insure that the evaluation and treatment of employees and applicants for employment are free of such discrimination. Contractor, its contractor, and subcontractor shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 12900 et seq.) and the regulations promulgated thereunder (California Administrative Code, Title 2 Sections 7285.0 et seq.), the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Government Code Section 11135-11139.5), and the regulations or standards adopted by the awarding State agency to implement such article.

Contractor, its contractors, and subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

Contractor shall include the nondiscrimination and compliance provision of this clause in all subcontracts to perform work under the Contract.

Contractor, its contractors, and subcontractors shall permit access by representatives of the Department of Fair Employment and Housing and the awarding State agency, upon reasonable notice, at any time during the normal business hours, but in no case less than 24-hours' notice, to such of its books, records, accounts, other sources of information, and its facilities as said Department or Agency shall require to ascertain compliance with this clause. The Contractor's signature on this contract shall constitute a certification under the penalty of perjury under the laws of the State of California that the Contractor has, unless exempted, complied with the nondiscrimination program requirements of Government Code Section 12990 and Title 2, California Code of Regulations Section 8103.

**D. Hold Harmless**

Contractor agrees to mutually save harmless the District, their agents or employees and to hold the same free and harmless from any and all claims, demands, damages, losses, costs, expenses or liability due or incident to, either in whole or in part, and whether directly or indirectly, related to the project resulting from any and all contractors, subcontractors, materialmen, laborers and any other person, firm or corporation furnishing or supplying work, services, materials or supplies in connection with the performance of this contract, and from any and all claims and losses accruing or resulting to any person,

firm or corporation who may be injured or damaged by the District in the performance of this contract, except all claims due to willful negligence or fraud.

E. Compliance With Laws, Regulations, Permit Requirements

Contractor shall at all times comply with, and require its contractors and subcontractors to comply with, all applicable federal and State laws, rules and regulations, permit and all applicable local ordinances, specifically including but not limited to environmental, procurement and safety laws, rules, regulations, permits and ordinances.

F. Successors and Assigns

This Contract and all of its provisions shall apply to and bind the successors and assigns of the parties hereto. No assignment or transfer of this Contract or any part hereof, rights hereunder or interest herein by the Contractor shall be valid unless and until it is approved by the Landowners and made subject to such reasonable terms and conditions as the Landowners may impose.

G. Audit Requirement

Pursuant to Government Code Section 10532, the contracting parties shall be subject to the examination and audit of the State and the State Auditor General for a period of three years after final payment under this Contract with respect to all matters connected with the performance of this Contract, including but not limited to the cost of administering this Contract. All records of the Contractor shall be preserved for this purpose for at least three years after completion of the project.

H. Remedies Not Exclusive

The use by either party of any remedy specified herein for the enforcement of this Contract is not exclusive and shall not deprive the party using such remedy of, or limit the application of, any other remedy provided by law.

I. Amendments

This Contract may be amended at any time by mutual agreement of the parties, except insofar as any proposed amendments are in any way contrary to applicable law. Requests for amendments must be in writing stating the amendment request and the reason for the request. Amendment agreements will be in writing, signed by the authorized representative of each party, and become an Exhibit of the contract.

J. Waiver of Rights

It is the intention of the parties hereto that from time to time either party may waive any of its rights under this Contract unless contrary to law. Any waiver by either party hereto of rights arising in connection with this Contract shall not be deemed to be a waiver with respect to any other rights or matters.

K. Warranty/Standard of Professionalism

Contractor warrants to the District that the work under this Contract shall be performed with the degree of skill and care that is required by current, good, and sound professional procedures and practices and in conformance with generally accepted professional standards prevailing at the time the work is performed so as to ensure that the services performed are correct and appropriate for the purposes contemplated in this Contract and related specifications.

L. Delivery and Retention of Records

To the extent that the District does not otherwise specifically request delivery of records or results, Contractor agrees to retain all records and results of work performed under this Contract for a period of not less than two years from the date the final invoice is accepted by the District. At the District's request, Contractor will deliver a copy of any or all original notes, investigative notes, tests, photographs, records, calculations, summaries, reports, and records produced and collected in the course of the work performed under this Contract.

M. Cancellation

The District may cancel this Contract, in part or in whole, for the Districts convenience upon 30 days written notice. In the event of cancellation, the District will pay Contractor for services satisfactorily performed prior to the effective date of cancellation. Any reports, drawings, or other documents prepared for the District prior to the effective date of such cancellation shall be delivered to the District by Contractor. The Contractor may cancel this Contract for any reason upon 30 days written notice. Contractor shall not enter into any agreements, commitments, or subcontracts which would incur significant cancellation costs without prior written approval of the District. Such written approval is a condition precedent to the payment of any cancellation charges by the District.

N. Availability of Information

The District's duly authorized representatives shall have, during the term of the contract and for three (3) years thereafter, access at all reasonable times to all of Contractor's and its subcontractors' personnel, accounts and records of all description, including but not limited to digital and hard-copy files, pertaining to the Contract to verify or review the quantity, quality, work program and progress of the work, reimbursable costs, amounts claimed by Contractor, estimates of cost for fixed rates including those applicable to proposed changes, and for any other reasonable purposes.

This provision shall apply to all contracts except those performed solely on a lump-sum basis. However, where lump-sum and time and materials work (unit price, reimbursable cost, fixed rates, etc.) are performed together, either as a part of this Contract or as separate contracts, then the above audit privilege shall also extend to the District access to all Contractor's records pertaining to all contracts including the lump-sum for assurance that the portions of the work performed on a time and materials basis are not being charged with time, material or other units or cost which are intended to be covered by lump-sum or fixed rates, etc. provided herein, supplement hereto or in such other agreements.

Contractor's and its subcontractors' accounts shall be kept in accordance with generally accepted accounting principles in the particular industry and shall be kept in such a manner and in sufficient detail to clearly disclose the nature and amounts of the different items of service and cost pertaining to the Contract and the basis for charges or allocations to the Contract.

Contractor agrees to maintain records for possible audit for a minimum of three (3) years after final payment, unless a longer period of records retention is stipulated. Contractor agrees to allow auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. Per requirements of the state grant funding for this project, Contractor agrees to allow the District, or their designated representative, the right to review and to copy any records and supporting documentation pertaining to the performance of this contract. Further, Contractor shall allow the State to audit records and interview staff related to performance of this Agreement. (Gov. Code §8546.7, Pub. Contract Code, CCR Title 2, Section 1896).

O. Compliance with Tax Reform Act of 1986

Contractor represents and warrants that it will withhold all taxes, if any, which are required to be withheld under applicable law with respect to payments to persons hired by Contractor who perform services for the District. Contractor shall indemnify and hold the District harmless, on an after-tax basis, for any liability incurred by the District as a result of Contractor's failure to institute any such required withholding.

P. Choice of Laws

This Contract shall be construed and interpreted in accordance with the laws of the State of California excluding any choice of law rules which may direct the application of the laws of another jurisdiction.

Q. Nonwaiver

The waiver by either party of any breach of any term, covenant, or condition contained in this Contract or any default in the performance of any obligations under this Contract shall not be deemed to be a waiver of any other breach or default of the same or any other term, covenant, condition, or obligation. Nor shall any waiver of any incident of breach or default constitute a continuing waiver of same.

R. Enforceability

In the event that any of the provisions or the application of any of the provisions of this Contract are held to be illegal or invalid by a court of competent jurisdiction, District and Contractor shall negotiate an equitable adjustment in the provisions of this Contract with a view toward effectuating the purpose of this Contract. The illegality or invalidity of any of the provisions or the application of any of the provisions of this Contract shall not affect the legality or enforceability of the remaining provisions of the Contract.

S. Incidental and Consequential Damages

The District shall not be liable for incidental or consequential damages including, but not limited to, loss of profits, commitments to subcontractors, rental or lease agreement(s), and personal services contracts unless expressly authorized in writing by the District.

T. Prior Work

Services performed by Contractor pursuant to the District's authorization, but before the execution of this Contract, shall be considered as having been performed subject to the provisions of this Contract.

U. Force Majeure

Neither the District nor Contractor shall be considered in default in the performance of its obligations under this Contract, except obligations to make payments hereunder, for work previously performed to the extent that the performance of any such obligation is prevented or delayed by any cause, existing or future, which is beyond the reasonable control of the affected party. In the event either party claims that performance of its obligations was prevented or delayed by any such cause, that party shall promptly notify the other parties of that fact and of the circumstances preventing or delaying performance. Such party so claiming a cause-delayed performance shall endeavor, to the extent reasonable, to remove the obstacles which preclude performance.

V. Integration

This Contract contains the entire agreement and understanding between the parties as to the subject matter of the Contract. It merges and supersedes all prior or contemporaneous agreements, commitments, representations, writings, and discussions between District and Contractor, whether oral or written, and has been induced by no representations, statements, or agreements other than those expressed herein. Neither party shall be bound by any prior or contemporaneous obligations, conditions, warranties, or representations with respect to the subject matter of this Contract.

## 11. PAYMENT

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A. Invoices

Contractor shall submit an invoice to the District for compensation and reimbursable expenses incurred. Invoices will be submitted no more frequently than every 30 days, and no less frequently than every 90 days. Each invoice shall be broken down by contract/work items, and included for each item shall be the following information:

- Work item descriptions
- Number of units (i.e. acres) completed per work item this period
- Cost per completed unit by work item this period
- Total cost to each work item this period
- Total invoice amount this period
- Total cost incurred to date

Final invoice shall be marked Final.

B. Invoice Submittal

The Contractor shall send invoices for each payment when due to:

Feather River Resource Conservation District  
P.O. Box 3562  
Quincy, CA 95971

C. Payment

As full consideration for performance of the Scope of Work, the District will pay Contractor on a unit per work item basis, in accordance with scope of work and deliverables outlined in this contract. This contract amount shall be inclusive of all taxes incurred. The District will pay the contractor for fully acceptable work at the prices bid in the bid template, less deductions for other items as identified in the contract.

D. Terms of Payment

Payment will be by itemized invoice. All payments will be made to Contractor, subject to District approval, within 90 days. The District shall make checks payable to the (contractor business name) and mail to:

(contractor business name and address)



## **12. AMENDMENTS**

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### **A. Change in Work**

The District reserves the right to make such changes in scope of work as may be necessary or desirable, and any difference in scope of work and/or contract price resulting from such changes shall be agreed upon in writing by Contractor.

### **B. Additional Work**

Before proceeding with any work involving possible claims for extra compensation not specified in the Contract, Contractor shall submit in writing to the District with a detailed breakdown and estimated cost of anticipated contract work including extensions and change orders as follows:

- Description of work to be performed including detailed breakdown by identifiable work items.
- Estimated cost of each work item by unit.
- Expected date of completion of each work item.

Contractor shall not proceed with any such additional work prior to receiving written authorization of Change Order by the District.

### **C. Authorization**

No modification or change to this Agreement that is beyond the Scope of Work described herein shall be binding or effective unless expressly set forth in writing and signed by the District's Executive Officer. The staff of either party to this Contract are not authorized to make modifications or changes to this Contract that are beyond the Scope of Work agreed upon. The modification or change is not effective until the District provides written approval. Contractor agrees that all costs for any such modification or change that is performed without prior written approval shall be at Contractor's sole risk and expense.

## **13. CONTRACTOR INSURANCE REQUIREMENTS**

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Contractor must hold insurance that meet the following Insurance Requirements:

Prior to rendering services, the contractor and his/her subcontractors shall acquire, and maintain during the term of this Agreement, at Contractor's sole expense: (1) Workers' Compensation Insurance conforming to the statutory requirements of the state in which operations under this agreement are performed; (2) comprehensive general and automobile bodily injury liability insurance written on an "occurrence" basis subject to minimum limits of \$1,000,000.00 each person and \$1,000,000.00 each occurrence; and (3) general property damage insurance subject to a minimum of \$1,000,000.00 with not more than a \$10,000.00 deductible each loss; and All liability insurance coverage shall provide that subcontractors working for the contractor are covered under the terms of contractor's policies. All insurance shall meet the approval of the District and all policies evidencing said insurance shall provide for thirty days' prior written notice to the District before cancellation or material change in the policy. A certificate of Insurance showing evidence of insurance coverage as specified herein shall be furnished to the District prior to commencement of Contractor's operations.

## 14. EVALUATION CRITERIA

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Price, Technical Approach, Availability, Past Performance, and Community Benefit will be considered for the “Best Value” evaluation. The order of importance corresponds with each criteria’s preceding order of appearance.

## 15. BIDDING REQUIREMENTS

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**Evaluation Criteria:** Please keep bid proposals to a maximum of 5 pages not including references. Prospective bidders are to include the following within their bid:

1. Bid template for price per acre and per work item (2 items total) of initial herbicide release and herbicide re-release.
2. Business address.
3. Technical approach to each work item including:
  - a. work method (approach to efficient completion of the work, ensuring all areas of work units are planted/treated, crew size, crew organizational structure and leadership, etc.)
  - b. schedule of items (projected pace - expected acres per day completed, and expected number of days from work commencement to completion)
  - c. approach to quality control (planting spot preparation is a full scalp as described in the contract, what type of seedling protection will be utilized to ensure they do not come in contact with herbicide, compliance with tree spacing and planting specifications, etc.)
4. Experience in planting, release, and other related projects with reference contact information.
5. Safety record, training, and plan. The safety plan shall address, among other things, a communications plan, egress of injured workers, a traffic control plan for roads, and protection of the public, District, and Government personnel.

Contractor awarded bid items must certify, in writing, that all employees working on the Moonlight Reforestation Project have been “E-Verified” to legally work in the United States. Please refer to the website <https://www.e-verify.gov/>

**Bid Date:**

The contractor shall provide a bid for the individual bid items **no later than May 30th at 5:00 pm.**

**Bids shall be received:**

at Feather River Resource Conservation District, PO Box 3562, Quincy, CA 96971,

or emailed to [mhall@frrcd.org](mailto:mhall@frrcd.org).

## 16. AWARD OF CONTRACT

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The District will award the contract resulting from this solicitation to that offeror: (1) whose proposal is technically acceptable and (2) whose technical/price relationship is the most advantageous to the District. Award may not necessarily be made for technical capabilities that would appear to exceed those needed for the successful performance of the work. The District reserves the right to make price/technical trade-offs that are in the best interest and to the advantage of the District. The District may reject any or all offers if such action is determined to be in the best interest of the District.

## 17. CONTRACTING OFFICER

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**Name:** Michael Hall  
**Telephone Number:** (530) 927-5299  
**Email:** [mhall@frrcd.org](mailto:mhall@frrcd.org)

## 18. LIST OF ATTACHMENTS

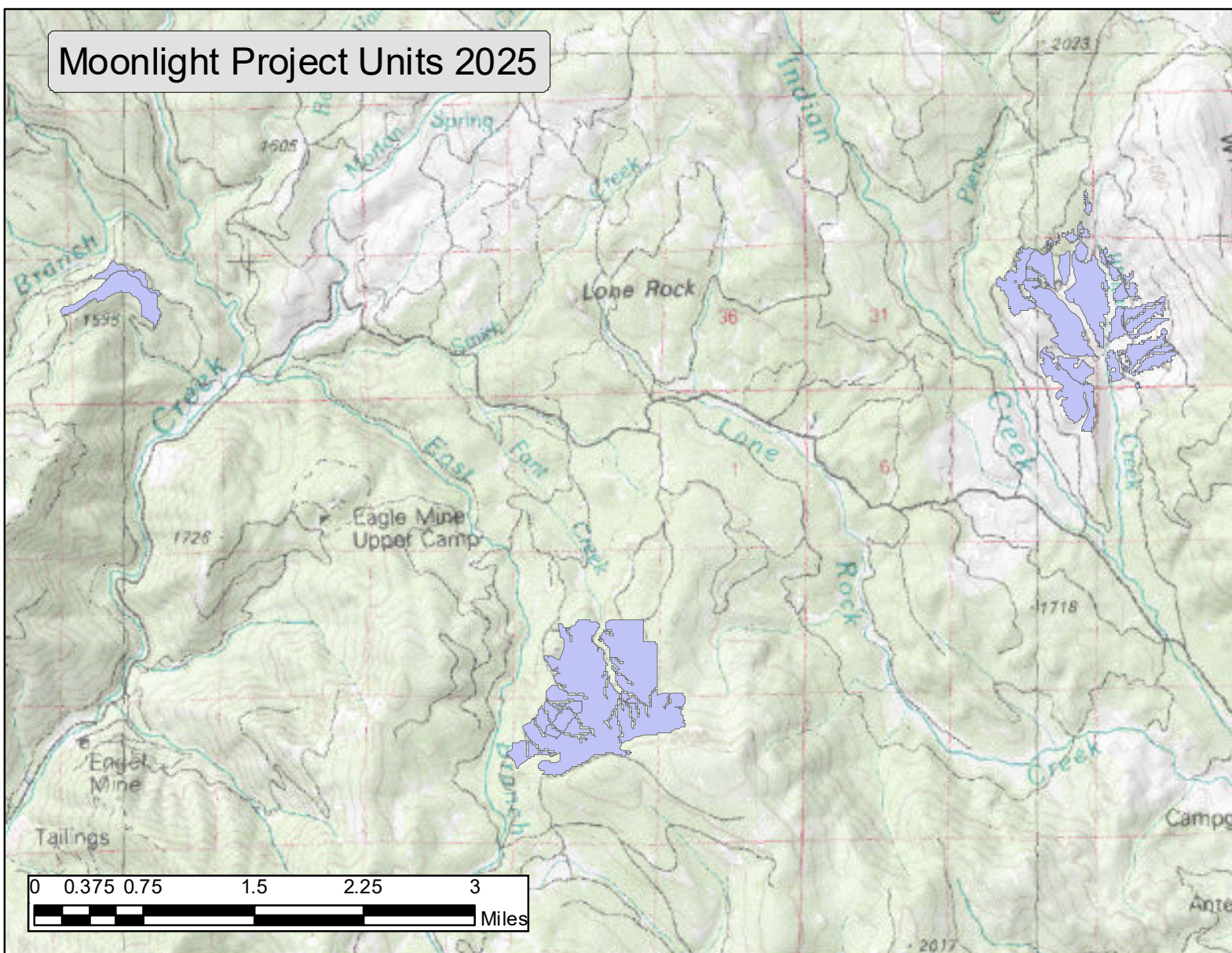
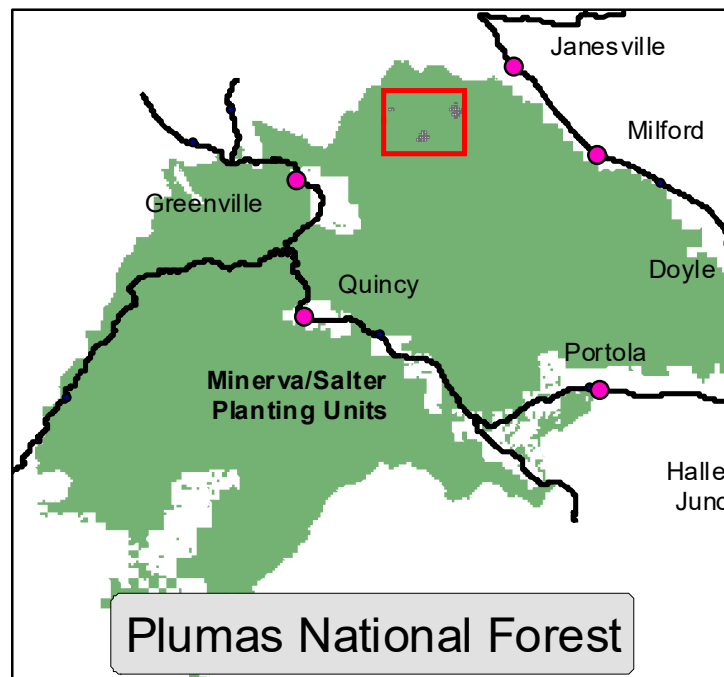
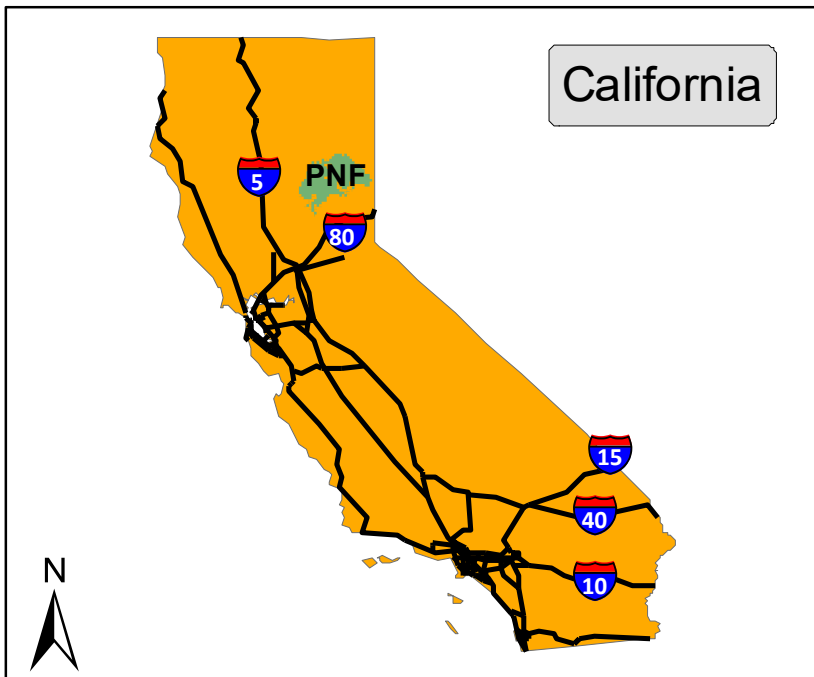
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The following attachments are made a part of this solicitation and any resultant contract.

TITLE	DESCRIPTION
<b>A) Maps</b>	Vicinity Map, Work Area Maps
<b>B) Application Coverage</b>	Acceptable Herbicide Coverage
<b>C) Detailed Unit Information</b>	Unit Information and Acreage
<b>D) Mitigation Measures</b>	Environmental Compliance Requirements
<b>E) Herbicide Safety and Spill Plan</b>	Herbicide Safety and Spill Plan

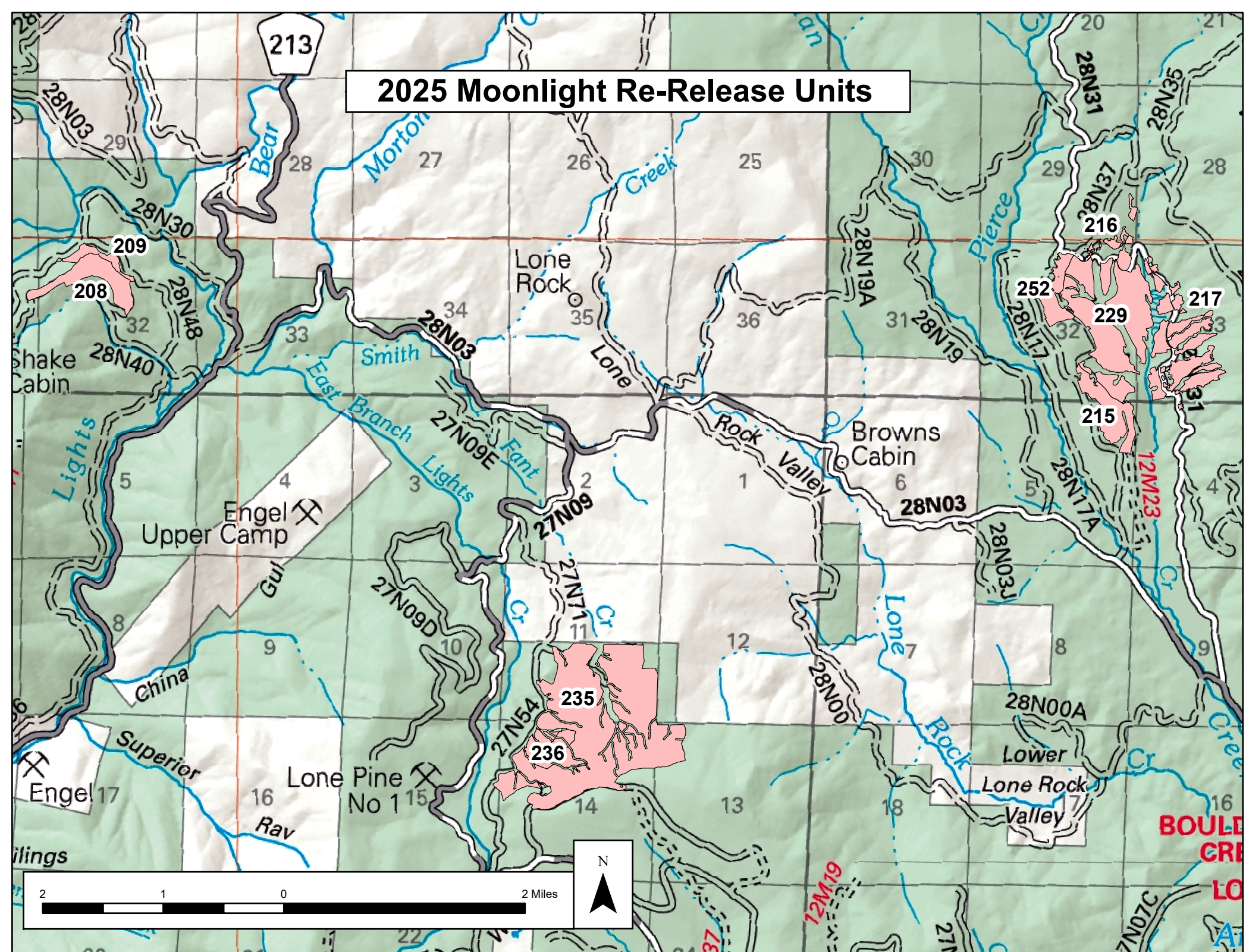
# Attachment A - Maps

## Moonlight Herbicide Re-Release 2025-Vicinity Map



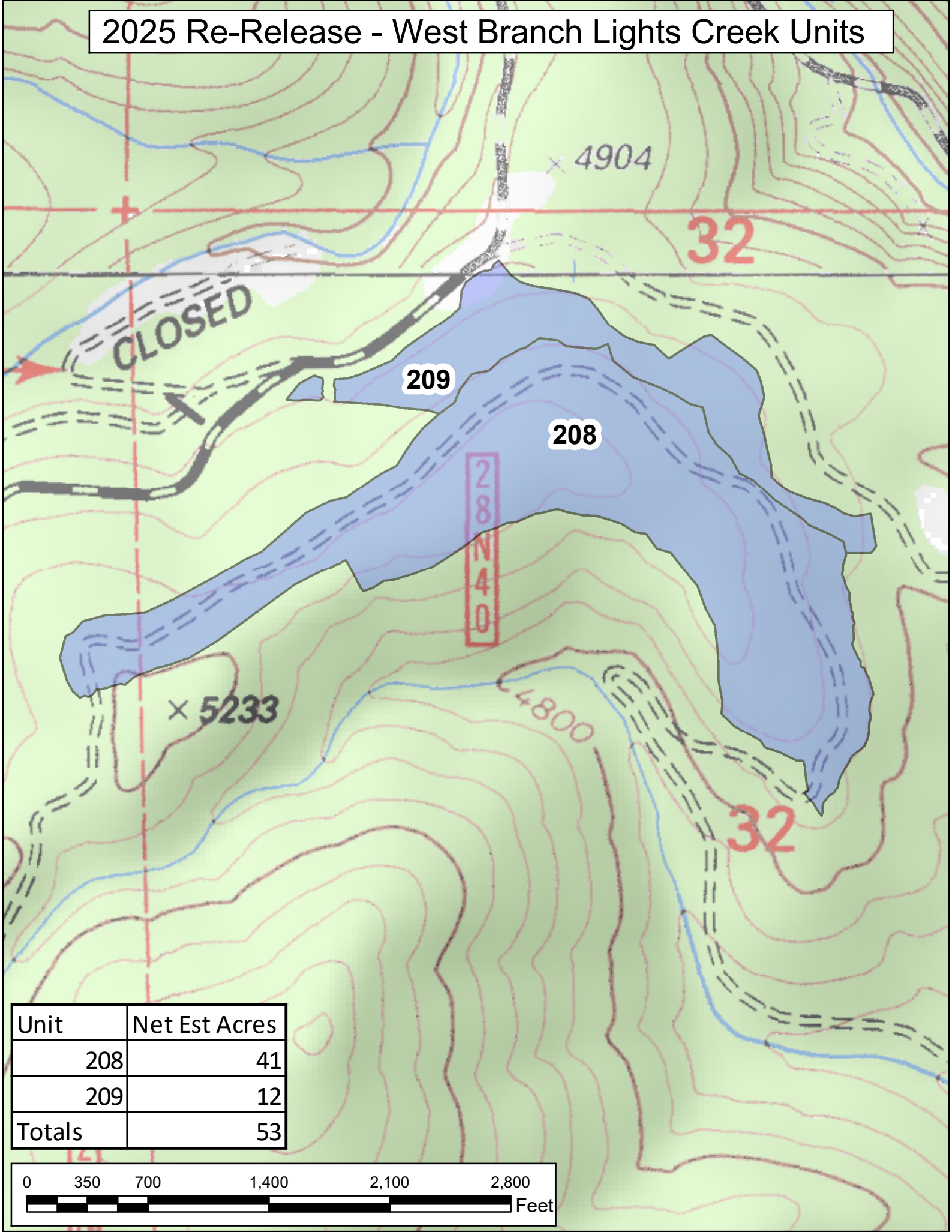


### 2025 Moonlight Re-Release Units

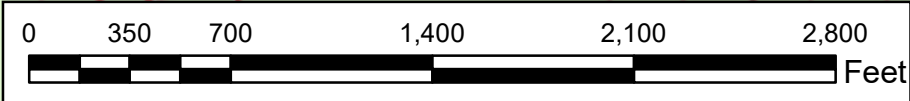




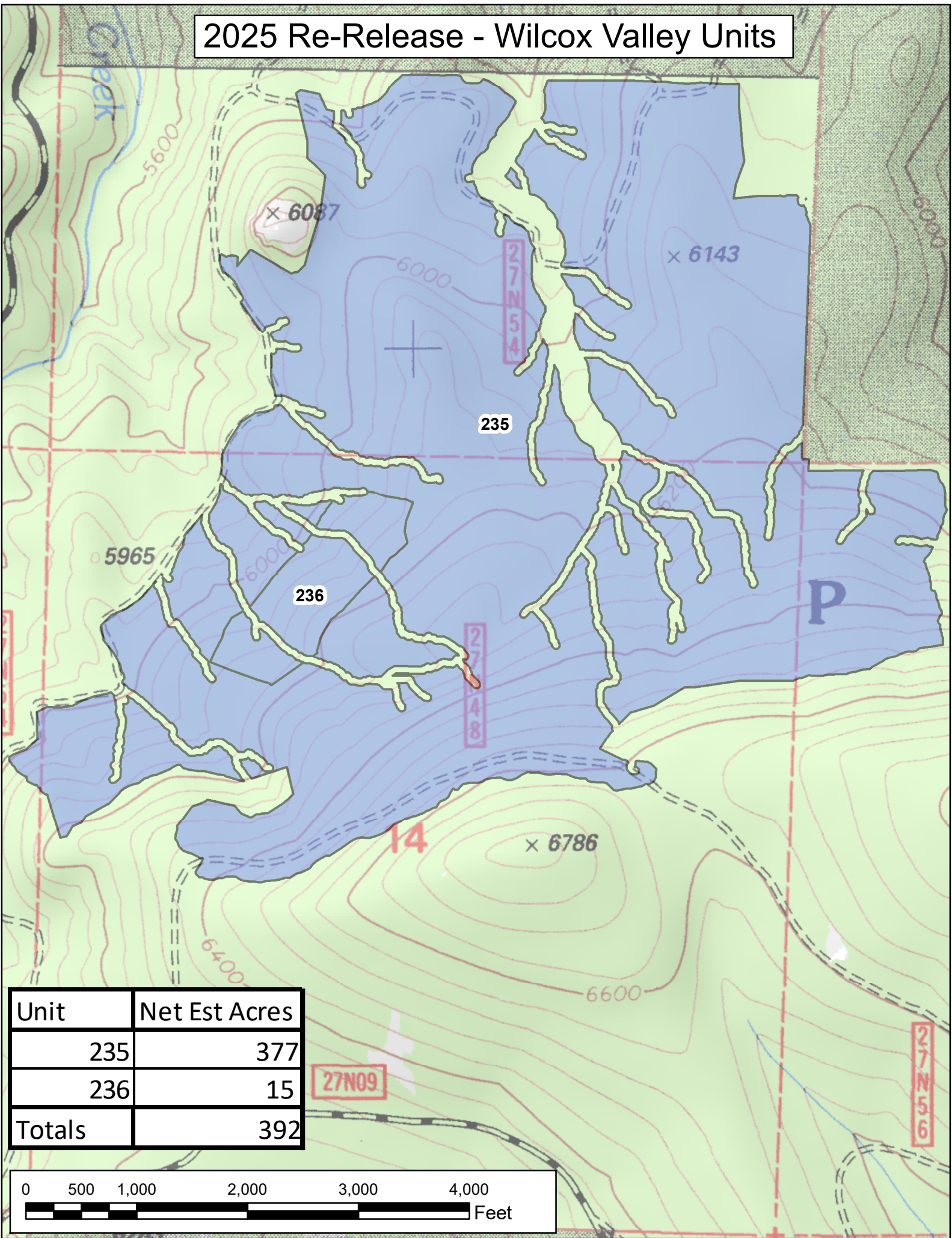
2025 Re-Release - West Branch Lights Creek Units



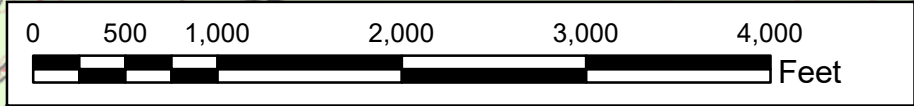
Unit	Net Est Acres
208	41
209	12
Totals	53



# 2025 Re-Release - Wilcox Valley Units

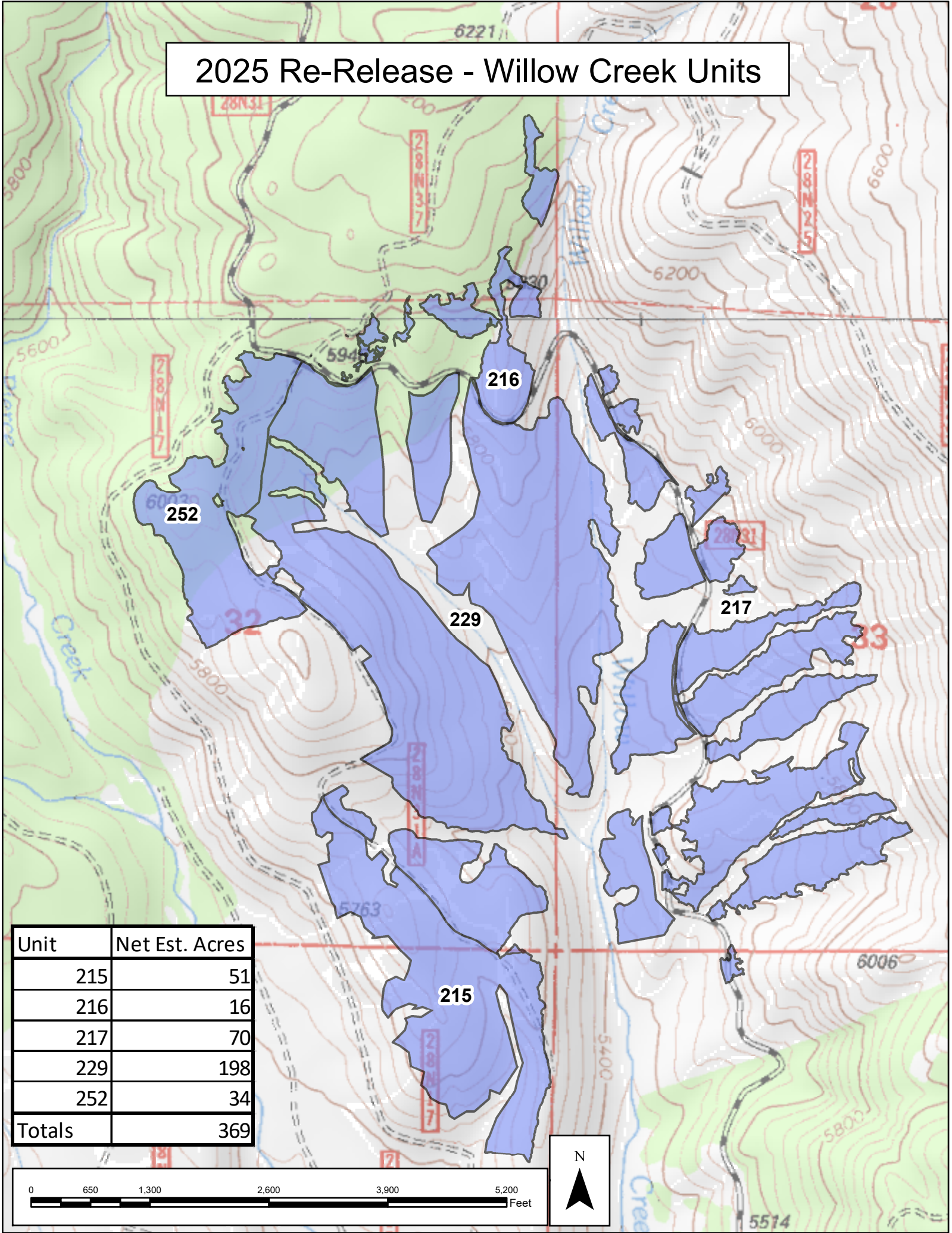


Unit	Net Est Acres
235	377
236	15
Totals	392

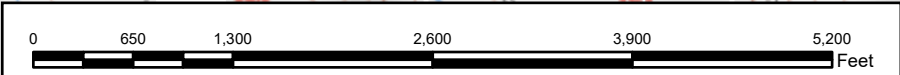




# 2025 Re-Release - Willow Creek Units



Unit	Net Est. Acres
215	51
216	16
217	70
229	198
252	34
Totals	369



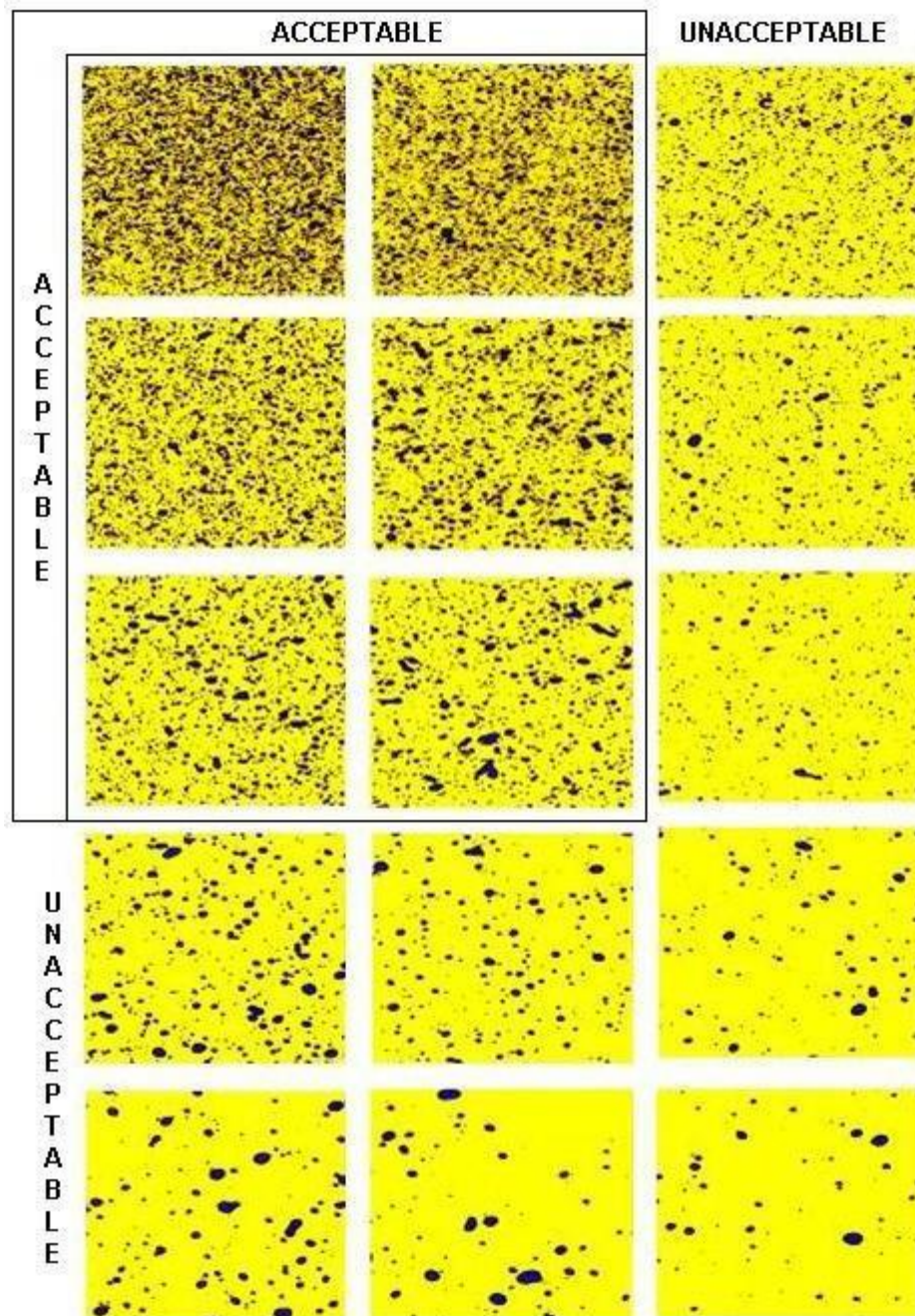


# ATTACHMENT B

## HERBICIDE APPLICATION COVERAGE

Moonlight Reforestation 2025

Chemical Release



# ATTACHMENT C

## Re-Release Detailed Unit Information Moonlight Reforestation 2025

Unit	Total Unit QTY	Work Year	Description	UOM	Estimated Work QTY
Unit 208	49.0	2025	Herbicide Re-Release	Acres	41
Unit 209	14.0	2025	Herbicide Re-Release	Acres	12
Unit 215	81.0	2025	Herbicide Re-Release	Acres	51
Unit 216	47.0	2025	Herbicide Re-Release	Acres	16
Unit 217	164.0	2025	Herbicide Re-Release	Acres	70
Unit 235	410.0	2025	Herbicide Re-Release	Acres	377
Unit 236	17.0	2025	Herbicide Re-Release	Acres	15
Unit 229	256.0	2025	Herbicide Re-Release	Acres	198
Unit 252	46.0	2025	Herbicide Re-Release	Acres	34
	<b>1084.0</b>		<b>Total</b>	<b>Acres</b>	<b>814</b>

## Moonlight Fire Area Restoration Project

**Mitigation Monitoring and Reporting Program (MMRP)****Summary of Standard Management Requirements and Project-specific Mitigation Measures**

In order to protect project area resources and comply with federal, state, and local laws, the following standard management requirements apply to the proposed action. These Standard Management Requirement are utilized by the Mt. Hough Ranger District on all projects, as well as project specific mitigation measures, in order to reduce undesirable environmental effects, of the proposed activities and comply with the Plumas Land and Resources Management Plan, Forest Service policies, and other state, federal, and local laws.

**Aesthetics**

Standard management requirements for aesthetics will be monitored by Forest staff and should be applied within the immediate foreground of visual corridor (300 feet from the viewer) (FHS2382.1). These include:

- **Landings and skid trail locations:** To the extent feasible, locate landings and primary skid trails away from the immediate foreground of Sensitivity Level I and II travel corridors. Limit size of landings so that they are not visually evident from the sensitive travel routes following completion of treatment activities.
- **Stump heights:** Minimize stump heights in both mechanical and hand thinning units adjacent to sensitive travel corridors, typically resulting in stumps 6 inches or less in height within 300 feet of the travel corridor.
- **Tree marking:** During tree marking, open and enhance views of residual old growth trees near the visual corridor where possible.
- **Burn piles and underburning:** Target consumption of burn piles to 90 percent or greater. Target underburn mortality levels of crop trees to 10 percent or less.

**Agricultural Resources**

Vegetation management activities would be conducted consistent with the relevant standards and guidelines from the Sierra Nevada Forest Plan Amendment pages 49 through 66 (USDA Forest Service 2004b). All standards and guidelines would be followed, those that specifically relate to the vegetation resource for Moonlight proposed actions are shown in table 1. All applicable standards and guidelines would be followed as they apply to each resource area and be monitored by Forest staff.

**Table 1. Proposed action and applicable standard and guide numbers**

<b>Proposed Action</b>	<b>Standard and Guide Numbers</b>
Reforestation and release	3, 4, 5, 6, 11, 12, 20, 22, 23
Precommercial thinning	3, 4, 5, 6, 11, 12, 18, 20, 22, 23, 26
Mechanical thinning	5, 6, 7, 8, 11, 12, 18, 19, 20, 22, 23, 26
Aspen restoration	6, 20, 22, 23, 105
Hazardous fuels reduction	4, 5, 6, 8, 11, 12, 18, 19, 20, 22, 23
Wildlife habitat improvement	11, 20, 22, 26, 27, 29, 74, 75, 76, 78, 79, 80, 81, 82, 83

## Moonlight Fire Area Restoration Project

Additional, standard management requirements for silviculture and forest health include:

- **Root disease prevention measures:** Conifer stumps 14 inches and greater in stump diameter would be treated with a registered borate compound within four to 24 hours after the tree is felled, to prevent the introduction and spread of Heterobasidion root disease. Within recreation areas or other high value areas such as near structures or powerlines, apply borate compound within four hours to all pine and true fir cut stumps greater than 3 inches in diameter. Application of borax would follow all label directions, as well as all applicable federal, State and local laws.
- **Residual species preference:** Where present, retain all hardwood and riparian species. Retain the largest, most vigorous dominant and co-dominant trees to create a residual stand that would be comprised of larger fire-resilient trees. Species preference would be determined by dominant forest type. In general, prefer to retain shade intolerant species including rust resistant sugar pine, black oak, ponderosa and Jeffery pine, and to an extent, Douglas-fir.
- **Biomass treatment for fuels:** If no viable biomass market exists, it is preferred that material be left within the stand in small machine piles (grapple piling treatment) or hand constructed piles. This mitigation measure is intended to leave smaller amounts of fuels distributed across the landscape so that follow up disposal (burning) is easier.
- **Tree Mortality:** No more than 10 to 20 percent variable amounts of mortality may occur in the residual crop trees following underburning within areas of mortality no greater than 2 acres. Minimize mortality in visual corridors.

**Table 2. Project-specific mitigation measures for vegetation management activities**

Number	Activity/ Action	Mitigation Measure
Veg- 1	Thinning	Eastside Pine: Thin trees to retain 30 percent of the existing basal area, generally comprised of the largest trees ((USDA Forest Service 2004b, pages 51). Dry Mixed Conifer: In mechanical thinning treatments retain 40 percent of the existing basal area, generally comprised of the largest trees. (USDA Forest Service 2004b, pages 50).
Veg- 2	Thinning	Retain all live conifers 30 inches diameter at breast height or larger; exceptions may be allowed to meet needs for operability on a specific case basis (SNFPA ROD 2004, page 50).
Veg-3	Thinning	Preferably retain shade intolerant species where present, red fir over white fir, and vigorous disease- and insect-free individuals over declining individuals. Individuals showing signs of heavy root disease infection, dwarf mistletoe, or insect attack will usually be targeted for removal.
Veg- 4	Thinning	Incorporate topography and aspect when determining leave trees. Generally, stands on ridge tops or higher in slope position would have fewer retained trees as compared to stand in lower slope position and/or drainage bottoms. In addition, stands with a more southerly aspect would have lower residual basal area as compared to stands with a more northerly aspect.
Veg- 5	Thinning	Increase horizontal and vertical heterogeneity by retaining patches of large trees among the thinning matrix, with occasional openings to allow for small gap regeneration and recruitment. Patches will have higher densities and canopy covers than surrounding areas, while openings will have lower densities and more open canopies. Patches may range from a few to several larger individuals. Openings will resemble small scale disturbances such as individual large tree mortality and disease centers where a few individuals die, and where possible will be targeted in areas where shade intolerant species are present.

## Moonlight Fire Area Restoration Project

Number	Activity/ Action	Mitigation measure
Veg- 6	Thinning	A heterogeneous landscape comprised of different seral stages and tree species in various ranges of density and canopy cover would be resilient to disturbance. Desired stand structure would vary according to topographic location, such as aspect, slope position, and site quality, creating high levels of horizontal and vertical diversity at the stand and landscape-scale. North facing slopes, true fir and dry mixed conifer stands would contain more shade tolerant species and higher canopy cover. Desired forest attributes include uneven-aged, multi-storied stands dominated by legacy structures composed of large, fire-adapted trees.
Veg-7	Thinning	Post treatment stand densities would generally be low, characteristic of active-fire ecosystems, especially on south-facing slopes and near ridge tops. Pine type stands would be primarily shade intolerant species with open canopy. Desired forest attributes include uneven-aged, multi-storied stands dominated by legacy structures composed of large, fire-adapted trees. Pine type stands would have open pockets of sparse canopy cover that promote the establishment and growth of fire-adapted and shade-intolerant species including ponderosa and Jeffrey pine, sugar pine, and aspen which would contribute to landscape heterogeneity and native plant species diversity. Young pine regeneration in the understory is desirable to increase structural diversity and create uneven-aged conditions. Tree densities and canopy cover would generally have been lower than in Sierran mixed conifer forests due to the lower precipitation levels and poorer site productivity, but would still have varied according to aspect.
Veg-8	Thinning	In mechanical thinning treatments maintain canopy cover consistent with the Sierra Nevada Forest Plan Amendment standards and guidelines, as presented on pages 50 and 51 of the Record of Decision (USDA Forest Service 2004b).
Veg-9	Thinning (eastside pine only)	Stand densities would generally be low, characteristic of active-fire ecosystems, especially on south-facing slopes and near ridge tops. Pine type stands would be primarily shade intolerant species with open canopy. Desired forest attributes include uneven-aged, multi-storied stands dominated by legacy structures composed of large, fire-adapted trees. Pine type stands would have open pockets of sparse canopy cover that promote the establishment and growth of fire-adapted and shade-intolerant species including ponderosa and Jeffrey pine, sugar pine, and aspen which would contribute to landscape heterogeneity and native plant species diversity. Young pine regeneration in the understory is desirable to increase structural diversity and create uneven-aged conditions. Tree densities and canopy cover would generally have been lower than in Sierran mixed conifer forests due to the lower precipitation levels and poorer site productivity, but would still have varied according to aspect.
Veg-10	Aspen Restoration	Prescriptively remove conifers through a combination of mechanized equipment and chainsaw, up to 30.0 inches dbh (29.9 inches dbh or less). Conifers will be retained in areas that have experienced high and moderate severity fire effects on a prescriptive basis.
Veg-11	Aspen Restoration	Prescriptively remove conifers around aspen stands to allow for maximum sunlight. Treat up to 150 feet within the aspen stand on the south, east and west facing aspects and up to 75 feet on the north facing aspects. No canopy cover or spacing guidelines would restrict removal of conifers. Temporary fencing may be placed to protect new shoots from browsing if needed.
Veg-12	Aspen Restoration	Fire will be applied prescriptively, as required to treat ground fuels; if conditions do not allow for prescribed fire to be conducted safely, fuels may be piled for burning.
Veg-13	Ground-based harvesting and yarding	Mechanical harvesting would be used to remove commercial sawlog and biomass trees. Tops and limbs would be yarded to the landing and removed as a product, if viable markets exist. If viable markets do not exist, biomass may be piled by machine in a landing or within the stand and burned on site.



**Table 3. Project-specific mitigation measures for fire and fuels**

Number	Activity/ Action	Mitigation Measure
Fuels-1	All	Maintain adequate cover of surface fuels, litter, duff, and large woody debris to maintain habitat values, reduce potential erosion and meet soil standards for woody debris and ground cover.
Fuels-2	All	Retain surface fuels (less than 12 inches diameter) at a level that would result in projected flame lengths of less than 4 feet under 90th percentile weather conditions. This generally corresponds to approximately 5 tons or less per acre in this size class of surface fuels per acre depending on the forest type.
Fuels-3	All	Retain large woody debris (greater than 12 inches diameter) in various decay classes to an approximate residual fuel loading of 10- to 15 tons per acre in this size class.
Fuels-4	All	Where needed, jackpot burn, or machine pile and burn extensive areas of deadfall, where feasible, in terms of equipment operability and reduced chance of excessive scorch-related mortality upon burning of these piles.
Fuels-5	All	Based on post treatment evaluations, underburn, jackpot burn, machine pile and burn, and/or hand thin, pile, and burn to treat natural and activity-generated fuels.

## Air Quality

Comply with air quality permits issued by the Northern Sierra Air Quality Management District for all prescribed burning. A prescribed burn plan, including a mandatory smoke management plan (SMP), would be required prior to any prescribed fire. The smoke management plan is reviewed and approved by the local Air Quality Management District office.

## Biological Resources

### Terrestrial and Aquatic Wildlife Resources

Standard management requirements are applied for protecting wildlife and wildlife habitat, including:

- **Wildlife Limited Operating Periods:** To protect key wildlife species, unless determined to be unnecessary following pre-implementation surveys, limited operating periods (LOPs) listed in the 2004 SNFPA ROD (pages 54-62) and the Biological Evaluation/Biological Assessment would apply.
- **New wildlife findings:** Where subsequent surveys identify occupied threatened, endangered, or sensitive species habitat, establish protected activity centers, den site buffers, or other protections as described in the SNFPA EIS. Include protections for any additional sensitive species identified in the BE/BA. In the event of a verified threatened, endangered or sensitive species occurrence after project award, the appropriate limited operating periods would apply. Other mitigations may take place as agreed upon by the sale administrator and district wildlife biologist.
- **Down wood:** Within westside vegetation types, generally retain an average of 10-15 tons (over 15 inch diameter) of large down wood per acre over the treatment unit. Within eastside vegetation types, an average of 3 large down logs would generally be retained per acre. In areas considered deficient in large woody debris, wherever possible leave cull logs at the stump rather than being skidded to the landing. The sale administrator and the district wildlife biologist would agree upon the location and amount (Table 2, USDA Forest Service SNFPA 2004 ROD).
- **Snags:** Snag retention levels would be determined on an individual, project basis; however, they would consider the guidelines set forth in the standards and guides (USDA Forest Service 2004a, b). The guidelines state that projects would retain 4 of the largest snags per acre in westside mixed conifer and ponderosa pine types; 6 of the largest snags per acre in the red fir forest type; 3 of the

largest snags per acre in the eastside and eastside pine types; and 4 of the largest snags in westside hardwood ecosystems. Wherever possible, use snags larger than 15 inches dbh and 20 feet in height to meet these guidelines (Table 2, USDA Forest Service SNFPA 2004 ROD).

- **Structure trees:** Retain and protect high value wildlife habitat trees (trees with multiple tops, broken tops, rot, cavities, and other formations) that create structure for nests and dens.
- **Prescribed fireline construction (machine):** In general, prescribed fireline construction utilizing a piece of equipment would be conducted in accordance with district resource specialists. There would be no mechanical fireline construction in hand thin protected activity center units unless approved by the wildlife biologist.
- **Sierra Nevada yellow-legged frog:** All applicable programmatic conservation measures from the Programmatic Biological Opinion (USDA Forest Service 2015, pgs. 15-17), and Program-Specific Conservation Measures (USDA Forest Service 2015, pgs. 17-29) will be applied to the proposed action and incorporated into the general best management practices and project mitigation measures. Three activities described in the programmatic biological opinion apply to the proposed project: (1) vegetation management, timber harvest, fuels management, and watershed restoration; (2) maintenance of roads and trails; and (3) biological resource management. In addition to general water quality best management practices (table 75) and project-specific mitigation measures in the following section, the proposed project would meet all relevant standards and guidelines, and best management practices, associated with the general and program-specific measures of the biological opinion (USDA Forest Service 2015 pp. 15-29, appendix A, appendix B, and Table 10).

**Table 4. Project-specific mitigation measures for wildlife**

Number	Activity	Mitigation measure
Wild-1	All	All food-related garbage will be placed in tightly sealed containers at the end of each workday to avoid attracting predators. Containers will be emptied and garbage removed from the project site at the end of each work week. If sealed containers are not available, garbage will be removed from the project site upon completion of daily activities. Additionally, any garbage present in the right-of-way will be removed after annual treatment of the site is complete. All garbage removed from the project site will be disposed of at an appropriate off-site refuse location.

The limited operating periods in Table 5 would be applied, based on the requirements listed in the Sierra Nevada Forest Plan Amendment.

**Table 5. Limited operating periods for wildlife species of concern**

Species	Location	Limited Operating Period	Reference Pages
Bald Eagle	Within designated territories (1/2 mile around nest) Winter roosts	November 1 - August 31 November 1 - March 1	2 - 8*
California Spotted Owl	Within 1/4 mile of nests or within protected activity center boundary	March 1 - August 15	2 - 8* Modified by October 2006 RO Letter
Great Gray Owl	Within 1/2 mile of nesting sites	March 1 - August 31	2 - 8*
Goshawk	Within 1/4 mile of nests or within protected activity center boundary	February 15 - September 15	A - 60**
Marten	100 acre den site buffer	May 1 - July 31	A - 62**
Pacific Fisher	700 acre den site buffer	March 1 - June 30	A - 61**

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Species	Location	Limited Operating Period	Reference Pages
Pallid Bat and Townsend's Big-eared Bat	W/in 1/4 mile of maternity and other roosts	May 1 – August 15	Professional Judgment
Sierra Nevada Yellow-Legged Frog	Variable depending on activity (see project-specific mitigation measures above)	November 1 <sup>st</sup> to April 15 <sup>th</sup>	Biological Opinion

\*Herger-Feinstein Quincy Library Group Forest Recovery Act – Final Environmental Impact Statement (HFQLGFRA-FEIS) (1999), Page 2-8, Table 2.3.

\*\*Sierra Nevada Forest Plan Amendment – Final Supplemental Environmental Impact Statement (SNFPA FSEIS) – Record of Decision (ROD) (2004), page A-54, A-58, A-60, A-61 and A-62.

### Aquatic Wildlife Resources

The following mitigation measures would be applied to reduce effects to water quality, riparian habitats, and aquatic species. In particular, conservation measures from the programmatic biological opinion for the Sierra Nevada yellow-legged frog are being incorporated. Terms and conditions from other recent projects were also used to develop the following mitigation measures.

All applicable programmatic conservation measures (Programmatic Biological Opinion (USDA Forest Service 2015) pgs. 15-17, and program specific conservation measures (USDA Forest Service 2015) pgs. 17-29) will be applied to the proposed action and incorporated into the general best management practices and project mitigation measures. Three activities described in the programmatic biological opinion apply to the proposed project: (1) vegetation management, timber harvest, fuels management, and watershed restoration; (2) maintenance of roads and trails; and (3) biological resource management. These are incorporated by reference.

Mitigation measures may vary by suitable, occupied, critical habitats. Where there are not more restrictive measures of occupied and critical habitat, the measures for suitable habitat should be used.

- **Suitable habitat** on the Plumas National Forest occurs above 3,500 feet in elevation. In project practical terms, suitable habitat includes most water bodies: lakes, ponds, tarns, intermittent and perennial streams, rivers, plunge pools within intermittent creeks, seeps, springs, pools (such as a body of impounded water contained above a natural dam), and other forms of aquatic habitat. Adjacent terrestrial habitat generally extends 82 feet from the water, though larger areas are incorporated when water bodies are located within 984 feet (300 meters) of each other (such as a complex of lakes/ponds/springs). Ephemeral channels are not considered suitable habitat. The complete definition of suitable habitat for the Sierra Nevada yellow-legged frog is defined in the following Federal Register document : *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Sierra Nevada Yellow-Legged Frog, the Northern DPS of the Mountain Yellow-Legged Frog, and the Yosemite Toad; Final Rule* (U.S. Fish and Wildlife Service 2016).
- **Occupied habitat** includes portions of the following drainages: Antelope Lake, Lone Rock Creek, Indian Creek, and Boulder Creek.
- Critical habitat includes areas designated by the U.S. Fish and Wildlife Service as (U.S. Fish and Wildlife Service 2016); these areas are located in the vicinity Antelope Lake and tributaries to the north and west. Water bodies within critical habitat will be considered occupied due to the relatively high mobility of the Sierra Nevada yellow-legged frog.

See table 6 for general mitigation measures related to protection of riparian habitats and Sierra Nevada yellow-legged frog habitats. See table 7 for activity buffers for water bodies within suitable habitat, and



within occupied or critical habitat.

**Table 6. General mitigation measures to protect water quality, riparian habitats, and aquatic features**

Number	Activity	Mitigation Measure
Aqu-1	All	Tightly woven fiber netting or similar material shall be not used for erosion control or other purposes within Sierra Nevada yellow-legged frog <b>suitable habitat</b> to ensure that individuals do not get trapped, injured or killed. Plastic mono-filament netting or similar material will not be used at any of these projects because individuals of these listed species may become entangled or trapped in it.
Aqu-2	All	To protect water quality and meet Sierra Nevada Forest Plan Amendment riparian management objectives, roadside ditches will be treated the same as the water body type they resemble.
Aqu-3	Chainsaw thinning	Chainsaw thinning would be restricted during the wet season, between November 1 <sup>st</sup> to April 15th, or the first wetting rain (72 hours with no drying period), whichever comes first. A district biologist may amend the dates based on local site conditions.
Aqu-4	Revegetation	To protect water quality and riparian habitat for aquatic organisms, within 50 feet of perennial or seasonal streams, if treatment reduces groundcover to less than 75 percent for a contiguous area of greater than 0.25 acre, then mulching and/or revegetation may be required to minimize erosion and reestablish native vegetation. Only native plant species will be used in revegetation. All mulch and seed material will be certified weed-free.
Aqu-5	Herbicide Application	Herbicide applications will treat the minimum area necessary to meet site objectives.
Aqu-6	Herbicide application	To minimize the risk of pesticide drift onto water or non-target areas, in order to minimize impacts to water quality, special status plants and wildlife, non-target vegetation, and other biological resources (e.g. pollinators, aquatic organisms), implement the following spray application drift control measures: 1) Only ground based equipment will be used 2) All applications will cease when weather conditions exceed those on the label 4) Applications will cease when wind speed exceeds 10 mph 5) Spray nozzles will produce a relatively large droplet size (500-800 microns) 6) Low nozzle pressures will be used 7) Spray nozzles will be kept within 24 inches of target vegetation during spraying 8) A pressure gauge or pressure regulator will be required on each backpack sprayer
Aqu-7	Herbicide application	Herbicide will not be applied during the wet season (November 1 - April 15) to minimize herbicide transport in the environment.

Number	Activity	Mitigation measure
Aqu-8	Herbicide application	No herbicide will be applied if there is a more than 50 percent chance of more than 0.1 inches of precipitation predicted within the next 48 hours. 0.1 inch is based on following "measurable" precipitation prediction data provided by National Weather Service.
Aqu-9	Herbicide application	To minimize risk of surface and groundwater contamination in order to protect water quality and aquatic organisms, implement the following on soils above 3,500 feet in elevation: application of Glyphosate and Triclopyr (including equipment rinsing) will not occur on deep, coarse textured, saturated soils. For elevations above 4,000 feet, district hydrologist or soil scientist will be consulted about the proper timing of herbicide application in the spring prior to treatments.
Aqu-10	Herbicide application	To protect water quality and insure protection of beneficial uses, all wells, ponds, and springs used for domestic water supplies will be protected with a 200-foot buffer for herbicide treatment and mixing. At annual implementation review meeting, water rights will be checked with the state and potential affected parties would be contacted.
Aqu-11	Herbicide application	To protect water quality and insure protection of beneficial uses, perennial streams used for domestic water supply will be protected with a 200-foot buffer around the diversion intake. Directed spray can occur within this buffer if (a) use near a domestic water source is directed on the product label; AND (b) water quality is monitored.
Aqu-12	Herbicide Application	When not within Sierra Nevada yellow-legged frog suitable habitat, the following herbicide application buffers will apply for backpack sprayers: <ul style="list-style-type: none"> <li>• Glyphosate: 25 feet for perennial streams or Special Aquatic Features with live water; 10 feet for seasonal wetlands or intermittent/ephemeral streams when dry.</li> <li>• Triclopyr: 100 feet for perennial streams or Special Aquatic Features with live water; 50 feet for seasonal wetlands or intermittent/ephemeral streams when dry.</li> </ul>

**Table 7. Activity buffers around water bodies<sup>1</sup> within suitable habitat, and within occupied or critical habitat**

Activity	Suitable, Unoccupied Habitat	Occupied or Critical Habitat
All	Within the un-surveyed areas of <b>suitable habitat</b> , Sierra Nevada yellow-legged frog habitat occupancy will be assessed annually by the Forest Service within proposed treatments areas. Occupancy will be determined through surveys by the Forest Service or qualified biologists. The qualified biologist will have documented training in the biology and field identification of frogs in addition to demonstrable experience surveying for and positively identifying Sierra Nevada yellow- legged frogs. The survey will cover all suitable habitat areas and should any life stages of the species be found (i.e. the site is occupied), work activities for that area will occur during the limited operating period suggested by the Forest Service conservation measures.	Prior to initiating tree thinning, prescribed burns, herbicide applications, and other project activities that could put at risk Sierra Nevada yellow-legged frogs, surveys of each site will be conducted by a Forest Service biologist. If during the surveys, any life stages of the Sierra Nevada yellow-legged frog are found, the project activities will stop, the Forest Service will create a 750 feet buffer upstream and downstream from the frog detection point, and 75 feet (action-type dependent) wide minimum on both sides of the stream would not be treated.

Activity	Suitable, Unoccupied Habitat	Occupied or Critical Habitat
All	Instream work (e.g., road crossings, culverts) will not be performed during winter months (November 1 - April 15). During the remainder of the year (April 16th through October 31st) activities within the stream would be restricted with a limited operating period. During this time, areas 100 feet upstream and downstream of the work will be reviewed by project manager immediately prior to implementation. If no water is present the limited operating period would be lifted. If surface water is present within 200 feet of the activity, stream surveys will be conducted by a qualified biologist. If the surveys find no frogs, eggs or tadpoles, the limited operating period would be lifted for site specific projects. The window for lifting the limited operation period for site specific project work typically ranges from 1 to 4 days. After 4 days the limited operation periods will go into full effect again. In the event a Sierra Nevada yellow-legged frog is detected in the vicinity of in-stream work, the frog would be relocated to a safe place during waterhole development to prevent mortality after approval from U.S. Fish and Wildlife Service.	
All	-	Within 500 feet of known occupied sites for the Sierra Nevada yellow-legged frog, precautions will be issued to and care will be taken by workers to avoid crushing or trampling amphibians.
Limited operation period for all activities	Within 100 feet of suitable habitat, no project activities between November 1 <sup>st</sup> and April 15th, or the first wetting rain (72 hours with no drying period), whichever comes first. A district biologist may amend the dates based on local site conditions.	Within 100 feet of suitable habitat, and 750 feet upstream and downstream, no project activities between November 1 <sup>st</sup> and April 15th, or the first wetting rain (72 hours with no drying period), whichever comes first. A district biologist may amend the dates based on local site conditions.
Heavy Equipment including harvest equipment, road building equipment, mastication equipment, etc.	Will not be utilized within 100 feet of streams that have suitable habitat for Sierra Nevada yellow-legged frog, except for project activities on existing roads and stream crossings.	Will not be utilized within 100 feet of streams, and 750 feet upstream and downstream that are occupied by Sierra Nevada yellow-legged frog. For road and stream crossing activities within this zone, prior approval from U.S. Fish and Wildlife Service would be required.
Prescribed fire and pile burning	Piles to be burned will be built outside of the 100 foot Sierra Nevada yellow-legged frog riparian buffer to protect these animals.	No prescribed fire or pile burning will be done within 100 feet of occupied streams, and 750 feet upstream and downstream.
Thinning and burning	Within 100 feet of aquatic habitat, all conifers up to 12 inches dbh would be cut with chainsaws. Conifers between 12 inches and 30 inches dbh may be felled or girdled, depending on site conditions. Trees felled will have the boles retained on site and the limbs and tops removed and piled for later burning.	In the event a Sierra Nevada yellow-legged frog is detected in the vicinity of chainsaw thinning units, the treatment would be delayed for the season, or until the frog moved out of the treatment unit.

Activity	Suitable, Unoccupied Habitat	Occupied or Critical Habitat
Pile burning within the riparian conservation area	Piles to be burned will be built outside of the 100 foot Sierra Nevada yellow-legged frog riparian buffer to protect these animals. Pile burning will be in directional light, which means that the fire must start at one point only and let fire burn through to allow any wildlife species within the pile to escape. Piles for wildlife retention inside of the 100 foot riparian buffer will be built with wildlife pile prescriptions and will not be burned to provide for Sierra Nevada yellow-legged frog shelter habitat.	No pile burning will be done within 100 feet of occupied streams, and 750 feet upstream and downstream.
Tree and brush removal	To prevent loss or damage to suitable habitat, all tree and brush removals within the 100-foot buffer zone will be done by hand or with the use of chainsaws.	No activity within 75 feet of occupied aquatic habitat and 750 feet upstream and downstream.
Aspen management conifer removal	Trees may be removed with mechanical entry from 33 to 100 feet of the stream during the summer season (April 16 - Oct 31) when frogs are restricted to within 33 feet of streams. No mechanical entry will take place within 33 feet of live streams.	In the event a Sierra Nevada yellow-legged frog is detected in the vicinity of aspen treatment units, the upland and riparian treatment unit within 100 feet of the stream and 0.25 miles upstream and downstream of the sighting would be dropped permanently from treatment.
Herbicide application	Herbicide and other chemical treatments would not occur within 107 feet of the stream within (25 feet from upland habitat edge) suitable Sierra Nevada yellow-legged frog habitat.	Herbicide application would be restricted within 500 feet of occupied streams. Direct spray may be allowed between 107 feet and 500 feet from occupied sites where site specific treatment is analyzed and determined to have no or negligible risk.  In the event a Sierra Nevada yellow-legged frog is detected in the vicinity of herbicide treatment units, the treatment would be delayed for the season, or until the frog moved out of the treatment unit.
Herbicide mixing	Herbicide mixing will not occur within 150 feet of surface waters, except at existing facilities	No mixing will occur within 500 feet of sites occupied by Sierra Nevada yellow-legged frog.
Fueling of gas-powered equipment with gas tanks larger than 5 gallons	Will not occur within 150 feet of surface waters, except at existing facilities.	No fueling of gas powered equipment will occur within 500 feet of sites occupied by Sierra Nevada yellow-legged frog.
Fueling of gas-powered equipment less than 5 gallons	Will not occur within 25 feet of surface waters, except at existing facilities.	No fueling of gas powered equipment will occur within 500 feet of sites occupied by Sierra Nevada yellow-legged frog.

1- Water bodies are lakes, ponds, tarns, streams, rivers, creeks, plunge pools within intermittent creeks, seeps, springs, pools (such as a body of impounded water contained above a natural dam), and other forms of aquatic habitat

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## Botanical Resources

Protect known threatened, endangered, sensitive, special interest, and watch list plant species according to Plumas National Forest current interim management prescriptions for specific species. If additional protected plant species are found during the life of the project, conduct an assessment and apply appropriate management prescriptions.

## Noxious Weeds

Standard management requirements for preventing and controlling the spread of noxious weeds include:

- **Prevent spread of invasive species with equipment:** Use contract clauses to require that the activities of contractors are conducted to prevent and control the introduction, establishment, and spread of aquatic and terrestrial invasive species. For example, where determined to be appropriate, use agreement clauses to require contractors to meet Forest Service-approved vehicle and equipment cleaning requirements/standards prior to using the vehicle or equipment in the National Forest System.
- **Cleaning equipment:** Require all off-road equipment and vehicles (Forest Service and contracted) used for project implementation to be free of weeds. Clean all equipment and vehicles of all mud, dirt, and plant parts. This will be done at a vehicle washing station or steam-cleaning facility before the equipment and vehicles enter the project area.
- **Staging areas:** Do not stage equipment, materials, or crews in areas infested with invasive plant species where there is a risk of spread to areas of low infestation.
- **Known/existing infestations:** Known infestations would be designated as control areas where equipment and soil disturbing project activities would be excluded. These areas would be designated on project maps and delineated in the field with day-glow orange noxious weed flagging. The currently known noxious weeds in the project area are: barbed goatgrass (*Aegilops triuncialis*), yellow starthistle (*Centaurea solstitialis*), spotted knapweed (*Centaurea stoebe*), Canada thistle (*Cirsium arvense*), Scotch broom (*Cytisus scoparius*), common St. Johnswort (*Hypericum perforatum*), Dyer's woad (*Isatis tinctoria*), butter and eggs (*Linaria vulgaris*), and medusahead (*Taeniatherum caput-medusae*). Most weed species are limited in extent, except for Canada thistle, which has increased dramatically throughout the area after the Moonlight Fire. Known infestations would be prioritized for prevention and control measures based on species abundance (less common weeds would receive higher priority), risk of spread from activities, and other site-specific factors. If avoidance would unreasonably constrain our ability to implement the proposed restoration activities, equipment and vehicles would be cleaned prior to leaving the infested area. Additional weed control and monitoring mitigations would be developed to ensure project activities do not spread invasive plants.
- **Road construction, reconstruction, and maintenance:** All earth-moving equipment, gravel, fill, or other materials need to be weed free. Onsite sand, gravel, rock, or organic matter would be used where possible.
- **Revegetation:** If skid trails, landings, or stream crossings require soil stabilization, weed-free equipment, mulches, and seed sources would be used. On-site material would be chipped to use as mulch to the extent possible. If mulch is imported to the site use weed free rice straw (preferred) or certified weed free straw. Avoid seeding in areas where revegetation will occur naturally, unless invasive plant species are a concern. Save topsoil from disturbance and put it back to use in onsite revegetation, unless contaminated with invasive plants. All activities that require seeding or planting would need to use locally collected native seed sources or those

identified by the Botanist. A seed mix would be developed when specific site locations and conditions (dry, moist, wet, etc.) are determined.

**Table 8. Project-specific mitigation measures for sensitive and native plant communities**

Number	Activity	Mitigation measure
Bot-1	All	Unit-specific plant protection plans will be prepared. These will identify sensitive plant or invasive plant populations occur in treatment units and specific avoidance measures.
Bot-2	All	Where feasible and appropriate, native plant species would be planted within the riparian conservation area to increase ground cover and improve native plant diversity. These plantings would focus on areas where there is limited existing ground cover.
Bot-3	Transportation	In order to prevent adverse impacts to Pulsifer's milkvetch occurrence 007C along the non-system road U3030, the occurrence will be flagged and the area avoided during obliteration activities.
Bot-4	Transportation	In order to prevent adverse impacts to adobe parsley at the northern end of trail #12M29, the occurrence will be flagged and avoided if ground disturbing activities are required at this end of the trail segment to be decommissioned.
Bot-5	Transportation	In order to prevent adverse impacts to Susanville beardtongue sub-occurrence 001G along road 28N08, the occurrence will be flagged and avoided if ground disturbing activities outside the existing road prism are required at this location.

## Cultural/Tribal Resources

This project would follow the guidelines outlined in the Region 5 Programmatic Agreement. The following protection measures will be implemented, as appropriate, for all cultural resources located within the project area. The application of the following protection measures would result in the project having “no effect” on cultural resources and the Forest would have taken into account the effect of the project on cultural resource sites in compliance with the programmatic agreement and Section 106 of the National Historic Preservation Act.

- If any unrecorded cultural resources (artifacts, features or sites) are encountered as a result of project operations, all activities in the vicinity of such finds will immediately cease pending an examination by the forest or district archaeologist, *including tribal consultation*.
- Adequate cultural resource surveys would be completed prior to the onset of project activities to ensure that any previously unrecorded cultural resources are not harmed. In areas where vegetation is too dense to perform cultural resource surveys prior to the onset of project activities, adequate surveys would be performed after fuels reduction project activities.
- All proposed activities, facilities, improvements, and disturbances would avoid heritage resource sites. “Avoidance” means that no activities associated with the project that may affect heritage resource sites would occur within a site’s boundaries, including any defined buffer zones. Portions of the project may need to be modified, redesigned, or eliminated to properly avoid heritage resource sites.
- If cultural resources (including areas of concern/significance for the local Native Americans) are discovered during project implementation where none are known, the Mt. Hough Ranger District heritage resources staff would be contacted immediately and the discovery would be dealt with

as appropriate.

- All heritage resource sites within the area of potential effect would be clearly delineated prior to implementing any associated activities that have the potential to affect heritage resource sites. Buffer zones may be established to ensure added protection where the forest or district archaeologist determines that they are necessary. The use of buffer zones in conjunction with other avoidance measures are particularly applicable where setting contributes to the property's eligibility under 36 CFR 60.4, or where it may be an important attribute of some types of heritage resource sites (e.g., historic buildings or structures; historic or heritage properties important to Native Americans). The size of buffer zones needs to be determined by the forest or district archaeologist on a case-by-case basis.
- When any changes in proposed activities are necessary to avoid heritage resource sites (e.g., project modifications), these changes would be completed prior to initiating any activities.
- Monitoring during project implementation, in conjunction with other measures, may be used to enhance the effectiveness of protection measures.
- If heritage resources are inadvertently discovered during project implementation, the Mt. Hough Ranger District archaeologist would be contacted immediately. The heritage resources would be recorded, clearly delineated, and protected.
- Upon approval of the forest or district archaeologist, low intensity underburning may be allowed over selected prehistoric sites as long as fuel loads are relatively light.
- The forest or district archaeologist may approve the use of mechanical equipment to remove brush or woody material from within specifically identified areas within site boundaries under prescribed measures designed to prevent or minimize effects. Vegetative or other protective padding may be used in conjunction with the forest or district archeologist authorization of certain equipment types within site boundaries.
- Upon approval of the forest or district archaeologist, existing breaches within linear sites may be designated on the ground and reused for project activities.
- Roads and trails that currently overlie historic linear sites may continue to be used as transportation routes without notification. However, if there are activities that will change the morphology of the existing road or trail (that is overlaying a historic linear site), these activities need to be reviewed by the forest or district archaeologist.
- Roads proposed to be decommissioned that extend through archaeological sites will need to be blocked instead of sub-soiled.
- Vegetation may be removed within sites using hand tools, so long as ground disturbance is minimized and features are avoided. The removed vegetation shall not be piled within site boundaries unless the location has been specifically approved by the forest or district archaeologist.

**Table 9. Project-specific mitigation measures for cultural resources**

Number	Activity/Action	Mitigation measure
CR-1	Aspen Restoration	The District Archaeologist would be consulted when arborglyph sites are identified within aspen stands. Sites would be flagged and avoided following the Standard Protection Measures outlined in the Region 5 Programmatic Agreement (USDA 2013). Trees will be directionally felled away from sites.

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Mitigations added in response to comment received from Native American Heritage Commission:

- a) Feather River RCD will consult with culturally affiliated Native American tribes regarding the disposition of recovered cultural items that are not burial associated.
- b) The following process will be followed in the event that Native American human remains are discovered inadvertently:
  - i. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
    - A. The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
    - B. If the coroner determines the remains to be Native American:
      - 1. The coroner shall contact the Native American Heritage Commission within 24 hours.
      - 2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
      - 3. The most likely descendent may make recommendations to the Feather River RCD and Plumas National Forest, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or
  - ii. Where the following conditions occur, the Plumas National Forest shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
    - A. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
    - B. The descendant identified fails to make a recommendation; or
    - C. The Plumas National Forest rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to Plumas National Forest.



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## Geology/Soils

Several soil and water quality protection measures are standard for timber harvest projects on National Forest System lands. Most of these measures, such as practices for stream course protection, harvest traffic patterns and skid trail layout, are described in the Timber Sale Administration Handbook for Region 5 (FSH 2409.15) and in standard clauses of timber sale contracts. Additional standard management practices for hydrology and soil resources include:

- **Temporary roads:** All temporary roads used in this project whether existing or new would be closed to traffic and adequate drainage installed after operations. Subsoiling is required (see subsoiling project design criteria, below).
- **Landings:** Landings would be utilized to remove sawlog and biomass products. Landing would be designated at the time of harvest operations. To the extent practicable, past, existing landings would be utilized so long as they are located in places where no other resource concerns exist. New landings would be constructed to accommodate material where necessary.
- **Subsoiling (Landings temp roads, main skids):** All landings, all temp roads, and main skids within 200 feet of landings would be subsoiled. If implemented, subsoiling would lift and fracture the soil in place leaving it loose and friable to a minimum depth of 18 inches. Treatment would be repeated if furrows are left deeper than 12 inches. Furrows would be oriented perpendicular to slopes greater than 10 percent. Recommendations from a 2006 review of subsoiling activities on Plumas and Tahoe National Forests would be followed (USDA Forest Service 2006). Subsoiling treatments could be suspended or eliminated if the subsurface rock size and distribution is such that effective operation is not possible, if slopes are over 25 percent, or if root damage or root disease, is a concern. The contract (sale) administrator shall consult with earth scientist and other appropriate resource specialists to eliminate or suspend subsoiling, in areas where subsoiling may not benefit the resource.
- **Prescribed fire control line construction:** Fire control lines are a concern for hydrology and soil quality risks, whether put in by hand or using mechanical means. They need to be rehabilitated for drainage using best management practice (BMP) guidance below. Where containment lines meet roads or off highway vehicle (OHV) trails they shall be disguised by scattering brush and slash for the first 100 feet. In the first 100 feet from an existing road or trail, fire containment lines shall not be constructed until implementation is scheduled. If prescribed fire containment lines are in riparian conservation areas (RCAs) they shall also be covered with slash to achieve 50 percent ground cover. Fireline construction should be in accordance with all equipment restrictions. Exception may be made upon consultation with an earth scientist. If old road templates are opened up they are to be physically closed with rock or earthen barriers. The objective is for them to not become non-system trails.
- **Slope restrictions:** Ground-based equipment would be restricted to slopes less than 35 percent. Exceptions may be made for short pitches of 100 feet slope distance, up to 50 percent slope. When units have inaccessibly steep inclusions of steeper ground, sawlog and biomass products may be end-lined. Excessive soil displacement (i.e., ‘furrowing’) caused by endlining would be mitigated or repaired by the operator. Mastication and grapple piling units may include 40 percent slope. Exceptions may be made for short pitches of 100 feet slope distance, up to 50 percent slope.

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- **Wet weather and winter harvest operations:** Conduct ground based harvest operations when soil is dry; that is, in the spring when soil moisture in the upper 8 inches is not sufficient to allow a soil sample to be squeezed and hold its shape, or will crumble when the hand is tapped. In the summer and early fall after storm event(s) when soil moisture between 2-8 inches in depth is not sufficient to allow a soil sample to be squeezed and hold its shape, or will crumble when the hand is tapped. Winter harvest operations may occur only when the ground is frozen to a depth of 5 inches or over 8 inches of well packed snow.
  - **Down woody material and ground cover retention:** Maintain adequate cover of surface fuels, litter, duff, and large woody debris to maintain 50 percent ground cover. Maintain, where available, 10-15 tons of large down logs per acre (greater than 15 inches diameter), emphasize decay classes 1, 2, and 3. On site activity generated material (slash or chips) shall not exceed a depth greater than 6 inches in depth.
  - **Equipment Use:** Only grapple piling equipment with lift capabilities would be utilized for machine piling. Dozer piling would be avoided unless absolutely necessary, and would be allowed in landings. Avoid piling soil and duff to the extent possible.

## Hazards and Hazardous Materials

### Herbicide

Standard management requirements are applied when implementing herbicide application, including:

- Herbicide application would be consistent with the Forest Service Pesticide Use Policy, would be in compliance with state and federal regulations, and would follow Region 5 Best Management Practices for Water Quality and Vegetation Manipulation and the Region 5 supplement No. 2100-95-1 to 2150 on Pesticide-Use Management and Coordination. Appropriate monitoring protocols will be used to ensure herbicide was applied according to requirements according to label specifications.
- The Herbicide Transportation, Handling, and Emergency Spill Response Plan and spill kit will be on-site when herbicide treatment methods occur. This plan will include reporting procedures, project safety planning, methods of clean-up of accidental spills, and information including a spill kit contents and location as noted in Forest Service Manual (FSM) 2150, Pesticide-Use Management and Coordination and Handbook (FSH) 2109.14, and Pesticide-Use Management and Coordination Handbook.
- Apply herbicide at optimum times of year to achieve higher percent kill.
- Containers and equipment will be disposed of in accordance with regulations to prevent water contamination.
- **Sierra Nevada yellow-legged frog habitat protection:** Within 500 feet of known occupied sites for foothill yellow-legged frog or Sierra Nevada yellow-legged frog, herbicide application would be designed to avoid adverse effects to individuals and their habitats (USDA Forest Service 2004, USDA Forest Service 1998). If tadpoles or metamorphs of foothill yellow-legged frog or Sierra Nevada yellow-legged frog are present, herbicide treatment would be seasonally delayed until metamorphs disperse.
- **Western bumblebee protection:** Avoid spraying any plant while it is in bloom or during the middle of the day when pollinators are the most active (USDA and USDI 2015).
- **Protection of botanical resources:** No applications within 25 feet of sensitive or watch list plant species. This buffer may be reduced if the sensitive or watch list plants are

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covered/shielded during spraying.

- **Protection of human health:** No herbicides would be applied on weekends or holidays to minimize impacts to recreation. To ensure members of the public do not enter treated areas during label reentry intervals, applicators would remain in or near treated areas until the application solution is fully dry. (This is the reentry interval for all herbicides and adjuvants proposed for use in this project.)

## Hydrology/Water Quality

### Project Best Management Practices (BMPs)

Protect water quality through the use of best management practices (BMPs) which are employed by the Forest Service and the State of California to prevent water quality degradation and to meet state water quality objectives relating to non-point sources of pollution. Best management practices utilized on Plumas National Forest System lands are procedures and techniques that are incorporated in project actions and have been determined by the State of California to be the most effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.

Best management practices applicable to Plumas National Forest projects such as the Moonlight Fire Area Restoration Project are presented in a guide for all U.S. national forests, National Best Management Practices for Water Quality Management on National Forest System (USDA 2012). Additional best management practices are presented in a regional amendment (Pacific Southwest Region - Region 5) of the USDA-Forest Service Handbook, Section 2509.22, Chapter 10 (Water Quality Management Handbook) (USDA 2011). Per the Region 5 amendment to FSH 2509.22, activities would have best management practice implementation monitoring using a “checklist” approach. Best management practices implementation checklists would document whether and when the site-specific best management practices specified in NEPA analyses were implemented. These checklists would provide a systematic means for early detection of potential water-quality problems, and would be completed early enough to allow corrective actions to be taken, if needed, prior to any significant rainfall or snowmelt throughout the duration of the project. Checklists would be completed several times during the life of most projects, including prior to ground-disturbing activities, prior to winter periods, and at the completion of the project.

The standard best management practices for protecting water quality are listed in table 10. The table lists the Region 5 best management practices that may apply to this project and also refers to the corresponding Forest Service National best management practices. In addition to the general best management practices, use project-specific mitigation measures that relate directly to these best management practices to minimize erosion and resultant sedimentation (these are outlined in the Project-specific Mitigation measures section below).

**Table 10. Standard best management practices (BMPs) for protecting water quality**

R5 BMP Number	Best Management Practice	Description	National Best Management Practice
1.1	Timber Sale Planning Process	Project contract includes provisions set forth in NEPA to protect water quality.	Veg-1

1.3	Determining Surface Erosion Hazard for Timber Harvest Unit Design	Based on an evaluation of erosion hazard, erosion control measures may be used to reduce the potential risk of accelerated erosion to a low or moderate level.	Veg-2
<b>R5 BMP Number</b>	<b>Best Management Practice</b>	<b>Description</b>	<b>National Best Management Practice</b>
1.4	Using Sale Area Maps and/or Project Maps for Designating Water Quality Protection Needs	Sale area or contract map contains treatment unit boundaries, streamcourse and wetland protection zones, roads where haul is permitted/prohibited, and areas where special operations are designated to protect water quality.	N/A
1.5	Limiting the Operating Period of Timber Sale Activities	Purchaser's Plan of Operation and Operation Schedule are approved by Forest Service per clauses C6.3 and B6.31 Operating period limitations, such as when soils are wet, are defined per clause C6.313	N/A
1.8	Streamside Management Zone Designation	As a preventive measure, roads, skid trails, landings, and other timber-harvesting facilities will be kept at a prescribed distance from designated stream courses.	Plan-3
1.9	Determining Tractor-loggable Ground	Project contract specifies areas upon which tractors can operate.	Veg-4
1.10 1.12	Tractor Skidding Design Log Landing Location	Skid trail patterns serve to avoid build-up of destructive runoff and sedimentation to stream management zones. Landings are of minimal size, are located well outside of streamside management zones, minimize the number of skid trails required, and are of stable construction.	Veg-6
1.13	Erosion Prevention and Control Measures During Timber Sale Operations	Equipment has not operated when ground conditions are such that excessive damage has resulted. Erosion control measures have been in place prior to likely precipitation events and prior to seasonal shutdown.	Veg-2
1.14	Special Erosion-prevention Measures on Disturbed Land	When required by the contract, the purchaser will give adequate treatment by spreading slash, mulch, or wood chips (or, by agreement, some other treatment) on portions of tractor roads, skid trails, landings, cable corridors or temporary road fills. This provision is to be used only for sales which contain identified special soil stabilization problems which are not expected to be adequately treated by normal methods prescribed under other contract provisions.	N/A

1.15	Regeneration of Areas Disturbed by Harvest Activities	This best management practice is only for projects where it is expected that disturbed soils in certain areas will require vegetative cover for stabilization and normal contract methods will not mitigate sufficiently. These areas are shown on the project map and treatments are described in the contract.	N/A
<b>R5 BMP Number</b>	<b>Best Management Practice</b>	<b>Description</b>	<b>National Best Management Practice</b>
1.16 1.17	Log Landing Erosion Control Erosion Control on Skid Trails	Erosion control work is completed on landings and skid trails to adequately drain and disperse water and minimize erosion and sedimentation. Landing treatments facilitate revegetation, stabilize cut and fill slopes, and divert road drainage away from landings.	Veg-6
1.18 1.19	Meadow Protection during Timber Harvesting Streamcourse and Aquatic Protection	Any damage to streamcourses or meadows has been repaired in a timely fashion. All project-generated debris has been removed from streamcourses.	AqEco-1
1.20 1.21	Erosion-control Structure Maintenance Acceptance of Timber Sale Erosion-control Measures Before Sale Closure	Erosion control measures throughout the project area are acceptable and have been maintained throughout the project term.	N/A
1.22	Slash Treatment in Sensitive Areas	Special slash treatment, without the use of mechanized equipment, is specified in project sensitive areas as necessary. These areas are shown on the project map and treatments are described in the contract.	Veg-8
1.25	Modification of the Timber Sale Contract	If necessary, the project contract was modified during implementation to prevent damage to soil, water or watershed values.	N/A
2.3	Road Construction and Reconstruction	Temporary and long-term erosion-control measures are necessary to reduce erosion and maintain overall slope stability. These erosion-control measures may include vegetative and structural techniques to ensure the area's long-term stability.	Road-3
2.4	Road Maintenance and Operations	To ensure water-quality protection by providing adequate and appropriate maintenance and by controlling road use and operations	Road-4
2.5	Water Source Development and Utilization	To supply water for road maintenance, dust abatement, and other management activities, while protecting and maintaining water quality	WatUses-3

2.7	Road Decommissioning	Stabilize, restore, and vegetate unneeded roads to a more natural state as necessary to protect and enhance National Forest System lands, resources, and water quality. The end result is that the decommissioned road will not represent a significant impact to water quality by reducing sedimentation from road surfaces and slopes, reducing risk of mass failures, and restoring natural surface and subsurface drainage patterns.	Road-6
<b>R5 BMP Number</b>	<b>Best Management Practice</b>	<b>Description</b>	<b>National Best Management Practice</b>
2.8	Stream Crossing	Minimize water, aquatic, and riparian resource disturbances and related sediment production when constructing, reconstructing, or maintaining temporary and permanent stream crossings.	Road-7
2.11	Equipment Refueling and Servicing	To prevent fuels, lubricants, cleaners, and other harmful materials from discharging into nearby surface waters or infiltrating through soils to contaminate groundwater resources.	Road-10
2.13	Erosion Control Plans (roads and other activities)	To ensure that all required and relevant mitigation measures are documented and implemented, an environmental control plan will be prepared to complement design (design addresses required mitigations specified in NEPA documents), site-specific prescriptions, and amended to include changes made in the field.	Road-3
5.2	Slope Limitations Mechanical Equipment Operation	Limit tractor operation to slopes where corrective measures such as water bars can be effectively installed to limit excessive surface disturbance and keep surface water from concentrating	Veg-2
5.4	Revegetation of Surface-disturbed Areas	Protect water quality by minimizing soil erosion through the stabilizing influence of vegetation foliage and root network.	Veg-3
5.7	Pesticide Use Planning Process	To introduce water quality and hydrologic considerations into the pesticide use planning process.	Chem-1
5.8	Pesticide Application According to Label Directions and Applicable Legal Requirements	To avoid water contamination by complying with all label instructions and restrictions for use.	Chem-2
5.10	Pesticide Spill Contingency Planning	To reduce contamination of water by accidental pesticide spills.	Chem-3
5.11	Cleaning and Disposal of Pesticide Containers and Equipment:	To prevent water contamination resulting from cleaning or disposal of pesticide containers.	Chem-5

5.12	Streamside Wet Area Protection During Pesticide Spraying	To minimize the risk of pesticide inadvertently entering waters, or unintentionally altering the riparian area, streamside management zone, or wetland.	Veg-3
5.13	Controlling Pesticide Drift During Spray Application	To minimize the risk of pesticide falling directly into water, or non-target areas.	N/A
6.2	Consideration of Water Quality in Formulating Fire Prescriptions	To provide for water quality protection while achieving the management objectives through the use of prescribed fire.	Fire-2
6.3	Protection of Water Quality from Prescribed Burning Effects	To maintain soil productivity, minimize erosion, and minimize ash, sediment, nutrients, and debris from entering water bodies.	Fire-2
<b>R5 BMP Number</b>	<b>Best Management Practice</b>	<b>Description</b>	<b>National Best Management Practice</b>
7.3	Protection of Wetlands	To avoid adverse water quality impacts associated with destruction, disturbance, or modification of wetlands.	Plan-3, AqEco-1, AqEco-3
7.4	Forest and Hazardous Substance Spill Prevention Control and Countermeasure (SPCC) Plan	To prevent contamination of water from accidental spills.	AqEco-2, Fac-6
7.6	Water Quality Monitoring	A water quality monitoring plan will be part of an environmental document, a management plan, or a special use permit, or it will be developed in response to other needs.	N/A
7.8	Cumulative Off-site Watershed Effects	Evaluate cumulative off-site watershed effects (CWE) including all effects on beneficial uses that occur away from the sites of actual land use activities and which are transmitted through the drainage system. Effects can be either beneficial or adverse and result from the synergistic or additive effects of multiple management activities within a watershed.	Rec-4

### Riparian Conservation Area and Streamside Management Zone

Apply the standards and guidelines identified in the 2004 Sierra Nevada Forest Plan Amendment (SNFPA) Record of Decision (ROD) relating to treatment of fuels and associated project activities within all riparian conservation areas (RCAs) and streamside management zones (SMZ), unless more restrictive measures apply for the protection of Sierra Nevada yellow-legged frog.

Integral to the protection of streamside management zones and riparian conservation areas is the designation of prescribed widths for these zones, so that the location of special treatment mitigation measures associated with streamside management zones and riparian conservation areas is clear to all persons involved in carrying out a proposed project. Guidelines for widths of streamside management zones are presented in appendix M of the Plumas Forest Plan. These guidelines were superseded by the suggested

widths for riparian conservation areas presented in appendix A of the 2004 Record of Decision (ROD) for the regional amendment of forest plans within the Sierra Nevada (USDA 2004).

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The riparian conservation area widths listed below would be the maximum buffer width identified for each aquatic feature type. Table 11 also displays an additional buffer (inner buffer or equipment exclusion zone) within the riparian conservation area guideline buffer.



**Table 11. Mitigation measures for riparian conservation areas by stream type\***

Stream type	Riparian Conservation Area widths	Minimum distance to burn pile	Equipment exclusion zone for slopes less than 35 percent	Equipment exclusion zone for slopes greater than 35 percent
*Perennial Stream	300 feet	100 feet	100 feet	No equipment entry
*Intermittent Stream	150 feet	100 feet	50 feet	No equipment entry
Ephemeral stream	150 feet	15 feet	25 feet	No equipment entry
*Special aquatic features (reservoirs, wetlands, fens, and springs)	300 feet	100 feet	100 feet	No equipment entry
Riparian features, dry meadows, seasonal wetlands	150 feet	15 feet	50 feet	No equipment entry

\*Unless this is suitable habitat for Sierra Nevada yellow-legged frog, in which case, conservation measures for Sierra Nevada yellow-legged frog would apply, where more restrictive (see project-specific mitigation measures).

For example, there is a perennial stream within a treatment unit-a 300 foot buffer is applied. Within that 300 foot buffer, approximately 70 feet from the edge of the active channel, the slope is 22 percent; a 100 foot inner buffer is applied. From the edge of the active channel no equipment can enter the riparian conservation area for 100 feet. Equipment can enter the remaining 200 feet of the 300 foot total buffer. When the slope within the riparian conservation area guideline buffer is greater than 35 percent, no mechanical equipment is allowed to enter the riparian conservation area. For example, there is a perennial stream within a treatment unit- a 300 foot buffer is applied. Within that 300 foot buffer, approximately 100 feet from the edge of the active channel, the slope is 38 percent; no equipment is allowed within any portion of the 300 foot buffer that exceeds 35 percent slope.

Standard management practices for riparian conservation areas are applied within the riparian conservation area widths (as defined in table 76). In some cases, more restrictive buffers or measures or Sierra Nevada yellow-legged frog habitat may apply (see project-specific mitigation measures). These measures include the following:

- **Riparian Conservation Area Equipment Constraints:** Establish equipment exclusion zones adjacent to stream channels according to table 76. Allow equipment to travel into outer riparian conservation area zone to harvest trees and bring them to skid trails. To minimize soil displacement, no equipment would be permitted to turn around while off a skid trail in a riparian conservation area.
- **Springs, seeps, fens, and meadows:** Prohibit mechanical equipment use within 100 feet of edge of features. Hand thinning treatments within feature and within the equipment exclusion zone would be allowed. Piles would be constructed at least 25 feet from edge of feature. Tree boles would be left in fens as benefit to structure and diversity. Prescribed burning would not be allowed within 25 feet of features.
- **Landings:** There would be no construction of new landings or use of old landings within riparian conservation areas unless agreed to by earth scientist and sale administrator.
- **Temp roads/Skid Trails:** Where temporary road or skid trail construction involves cut and fill, the feature would be subsoiled, then re-contoured to match the existing topography. In riparian conservation areas, slash would be scattered to provide ground cover of 50 percent or greater and would be less than 6 inches in depth. Slash would consist of organic material (logs,

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branches chips and duff). Slash would be scattered to resemble a natural appearance similar to the surrounding landscape. Rocks can be included as acceptable ground cover (included in the 50 percent cover). These areas would be sufficiently blocked at the entrances to preclude access by motorized wheeled vehicles. Where temporary roads cross stream channels, all fill would be removed from the channel and utilized for re-contouring or spread in a stable location outside the riparian conservation area. To the extent possible, existing skid trails would be utilized thus minimizing any new disturbance within the project area.

- **Stream Crossings:** Crossings of perennial streams with skid trails or temp roads are generally prohibited. If skid trails or temporary road construction need crossings in perennial or intermittent streams consultation with earth scientist and biologist is required prior to approval.
- **Prescribed Fire:** Broadcast (prescribed) burning would be allowed within riparian conservation areas, but there would be no ignitions in riparian vegetation. Fire may back through this zone.

### Aspen and Cottonwood Treatments

Per the Sierra Nevada Framework, restoration treatments may occur within the riparian conservation areas. Because aspen and cottonwood treatments aim to restore riparian vegetation, several exceptions to the above riparian conservation area and streamside management zone guidance are used to conduct these treatments, including the following. In some cases, more restrictive buffers or measures or Sierra Nevada yellow-legged frog habitat may apply (see project-specific mitigation measures).

- **Mechanical equipment use in riparian conservation areas:** Equipment use within riparian conservation areas will be restricted within 15 feet on each side of the riparian conservation area feature (e.g. edge of the active channel, wet perimeter of the soil, etc.) or riparian vegetation, whichever is greater. Mechanical equipment will be allowed to work adjacent to this exclusion zone and reach in with an extendable boom.
- **Skid trail location:** skid trails will be perpendicular to the stream course within 50 feet of the stream and spacing of skids will generally be no closer than 120 feet.
- **Streambank stability:** No trees will be removed that are providing stability to the streambank.
- **Harvesting periods:** These units will be harvested in dry periods when the upper 8 inches of the soil is essentially dry. For this measure soil is defined as “dry” when no portion can be molded by hand compression and hold that shape when the hand is tapped. Additionally, these units can be treated when the ground is frozen to a depth of 5 inches or snow depth is at least 18 inches or is snow is compacted by equipment to 8 inches.

## Mineral Resources

Standard management requirements will be monitored by Forest staff and are applied to avoid impacts to mining claims or activity, including:

- **Protect mining claim corner markers and discovery markers:** Mining claims markers include a corner monument on each of the four corners and one at the discovery point. Any other signs should be approved by the Forest Service and may require a Plan of Operations. Monuments are usually a wooden 4X4 post or a PVC pipe, often with rocks piled up around the base. However, a wide variety of variations can be found. This does not apply to signs

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attached to trees.

- **Claim signs attached to trees (marked for removal) should be removed from the tree and turned in to the Minerals Staff:** In most cases, attaching signs to trees is not allowed. However, many mining claims signs are attached to trees. If trees planned for removal have mining claim signs attached to them, the signs should be removed and turned in the Minerals staff, so the signs may be returned to the claimant. The location of the sign should be noted when turning it in to the Minerals staff.

## Recreation

Standard management requirements will be monitored by the District or Forest staff and are applied to protect recreational opportunities and ensure visitor safety, including:

- Motorized trails will be protected from damage as much as possible and shall be restored back to its original condition if damaged by operations. These trails are to be closed to the public during active operations that utilize these trails. Trails will be signed during these closures. The Forest Service will be notified 21 days prior to entering the units that the trails are included in or adjacent to. Closure will be by mutual agreement as to timing, duration and type and location of safety signs. No decking of landing piles on trails. Trails are to remain open after they have been utilized for project purposes.
- Implement measures for safety of forest visitors and provide public notifications, such as: treatment areas closures, locations of herbicide use and prescribed fire, locations of haul routes, and treatment implementation timeframes. Provide public notification as appropriate at recreation sites, trailheads, in local newspapers, and online.
- Coordinate treatment timing limitations to minimize impacts to the recreating public, concession operators, and special use permit holders. This may include a limited operating period from Memorial Day to Labor Day within recreation sites, no project activities or hauling activities on weekends or holidays and during important hunting season timeframes, or other site specific limitations determined necessary to minimize impacts to recreation activities within the project area.
- Obliterate, obscure, or physically block hand or machine fire lines, skid trails, and temporary roads that are visible from, or intersect open roads to prevent unauthorized OHV use.

**Table 12. Project-specific mitigation measures for recreation**

Number	Activity	Mitigation measure
Rec-1	All	No project activities will be conducted within developed campgrounds from Memorial Day to Labor Day.
Rec-2	All	Operations will abide by the motor vehicle prohibitions in the Diamond Mountain Limited Vehicle Access Area (T 27/28 N, R11/12E), specific acreage and timing is coordinated annually with the California Department of Fish and Game to provide for Roadless deer hunting opportunities.
Rec-3	Hauling	Restrict hauling to weekdays only within Antelope Lake Recreation Area, on National Forest System road 28N03 to National Forest System road 29N43 and Antelope Lake Dam. No hauling on holidays from Memorial Day thru Labor Day weekend.
Rec-4	Hauling	Sign all haul routes to alert drivers of hauling and logging activities around the Antelope Lake Recreation Area, particularly the intersection of campgrounds, the boat launch, and trailheads. A key location for a logging traffic alert sign is at the intersection of Plumas County roads 112 and 207 in Taylorsville near the rodeo grounds. Alternate routes may be required due to season events or road restrictions and/or closures.
Rec-5	Vegetation management in	For treatments within developed campgrounds, a recreation specialist will be consulted to identify trees to be maintained for screening, shading, campground aesthetics, and to identify hazard trees for removal.
Rec-6	Pile burning in campground	Ensure that mechanical piles in developed campgrounds do not contain accumulated soil and are able to burn completely. Landing piles within the Antelope Lake Recreation areas will be burned and removed promptly following treatment.
Rec-7	Vegetation management near trails	Where trail routes are within, or along the boundary of treatment units, ensure trail route is clearly marked and maintained, remove hazard trees along the trail. If treatment operations cross, or damage the trail tread, re-establish the trail to the appropriate design standards when implementation is complete.
Rec-8	Firewood	Provide public notification of firewood gathering opportunities associated with the project.
Rec-9	Herbicide Application	No herbicides will be applied on weekends or holidays to minimize impacts to recreation. To ensure members of the public do not enter treated areas during label reentry intervals, applicators will remain in or near treated areas until the application solution is fully dry. (This is the reentry interval for all herbicides and adjuvants proposed for use in this project.)
Rec-10	All Activities	Protect special use improvements within the project area including two pasture/livestock areas, one waterline, and one resource monitoring site. The special use improvements will be flagged during project implementation and identified on contract maps as improvements.

## Transportation

Standard management requirements for transportation will be monitored by District or Forest staff and include:

- **Stream crossings:** Design all new stream crossings to accommodate a 100-year flood and provide fish passage as necessary.
- **Waterbars:** Stabilize and strategically place water bars on temporary roads where drainage control issues are evident or expected.
- **Dust abatement:** Abate dust from logging traffic with water selected from water drafting sites that have suitable stream flow and access. When water is scarce, use alternative

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sources such as chlorite, sulfonate or other dust abatement materials.

- **Drafting sites:** New or existing water draft sites would be evaluated with the Mt. Hough Ranger District biologist prior to changes or use. Drafting sites shall be visually surveyed for amphibians and their eggs before drafting begins. Estimate maximum drawdown volumes prior to using the draft site. Maintain minimum pool levels during drafting using measurements such as staff gauges, stadia rods, tape measures, etc. Construct water-drafting sites so that oil, diesel fuel, or other spilled pollutants would not enter the stream. Back down ramps would be constructed and or maintained to ensure the streambank stability is maintained and sedimentation is minimized. Rocking, chipping, mulching, or other effective methods are highly recommended to achieve this objective. As necessary, earthen or log berm, straw waffle, certified weed free hay or rice straw bale berms, or other containment structures would be constructed at the bank full water line to protect the stream bank. Forest personnel and contractors shall use the Forest Service approved suction strainer (FSM 5161) or other foot vales with screens having openings less than 2mm in size at the end of drafting hoses. The suction strainer shall be inserted close to the substrate in the deepest water available; the suction strainer shall be placed on a shovel, over plastic sheeting, or in a canvas bucket to avoid uptake of substrate or aquatic biota. "Mucked out" debris, bedload sediment, etc. shall be transported to an appropriate disposal site (to be designated) if no apparent site is feasible.
- **Pre-existing skid trails and landings:** would be used whenever available, feasible, and in a desirable location. In order to avoid loss of land base productivity, no more than 15 percent of timber stands would be dedicated to landings and permanent skid trails (USDA Forest Service 1988). In areas where pre-existing skid trails and landings are not present, construction of such facilities would occur as agreed upon by the Forest Service and purchaser. All landings and skid trails utilized would conform to the standards and guidelines set forth in the Timber Sale Administration Handbook (FSH 2409.15) and the Forest Plan.

## Monitoring

### Biological Resources

#### Terrestrial and Aquatic Wildlife Resources

Surveys for Sierra Nevada yellow-legged frogs would be conducted by Forest staff or qualified contracted biologist both before project implementation as well as after project implementation. Comparison of areas utilized before project activities, including basking site enhancement, would be compared to post-treatment.

California spotted owl and northern goshawk protected activity centers treated with fuels reduction would be monitored by Forest staff or qualified contracted biologist for at least 2 years after project treatment to determine site occupancy.

#### Botanical Resources

##### Noxious Weeds

Monitoring during and after project implementation would be used to assess the effectiveness of the

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standard management requirements at preventing the introduction and spread of invasive plant species in the project area. The measurement indicators described in this analysis—for example, the number of existing infestations and the number of acres treated—would be used in this assessment. Post-treatment monitoring would identify the need for follow-up treatment, assess the effectiveness of the different treatment methods, and/or identify the need for alternative methods of control. Monitoring would be conducted by district personnel during and following project implementation and is expected to greatly reduce the likelihood of uncontrollable spread of invasive plant species in the Moonlight Restoration project area. Any treatment of invasive species would be conducted consistent with the Moonlight Fire Area Invasive Plant Treatment Project, which is being planned as a separate project.

## **Cultural/Tribal Resources**

Monitoring during project implementation, in conjunction with other measures, may be used to enhance the effectiveness of protection measures.

Forest archaeologists or qualified contractors will monitor sites to provide protection as needed. Sites may be monitored by Fire crews delegated as delegated by the Forest archaeologist, depending on the site or resource type.

- Fire lines or breaks may be constructed off sites to protect at risk historic properties.
- Vegetation may be removed and fire lines or breaks may be constructed within sites using hand tools, so long as ground disturbance is minimized and features are avoided, as specified by the heritage program manager.
- Fire shelter fabric or other protective materials or equipment (e.g., sprinkler systems) may be utilized to protect at risk historic properties.
- Fire retardant foam and other wetting agents may be utilized to protect at risk historic properties and in the construction and use of fire lines.
- Surface fuels (e.g., stumps or partially buried logs) on at risk historic properties may be covered with dirt, fire shelter fabric, foam or other wetting agents, or other protective materials to prevent fire from burning into subsurface components and to reduce the duration of heating underneath or near heavy fuels.
- Trees which may impact at risk historic properties should they fall on site features and smolder can be directionally felled away from properties prior to ignition, or prevented from burning by wrapping in fire shelter fabric or treating with fire retardant or wetting agents.
- Vegetation to be burned shall not be piled within the boundaries of historic properties unless the location (e.g., a previously disturbed area) has been specifically approved by the Forest's heritage program manager.
- Mechanically treated (crushed/cut) brush or downed woody material may be removed from historic properties by hand, through the use of off-site equipment, or by rubber-tired equipment approved by the heritage program manager. Ground disturbance shall be minimized to the extent practicable during such removals.
- Woody material may be chipped within the boundaries of historic properties so long as the staging of chipping equipment on-site does not affect historic properties.
- The Forest's heritage program manager shall approve the use of tracked equipment to remove brush or woody material from within specifically identified areas of site boundaries under

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prescribed measures designed to prevent or minimize effects. Vegetative or other protective padding may be used in conjunction with the heritage program manager's authorization of certain equipment types within site boundaries.

## **Geology/Soils**

The Forest Plan sets out objectives and protocol for monitoring of plan standards and guidelines, best management practice compliance and effectiveness, and soil productivity parameters. Monitoring is to be completed by Forest staff on a per annum basis, either project by project, or a sampling of projects. Sampling should include at least five units for effectiveness monitoring to confirm that soil cover and fine organic matter is not reduced below recommended levels. Road improvement and obliteration actions would be monitored after implementation and after the first winter to ensure that treatments remain effective. Specific methods would be defined by district watershed personnel.

## **Hydrology/Water Quality**

Water quality monitoring would be implemented by Forest staff in compliance with the Regional Water Quality Management Handbook. Best management practices implementation checklists will document whether, and when, the site-specific best management practices (BMPs) specified in NEPA analyses were implemented (BMP 16.31). The checklist will be the primary systematic means for early detection of potential water-quality problems, and will be completed early enough to allow corrective actions to be taken, if needed, prior to any significant rainfall or snowmelt throughout the duration of the project.

## **Recreation**

Monitoring will be conducted by Forest staff or qualified contractor. Monitor treatment areas to determine if illegal off-highway vehicle (OHV) use is taking place in areas where treatments have occurred. If monitoring reveals this is happening, steps should be taken to prohibit the use (i.e. signing, barrier installation, increased law enforcement).

Monitor National Forest System trail conditions following prescribed burning to determine if there is a need for increased trail maintenance for specific areas due to fallen trees or increased erosion.

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**Moonlight Fire Reforestation  
Herbicide Transportation, Handling, and Emergency Spill Response Plan**

USDA – Forest Service, Region Five  
Plumas National Forest  
Mt. Hough Ranger District

March 12, 2019  
Emergency Contact Update: 24 Jan. 2023

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## I. INTRODUCTION

This plan outlines safety procedures and specific actions to prevent and manage potential incident or injury resulting from implementation of herbicide use during vegetation control treatments in the Moonlight Reforestation project on Mt. Hough Ranger District of Plumas National Forest.

This plan is tiered to and supplements the following documents:

- Forest Service Handbook (FSH) 2109.14. (08/31/2016) Pesticide-Use Management and Coordination Handbook Chapters 60 and 70
- FSH 6709.11 Forest Service Health and Safety Code Handbook
- Forest Service Manual (FSM) 2150-2165 Hazardous Materials Management
- Mt. Hough Ranger District Hazard Communication Plan (01/25/1995)
- Moonlight Fire Area Restoration Project - Final Environmental Assessment (5/2018)
- Specimen labels and Safety Data Sheets (SDS)

## II. PESTICIDE SAFETY

Spill prevention is the first line of defense in avoiding unacceptable environmental contamination and possible adverse effects to people and the environment.

The risk of spills is minimized by conducting training, preparing a JHA and spill plan, using appropriate pesticide storage, transportation, and handling practices, and by doing frequent inspections of pesticide containers, equipment and facilities. The spill plan will outline emergency notifications and establish standard practices, such as maintenance of spill kits.

### A. Training and Licensing

#### 1. Contractors

a. All Contractors handling pesticides on Plumas National Forest shall have a current State of California Department of Pesticide Regulation (CA DPR) Qualified Applicator License (QAL) including the Category "E" (Forest), and Pest Control Business License, prior to the award of contract. The Contractor shall register this License with the appropriate County Agriculture Commissioner prior to beginning work.

b. The Contractor shall comply with the State of California Safety Orders found under the California Administrative Code and with the requirements of the Federal Worker Protection Standards (40 CFR, part 170). All employees, prior to applying any chemicals, must have received safety training and must utilize all appropriate safety equipment provided.

- c. The Contractor's authorized representative(s) on site must, at a minimum, be State of California Certified Pesticide Applicator (QAC).

## 2. Forest Service Contract Administration

Forest Service employees on site without a CA applicator license must receive training annually, as required by CA DPR (California Code of Regulations Section 6724) before working with any pesticides (FSM 2155).

## B. Transportation of Pesticides

Precaution must be exercised when transporting pesticides in order to minimize possibility of incidents or effects of any occurrence of accidental spill.

1. Transport from the storage facility only the quantity needed for the day's operations. Return leftover pesticides to an approved pesticide storage facility at the end of each day.
2. Precautions must be taken while loading and unloading pesticide containers on and off vehicles. Containers should be loaded so none can move, roll, or fall from a vehicle.
3. Transport pesticides in their original sealed containers. Open containers must never be transported. Partly used containers must be securely closed before movement. Take effort to insure a minimal amount of herbicide mixture is moved between units. Any service containers must be properly labeled to identify the pesticide as follows:
  - a. Product name preceded by the word "Diluted"
  - b. EPA registration number preceded by the words "Derived From"
  - c. Name and percent of active ingredient as diluted
  - d. Signal word(s) from registered label
4. Keep pesticides in truck beds or trailers isolated from drivers and passengers. Do not transport pesticide containers in the same cargo area with food, beverages, livestock feeds, clothing, or potable water.
5. Vehicles that are transporting pesticides may not be left unattended unless the pesticides are locked in an attached transport/storage unit.
6. Shield pesticide containers from direct sunlight while in transit to the worksite, and keep moving them as necessary to remain in the shade. Excessive heat can cause expansion of certain pesticides, resulting in container rupture or violent discharge when opened. Make periodic checks to ensure that no containers have been punctured or otherwise damaged.

7. Maintain a manifest of each pesticide cargo. Identify the amount of pesticide being transported, number and size of containers, product name, chemical name, and their Environmental Protection Agency (EPA) registration numbers.
  8. Carry in the vehicle copies of the accident and spill plan, as well as pesticide labels and Safety Data Sheets (SDS) for all products being transported regardless of the volume of pesticide being transported.
  9. All transport vehicles must be labeled as required by the California Code of Regulations.
- C. Pesticide Batch Truck Precautions
1. All valves capable of emptying herbicide from the batch tank must be lockable. The batch tank shall be a mixing tank equipped with a constant agitator, a sight level in good condition to measure tank volume, and a leveling gauge which will be adequate for leveling a tank in all directions. The filler hose from the batch tank shall be equipped with a self-closing nozzle. The batch tank shall be in good condition, meeting all State requirements. The batch tank shall be mounted such that it can be moved and operated separately from the clean water tank; for example, mounted on a separate vehicle from the clean water tank, or mounted on a trailer. Trailer hitches used to tow equipment and trailers shall be securely mounted directly to the vehicle frame. Bumper hitches shall not be used unless specifically designed and rated for towing heavy loads.
  2. The clean water tank shall be a tank exclusively for clean water, having a back flow prevention device or the proper air gap filling apparatus. The water tank and all drafting equipment must be free of pesticides and dye residue. Pesticides and dyes shall not be stored or transported in the same vehicle used to transport the clean water tank.
  3. The batching location will be designated by the Contracting Officer or his Representative. Mixing of spray solutions will be done away from streams, drains, ditches leading to streams, or wet areas. Mixing should be done on level areas where major spills would be absorbed into the soil before reaching a waterway.
- D. General Safety Procedures
1. Routes of Possible Exposure  
Pesticides can enter the body by one or more of four direct exposure routes. All personnel involved with spraying operations will be advised of these possible routes of exposure.
    - a. Oral: This represents a serious potential for contamination. Chemical may be splashed into the mouth during pouring, measuring, or mixing

operations. Contamination may also occur by licking the lips, rubbing the mouth, or smoking, eating, or drinking with contaminated hands and fingers.

b. Dermal: This is the most common route of exposure. Although face, neck, armpits, and genitals will absorb chemical more easily, the hands usually receive the highest exposure.

c. Cuts and Abrasions: Chemical may be absorbed very quickly in the blood stream through these openings in the skin.

d. Respiratory: Although exposure is at a minimum through the respiratory route, absorption is at a maximum, as almost all of the contaminant inhaled is absorbed internally. Diluted mists carried in the air during the ground application easily may be breathed and absorbed.

## 2. General Personal Hygiene

All pesticide handlers will wear clean change of clothes every day and will rinse gloves, boots and other contaminated safety equipment at the job site at the end of each working day. All persons shall wash before eating or handling foods, drinking, smoking, or using restroom facilities.

## 3. Personal Protective Equipment (PPE)

The purpose of personal protective equipment is to prevent pesticides from contacting the body and clothing. This equipment also protects the eyes and may prevent inhalation of toxic chemicals. Personal safety equipment is effective only if it fits correctly, is used properly, and is kept cleaned and maintained. All personal protective equipment designated for pesticide projects will be specific for those uses and will not be worn or used for other purposes. The employer will be required to furnish water, soap, and disposable towels in sufficient quantities for all employees. Eyewash water bottles shall also be readily available for washing eyes. Other PPE will be considered as necessary if required by the label. Designated PPE for this project includes:

- a. ANSI Z87 rated eye protection
- b. Unlined chemical resistant gloves, minimum weight 13 mil
- c. Long sleeve shirt and pants, or coveralls
- d. Work boots and socks
- e. Hard hat
- f. Portable eyewash kit on person or on truck within ¼ mile of application site, minimum 16 oz.

## 4. Public Safety

- a. The management requirements listed in the environmental document, specimen labels, and SDS will be followed to reduce off site movement, drift, or volatilization.
- b. Warning signs will be posted at logical entry points to application units immediately before application and until the reentry interval (REI) period is

passed. All units will be checked for members of the public immediately prior to application. Unauthorized persons will be asked to leave.

E. Disposal of Empty Pesticide Containers

1. All empty containers for pesticides and adjuvants shall be disposed of in accordance with requirements of the Specimen Label and CA DPR.
2. All empty containers and unused amounts of pesticides must be securely held in a safe and secure pesticide storage area until reuse or proper disposal can occur.
3. Disposal hazards can be reduced by, immediately after emptying a container, rinsing 3 times with water and pouring the rinse into the spray tank load for distribution.
4. The containers must be disposed of ONLY at approved landfills. The Plumas-Sierra Ag Dept. can provide information for locating and utilizing approved landfills.
5. Contract requirements for disposal of containers include the following:
  - a. All containers shall be triple rinsed, with clean water, on the work site. The rinse water shall be disposed of by placing it in the batch tank.
  - b. Used containers, except those that are returnable, shall be punctured on the top and bottom to render them unusable.
  - c. A log of the containers and how they were rinsed and where they were disposed of shall be made available to the Contracting Officer.
  - d. Certification of disposal at an approved dump or receipt from a point of redemption on returnable containers is required.

F. Spill Kit

Contract requirements include an incidental spill kit for each vehicle transporting pesticides as well as on site at storage facilities, loading and mixing sites. Project administrators will also maintain a vehicle spill kit in preparation for response to incidental spills. The vehicle spill kit should contain:

- List of emergency phone numbers and spill safety plan
- 2 pairs unlined nitrile gloves
- 1 pair unvented goggles or other ANSI Z87 protective eyewear
- 1 pair rubber boots or overshoes
- 1 pair of coveralls or rainsuit
- 1 roll of flagging
- 1 repair/patch kit (duct tape, putty)
- 1 whisk broom (synthetic fiber)
- 1 dustpan
- 6 30-gallon plastic trash bags with ties

- 1 pint liquid detergent
- 1 polyethylene or plastic tarpaulin
- 10 blank labels & a permanent marker
- 10-30 lbs. absorbent material or equivalent
- 1 portable eyewash kit
- 1 shovel

### III. PESTICIDE SPILL AND ACCIDENT PROCEDURES

Spill accidents are categorized as emergency or non-emergency. A spill is defined as emergency if it moves off site and threatens water supplies or is otherwise potentially harmful to human health or the environment. **In the event of an emergency or a spill larger than “incidental” notify Plumas Dispatch immediately so the appropriate response can be initiated.**

#### A. Accidents

Accident events comprise major pesticide spills, significant adverse pesticide impacts on the environment, aircraft crashes, or employee injury or death. If the spill involves a vehicle accident, determine the extent of any possible injuries or contamination and notify the dispatcher so that emergency medical equipment and personnel can be dispatched. **Threats to human life are a priority over spill containment and cleanup.** Immediate attention is required when employee accidents involve trucks, buses, cars, vans, or boats. Personnel should:

1. Protect and care for the injured.
2. For incidental spills only and with proper training contain spilled material, especially pesticides, and note or otherwise record (for example, photograph) precise location of accident.
3. Notify the appropriate Forest Service personnel. If and when Forest Service or GSA vehicles are involved, these incidents must be entered into the Forest Service e-Safety system as a motor vehicle accident (MVA).
4. Notify State highway or other transportation and safety personnel.
5. For incidental spills only, initiate emergency cleanup commensurate with the employee's level of training and certification.

B. In the event of accidental spill, the objective is to take immediate action, in a safe manner, to minimize the spill contamination until specialized personnel and equipment arrives. Make note and provide responders with the following:

1. Product name, EPA registration number



2. Chemical common name
3. Date and time of spill
4. Estimate of the amount spilled
5. The concentration (i.e. concentrate or mix)
6. If in water, stream name and exact location

C. Steps to take in the event of an accident:

1. **Notification of trained county, State, or Federal responders should be first.** Eliminate fire danger and administer first aid to seriously injured victims. Care of injured personnel:

- a. Dress in personal protective equipment for which you are properly authorized, trained and equipped. If a fumigant or dangerous vapor is involved, wear the appropriate respirator or emergency escape breathing apparatus only if authorized and trained to do so (FSH 6709.11, ch. 50 and ch. 60, sec. 61).
- b. Designate a decontamination zone and safe area and move injured personnel from the exposure site to safe area.
- c. Gather contaminated clothing from injured individuals and rescue personnel. Wash the individuals with detergent and water (as specified on the product label), or decontaminate as specified by the manufacturer.
- d. **Immediately call for medical assistance for injured and contaminated personnel.** Do not leave contaminated individuals alone, except possibly very briefly to call for medical assistance. If possible, direct a responder to stay with them until medical personnel take charge. Alert medical personnel of possible or actual pesticide exposure. If it is necessary to transport pesticide-exposed individuals for prompt medical attention, in the vehicle apply first aid as specified on label for routine spills of toxic, caustic, or corrosive pesticide. Prepare for this contingency by stocking containers of potable water in transport vehicles to flush eyes or skin.
- e. If it is necessary to transport pesticide-exposed individuals for prompt medical attention, in the vehicle apply first aid as specified on label for routine spills of toxic, caustic, or corrosive pesticide. Prepare for this contingency by stocking containers of potable water in transport vehicles to flush eyes or skin.

2. Control traffic as necessary. Place flaggers or reflector triangles to prevent additional accidents. Be careful using flares around spilled material.

3. Prevent unprotected personnel from entering the spill area. Line out the spill area with flagging, if possible.
4. Prevent ignition of flammable material by removing the flammable material or eliminating sources of ignition such as exhausts, electric motors, gasoline engines, or cigarettes.
5. Take immediate action to stop the spill by either plugging the leak or doing whatever is safely possible to ensure the spill is stopped from coming out of the source container. Only properly trained and certified personnel may handle the pesticides. Consistent with employee qualifications, confine the spill to prevent it from spreading. Encircle the spill area with a dike of absorbent material such as kitty litter for water soluble pesticides, powersorb, rags, or construct an earthen berm. If necessary, dig a ditch to direct the spill flow away from sensitive areas.
6. Separate leaking container(s) from other containers.
7. Try to prevent the material from entering waterways. Take immediate action to contain the spill by temporarily diverting it from water sources into a local ponding area.
8. **DO NOT** wash the spill into a ditch, drainage, stream, sewer drain, or off the road, since this serves to further spread the chemical.

#### D. Incidents

As defined by Occupational Safety and Health Administration (OSHA), an incidental spill/release is a release of a hazardous substance which does not pose a significant safety or health hazard to employees in the immediate vicinity or to the employee cleaning it up, nor does it have the potential to become an emergency within a short time frame. Incidental releases are limited in quantity, exposure potential, or toxicity and present minor safety or health hazards to employees in the immediate work area or those assigned to clean them up. An incidental spill may be safely cleaned up by employees who are familiar with the hazards of the chemicals with which they are working. Spills/releases that are beyond the definition of incidental must be addressed by either State/local hazardous materials spill response teams and/or qualified emergency spill response contractors.

Pesticide incidents include non-life-threatening situations such as incidental pesticide spills, non-target pesticide applications, unusual occurrences of drift, unforeseen adverse effects on wildlife or other components of the environment, and any other situation that might affect public welfare or be of special interest to the public, the press, or other media.

#### E. Cleanup of Incidental Spills

Project personnel shall only be involved with cleanup of incidental pesticide spills, and only to the degree that they have been trained (FSM 2161). Non-emergency incidental spills can typically be safely contained with the vehicle spill kit by the trained personnel on-site before prompt notification of appropriate individuals or agencies on the notification list. Whether the spill is incidental or not, contact the unit Hazardous Materials Emergency Response Coordinator promptly. Guidelines for liquid spills:

1. Pump as much as possible of the spilled liquid into recovery containers.
2. Use absorbent materials, such as commercially bagged clay, kitty litter, or sawdust, to soak up the spill. Use only enough material to absorb the spill.
3. Spread the absorbent material around the perimeter of the spill and sweep toward the center.
4. Shovel the absorbent and pesticide into approved hazardous material container(s) for subsequent disposal. In some cases, absorbent containing pesticides such as herbicides can be applied to the ground as though it were a granular formulation. Contact the Regional Pesticide Coordinator for further information. If it is determined that the pesticide can be reused, label the container as a service container (FSH 2109.14, ch. 40, sec. 42.1).
5. Label all containers properly and legibly (FSM 2163.2). Label containers with the date the container was filled, chemical common name, product name and EPA registration number, and a description of any absorbent or other additional material (soil, forest detritus, and so forth) found in the container, and include the words "Hazardous Waste" when appropriate (40 CFR 262.31 and 32).

#### F. Disposal of Pesticide Waste

Follow the general guidelines for pesticide waste disposal (FSH 2109.14, ch. 40, sec. 43). Contact the unit Hazardous Materials Coordinator and the Regional Pesticide Coordinator regarding disposal of contaminated materials.

#### G. Decontamination of Incidental Releases

For spills larger than those defined under OSHA as "incidental," refer to unit contingency and emergency response plan. For unintended incidental releases, properly trained certified pesticide applicators may decontaminate small amounts of residual pesticide(s) remaining after the cleanup process as outlined in the pesticide-project safety plan (FSM 2151.3). Decontaminate or neutralize road surfaces, mixing and loading sites, storage area floors, and truck beds while wearing appropriate personal protective equipment. The decontaminating or neutralizing agent used varies based on the spilled chemical, surface type, or area contaminated. Consult the manufacturer's Safety Data Sheet (SDS) and product label or contact the Regional

Pesticide Coordinator for further information. For spills larger than incidental, refer to unit Emergency Response Plan.

#### H. Reporting Requirements

Report all pesticide incident and accident situations to the local Hazmat Coordinator and determine appropriate future actions. Specific instructions for filing a written Pesticide Accident and Incident Report are in FSH 2109.14, chapter 70, section 71.3.

##### 1. Initial Notification -- Incident or Accident Report

Promptly inform Forest or Regional Office personnel of any significant pesticide incident or accident via telephone, telegraph, facsimile, or urgent electronic message. Initial reports at the Field level (District or Forest) are evaluated for transmission to the Regional and Washington Office. Pesticide incidents that might affect public welfare or might be of special interest to the public, the press, or other media should be reported promptly to the Washington Office, Director, Office of Safety and Occupational Health. Make initial reports of pesticide incidents and accidents to the Washington Office, Personnel Management staff, Safety and Health Branch Chief (FSM 6700).

The Safety and Health Branch Chief ensures that the appropriate Deputy Chief(s) and Washington Office Staff Directors are notified. Submit follow-up and written reports through Engineering or Forest Health Protection in accordance with the following direction. The Deputy Chief for State and Private Forestry informs the Chief, the Secretary of Agriculture, and the Administrator, Environmental Protection Agency, of significant incidents.”

Examples of significant incidents and accidents to report immediately to the Washington Office are:

- a. Injury or death of person working with pesticides, or on any project involving pesticides.
- b. Crashes of aircraft with pesticides on board.
- c. Accidental dumping or spilling of significant quantities of pesticides. Significance is determined by the quantity of material involved and the characteristics of the active ingredient.
- d. Significant adverse effects of pesticide use on humans, fish, birds, wildlife, farm animals, trees and crops, homes, and other components of the environment.

2. All written reports pertaining to significant pesticide incidents and accidents including spills and related investigations shall be kept in permanent record files. Accidents and incidents that involve employee injuries, illnesses, or near misses should also be reported into the USFS e-Safety System.

Follow up initial telephoned, faxed, or urgent computer messages with a Pesticide Accident/Incident Report. There is no set format for this report, but, at a minimum, such reports must indicate:

- a. Location of incident, such as State, county, National Forest, city, section, township, range, and identifiable roads or other landmarks.
- b. Ownership of property involved (if private property, give owner's name and address).
- c. Tree species, plant, animal community, or structure treated.
- d. Pest(s) involved.
- e. Human beings or domestic animals affected:
  - If human beings were involved, obtain and attach a written statement, with their consent, from the attending physician(s) with point of contact information. Such Personally Identifiable Information (PII) must be safeguarded from unauthorized disclosure.
  - If domestic animals were involved, obtain and attach a statement from the attending veterinarian.
- f. Name of person who ordered the work (individual landowner, State, Federal Government, or Supervisor of cooperative Federal-State program or project).
- g. If the work was publicly supported, list the agencies involved.
- h. Give the date the pesticide was applied, time, method of application, applicator, formulation, and dosage.
- i. Labeling - Respond to the following:
  - Was the material registered by the EPA and/or the State?
  - Was the material used according to label directions? If not, explain how it was used differently than according to the label
  - Did the label warnings and precautions cover the use?
  - If protective devices were recommended on the label, were they used?
- j. Were there unusual circumstances involved, such as inclement weather?
- k. If warning placards or watchmen were recommended, were they used? If not, why not?
- l. Did the public have adequate notice? Was there an environmental assessment or environmental impact statement covering the project?
- m. Was the individual or authority who ordered the work aware of the known hazards?
- n. Was the applicator aware of the known hazards? Was there a safety plan?
- o. What other precautions were taken to safeguard human health and the environment?
- p. Was application equipment properly calibrated and in good condition?
- q. Have there been recent similar incidents? If so, explain.
- r. Were samples of adversely affected water, vegetation, crops, or animals taken?

- What was collected: Carcass, plant material, water, soil, formulation used, other?
  - How were samples handled: Storage, contained, shipped, moved?
  - Where were samples sent for analysis?
  - Have results of sample analysis been obtained? If so, what were the results?
- s. Attach copies of news articles pertaining to the incident.

I. Facility Fire or Explosion

An accident resulting in a facility fire or explosion warrants immediate attention to:

1. Protect and care for the injured.
2. Notify local police, firefighting personnel, and hazardous materials personnel.
3. Prevent spread of fire. Ensure that all persons attempting to contain the fire have the proper training to do so, and that personal protection equipment is being appropriately used.

4. Build containment dikes downslope from the accident scene.

The Regional or Area Safety and Health Manager shall notify the Washington Office, Office of Safety and Occupational Health, within 8 hours, in the event of a facility fire or explosion. Follow the guidelines provided by FSM 2160, the unit contingency and emergency response plan, and appropriate environmental engineering personnel if there is release, or the potential for release, of reportable quantities of a hazardous material. Prepare for a Regional or Washington Office investigation.



## EMERGENCY CONTACT INFORMATION

### Notification

- Plumas National Forest (PNF) Dispatch **(530) 283-7837**
- PNF Dispatch – 24 hour EMERGENCY **(530) 283-0193**
- If no cell service use Forest Service radio channel 1
- Or call **911**

### Additional Notification Contacts

- **PNF Hazmat Spill Coordinator – Donna Duncan (530) 394-8067**
- Mt. Hough Ranger District Hazardous Materials Coordinator – Quincy: Jess Steffen **(530) 283-9139**, Greenville: Collin Shafer (Engine 20) **(530) 284-7136**, cell: **(530) 927-7828**
- Plumas National Forest Pesticide Use Coordinator – Will Brendecke **(530) 283-7841**, cell **(541) 419-5268**
- Plumas-Sierra County Agricultural Commissioner – Tim Gibson **(530) 283-6365**, cell **(530)-249-2666**
- Plumas National Forest Safety Officer – Dave Marion **(530) 283-7761**
- California Highway Patrol, Quincy **(530) 283-1100**
- Plumas County Sheriff, Dispatch **(530) 283-6300**
- Plumas County Hazardous Materials Team – Robbie Cassou **(530) 283-6332**

### Hospitals & Health Clinics

- Plumas District Hospital, 1065 Bucks Lake Rd., Quincy, CA 95971, **(530) 283-2121**
- ~~Indian Valley Medical Clinic, 176 Hot Springs Road, Greenville, CA **(530) 284-6116**~~
- Eastern Plumas District Hospital, 500 First Ave., Portola, CA 96122, **(530) 832-6500**
- Seneca Healthcare District, 130 Brentwood Dr., Chester, CA **(530) 258-2151**
- Enloe Medical Center, 1531 Esplanade, Chico, CA 95926, **(530) 332-7300**
- Banner Lassen Medical Center, 1800 Spring Ridge Dr., Susanville, CA **(530) 252-2000**

### Poison Control Centers

- The California Poison Control System  
24-Hour Emergency Phone: **(800) 222-1222**

- Sacramento Division; UC Davis Medical Center  
Emergency Phone: **(800) 876-4766**  
Emergency Phone for Hearing Impaired: **(800) 972-3323**

### **County Health Department**

- Plumas County Department of Public Health  
270 County Hospital Rd., Suite 206, Quincy, CA 95971  
**(530) 283-6330**, FAX (530) 283-6425
- Plumas County Department of Environmental Health  
270 County Hospital Rd., Suite 127, Quincy, CA 95971  
**(530) 283-6355**, FAX (530) 283-6441,  
**Emergency: 530-283-6300** (Sheriff Dispatch)
- Rob Robinette, Environmental Health Specialist, **(530) 283-6355**

### **HAZMAT Cleanup Companies**

- American Integrated Services, INC  
**(805) 431-1418**
- PARC Environmental  
**(559) 233-7156**
- Engineering/Remediation Resources Group  
**(415) 395-9974**
- A/C Industrial Services Corp.  
Chico, CA 95973  
**(530) 343-5488**  
24-Hour Emergency Number: **(800) 343-3488**