Eldorado National Forest
Placerville Ranger District

Aquatic Biological Assessment/Evaluation for the Trestle Forest Health Project

October 2014

PROJECT LOCATION:
El Dorado County, CA
T.8N., R.13 E., Sections 1, 2; T.8N., R.14 E, Sections 4-6
T.9N., R.13E., Sections 1-3, 11-16, 19-30, 33-36; T.9N., R.14E, Sections 5-10, 14-22, 28-33;
T.10 N, R.13E., Sections 35 and 36

Prepared By: */s/ Joseph Chow, Fisheries Biologist, October 2014*
Reviewed By: */s/ Jann Williams, Forest Fisheries Biologist, October 2014*

EFFECTS DETERMINATIONS

Species	TES Species	Determination
California red-legged Frog	Threatened	No Effect
Critical habitat for CA red-legged frog	Designated	No Effect
Central Valley spring-run Chinook Salmon	Threatened	No Effect
Delta Smelt	Threatened	No Effect
Foothill yellow-legged frog	FS Sensitive	May affect but is not likely to adversely affect
Hardhead	FS Sensitive	No Effect
Lahontan Cutthroat	Threatened	No Effect
Sacramento winter-run Chinook Salmon	Threatened	No Effect
Sierra Nevada yellow-legged frog and proposed critical habitat	Endangered, Critical Habitat proposed	No Effect
Western Pond Turtle	FS Sensitive	May affect but is not likely to adversely affect
Yosemite Toad	FS Sensitive	No Effect
Pacific Lamprey	FS Sensitive	May affect but is not likely to adversely affect

I. INTRODUCTION

The Placerville Ranger District on the Eldorado National Forest in El Dorado County, California has developed four alternatives for managing the Trestle Forest Health Project Area, hereafter referred to as Trestle FHP or TFHP. The Environmental Impact Statement analyzes alternatives for implementation of a variety of vegetation and restoration treatments in forest stands to reduce the potential for loss of important ecosystem components to high severity fire behavior on a majority of the landscape and to improve forest heath and increase resilience of stands to the adverse effects of insects and diseases. The gross area of the project is 20,452 acres. This total includes 1,325 acres of other ownership. The project is located entirely in El Dorado County, California in T.8N., R.13 E., in all or portions of Sections 1and 2; T.8N., R.14 E., in all or portions of Sections 4-6; T.9N., R.13E., in portions of Section 1-3, 11-16, 19-30, 33-36; T.9N., R.14E., in all or portions of Sections 5-10, 14-22, 28-33; and T.10 N, R.13E., in all or portions of Sections 35 and 36; M.D.B & M. The area is accessed from Grizzly Flat using the Capps Crossing Road (9N30) or the North South Road (10N83). Elevations range from 3,200 feet on the west side of the project area to 5,800 feet on east side of the project area.

The Trestle FHP will implement management direction provided by the Eldorado National Forest Plan, as amended by the Sierra Nevada Forest Plan Amendment (SNFPA 2004). Proposed management actions would incorporate concepts described in "An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests", PSW-GTR-220, North et al, 2009 and "Managing Sierra Nevada Forests", PSW-GTR-237, North et al, 2012.

Forest Service Manual (FSM) 2672.42 (USDA Forest Service 1990) directs that a biological assessment (BA) be prepared for all proposed projects that may have effects upon US Fish and Wildlife Service (USFWS) listed threatened, endangered, and proposed species. In addition, FSM 2670.32 (USDA Forest Service 1990) directs that a biological evaluation (BE) be prepared to determine the effects of proposed projects on USDA Forest Service Region 5 designated sensitive species.

The purpose of these documents is to ensure that project decisions do not adversely affect species viability or create significant trends towards Federal listing. This document will analyze the potential effects of the proposed TFHP for both federally listed threatened and endangered aquatic species and Region 5 listed sensitive species. This document supports the Biological Evaluation requirement. No federally listed aquatic threatened or endangered species or critical habitat occurs within the project boundary or will be affected by project activities.

II. CONSULTATION TO DATE

Pursuant to Section 7(c) of the Endangered Species Act of 1973 as amended, the USFWS is contacted to obtain a current list of threatened, endangered, proposed, and candidate species that may be present on the Eldorado National Forest (ENF). The most recent quarterly species list for the ENF was dated December 17, 2013 and obtained from the USFWS website (http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists_NF-action-page.cfm) on September 8, 2014. This list is available for review at the Eldorado National Forest Supervisors

Office in Placerville, CA.

This document analyzes the potential effects of the proposed projects upon the following federally listed threatened, endangered, candidate, and Region 5 sensitive aquatic species (Table 1). Candidate species are managed as sensitive species by the USDA Forest Service:

Federally Listed Threatened (T), Endangered (E) Aquatic Species

Delta smelt	(*Hypomesus transpacificus*), T
Lahontan cutthroat trout	(*Oncorhynchus clarki henshawi*), T
Central Valley steelhead	(*Oncorhynchus mykiss*), T
Central Valley spring-run chinook salmon	(*Oncorhynchus tshawytscha*), T
winter-run chinook salmon	(*Oncorhynchus tshawytscha*), E
California red-legged frog	(*Rana draytonii*), T
Sierra Nevada yellow-legged frog	(*Rana sierrae*), E
Yosemite toad	(*Anaxyrus canorus*), E

Species with Critical Habitat Designated (X) in the Eldorado National Forest

Sierra Nevada yellow-legged frog	(*Rana sierrae*), PX
Yosemite toad	(*Anaxyrus canorus*), PX
California red-legged frog	(*Rana draytonii*), X

US Forest Service Region 5 Designated Sensitive Aquatic Species

Pacific lamprey	(*Entosphenus tridentata*)
Hardhead	(*Mylopharodon conocephalus*)
Foothill yellow-legged frog	(*Rana boylii*)
Western pond turtle	(*Actinemys marmorata*)

Key:

(E) Endangered - Listed as being in danger of extinction.
(T) Threatened - Listed as likely to become endangered within the foreseeable future.
(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.
(PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
(X) Critical Habitat designated for this species

There are no anadromous species of fish known to occur on the Eldorado National Forest mostly due to the presence of rim dams, water diversions and natural barriers; therefore no consultation with the National Marine Fisheries Service was initiated.

Table 1. Federally Threatened, endangered, or Forest Service sensitive aquatic species that may

be present in Eldorado National Forest, their preferred habitat and elevation range, and their potential to reside in the Trestle FHP area.

Species	TES Status	Elevation Range of Habitat	Preferred Habitat	Potential for Project to Affect this Species
California red-legged frog and its critical habitat	**Threatened; California Species of Concern**	**Below 5,000 ft.**	**Ponds and slow-moving streams**	**None. Partly located within the elevation range of this species. Extensive protocol surveys have not detected this species. Potentially suitable breeding and foraging habitat would not be affected. Critical habitat not within project area.**
Central Valley spring-run Chinook salmon	threatened	N/A	Central Valley delta and up rivers to man-made and natural barriers	None. Downstream effects are not expected.
Central Valley steelhead	threatened	N/A	Central Valley delta and up rivers to man-made and natural barriers	None. Downstream effects are not expected.
Delta smelt	threatened	N/A	Sacramento-San Joaquin delta	None. Downstream effects are not expected.
Foothill yellow-legged frog	**FS sensitive**	**Below 6,000 ft.**	**High gradient streams with cobbles, riffles, and open canopy areas**	**Past sightings within 1 mile of project area boundary on Sopiago Creek.**
Hardhead	FS sensitive	Below 4,800 ft.	Undisturbed foothill streams with clear, deep (>0.8m) pools and runs with sand-gravel-boulder substrates and slow velocities.	None. No known populations in the Cosumnes River drainage in the Eldorado NF. Historical distribution also unknown. Presence of known natural barriers and effects of mining would likely limit distribution.
Lahontan cutthroat trout	threatened	N/A	High elevation and east slope streams and lakes	None. No known populations have the potential to be affected by the proposed project.
Sierra Nevada yellow-legged frog and its Proposed Critical Habitat	**Endangered, Critical Habitat proposed**	**Above 4,500 ft.**	**High elevation low-gradient streams and small ponds that are either intermittent or perennial**	**None have ever been detected within project area and habitat suitability potential is low. Nearest sighting is 0.6 air miles east of project area boundary in different watershed. Critical habitat not within project area**
Western pond turtle	**FS sensitive**	**Below 5,000 ft.**	**Ponds and slow moving streams**	**One sighting within project area (Leoni Meadow), suitable nesting habitat identified in a GIS within project area.**
Sacramento winter-run chinook	endangered	N/A	Central Valley delta and up rivers to man-made and natural barriers	None. Downstream effects are not expected.
Yosemite toad	FS sensitive	Above 6,500 ft.	High elevation wetland areas and meadows	None (outside of range). No known populations have the potential to be affected by the proposed project.
Pacific lamprey	**FS sensitive**	**Sea level to over 4,000 ft.**	**Backwater and deep pools of clear perennial streams with gravel-sand substrates.**	**Present within two miles of Forest boundary (MF Cosumnes). Presence within the project area unknown, but potentially present.**

III. CURRENT MANAGEMENT DIRECTION

Direction to maintain the viability of Region 5 endangered, threatened, and sensitive species is

provided by the National Forest Management Act, the Code of Federal Regulations (CFR 219.19), the Forest Service Manual, FSM 2672 (USDA Forest Service 1990), and the Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement (EIS) (USDA Forest Service 2004a). This Amendment guides the management of the Sierra Nevada national forests until their forest plans are revised. The aquatic, riparian, and meadow conservation strategy in this EIS will provide clean water, functioning aquatic ecosystems, and environmental conditions that contribute to viable populations of associated species (USDA Forest Service 2004a).

Current Forest Service policy (FSM 2670 [USDA Forest Service 1990]) is to manage National Forest System lands so that the special design features provided under the Endangered Species Act will no longer be necessary, and threatened or endangered species will become de-listed. The Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement (EIS) (USDA Forest Service 2004a) provides direction for the management of threatened and endangered species. The Aquatic Management Strategy in the EIS directs that Forests utilize administrative measures to protect and restore aquatic, riparian, and meadow ecosystems and provide for the viability of native animal species associated with these ecosystems. The following Aquatic Management Strategy goals pertain to aquatic endangered, threatened, and sensitive species:

- Maintain and restore water quality to meet goals of the Clean Water Act and Safe Drinking Water Act, providing water that is fishable, swimmable, and suitable for drinking after normal treatment.
- Maintain and restore habitat to support viable populations of native and desired non-native plant, invertebrate and vertebrate riparian-dependent species.
- Maintain and restore the species composition and structural diversity of animal communities in riparian areas, wetlands, and meadows to provide desired habitats and ecological functions.
- Maintain and restore the distribution and health of biotic communities in special aquatic habitats (such as springs, seeps, vernal pools, fens, bogs, and marshes) to perpetuate their unique functions and biological diversity, and
- Maintain and restore spatial and temporal connectivity for aquatic and riparian species within and between watersheds to provide physically, chemically and biologically unobstructed movement for their survival, migration, and reproduction.

The Record of Decision for the Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement (USDA Forest Service 2004b) directs the Agency to conduct a Riparian Conservation Objectives analysis for projects occurring within Riparian Conservation Areas (RCAs). This analysis can be found in TFHP RCO Consistency Report as part of the project record.

IV. DESCRIPTION OF THE PROPOSED PROJECT – ALTERNATIVES CONSIDERED

Alternative 1

No Action

Under the No Action alternative, current management plans would continue to guide management of the project area. No commercial thinning, prescribed burning, watershed restoration activities, or other activities would be implemented under this project to accomplish the purpose and need.

Alternative 2

Proposed Action

Thinning

1. Use a combination of ground based and skyline logging systems to conduct mechanical thinning on approximately 4,887 acres (4,444 acres within natural stands and 443 acres within plantations). Thinning would include the cutting and removal of select commercial (trees 10" to 29.9" dbh) and non-commercial (trees 4" to 9.9" dbh) sized trees, using a combination of variable density thinning and thinning from below to maintain or increase within stand heterogeneity while reducing ladder fuels in strategic locations.
    a. On slopes generally less than 35%, ground-based mechanized equipment (low-impact feller-buncher, hand felling, and conventional skidding equipment) would be used to remove both commercial and non-commercial material on approximately 4,733 acres and non-commercial sized material only on 25 acres.

    b. A skyline system would be used to thin approximately 76 acres of treatment units with slopes generally greater than 35%. Units identified for thinning using skyline systems would include harvest on slopes generally less than 50% with mechanical equipment to cut and bunch thinned trees. Hand felling would be used in areas with slopes generally steeper than 50%.

    c. Within the mechanical thinning units, cutting of small trees (1" to 3.9" dbh) and brush would occur on approximately 1,575 acres.

    d. Removal of hardwoods greater than 4" dbh and trees $\geq$ 30" dbh would not occur, except to allow for equipment operability or safety.

    e. The removal of dead and unstable live trees (hazard trees) of all sizes would occur along utility lines, timber haul roads and landings to provide for safety of woods worker and public throughout project implementation, except where restrictions for removal apply.

    f. Existing and operations generated slash and brush would be tractor piled or grapple piled after mechanical thinning operations. Tractor piling would occur as a follow-up treatment on approximately 1,597 acres in natural stands and 310 acres in plantations to

reduce ground fuels and ladder fuels. Tractor piling would not occur on slopes generally greater than 35%. Grapple piling would occur on 15 acres in natural stands.

g. Biomass (non-commercial) material accumulated on landings would be disposed of or removed in a number of ways, including on-site burning, commercial and personal use firewood, or as co-generation fuel where feasible.

2. Conduct non-commercial mechanical thinning (trees less than 12 inches dbh) up to 100 feet on one or both sides of the Capps Crossing Road (9N30) and Grizzly-Caldor Road / Leoni Road (09N73) in 5 segments totaling approximately 3 miles (approximately 57 acres). Material would be moved to landings and treated as described for biomass from thinning units. Conduct brush cutting up to 100 feet of Capps Crossing Road (9N30) and Grizzly-Caldor Road / Leoni Road (09N73) in 3 segments totaling approximately 5 miles (approximately 88 acres).

Hand Thinning

3. Hand cut and pile understory vegetation (trees less than 9 inches dbh and brush) on approximately 1,492 acres. Approximately 1,044 acres of the treatments by hand occur in units that are located within 500 feet of private property boundaries in the Wildland Urban Interface (WUI) defense zones and threat zones.

4. Within plantations, conduct approximately 6 acres of hand thinning of non-commercial sized material, with some hand piling and some lop and scatter of thinned material.

Prescribed Burning

5. Prescribed fire is proposed on 15,812 acres within the project area. Pile burning and underburning are the two primary techniques of prescribed fire proposed in this project.
    a. Underburning is proposed as the initial or primary treatment for this project on approximately 9,583 acres, where land allocations, environmental constraints, or stand conditions makes prescribed fire the preferred tool to achieve treatment objectives. Of the approximately 9,583 acres of underburning as an initial treatment, 984 acres is considered priority for prescribed fire only treatments and anticipated to be completed within the next 5 to 10 years.

    b. All treatment units, except those specifically excluded from proposed burning, are proposed for follow-up prescribed burning. Multiple burn entries would occur in burn only stands with heavy fuel build up conditions to reach desired conditions described in the purpose and need for the project.

    c. Pile burning is proposed as a follow-up treatment on 3,412 acres. Within thinning and piling units, underburning may be implemented concurrent with pile burning or separately.

    d. Prescribed fire may be ignited using ground based firing techniques or through aerial firing techniques.

e. In preparation for prescribed burning, perimeter line construction would be needed where roads, trails, or natural barriers are absent. This may involve hand cutting of vegetation including trees up to 9-inch diameter, pruning, and scraping a bare soil line, or line construction with a D-6 or smaller dozer.

Transportation System

6. Road reconstruction to facilitate treatments and improve road conditions is proposed on approximately 84 miles. Reconstruction activities may include, repair or replacement of inadequate drainage culverts; elimination of ruts; roadside drainage maintenance; cattle guard cleaning and repair; installation of waterbars and dips with inadequate water runoff control; placement of erosion resistant and protective material (riprap), gate installation to control seasonal use or replacement of existing non-functional gates or barricades; cleaning and filling cracks and potholes on existing asphalt roads; and, cutting and removing roadside vegetation encroaching on all system roads.

7. Approximately 3 miles of temporary roads would be used for project operations. Once there is no longer a use for the road, the temporary roads would be obliterated using methods such as, earth barricades; ripped to alleviate soil compaction and restore infiltration; seeding, removing drainage structures; slashing; and, camouflaging road junction.

8. Obliterate approximately 3.1 miles of 3 roads not open to public use identified as causing negative watershed impacts and identified as not needed for administrative access (Routes 09N44B, 09N45D, and 09N65B). Obliteration would include: earth barricades; ripping to alleviate soil compaction and restore infiltration; removing drainage structures, mulching with native materials (slash); and seeding.

Water Hole Maintenance and Repair

9. To furnish an adequate water supply for fire or contract work, perform maintenance and repair work on eleven existing water supply facilities. Maintenance and repair work would include: clearing plugged pipes; installing temporary weirs or sandbags; placing erosion resistant and protective material (riprap) on road surfaces accessing water supply facilities; and, cleaning pond areas of debris.

Restoration - Dispersed Recreation, Roads, Trails, and Abandoned Mines

10. Steely Fork Consumnes River Site 1: Section 15, T09N R13E
    a. Reduce watershed damage from a denuded area eroding into Steely Fork Consumnes River while continuing to allow for dispersed recreation use and water drafting activities.
        i. Block access to stream crossing with boulders and gate to stop creek crossing, but leave access to water hole; place aggregate base between the gate and stream; and re-establish existing lead-off ditches.
        ii. Place boulders along the border of the dispersed camping area to restrict site expansion. Break up the soil compaction (outside of the defined camping area) via sub-soiler, ripping shanks, or by hand. Avoid underground lines and sensitive sites.

11. Steely Fork Consumnes River Site 2: Section 14, T09N R13E
    a. Reduce watershed damage from area eroding sediment into Steely Fork Consumnes River and enhance the meadow in the area.
        i. Replace the gate blocking access to the 09N73A (road closed to public use); construct water bars on stream approaches; block access to non-system routes with boulders; break up the soil compaction (in the dispersed camping area and the spur road) via sub-soiler, ripping shanks, or by hand; and plant or seed vegetation as needed.
        ii. Meadow enhancement activities would include; removal of encroaching conifers by hand, block motorized vehicle access to the meadow using the felled trees, hand pull invasive plant species, remove barbed wire, and install nesting platform for great gray owl.
        iii. Identify designated hiking path by blocking and obscuring non-system trails with natural materials.

12. Steely Fork Consumnes River Site 3: Sections 21-22, T09N R13E
    a. Reduce watershed damage from area eroding sediment into Steely Fork Consumnes River.
        i. Block unauthorized route off of 09N65B using native materials; break up soil compaction in the dispersed site and non-system route via sub-soiler, ripping shanks, or by hand and mulch with straw or native vegetation; and reestablish vegetation through seeding and planting.
        ii. Obliterate 9N65B (closed to public use). Break up soil compaction via sub-soiler or ripping shanks and cover with straw or native vegetation. Reestablish vegetation through seeding and planting.

13. Dogtown Creek Site 1: Section 30, T09N R14E
    a. Reduce watershed damage from camping area eroding sediment into Dogtown Creek.
        i. Obliterate camping area. Block access through placement of boulders; break up soil compaction via sub-soiler or ripping shanks and mulch with straw or native vegetation. Reestablish vegetation through seeding and planting.

14. Dogtown Creek Site 2: Section 28, T09N R14E
    a. Reduce watershed damage from area eroding sediment into Dogtown Creek while continuing to provide for dispersed recreation opportunities.
        i. Place boulders at border of the dispersed recreation use site to restrict site expansion; break up soil compaction via sub-soiler or ripping shanks and mulch with straw or native vegetation. Reestablish vegetation through seeding and planting. Plant riparian vegetation on stream banks with absent or suppressed vegetation.

15. Intersection of 9N34Y and 14E31: Section 25, T09N R13E.
    a. Reduce erosion and restore drainage by removing small diameter pipe with hand tools while maintaining existing water source upslope for wildlife.

16. Intersection of 14E31 trail and 10N83: Section 15, T09N R14E.
    a. Define the designated use area and reduce non-system vehicle use activities by installing barriers to define and narrow the trail, add cover to eroded areas, and place coarse woody material in open areas.

17. Intersection of 14E31 and 9N45 Site 1: Section 29 T09N R14E.
    a. Improve water control features and reduce sediment deposits on road and channels.
        i. Realign the system trail parallel to the contour.
        ii. Restore the landing by decompacting soil via sub-soiler or ripping shanks; install waterbars; and much with straw or native vegetation to provide soil cover.

18. Intersection of 14E31 and 9N45 Site 2: Section 30, T09N, R14E.
    a. Improve water control features and reduce sediment deposits on road and channels by aligning the system trail parallel to the contour and obliterate, block and restore abandoned trail.

19. 14E31 near Plummer Ridge Guard Station: Section 20, T09N R14E.
    a. Reduce impacts to sensitive soils and plant habitat (shallow lava cap soil) by defining and restoring the trail intersection through the placement of boulders and native materials.

20. Unauthorized route associated with 14E13: Section 29, T09N R14E.
    a. Reduce erosion and sedimentation by unauthorized vehicle use on large road cut bank by installing barrier rocks along the road at cut slope; placing course woody material on the slope, installing dips to change the drainage patterns; and blocking and disguising access to the area from 14E31 using natural materials (hand fall trees) or boulders;.

21. Unauthorized route associated with 09N45: Section 28, T09N R14E.
    a. Reduce soil compaction and improve meadow hydrology by blocking, obliterating, and disguising the non-system route using native materials. Break up soil compaction in the meadow portion using hand tools.

22. Unauthorized route associated with 09N65B: Section 21, T09N R13E.
    a. Reduce impacts to riparian vegetation and soil compaction by blocking, obliterating, and disguising the non-system route by hand falling small material across the trail.

23. Road 09N55: Section 32, T09N R14E.
    a. Reduce sediment contribution to Middle Dry Creek while providing for OHV recreation opportunity.
        i. Reclassify the last 1.1 miles of road 09N55 from a system road to a motorized trail, allowing only vehicles <50" in width.
        ii. Rehabilitate sides of existing road to narrow the trail corridor and accommodate vehicles <50" in width.

24. Meadow near Harrel Water Tank: Section 7, T09N R14E.

a. Restore meadow vegetation by removing debris and blocking areas with native material to enable vegetation to recover.

25. 08N49 Road: Section 32, T09N, R14E.
    a. Reduce unauthorized vehicle use in sensitive plant populations by placing boulders along the edge of the road to barricade vehicular access.

26. Abandoned mine closure Site 1 and 2: Section 23, T09N R13E.
    a. Close the shaft to provide for human and wildlife safety while protecting applicable heritage features. A bat friendly enclosure would be used if identified as bat habitat.

27. Barbed wire removal and T-post relocation: Sections 6 and 7, T09N R14E.
    a. Remove barbed wire and some T-posts. T-posts would be relocated as necessary with applicable signage to indicate boundary of research plots.

Alternative 4

This alternative was developed based on comments that given the reported population decline, thinning of California spotted owl habitats could lead to negative effects to owl populations in the project area. This alternative would commercially thin 2,140 fewer acres within natural stands and increase commercial thinning in 13 acres of plantation stand, non-commercially thin 53 additional acres, reduce hand thinning by 369 acres, increase prescribed burning as an initial treatment by 3,012 acres, including increasing priority initial prescribed fire treatments by 579 acres, decrease follow-up prescribed fire by 699 acres, increase non-commercial mechanical roadside thinning by 2 acres, increase road brushing by 79 acres, reduce road reconstruction by approximately 20 miles and changes some of the roads to be reconstructed, increase the proposed use of temporary roads by 0.6 miles, and increase road obliteration adding 0.8 miles of one road (09N49G) as compared to the proposed action, Alternative 2.
This alternative would include the following treatments:

1. 2,735 acres of mechanical thinning of commercial and non-commercial sized trees (2,304 acres within natural stands and 431 acres of plantations) using ground based equipment, with follow up surface fuels treatments as proposed in Alternative 2;
2. Conduct approximately 53 acres of non-commercial mechanical thinning (trees less than 10 inches dbh) within natural stands and 25 acres within plantations;
3. Within the mechanical thinning units, cutting of small trees (1" to 3.9" dbh) and brush would occur on approximately 1,007 acres;
4. Conduct non-commercial mechanical thinning (trees less than 12 inches dbh) within 100 feet on one or both sides of Capps Crossing Road (9N30) and Grizzly-Caldor Road / Leoni Road (09N73) on 5 segments of the road that are outside of mechanical thin units (approximately 59 acres);
5. Conduct mechanical brush cutting up to 100 feet of Capps Crossing Road (9N30) and Grizzly-Caldor Road / Leoni Road (09N73) on 4 segments of the road that are outside of mechanical thin units (approximately 167 acres);
6. Hand thin and pile on approximately 1,123 acres, including 483 acres located within 500 feet of private property boundaries;
7. Conduct approximately 6 acres of hand thinning within conifer plantations;

8. Perform tractor piling on approximately 1,049 acres within natural stands and 312 acres within plantations, and grapple piling approximately 15 acres within natural stands;
9. Conduct prescribed understory burning as the initial or primary treatment on approximately 11,032 acres, of which 1,563 acres is first priority burning;
10. Pile burning is proposed as a follow-up treatment on 2,508 acres;
11. Conduct prescribed understory burning as a follow-up treatment on up to 15,113 acres;
12. Approximately 66 miles of road reconstruction;
13. Obliterate approximately 3.9 miles of roads not open to public use;
14. Restoration activities are the same as proposed in Alternative 2.

Alternative 5

This alternative was developed based on comments that given the reported population decline, thinning of California spotted owl habitats could lead to negative effects to owl populations in the project area along with comments that treatment should provide for effective fire modification strategy that can be implemented in a relative short timeframe to protect both the community and forest resources. This alternative would commercially thin 1,149 fewer acres within natural stands and 13 additional acres in plantation stands, reduce hand thinning by 380 acres, increase prescribed burning as an initial treatment on 1,519 acres while reducing prescribed fire as a priority initial treatment on 14 acres, reduce prescribed fire as a follow-up treatment on 701 acres, increase non-commercial mechanical roadside thinning by 2 acres, increase roadside brushing by 55 acres, reduce road reconstruction by approximately 15 miles and changes some of the roads to be reconstructed increases the use of temporary roads by 0.6 miles, and increase road obliteration adding 0.8 miles of one road (09N49G) compared to the proposed action, Alternative 2.

1. 3,726 acres of mechanical thinning of commercial and non-commercial sized trees (3,295 acres within natural stands and 431 acres of plantations) using ground based equipment, with follow up surface fuels treatments as proposed in Alternative 2;
2. Conduct approximately 25 acres of non-commercial mechanical thinning (trees less than 10 inches dbh) within conifer plantations;
3. Within the mechanical thinning units, cutting of small trees (1" to 3.9" dbh) and brush would occur on approximately 1,190 acres;
4. Conduct non-commercial mechanical thinning (trees less than 12 inches dbh) within 100 feet on one or both sides of Capps Crossing Road (9N30) and Grizzly-Caldor Road / Leoni Road (09N73) on 5 segments of the road that are outside of mechanical thin units (approximately 59 acres);
5. Conduct mechanical brush cutting within 100 feet of one or both sides of Capps Crossing Road (9N30) and Grizzly-Caldor Road / Leoni Road (09N73) on 4 segments of the road that are outside of mechanical thin units (approximately 167 acres);
6. Perform tractor piling on approximately 1,231 acres within natural stands and 312 acres within plantations, and grapple piling approximately 15 acres within natural stands.
7. Hand thin and pile on approximately 1,112 acres, including 470 acres located within 500 feet of private property boundaries;
8. Conduct approximately 6 acres of hand thinning within conifer plantations;
9. Conduct prescribed understory burning as the initial or primary treatment on approximately 10,132 acres, of which 970 acres is priority burning for initial prescribed fire treatment;

10. Pile burning is proposed as a follow-up treatment on 2,671 acres
11. Prescribed understory burning is proposed as a follow-up treatment on approximately 15,111 acres;
12. Approximately 69.5 miles of road reconstruction;
13. Obliterate approximately 3.9 miles of roads not open to public use;
14. Restoration activities are the same as proposed under Alternative 2.

Design Criteria Common to All Action Alternatives

The Forest Service has developed the following design criteria to be used for all action alternatives (unless otherwise specified). The purpose of these design criteria is to avoid, or to minimize the potential for adverse effects to the resources discussed below.
Best Management Practices (BMPs) as defined by the State of California for water quality protection would be integrated in into the proposed activities.

Mechanical and Hand Thinning

1. Rust-resistant sugar pine trees would be identified and protected from all activities.

2. Pacific yew greater than 1" dbh would be retained during thinning activities except where removal is needed for equipment operability.

3. Water would be used to abate dust from logging traffic with water selected from water drafting sites that have suitable stream flow and access. When water is scarce, EPA approved dust palliatives such as magnesium chloride or lignin sulfonate may be used for dust abatement.

4. Within the skyline thinning units (under Alternative 2 only), divots greater than 2 feet in depth caused by mechanical equipment would be re-contoured where it has a potential to channel water.

5. In addition to the seasonal closure identified by the Wheeled Motorized Travel Management Final Environmental Impact Statement (FEIS) (2008) roads identified as open for public use may be temporarily closed during inclement weather to protect reconstruction investments until those roads have stabilized. A Forest Order would be issued.

6. Infrastructure for Grizzly Flat, including Grizzly Flat Community Services District diversion dams, drafting stations, and pipelines, as well as electric lines, phone lines, and water pipes for private inholdings would be protected during treatment activities.

7. Activities within 500 feet of residences would be coordinated so that operations do not begin before 6 am.

8. Near residences, some material that would otherwise be put into landing piles may be stacked in decks to facilitate access for firewood collecting where feasible.

Prescribed Fire

1. Smoke emissions would be minimized by following Best Available Control Measures (BACM). A smoke permit administered by the local County Air Resource Agency would accompany burn plans.

2. Burn piles would be placed at least 50 feet from property boundary lines to reduce risk of fire escape and facilitate burning. Piles would be placed away from the boles of residual trees to reduce damage to residual trees and snags.

3. Prescribed burn prescriptions in plantations would be designed to maintain tree cover over the majority of the burn unit. All trees and brush killed by prescribed burning activities shall be left in place for wildlife purposes.

4. To minimize mortality loss to Pacific yew (*Taxus brevifolius*), lighting would cease within 10 feet of yew tree species. Where ceasing ignitions is unfavorable or may increase risk of mortality, firing tactics to direct heat away from yew tree would be utilized including ring and dot firing techniques.

5. Burn units with dense stands of Pacific yew would be treated with hand thinning and pile burning where necessary to meet fuel objectives. Piles would be placed to avoid large concentrations of Pacific yew. Broadcast burning would not occur in dense stands of Pacific yews.

6. To minimize mortality in legacy yellow pine (Ponderosa pine and Jeffrey pine) and sugar pine, prescribed burn units will be assessed for potential mortality in legacy pine prior to implementation of prescribed burning. In this project area, legacy pine is defined as sugar pine and yellow pine (pines with orange, smooth bark) trees of 42" dbh or greater. Prescribed burn methods will be designed to not be more than 30% mortality in legacy pine averaged across all burn units within the project area. Protection measures to reduce the potential for mortality in legacy pine such as raking, using water/foam/hoselays, or line construction (to exclude from burning) may be implemented. Use the following criteria if raking is the preferred protection measure:

    a. Rake legacy pines (sugar pine and yellow pine trees of 42" dbh or greater) with more than 4 inches duff accumulation or with pre-existing fire scars.

    b. Raked trees would have accumulated duff and litter removed within 2 feet of the tree bole.

    c. Raked material would be spread out beyond 2 feet from the tree bole so that mounds are not created. Trees with fire scars would be raked to bare mineral soil. Other raked trees would have no more than 2 to 3 inches of duff remaining.

    d. Raking would be preferably performed in late season to allow for at least one growing season for fine roots to recover prior to burning. At a minimum, raking would be

performed at least 60 days before prescribed fire implementation to allow for fine root recovery and reduce damage potential for residual trees.

Roads and OHV Trails

1. Provide for public safety by posting traffic control signs on any OHV trails within project area warning visitors of potential hazards due to project activities (burning, mastication, felling). Post closure information on local information boards and on the Eldorado National Forest website.

2. Repair or replace damage to improvements caused during project implementation in coordination with the recreation staff. If trails are damaged during contract administration, the contractor would effectively repair/restore damaged trails prior to acceptance of work.

3. Skid trails that intersect system roads open to the public would be barricaded with natural material so as to discourage unauthorized vehicle use.

4. Thinning activities along system OHV trails would be performed so that the trail experience and difficulty level is maintained where possible. A 15 foot no treatment buffer would be located adjacent to designated trails that are not co-located with roads reconstructed as part of this project.

5. Where road reconstruction is co-located with designated OHV trails, trails would be constricted post treatment to accommodate a trail experience, but would also facilitate access to fire suppression crews should a wildfire start in the area. The trail location would traverse across the entire road prism to provide curves for variety and challenge for the trail users. Where possible, the majority of the trail tread be located on the outer third of the road bed to facilitate drainage of the trail in the future. Trail location would incorporate the drainage features of the road, such as rolling dips to also provide drainage for the trail.

6. Where OHV trails are located within prescribed burn units, utilize firing techniques to retain vegetation within the trail corridor to the extent feasible. Where necessary to define the designated route and discourage unauthorized travel, barriers and native materials would be placed along these segments after prescribed burning operations have been completed.

Snags, Down Logs, and Hazard Trees

1. Designation of hazard or "danger" trees would follow direction in the *Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region* (Report Number RO-12-01, 2012). Hazard trees within the RCAs would be felled toward the stream and left in place below roads to provide for additional down wood in RCAs. Hazard trees within spotted owl, great gray owl, and northern goshawk PACs would be felled and left on site unless reviewed by a wildlife biologist.

2. Standing dead trees (snags) greater than 15 inches dbh that do not present a hazard for public and woods worker safety would not be felled and removed. Trees greater than 30 inches dbh

impacted from harvest equipment that result in skin-ups should be left on the landscape to serve as recruitment snags.

3. Where possible, large down logs (logs greater than 10 feet long and 16 inches in diameter at mid-point) would be left in place and protected to the extent practical during mechanical treatment and understory prescribed burning.

Hydrology and Aquatic Features

1. Equipment operation would be limited by exclusion zones identified in the table below. Protection measures may be altered on-the-ground for a specific site based on recommendations by a Resource Specialist (Soil Scientist, Fisheries Biologist, Botanist, and Hydrologist).

Table 1. Equipment exclusion zones for aquatic features[1].

Aquatic Feature	Ground-based equipment exclusion zone (feet)			
	< 15 % slope	15 – 25 % slope	25 – 35 % slope	> 35 % slope
Perennial stream[2]	75	100	150	Requires recommendation from a resource specialist after an on-site visit.
Intermittent stream[2]	50	50	75	
Ephemeral stream[2]	25	25	50	
Draws[3]	10	25	25	
Special aquatic features[4]	75	100	150	
Sierra Nevada[5] yellow-legged frog Habitat	**100** feet for all perennial and intermittent streams above 4,500 feet in elevation. There would be no reach-in to remove vegetation within the equipment exclusion zone and no ignition for prescribed fire except to maintain control of the fire.			

[1] Exceptions to the general equipment exclusion buffers are identified for specific units.
[2]For streams, distances are as measured from the edge of the channel or riparian vegetation, whichever is greater.
[3] For draws, distances are as measured from the bottom of the draw. Draws have a poorly defined channel, and generally do not show evidence of recent flow.
[4] For special aquatic features, distances are as measured from edge of wet area or riparian vegetation, whichever is greater, Special aquatic features includes lakes, ponds, meadows, wetlands, springs, seeps, etc.
[5]For Sierra Nevada yellow-legged frog habitat, exclusion buffer is set for all project activities; however, ignition of prescribed fire may occur inside of 100 foot buffer to control fire and prevent sedimentation from fire lines (this exception is site specific).

a. Exceptions to the general equipment exclusion buffers identified in the design criteria are:
    i. Unit 623473 - 10 ft. equipment exclusion zone for ephemeral streams and draws.

ii. Unit 623474 - 10 ft. equipment exclusion zone for ephemeral streams and draws.
iii. Unit 623415 - 10 ft. equipment exclusion zone for ephemeral streams and draws.
iv. Unit 622100 (Alternative 2 only) - Equipment exclusion zones for all streams (perennial, intermittent, and ephemeral) would be the same as described for perennial streams.

b. Monitoring of a least one stream segment as described in Section 16.34 of the 2011 Water Quality Management Handbook for Region 5 of the Forest Service. This applies to watersheds are currently at a very high risk of CWE (above the Threshold of Concern) and watersheds that will be at very high risk of CWE as result of the Trestle Forest Health Project.

c. Within Riparian Conservation Areas (RCAs), ground cover will be maintained at 70 percent or greater where the ground cover is currently 70 percent or greater.

d. Reviews by a Hydrologist, Fisheries Biologist, or Soil Scientist would occur prior to activities within RCAs that involve:
   i. construction of new landings and/or modification and use of existing landings;
   ii. construction of permanent and/or temporary roads not identified in the project proposal;
   iii. use of ground-based equipment and/or removal of vegetation in inner gorges (Inner gorges are defined as areas with slopes greater than 70 percent adjacent to aquatic features); and
   iv. equipment crossings of perennial and intermittent streams or the placement of temporary stream crossing structures not identified in the project proposal.
   v. use of EPA approved dust palliatives for dust abatement.

e. Felling and removal of hazard trees next to haul routes with RCAs would include:
   i. No endlining to remove trees;
   ii. Should a felled hazard tree enter a stream course, the Sale Administrator and Resource Specialist would recommend the fate of the tree (e.g. repositioning of the tree, leaving a portion of the tree as felled, etc.); and
   iii. Hazard trees with no commercial value and those outside the reach of skidding equipment would be retained in place provided the felled trees would not interfere with the safe use of the road or adversely affect a stream course and associated culverts.

Aquatics

1. Existing waterholes and other aquatic sites including ponds, lakes and streams used for water drafting would be surveyed for Aquatic TES species and flow levels taken prior to use. In the event TES species are found to occur at drafting sites; sites will not be used and future surveys would be conducted by an aquatic specialist to determine presence of possible populations.

2. Drafting sites would be constructed so that oil, diesel fuel and/ or other spilled pollutants would not contaminate the stream. Stream bank stability would be maintained and sedimentation

minimized by constructing and maintaining back down ramps using rocking, chipping, mulching or another effective method. A Forest Service approved screen covered drafting box, or other device to create low entry velocity, would be used while drafting to minimize removal of aquatic species including juvenile fish, amphibian egg masses and tadpoles from aquatic habitats.

3. Dust abatement palliatives would not be used within 100 feet of all stream crossings (both perennial and seasonal).

Botany

1. Pleasant Valley Mariposa lily (*Calochortus clavatus* var. *avius*) populations within the project area would be flagged for avoidance, and all ground disturbing activities, burn piles, hazard tree removal, roadside brushing, mechanical equipment, line construction, and spring burning would be excluded from sensitive plant protection areas, with the following exceptions:
    e. Where it is necessary to remove trees from within site boundaries, the project botanist would be consulted to mitigate impacts. All thinning of trees adjacent to site boundaries would be directionally felled away from the site. Hand thinning and prescribed fire within sensitive plant protection areas may occur at the recommendation of the project botanist. The project botanist would be notified prior to implementation of the prescribed burn in sensitive plant populations and if available would be onsite to take part in, and/or monitor burning and associated effects. At a minimum, a post burn visit would be conducted by the botanist. If new sensitive plant occurrences are discovered during project implementation the project botanist would be notified to develop necessary protection measures.

2. Application of Magnesium Chloride for dust abatement will not occur within 100 feet of roadside occurrences of Sensitive plant or watch-list species.

3. Lava caps, which support unique plant communities in the project area, would be protected from motorized equipment and vehicles. Line construction through lava cap communities would be avoided when feasible. If necessary, line construction would be completed with hand tools only.

4. Eldorado National Forest Priority 1 and 2 invasive plant infestations within the project area would be flagged for avoidance and treated using integrated pest management techniques as a part of the Trestle project for up to 3 years after implementation. Treatments under the project will tier to the Eldorado National Forest Invasive Plant EA and may include a combination of techniques including tarping, manual removal, string trimming, and targeted herbicide application. Currently known high priority infestations within the project area include tree of heaven, yellow starthistle, rush skeletonweed, and scotch broom. If new infestations develop as a result of project activities (i.e. within landings, areas of road reconstruction, within harvest units) treatment strategies would be developed under the Eldorado National Forest Invasive Plant EA and would be implemented as part of the Trestle project.

5. Off-road equipment vehicles would be cleaned to insure it is free of soil, seeds, vegetative matter or other debris before entering National Forest System lands to prevent the introduction or spread of invasive plants. Prior to the start of operations, the Forest Service would do a visual inspection

for such debris. Equipment would be cleaned prior to moving from weed-infested areas to weed-free areas.

6. All earth-moving equipment, gravel, fill or other materials would be weed free. Onsite sand, gravel, rock, or organic matter would be used where possible.

7. Straw or mulch used for erosion control would be certified weed-free. A certificate from the county of origin stating the material was inspected is required.

8. Any seed used for restoration or erosion control would be from a locally collected source (ENF, Seed, Mulch and Fertilizer Prescription, 2000).

Wildlife

1. A limited operating period (LOP) for California spotted owls, prohibiting vegetation treatments would be implemented within ¼ mile of spotted owl activity centers during the breeding season (March 1 through August 15), unless surveys confirm that owls are not nesting.
    a. Based on the most recent survey data, LOPs would be implemented for all or portions of units 622078, 622079,622081, 622082, 622084, 622085, 622086, 622087, 622089, 622091, 622092, 622094, 622095, 622096, 622097, 622098, 622099, 622101, 622103, 623401, 623404, 623407, 623413, 623414, 623415, 623416, 623417, 623418, 623419, 623425, 623427, 623431, 623436, 623437, 623459, 623460, 623463, 623465, 623466, 623467, 623468, 623470, 623470, 623471, 623375, 623476, 623477, 624573, 624585, 624586, 624587, 624588, 624594, 624605, 624606, 624607, and 624608.

2. A limited operating period (LOP) for northern goshawks, prohibiting vegetation treatments would be implemented within ¼ mile of the northern goshawk nest site during the breeding season (February 15 through September 15), unless surveys confirm that goshawks are not nesting. Where the nest stand within a protected activity center is unknown, the LOP will apply to a ¼ mile area surrounding the PAC.
    a. Based on the most recent survey data, LOPs would be implemented for all or portions of units 623438, 623439, 623440, 623407, 623416, 623418, 623419, 623427, 623439, 623440, 623441, 623442, 623459, 623460, 623469, 623470, 623471, 624576, and 624579.

3. A limited operating period (LOP) for great gray owls, prohibiting vegetation treatments within ¼ mile of the PAC during the nesting period (March 1 to August 15), unless surveys confirm that great gray owls are not nesting.
    a. Based on the most recent survey data, the LOP for great gray owl would be implemented for all or portions of units 623413, 623414, and 623415.

4. LOPs for spotted owl would be implemented for road reconstruction activities, for specific portions of roads which occur within ¼ mile of roost or nest stands from March 1 to August 15.
    a. Based on the most recent survey data, the LOP for road reconstruction would be implemented for a specific segment of 09N47 and 09N49.

5. Because prescribed fire could occur several years after the mechanical harvest work is completed, future prescribed understory burning within ¼ mile of PACs would have an LOP around California spotted owl, northern goshawk, and great gray owl PACs unless surveys determine that the birds are not nesting. LOPs can be waived to allow for early season burning on up to 5 percent of California spotted owl and northern goshawk PACs per year, with up to 10 percent per decade across the bioregion.

6. To minimize potential impacts to known roosting populations of bats at Arctic Mine, minimize the amount of smoke entering the mine shaft to the extent practical through firing techniques.

Soils

1. To control the surface erosion, mechanical activities would maintain a minimum soil cover of 70% in units with potentially moderate or higher erosion risk, including: 623400, 623403, 623407, 623408, 623414, 623416, 623422, 623436, 623439, 623440, 623441, 623442, 623450, 623456, 623457, 623458, 623459, 623460, 623463, 623465, 623470, 623471, 623475, 624572, and all Riparian Conservation Areas. In all other units, maintain a minimum of 50% cover.

2. Following prescribed burning operations, average soil cover for each treated unit would be maintained at 70% or greater one year following burning activities. If soil cover does not meet this threshold value after treatment, implement measures such as mulching with lop and scatter material or weed free straw until vegetation re-growth could provide cover.

3. Activities would not increase unacceptable soil conditions above 15 percent in the activity area. Units 322-084, 085, 086, 087, 623-404, 405, 449, 465 and 471 were identified as above or near 15% extent for soil compaction.
    a. In units where soil disturbance currently exceeds or is expected to exceed the 15% threshold from mechanical activities, decompaction with a sub-soiler or ripping shanks of main or secondary skid trails with detrimental compaction or displacement would be ripped to the extent that detrimental soil disturbance is less than 15%.
        i. Detrimental displacement is defined as displacement that results in "divots" where equipment has turned on loose soils where more than half the natural topsoil depth is displaced over 100 square foot area.
        ii. Detrimental compaction is defined as compaction that extends to the 4 to 8 inch depth, soil structure is clearly altered to massive or platy and does not break towards a natural structure with gentle handling, and roots and pores are flattened.

4. New disturbance on shallow soils and low site areas, such as new landings, skid roads, or temporary roads would be further reviewed by the soil scientist or designee to recommend actions to minimize effects to soils.

5. For skid trails and fire lines terminating at roads or OHV trails, two additional cross ditches would be installed; one cross ditch at approximately 30 feet from the intersection on all slopes

and a second cross ditch 100 feet from the intersection for slopes less than 10 percent and 60 feet for slopes greater than 10 percent.

Cultural Resources

1. Historic properties within the area of potential effects (APE) would be protected from adverse effect through the application of the Approved Standard Protection Measures detailed in Appendix E of the *"Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), the California State Historic Preservation Officer, the Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forest of the Pacific Southwest Region (Regional PA, 2013) ".*

2. All resources at risk (RAR) within the APE would be identified with flagging and/or on maps prior to initiating project activities (Klemic, R2012050360011). Areas where activities would occur within the APE and archaeological survey has been deferred would be considered exclusion zones unless reviewed by the district archaeologist on a case by case basis.

3. Protection measures specific to prescribed burn activities are detailed in the Regional PA, 2013, Appendix E, Section 2.2, (b)(1)(A-K) and would be established for each RAR based on coordination between cultural resource managers and fuels specialists prior to implementation.

4. Should any previously unrecorded cultural resources be encountered during implementation of this project, all work would immediately cease in that area and the District Archaeologist would be notified immediately. Work would resume subsequent to approval by the District Archaeologist for implementation of additional protection measures, as necessary to meet provisions in the Regional PA (2013). Should any cultural resources become damaged in unanticipated ways by activities proposed in this project, the steps described in the Regional PA, 2013 for inadvertent effects would be followed.

Monitoring

Site-specific monitoring of project activities would be conducted if any of the action alternatives are implemented. This monitoring is designed to verify that the projects are implemented as designed, and are effective in meeting the project and Forest Plan objectives. The overarching purpose of monitoring is to provide feedback to the Forest that enables evaluation of the achievement of ecosystem health and sustainability and improvement of management to better meet the expectations of the public.

One aspect of monitoring looks at the degree to which project objectives, standards, and guidelines of the Forest Plan are being implemented. Another reason is to measure the effectiveness of management practices used in site-specific projects. Monitoring is also used to verify the assumptions and models used in planning. Funding for monitoring may vary; this may lead to assessing priorities as needed to assure the integrity of Forest Plan monitoring and evaluation. When it is certain that regulations and standards are being met, monitoring of a particular element would cease. If monitoring evaluations show that regulations or standards are not being achieved at the desired level, management intervention would occur and monitoring would continue.

Project Level Implementation

Each active management unit would be visited at a frequency necessary to assure compliance. Monitoring of preparation and implementation would occur at regular intervals to ensure compliance with prescription intent and where applicable contract provisions. Minor contract changes or contract modifications would be enacted, when necessary, to meet objectives and standards on the ground.

Post-treatment monitoring within the project area may be conducted following project implementation to ensure that the design criteria are effective.

Invasive Plants

Locations of any new infestations of invasive plants would be mapped, reported to the project botanist, and documented for continued monitoring.

Monitoring for new and expanding invasive plant populations would be conducted at treatment sites known to have invasive plant occurrences throughout project implementation and after treatment for 2-3 years depending upon need.

Wildlife

California spotted owl, great gray owl, and northern goshawk nest stands or territories may be surveyed to determine occupancy where LOPs may be waived.

Water Quality and Soils

BMP monitoring would take place based on annual BMP monitoring protocols. Onsite evaluation protocols are applied to both randomly and non-randomly selected project sites. The number of random evaluations to be completed each year is assigned by the Regional Office, based on: 1) the relative importance of the BMP in protecting water quality; and 2) those management activities most common on the individual Forest. Forests supplement these randomly selected sites with additional sites based on local monitoring needs, such as those prescribed in an environmental document, or as required under the Regional Water Quality Conditional Waiver for Timber Sale Activities on Federal Land. Onsite evaluation protocols are used to assess the implementation and effectiveness of individual BMPs or groups of closely

related BMPs. Additional details can be found in Investigating Water Quality in the Pacific Southwest Region (USDA Forest Service 2002) and Water Quality Management for National Forest System Lands in California (USDA Forest Service 2011, Water Quality Management Handbook).

Monitoring of a least one stream segment would occur as described in Section 16.34 of the 2011 Water Quality Management Handbook for Region 5 of the Forest Service. This applies to watersheds are currently at a very high risk of CWE (above the Threshold of Concern) and watersheds that will be at very high risk of CWE as result of the Trestle Forest Health Project. Implementation, effectiveness, and forensic monitoring of the project would occur as defined in the Central Valley Timber Harvest Waiver Eldorado National Forest Monitoring Plan.

Cultural Resources

To the extent possible, based on improved ground visibility, additional survey would be conducted for up to 20% of areas previously not surveyed or where survey was deferred within one year following completion of associated project activities.

Comparison of Alternatives

This table provides a brief summary of the alternatives and their environmental impacts in comparative format.

Table 3. Comparison of Alternatives

	Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 4	Alternative 5
Project Activities				
Ground Based Mechanical Commercial Thinning (Natural Stands)	0	4,368	2,304	3,295
Skyline Commercial Thinning (Natural Stands)	0	76	0	0
Ground Based Mechanical Commercial Thinning (Plantations)	0	418	431	431
Non-Commercial Mechanical Thinning (Natural Stands)	0	0	53	0
Non-Commercial Mechanical Thinning (Plantations)	0	25	25	25
Hand Thinning and Pile (Natural Stands)	0	1,492	1,123	1,112
Hand Thinning and Rx Burn (Plantations)	0	6	6	6
Prescribed Burn as initial/primary treatment	0	9,583 (984 first priority; 8,599 opportunity)	12,595 (1,563 first priority; 11,032 opportunity)	11,102 (970 first priority; 10,132 opportunity)
Prescribed burning, both follow up and rx burn only	0	15,812	15,113	15,111
Non-Commercial Mechanical Roadside (Capps Crossing and Caldor-Grizzly/Leoni Road)	0	57	59	59

Roadside Brushing (Capps Crossing and Caldor-Grizzly/Leoni Road	0	88	167	143
Road Reconstruction (miles)	0	84.1	65.8	69.5
Road Obliteration (unauthorized routes)	0	3.1	3.9	3.9

V. EXISTING ENVIRONMENT – SPECIES ACCOUNTS

This section of the report analyzes the potential impacts of the Trestle Forest Health Project (TFHP) to aquatic resources in the Eldorado National Forest. The TFHP includes portions of seven (HUC 14) watersheds within the Cosumnes River Basin. These watersheds can be characterized as forested and mountainous ranging from 3,200 to 5,800 feet in elevation. Activities identified in the proposed action alternatives would most likely occur between 2014 – 2024 and possibly beyond (e.g., prescribed burning). Activities include: commercial and pre-commercial thinning of trees, prescribed burning (for most of the project area), restoration activities (e.g., rehabilitation of dispersed use areas adjacent to streams), as well as road reconstruction, repair, and maintenance. There are approximately 44 miles of perennial stream habitat within the project area and identified watersheds that drain into the North and Middle Forks of the Cosumnes River. According to the Hydrology Report (Markman 2014) the water quality of the perennial streams is generally "good" however; there are a number of segments of several perennial streams that are in a degraded condition. Direct, indirect and cumulative watershed effects for all the TFHP alternatives are discussed further in the Hydrology Report.

Species with the potential to be within the project boundary include: Federally Threatened (T) – California Red-legged frog, Endangered (E) Sierra Nevada Yellow-legged Frog, Forest Service Sensitive (FSS) Foothill yellow-legged frog, FSS Western pond turtle, and FSS Pacific lamprey.

Sierra Nevada Yellow-legged frog has not been documented and is not known to be found within the project area boundary. However, the nearest sighting occurred 0.6 miles east of the project boundary on NF Cosumnes River in 2003. SNYLF are highly aquatic and do not venture far from water, therefore, only activities occurring within, or immediately adjacent to Riparian Conservation Areas (RCAs) are likely to impact this species or their preferred habitat. No extensive protocol surveys in possible habitat have been conducted since the species has been officially listed as endangered in April 2014. Habitat suitability for SNYLF is deemed low within the project boundary since elevation is at the lower limit for the species. SYNLF detections have never occurred nor been documented on the ENF below 5,000 feet. Designated Critical Habitat does not exist within the project area or the affected watersheds.
California red-legged frog has not been documented within the project area boundary following extensive protocol level surveys in suitable habitats (1997-2013). Habitat suitability for CRLF

was deemed low within the project boundary in habitats below 4,000 feet due to high spring flows, lack of backwater and deep pooling areas, and the presence of rainbow trout. Designated Critical Habitat does not exist within the project area or the affected watersheds. The Cosumnes River Watershed is listed as Core Recovery Habitat for CRLF.

Foothill yellow-legged frog has only been documented in one location (Sopiago Creek – Amador RD) adjacent (approx. 1.0 mile so.) of the project area boundary, but was likely historically widespread in many streams and tributaries of the project area based on suitable habitat present. Foothill yellow-legged frogs are highly aquatic and do not venture far from water, therefore, only activities occurring within, or immediately adjacent to Riparian Conservation Areas (RCAs) are likely to impact this species or their preferred habitat. Introduced rainbow trout and stream alteration from past mining, timber harvest, grazing, road construction and resulting effects may preclude this species from recolonization.

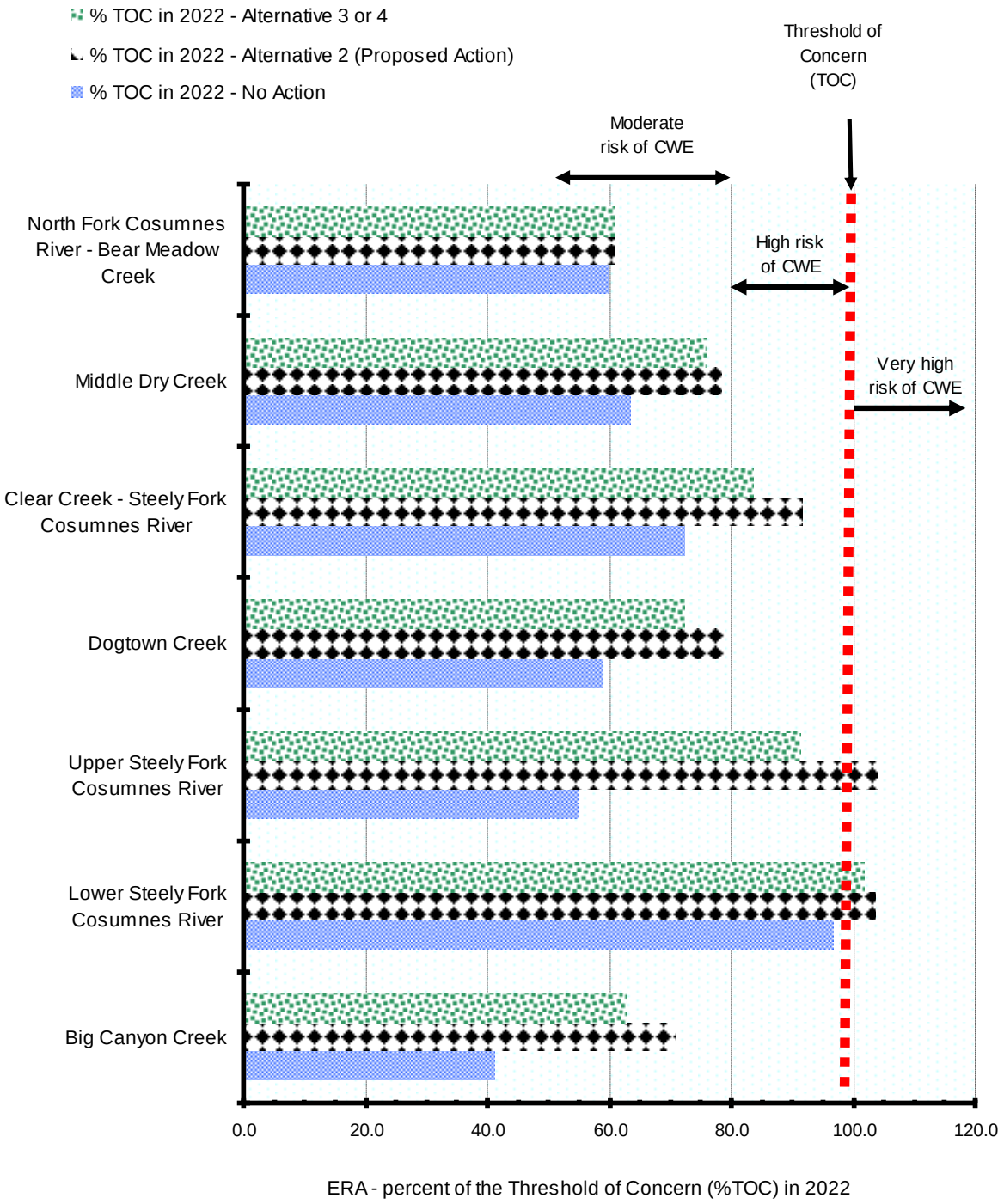
Western pond turtle has only been observed in one stream within the project area boundary (Clear Creek, Leoni Meadow - private). Project contains suitable habitat and this species was likely historically widespread in many streams and tributaries of the project area. Western pond turtles utilize both aquatic as well as terrestrial habitat types, therefore, may be affected by project activities both within RCAs as well as upland environments, especially where nesting areas are located. Stream alteration from past mining, grazing, timber harvest, road construction and resulting effects may preclude this species from recolonization.

Pacific lamprey: have been observed within two miles of the western forest boundary (near Omo Ranch, CA) and the project area boundary. This species was added as a Forest Service Sensitive Species in 2013. Target surveys for lamprey have not been conducted for the project area or any forest streams. Given the presence of Pacific lamprey within two miles of the western forest boundary lamprey have the potential to reside within the streams of the project area. Introduced rainbow trout and stream alteration from past mining, grazing timber harvest, road construction and resulting effects may preclude this species from the project area if historically present.

The ability of project activities to affect these species is depend on where such activities are occurring within these watersheds, the amount of habitat affected, direct, indirect, as well as cumulative effects of this project compared with past, present and reasonably foreseeable future actions. The analysis area considered for the aforementioned species involves the following 7 drainages (HUC 7) and their current status in terms of risk of cumulative watershed effects (CWE) in Figure 1. adapted from the Hydrology Report that span the Trestle project area:

BIG CANYON CREEK
LOWER STEELY FORK COSUMNES RIVER*
UPPER STEELY FORK COSUMNES RIVER
DOGTOWN CREEK
CLEAR CREEK
MIDDLE DRY CREEK
NORTH FORK COSUMNES RIVER – BEAR MEADOW CREEK
* Currently at risk for "very high" CWE **Figure 1.** Percent Equivalent Roaded Acres (% ERA) - expressed as the Percent of the Threshold of Concern (% TOC) - and the risk of Cumulative

Watershed Effects (CWE) for the watersheds of the Trestle Forest Health Project in 2022 [Adapted from Hydrology Report]...



The results of the Hydrology Report (Markman 2014) are summarized here. A more detailed description of the project watersheds, cumulative watershed effects (CWE) analysis, and the equivalent roaded acres (ERA) method can be found in the Hydrology Report.

The following lists the conclusions concerning the risk of CWE in the seven project watersheds within the TFHP.

- Risk if CWE currently ranges from low to very high in the seven watersheds.
- If Alternative 1 is selected (No Action) risk of CWE in all seven watersheds unchanged or decreases until 2026.
- If Alternative 2 (Proposed Action) is selected risk of CWE in Upper and Lower Steely Fork Cosumnes is very high for nine years.
- There is no difference in the risk of CWE between Alternatives 4 and 5.

A Geographic Information System (GIS) analysis determined that there are approximately: 44 miles of perennial streams within the Trestle FHP and include: North Fork Cosumnes River, Big Canyon Creek, North Canyon Creek, Steely Fork Cosumnes River, Salt Rock Creek, South Steely Creek, North Steely Creek, Clear Creek Dogtown Creek, and Middle Dry Creek. Identified land disturbances within the project area boundary include: timber harvest and vegetation management, prescribed fire, off-highway vehicle use (OHV), grazing, user-created camping and dispersed recreational use next to perennial streams, as well as private land development, vegetation management, and timber harvest. There are approximately 278 miles of roads with a density of 4.8 miles of roads per square mile for the project area and ranges from 2.8 – 6.0 miles per sq. mi. for individual watersheds.

Table 4. Summary of selected aquatic features [adapted from Hydrology Report] in the Trestle Forest Health Project (TFHP).[1,2,3,4]

Aquatic feature	HUC 14 Drainage	Proximity of thinning units and burn areas (within the RCA) to aquatic feature	Characteristics
North Fork Cosumnes River	North Fork Cosumnes River – Bear Meadow Creek	There are no thinning units and no prescribed burn areas within the RCA of the North Fork Cosumnes River.	▪ Perennial stream. ▪ Flows to the west and into the Cosumnes River. ▪ Length of the stream in the watershed is approximately 5.8 miles. ▪ Surface flow is year-round (perennial). Flow can decrease less than 5.0 cubic feet per second (cfs.) in late summer and early fall. ▪ Rosgen B/C channel. Aquatic habitat of low gradient riffles with pools, runs, and bedrock cascades (Figure 4). Average channel width of 25 feet with an active floodplain. ▪ Water quality fairly good, based on limited parameters and measurements. pH = 7.1 (near nuetral); electrical conductivity = 7.7 uS (indicates low concentrations of dissolved solids); turbidity = 1.2 to 2.4 NTU (indicates low concentrations of suspended sediment). ▪ The stream channel is in fairly good condition overall, with stable streambanks, low amounts of fine-grained sediment in the channel, abundant riparian vegetation, functional large woody debris (somewhat lacking in amount).
Big Canyon Creek	Big Canyon Creek	▪ Approximately 1,370 feet of commercial thinning units border the stream – this is 6.2 percent of the length of the stream. ▪ Approximately 11,640 feet of prescribed burn areas border the stream – this is 52.5 percent of the length of the stream.	▪ Perennial stream. ▪ Flows to the west and northwest and into the North Fork Cosumnes River. ▪ Length of the stream is approximately 4.2 miles. ▪ Surface flow is year-round (perennial). Flow can decrease to less than 1.0 cubic feet per second (cfs.) in late summer and early fall. ▪ Aquatic habitat mostly consists of low gradient riffles with pools, runs, and higher gradient bedrock cascades (Figure 5).

[1] The location of streams is shown in Figure 3.
[2] Descriptions of stream condition and water quality measurements are based on observations from 2010 through 2012 by Steve Markman (Hydrologist).
[3] RCA = Riparian Conservation Area. The RCA - a land allocation defined in the 2004 Sierra Nevada Forest Plan Amendment - is 300 feet on each side of a perennial stream and 150 feet on each side of intermittent and ephemeral streams.
[4] The flow of several perennial streams for the 2, 10, and 100 year return intervals is shown in Figure 8.

Aquatic feature	HUC 14 Drainage	Proximity of thinning units and burn areas (within the RCA) to aquatic feature	Characteristics
Steely Fork Cosumnes River	Upper Steely Fork Cosumnes River	▪ Approximately 5,870 feet of thinning units border the stream – this is 35.1 percent of the length of the stream. ▪ Approximately 7,230 feet of prescribed burn areas border the stream – this is 13.2 percent of the length of the stream.	▪ Perennial stream. ▪ Flows to the west and into the North Fork Cosumnes River. ▪ Length of the stream in the watershed is 3.2 miles (not including the major tributaries of North Steely Creek and South Steely Creek). ▪ Surface flow is year-round (perennial). Flow can decrease as low as 2.0 cubic feet per second (cfs.) in late summer and early fall. ▪ Aquatic habitat of low gradient riffles with pools, runs, and higher gradient bedrock cascades. ▪ Water quality fairly good, based on limited parameters and measurements. pH = 7.5 (near nuetral); electrical conductivity = 57 uS (indicates low concentrations of dissolved solids); turbidity = 1 NTU (indicates low concentrations of suspended sediment). ▪ The 0.8 mile long stream segment in the vicinity of Units 623476 and 623477 is in fairly good condition overall and has shown only minor changes between 1998 and 2012, as evidenced by stable streambanks and channel, fairly low amounts of fine-grained sediment in the channel, and abundant riparian vegetation (Figure 6). ▪ Some of the intermittent/ephemeral tributaries of the Steely Fork Cosumnes River contain large numbers of dead trees (standing and down) in the Riparian Conservation Area (Figure 7).
Clear Creek	Clear Creek – Steely Fork Cosumnes River	▪ Approximately 1,070 feet of thinning units border the stream – this is 3.9 percent of the length of the stream. ▪ Approximately 11,220 feet of prescribed burn areas border the stream – this is 40.9 percent of the length of the stream.	▪ Perennial stream. ▪ Flows to the west and into the Steely Fork Cosumnes River. ▪ Length of the stream in the watershed is 5.2 miles. ▪ Surface flow is year-round (perennial). Flow can decrease to less than 1.0 cubic feet per second (cfs.) in late summer and early fall. ▪ Aquatic habitat of low gradient riffles with pools, runs, and higher gradient bedrock cascades.

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Clear Creek	Clear Creek – Steely Fork Cosumnes River	▪ Approximately 1,070 feet of thinning units border the stream – this is 3.9 percent of the length of the stream. ▪ Approximately 11,220 feet of prescribed burn areas border the stream – this is 40.9 percent of the length of the stream.	▪ Perennial stream. ▪ Flows to the west and into the Steely Fork Cosumnes River. ▪ Length of the stream in the watershed is 5.2 miles. ▪ Surface flow is year-round (perennial). Flow can decrease to less than 1.0 cubic feet per second (cfs.) in late summer and early fall. ▪ Aquatic habitat of low gradient riffles with pools, runs, and higher gradient bedrock cascades.

[1] The location of streams is shown in Figure 3.
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[3] RCA = Riparian Conservation Area. The RCA - a land allocation defined in the 2004 Sierra Nevada Forest Plan Amendment - is 300 feet on each side of a perennial stream and 150 feet on each side of intermittent and ephemeral streams.
[4] The flow of several perennial streams for the 2, 10, and 100 year return intervals is shown in Figure 8.

VI. EFFECTS OF THE PROPOSED PROJECT

A. Direct and Indirect Effects of the Proposed Action (Alternative 2) Common to All Species

Effects Common to all species

The degree to which aquatic organisms and habitats can be affected by land management activities depends largely on the intensity of these activities in, and immediately adjacent to, riparian areas. Within riparian areas, "The desired condition is to provide sustainable aquatic, riparian, and meadow (ARM) compositions, structures, and functions including processes within desired ranges of variability, well-distributed habitat for desired plant, invertebrate, and vertebrate species as well as connectivity among watersheds (USDA Forest Service 2004c)."

Riparian areas provide shade, regulate microclimates, and contribute pieces of large woody debris that create and enhance habitat complexity. Thus depending on the amount of alteration, changes in riparian vegetative composition and structure that fall outside of the range of natural variability, have the potential to influence daily water temperature regimes, affect macroinvertebrate assemblages, and affect aquatic species presence and reproduction.

Climate Change

In the Western United States, increased temperatures have led to more precipitation falling as rain rather than snow, earlier snowmelt and snowmelt-driven streamflow (Stewart and others 2005, Hamlet and others 2007), and reduced spring snowpack (Mote 2003, Mote and others 2005, Barnett and others 2008). For the mountainous regions of the Western United States, snowmelt provides approximately 70 percent of annual streamflow (Mote and others 2008). Both increased winter rain (as opposed to snow) and shifts to earlier spring snowmelt result in greater winter and spring streamflows leading to increased flood risk and reduced summer streamflows in snowmelt-dominated and transient (rain/snow) watersheds. This reduction in summer streamflow could have major implications for fisheries and aquatic wildlife. Climate controls ecosystem structure and processes such as species distribution and abundance, regeneration, vegetation productivity and growth, and disturbance, including insects, and fire. Increasing temperatures and changes in precipitation with climate change will impact both ecosystem structure and ecosystem processes. Viability of a species is dependent on the availability of suitable habitat. Animal species respond to climate variability in the short term through shifts in geographic range (migration) when suitable habitat is not available in the former range. Mortality and population extirpation in parts of a species' former range often occur. Over time, extirpation and colonization events cumulatively result in shifts of the species' distribution range (Davis and Shaw 2001, Delcourt and Delcourt 1991). Land-use changes, development, and introduction of invasive species often impede the ability of species to respond to climate change adaptively resulting in small population sizes and isolation of populations as a result impede gene flow (Joyce and others, in press).

Widespread fire years and fire extent are associated with warmer and drier spring and summer conditions in the Western United States (McKenzie and others 2004, Westerling and others 2006, Heyerdahl and others 2008, Taylor and others 2008). Warmer spring and summer conditions lead to relatively early snowmelt, and lower summer soil and fuel moisture, and thus longer fire seasons (Westerling and others 2006). Increased temperatures and drought occurrence in some locations owing to global warming will likely lead to increased fire frequency and extent. Intensity of fires may also increase in some areas if higher temperatures interact with fuel characteristics to increase fire intensity. This could lead to diminished habitat and further pressure on existing habitat for aquatic wildlife species within the project area. Thus activities associated with the TFHP have the potential to reduce or offset some of the impacts of climate change.

California red-legged frog
Rana draytonii

The California red-legged frog has been reduced over 70 percent from its historic range. Although found near sea level to about 5,200 ft. (1,500 m), most occurrences are below 4,000 (Federal Register 2006). Preferred habitats include: quiet side channel pools of low-gradient streams, marshes, and ponds. Long overland movements (up to 1 mile between breeding habitats) into terrestrial habitats during the rainy season have been documented. More abundant in coastal areas of the geographic range and found only within isolated portions of the Sierra Nevada Range.

Critical Habitat
Activities related to the Trestle FHP will not occur within Critical Habitat for the California red-legged frog (USDI 2010). The nearest critical habitat is North Fork Weber Creek watershed (ELD-1 unit), approximately 13 air miles south of the project area.

Recovery Habitat
The entire Cosumnes River Watershed has been designated as Core Recovery Habitat. The Trestle FHP is within Recovery Habitat.

Species and Habitat Account
The complete species account for California red-legged frog (CRLF) can be obtained from the Eldorado National Forest (ENF) Supervisor's Office in Placerville, California.

Existing surveys and sightings
There are four documented occurrences of California red-legged frog (CRLF) in or near the Eldorado NF lands: Bear Creek & Little Silver Creek (Georgetown Ranger District) that are likely the same population, Ralston Pond (Georgetown RD), Sopiago Creek (Amador RD), and Spivey Pond – Weber Creek on Bureau of Land Management land adjacent to Eldorado NF. In addition, Critical Habitat has been designated in for Spivey Pond (Weber Creek) and Core Recovery habitat has been designated in the Traverse Creek drainage (Georgetown RD) and for the entire Cosumnes River Watershed (Amador RD and Placerville RD). The nearest known CRLF population to the Trestle FHP is Spivey Pond approximately 12 air miles northwest of the project which contains a known breeding population. The nearest known CRLF sighting was in 2002 where 3 adult frogs were observed on private land in Sopiago Creek located approximately 3.0 air miles south of project area boundary (CNDDB). A breeding population has not been confirmed at this site.

In a May 6 2003 letter [1-1-03-I-1808] ENF Supervisor John D. Berry regarding the Silver Pearl Land Exchange the US Fish & Wildlife Service recommended "…surveys [CRLF] be focused primarily within the 0.2 mile of suitable stream habitat that is equal to or less than a two percent gradient.."

Past Surveys:

Surveys of low gradient stream habitats have occurred on the streams within project boundary and within one mile of the boundary from 1997 – 2013 with no CRLFs detected.

Present Surveys:
All low gradients stream reaches identified in a GIS within the TFHP and within one mile of the project area boundary below 4,000 feet were identified. Nine sites within the Trestle FHP area were selected in 2013 for survey (2 Day 2 Night) based on elevation, low-gradient reaches and past surveys. Of these nine sites only Clear Creek was identified as "high priority" based on elevation, amount of low gradient habitat and past survey efforts

(Last Chance Fuels Reduction Project) declaring suitable habitat present. Clear Creek runs east to west starting at a spring and meadow (Gould meadow) complex originating at approximately 4,600 feet and flowing west until the confluence with Steely Fork Cosumnes River at approximately 3,400 ft. elevation, thus the total length of Clear Creek is roughly 5 miles from origin to confluence. In the middle of Clear Creek is a private inholding (Leoni Meadows) in which a large meadow complex exists at an elevation of 4,000 ft. Leoni meadow is characterized by having deep narrow pools within the meadow where bullfrogs and one western pond turtle were observed during permitted Forest Service surveys.

Results of Surveys: *No CRLF observed.*

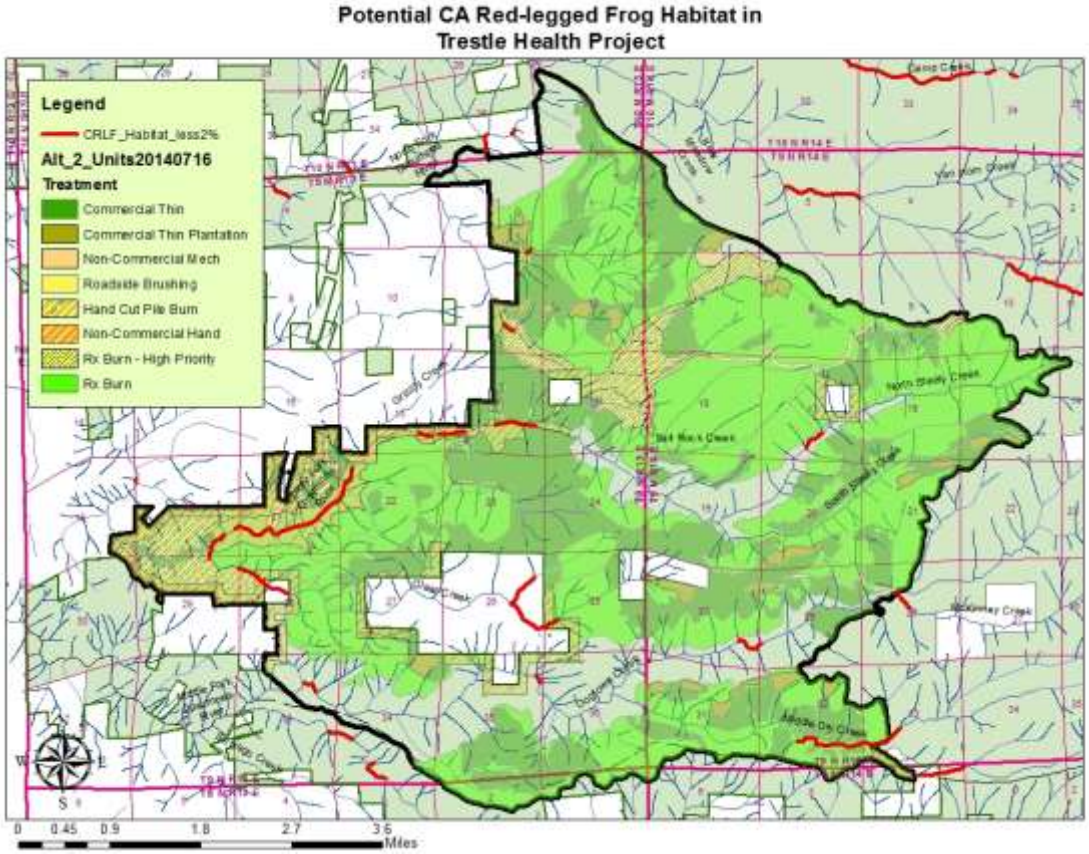

Figure 2. Potential CRLF habitat – less than 2% gradient streams in project area (red streams).

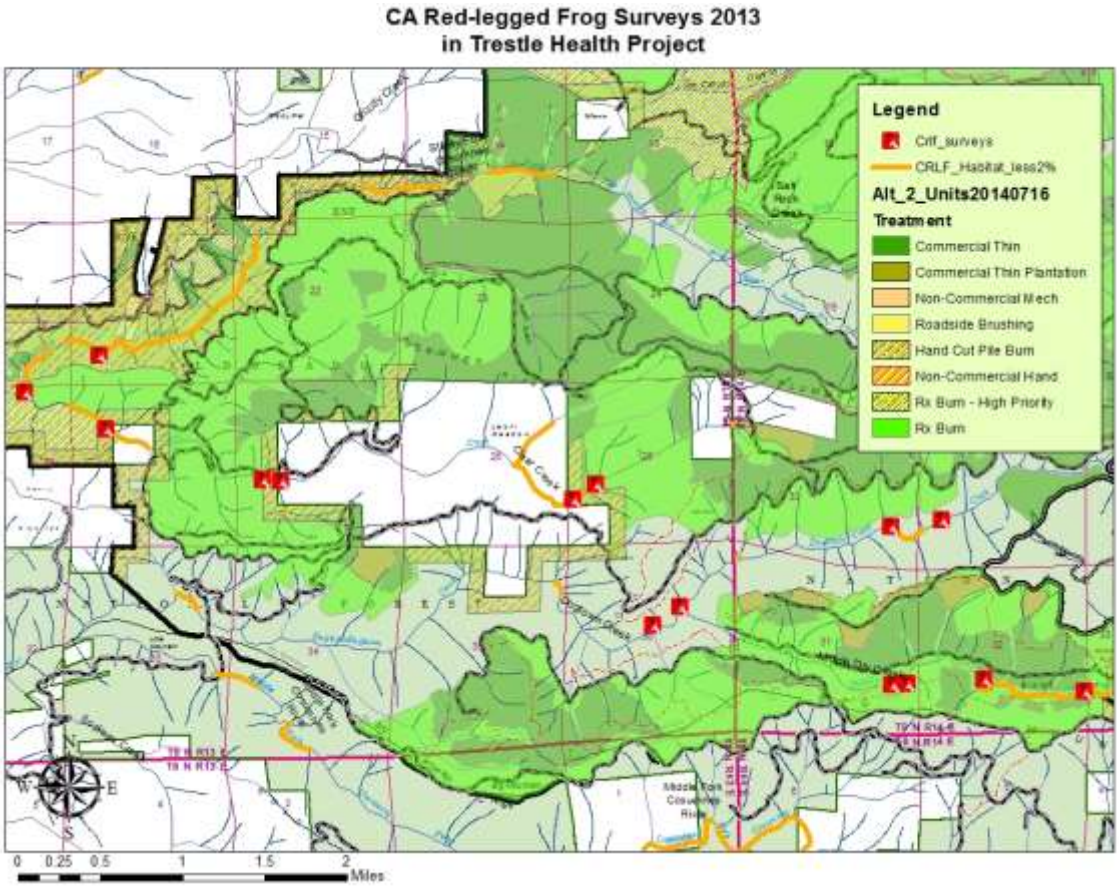

Figure 3. CA Red-legged frog surveys (red squares) in the Trestle project 2013 (proposed action – alternative 2).

Effects Summary for Alternatives 1, 2, 4 and 5 to CRLF.
Direct, indirect, as well as cumulative effects to CRLF, its designated Critical Habitat or Core Recovery Habitat are not expected under any of the alternatives. This conclusion is based on the following assumptions: 1.) the nearest known breeding population (Spivey Pond) is approximately 12 air miles northwest of project area boundary in a different river drainage system (American River), 2.) extensive protocol level surveys (2 Day 2 Night and 8 - Day) have occurred (1997-2013) in the most optimal habitats at the most optimal times for detection within the Trestle FHP and failed to detect CRLF, 3.) habitat suitability within the Trestle FHP has been deemed low due the presence of high spring flows, lack of deep pools (0.5 m) in low gradient reaches, and the presence of rainbow trout in all perennial stream habitats, and 4.) Effects to aquatic resources (water quality, stream condition, and aquatic habitat) will be negligible due to project level design criteria and the Riparian Conservation Objectives and associated guidelines being met. Given this information, a *"no effect"* determination was reached for CRLF and no further analysis was performed, and consultation with the US Fish and Wildlife Service was not initiated.

Determination of Effects

<u>California red-legged frog</u>

Alternative 1 – (No Action)

It is my determination that Alternative 1 of the Trestle Forest Health Project will not affect the California red-legged frog.

It is my determination that Alternative 1 of the Trestle Forest Health Project will not affect critical

habitat designated for the California red-legged frog.

Alternative 2 – (Proposed Action)

It is my determination that Alternative 2 of the Trestle Forest Health Project will not affect the California red-legged frog.

It is my determination that Alternative 2 of the Trestle Forest Health Project will not affect critical habitat designated for the California red-legged frog.

Alternative 4

It is my determination that Alternative 4 of the Trestle Forest Health Project will not affect the California red-legged frog.

It is my determination that Alternative 4 of the Trestle Forest Health Project will not affect critical habitat designated for the California red-legged frog.

Alternative 5

It is my determination that Alternative 5 of the Trestle Forest Health Project will not affect the California red-legged frog.

It is my determination that Alternative 5 of the Trestle Forest Health Project will not affect critical habitat designated for the California red-legged frog.

Foothill yellow-legged frog
Rana boylii

Distribution, Abundance, and Habitat
Found in or adjacent to rocky streams in a diversity of habitats such as valley-foothill hardwood, valley-foothill hardwood- conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and various wetland types. In California, FYLF area distributed along the length of the western flank of the Sierra Nevada Mountains from the Cascades to Kern Co. The documented elevation range is from sea level to 1,940m (6,370 ft.) in the Sierra Nevada (Jennings and Hayes 1994). However, of the 220 foothill yellow-legged frog detections[1] on or adjacent to the Eldorado National Forest, a single detection was above 1,525 m (5,000 ft.). The mean elevation for these detections was approximately 787 m (2,583 ft.). Given this information, the max upper elevation extent for foothill yellow-legged frog on the Eldorado National Forest is believed to be 4,500 feet.

Species and Habitat Account
The species accounts for foothill yellow-legged frog (FYLF) can be obtained from the Eldorado National Forest (ENF) Supervisor's Office in Placerville, California.

[1] Detections may include more than one individual and/or more than one life stage.

Existing Surveys and Sightings
Extensive surveys for CA red-legged frog (1997-2013) have been conducted for the major perennial streams of the project area and associated watersheds (HUC 14) in favorable stream habitats below 5,000 feet. If present, FYLF would have likely been detected during these surveys since they occupy similar habitat types, specifically suitable breeding areas (deep pools). However, a nearby occurrence of FYLF (Sopiago Creek, Amador RD) is known. An adult FYLF was observed approximately 1 air mile and only 2 stream miles, via the confluence of the Middle Fork Cosumnes River, away from the project area boundary 8/30/1999 by an Eldorado National Forest fisheries survey crew. Given the proximity of this sighting along with lack of targeted surveys outside of low gradient reaches, where FYLF may still occur in higher gradient reaches that were not conducted for CRLF, FYLF have a higher potential to be present within the project area boundary.

Direct, Indirect, and Cumulative Effects to FYLF for Alternative 1 (No Action)
Under the No Action Alternative, none of the proposed silvicultural treatments (i.e. commercial and non-commercial thinning), road related activities (79 miles of road reconstruction & repair, 53 miles of road closure, and 5 miles of road obliteration); fuels reduction treatments including understory removal, machine piling, mastication, prescribed burning, or dispersed use restoration actions would be implemented. Other management projects activities from prior decisions would still occur including road maintenance, trail maintenance, and fire suppression as well as approved State timber harvest plans. Under this alternative, fuels would not be reduced, but would continue to accumulate. The risk for high severity wildfire would remain or increase, with the possibility of stand replacement mortality for much of the project area. No action could lead to a greater risk of erosional effects to aquatic features during periods of increased run-off and snowmelt in the years following a high-severity wildfire than Alternatives 2.

The hydrologic response of erosion rates after a high severity wildfire is increased by two or more magnitudes for several years post-fire and returns to near pre-wildfire levels within four or five years. However, the effects to aquatic features and beneficial uses of water both within and downstream of a high severity wildfire are difficult to predict in fire suppressed landscapes and depend on many factors. The single most important factor is often the size of the rainfall event that occurs during the first several years after the wildfire when the ground is most vulnerable to accelerated runoff and erosion. Tree mortality (snags) in riparian zones as a result of wildfire may contribute to large woody debris recruitment that is lacking in most drainages and remain elevated for the next 10 – 15 years post-wildfire (Gresswell 1999). There would be no direct or cumulative effects to FYLF or its habitat as the result of project activities not being implemented under Alternative 1. However, effects to FYLF from potential wildfire under Alternative 1 from the lack of fuels reduction related activities could negatively affect FYLF aquatic habitat by an increase in sediment deposition, nutrient loading to streams where they may occur or suppress recolonization in unoccupied but suitable habitats.

Effects of Alternative 1 to FYLF Discussion:
There would be no direct or cumulative effects to FYLF or its habitat as the result of project activities not being implemented under Alternative 1. Potential effects to FYLF from wildfire under Alternative 1 could be expected since FYLF have potential to be present within the project area based on known nearby occurrences (Sopiago Creek), and the amount of existing potentially suitable habitat within the TFHP area. Post-wildfire effects to FYLF could be expected to last 1-15 years depending on burn severity and precipitation events post-fire. High-severity wildfire impacting riparian canopy cover as well as coarse woody debris could render habitat unsuitable further fragmenting FYLF populations and hindering recolonization efforts.

Conclusions: When considered with past, present and reasonably foreseeable future activities, any cumulative impacts to FYLF or its preferred habitat by selecting Alternative 1 of the TFHP are expected to be unchanged with the exception of wildfire for the following reasons:

- Lack of any timber harvest, mastication, and road related activities, as well as fuels reduction, dispersed use restoration, and prescribed burning treatments occurring.
- Remaining potential for wildfire and post-wildfire effects in an untreated landscape, especially high-severity wildfire risk.

Overall, the lack of actions implementing Alternative 1 would likely not affect FYLF, however, since there would be no reduction in wildfire risk in an untreated landscape, effects could be expected and may have lasting consequences if habitat is rendered unsuitable from lack of these activities. Response of amphibians from lack of treatment will likely depend on the type and magnitude of disturbance, the amount and configuration of remaining habitat, and life-history characteristics. Given the status of FYLF, the proximity of known FYLF to the project area, potentially suitable habitat within the project boundary along with the unpredictable outcome of wildfire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog*." determination was reached.

Determination of Effects

It is my determination that Alternative 1 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog.

Direct and Indirect Effects to FYLF for Alternative 2 (Proposed Action)

FYLFs were detected within one mile of the TFHP area boundary project during past project surveys in the area (1999), suitable breeding and non-breeding habitat exists in most of the tributary and main stream reaches below 4,500 feet. Since FYLF have been detected adjacent to the project area (Sopiago Creek) this species has the potential to be affected by project activities for Alternative 2 listed in Table 4. Effects from timber harvest, road related activities, fuels reduction, prescribed burning, and restoration activities under Alternative 2 are possible. However, since FYLF is highly associated with water within stream channels, meadows and ponded areas in conjunction with project design features listed in Table 4, any direct or indirect effects to FYLF or aquatic habitat are expected to be minimal and limited to treatment areas within RCAs. The greatest threat to FYLF would most likely be from prescribed fire-related mortality or injury; or post-fire related sediment deposition in response to precipitation events in, or near riparian zones where the outcome of prescribed fire and post-fire effects can be difficult to predict.

Magnesium Chloride Dust Suppressant

Direct and indirect effects to FYLF could also occur from the use of dust palliatives, such as Magnesium Chloride ($MgCl_2$) for dust abatements on logging roads under the design criteria for thinning treatments. Limited studies have occurred on effects of road salts on amphibians; however, some conclusions can be drawn from present research and studies.

In a study conducted in Nova Scotia, field surveys were conducted on roadside aquatic habitats for amphibian species to determine affects from road salts and chloride concentrations. Acute toxicity tests (LC50) were performed on five locally common amphibian species using a range of environmentally significant NaCl concentrations. Field surveys indicated that spotted salamanders (Ambystoma maculatum) and wood frogs (Rana sylvatica) did not occupy high chloride ponds. American toads (Bufo americanus) showed no pond preference based on chloride concentration. Acute toxicity tests showed spotted salamanders and wood frogs were most sensitive to chloride, and American toads were the least. Spring peepers (Pseudacris crucifer) and green frogs (Rana clamitans) showed intermediate sensitivities. The study concluded that chloride concentrations in aquatic ponds due to application of

salts, influenced community structure by excluding salt intolerant species (Collins and Russell 2008). A similar study on the wood frog was conducted in Ohio indicating wood frog survival decreased from salinization of freshwater habitat brought about by road salt run-off (Langhans et al. 2011).

The effect to aquatic life and habitat can vary based upon species and is dependent on concentrations of suppressants used and proximity (Lewis 1999). Impacts are also dependent on whether the suppressant is used as a diluted liquid or a dry palliative. For the Trestle project, it will be used as dry palliative and in this state is less likely to be carried off by water runoff into drainages compared to a liquid application. However, since the suppressant is water soluble and moves laterally, movement will depend on concentrations and amount of rainfall. Application of the suppressant will occur in the summer months where rainfall is minimal (approximately July 1) which increases the likelihood of the suppressant not moving into drainages and effecting water quality and aquatic life.

The Colorado Department of Transportation (CDOT, 1998) conducted extensive research on the environmental impacts of magnesium chloride as a deicer on state roads. While this research focuses on a different activity than dust abatement, the results in terms of the chemicals environmental impact are relevant. Chloride concentration from two separate sources, magnesium chloride and sand with chloride, increased background chloride concentrations by 50 to 100 mg/L during winter application. These concentrations are described as being below levels considered potentially harmful to the most sensitive aquatic organisms (CDOT, 1998). The conclusions of the CDOT report stated that magnesium chloride is "highly unlikely to cause or contribute to environmental damage at distances greater than 20 yards. Even very close to the roadway, the potential for magnesium chloride to cause environmental damage is probably much smaller than other factors related to road maintenance."

Magnesium Chloride concentrations and additions in streams could directly affect larval stages of FYLF. From various studies and research, an increase in salinity concentrations would decrease dissolved oxygen content which can lead to embryonic and larvae mortality. Increase salinization could also deter amphibians from aquatic sites and be less likely to utilize areas for breeding. Indirect effects would include decrease in water quality, elevated chloride concentrations which decrease biological oxygen demand for aquatic life. Osmotic pressure of soils could possibly increase and negatively impact hardwood and tree growth. These effects are likely and are dependent on the movement of the suppressant. The Colorado research above concludes minimal impacts will occur based on time of application and precipitation.

It is difficult to determine definite impacts direct or indirect without more research and studies conducted and testing of these suppressants in aqueous environments. Therefore; with the exclusion buffers of 100 feet for all stream crossings impacts would likely be absent but potentially be there.

Table 5. Potential Treatments effects to FYLF as a result of the Trestle Forest Health Project Proposed Action (Alternative 2).

Treatment Effect	**Direct Effects**	**Indirect Effects**
Timber Harvest – commercial thinning and hazard tree removal	Mortality or injury from harvest equipment, tractor piling, and falling timber in RCAs.	• Harassment from noise and ground vibration • Removal of downed woody debris for cover habitat. • Reduction in microclimate structure that may alter habitat suitability. • Changes in sedimentation

		rates to streams that may affect pool structure, pool depth, and forage base. • Increased peak flows from reduced water uptake by trees altering habitat availability/suitability. • Loss of canopy structure may lead to warming of, and earlier drying out of streams. • Loss of future large woody debris for cover and in streams that impounds sediment, reduces stream velocity, and creates pool habitat. • Accelerated erosion from concentrated or diverted flow leading to increased sediment rates to streams that may degrade habitat, fill in pools and reduce forage base.
Road reconstruction, and repair. Road decommissioning and landing obliteration.	Mortality or injury from road equipment on roads where frogs might be under cover materials, especially on overgrown roads in RCAs.	<u>Roads within RCAs</u> • Brush clearing resulting in reduced sheltering habitat. • Vehicle lubricants and fluids entering waterways contaminating water • Increased public access to riparian areas by OHVs that may degrade habitat quality; increased dispersed recreation/camping that may result in removal of FYLF from streams as pets.
Fuels Treatment - non-commercial thinning, machine piling and mastication.	Mortality or wounding from tractor piling of occupied downed wood aggregations in RCAs.	• Changes in infiltration and water surface runoff rates that may affect habitat suitability from removal of coarse woody debris in

		RCAs. • Harassment from noise and ground vibration. • Changes in sedimentation rates to streams as a result of ground disturbance that may alter pool depths. • Water chemistry changes as a result of ignition fuels and ash input into streams that may affect water quality.
Prescribed fire – pile burning, understory burning, dozer and hand fire lines	Mortality or wounding by applied fire or pile burning if piles occupied in RCAs.	• Harassment from noise and ground vibration • Changes in sedimentation rates to streams that may affect pool structure and forage base. • Reduction in habitat quality due to water chemistry changes from ignition fuels, accidental fuel spill, and ash input into streams. • Moderate to High – severity areas of fire (e.g., spotting) in riparian areas resulting in decreased habitat and cover. <u>After burning:</u> • Changes in infiltration and water surface runoff rates that may affect habitat suitability. • Changes in water yield leading to changes in water permanence. • Changes in sedimentation rates to streams. • Water quality changes as a result of residual ignition

		fuels during or after runoff events. • Water chemistry changes as a result of ash input into streams during or after runoff events altering suitability.

Cumulative Effects to FYLF for Alternative 2

A cumulative effect represents the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions." (40 CFR 1508.7). The cumulative effects analysis presented here for FYLF does not attempt to quantify the effects of past management or human actions by adding up all prior actions on an action-by-action basis. Current conditions within the TFHP have been impacted by innumerable actions over the last century (and beyond) resulting in a very dynamic landscape. In addition, assessing cumulative effects in fire excluded, or otherwise altered forests, is extremely difficult. As a result, trying to isolate individual actions that continue to have residual impacts is impractical. Only through assessing current conditions that capture residual effects of past human actions as well as natural events, regardless of particular action or the event(s) that contributed to those effects, can a baseline be established. For these reasons, the analysis of past actions in this document is based largely on current environmental conditions with additional information summarized from the Hydrology Report (Markman 2014) that summarizes Cumulative Watershed Effects (CWE). Assessing how, implementing the TFHP will contribute to cumulative effects on FYLF or its habitat using existing information (not historical information) is the goal of this analysis.

Past disturbances management activities that have had the most impact on streams and watersheds within the TFHP area include multiple timber harvest events (private as well as public), road construction, grazing, mining, off-highway vehicle use, and hydrologic development (e.g., water diversion) that often results in increased sediment delivery and otherwise alteration to streams. In addition, the introduction of non-native species into the Sierra Nevada, has adversely affected many native aquatic species. Jennings (1996) notes that several Sierra Nevada amphibian species have shown dramatic declines in abundance, distribution, and diversity due to the introduction of aquatic predators such as trout and bullfrogs. Negatively altered aquatic habitat as well as hydrologic conditions often determines the presence and/or absence of aquatic dependent species.

However, during the last decade, protective measures for streamside zones in managed forests have become more restrictive. Although timber harvest plans on private lands incorporate stream buffers, the intensity and size of past timber harvest activities on private lands often resulted in fragmentation of habitat for many species making National Forest System lands increasingly important for sustaining habitat for aquatic and riparian-dependent species. Timber harvest on private lands is overseen by the California Forest Practices Act. The California Department of Forestry website (CDF 2014) was checked for planned timber harvest plans (THPs) on private lands in the watersheds where this project is located. The timber harvest plan listing did not indicate any timber harvest plans within the project area analyzed in this document. Any timber activities being planned in the future by the USDA Forest Service will follow the standards and guidelines established under the Sierra Nevada Forest Plan Amendment (USDA Forest Service 2004a). Under these standards and guidelines, the effects of future sales in the project area are expected to maintain and restore the species composition and structural diversity of plant and animal communities in riparian areas.

Present disturbances within the project area (public and private) presently include human-related activities such as, dispersed recreation, fuels reduction, prescribed burning, off-highway vehicle use, unauthorized road use,

and grazing. Natural processes include erosion, stream aggradation and degradation mainly as a result of climatic events such as rain-on-snow events and downpours during thunderstorms.

Reasonably foreseeable future disturbances within the project area (public and private) include human activities such as timber harvest, fuels reduction, road re-construction, road maintenance, and road decommissioning, off-highway vehicle use, and grazing will continue to take place within the TFHP project area. The level of recreational use on all National Forest System lands is expected to continue and increase temporally as the human population continues to increase. Increases in dispersed camping and off-highway vehicle use, particularly within the floodplain and adjacent riparian areas, have the potential to adversely affect aquatic and riparian habitats. However, as a result of implementing the TFHP the level of unauthorized use is expected to decrease as a result by placing barricades, barriers, and gates to routes not currently open to public use.

Effects of Alternative 2 to FYLF Discussion:

Recovery of the watersheds within the TFHP will largely depend on the gradual reduction of sediment into streams, and may take decades based on past human related activities. These long-term and larger scale factors often addressed in cumulative watershed effects analyses highlight the value of addressing activities beyond the TFHP area.

In the Sierra Nevada, the effects of human related activity including historic: mining, timber harvest, road building, grazing, off highway vehicle use, and recreation along with other factors including: new emergent diseases, pesticide use, habitat fragmentation, climate change, and introduced non-native species, have all been suggested as causes for the decline of amphibians. Understanding the extent to which all of these factors may have affected local FYLF populations in the watersheds associated with the TFHP area is beyond the scope of this analysis; so too is an analysis determining the extent to which these factors will continue to effect locally present FYLF populations. However, the connected actions of the TFHP with these other factors in determining whether a trend from current baseline conditions will occur is the goal of this analysis.

Direct and indirect actions with the potential to impact FYLF have been identified and disclosed. The degree in which these actions will affect individual frogs largely depends on the timing and duration of events, resulting impacts, and the time it takes to recover to a pre-project condition. For the TFHP this trend is expected to be short-term (less than 5 years) post-treatment for each treatment type proposed.

Conclusions: When considered with past, present, and reasonably foreseeable future activities, any cumulative impacts to FYLF or its preferred habitat as a result of implementing Alternative 2 of the TFHP are expected to be minor for the following reasons:

- No treatments within or adjacent to known occupied streams.
- Short (< 5 yr.) duration of project level effects.
- Established stream buffer exclusion zones.
- Overall reduction in wildfire risk.
- Restoration of dispersed use sites in riparian areas.
- Closure of roads not open to the public.
- Established buffers from aquatic features for possible use of magnesium chloride dust suppressant on logging roads.

Overall, the actions of Alternative 2 will ultimately benefit FYLF from a reduction in wildfire risk, promotion of riparian habitat through prescribed fire, a reduction in sediment delivery to streams from road repair, road closure, and dispersed use area restoration. . Since response of amphibians depends on the type and magnitude of disturbance, the amount and configuration of remaining habitat, as well as their life-history characteristics project activities may still impact this species even when the outcome is positive. Given the known status of

FYLF occurrence adjacent to the project area boundary as well as breeding locations and potentially suitable (unoccupied) habitats, and the unpredictable outcome of prescribed fire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog*." determination was reached.

Determination of Effects

It is my determination that Alternative 2 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog.

Direct and Indirect Effects to FYLF for Alternative 4

The emphasis of this alternative is to take a conservative approach to treatment activities to minimize impacts to California spotted owl habitat. The selection of treatment areas under this alternative is a reflection of the effort to balance the desirability of wildlife habitat improvement, forest health and stand density, and fuels reduction. Treatment areas would be prioritized and selected based on wildlife and fuels objectives, stand conditions and locations, combined with economics. Management activities tend to be concentrated where mutual objectives of wildlife, fuels and timber management coincide. Based upon existing stand structure, species composition, and density, fewer trees larger than 20 inches d.b.h. would be removed to achieve management objectives when compared to Alternative 2.

The expected results of implementing Alternative 4 include meeting combined wildlife, fire, fuels, and timber objectives by a combination of management activities. Results include the reduction of fuels accumulated on the ground and present as fuel ladders. Prescribed burning would favor ponderosa pine establishment and growth due to the ponderosa pines adaptation to fire. Wildlife habitat would be improved through fuels reduction and thinning. Those forested stands that have a dense understory and heavy fuel accumulations would become more open following treatment. Treated stands would become more resilient to fire, disease and insect infestation through the removal of dense, competing, young-growth trees, and would achieve a greater percentage of large trees in a shorter time frame than Alternative 2. Proposed treatments and management actions are described in detail in the section summarized for the overall project area.

Effects of Alternative 4 to FYLF Discussion:

Under Alternative 4 FYLF would experience similar direct, indirect and cumulative effects as Alternative 2. All other activities listed under alternative 2 would still occur.

Conclusions: When considered with past, present, and reasonably foreseeable future activities, any cumulative impacts to FYLF or its preferred habitat as a result of implementing Alternative 4 of the TFHP are expected to be minor for the following reasons:

- No treatments within or adjacent to known occupied streams.
- Short (< 5 yr.) duration of project level effects.
- Established stream buffer exclusion zones.
- Overall reduction in wildfire risk.
- Restoration of dispersed use sites in riparian areas.
- Closure of roads not open to the public.
- Established buffers from aquatic features for possible use of magnesium chloride dust suppressant on logging roads.

Overall, the actions of Alternative 4 will ultimately benefit FYLF from a reduction in wildfire risk, promotion of riparian habitat through prescribed fire, a reduction in sediment delivery to streams from road repair, road and trail closure, and dispersed use area restoration. Since response of amphibians depends on the type and

magnitude of disturbance, the amount and configuration of remaining habitat, as well as their life-history characteristics project activities may still impact this species even when the outcome is positive. Given the known status of FYLF occurrence adjacent to the project area boundary as well as breeding locations and potentially suitable (unoccupied) habitats, and the unpredictable outcome of prescribed fire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog*." determination was reached.

Determination of Effects

It is my determination that Alternative 4 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog.

Direct and Indirect Effects to FYLF for Alternative 5

The emphasis of this alternative is to take a conservative approach to treatment activities to minimize impacts to California spotted owl habitat as well as providing effective fire modification strategy to minimize impacts to the community and forestry resources. The selection of treatment areas under this alternative is a reflection of the effort to balance the desirability of wildlife habitat improvement, forest health and stand density, fuels reduction and the community. Treatment areas would be prioritized and selected based on wildlife and fuels objectives, stand conditions and locations, combined with economics. Management activities tend to be concentrated where mutual objectives of wildlife, fuels and timber management coincide. Based upon existing stand structure, species composition, and density, fewer trees larger than 20 inches d.b.h. would be removed to achieve management objectives when compared to Alternative 2.

The expected results of implementing Alternative 5 include meeting combined wildlife, fire, fuels, and timber objectives by a combination of management activities. Results include the reduction of fuels accumulated on the ground and present as fuel ladders. Prescribed burning would favor ponderosa pine establishment and growth due to the ponderosa pines adaptation to fire. Wildlife habitat would be improved through fuels reduction and thinning. The community and other forest resources would be protected with reduction of fuels lowering chances of wildfires. Those forested stands that have a dense understory and heavy fuel accumulations would become more open following treatment. Treated stands would become more resilient to fire, disease and insect infestation through the removal of dense, competing, young-growth trees, and would achieve a greater percentage of large trees in a shorter time frame than Alternative 2. Proposed treatments and management actions are described in detail in the section summarized for the overall project description.

Effects of Alternative 5 to FYLF Discussion:

Under Alternative 5 FYLF would experience similar direct, indirect and cumulative effects as Alternative 2. All other activities listed under alternative 2 would still occur.

Conclusions: When considered with past, present, and reasonably foreseeable future activities, any cumulative impacts to FYLF or its preferred habitat as a result of implementing Alternative 4 of the TFHP are expected to be minor for the following reasons:

- No treatments within or adjacent to known occupied streams.
- Short (< 5 yr.) duration of project level effects.
- Established stream buffer exclusion zones.
- Overall reduction in wildfire risk.
- Restoration of dispersed use sites in riparian areas.
- Closure of roads not open to the public.
- Established buffers from aquatic features for possible use of magnesium chloride sulfonate dust suppressant on logging roads.

Overall, the actions of Alternative 5 will ultimately benefit FYLF from a reduction in wildfire risk, promotion of riparian habitat through prescribed fire, a reduction in sediment delivery to streams from road repair, road and trail closure, and dispersed use area restoration. Since response of amphibians depends on the type and magnitude of disturbance, the amount and configuration of remaining habitat, as well as their life-history characteristics project activities may still impact this species even when the outcome is positive. Given the known status of FYLF occurrence adjacent to the project area boundary as well as breeding locations and potentially suitable (unoccupied) habitats, and the unpredictable outcome of prescribed fire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog*." determination was reached.

Determination of Effects

It is my determination that Alternative 4 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog.

Sierra Nevada yellow-legged frog
Rana sierrae

Distribution, Abundance, and Habitat
In the Sierra Nevada, the Sierra Nevada yellow-legged frog is found from approximately 1,372 m (4,500 ft.) to over 3,655 m (12,000 ft.) in elevation; the historic range of this species frog extends from Plumas County to Tulare County (Jennings and Hayes 1994). This frog is seldom far from water and prefers well illuminated**,** sloping banks of meadow streams, riverbanks, isolated pools, and lake borders with vegetation that are continuous to the water's edge. Sierra Nevada yellow-legged frogs have also been observed using a variety of habitats, including grassy streambanks, large boulders adjacent to deep stream pools, fallen trees extending into lakes, and along rocky lake shorelines adjacent to deeper water. Shallows along stream and lake margins are used by tadpoles to absorb heat to enhance metabolic rate (Jennings and Hayes 1994).

Species and Habitat Account
The species accounts for Sierra Nevada yellow-legged frogs (SNYLF) can be obtained from the Eldorado National Forest Headquarters Office in Placerville, California.

Existing Surveys and Sightings
The nearest known location of Sierra Nevada yellow-legged frogs were detected in 2003 (1 adult) in the North Fork Cosumnes River near Capps Crossing approximately 0.7 air miles from the eastern project boundary. This is within 1-mile of the project boundary; however, the detection occurred in the NF Cosumnes River within a different watershed, the **NF Cosumnes – Vanhorn Creek** watershed (HUC 14) which is outside of the project boundary and is unlikely not be impacted by project activities.

The elevation range for this species ranges from 4,500 ft. to over 12,000 ft. as designated from the federal listing on June 30, 2014. However; based on a GIS and database analysis no SNYLF has been detected on ENF land below 5,000 feet. Based on habitat suitability, no prior detections and elevation, SNYLF are not likely to occur within the Trestle Project boundary.

Past Surveys:

Surveys of selected streams 5,000 feet and below have occurred in streams within the project boundary during surveys for CRLF and FYLF species from 1997-2013 with no SNYLF detected.

Present Surveys:
All stream reaches identified in a GIS analysis within the TFHP boundary above 4,500 and 5,000 feet were identified. Some reaches (Middle Dry Creek) within the project area have been surveyed during observations for CRLF and FYLF species since the species share similar elevation ranges. The majority of 4,500 feet streams have not been surveyed for SNYLF due to low habitat suitability potential and non-ideal elevation range. The stream reaches with the highest potential for frog habitat were identified and can be seen in figure below. The highest potential stream reaches consist of 2.24 miles, while lower to no potential stream reaches consists of 14.96 miles.

Survey Results: *No SNYLF detected.*

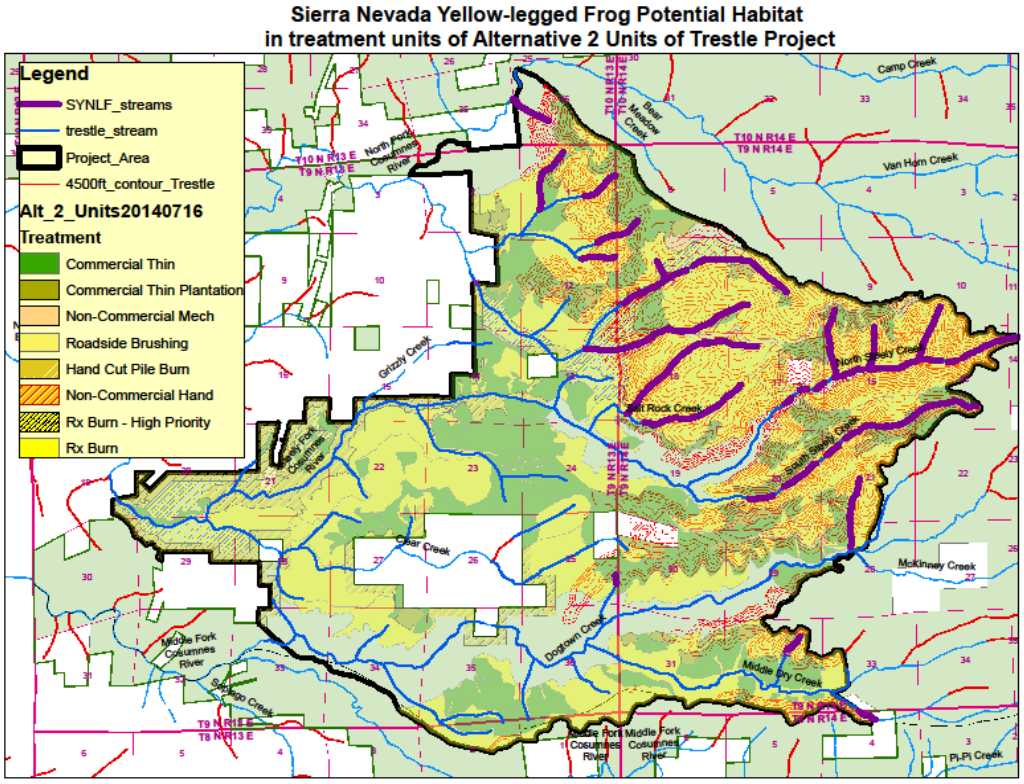

Figure 4. Potential SNYLF habitat (4,500 feet and above - purple) in project area.

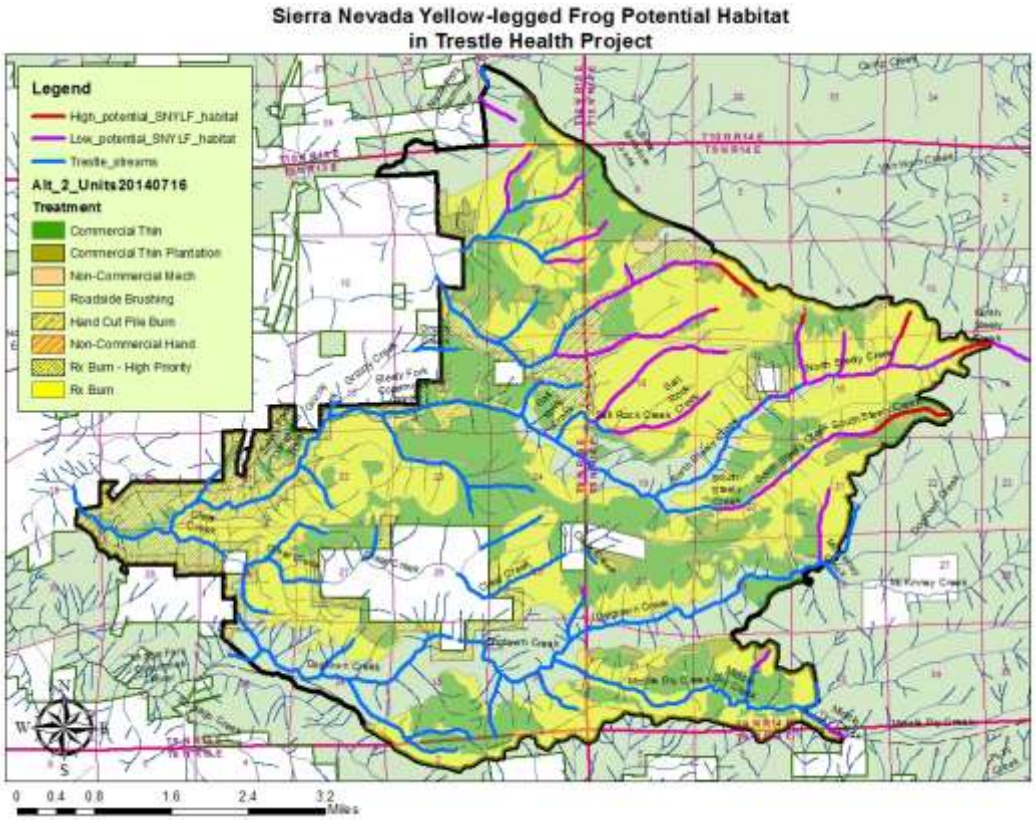

Figure 5. High potential (5000 ft. and above – red) and low potential (4,500 ft. and above - purple) habitat for SNYLF.

Effects Summary for Alternatives 1, 2, 4 and 5 to SNYLF.
Direct, indirect, as well as cumulative effects to SNYLF, its proposed Critical Habitat are not expected to be impacted under any of the alternatives. This conclusion is based on the following assumptions: 1.) the nearest known breeding population (Tragedy Creek) is approximately 15.2 air miles northwest of project area boundary in a different river drainage system, 2.) Proposed critical habitat is 20.3 and 12.2 air miles northeast and southeast of the project boundary in Desolation and Mokulumne wildernesses, 3.) Protocol level surveys have occurred (1997-2013) in some potential habitats for detection within the Trestle FHP and failed to detect SNYLF, 4.) The exclusion buffers of 100 feet enforced for all project activities would avoid effects to SNYLF, 5.) Habitat suitability within the Trestle FHP has been deemed low due to the elevation range limits and lack of prior detections, 6.) The presence of rainbow trout in all perennial stream habitats reduces habitat suitability, and 7.) Effects to aquatic resources (water quality, stream condition, and aquatic habitat) would be negligible due to project level design criteria and the Riparian Conservation Objectives and associated guidelines being met. Given this information, a "no effect" determination was reached for SNYLF and no further analysis was performed, and *consultation with the US Fish and Wildlife Service was not initiated*.

Summary of Determination of Effects for SNYF

Alternative – 1 (No Action)

It is my determination that Alternative 1of the Trestle Health project will not affect the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 1of the Trestle Health project will not affect designated critical habitat for the Sierra Nevada yellow-legged frog.

Alternative – 2 (Proposed Action)

It is my determination that Alternative 2 of the Trestle Health project will not affect the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 2 of the Trestle Health project will not affect proposed critical habitat for the Sierra Nevada yellow-legged frog.

Alternative – 4

It is my determination that Alternative 4 of the Trestle Health project will not affect the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 4 of the Trestle Health project will not affect proposed critical habitat for the Sierra Nevada yellow-legged frog.

Alternative – 5

It is my determination that Alternative 5 Trestle Health Project will not affect the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 5 of the Trestle Health project will not affect proposed critical habitat for the Sierra Nevada yellow-legged frog.

Western Pond Turtle
Actinemys marmorata

Distribution, Abundance, and Habitat
The western pond turtle, one of only two species of freshwater turtle native to west coast of the United States, found from sea level to approximately 1,525 m (5,000 ft.) in elevation; and is uncommon to common throughout California. Western pond turtles are habitat generalists, occurring in a wide variety of permanent and intermittent aquatic habitats and found in a variety of habitat types including ponds, lakes, streams, irrigation ditches and semi-permanent pools of intermittent streams. Most populations in the Sierra Nevada are restricted to smaller stream habitats.

Species and Habitat Account
The species accounts for western pond turtle (WPT) can be obtained from the Eldorado National Forest (ENF) Supervisor's Office in Placerville, California.

Existing surveys and sightings
There is only one WPT sighting within the project area boundary in Leoni Meadow (private) observed in 1995 by forest fisheries crew (with permission). WPT were not detected within the project area boundary during project level surveys (2012 and 2013) or during other past project surveys in the area (Last Chance Fuels Reduction Project). Habitat suitability was not established for every stream in the project, but it is reasonable to assume that suitable WPT habitat exists in same reaches identified as suitable for CRLF and FYLF since these species are commonly found occupying the same habitats below 5,000 feet. A GIS analysis within the project boundary identified 46 treatment units with a total of 830 acres of potentially suitable western pond turtle nesting habitat on south facing slopes (Figure 2). A total of approximately 2,883 acres of suitable nesting habitat occurs within the project area boundary where prescribed fire activities could affect WPT.

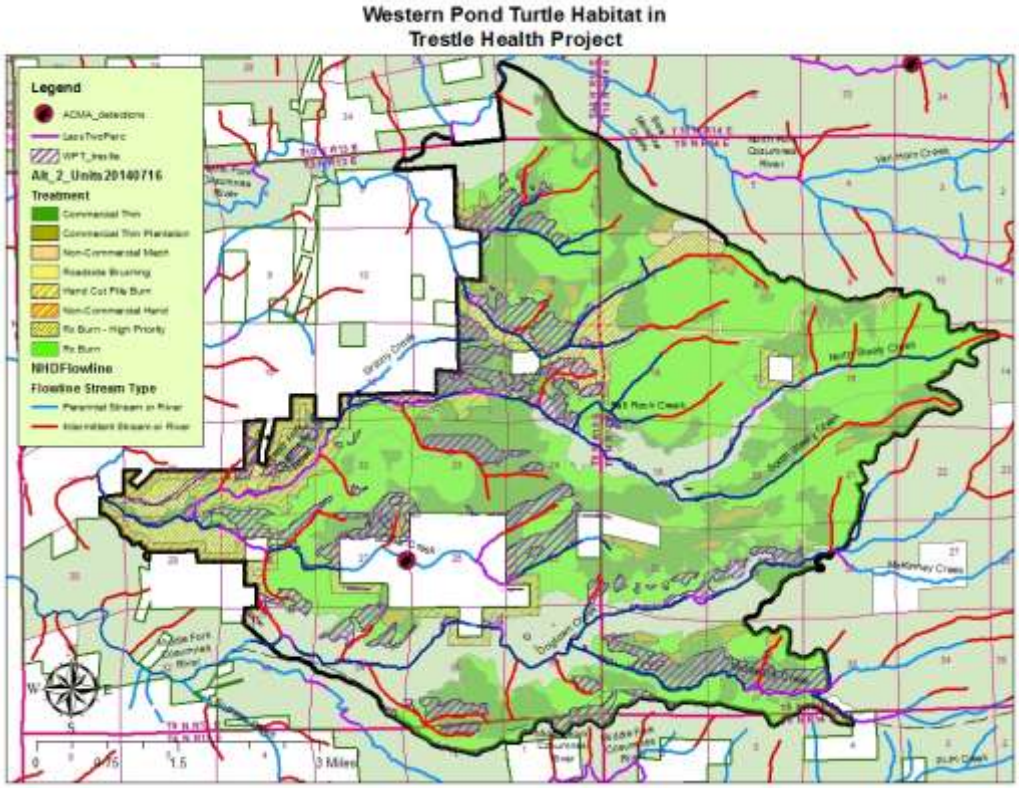

Figure 6. Project area boundary, illustrating western pond turtle suitable nesting habitat (purple-hashed polygons; approximately 2500 acres) of which approximately 830 acres is within treatment units. Red circle with dark center turtle symbol, adult western pond turtle seen in 1995 in Leoni Meadow.

Direct, Indirect, and Cumulative Effects to WPT for Alternative 1 (No Action)

Under the No Action Alternative, none of the proposed silvicultural treatments (i.e. commercial and non-commercial thinning), road related activities (79 miles of road reconstruction & repair, 53 miles of road closure, and 5 miles of road obliteration); fuels reduction treatments including understory removal, machine piling, mastication, prescribed burning, or dispersed use restoration actions would be implemented. Other management projects activities from prior decisions would still occur including road maintenance, trail maintenance, and fire suppression as well as approved State timber harvest plans. Under this alternative, fuels would not be reduced, but would continue to accumulate. The risk for high severity wildfire would remain or increase, with the possibility of stand replacement mortality for much of the project area. No action could lead to a greater risk of erosional effects to aquatic features during periods of increased run-off and snowmelt in the years following a high-severity wildfire than Alternatives 2,4 and 5.

The hydrologic response of erosion rates after a high severity wildfire is increased by two or more magnitudes for several years post-fire and returns to near pre-wildfire levels within four or five years. However, the effects to aquatic features and beneficial uses of water both within and downstream of a high severity wildfire are difficult to predict in fire suppressed landscapes and depend on many factors. The single most important factor is often the size of the rainfall event that occurs during the first several years after the wildfire when the ground is most vulnerable to accelerated runoff and erosion. Tree mortality (snags) in riparian zones as a result of wildfire may contribute to large woody debris recruitment that is lacking in most drainages and remain elevated for the next 10 – 15 years post-wildfire (Gresswell 1999). There would be no direct or cumulative effects to WPT, its habitat, or its nesting habitat as the result of project activities not being implemented under Alternative 1. However, effects to WPT from potential wildfire under Alternative 1 from the lack of fuels reduction related activities could negatively affect WPT aquatic habitat by an increase in sediment deposition, nutrient loading to streams where they may occur or suppress recolonization in unoccupied but suitable habitats.

Effects of Alternative 1 to WPT Discussion:

There would be no direct or cumulative effects to WPT, its habitat, or its nesting habitat as the result of project activities not being implemented under Alternative 1. Potential effects to WPT from wildfire under Alternative 1 could be expected since WPT are present within the project area (Leoni Meadow), and the amount of existing potentially suitable habitat, as well as nesting habitat within the TFHP area. Post-wildfire effects to WPT could be expected to last 1-15 years depending on burn severity and precipitation events post-fire. High-severity wildfire impacting riparian canopy cover as well as coarse woody debris could render habitat unsuitable further fragmenting WPT populations and hindering recolonization efforts.

Conclusions: When considered with past, present and reasonably foreseeable future activities, any cumulative impacts to WPT or its preferred habitat by selecting Alternative 1 of the TFHP are expected to be unchanged with the exception of wildfire for the following reasons:

- Lack of any timber harvest, mastication, road related activities, as well as fuels reduction, dispersed use restoration, and prescribed burning treatments occurring.
- Remaining potential for wildfire and post-wildfire effects in an untreated landscape, especially high-severity wildfire risk.

Overall, the lack of actions implementing Alternative 1 would likely not affect WPT, however, since there would be no reduction in wildfire risk in an untreated landscape, effects could be expected and may have lasting consequences if habitat is rendered unsuitable from lack of these activities. Response of turtles from lack of treatment will likely depend on the type and magnitude of disturbance, the amount and configuration of remaining habitat, and life-history characteristics. Given the status of WPT, known WPT occurrence within the project area, potentially suitable habitat as well as nesting habitat within the project boundary, and the unpredictable outcome of wildfire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Western pond turtle*." determination was reached.

Determination of Effects

It is my determination that Alternative 1 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Western pond turtle.

Direct and Indirect Effects to WPT for Alternative 2 (Proposed Action)

WPT was detected within the TFHP area boundary during past project surveys in the area (1995), and habitat as well as nesting habitat exists in most of the tributary and main stem stream reaches below 5000 feet, and has the potential to be affected by project activities for Alternative 2 listed in Table 7. Effects from timber harvest, road related activities, fuels reduction, prescribed burning, and restoration activities under Alternative 2 are possible, since WPT is both highly associated with water within stream channels and adjacent riparian zones, meadows and ponded areas. In conjunction with project design features listed in Table 5, any direct or indirect effects to WPT or aquatic habitat are expected to be marginal and not limited to treatment areas within RCAs, but upland nesting habitat types as well. The greatest threat to WPT would most likely be from prescribed fire-related mortality or injury; or post-fire related sediment deposition in response to precipitation events in, or near riparian zones where the outcome of prescribed fire and post-fire effects can be difficult to predict. Equipment related mortality to nesting female turtles, nests, and emerging hatchling turtles in upland habitats are the greatest risks in non-aquatic habitats.

Magnesium Chloride Dust Suppressant

Another threat to WPT could also be the use of Magnesium Chloride ($MgCl_2$) (dust suppressant) for dust abatements on logging roads under the design criteria for thinning treatments. There is even less research and studies conducted on effects of road pollutants on reptilian species compared to amphibian species. Impacts to

aquatic sites would be similar for all aquatic species.

The effect to aquatic life and habitat can vary based upon species and is dependent on concentrations of suppressants used and proximity (Lewis 1999). Impacts are also dependent on whether the suppressant is used as a diluted liquid or a dry palliative. For the Trestle project, it will be used as dry palliative and in this state is less likely to be carried off by water runoff into drainages compared to a liquid application. However, since the suppressant is water soluble and moves laterally, movement will depend on concentrations and amount of rainfall. Application of the suppressant will occur in the summer months where rainfall is minimal (approximately July 1) which increases the likelihood of the suppressant not moving into drainages and effecting water quality and aquatic life.

The Colorado Department of Transportation (CDOT, 1998) conducted extensive research on the environmental impacts of magnesium chloride as a deicer on state roads. While this research focuses on a different activity than dust abatement, the results in terms of the chemicals environmental impact are relevant. Chloride concentration from two separate sources, magnesium chloride and sand with chloride, increased background chloride concentrations by 50 to 100 mg/L during winter application. These concentrations are described as being below levels considered potentially harmful to the most sensitive aquatic organisms (CDOT, 1998). The conclusions of the CDOT report stated that magnesium chloride is "highly unlikely to cause or contribute to environmental damage at distances greater than 20 yards. Even very close to the roadway, the potential for magnesium chloride to cause environmental damage is probably much smaller than other factors related to road maintenance."

Direct physiological effects from magnesium chloride for WPT may not be known; however, it is reasonable that similar issues exist with the uptake (ingestion) of the pollutant directly from the environment) or from prey items (Andrews et al. 2008). Indirect effects would include alterations in water quality and negative impacts on growth of vegetation due to osmotic pressure in soils. Chloride levels maybe be elevated from runoff after precipitation events which can cause a decrease in biological oxygen demand influences the aquatic site.

It is difficult to determine definite effects on WPT without more research and studies conducted on effects of WPT. Therefore; with the exclusion buffers of 100 feet for all stream crossing would likely be absent but potentially be there.

Table 7. Direct and Indirect Threats to Western Pond Turtles from Project Activities under Alternative 2.

Treatment	**Direct Effects**	**Indirect Effects**
Timber Harvest – commercial thinning and hazard tree removal.	Mortality or injury to individuals and crushing of nests by harvest equipment, tractor piling, and falling timber.	• Harassment by noise and ground vibration that may affect nesting female WPTs or nests. • Removal of downed woody debris for cover habitat of adults and hatchlings • Reduction in microclimate structure that may alter habitat suitability of all life stages. • Changes in sedimentation rates to streams that may affect pool structure, depth, and forage base. • Increased peak flows from reduced water uptake by trees altering habitat availability.

		• Loss of canopy structure may lead to warming of nests on hill-slopes and earlier drying of streams in riparian areas. • Accelerated erosion from concentrated or diverted flow leading to increased sediment rates to streams that may degrade habitat, fill in pools and reduce forage base. • Channel creation and modification leading to unsuitable habitat.
Road Reconstruction, and repair. Road decommissioning and landing obliteration.	Mortality or injury from road equipment on roads where turtles might be under cover materials, especially on overgrown roads.	• Brush clearing resulting in reduced sheltering habitat. • Vehicle lubricants and fluids entering waterways contaminating water • Increased public access to riparian areas by OHVs that may degrade habitat quality, and dispersed recreation/camping that may result in removal of WPT from streams as pets.
Fuels Treatment – non-commercial thinning, machine piling and mastication.	Mortality or injury from road equipment on roads where turtles might be under cover materials, especially on overgrown roads. Harassment by noise and ground vibration that may affect nesting female WPT.	• Harassment by noise and ground vibration that may affect nesting female WPTs or nests. • Changes in infiltration and water surface runoff rates that may affect habitat suitability. • Changes in water yield • Changes in sedimentation rates to streams that may alter pool depths. • Water chemistry changes as a result of ignition fuels and ash input into streams that may affect water quality. • Loss of canopy structure may lead to warming of nests on hill-slopes and earlier drying of streams in riparian areas
Prescribed fire – pile burning, understory burning, dozer and	Mortality or Injury by applied fire or pile burning if occupied.	• Harassment by noise and ground vibration that may affect nesting female WPTs or nests

hand fire lines.	Mortality or injury to individuals and nests from crushing by dozer equipment. Mortality or injury from consuming unburned plastic spheres.	• Changes in sedimentation rates to streams that may affect pool structure and forage base. • Reduction in habitat quality due to water chemistry changes from ignition fuels, accidental fuel spill, and ash input into streams. • High – severity areas of fire (e.g., spotting) in riparian areas resulting in decreased habitat <u>After burning:</u> • Changes in infiltration and water surface runoff rates that may affect habitat suitability. • Changes in water yield leading to changes in water permanence. • Changes in sedimentation rates to streams. • Water quality changes as a result of residual ignition fuels during or after runoff events. • Water chemistry changes as a result of ash input into streams during or after runoff event altering suitability.

Individual western pond turtles (usually males) may have large home ranges and may wander within a given watercourse for several kilometers on a regular basis (Reese 1996). Western pond turtle nests have been found as far as 0.25 mi. from water (Reese and Welsh 1997) in open sunny areas on hill-slopes, generally with a south to southwest facing aspect[2]. Threats to nests and hatchlings would occur from May through March since the incubation period for western pond turtles is approximately eight months and may remain in the nest for a week or more (Table 8). Total nesting habitat potentially affected by the project is shown in Figure 2.

Table 8. Seasonal movements of western pond turtles and potential for disturbance.

Month	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Disturbance to:												
Indiv. nesting females												

[2] It should be noted that various studies have recorded considerable variances in distances western pond turtles travel overland away from the stream channel.

Eggs/hatchlings	
Overwintering adults	

Western pond turtles also move into upland slopes while overwintering. Overwintering movements are poorly understood; however, in Trinity County California, western pond turtles left the study-area river in September and began return movements in February, ending in June; the only lull in activity occurred between December and January (Reese and Welsh 1997). In one study in Trinity County, California the average distance of overwintering sites from a watercourse was 550 ft. (Ashton and others 1997). In the Sierra Nevada, the most likely time for western pond turtle overwintering movements is during the fall/late fall and early spring and would represent movements to and from upland overwintering sites. If western pond turtles were overwintering within the proposed project area, crushing of individuals could occur during these timeframes. However the majority of mechanical project activities would be expected to occur in the standard operating period (May to October). Therefore, the risks to overwintering turtles are low in this project.

Cumulative Effects to FYLF for Alternative 2

A cumulative effect represents the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions." (40 CFR 1508.7). The cumulative effects analysis presented here for WPT does not attempt to quantify the effects of past management or human actions by adding up all prior actions on an action-by-action basis. Current conditions within the TFHP have been impacted by innumerable actions over the last century (and beyond) resulting in a very dynamic landscape. In addition, assessing cumulative effects in fire excluded, or otherwise altered forests, is extremely difficult. As a result, trying to isolate individual actions that continue to have residual impacts is impractical. Only through assessing current conditions that capture residual effects of past human actions as well as natural events, regardless of particular action or the event(s) that contributed to those effects, can a baseline be established. For these reasons, the analysis of past actions in this document is based largely on current environmental conditions with additional information summarized from the Hydrology Report (Markman 2014) that summarizes Cumulative Watershed Effects (CWE). Assessing how, implementing the TFHP will contribute to cumulative effects on WPT or its habitat using existing information (not historical information) is the goal of this analysis.

Past disturbances: management activities that have had the most impact on streams and watersheds within the TFHP area include multiple timber harvest events (private as well as public), road construction, grazing, mining, off-highway vehicle use, and hydrologic development (e.g., water diversion) that often results in increased sediment delivery and otherwise alteration to streams. In addition, the introduction of non-native species into the Sierra Nevada, has adversely affected many native aquatic species. Negatively altered aquatic habitat as well as hydrologic conditions often determines the presence and/or absence of aquatic dependent species. However, during the last decade, protective measures for streamside zones in managed forests have become more restrictive. Although timber harvest plans on private lands incorporate stream buffers, the intensity and size of past timber harvest activities on private lands often resulted in fragmentation of habitat for many species making National Forest System lands increasingly important for sustaining habitat for aquatic and riparian-dependent species. Timber harvest on private lands is overseen by the California Forest Practices Act. The California Department of Forestry website (CDF 2014) was checked for planned timber harvest plans (THPs) on private lands in the watersheds where this project is located. The timber harvest plan listing did not indicate any timber harvest plans within the project area analyzed in this document. Any timber activities being planned in the future by the USDA Forest Service will follow the standards and guidelines established under the Sierra Nevada Forest Plan Amendment (USDA Forest Service 2004a). Under these standards and guidelines, the effects of future sales in the project area are expected to maintain and restore the species composition and structural diversity of plant and animal communities in riparian areas.

Present disturbances within the project area (public and private) presently include human-related activities such as, dispersed recreation, fuels reduction, prescribed burning, off-highway vehicle use, unauthorized road use, and grazing. Natural processes include erosion, stream aggradation and degradation mainly as a result of climatic events such as rain-on-snow events and downpours during thunderstorms.

Reasonably foreseeable future disturbances within the project area (public and private) include human activities such as timber harvest, fuels reduction, road re-construction, road maintenance, and road decommissioning, off-highway vehicle use, and grazing will continue to take place within the TFHP project area. The level of recreational use on all National Forest System lands is expected to continue and increase temporally as the human population continues to increase. Increases in dispersed camping and off-highway vehicle use, particularly within the floodplain and adjacent riparian areas, have the potential to adversely affect aquatic and riparian habitats. However, as a result of implementing the TFHP the level of unauthorized use is expected to decrease as a result by placing barricades, barriers, and gates to routes not currently open to public use.

Effects of Alternative 2 to WPT Discussion:

Recovery of the watersheds within the TFHP will largely depend on the gradual reduction of sediment into streams, and may take decades based on past human related activities. These long-term and larger scale factors often addressed in cumulative watershed effects analyses highlight the value of addressing activities beyond the TFHP area.

In the Sierra Nevada, the effects of human related activity including historic: mining, timber harvest, road building, grazing, off highway vehicle use, and recreation along with other factors including habitat fragmentation, climate change, and introduced non-native species are all potential causes for the decline of WPT. Understanding the extent to which all of these factors may have affected local WPT populations in the watersheds associated with the TFHP area is beyond the scope of this analysis; so too is an analysis determining the extent to which these factors will continue to effect locally present WPT populations. However, the connected actions of the TFHP with these other factors in determining whether a trend from current baseline conditions will occur is the goal of this analysis.

Direct and indirect actions with the potential to impact WPT have been identified and disclosed. The degree in which these actions will affect individual turtles largely depends on the timing and duration of events, resulting impacts, and the time it takes to recover to a pre-project condition. For the TFHP this trend is expected to be short-term (less than 5 years) post-treatment for each treatment type proposed.

Conclusions: When considered with past, present, and reasonably foreseeable future activities, any cumulative impacts to WPT, its preferred habitat, or nesting habitat as a result of implementing Alternative 2 of the TFHP are expected to be minor for the following reasons:

- No treatments within or adjacent to known occupied streams.
- Short (< 5 yr.) duration of project level effects.
- Established stream buffer exclusion zones.
- Overall reduction in wildfire risk.
- Restoration of dispersed use sites in riparian areas.
- Closure of roads not open to the public.
- Established buffers from aquatic features for possible use of magnesium chloride dust suppressant on logging roads.

Overall, the actions of Alternative 2 are most likely to benefit WPT from a reduction in wildfire risk, promotion of riparian habitat through prescribed fire, a reduction in sediment delivery to streams from road repair, road

closure, dispersed use area restoration, and a decrease in canopy. Since response of turtles depends on the type and magnitude of disturbance, the amount and configuration of remaining habitat, as well as their life-history characteristics project activities may still impact this species even when the outcome is positive. Given the known status of WPT occurrence within the project area boundary as well as potentially suitable habitats, and the unpredictable outcome of prescribed fire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Western pond turtle*." determination was reached.

Determination of Effects

It is my determination that Alternative 2 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Western pond turtle.

Direct and Indirect Effects to WPT for Alternative 4

The emphasis of this alternative is to take a conservative approach to treatment activities to minimize impacts to California spotted owl habitat. The selection of treatment areas under this alternative is a reflection of the effort to balance the desirability of wildlife habitat improvement, forest health and stand density, and fuels reduction. Treatment areas would be prioritized and selected based on wildlife and fuels objectives, stand conditions and locations, combined with economics. Management activities tend to be concentrated where mutual objectives of wildlife, fuels and timber management coincide. Based upon existing stand structure, species composition, and density, fewer trees larger than 20 inches d.b.h. would be removed to achieve management objectives when compared to Alternative 2.

The expected results of implementing Alternative 4 include meeting combined wildlife, fire, fuels, and timber objectives by a combination of management activities. Results include the reduction of fuels accumulated on the ground and present as fuel ladders. Prescribed burning would favor ponderosa pine establishment and growth due to the ponderosa pines adaptation to fire. Wildlife habitat would be improved through fuels reduction and thinning. Those forested stands that have a dense understory and heavy fuel accumulations would become more open following treatment. Treated stands would become more resilient to fire, disease and insect infestation through the removal of dense, competing, young-growth trees, and would achieve a greater percentage of large trees in a shorter time frame than Alternative 2. Proposed treatments and management actions are described in detail in the section summarized for the overall project description.

Effects of Alternative 4 to WPT Discussion:

Under Alternative 4 WPT would experience similar direct, indirect and cumulative effects as Alternative 2. All other activities listed under alternative 2 would still occur.

Conclusions: When considered with past, present, and reasonably foreseeable future activities, any cumulative impacts to WPT, its preferred habitat, or suitable nesting habitat as a result of implementing Alternative 4 of the TFHP are expected to be minor for the following reasons:

- No treatments within or adjacent to known occupied streams.
- Short (< 5 yr.) duration of project level effects.
- Established stream buffer exclusion zones.
- Overall reduction in wildfire risk.
- Restoration of dispersed use sites in riparian areas.
- Closure of roads and trails not open to public use.
- Established buffers and restrictions from aquatic features for possible use of magnesium chloride dust suppressant on logging roads.

Overall, the actions of Alternative 4 will ultimately benefit WPT from a reduction in wildfire risk, promotion of

riparian habitat through prescribed fire, a reduction in sediment delivery to streams from road repair, road and trail closure, dispersed use area restoration, and an increase in nesting habitat suitability in upland environments from a reduction in canopy and fuel loading. Since response of WPT depends on the type and magnitude of disturbance, the amount and configuration of remaining habitat, as well as their life-history characteristics project activities may still impact this species even when the outcome is positive. Given the known status of WPT occurrence within the project area boundary as well as the amount of suitable nesting habitat within the project area, and the unpredictable outcome of prescribed fire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Western pond turtle*." determination was reached.

Determination of Effects

It is my determination that Alternative 4 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Western pond turtle.

Direct and Indirect Effects to WPT for Alternative 5

The emphasis of this alternative is to take a conservative approach to treatment activities to minimize impacts to California spotted owl habitat as well as providing effective fire modification strategy to minimize impacts to the community and forestry resources. The selection of treatment areas under this alternative is a reflection of the effort to balance the desirability of wildlife habitat improvement, forest health and stand density, fuels reduction and the community. Treatment areas would be prioritized and selected based on wildlife and fuels objectives, stand conditions and locations, combined with economics. Management activities tend to be concentrated where mutual objectives of wildlife, fuels and timber management coincide. Based upon existing stand structure, species composition, and density, fewer trees larger than 20 inches d.b.h. would be removed to achieve management objectives when compared to Alternative 2.

The expected results of implementing Alternative 5 include meeting combined wildlife, fire, fuels, and timber objectives by a combination of management activities. Results include the reduction of fuels accumulated on the ground and present as fuel ladders. Prescribed burning would favor ponderosa pine establishment and growth due to the ponderosa pines adaptation to fire. Wildlife habitat would be improved through fuels reduction and thinning. The community and other forest resources would be protected with reduction of fuels lowering risks of wildfires. Those forested stands that have a dense understory and heavy fuel accumulations would become more open following treatment. Treated stands would become more resilient to fire, disease and insect infestation through the removal of dense, competing, young-growth trees, and would achieve a greater percentage of large trees in a shorter time frame than Alternative 2. Proposed treatments and management actions are described in detail in the section summarized for the overall project description.

Effects of Alternative 5 to WPT Discussion:

Under Alternative 5 WPT would experience similar direct, indirect and cumulative effects as Alternative 2. All other activities listed under alternative 2 would still occur.

Conclusions: When considered with past, present, and reasonably foreseeable future activities, any cumulative impacts to FYLF or its preferred habitat as a result of implementing Alternative 4 of the TFHP are expected to be minor for the following reasons:

- No treatments within or adjacent to known occupied streams.
- Short (< 5 yr.) duration of project level effects.
- Established stream buffer exclusion zones.
- Overall reduction in wildfire risk.
- Restoration of dispersed use sites in riparian areas.
- Closure of roads not open to the public.

- Established buffers and restrictions from aquatic features for possible use of magnesium chloride dust suppressant on logging roads.

Overall, the actions of Alternative 5 will ultimately benefit WPT from a reduction in wildfire risk, promotion of riparian habitat through prescribed fire, a reduction in sediment delivery to streams from road repair, road and trail closure, and dispersed use area restoration. Since response of WPT depends on the type and magnitude of disturbance, the amount and configuration of remaining habitat, as well as their life-history characteristics project activities may still impact this species even when the outcome is positive. Given the known status of FYLF occurrence adjacent to the project area boundary as well as breeding locations and potentially suitable (unoccupied) habitats, and the unpredictable outcome of prescribed fire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog*." determination was reached.

Determination of Effects

It is my determination that Alternative 5 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the western pond turtle.

Pacific lamprey
Entosphenus tridentatus

Adult Pacific lamprey spend 1-3 years in the ocean feeding on host fish and return to natal freshwater streams to reproduce. Adults spawn in low gradient stream reaches in gravel often at the tailouts of pools and riffles at shallow depths up to 4m deep. Ammocoetes, or larval lamprey that will spend 4-7 years in freshwater before migrating out to sea. The Pacific lamprey has been reduced over 55 percent from its historic range largely due to impassible dams. Most of the remaining occupied watersheds in California are rated as 'imperiled' or 'vulnerable' with additional threats of high water temperatures, low flow, stream alteration, and nutrient loading.

Distribution, Abundance, and Habitat

The Pacific lamprey is native to west coast of the United States and found from Baja Mexico north along the Pacific Rim to Japan. Once widespread along the west coast of the US there has been an observed decline in all western states. In 2003 the USFWS was petitioned to list four species of lamprey in Oregon, Washington, Idaho, and California, including the Pacific Lamprey, under the ESA, however, in December 2004, the USFWS determined that listing the Pacific Lamprey was not warranted (69 FR 77158).The US Fish and Wildlife Service has developed a strategy to proactively engage in conservation of the Pacific lamprey. Not much is known about the Pacific lamprey biology except from earlier studies and anecdotal evidence. Information is often extracted from other similar species or from different parts of the species' range. Although population data is scarce, it is expected that if current trends continue Pacific lamprey are likely to become extinct or endangered with extinction in the foreseeable future throughout all or parts of their range in the coterminous United States. The elevation extent for Pacific lamprey is unknown, but animals have been found as high as 3,000 feet.

Species and Habitat Account – Sierra Nevada

Pacific lamprey (PALA) larvae (ammocoetes) spend 4-7 years in low gradient, slow water areas of streams with deep pools (0.5m). Survival is strongly correlated with cooler water temperatures less than 22 C (71.6 F). Riparian vegetation is an important component of ammocoete development as they prefer habitats with canopy cover greater than 72%. The elevation extent of Pacific lamprey in the Sierra Nevada is unknown, but museum voucher specimens are known from the upper Sacramento River (2,330 ft.), upper McCloud River (2,749 ft.) and

Feather River (4,254 ft.). The Feather river specimens confirmed that lamprey could migrate over large waterfalls. Pacific lamprey were also confirmed over a natural barrier (Latrobe Falls, elevation 340 ft.) on the Cosumnes River in Eldorado County, CA (Goodman and Reid unpubl data).

Existing surveys and sightings

The Pacific lamprey is an anadromous fish that has been documented within two miles of the western forest boundary (near Fairplay, CA) by the California Department of Fish and Wildlife (1994) in the Middle Fork Cosumnes River (an undammed river). There are no PALA sightings within the project area boundary, but targeted PALA surveys in the rivers and streams within the project have not been conducted. PALA were not observed within the project area boundary during project level surveys (2012 or 2013) or during past project surveys in the area (Last Chance Project). Lamprey are not restricted by natural barriers that otherwise might inhibit fish migration. Adult lamprey can migrate over natural barriers (using their sucking disk), thus lamprey might be selecting spawning habitats without high fish predator density, thus the introduction of nonnative trout in many foothill streams may play a role in lamprey success.

Direct, Indirect, and Cumulative Effects to PALA for Alternative 1 (No Action)

Under the No Action Alternative, none of the proposed silvicultural treatments (i.e. commercial and non-commercial thinning), road related activities (79 miles of road reconstruction & repair, 53 miles of road closure, and 5 miles of road obliteration); fuels reduction treatments including understory removal, machine piling, mastication, prescribed burning, or dispersed use restoration actions would be implemented. Other management projects activities from prior decisions would still occur including road maintenance, trail maintenance, and fire suppression as well as approved State timber harvest plans. Under this alternative, fuels would not be reduced, but would continue to accumulate. The risk for high severity wildfire would remain or increase, with the possibility of stand replacement mortality for much of the project area. No action could lead to a greater risk of erosional effects to aquatic features during periods of increased run-off and snowmelt in the years following a high-severity wildfire than Alternatives 2,4 and 5.

The hydrologic response of erosion rates after a high severity wildfire is increased by two or more magnitudes for several years post-fire and returns to near pre-wildfire levels within four or five years. However, the effects to aquatic features and beneficial uses of water both within and downstream of a high severity wildfire are difficult to predict in fire suppressed landscapes and depend on many factors. The single most important factor is often the size of the rainfall event that occurs during the first several years after the wildfire when the ground is most vulnerable to accelerated runoff and erosion. Tree mortality (snags) in riparian zones as a result of wildfire may contribute to large woody debris recruitment that is lacking in most drainages and remain elevated for the next 10 – 15 years post-wildfire (Gresswell 1999). There would be no direct or cumulative effects to PALA or its habitat as the result of project activities not being implemented under Alternative 1. However, effects to PALA from potential wildfire under Alternative 1 from the lack of fuels reduction related activities could negatively affect PALA aquatic habitat by an increase in sediment deposition, nutrient loading to streams where they may occur or suppress recolonization in unoccupied but suitable habitats.

Effects of Alternative 1 to PALA Discussion:

There would be no direct or cumulative effects to PALA or its habitat as the result of project activities not being implemented under Alternative 1. Potential effects to PALA from wildfire under Alternative 1 could be expected since PALA have potential to be present within the project area based on known nearby occurrences (MF Cosumnes), and the amount of existing potentially suitable habitat within the TFHP area. Post-wildfire effects to PALA could be expected to last 1-15 years depending on burn severity and precipitation events post-fire. High-severity wildfire impacting riparian canopy cover as well as coarse woody debris could render habitat unsuitable further fragmenting PALA populations and hindering recolonization efforts.

Conclusions: When considered with past, present and reasonably foreseeable future activities, any cumulative impacts to PALA or its preferred habitat by selecting Alternative 1 of the TFHP are expected to be unchanged with the exception of wildfire for the following reasons:

- Lack of any timber harvest, mastication, road related activities, as well as fuels reduction, dispersed use restoration, and prescribed burning treatments occurring.
- Remaining potential for wildfire and post-wildfire effects in an untreated landscape, especially high-severity wildfire risk.

Overall, the lack of actions implementing Alternative 1 would likely not affect PALA, however, since there would be no reduction in wildfire risk in an untreated landscape, effects could be expected and may have lasting consequences if habitat is rendered unsuitable from lack of these activities. Response of lamprey from lack of treatment will likely depend on the type and magnitude of disturbance, the amount and configuration of remaining habitat, and life-history characteristics. Given the status of PALA, the proximity of known PALA to the project area, potentially suitable habitat within the project boundary along with the unpredictable outcome of wildfire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey*." determination was reached.

Determination of Effects

It is my determination that Alternative 1 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey.

Direct and Indirect Effects to PALA for Alternative 2 (Proposed Action)

PALAs were detected within two miles of the TFHP area boundary project during past surveys in the area by the California Department of Fish & Wildlife. , suitable breeding and non-breeding habitat does exist in most of the tributary streams and main stem stream reaches that occur below 4,500 feet. Since PALA have been detected adjacent to the project area (Sopiago Creek) this species has the potential to be affected by project activities for Alternative 2 listed in Table 6. Effects from timber harvest, road related activities, fuels reduction, prescribed burning, and restoration activities under Alternative 2 are possible. However, since PALA is highly associated with water within stream channels, meadows and ponded areas in conjunction with project design features listed in Table 5, any direct or indirect effects to PALA or aquatic habitat are expected to be minimal and limited to treatment areas within RCAs. The greatest threat to PALA would most likely be from prescribed fire-related mortality or injury; or post-fire related sediment deposition in response to precipitation events in, or near riparian zones where the outcome of prescribed fire and post-fire effects can be difficult to predict.

Magnesium Chloride Dust Suppressant

Direct and indirect effects to PALA could occur from the use of Magnesium Chloride ($MgCl_2$) (dust suppressant) for dust abatements on logging roads under the design criteria for thinning treatments. Impacts to aquatic sites would be the same for all aquatic species.

The effect to aquatic life and habitat can vary based upon species and is dependent on concentrations of suppressants used and proximity (Lewis 1999). Impacts are also dependent on whether the suppressant is used as a diluted liquid or a dry palliative. For the Trestle project, it will be used as dry palliative and in this state is less likely to be carried off by water runoff into drainages compared to a liquid application. However, since the suppressant is water soluble and moves laterally, movement will depend on concentrations and amount of rainfall. Application of the suppressant will occur in the summer months where rainfall is minimal (approximately July 1) which increases the likelihood of the suppressant not moving into drainages and effecting water quality and aquatic life.

The Colorado Department of Transportation (CDOT, 1998) conducted extensive research on the environmental impacts of magnesium chloride as a deicer on state roads. While this research focuses on a different activity than dust abatement, the results in terms of the chemicals environmental impact are relevant. Chloride concentration from two separate sources, magnesium chloride and sand with chloride, increased background chloride concentrations by 50 to 100 mg/L during winter application. These concentrations are described as being below levels considered potentially harmful to the most sensitive aquatic organisms (CDOT, 1998). The conclusions of the CDOT report stated that magnesium chloride is "highly unlikely to cause or contribute to environmental damage at distances greater than 20 yards. Even very close to the roadway, the potential for magnesium chloride to cause environmental damage is probably much smaller than other factors related to road maintenance."

Direct physiological effects from magnesium chloride for PALA may not be known; however, it is reasonable that similar issues exist with the osmoregulation of fish affecting their survival, growth and reproduction (Hunt et al. 2012). They can also be affected through the uptake (ingestion) of the pollutant directly from the environment or prey items such as plankton. Indirect effects would include alterations in water quality and negative impacts on growth of vegetation due to osmotic pressure in soils. Chloride levels maybe be elevated from runoff after precipitation events which can cause a decrease in biological oxygen demand influences the aquatic site. These potential impacts could only occur if the suppressant enters drainages and based on the Colorado study and timing of application impacts are unlikely.

It is difficult to predict definite impacts of the suppressant without extensive research and studies. From the study described above, it is likely the timing and application of magnesium chloride will have minimal to no impact to PALA.

Table 10. Potential Treatments effects to PALA as a result of the Trestle Forest Health Project Proposed Action (Alternative 2).

Treatment Effect	**Direct Effects**	**Indirect Effects**
Timber Harvest – commercial thinning and hazard tree removal.	None.	• Reduction in microclimate structure that may alter habitat suitability. • Changes in sedimentation rates to streams that may affect pool structure, pool depth, and forage base. • Increased peak flows from reduced water uptake by trees altering habitat availability/suitability. • Loss of canopy structure may lead to warming of, and earlier drying out of streams. • Reduction in microclimate structure that may alter habitat suitability.

		• Changes in sedimentation rates to streams that may affect pool structure, pool depth, and forage base.
Timber Harvest – commercial thinning and hazard tree removal.	None	• Reduction in microclimate structure that may alter habitat suitability. • Changes in sedimentation rates to streams that may affect pool structure, pool depth, and forage base. • Increased peak flows from reduced water uptake by trees altering habitat availability/suitability. • Loss of canopy structure may lead to warming of, and earlier drying out of streams. • Loss of future large woody debris for cover and in streams that impounds sediment, reduces stream velocity, and creates pool habitat. • Accelerated erosion from concentrated or diverted flow leading to increased sediment rates to streams that may degrade habitat, fill in pools and reduce forage base.
Road reconstruction, and repair. Road decommissioning and landing obliteration.	None.	• Vehicle lubricants and fluids entering waterways contaminating water • Increased public access to riparian areas by OHVs that may degrade habitat quality. • Changes in infiltration and water surface runoff rates

		that may affect habitat suitability from removal of coarse woody debris in RCAs.
Fuels Treatment - non-commercial thinning, machine piling and mastication.	None.	• Changes in sedimentation rates to streams as a result of ground disturbance that may alter pool depths. • Water chemistry changes as a result of ignition fuels and ash input into streams that may affect water quality. • Changes in sedimentation rates to streams that may affect pool structure and forage base. • Reduction in habitat quality due to water chemistry changes from ignition fuels, accidental fuel spill, and ash input into streams. • Moderate to High – severity areas of fire (e.g., spotting) in riparian areas resulting in decreased habitat and canopy cover.
Prescribed fire – pile burning, understory burning, dozer and hand fire lines	None.	<u>After burning:</u> • Changes in infiltration and water surface runoff rates that may affect habitat suitability. • Changes in water yield leading to changes in water permanence. • Changes in sedimentation rates to streams. • Water quality changes as a result of residual ignition fuels during or after runoff

		events. • Water chemistry changes as a result of ash input into streams during or after runoff events altering suitability.

Cumulative Effects to PALA for Alternative 2

A cumulative effect represents the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions." (40 CFR 1508.7). The cumulative effects analysis presented here for PALA does not attempt to quantify the effects of past management or human actions by adding up all prior actions on an action-by-action basis. Current conditions within the TFHP have been impacted by innumerable actions over the last century (and beyond) resulting in a very dynamic landscape. In addition, assessing cumulative effects in fire excluded, or otherwise altered forests, is extremely difficult. As a result, trying to isolate individual actions that continue to have residual impacts is impractical. Only through assessing current conditions that capture residual effects of past human actions as well as natural events, regardless of particular action or event contributed to those effects, can a baseline be established. For these reasons, the analysis of past actions in this document is based largely on current environmental conditions with additional information summarized from the Hydrology Report (Markman 2012) that summarizes Cumulative Watershed Effects (CWE). Assessing how, implementing the TFHP will contribute to cumulative effects on PALA or its habitat using existing information (not historical information) is the goal of this analysis.

Past disturbances: management activities that have had the most impact on streams and watersheds within the TFHP area include multiple timber harvest events (private as well as public), road construction, grazing, mining, off-highway vehicle use, and hydrologic development (e.g., water diversion) that often results in increased sediment delivery and otherwise alteration to streams. However, during the last decade, protective measures for streamside zones in managed forests have become more restrictive. Although timber harvest plans on private lands incorporate stream buffers, the intensity and size of past timber harvest activities on private lands often resulted in fragmentation of habitat for many species making National Forest System lands increasingly important for sustaining habitat for aquatic and riparian-dependent species. Timber harvest on private lands is overseen by the California Forest Practices Act. The California Department of Forestry website (CDF 2014) was checked for planned timber harvest plans (THPs) on private lands in the watersheds where this project is located. The timber harvest plan listing did not indicate any timber harvest plans within the project area analyzed in this document. Any timber activities being planned in the future by the USDA Forest Service will follow the standards and guidelines established under the Sierra Nevada Forest Plan Amendment (USDA Forest Service 2004a). Under these standards and guidelines, the effects of future sales in the project area are expected to maintain and restore the species composition and structural diversity of plant and animal communities in riparian areas. The introduction of nonnative trout in many foothill streams may also play a role in lamprey success.

Present disturbances within the project area (public and private) presently include human-related activities such as, dispersed recreation, fuels reduction, prescribed burning, off-highway vehicle use, unauthorized road use, and grazing. Natural processes include erosion, stream aggradation and degradation mainly as a result of climatic events such as rain-on-snow events and downpours during thunderstorms.

Reasonably foreseeable future disturbances within the project area (public and private) include human activities

such as timber harvest, fuels reduction, road re-construction, road maintenance, and road decommissioning, off-highway vehicle use, and grazing will continue to take place within the TFHP project area. The level of recreational use on all National Forest System lands is expected to continue and increase temporally as the human population continues to increase. Increases in dispersed camping and off-highway vehicle use, particularly within the floodplain and adjacent riparian areas, have the potential to adversely affect aquatic and riparian habitats. However, as a result of implementing the TFHP the level of unauthorized use is expected to decrease as a result by placing barricades, barriers, and gates to routes not currently open to public use.

Effects of Alternative 2 to PALA Discussion:

Recovery of the watersheds within the TFHP will largely depend on the gradual reduction of sediment into streams, and may take decades based on past human related activities. These long-term and larger scale factors often addressed in cumulative watershed effects analyses highlight the value of addressing activities beyond the TFHP area.

In the Sierra Nevada, the effects of human related activity including historic: mining, timber harvest, road building, grazing, off highway vehicle use, and recreation along with other factors including: new emergent diseases, pesticide use, habitat fragmentation, climate change, and introduced non-native species, have all been suggested as causes for the decline of lampreys. Understanding the extent to which all of these factors may have affected local PALA populations in the watersheds associated with the TFHP area is beyond the scope of this analysis; so too is an analysis determining the extent to which these factors will continue to effect locally present PALA populations. However, the connected actions of the TFHP with these other factors in determining whether a trend from current baseline conditions will occur is the goal of this analysis.

Direct and indirect actions with the potential to impact PALA have been identified and disclosed. The degree in which these actions will affect individual lamprey largely depends on the timing and duration of events, resulting impacts, and the time it takes to recover to a pre-project condition. For the TFHP this trend is expected to be short-term (less than 5 years) post-treatment for each treatment type proposed.

Conclusions: When considered with past, present, and reasonably foreseeable future activities, any cumulative impacts to PALA or its preferred habitat as a result of implementing Alternative 2 of the TFHP are expected to be minor for the following reasons:

- No treatments within or adjacent to known occupied streams.
- Short (< 5 yr.) duration of project level effects.
- Established stream buffer exclusion zones.
- Overall reduction in wildfire risk.
- Restoration of dispersed use sites in riparian areas.
- Closure of roads and trails not open to the public.
- Established buffers from aquatic features for possible use of magnesium chloride dust suppressant on logging roads.

Overall, the actions of Alternative 2 will ultimately benefit PALA from a reduction in wildfire risk, promotion of riparian habitat through prescribed fire, a reduction in sediment delivery to streams from road repair, road closure, and dispersed use area restoration. . Since response of lamprey depends on the type and magnitude of disturbance, the amount and configuration of remaining habitat, as well as their life-history characteristics project activities may still impact this species even when the outcome is positive. Given the known status of PALA occurrence adjacent to the project area boundary as well as potentially suitable habitat, and the unpredictable outcome of prescribed fire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey*." determination was reached.

Determination of Effects

It is my determination that Alternative 2 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey.

Direct and Indirect Effects to PALA for Alternative 4

The emphasis of this alternative is to take a conservative approach to treatment activities to minimize impacts to California spotted owl habitat. The selection of treatment areas under this alternative is a reflection of the effort to balance the desirability of wildlife habitat improvement, forest health and stand density, and fuels reduction. Treatment areas would be prioritized and selected based on wildlife and fuels objectives, stand conditions and locations, combined with economics. Management activities tend to be concentrated where mutual objectives of wildlife, fuels and timber management coincide. Based upon existing stand structure, species composition, and density, fewer trees larger than 20 inches d.b.h. would be removed to achieve management objectives when compared to Alternative 2.

The expected results of implementing Alternative 4 include meeting combined wildlife, fire, fuels, and timber objectives by a combination of management activities. Results include the reduction of fuels accumulated on the ground and present as fuel ladders. Prescribed burning would favor ponderosa pine establishment and growth due to the ponderosa pines adaptation to fire. Wildlife habitat would be improved through fuels reduction and thinning. Those forested stands that have a dense understory and heavy fuel accumulations would become more open following treatment. Treated stands would become more resilient to fire, disease and insect infestation through the removal of dense, competing, young-growth trees, and would achieve a greater percentage of large trees in a shorter time frame than Alternative 2. Proposed treatments and management actions are described in detail in the section summarized for the overall project description.

Effects of Alternative 4 to PALA Discussion:

Under Alternative 4 PALA would experience similar direct, indirect and cumulative effects as Alternative 2. All other activities listed under alternative 2 would still occur.

Conclusions: When considered with past, present, and reasonably foreseeable future activities, any cumulative impacts to PALA or its preferred habitat as a result of implementing Alternative 4 of the TFHP are expected to be minor for the following reasons:

- No treatments within or adjacent to known occupied streams.
- Short (< 5 yr.) duration of project level effects.
- Established stream buffer exclusion zones.
- Overall reduction in wildfire risk.
- Restoration of dispersed use sites in riparian areas.
- Closure of roads and trails not open to public use.
- Established buffers from aquatic features for possible use of magnesium chloride dust suppressant on logging roads.

Overall, the actions of Alternative 4 will ultimately benefit PALA from a reduction in wildfire risk, promotion of riparian habitat through prescribed fire, a reduction in sediment delivery to streams from road repair, road and trail closure, and dispersed use area restoration. Since response of PALA depends on the type and magnitude of disturbance, the amount and configuration of remaining habitat, as well as their life-history characteristics project activities may still impact this species even when the outcome is positive. Given the unknown status of PALA occurrence within the project area boundary, the documentation of this species two miles west of the forest boundary, potentially suitable habitat within the project area, and the unpredictable

outcome of prescribed fire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey*." determination was reached.

Determination of Effects

It is my determination that Alternative 4 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey.

Direct and Indirect Effects to *PALA* for Alternative 5

The emphasis of this alternative is to take a conservative approach to treatment activities to minimize impacts to California spotted owl habitat as well as providing effective fire modification strategy to minimize impacts to the community and forestry resources. The selection of treatment areas under this alternative is a reflection of the effort to balance the desirability of wildlife habitat improvement, forest health and stand density, fuels reduction and the community. Treatment areas would be prioritized and selected based on wildlife and fuels objectives, stand conditions and locations, combined with economics. Management activities tend to be concentrated where mutual objectives of wildlife, fuels and timber management coincide. Based upon existing stand structure, species composition, and density, fewer trees larger than 20 inches d.b.h. would be removed to achieve management objectives when compared to Alternative 2.

The expected results of implementing Alternative 5 include meeting combined wildlife, fire, fuels, and timber objectives by a combination of management activities. Results include the reduction of fuels accumulated on the ground and present as fuel ladders. Prescribed burning would favor ponderosa pine establishment and growth due to the ponderosa pines adaptation to fire. Wildlife habitat would be improved through fuels reduction and thinning. The community and other forest resources would be protected with reduction of fuels lowering risks of wildfires. Those forested stands that have a dense understory and heavy fuel accumulations would become more open following treatment. Treated stands would become more resilient to fire, disease and insect infestation through the removal of dense, competing, young-growth trees, and would achieve a greater percentage of large trees in a shorter time frame than Alternative 2. Proposed treatments and management actions are described in detail in the section summarized for the overall project description.

Effects of Alternative 5 to PALA Discussion:

Under Alternative 5 PALA would experience similar direct, indirect and cumulative effects as Alternative 2. All other activities listed under alternative 2 would still occur.

Conclusions: When considered with past, present, and reasonably foreseeable future activities, any cumulative impacts to FYLF or its preferred habitat as a result of implementing Alternative 4 of the TFHP are expected to be minor for the following reasons:

- No treatments within or adjacent to known occupied streams.
- Short (< 5 yr.) duration of project level effects.
- Established stream buffer exclusion zones.
- Overall reduction in wildfire risk.
- Restoration of dispersed use sites in riparian areas.
- Closure of roads not open to the public.
- Established buffers from aquatic features for possible use of magnesium chloride dust suppressant on logging roads.

Overall, the actions of Alternative 5 will ultimately benefit PALA from a reduction in wildfire risk, promotion of riparian habitat through prescribed fire, a reduction in sediment delivery to streams from road repair, road

and trail closure, and dispersed use area restoration. Since response of PALA depends on the type and magnitude of disturbance, the amount and configuration of remaining habitat, as well as their life-history characteristics project activities may still impact this species even when the outcome is positive. Given the unknown status of PALA occurrence within the project area boundary, the documentation of this species two miles west of the forest boundary, potentially suitable habitat within the project area, and the unpredictable outcome of prescribed fire a "*may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey*." determination was reached.

Determination of Effects

It is my determination that Alternative 5 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the pacific lamprey.

VII. Summary of Determinations

Alternative 1 (No Action)

It is my determination that Alternative 1 of the Trestle Forest Health Project will not affect the California red-legged frog.

It is my determination that Alternative 1 of the Trestle Forest Health Project will not affect critical habitat of the California red-legged frog.

It is my determination that Alternative 1 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog.

It is my determination that Alternative 1 of the Trestle Forest Health Project will not affect the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 1 of the Trestle Forest Health Project will not affect proposed critical habitat of the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 1 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the western pond turtle.

It is my determination that Alternative 1 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey.

Alternative 2 (Proposed Action)

It is my determination that Alternative 2 of the Trestle Forest Health Project will not affect the California red-legged frog.

It is my determination that Alternative 2 of the Trestle Forest Health Project will not affect critical habitat of the California red-legged frog.

It is my determination that Alternative 2 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-Legged

frog.

It is my determination that Alternative 2 of the Trestle Forest Health Project will not affect the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 2 of the Trestle Forest Health Project will not affect proposed critical habitat of the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 2 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the western pond turtle.

It is my determination that Alternative 2 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey.

Alternative 4

It is my determination that Alternative 4 of the Trestle Forest Health Project will not affect the California red-legged frog.

It is my determination that Alternative 4 of the Trestle Forest Health Project will not affect critical habitat designated for the California red-legged frog.

It is my determination that Alternative 4 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog.

It is my determination that Alternative 4 of the Trestle Forest Health Project will not affect the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 4 of the Trestle Forest Health Project will not affect proposed critical habitat of the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 4 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the western pond turtle.

It is my determination that Alternative 4 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey.

Alternative 5

It is my determination that Alternative 5 of the Trestle Forest Health Project will not affect the California red-legged frog.

It is my determination that Alternative 5 of the Trestle Forest Health Project will not affect critical habitat designated for the California red-legged frog.

It is my determination that Alternative 5 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the foothill yellow-legged frog.

It is my determination that Alternative 5 of the Trestle Forest Health Project will not affect the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 5 of the Trestle Forest Health Project will not affect proposed critical habitat of the Sierra Nevada yellow-legged frog.

It is my determination that Alternative 5 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the western pond turtle.

It is my determination that Alternative 5 of the Trestle Forest Health Project may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability for the Pacific lamprey.

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IX. Appendices - Survey Data Forms

EAST CLEAR CREEK
6-26-2013
KH/AS

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

Site Assessment reviewed by _____ (FWS Field Office) (date) (Biologist)

Date of Site Assessment: 6-26-2013 (mm/dd/yyyy)

Site Assessment Biologists: HEILMAN (Last name) KENDY (first name) _____ (Last name) _____ (first name)

CLEMENTSON (Last name) ASHLEE (first name) _____ (Last name) _____ (first name)

Site Location: E. CLEAR CREEK, EL DORADO COUNTY, CALOOD QUAD SEC 25 T9N R13E
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

"ATTACH A MAP (include habitat types, important features, and species locations)**

Proposed project name: TRESTLES
Brief description of proposed action:

1) Is this site within the current or historic range of the CRF (circle one)? (YES) NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

~~POND~~:

Size: _____ Maximum depth: _____

Vegetation: (emergent,) overhanging, dominant species: _____

Substrate: SILT, SAND, MUDDY AREAS

Perennial or Ephemeral *(circle one)*. If ephemeral, **date** it goes dry: ✓
INTERMITTENT

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6-26-2013
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Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:
Bank full width: 1.0 m
Depth at bank full: 0.7m
Stream gradient: 5-15%

Are there pools (circle one)? (YES) NO
If yes,
Size of stream pools: 5'x6' max
Maximum depth of stream pools: 84 cm

Characterize non-pool habitat: run, riffle, glide, other: small riffle & glide

Vegetation: emergent, overhanging, dominant species: emergent vegetation & woody debris

Substrate: silt sand, duff

Bank description: cut banks, soil, dogwood, alder

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: July 7

Other aquatic habitat characteristics, species observations, drawings, or comments:
Thick canopy & Narrow riparian area. Cedar, white fir & Douglas Fir Line creek with flat areas of emergent vegetation

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location

EAST CLEAR CREEK
6-26-2013
KH/RS
DA-1 1

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 6-26-2013 (mm/dd/yyyy) Survey Biologist: HEILMAN (Last name) KEVIN (first name)
Survey Biologist: CLENDENNING (Last name) ACHILLE (first name)

Site Location: EL DORADO CO. EAST CLEAR CREEK SEC 25 TN9 R13E
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLES
Brief description of proposed action:

FUELS REDUCTION

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 4:42 End Time: 6:01

Cloud cover: 20% Precipitation: 0

Air Temperature: 78-80° Water Temperature: 52°F

Wind Speed: 5-10 mph Visibility Conditions: CLEAR

Moon phase: WANING Humidity: 60% +

Description of weather conditions: LT. BREEZY SUNNY & LITTLE CLOUDS

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? YES NO
Brand, model, and power of binoculars: BUSHNELL 10x50

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Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:
Bank full width: 1.0 m
Depth at bank full: 0.7m
Stream gradient: 5-15%

Are there pools (circle one)? (YES) NO
If yes,
Size of stream pools: 5'x6' max
Maximum depth of stream pools: 84 cm

Characterize non-pool habitat: run, riffle, glide, other: small riffle & glide

Vegetation: emergent, overhanging, dominant species: emergent vegetation & woody debris

Substrate: silt sand, duff

Bank description: cut banks, soil, dogwood, alder

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: July 7

Other aquatic habitat characteristics, species observations, drawings, or comments:
Thick canopy & narrow riparian area. Cedar, white fir & Douglas Fir Line creek with flat areas of emergent vegetation

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location

EAST CLEAR CREEK
6-26-2013
KH/RS
DA-1 1

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 6-26-2013 (mm/dd/yyyy) Survey Biologist: HEILMAN (Last name) KEVIN (first name)
Survey Biologist: CLENDENNING (Last name) ACHILLE (first name)

Site Location: EL DORADO CO. EAST CLEAR CREEK SEC 25 TN9 R13E
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLES
Brief description of proposed action:
FUELS REDUCTION

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 4:42 End Time: 6:01

Cloud cover: 20% Precipitation: 0

Air Temperature: 78-80° Water Temperature: 52°F

Wind Speed: 5-10 mph Visibility Conditions: CLEAR

Moon phase: WANING Humidity: 60% +

Description of weather conditions: LT. BREEZY SUNNY & LITTLE CLOUDS

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? YES NO
Brand, model, and power of binoculars: BUSHNELL 10x50

25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

NONE OBSERVED

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: _____

NO NON-NATIVE FISH OBSERVED, NO BULLFROG CALLS, NO PHYSICAL EVIDENCE OF RACCOONS

- NOT VERY SUITABLE HABITAT

Other notes, observations, comments, *etc.*

START COORDINATES: 10S 0717788 4275661 — 100-0044 → 0047 START AT PHOTOS

CLEAR CREEK NOT FLOWING - POOLS IN CHANNEL DO EXIST

1ST POOL @ 21 CM DEEP

LARGE AMOUNTS OF WOODY DEBRIS IN CHANNEL.

100-0055 – 70 CM DEEP POOL - 20 YARDS OF EXPOSED BANK – 10S 0717877 4275722

100-0060 84 CM DEEP POOL -

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

EAST CLEAR CREEK
DAY #2

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 07/22/13 (mm/dd/yyyy)

Survey Biologist: HEICMAN (Last name) K. (first name)

Survey Biologist: CLENDENNING (Last name) A (first name)

Site Location: EL DORADO EAST CLEAR CREEK SEC 25TN9 R13E
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLES
Brief description of proposed action:

FUELS REDUCTION

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 2:11 End Time: 3:20

Cloud cover: 70% Precipitation: 0

Air Temperature: 81°F Water Temperature: 0 DRY

Wind Speed: 0-10 mph Visibility Conditions: CLR

Moon phase: NEAR FULL Humidity: 60%

Description of weather conditions: WARM, HUMID

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? YES NO
Brand, model, and power of binoculars: _____

25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
PACIFIC TREE (chorus)	1	O	JUV	METAmorph	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: _____

Other notes, observations, comments, *etc.*

ENDS SURVEY @
10S 0718010
4275814

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

26

CLEAR CREEK
EAST
NIGHT #1

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 8-1-2013 (mm/dd/yyyy)

Survey Biologist: Heffman Kevin (Last name) (first name)

Survey Biologist: CLOCKWISE " (Last name) (first name)

Site Location: EL DORADO CO.
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:
FUELS REDUCT.

Type of Survey (circle one): DAY (NIGHT) BREEDING (NON-BREEDING)

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 10:08 End Time: [illegible]

Cloud cover: NONE Precipitation: 0

Air Temperature: 56 Water Temperature: 53°

Wind Speed: 0-5 mph Visibility Conditions: CLEAR

Moon phase: _____ Humidity: 50%

Description of weather conditions: COOL CLEAR

Brand name and model of light used to conduct surveys: STANLEY FATMAX TORCH

Were binoculars used for the surveys (circle one)? YES NO
Brand, model, and power of binoculars: _____

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
None	—	—	—	—	—

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: Dry stream bed, some pools left

Other notes, observations, comments, *etc.*

Nothing Found or Heard

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

26

CLEAR CREEK
EAST
Night #2

Appendix E.
California Red-legged Frog Survey Data Sheet

Date of Survey: 8/15/2013 (mm/dd/yyyy)

Survey Biologist: HELMAN (Last name) K (first name)

Survey Biologist: CLENNENNING (Last name) A (first name)

Site Location: EL DORADO CO. CLEAR CREEK E DAY
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:
Fuels Reduction

Type of Survey (circle one): DAY (NIGHT) BREEDING NON-BREEDING

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 10:25 **End Time:** 11:15

Cloud cover: NONE **Precipitation:** NONE

Air Temperature: 60° **Water Temperature:** N/A

Wind Speed: 5-8 **Visibility Conditions:** CLEAR

Moon phase: 60% FULL **Humidity:** 30% or less

Description of weather conditions:

Brand name and model of light used to conduct surveys: STREAMLIGHT PROMAX 900 LUMEN

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars:

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Nothing found					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: Non Native Fish Not observed.

Other notes, observations, comments, *etc.*

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species locations

CLEAR CREEK WEST
SEC 27
6-26-2017
DAY #1

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 6-26-2013 (mm/dd/yyyy)

Survey Biologist: HEFLMAN (Last name) K (first name)

Survey Biologist: CLENDENNING (Last name) A (first name)

Site Location: SEC 27 ELDORADO CO. 10S 0714929 4275842
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLES
Brief description of proposed action:

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 6:51 **End Time:** 7:32

Cloud cover: NONE **Precipitation:** 0

Air Temperature: 71 **Water Temperature:** 54

Wind Speed: 0-5 **Visibility Conditions:** CLEAR

Moon phase: WANING **Humidity:** 60% +

Description of weather conditions: cool mostly sunny

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: _____

25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: NO NON-NATIVE FISH OBSERVED

Other notes, observations, comments, *etc.*

WP#123 100-0062 10S 0714929 4275842 upstream start pt

WP#124 100-0074 END OF SURVEY AREA DOWNSTREAM 10S 0714755 4275856

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

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CLEAR CREEK (WEST) SEC 27 8-1-2013 DAY 2

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: 8-1-2013 (mm/dd/yyyy)

Survey Biologist: HEILMAN K (Last name) (first name)

Survey Biologist: GLENDENNING A (Last name) (first name)

Site Location: EL DORADO, CLEAR CREEK 10S 0714929 4275847
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLES
Brief description of proposed action:
FUELS REDUCTION

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 4:41 End Time: 5:25

Cloud cover: 0 Precipitation: 0

Air Temperature: 76° Water Temperature: 53°F 7.4ppm

Wind Speed: 8-15 mph Visibility Conditions: CLEAR

Moon phase: _____ Humidity: 40% +/-

Description of weather conditions: COOL BREEZE MILD TEMP

Brand name and model of light used to conduct surveys: NA

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: BUSHNELL POWERVIEW 10x50

25

CLEAR CREEK (WEST) SEC 27 8-1-2013 DAY 2

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 8-1-2013 (mm/dd/yyyy)

Survey Biologist: HEIDMAN (Last name) K (first name)

Survey Biologist: CLENDENNING (Last name) A (first name)

Site Location: EL DORADO, CLEAR CREEK 10S 0714929 4275847
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLES
Brief description of proposed action:
FUELS REDUCTION

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 4:41 End Time: 5:25

Cloud cover: Ø Precipitation: Ø

Air Temperature: 76° Water Temperature: 53°F 7.4 DO

Wind Speed: 8-15 mph Visibility Conditions: CLEAR

Moon phase: _____ Humidity: 40% +/-

Description of weather conditions: COOL BREEZE MILD TEMP

Brand name and model of light used to conduct surveys: NA

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: BUSHNELL POWERVIEW 10x50

CLEAR CREEK
WEST
Night 1

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 8-1-2013 (mm/dd/yyyy) **Survey Biologist:** HERMAN (Last name) KEN (first name)
Survey Biologist: CLENDENNING (Last name) ACH: IIC (first name)

Site Location: EL DORADO, CLEAR CREEK Sec 27 10S 07E 4279842 0714929
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:

FUELS REDUCTION PROJECT

Type of Survey (circle one): **DAY** (**NIGHT**) **BREEDING NON-BREEDING**

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 9:29 **End Time:** 9:21

Cloud cover: NONE **Precipitation:** 0

Air Temperature: 62 **Water Temperature:** 51

Wind Speed: 05 **Visibility Conditions:** CLEAR

Moon phase: _____ **Humidity:** 40-50%

Description of weather conditions: COOL, CALM

Brand name and model of light used to conduct surveys: STANLEY FAT MAX AQUA TORCH

Were binoculars used for the surveys (circle one)? **YES NO**
Brand, model, and power of binoculars: _____

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
NONE	—	—	—	—	—

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: BROWN trout OBSERVED IN 4 pools

Other notes, observations, comments, *etc.*

NOTHING HEARD OR OBSERVED.

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

CLEAR CREEK WEST
#2 N.S Lt
8-15-2013

Appendix E.
California Red-legged Frog Survey Data Sheet

[redacted]

Date of Survey: 8-15-13 (mm/dd/yyyy)

Survey Biologist: HEILMAN (Last name) K (first name)

Survey Biologist: CLENDENIN (Last name) D (first name)

Site Location: EL DORADO CO CLEAR CREEK 10S 0714929 4275842
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:
FUELS REDUCTION

Type of Survey (circle one): DAY (NIGHT) BREEDING (NON-BREEDING)

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 9:24 **End Time:** 10:07

Cloud cover: NONE **Precipitation:** 0

Air Temperature: 61 **Water Temperature:** 54°F

Wind Speed: 0-5 **Visibility Conditions:** CLEAR

Moon phase: 60% Full **Humidity:** 30% or LESS

Description of weather conditions: Cool, LT BREEZE

Brand name and model of light used to conduct surveys: STANLEY FATMAX ADJTORCH

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: _____

CLEAR CREEK WEST
SEC 27
6-26-2013

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

Site Assessment reviewed by: _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Site Assessment: 06-26-2013
(mm/dd/yyyy)

Site Assessment Biologists: HEFLMAN KEVIN _____
(Last name) (first name) (Last name) (first name)

CLENDENNEN ALLIE _____
(Last name) (first name) (Last name) (first name)

Site Location: CLEAR CREEK EL DORADO CO. OMO RANCH QUAD T9N R13E SEC 27
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)****

Proposed project name: TRESTLE
Brief description of proposed action:

1) Is this site within the current or historic range of the CRF (circle one)? (YES) NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND:

Size: _____ Maximum depth: _____

Vegetation: emergent, overhanging, dominant species: _____
_____
_____

Substrate: _____
_____

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:

Bank full width: 3m
Depth at bank full: 1.5 FT
Stream gradient: GREATER than 10%

Are there pools (circle one)? (YES) NO

If yes,

Size of stream pools: 4'x4'
Maximum depth of stream pools: _____

Characterize non-pool habitat: run, riffle, glide, other: RIFFLE ON BEDROCK

Vegetation: emergent, overhanging, dominant species: EMERGENT w/ WOODY DEBRIS

Substrate: BEDROCK

Bank description: ERODED Dirt Bank w/ BEDROCK SUBSTRATE Occasional SEDIMENT DEPOSITION

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location

7-1-13
KH/AE
CLEAR CREEK
CONFLUENCE TO
STEELY FORK

Appendix E.
California Red-legged Frog Survey Data Sheet

[redacted]

Date of Survey: 7-1-13 (mm/dd/yyyy)

Survey Biologist: HERMACH (Last name) KEVIN (first name)

Survey Biologist: CLENDENNENS (Last name) ACHILLE (first name)

Site Location: EL DORADO CO CLEAR CREEK NW¼ of NW¼ SEC 28 T7N R13E
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: _____
Brief description of proposed action:

START pt. COORDINATE 10S 071 3213
4176351

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 1:07 **End Time:** 3:17

Cloud cover: LT HAZE **Precipitation:** NONE

Air Temperature: 85 **Water Temperature:** 61 (6 6

Wind Speed: 0-5 **Visibility Conditions:** CLEAR

Moon phase: _____ **Humidity:** 40

Description of weather conditions: HEAT IS HIGH TODAY

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: _____

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: _____

Other notes, observations, comments, *etc.*

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species locations

7-1-13
KH/AC
CLEAR CREEK CONFLUENCE
SELLY FORK

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

[redacted]

Date of Site Assessment: 7-1-13 (mm/dd/yyyy)

Site Assessment Biologists: HEILMAN (Last name) KEVEN (first name); _____ (Last name) _____ (first name)

_____ (Last name) _____ (first name); _____ (Last name) _____ (first name)

Site Location: CLEAR CREEK ABOVE SELLY FORK CONFLUENCE
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLES
Brief description of proposed action:
100-0095 upstream of start point
96 Downstream of start
97 " " "

1) Is this site within the current or historic range of the CRF (circle one)? (YES) NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND:

Size: _____ Maximum depth: _____

Vegetation: emergent, overhanging, dominant species: _____

_____

_____

Substrate: _____

_____

(**Perennial**) **or Ephemeral** *(circle one)*. If ephemeral, date it goes dry: _____

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:
Bank full width: 15' AVE
Depth at bank full: 2' MAX
Stream gradient: 8-12%

Are there pools (circle one)? (YES) NO
If yes,
Size of stream pools: SVIO AVERAGE
Maximum depth of stream pools: 10 cm

Characterize non-pool habitat: run, riffle, (glide) other: SMALL CASCADE POOL

Vegetation: emergent, overhanging, dominant species: Alder, Ryegrass UNE

Substrate: BEDROCK, GRAVEL

Bank description: CUT BANK : BEDROCK

Perennial or **Ephemeral** *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:
WP #150 10S 0713213 START PT COORDINATES
4276351

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location

7-3-13 Dog town Creek Site A East

Appendix E.
California Red-legged Frog Survey Data Sheet

[redacted]

Date of Survey: 7-3-13 (mm/dd/yyyy)

Survey Biologist: Heffman (Last name) Kevin (first name)

Survey Biologist: Clendenning (Last name) Adam (first name)

Site Location: El Dorado Co. Dog town Creek 10S 0721394 4275461 #134
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Trestle

Brief description of proposed action:

Fuels Reduction

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 12:01 End Time: 1:20

Cloud cover: None Precipitation: None

Air Temperature: 90 Water Temperature: 63° F

Wind Speed: 0-5 Visibility Conditions: Clear

Moon phase: _____ Humidity: 40% +/-

Description of weather conditions: Hot High Pressure

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? (YES) NO

Brand, model, and power of binoculars: Bushnell 8x50

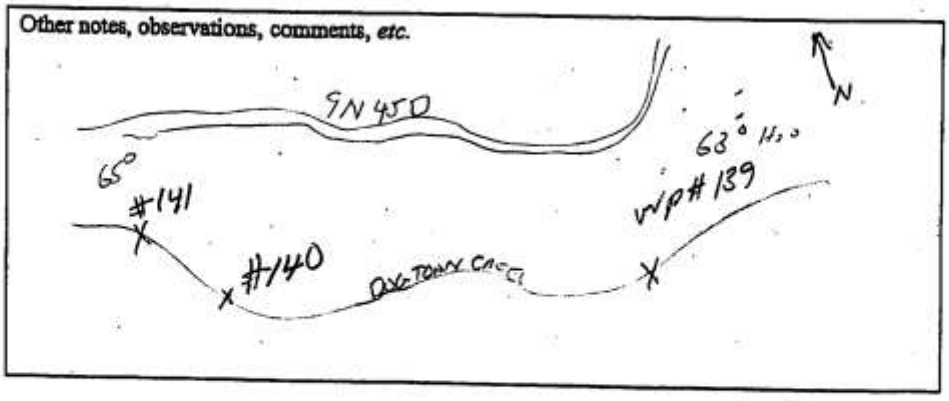
Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:
LIVE NON NATIVE FISH FOUND IN 1/2 OF SURVEY REACH (LOWER HALF) DEAD FISH FOUND THROUGHOUT, 2 BLEAK BODIES FOUND IN WATER, BLEACHED OR BLUE ALGAE FOUND IN ENTIRE SURVEY REACH

Other notes, observations, comments, *etc.*



Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species locations

#141 10S 0720914 4275436
#140 10 0720947 4275305
#139

DOGTOWN CREEK
EAST
DAY 2 visit

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: 7/31/2013 (mm/dd/yyyy) **Survey Biologist:** HEFFMAN (Last name) KEVIN (first name)
Survey Biologist: CLENNENNING (Last name) ARTHUR (first name)

Site Location: EL DORADO CO DOGTOWN CREEK 10S 0721394 4275461
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)****

Proposed project name: TRESTLES
Brief description of proposed action:
FUEL REDUCTION

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 4:25 **End Time:** 5:47

Cloud cover: 0 **Precipitation:** 0

Air Temperature: 77°F **Water Temperature:** 61° ppm 65 pH 7.4

Wind Speed: 6-12 **Visibility Conditions:** CLEAR

Moon phase: _____ **Humidity:** 30% +/-

Description of weather conditions: WARM, NEE BREEZE, SLIGHT HAZE TO AIR

Brand name and model of light used to conduct surveys: NA

Were binoculars used for the surveys (circle one)? YES NO
Brand, model, and power of binoculars: _____

25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Ø					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: HUMANS ARE A HIGH THREAT HERE, SEE FISH VERY VIGIL, EFFECTS OF BLENCH STILL PRESENT, NO FROGS HEARD. FISH THAT WERE SEEN APPEAR TO BE ENTRODUCED BROOK TROUT

Other notes, observations, comments, *etc.*

2ND VISIT. BEDROCK & BOULDER STREAM BED. GRADIENT MEASURED AS 2.8%. MIXED STAGES OF ALDER LINE BANKS. MULTIPLE POOLS THROUGH OUT REACH. FISH PRESENT IN STREAM BEFORE 1ST VISIT.

⇒ ONLY A FEW SMALL FISH FOUND IN LOWER 1/3 OF SURVEY REACH

4"-5" FISH FOUND IN POOL @ END OF SURVEY REACH. NOT MANY ALONG MOVING POOL ONLY SOME SIDE POOLS WHICH ARE NOT VERY DEEP AND WILL BE DRY WITHIN THE WEEK

WP#179 10S 0720899
4275399
EL 4128 @ END OF SURVEY REACH

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Dogtown EAST
Night # 1
8-7-2013

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by_____
(FWS Field Office) (date) (biologist)

Date of Survey: 8-7-13 (mm/dd/yyyy) **Survey Biologist:** Clendenning Michelle (Last name) (first name)
Survey Biologist: Heilman Kevin (Last name) (first name)

Site Location: Dogtown Creek East
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Trestles
Brief description of proposed action:
Fuels reduction

Type of Survey (circle one): **DAY** **NIGHT** **BREEDING** **NON-BREEDING**

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 11:14 P.M. **End Time:** 12:15 AM

Cloud cover: 25% **Precipitation:** 0

Air Temperature: 56°F **Water Temperature:** 57°F

Wind Speed: 0-3 **Visibility Conditions:** Clear

Moon phase: New Moon **Humidity:** 30%

Description of weather conditions: Mostly clear cool night

Brand name and model of light used to conduct surveys: Stanley F15WP

Were binoculars used for the surveys (circle one)? **YES** **NO**
Brand, model, and power of binoculars: _____

Dogtown Creek
East
Night #2

Appendix E.
California Red-legged Frog Survey Data Sheet 8-15-2013

Survey results reviewed by _____
(FWS Field Office) (date) (biologist)

Date of Survey: 8/15/2013 (mm/dd/yyyy) Survey Biologist: Herman (Last name) (first name)
Survey Biologist: Clendenen (Last name) (first name)

Site Location: El Dorado, Dogtown Creek
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Trestles
Brief description of proposed action:
Fuels Reduction

Type of Survey (circle one): DAY (NIGHT) BREEDING (NON-BREEDING)
Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 11:35 PM End Time: 12:03 AM
Cloud cover: None Precipitation: None
Air Temperature: 58°F Water Temperature: 52°
Wind Speed: 5-10 Visibility Conditions: Clear
Moon phase: 60% Full Humidity: Leisthin 308

Description of weather conditions: _____

Brand name and model of light used to conduct surveys: Stanley Fat Max

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: _____

25

DOGTOWN CREEK
SITE A
EAST

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

[redacted]

Date of Site Assessment: 7-3-13
(mm/dd/yyyy)

Site Assessment Biologists: [redacted] KEVIN
(Last name) (first name)

[redacted] ACHILLE
(Last name) (first name)

Site Location: EL DORADO CO. 10S 0721394 4275461 WP #139
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:

1) Is this site within the current or historic range of the CRF (circle one)? YES NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND:

Size: _____ Maximum depth: _____

Vegetation: emergent, overhanging, dominant species: _____

_____

_____

Substrate: _____

_____

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:

Bank full width: 20-25
Depth at bank full: 2-4'
Stream gradient: 5-12%

Are there pools (circle one)? (YES) NO

If yes,

Size of stream pools: 5'x 70 Longest
Maximum depth of stream pools: 24"

Characterize non-pool habitat: run, riffle, glide, other: RIFFLE with BEDROCK & Boulder COBBLE STREAM BED

Vegetation: emergent, overhanging, dominant species: ALDER Dominant with DOGWOOD

Substrate: BED ROCK, BOULDER, COBBLE, GRAVEL

Bank description: ALDER VEG Dominant, BEDROCK Banks

(Perennial) or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:

-003 Downstream From Start Pt
-004 Up From Start Pt

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location

Dogtown West
7-17-2013

Appendix E.
California Red-legged Frog Survey Data Sheet

Day #1

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 7/17/2013 (mm/dd/yyyy)

Survey Biologist: HEERMANN (Last name) KEVIN (first name)

Survey Biologist: CLENDENNING (Last name) Ach. IIC (first name)

Site Location: EL DORADO CO 10S 0718573 4274472 DOGTOWN CREEK WEST (WP 11/56)
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:
Hazard Fuels Reduction.

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 8:16 **End Time:** 8:44

Cloud cover: NONE **Precipitation:** NO

Air Temperature: 77 **Water Temperature:** 62°F

Wind Speed: 0-5 **Visibility Conditions:** CLEAR

Moon phase: 1/2 **Humidity:** 50%

Description of weather conditions: COOL LT BREEZE

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: BUSHNELL 10x50

8:15 1st picture

25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: NON NATIVE FISH HOLDING IN MOST POOLS

Other notes, observations, comments, *etc.*

BED ROCK STREAM BED with LONG SLOW POOLS/GLIDES WITH BARE BEDROCK BANKS, ALDER & PINE, FIR

END WPT #157
10S 0718838 4274622

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

DOGTOWN CREEK WEST
DAY #2
8-1-2013

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 8/1/2013 (mm/dd/yyyy)

Survey Biologist: HETMAN (Last name) K (first name)

Survey Biologist: CLENDENNING (Last name) A (first name)

Site Location: EL DORADO CO. DOGTOWN CREEK 10S 0718573 4274442 STA 1
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:

FUELS REDUCTION

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 6:19 **End Time:** 7:21

Cloud cover: 0 **Precipitation:** 0

Air Temperature: 68° **Water Temperature:** 62°F at 71

Wind Speed: 0-5 **Visibility Conditions:** CLEAR

Moon phase: _____ **Humidity:** 40%

Description of weather conditions: COOL LT. BREEZE mild temps

Brand name and model of light used to conduct surveys: NA

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: BUSHNELL POWERVIEW 10x50

25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
O		O			
		O			

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: NON NATIVE FISH INVADED SOME OF THE LARGER POOLS

Other notes, observations, comments, *etc.*

MOST OF SUNDAY REACH IS LOW GRADE BEDROCK GLIDES ? CASCADES
NOT HEAVILY POPULATED WITH TROUT. GOOD BANK VEG ? AREAS WITH
BANKS UNDERCUT BUT POOL DEPTH IS NOT DEEP ENOUGH TO PROVIDE
COVER. AREAS OF LARGE POOLS ARE EXPOSED TO MORE LIGHT AND ARE
SHALLOW ENOUGH TO PROMOTE THICK ALGAE

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Dogtown Night
7-17-13 Night #1

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 7/17/2013 (mm/dd/yyyy)

Survey Biologist: HEFLMAN (Last name) K (first name)

Survey Biologist: GLENDENNING (Last name) A (first name)

Site Location: EL DORADO CO DOGTOWN CREEK 10S 0718573 4274442
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:

Type of Survey (circle one): **DAY** (**NIGHT**) **BREEDING** **NON-BREEDING**

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 9:04 **End Time:** 9:51

Cloud cover: 0 **Precipitation:** 0

Air Temperature: 68 **Water Temperature:** 62°F

Wind Speed: 0-5 **Visibility Conditions:** CLEAR

Moon phase: 1/2 FULL **Humidity:** 50-60%

Description of weather conditions: DARK, COOL, ST BREEZE

Brand name and model of light used to conduct surveys: STANLEY HAND TORCH

Were binoculars used for the surveys (circle one)? **YES** **NO**
Brand, model, and power of binoculars: _____

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
O					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: NON NATIVE FISH in all POOLS

Other notes, observations, comments, *etc.*

NO FROG CALLS HEARD, NO EYE FLASH OBSERVED
NO DEAD FISH FROM DOSTOMIN EAST SITE OBSERVED

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Dogtown West
Night #2
8-7-2013

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____
(FWS Field Office) (date) (biologist)

Date of Survey: 8-7-13 (mm/dd/yyyy)

Survey Biologist: Clendening Ariel
(Last name) (first name)

Survey Biologist: [illegible]
(Last name) (first name)

Site Location: Dogtown Creek West
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)****

Proposed project name: Trestles
Brief description of proposed action:
Fuels reduction
Starting Elev. 3780 ft

Type of Survey (circle one): **DAY** (**NIGHT**) **BREEDING** (**NON-BREEDING**)

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 9:21 P.M. **End Time:** 10:17 PM

Cloud cover: 25% **Precipitation:** 0

Air Temperature: 56°F **Water Temperature:** 58°F

Wind Speed: 0-3 **Visibility Conditions:** Clear

Moon phase: New Moon **Humidity:** 30%

Description of weather conditions: Cool with mostly clear skys.

Brand name and model of light used to conduct surveys: Stanley F15W10

Were binoculars used for the surveys (circle one)? **YES** (**NO**)
Brand, model, and power of binoculars: _____

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
N/A					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: Fish observed in creek
No other threats observed

Other notes, observations, comments, *etc.*
Very over-grown with riparian vegetation.

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

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Dogtown West
7-17-2013
Day #1

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

Site Assessment reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Site Assessment: 7/17/2013
(mm/dd/yyyy)

Site Assessment Biologists: HEIMAR _____
(Last name) (first name) (Last name) (first name)

_____ _____
(Last name) (first name) (Last name) (first name)

Site Location: EL DORADO CO
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Trestle
Brief description of proposed action:

1) Is this site within the current or historic range of the CRF (circle one)? (YES) NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? (YES) NO
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(If multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND:

Size: _____ Maximum depth: _____

Vegetation: emergent, overhanging, dominant species: _____

_____

_____

Substrate: _____

_____

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

INTERMITTENT

22

MIDDLE DRY CREEK
7-16-13 (EAST)

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 07/16/2013 (mm/dd/yyyy) Survey Biologist: HEFLMAN (Last name) KEVIN (first name)
Survey Biologist: CLONCINGER (Last name) ACHILLE (first name)

Site Location: EL DORADO CO. 10S 0722796 4273792 MIDDLE DRY CREEK
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:
FUELS REDUCTION

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 3:05 End Time: 4:15

Cloud cover: 0-5% Precipitation: NONE

Air Temperature: 78-80 Water Temperature: NA

Wind Speed: 5-15 mph Visibility Conditions: CLEAR

Moon phase: 1/2 Humidity: 40-50

Description of weather conditions: WARM, SUNNY, SLIGHT BREEZE

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? YES NO
Brand, model, and power of binoculars: _____

0046- BEGIN OF MIDDLE DRY 25 wp#149 START

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

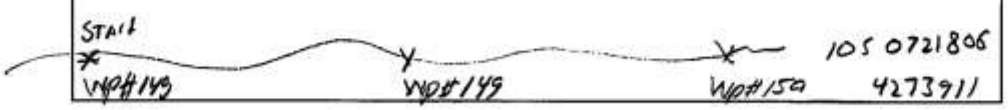
Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
O					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: NON-NATIVE FISH HOLDING IN LARGER POOLS AT END OF SURVEY REACH. High percent of algae matting in Dry Gulch & Wet portions of survey reach

Other notes, observations, comments, *etc.*

3/4 of survey reach w. 4h small flow between pools

Starting at wp #145 10S 0721884 4273823



Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

0059-
✓ Date
All on 7-16
Except 1st pool on 7/17

Camera mistake

MIDDLE DRY CREEK
DAY 2 VISIT (EAST)
7/31/13

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by: _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: 07/16/2013 (mm/dd/yyyy) **Survey Biologist:** HEILMAN (Last name) KEVIN (first name)
Survey Biologist: GLENDENNING (Last name) ACHILLE (first name)

Site Location: EL DORADO CO. MIDDLE DRY CREEK EAST 10S 0722796 4273792
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLES
Brief description of proposed action:
FUELS REDUCTION

Type of Survey (circle one): (DAY) NIGHT BREEDING (NON-BREEDING)

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 7:55 **End Time:** 9:33

Cloud cover: 0 **Precipitation:** 0

Air Temperature: 66°F **Water Temperature:** N/A DRY BED

Wind Speed: 0-5 **Visibility Conditions:** CLEAR - SLIGHT HAZE

Moon phase: ½ +/- WANING **Humidity:** 40% +/-

Description of weather conditions: COOL CALM

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? **YES NO**
Brand, model, and power of binoculars: _____

25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
NONE HEARD					
OR OBSERVED					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: LACK OF WATER, NON NATIVE FISH, CATTLE IN AREA

Other notes, observations, comments, *etc.*

SURVEY REACH IS COMPLETELY DRY, NO POOLS OR FLOW FOUND STREAM BED COVERED BY DRY ALGAE IN SOME AREAS ON THE UPPER HALF OF SURVEY REACH, LOW GRADIENT AREA WITH ALDERS ON BANKS & NATIVE RIPARIAN AREA, FIRS, PONDEROSA PINE, CEDAR LINE RIPARIAN CORRIDORS, LACK OF SIGNIFICANT FLOW IS MAJOR FACTOR TO POOR QUALITY OF STREAM CONDITION

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Middle Dry Creek (East)
1 Night visit
7/31/2013

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: 7/3/2013 (mm/dd/yyyy) Survey Biologist: HEIMAN (Last name) KEVIN (first name)
Survey Biologist: CLENDENNING (Last name) ALLIE (first name)

Site Location: EL DORADO CO. MIDDLE DRY CREEK 10S 0722796 4273792
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:
FUELS REDUCTION

Type of Survey (circle one): DAY (NIGHT) BREEDING (NON-BREEDING)
Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 9:03 End Time: 9:56
Cloud cover: NONE Precipitation: 0
Air Temperature: 60° Water Temperature: NA DRY STREAM
Wind Speed: 0-5 Visibility Conditions: CLEAR
Moon phase: 1/2 WANING Humidity: 40% OR LESS
Description of weather conditions: COOL LT. BREEZE, CLEAR

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? YES NO
Brand, model, and power of binoculars: _____

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: LACK OF WATER, CAN BE + NON NATIVE FISH WHEN THERE ARE FLOWS

Other notes, observations, comments, *etc.*

REACH IS DRY

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

MIDDLE DRY CREEK
EAST
N:S 4+ #2
8-15-2013

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: 8-15/2013 (mm/dd/yyyy)

Survey Biologist: HOLMAN (Last name) K (first name)

Survey Biologist: CLENDENIN (Last name) A (first name)

Site Location: EL DORADO RANCH, MIDDLE DRY CREEK
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLES
Brief description of proposed action:
[redacted] FUELS REDUCTION

Type of Survey (circle one): DAY (NIGHT) BREEDING NON-BREEDING

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 12:56 End Time: 1:56

Cloud cover: NONE Precipitation: 0

Air Temperature: 48° Water Temperature: 52°

Wind Speed: 5-8 Visibility Conditions: CLEAR

Moon phase: 60% FULL Humidity: LESS THAN 30%

Description of weather conditions: COOL CALM

Brand name and model of light used to conduct surveys: STANLEY FAT MAX ADJUSTABLE

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: _____

25

MIDDLE DRY CREEK
7-16-13
(EAST)

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

[redacted]

Date of Site Assessment: 7-16-13
(mm/dd/yyyy)

Site Assessment Biologists: HEILMAN (Last name) KEVEN (first name) _____ _____

CLENDENNEN (Last name) ACHILLE (first name) _____ _____

Site Location: EL DORADO MIDDLE DRY CREEK
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: _____
Brief description of proposed action:

1) Is this site within the current or historic range of the CRF (circle one)? YES NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND:

Size: _____ Maximum depth: 0

Vegetation: emergent, overhanging, dominant species: ALDER, DOUGLASIA
CEDAR WHITE F.

Substrate: COBBLE BOULDER, SAND, GRAVEL

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____
INTERMITTENT STREAM

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:

Bank full width: 15-20
Depth at bank full: 0
Stream gradient: 0-10

Are there pools (circle one)? (YES) NO

If yes,

Size of stream pools: Avg 8x15'
Maximum depth of stream pools: 48

Characterize non-pool habitat: run, riffle, glide, other: DRY, POOLS

Vegetation: emergent, overhanging, dominant species: ALDER, PINE, FIR

Substrate: GRAVEL, BOULDER

Bank description: ERODED cuts, UNDERCUT BANKS
NARROW RIPARIAN CORRIDOR

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry:

INTERMITTENT ?-K?

Other aquatic habitat characteristics, species observations, drawings, or comments:

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location

MIDDLE DRY (WEST)
7-10-13

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: 7-10-D (mm/dd/yyyy)

Survey Biologist: HERMAN (Last name) KEVIN (first name)

Survey Biologist: GLENDINNING (Last name) Achilk (first name)

Site Location: MIDDLE DRY CREEK (WEST SITE) 10S 0770973 4273897
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 3:21 End Time: 3:58

Cloud cover: 80% Precipitation: NONE

Air Temperature: 80-85 Water Temperature: 58

Wind Speed: 0-5 Visibility Conditions: CLEAR

Moon phase: _____ Humidity: 60%

Description of weather conditions: OVERCAST, HUMID

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: BUSHNELL 10x5

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: Fish in all ponds

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

26

Middle Dry (West)
Day 2 survey
7/31/2013

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: 7/31/2013 (mm/dd/yyyy) Survey Biologist: Heckman (Last name) Kevin (first name)
Survey Biologist: Clendenning (Last name) Achille (first name)

Site Location: El Dorado Co Middle Dry Creek (Elkins Flat) 10S 0721055 4273869 El 1967
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Trestles
Brief description of proposed action:
Fuels Reduction

Type of Survey (circle one): (DAY) NIGHT BREEDING (NON-BREEDING)
Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 7:03 End Time: 7:39
Cloud cover: None Precipitation: 0
Air Temperature: 74 Water Temperature: 56° pH 7.3
Wind Speed: 0-5 Visibility Conditions: Clear
Moon phase: _____ Humidity: 40% +/-
Description of weather conditions: Cooler Evening

Brand name and model of light used to conduct surveys: NA

Were binoculars used for the surveys (circle one)? YES NO
Brand, model, and power of binoculars: _____

25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
NOTHING FO OR HEARD					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: BROOK TROUT in most pools AND ARE STRANDED

Other notes, observations, comments, *etc.*

STREAM IS DRY ABOVE THE CROSSING which IS the start OF the SURVEY REACH. LOW GRADIENT REACH. ALDER & EMERGENT VEGETATION LINE THE RIPARIAN corridor. COBBLE, BOULDER, GRAVEL STREAM BED. Not VERY many DEEP POOLS But ones that ARE there ARE RATHER LARGE. SURVEY REACH is DRY on Bottom third.

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Middle Dry Crk. West

7-18-13

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: 7-18-13 (mm/dd/yyyy) Survey Biologist: Clendenning (Last name) A. (first name)
Survey Biologist: Heilman (Last name) K (first name)

Site Location: Eldorado 10S 0720973 4273897
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Trestles
Brief description of proposed action:

Type of Survey (circle one): DAY (NIGHT) BREEDING (NON-BREEDING)

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 22:09 End Time: 22:55

Cloud cover: 0% Precipitation: 0

Air Temperature: 63° F Water Temperature: _____

Wind Speed: 0-3 Visibility Conditions: Clear

Moon phase: 3/4 Waxing Humidity: 40-45%

Description of weather conditions: Clear mild temperatures Good weather to find frogs

Brand name and model of light used to conduct surveys: Stanley torch

Were binoculars used for the surveys (circle one)? YES (NO)
Brand, model, and power of binoculars: _____

25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
N/A					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: Non-native trout, lack of water (stream is drying up).

Other notes, observations, comments, *etc.*
Very quiet night. No frog calls heard. Hardly any noise from other animals either. Many pools are drying up, but there is still slight flow in certain sections of stream,

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

MIDDLE DRY CREEK
(WEST)
NHC 2
7/31/2013

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 7/31/2013 (mm/dd/yyyy)

Survey Biologist: HEILMAN (Last name) KEVIN (first name)

Survey Biologist: CLENDENNING (Last name) ACHILLE (first name)

Site Location: EL DORADO CO, MIDDLE DRY CREEK (ELKINS FLAT) 10S 0721055 4273869
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:
FUELS REDUCTION

Type of Survey (circle one): DAY (NIGHT) BREEDING (NON-BREEDING)

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 10:02 End Time: 10:48

Cloud cover: 0 Precipitation: 0

Air Temperature: 63° Water Temperature: 54°F

Wind Speed: 0-3 Visibility Conditions: CLEAR

Moon phase: _____ Humidity: LESS THAN 40%

Description of weather conditions: Cool, calm

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? YES NO
Brand, model, and power of binoculars: _____

25

MIDDLEBURY (west)
7-10-13

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

[redacted]

Date of Site Assessment: 7-10-13 (mm/dd/yyyy)

Site Assessment Biologists: H GELMAN (Last name) (first name) _____ (Last name) (first name)

CLENDENNING (Last name) (first name) _____ (Last name) (first name)

Site Location: 10S 0720973 4273897
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: _____
Brief description of proposed action:

- 0040 START OF SURVEY

1) Is this site within the current or historic range of the CRF (circle one)? (YES) NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES (NO)
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND:

Size: _____ Maximum depth: _____

Vegetation: emergent, overhanging, dominant species: _____

_____

_____

Substrate: _____

_____

Perennial or Ephemeral *(circle one).* If ephemeral, date it goes dry: _____

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:

Bank full width: 15-18'
Depth at bank full: 1.0
Stream gradient: 0-8%

Are there pools (circle one)? (YES) NO

If yes,

Size of stream pools: 20x10
Maximum depth of stream pools: 0.2m

Characterize non-pool habitat: run, riffle, (glide) other: _____

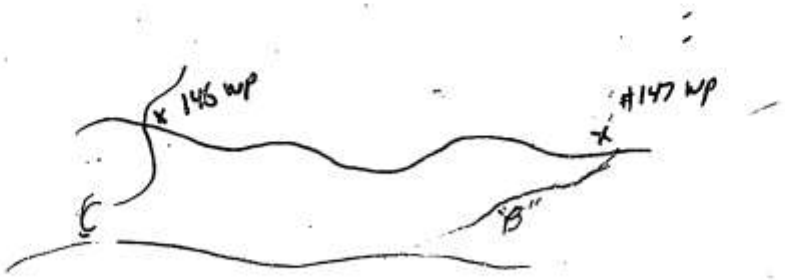
Vegetation: emergent, overhanging, dominant species: Pine, Fir, Cedar

Substrate: Rocky, Silt

Bank description: Eroded soil

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:



Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Trout	7	O	3-5"		
Frogs	0				

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: Lack of flow, shallow pools with fish

Other notes, observations, comments, *etc.*

Calm clear night, nothing seen or heard. Beach is mostly dry with some pools & dry spots in between

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

STEELY FORK COSUMNES
7-10-13
DAY #1

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 07-10-2013 (mm/dd/yyyy)

Survey Biologist: HEIZMAN (Last name) KEVIN (first name)

Survey Biologist: CLENDENNEN (Last name) ALBILLE (first name)

Site Location: EL DORADO CO. STEELY FORK COSUMNES 10S 0712425 4276711
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)****

Proposed project name: TRESTLE
Brief description of proposed action:

Type of Survey (circle one): (DAY) NIGHT BREEDING NON-BREEDING

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 11:15 **End Time:** 12:41

Cloud cover: 50% **Precipitation:** 0

Air Temperature: 86 **Water Temperature:** 60°

Wind Speed: 5-10 **Visibility Conditions:** CLEAR

Moon phase: _____ **Humidity:** 60%

Description of weather conditions: pt cloudy warm

Brand name and model of light used to conduct surveys: _____

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: BUSHNELL 10x50

25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: Largest threat is Non Native Fish in all large pools

Other notes, observations, comments, *etc.*

All Large Pools Have large populations of Non Native Fish.

Lot of Evidence of mining in area

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

STEELY FORK
COSUMNES
7-10-13
DAY #1

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

Date of Site Assessment: 07-10-2013
(mm/dd/yyyy)

Site Assessment Biologists: HEILMAN, KEVEN
(Last name) (first name)
CLENDENNING, ASHLEE
(Last name) (first name)

Site Location: EL DORADO CO. STEELY FORK COSUMNES 10S 0712425 4276711
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: TRESTLE
Brief description of proposed action:

1) Is this site within the current or historic range of the CRF (circle one)? (YES) NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES NO
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POOL
~~POND~~:
Size: LARGE POOLS ON REACH Maximum depth: 1.5 m

Vegetation: emergent, overhanging, dominant species: ALDER, DOGWOOD

Substrate: BEDROCK, GRAVEL, BOULDER, MOSS COVERED ROCK

(Perennial) or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:

Bank full width: 20-30'
Depth at bank full: 1.7'
Stream gradient: 5-10%

Are there pools (circle one)? (YES) NO

If yes,

Size of stream pools: AVG 30 x 60
Maximum depth of stream pools: 1.0 m

Characterize non-pool habitat: run, (riffle), glide, other: REDROCK RIFFLE

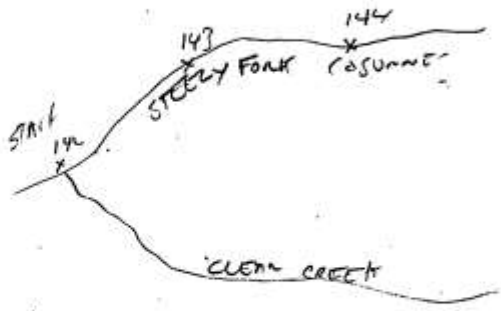
Vegetation: emergent, overhanging, dominant species: DOGWOOD, ALDER

Substrate: REDROCK, COBBLE

Bank description: REDROCK WITH SOME UNREACT SOIL AREAS

(Perennial) or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:



142 - START SURVEY
143 - TRAIL FROM NO 141
144 - EVIDENCE OF MINING

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location