The Plumas National Forest
Feather River Ranger District

Hughes Place Critical Habitat Restoration
Biological Evaluation

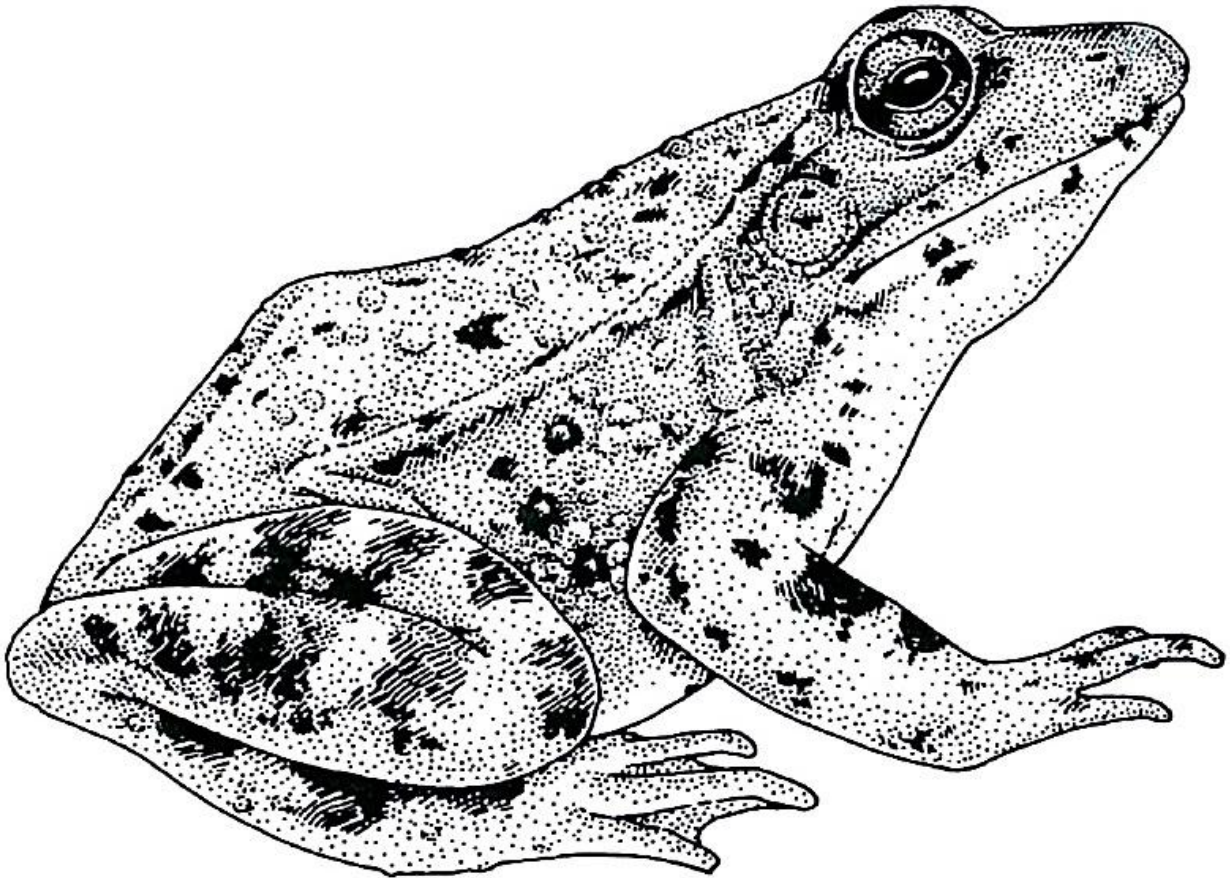
Forest Service Species of Concern

Management Indicator Species Report

Migratory Bird Species Report

March 28, 2019

LOCATION: Hughes Place T22N, R5E, Sec 27; Berry Creek 7.5-minute topographic quadrangle
PROJECT: Build 2 ponds
PROJECTS Total ACRES: 9.6 acres
PROJECT DURATION: 7 Days
MAP: Appendix E Figure 1



INTRODUCTION

The Feather River Ranger District (FRRD) on the Plumas National Forest (PNF) is proposing to construct two ponds within the federally threatened California red-legged (*Rana draytonii*) critical habitat unit BUT-1 (Hughes Place). This work is supported through an inter-agency agreement between Fish and Wildlife Service and Plumas National Forest. A Biological Assessment (BA) (Appendix E) has been submitted in accordance with legal requirements set forth under regulations for formal consultation with the Fish and Wildlife Service on March 4, 2019. Hughes Place Pond is one of only two California red-legged frog (CRLF) population sites on the Plumas National Forest, of only a handful in the Sierra Nevada.

This Biological Evaluation (BE) is prepared to determine whether the proposed action will result in a trend toward listing or loss of viability for Forest Service Sensitive Species, Management Indicator Species and/or Migratory Bird Species.

ACTIVITIES

The *construction of two ponds* will increase available aquatic breeding habitat and assist in recovery of the California red-legged. Project activities will occur during late-June – July, 2019 and last for no more than 7 days.

Forest Service staff will *partially reopen a historic road* that has grown over to provide heavy equipment (excavator and backhoe) access to the site. The temporary road activity zone originates at one end of the 22N77X road (southern border of section 27) and terminates at the pond construction zone.

Forest Service staff will access the site during implementation via *a temporary foot trail* originating along the 23N28 road and terminating in upland habitat above Hughes Place Pond.

Ongoing activities within the action area include *controlling non-native invasive scotch broom* (*Cytisus scoparius*) and blackberry (*Rubus armeniacus*). Non-native plant treatments involve pulling scotch broom by hand before it seeds and pruning blackberry with clippers to the stump. Hand treatments to control invasive plant populations in the action area are expected to continue indefinitely, or until populations are extirpated.

SPECIES CONSIDERED

Forest Service Sensitive Species

California spotted owl and Northern goshawk are known to occur near the project area. Refer to **Appendix A** for a list of Forest Service designated Sensitive Species.

Management Indicator Species

Management Indicator Species (MIS) are used because their population changes are believed to indicate whether management activities are having an effect on the viability and diversity of animal and plant communities.

Management Indicator Species are identified in the Plumas National Forest Land and Resource Management as amended by the 2007 Sierra Nevada Forests Management Indicator Species Amendment Record of Decision. The current bioregional status and trend of populations and/or habitat for each of the MIS is discussed in the 2010 Sierra Nevada Forests Bioregional Management Indicator Species (SNF Bioregional MIS) Report (USDA Forest Service 2010). Refer to **Appendix B** for species list, **Appendix C** covers project level analysis of MIS.

Migratory Bird Species

Under the National Forest Management Act (NFMA), the Forest Service is directed to "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives." (P.L. 94-588, See 6 (g) (3) (B)). The January 2000 USDA Forest Service Landbird Conservation Strategic Plan, followed by Executive Order 13186 in 2001, in addition to the Partners in Flight (PIF) specific habitat Conservation Plans for birds and the January 2004 PIF North American Landbird Conservation Plan, all reference goals and objectives for integrating bird conservation into forest management and planning.

In late 2008, a Memorandum of Understanding (MOU) between the USDA Forest Service and the US Fish and Wildlife Service to Promote the Conservation of Migratory Birds was signed. The intent of the MOU is to strengthen migratory bird conservation through enhanced collaboration and cooperation between the Forest Service and the Fish and Wildlife Service, as well as other federal, state, tribal and local governments. Within the National Forests, conservation of migratory birds focuses on providing a diversity of habitat conditions at multiple spatial scales and ensuring that bird conservation is addressed when planning for land management activities.

The Plumas National Forest utilizes the U.S. Fish & Wildlife Service 2008 Birds of Conservation Concern for the Sierra Nevada as its framework for analyzing effects to migratory birds. Management Indicator Species Report (MIS) address the species either directly or by using a surrogate species that utilize the same or similar habitat attributes. The eleven migratory birds are addressed directly or by using a surrogate species. Refer to **Appendix D**.

MANAGEMENT DIRECTION

Decision Framework

- Code of Federal Regulations (36&50CFR)
- Forest Service Manual and Handbooks (FSM/H 2670)
- National Forest Management Act (NFMA: 1976)
- Endangered Species Act (ESA: 1976)

- National Environmental Policy Act (NEPA: 1969)
- Migratory Bird Treaty Act of 1918 as amended (MBTA)
- Plumas National Forest Land and Resource Plan (LRMP: 1988)
- Sierra Nevada Forest Plan Amendment FSEIS and ROD (SNFPA: 2004)
- Regional Forester policy and management direction

Management Requirements

C-Clauses

- C6.24-B6.24 - Protection of Habitat of Threatened, Endangered, Proposed Species (TEPS) (10/78): If protection measures prove inadequate, if other such areas are discovered, or if new species are listed on the Endangered Species list, then the Forest Service may either cancel under C8.2 or unilaterally, as stated modify this contract to provide additional protection regardless of when such facts become known. Discovery of such areas by either party shall be promptly reported to the other party.

- CT6.313 - The dates and reason for delaying harvest should be included in C6.313 Limited Operating (1/84), or other language that is appropriate for the type of contract. Except when agreed otherwise, Purchaser's operations shall be "limited" as described within this document. If new TEPS species are listed or discovered within an area in which they may be adversely affected by activities, protection measures such as LOPs will be implemented as recommended by a qualified biologist, as appropriate for the species.

Mitigations

The majority of song birds nest on the ground and the project is primarily composed of dry grassy meadows. A thorough search by a biologist will occur prior to the activities. The primary nesting season for ground nesting birds is April 15-July 31.

EXISTING ENVIRONMENT AND EFFECTS

Species List

Appendices A, B, and C contains a list of Threatened, Endangered, Proposed, Candidate and Sensitive species, Management Indicator Species and Migratory Birds that potentially occur on the Plumas National Forest. Relevant species to the area were addressed.

Analysis Area

The analysis area (9.6 acres) is defined as all areas to be affected directly or indirectly by the project and provides a boundary in which the physical and biological effects of the action and any interrelated and interdependent actions are assessed to determine the resulting stressors to species and their habitat. The greatest level of disturbance will occur near Hughes Pond. The temporary road and foot trail impacts are in upland habitat and cover approximately 1.9 and 1.8 acres, respectively. Pond construction foot print is approximately impacts (1.2 are considered at an appropriate scale within the action area along Jack Creek headwater spring, as sediment

transportation levels appear to be low in this aquatic non-breeding habitat (low flow and saturated and heavily vegetated soils). acres total) overlap both upland (0.8 acres) and dispersal (0.4 acres) habitats for the frog. Downstream project impacts are considered at an appropriate scale within the action area along Jack Creek headwater spring, as sediment transportation levels appear to be low in this aquatic non-breeding habitat (low flow and saturated and heavily vegetated soils).

Field Reconnaissance

The location of Hughes Place is an open dry meadow atypical of California spotted owl or Northern goshawk habitat. The pond building activities do not occur within California spotted owl or Northern goshawks protected activity center (PAC). The PACs known to occur are approximately 1 mile from Hughes Place.

DETERMINATION OF EFFECTS

The effects of proposed pond building within three activity areas (i.e., Pond construction, Temporary road, and Temporary foot trail) will not affect Forest Service Sensitive Species, Management Indicator Species, or Migratory bird species. Refer to Appendix A, B, and C.

Biological Evaluation was prepared by the wildlife biologist Jo Anna Arroyo

Literature Cited

Seamans, M.E.; Gutiérrez, R.J. 2007. Habitat selection in a changing environment: the relationship

Sierra Nevada Forest Plan Amendment, Final Supplemental Environmental Impact Statement ROD 2004.

U.S. Department of Agriculture, Forest Service [USDA FS]. 2004. Sierra Nevada Forest Plan Amendment: final supplemental environmental impact statement. San Francisco, CA: Pacific Southwest Region.

USDA Forest Service 1988. Plumas National Forest Land and Resource Management Plan and Final Environmental Impact Statement. Pacific Southwest Region, San Francisco, CA.

APPENDIX A

Threatened, Endangered, Proposed, Candidate and Forest Service Sensitive Species that potentially occur on the Plumas National Forest and determinations

Threatened, Endangered and Sensitive Species (Scientific Name)	Species Status*	Habitat or Ecosystem Component	Category for Project Analysis**	Determinations
Invertebrates				
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Elderberry trees (Sambucus spp.)	1	WNA
Fish				
Hardhead minnow (*Mylopharodon conocephalus*)	USFS : S	Riverine and Lacustrine	1	WNA
Amphibians				
California red-legged frog (*Rana aurora draytonii*)	FT	Riverine and Lacustrine	1	Refer to Biological Assessment
Foothill yellow-legged frog (*Rana boylii*)	USFS : S, DFG : SSC	Riverine and Lacustrine	1	WNA
Sierra (Mountain) yellow-legged frog (*Rana sierrae*)	FE, USFS : S, DFG : SSC	Riverine and Lacustrine	1	WNA
Northern leopard frog (*Rana pipiens*)	USFS : S, DFG : SSC	Riverine and Lacustrine	1	WNA
Reptiles				
Northwestern pond turtle (*Clemmys marmorata marmorata*)	USFS : S, DFG : SSC	Riverine and Lacustrine	1	Refer to Biological Assessment
Birds				
Bald eagle (*Haliaeetus leucocephalus*)	USFS : S, SE, USFWS : BCC	Large trees adjacent to riverine and lacustrine	1	WNA
California spotted owl (*Strix occidentalis occidentalis*)	USFS : S, USFS : MIS, DFG : SSC, USFWS : BCC	Late Seral Closed Canopy Coniferous Forest	1	WNA
Greater sandhill crane (*Grus canadensis tabida*)	USFS : S, ST	Prefers open habitats (grasslands and croplands) with shallow lakes and fresh emergent wetlands	1	WNA
Great gray owl (*Strix nebulosa*)	USFS : S, SE	Late Seral Closed Canopy Coniferous Forest adjacent to wet meadows	1	WNA
Northern goshawk (*Accipiter gentilis*)	USFS : S, DFG : SSC	Late Seral Closed Canopy Coniferous Forest	1	WNA

Threatened, Endangered and Sensitive Species (Scientific Name)	Species Status*	Habitat or Ecosystem Component	Category for Project Analysis**	Determinations
Swainson's hawk (*Buteo swainsoni*)	USFS : S, DFG : SSC	Open desert, grassland or cropland containing scattered, large trees or small groves	1	WNA
Willow flycatcher (*Empidonax trailii brewsteri*)	USFS : S, SE, USFWS : BCC	Riparian with dense willows	1	WNA
Mammals				
American marten (*Martes americana*)	USFS : S	Late Seral Closed Canopy Coniferous Forest	1	WNA
California wolverine (*Gulo gulo luteus*)	USFS : S, ST	Late Seral Closed Canopy Coniferous Forest	1	WNA
Pacific fisher (*Martes pennanti pacifica*)	FC, USFS : S, DFG : SSC	Late Seral Closed Canopy Coniferous Forest	1	Refer to Biological Assessment
Pallid bat (*Antrozous pallidus*)	USFS : S, DFG : SSC	Most common in open, dry habitats with rocky areas (rocky outcrops, cliffs and crevices)	1	WNA
Sierra Nevada red fox (*Vulpes vulpes necator*)	USFS : S, ST	Late Seral Closed Canopy Coniferous Forest	1	WNA
Townsend's big-eared bat (*Corynorhinus townsendii*)	USFS : S, DFG : SSC	Mesic Habitats	1	WNA
Fringe-tailed myotis (*Myotis thysanods*)	USFS-S	Sangs, caves, mines, crevices in rocks. Nearby water. Oaks and pinyon woodlands	1	WNA
Invertebrates				
Bumble bee (*Bombus occidentallis)*	USFS-S	Its short proboscis limits flower species with short corolla lengths	1	WNA

***Species Status: FE** = Federal Endangered, **FT** = Federal Threatened, **FP** = Federal Proposed, **FC** = Federal Candidate,
USFS: S = U.S. Forest Service - Sensitive, **USFS: MIS** = U.S. Forest Service – Management Indicator Species, **SE** = State Endangered,
ST = State Threatened, **DFG: FP** = State Fully Protected, **DFG: SSC** = State Species of Special Concern,
USFWS: BCC = U. S. Fish and Wildlife Service Birds of Conservation Concern, **SOI** = Species of Interest.
** **Category 1:** Species whose habitat is not in or adjacent to the wildlife analysis area and would not be affected by the project.
Category 2: Species whose habitat is in or adjacent to the wildlife analysis area, but would not be either directly or indirectly affected by the project. **Category 3:** Species whose habitat would be either directly or indirectly affected by the project.
***Determinations: T, E & P Species: WNA** = Will Not Affect, **MAINLA** = May Affect but Is Not Likely to Adversely Affect Individuals or their designated critical habitat, **MAILAA** = May Affect and Is Likely to Adversely Affect Individuals or their designated critical habitat.
FS Sensitive Species: WNA = Will Not Affect, **MAI** = May Affect Individuals, but is not likely to result in a trend toward Federal listing or loss of viability, **MAILRTFL** = May Affect Individuals, and is Likely to Result in a Trend toward Federal Listing or loss of viability.

APPENDIX B

Selection of MIS for Project-Level Habitat Analysis

Habitat or Ecosystem Component	CWHR Type(s) defining the habitat or ecosystem component*	Sierra Nevada Forests Management Indicator Species (Scientific Name)	Species Status**	Category for Project Analysis ***
Early Seral Coniferous Forest	Douglas-fir (DFR), Eastside Pine (EPN), Jeffrey Pine (JPN), Lodgepole Pine (LPN), Ponderosa Pine (PPN), Red Fir (RFR), Sierran Mixed Conifer (SMC), Subalpine Conifer (SCN), White Fir (WFR), tree sizes 1, 2, & 3, all canopy closures	Mountain quail (*Oreortyx pictus*)	USFS : MIS	1
Mid Seral Coniferous Forest	Douglas-fir (DFR), Eastside Pine (EPN), Jeffrey Pine (JPN), Lodgepole Pine (LPN), Ponderosa Pine (PPN), Red Fir (RFR), Sierran Mixed Conifer (SMC), Subalpine Conifer (SCN), White Fir (WFR), tree size 4, all canopy closures	Mountain quail (*Oreortyx pictus*)	USFS : MIS	1
Late Seral Open Canopy Coniferous Forest	Douglas-fir (DFR), Eastside Pine (EPN), Jeffrey Pine (JPN), Lodgepole Pine (LPN), Ponderosa Pine (PPN), Red Fir (RFR), Sierran Mixed Conifer (SMC), Subalpine Conifer (SCN), White Fir (WFR), tree size 5, canopy closures S and P	Sooty grouse (*Dendragapus obscurus*)	USFS : MIS	1
Late Seral Closed Canopy Coniferous Forest	Douglas-fir (DFR), Eastside Pine (EPN), Jeffrey Pine (JPN), Lodgepole Pine (LPN), Ponderosa Pine (PPN), Red Fir (RFR), Sierran Mixed Conifer (SMC), Subalpine Conifer (SCN), White Fir (WFR), tree size 5 (canopy closures M and D), and tree size 6.	California spotted owl (*Strix occidentalis occidentalis*)	USFS : S, USFS : MIS, DFG : SSC, USFWS : BCC	1
		Northern flying squirrel (*Glaucomys sabrinus*)	USFS : MIS	
Oak-associated Hardwood & Hardwood/conifer	Montane Hardwood (MHW), Montane Hardwood-Conifer (MHC)	Mule deer (*Odocoileus hemionus*)	USFS : MIS	1
Riparian	Montane Riparian (MRI), Valley Foothill Riparian (VRI)	Yellow warbler (*Dendroica petechia*)	USFS : MIS, DFG : SSC	1
Riverine & Lacustrine	Riverine (RIV), Lacustrine (LAC)	Aquatic macroinvertebrates	USFS : MIS	1
Shrubland (west-slope chaparral types)	Montane Chaparral (MCP), Mixed Chaparral (MCH), Chamise-Redshank Chaparral (CRC)	Fox sparrow (*Passerella iliaca*)	USFS : MIS	1

Habitat or Ecosystem Component	CWHR Type(s) defining the habitat or ecosystem component*	Sierra Nevada Forests Management Indicator Species (Scientific Name)	Species Status**	Category for Project Analysis ***
Snags in Burned Forest	Medium and large snags in burned forest (stand-replacing fire)	Black-backed woodpecker (*Picoides arcticus*)	USFS : MIS	1
Snags in Green Forest	Medium and large snags in green forest	Hairy woodpecker (*Picoides villosus*)	USFS : MIS	1
Wet Meadow	Wet Meadow (WTM), Freshwater Emergent Wetland (FEW)	Pacific chorus frog (*Pseudacris regilla*)	USFS : MIS	1

*All CWHR size classes and canopy closures are included unless otherwise specified; dbh = diameter at breast height;
1 = Seedling Tree <1" dbh, **2 =** Sapling Tree 1 - 6" dbh, **3 =** Pole Tree 6 - 11" dbh, **4 =** Small Tree 11 - 24"dbh, **5 =** Medium/Large Tree >24"dbh,
6 = Multi-layered Tree. **D =** Dense Canopy Cover (> 60%), **M =** Moderate Canopy Cover (40 - 59%), **P =** Open Canopy Cover (25 – 39%), **S =** Sparse Canopy Cover (10 – 24%) (Mayer and Laudenslayer 1988).
****Species Status: FE** = Federal Endangered, **FT** = Federal Threatened, **FP** = Federal Proposed, **FC** = Federal Candidate,
USFS: S = U.S. Forest Service - Sensitive, **USFS: MIS** = U.S. Forest Service – Management Indicator Species, **SE** = State Endangered,
ST = State Threatened, **DFG: FP** = State Fully Protected, **DFG: SSC** = State Species of Special Concern,
USFWS: BCC = U. S. Fish and Wildlife Service Birds of Conservation Concern, **SOI** = Species of Interest.
*** **Category 1:** Species whose habitat is not in or adjacent to the Wildlife Analysis Area and would not be affected by the project.
Category 2: Species whose habitat is in or adjacent to the Wildlife Analysis Area, but would not be either directly or indirectly affected by the project.
Category 3: Species whose habitat would be either directly or indirectly affected by the project.

APPENDIX C

Analysis of Migratory Birds

Birds of Conservation Concern (Sierra Nevada - BCR 15) Species (Scientific Name)	Species Status*	Forest Service Sensitive Species (S) or Management Indicator Species (MIS)	Project Level Report (BA/BE or MIS)	Critical Habitat component or threat as defined by Sierra Nevada Bird Conservation Plan (PIF)	Category for Project Analysis**
American peregrine falcon (*Falco peregrinus anatum*)	SE, USFWS : BCC	See Below	N/A	Bodies of water in open areas with protected cliffs, canyons and ledges for cover and nesting	1
Bald eagle (*Haliaeetus leucocephalus*)	USFS : S, SE, USFWS : BCC	Bald Eagle (S)	BE	Designated as a non-land bird by DeSante	1
Black swift (*Cypseloides niger*)	USFWS : BCC	See Below	N/A	Wet cliff, waterfalls	1
California spotted owl (*Strix occidentalis occidentalis*)	USFS : S, USFS : MIS, DFG : SSC, USFWS : BCC	California Spotted Owl (S)	BE	Depends critically on old growth	1
Calliope Hummingbird (*Stellula calliope*)	USFWS : BCC	Sooty (Blue) Grouse (MIS) Yellow Warbler (MIS) Willow Flycatcher (S)	MIS MIS BE	Open Forested habitats, and moist habitats on the East Slope	1
Cassin's Finch (*Carpodacus cassinii*)	USFWS : BCC	California Spotted Owl (S)	BE	Depends critically on old growth	1
Flammulated Owl (*Otis flammeolus*)	USFWS : BCC	Mule Deer (MIS) Hairy Woodpecker (MIS)	MIS MIS	Depends critically on oaks or oak woodlands, Loss of snags	1
Lewis' woodpecker (*Melanerpes lewis*)	USFWS : BCC	Hairy Woodpecker (MIS)	MIS	Loss of snags	1
Olive-sided flycatcher (*Contopus cooperi*)	DFG : SSC, USFWS : BCC	California Spotted Owl (S) Hairy Woodpecker (MIS)	BE MIS	Utilize late successional/old growth forest, but does not depend on it critically, Loss of snags	1
Williamson's sapsucker (*Sphyrapicus thyroideus*)	USFWS : BCC	Hairy Woodpecker (MIS)	MIS	Loss of snags	1
Willow flycatcher (*Empidonax trailii brewsteri*)	USFS : S, SE, USFWS : BCC	Willow Flycatcher (S)	BE	Depends critically on montane meadow habitat	1

***Species Status: FE** = Federal Endangered, **FT** = Federal Threatened, **USFS: S** = U.S. Forest Service - Sensitive, **USFS: MIS** = U.S. Forest Service – Management Indicator Species, **SE** = State Endangered, **ST** = State Threatened, **DFG: FP** = State Fully Protected, **DFG: SSC** = State Species of Special Concern, **USFWS: BCC** = U. S. Fish & Wildlife Service Birds of Conservation Concern, **SOI** = Species of Interest.
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APPENDIX E

California Red-legged Frog Critical Habitat Restoration (BUT-1, Hughes Place)
Initiation Package for Endangered Species Act Consultation
Plumas National Forest, Feather River Ranger District, 875 Mitchell Ave., Oroville, CA 95965
January 2, 2019

I. INTRODUCTION

The purpose of this initiation package is to review the proposed California Red-legged Frog Critical Habitat Restoration Project in sufficient detail to determine to what extent the proposed action may affect any of the threatened, endangered, or proposed species and designated or proposed critical habitats listed below. In addition, the following information is provided to comply with statutory requirements to use the best scientific and commercial information available when assessing the risks posed to listed and/or proposed species and designated and/or proposed critical habitat by proposed federal actions. This initiation package is prepared in accordance with legal requirements set forth under regulations implementing Section 7 of the Endangered Species Act (50 CFR 402; 16 U.S.C. 1536 (c)).

Threatened, Endangered, Proposed Threatened or Proposed Endangered Species

The following listed and proposed species may be affected by the proposed action:
California Red-legged Frog (*Rana draytonii*) **T**,
Pacific Fisher (*Pekania pennanti*) **proposed T**.

Candidate Species, Sensitive Species and Species of Concern

The following candidate species, sensitive species, and species of concern may be affected by the proposed action:
Western Pond Turtle (*Actinemys marmorata*) **C**.

Species not included in consultation package

The project was entered into the IPAC website on Oct 18, 2018 (Consultation Code: 08ESMF00-2019-SLI-0133, Event Code: 08ESMF00-2019-E-00384). Delta smelt (*Hypomesus transpacificus*) was included on the species lists obtained from U.S. Fish and Wildlife Service (FWS) and the National Oceanic Atmospheric Administration National Marine Fisheries Service but was eliminated from analysis due to lack of species distribution, suitable habitat, and lack of designated critical habitat.

Critical Habitat

The action addressed within this document falls within critical habitat unit BUT-1 (Hughes Place) for California Red-legged Frog (CRLF).

II. CONSULTATION TO DATE

The Plumas National Forest (PNF) has not previously requested informal or formal consultation from FWS on the project. PNF and FWS have discussed project design and participated in an inter-agency site visit to the project area on July 25th, 2018. This work is supported through an inter-agency agreement between FWS and PNF (17-IA-11051100-034), with FWS providing technical assistance throughout project development.

III. DESCRIPTION OF THE PROPOSED ACTION

The PNF is proposing to construct two ponds within CRLF critical habitat unit BUT-1 (Hughes Place) on the Feather River Ranger District (FRRD; T22N, R5E, S27; Berry Creek 7.5-minute topographic quadrangle) to increase available aquatic breeding habitat and assist in recovery of the federally threatened CRLF (Figures 1 and 2). Project activities will occur on National Forest System Lands during late-June – July, 2019 and no permits are required for this activity and activities are not part of another project. Ongoing activities within the action area include controlling non-native invasive scotch broom (*Cytisus scoparius*) and blackberry (*Rubus armeniacus*). Non-native plant treatments involve pulling scotch broom by hand before it seeds and pruning blackberry with clippers to the stump. Hand treatments to control invasive plant populations in the action area are expected to continue indefinitely, or until populations are extirpated.

PNF has contracted Thomas R. Biebighauser (Wetland Ecologist, Wildlife Biologist) to supervise pond construction by PNF staff while concurrently providing training. Mr. Biebighauser has restored >1,900 wetlands across 23 U.S. states, Puerto Rico, Canada, and New Zealand, written four books on wetland restoration techniques, and provides graduate instruction on the topic at Eastern Kentucky University and the University Louisville Speed School of Engineering. He has received numerous awards for his work in wetland restoration, including the 2015 National Wetlands Award for Conservation and Restoration. Mr. Biebighauser will direct PNF heavy equipment operators, personnel, and volunteers while building two ponds using aquatic-safe liners and geotextile pads.

The area will be accessed via two Forest Service System roads (23N28 and 22N77X, Figure 2). Forest Service (FS) staff will access the site on foot from road 23N28 (temporary foot trail), and a historic logging road (temporary road) will be used to transport an excavator and backhoe to and from site (Figure 2). No heavy equipment will be necessary to temporarily open the historic logging road. Reconnaissance revealed that only a handful of small-diameter trees (<38 centimeters) or large shrubs may need to be removed (by hand) along the temporary road to provide large equipment access, and the temporary road will be reclaimed and blocked (made impassable via log and bounder placement) post-implementation.

Two ponds (shallow basins, deepest in the center, < 20 meters in diameter) will be constructed approximately 50 meters distance from the existing breeding pond using an excavator and backhoe (Ponds #1-2, Figure 2). A third area was identified as a backup pond location in case there are any unforeseen difficulties implementing sites 1 and 2 (Pond #3, Figure 2). Construction will involve reshaping and compacting soils onsite with heavy equipment, placement of an aquatic-safe liner and matching 16 oz. geotextile pad on top of the excavated and compacted depression, followed by placing six inches of topsoil, and woody debris, over the liner-covered and compacted soil. Disturbed ground within the action area will be reseeded with seed collected from adjacent native vegetation, and broadcasting weed-free straw also will be used to help control erosion. Shrubs and small diameter trees removed during implementation, and naturally occurring large down logs in the area, will be placed in and around ponds after construction is completed to meet wildlife habitat needs (e.g., basking sites).

Proposed pond development at Hughes Place is needed to increase available aquatic breeding habitat and increase dispersal habitat quality between the existing breeding pond and adjacent aquatic non-breeding habitat (i.e., Hughes Place Pond and Jack Creek headwater spring, respectively, Figure 2). Hughes Place Pond may completely dry during late-summer and early-fall potentially stranding tadpoles unable to complete metamorphosis before aquatic conditions deteriorate. This was apparently the situation during California's most recent drought (e.g., 2011-2017). Ponds proposed for development will be ephemeral, gradually drying over the summer before filling again during the winter rainy season. However, we aim to maintain aquatic conditions for longer durations of the annual cycle by using an aquatic-safe liner in developed ponds, providing greater time for frogs to complete metamorphosis before migrating to adjacent aquatic non-breeding habitat. Further, ephemeral ponds will support California red-legged frog breeding without exposing eggs and larvae to predatory fish and bullfrogs.

Hughes Place Pond also supports a relatively large, and apparently self-sustaining, population of western pond turtles (*Actinemys marmorata*). Limited visual encounter surveys and recent incidental observations indicate a minimum population between 60-95 turtles at Hughes Place Pond (Wildlife Research Associates 2008, personal observation). Pond turtles are California's only native freshwater turtle species and is globally classified as vulnerable to become endangered unless the circumstances that are threatening its survival and reproduction improve (IUCN Red List of Threatened Species 1996). The California Department of Fish and Wildlife has designated the pond turtle as a species of special concern (Jennings and Hayes 1994) and a petition for listing the species as endangered under the U.S. Endangered Species Act (16 U.S.C. ch. 35 § 1531 et seq) is currently under review by the U.S. Fish and Wildlife Service (Federal Docket No. FWS–R8–ES–2015–0024).

During 2007, 24 pond turtles (17 females, 6 males, 2 unknown) were individually marked along their marginal scutes at Hughes Place Pond, and PNF is soliciting support to conduct future pond turtle monitoring in the project area. Proposed monitoring will attempt to recapture (by hand and using dip-nets) previously marked turtles and use recent advances in GPS technology to address two of the highest priority research/science needs identified by the *Emys* (*Actinemys*) *marmorata* California Working Group: (1) Habitat modeling to direct surveys; and (2) Develop description of pond turtle habitat needs (upland and aquatic) to guide restoration and enhancement projects. Proposed monitoring will identify and capture female turtles through visual surveys during evening terrestrial nesting forays and males will be captured in the pond using a dip-net (Christie and Geist 2017). GPS-UHF loggers will be attached to the carapace of captured turtles to concurrently acquire baseline space use and habitat selection data for turtles in the northern Sierra Nevada region of California while evaluating turtle use of restored red-legged frog critical habitat to inform ongoing and future population and habitat restoration and enhancement projects. No by-catch of any CRLF life-stages was reported during prior dip-netting activities at Hughes Place Pond (Wildlife Research Associates 2008). Although not currently funded, proposed turtle monitoring would occur over a two year period (e.g., begin summer 2019 and continue through September 2021) and all necessary permits will be obtained.

Conservation Measures

Project Conservation Measures were developed to ensure compliance with Endangered Species Act and USDA Forest Service Region 5 direction. The following Conservation Measures will be

followed to avoid or minimize the potential for adverse effects to the California Red-legged Frog.

1) California red-legged Surveys
    a) Additional surveys would be required prior to, during and post construction activities. If frogs are detected a FS Biologist will work with employees, contractor(s), and Fish and Wildlife Service to avoid or minimize effects to species.
    b) Design all procedures to best protect species while allowing restoration activities to continue, or modify as necessary after discussing with FWS.
    c) Utilize the following documents and publications while conducting surveys and assessing habitat:

"Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog (USDI 2005).
"A Standardized Protocol for Surveying Aquatic Amphibians" (Fellers & Freel 1995).
A Guide to Wildlife Habitats of California. (Mayer, K. E. et al. 1988).
A field guide to western reptiles and amphibians. Second edition. Houghton (Stebbins 1985).

2) Limited Operating Periods
    a) A CRLF Limited Operating Period (LOP) of October 15th through June 1st, or the first wetting rains (first 0.5 centimeter of autumn rain), will be implemented for all project activities.
    b) If a Pacific fisher den site is discovered within 1 kilometer of the action area, implement a fisher LOP from March 1st through June 30th.
    c) If any new species become listed, or a currently listed species is discovered within the action area, and may be adversely affected by activities, the FS will implement protection measures appropriate for the species, such as LOPs, as recommended by a FS biologist. If these circumstances occur, the Forest Service will request section 7 consultation if needed (i.e., if the proposed activities may affect the species).
3) Mitigations
    a) During the week prior to initiating any project activities that could result in adverse effect to the CRLF, survey of the Action Area will be conduct by FS biologists. Forest Service biologists also will conduct surveys of the Action Area before commencing work daily to ensure no frogs have not moved into the action area.
    b) Prior to the start of pond construction, signage will be placed near high risk areas adjacent to implementation activities (e.g., aquatic habitats) to maintain high frog awareness among Forest Service implementation staff and contractor(s).
    c) If any life stages of CRLF are found during project implementation and may be adversely affected by project activities, activities in the immediate vicinity of the individual(s) will be stopped until they move out the area or until they are re-located to a safe place by FS biologists. The relocation site will be within suitable CRLF habitat and will not exceed the natural dispersal distance the animal would travel. If there are activities removed from the location of the animal or that have no potential to result in take, those activities may continue.
    d) Pond construction will be limited to June-July 2019, or before the first wetting rains of the season (first 0.5 centimeter of autumn rain). In the unlikely event

wetting rains should occur during implementation, operations will stop. Work may subsequently resume when rain stops and after a dry period of 48 hours or more, and no further precipitation is forecast during time required to complete construction.

e) A FS biologist will be on site during all project activities.
f) All appropriate Best Management Practices and Standard Operating Procedures will be implemented to prevent sediment from reaching aquatic habitat as a result of project activities.
g) All tree and brush removal within 100 meters of aquatic habitat will be done by hand or with the use of chainsaws.
h) No fueling of gas powered equipment will occur within 200 meters of aquatic habitat.
i) All food-related garbage will be placed in tightly sealed containers and removed from the site at the end of each workday to avoid attracting predators. Additionally, and garbage present in the action area will be removed after implementation is complete. All garbage removed from the project site will be disposed of at an appropriate off-site refuse location.
j) Implementation crews will be educated on identification of CRLF and frogs in general during daily briefings to minimize any potential harm.
k) Tightly woven fiber netting, plastic mono-filament netting or similar material shall not be used for erosion control of other purposes within the action area to ensure that individuals do not get trapped, injured, or killed.
l) Coir logs or other sediment catchment devices will be placed to minimize sedimentation into the stream.
m) Equipment will be staged and parked in upland habitat >100 meters from aquatic habitat. Forest Service biologists will conduct surveys of the Action Area, including vehicle staging zone, before commencing work daily to ensure no frogs have not moved into the area.
n) Monitor water quality daily to evaluate for excessive sedimentation.
o) Construct ponds within the shortest time possible considering best operational practices and safety, and minimizing resource disturbance.

4) Noxious Weed Prevention

a) All equipment used off-road will be weed-free prior to entering National Forest System lands.
b) Noxious weeds identified before ground-disturbing activities will be treated by hand cutting and pulling during and after implementation.
c) Equipment will be washed before moving from an infested area to a non-infested area.
d) Equipment staging will be done in weed-free areas.
e) Disturbed ground within the action area will be reseeded with material collected from adjacent native vegetation.
f) FS biologists will refer to the project botany report for weed-free protocol specific details.

5) Western Pond Turtle monitoring

a) Prior to and during any turtle monitoring activities a FS biologist will survey the area for CRFL to avoid harassing any individuals. A FS biologist will be on site during all project activities
b) If frogs are detected a FS biologist will work with FWS to avoid or minimize effects to the species.

c) Female turtles located while foraying into upland habitat will be approached with caution to minimize disturbance to any other turtles or CRLF that may have moved (unnoticed) into the area during the foray survey. Nesting female turtles (laying eggs) will not be disturbed.
d) Extreme care will be taken to avoid by-catch of all CRLF life-stages (egg, tadpole, undergoing metamorphosis, and adults) while dip-netting male turtles in Hughes Place Pond. Dip-netting activities will occur May-August, for no more than five days. If CRLF by-catch should occur while capturing turtles, individual(s) would be returned to habitat immediately, and dip-netting will stop until a FS biologists discussed the situation with FWS.
e) If CRLF are found during the implementation of turtle monitoring, activities will stop around the individual(s) until they move out the area or until they are re-located to a safe place by FS biologists. The relocation site will be within suitable CRLF habitat and will not exceed the natural dispersal distance the animal would travel.

6) In the case of an injured and/or dead CRLF, FWS shall be notified of events within one day and the animal(s) shall only be handled by a USFS-approved biologist. An injured CRLF in need of medical care shall only be cared for by a licensed veterinarian or other qualified person. Observed dead individuals must be sealed in a resealable plastic bag and the date, time, and location of where the animal was found should be recorded. The bag containing the specimen should be kept in a freezer until instructions are received from the Service regarding the disposition of the dead specimen. The Service contact person is the Sierra/Cascades Division Chief at the Sacramento Fish and Wildlife Office at (916) 414-6621.

Action Area

The action area (9.6 acres) is defined as all areas to be affected directly or indirectly by the project and provides a boundary in which the physical, chemical, and biological effects of the action and any interrelated and interdependent actions are assessed to determine the resulting stressors and subsidies to species and their critical habitat. The project action area is primarily composed of dry meadow and aquatic habitats with lesser amounts of mixed oak-coniferous forest (Figure 2). The action area drains into Hughes Place Pond and Jack Creek headwater spring and proposed activities will occur upslope of occupied aquatic breeding and aquatic non-breeding habitats. The action area boundary was delineated by buffering: aquatic breeding and non-breeding habitat and proposed pond construction sites by 50 meters, a temporary foot trail by 10 meters, and a temporary road by 20 meters (Figure 2). We estimate the greatest level of disturbance will occur within 30 meters of pond development sites (Pond #1-3, Figure 2) and therefore buffered those areas to refine our assessment of project impacts (Pond construction zone, Figure 2). All 9.6 acres of the action area are within CRLF critical habitat (Figure 1). Temporary road and foot trail impacts are in upland habitat and cover approximately 1.9 and 1.8 acres, respectively (Figure 2). Pond construction impacts (1.2 acres total) overlap both upland (0.8 acres) and dispersal (0.4 acres) habitats for the frog (Figure 2). Downstream project impacts are considered at an appropriate scale within the action area along Jack Creek headwater spring, as sediment transportation levels appear to be low in this aquatic non-breeding habitat (low flow and saturated and heavily vegetated soils).

IV. STATUS OF THE SPECIES AND CRITICAL HABITAT IN THE ACTION AREA

California Red-legged Frog

Hughes Place Pond is one of two known populations of CRLF occurring on PNF, the other population is along Little Oregon Creek in critical habitat unit YUB-1. The action area (9.6 acres) is completely within critical habitat unit BUT-1 (5,294 total acres; 3,256 acres on National Forest Service System Lands; Figure 1) and contains all four primary constituent elements (Aquatic breeding habitat = 0.4 acres, Aquatic non-breeding habitat = 0.6 acres, Dispersal habitat = 0.5 acres, Upland habitat = 8.1 acres).

Population monitoring was undertaken at Hughes Place during 2005-2008 (Wildlife Research Associates 2008). Hughes Place Pond (aquatic breeding habitat) was perennial in 2006 and intermittent during 2005, 2007-2008 (water temperatures ranged from 3-20 degrees Celsius). Ice was typically observed along the edges of the pond in January, and the entire surface of the pond was frozen during January 2008. Frog surveys were typically composed of two diurnal and one nocturnal survey per year (N=67 daytime and 46 nocturnal surveys). The first metamorphosing frogs were typically observed in July each year and six adult frogs were tracked via VHF-transmitters during 2005-2007 (Wildlife Research Associates 2008). Monthly (January – March, 2006-2007) or weekly (November 2007 – March 2008) egg mass surveys also were conducted during this monitoring effort, as was *Batrachochytrium dendrobatidis* sampling during 2007 (Wildlife Research Associates 2008).

The site was most likely occupied at the time of listing, and 18 individual adult frogs were marked with pit tags during 2006-2007 with an average of 10 adult frogs observed each year (2006 = 8 adult and two first-year frogs, 2007 = 12 adult and four first-year frogs, Wildlife Research Associates 2008). Male frogs were observed calling at Hughes Place Pond in February during 2006-2008, tadpoles were observed in April-May of 2005-2008, but eggs were not located at the site until March of 2008 (N=7 eggs masses). Four of 13 frogs tested positive for *B. dendrobatidis* in 2007 and two of seven frogs tested positive during 2008. Six individual frogs were sampled for *B. dendrobatidis* in both 2007 and 2008. Four of six frogs tested negative during both years of study; whereas, *B. dendrobatidis* was not detected in 2007 but was detected in 2008 on one individual and another frog tested positive during both 2007 and 2008.

Radio-tracking revealed that frogs remained at the Hughes Place Pond and did not use upland habitat during winter. Frogs used the pond each year until it dries during July-September, at which time frogs moved to adjacent aquatic non-breeding habitat (i.e., through dispersal habitat to the Jack Creek headwater spring, Figure 2). Frog movements away from the pond occurred during the first 0.5 centimeter of autumn rain (September-November) after the pond became dry in 2005 and 2007. No terrestrial forays > 20 meters were observed at either the pond or Jack Creek headwater spring, i.e., frogs only used upland habitat while moving between breeding and aquatic non-breeding habitats (Figure 2). After migrating to the Jack Creek headwater spring during the first autumn rains, frogs generally exhibited limited movement up-and down the spring (e.g., 10 meters) before returning to Hughes Place Pond, after the pond had attained approximately 60 centimeters of water depth. However, one individual did make relatively longer distance movements while occupying Jack Creek headwater spring (approximately 100 meters) before returning to Hughes Place Pond for the winter. Aside from monitoring during 2005-2008, occupancy has consistently been confirmed at Hughes Place Pond (USDA Forest

Service 2018; one or more site visits annually; 1997-2001, 2012-2016).

Pacific Fisher

The current distribution of fisher within California suggests a once continuous distribution is now fragmented into two areas separated by hundreds of miles. Numerous survey efforts have failed to detect fisher in an area between Mt. Shasta and Yosemite National Park (Zielinski et al. 2005), and there have been no detections or confirmed sightings of fisher within this 240-260 mile gap along the northern Sierra Nevada since 1990 (USDA Forest Service 2004). The action area is located within this distributional gap, and no fisher were detected in the action area or in the surrounding landscape during episodic ad hoc sampling (baited and un-baited camera stations) over the past 20 years (USDA Forest Service 2018).

Fishers were reintroduced on private lands in Butte County that are adjacent to PNF and owned by Sierra Pacific Industries (Sterling Management Tract). Reintroductions began in November 2009 with 40 fishers released by the end of 2011 (24 females and 16 males, CDFW 2018). Reintroduced fishers have denned on PNF six times, along the North Fork of the Feather River, Mt Hough Ranger District, but no reintroduced fisher have been observed traveling toward Hughes Place (personal communication, Aaron Facka 2018). Besides reintroduced fisher, there are two verified historic fisher observations on the PNF (verified = trapped animal, photo, track, or sighting by reliable observer). Both records are 1940's trapping records, one from the central portion of PNF and the other along the eastside of the Sierra. There also have been four unconfirmed reports of fisher from the central portion of PNF, and one of these unconfirmed detections (1995) was identified in the April 8, 2004 edition of the Federal Register.

Although approximately 2.5 acres of the action area (9.6 acres) appears to provide adequate canopy cover for the fisher, i.e., along Jack Creek headwater spring (1.7 acres) and the temporary foot trail (0.8 acres, Figure 2), fisher do not appear to currently occupy the action area or the surrounding landscape in the French Creek subwatershed (HUC 12 – Level 6). The closest reintroduced fisher population is approximately 15 kilometers northeast of the action area.

V. ENVIRONMENTAL BASELINE AND CUMULATIVE EFFECTS

The action area has been used by humans since pre-historic times, it supported a holiday lodge and logging operation in historic times, and adjacent lands are currently used by off-highway vehicle recreationists (along established trails and roads). There is one pond (0.8 acres) in the action area that serves as aquatic breeding habitat (Hughes Place Pond) and a single aquatic non-breeding feature (Jack Creek headwater spring), these two aquatic features are approximately 100 meters apart (Figure 2). Hughes Place Pond is likely an anthropogenic structure created when the site was used as a timber mill, or it was likely modified to meet milling needs. The FS manages vegetation in the action area, and surrounding landscape, to promote resilient forest conditions in ecologically appropriate settings while maintaining CRLF habitat suitability (i.e., primary constituent elements). There is a substantial checkerboard of private lands surrounding the action area, especially to the south, which appear to be managed primarily for timber production (based on aerial imagery). The majority of these private lands are downstream of the action area or located in subwatersheds that do not drain through the action area.

The Camp Fire started on November 8, 2018 near Pulga in the Feather River Canyon and quickly

spread into several communities (e.g., Paradise, Magalia and Concow) causing extensive and widespread loss of life and damage to infrastructure and buildings. The fire was contained 17 days later after burning >153,000 acres. The Camp Fire burned through the action area before it was contained, approximately 300 meters distance from the action area, along National Forest Service System road 23N28 (Figure 2). FS biologists have not been able to safely access the action area since fire containment, but soil burn severity mapping indicates roughly one-third of the action area burned at low severity (3.5 acres) and two-thirds burned at very low severity or was unburned (6.1 acres). This same general burn pattern also was evident throughout the two subwatersheds surrounding the action area (French and Chino Creeks, HUC 12 - Level 6). That is, the forest predominately burned at very low severity or was unburned, with fewer areas burned at low severity. Less than a dozen small (< 25 acres) isolated patches of forest in surrounding subwatersheds did burn at moderate severity, but the nearest patches of forest to burn at high severity were 4-5 kilometers from the action area. Based on soil burn severity mapping and the lack of need for fire suppression activities in the area, significant resource damage resulting from the Camp Fire (and fire management activities) is not likely, nor suspected, in the action area. When the Camp Fire ignited, FRRD staff were in the early planning phases for a fuels reduction project in the French Creek subwatershed, which overlaps the eastern half of the BUT-1 critical habitat unit. The French Creek vegetation management planning effort had not yet identified potential treatment areas before burning during the Camp Fire. The FS has not completed post-fire reconnaissance of the area, but salvage operations are most likely to be proposed and implemented within the Camp Fire area. Future salvage operations will not be planned in the action area, and any unrelated future salvage or green forest vegetation management projects proposed in the surround landscape that are capable of impacting threatened, endangered, and proposed species or critical habitat will be submitted for formal or informal consultation.

Trespass marijuana cultivation has become a forest-wide concern on PNF resulting in numerous threats to terrestrial and aquatic natural resources and humans. Reservoir development and water diversion (via complex pipe systems) for irrigation significantly modify watersheds and refuse associated with cultivation camp sites pollute forests and streams. Hazardous materials (e.g., rodenticides) are commonly found in trespass cultivation camp sites threatening human and wildlife safety. Using boots on the ground coupled with either air or ground extraction operations, FS and partner organizations primarily reclaim trespass cultivation sites by restoring the diversion of water from springs and streams and removing miles of irrigation pipe from the landscape while disposing of tons of refuse associated with cultivation camps. During 2018, >11 miles of stream habitat was restored on PNF across 14 subwatersheds (HUC 12 – Level 6). The total extent, and growth rate, of trespass marijuana cultivation on PNF is unclear, as attempts to quantify such illegal activities is typically neither accurate nor precise. Regardless, this natural resource issue appears to be persisting on PNF, at a minimum. There has been no indication of illegal marijuana cultivation in the action area; however, it also does not appear that any portions of the PNF landscape are exempt from, or off-limits to, trespass cultivation.

Ongoing invasive plant treatments in and around the action area involve hand-pulling and double-bagging weeds for offsite disposal, or clipping weeds with hand tools and leaving clippings on site to decompose (e.g., blackberry). FS biologists undertake invasive plant treatments on the FRRD and wildlife biologists with extensive experience working with CRLF

are intimately involved in weed treatments within and adjacent to occupied habitat. The berms along County Roads have been treated with herbicides to control vegetation in Butte County during the past (personal observation), but there are no County Roads within three kilometers of the action area. Past and ongoing FS invasive plant treatments in and around the action area may cause short-term disturbance to wildlife, but these treatments also limit weed population growth in the area.

California Red-legged Frog and Designated Critical Habitat

Demographic parameters have not been estimated for the Hughes Place population, but the site was likely occupied at the time of listing and although the population is small (almost certainly < 50 individuals, and likely half that number) it appears to be self-sustaining (active reproduction and multiple life stages and age classes observed over the last 20 years). Typically, male frogs are calling at Hughes Place Pond in February, egg masses have been observed in March and tadpoles in April-May, with the first metamorphosing frogs appearing in July each year.

Although Hughes Place Pond (aquatic breeding habitat) may be perennial in wet years, it commonly is intermittent, drying out in late summer or early autumn. The movement ecology of CRFL's at Hughes Place follows the general pattern of frogs residing in the pond during winter, spring and summer, and migrating to Jack Creek headwater spring when the pond completely dries in autumn. Frog movements away from the pond typically occur during the first 0.5 centimeter of autumn rain (September-November), and frogs generally exhibit limited movement within aquatic non-breeding habitat (Jack Creek headwater spring) before returning to Hughes Place Pond, after rain water has filled the pond to approximately 60 centimeters depth. Aside from migrating through upland dispersal habitat (Primary Constituent Element, Figure 2), no significant terrestrial movements away from aquatic features have been observed at the site.

Past, present and future federal, state, local, private, or tribal activities on the landscape are not likely to have significant impacts on habitat quality or quantity in the action area, nor are such activities suspected to impact frog population persistence. The action area is remote and entirely on Forest Service System Lands. FS activities are designed to promote resilient forest conditions in ecologically appropriate settings while maintaining CRLF habitat suitability (i.e., primary constituent elements). Aside from vegetation management activities on adjacent public and private lands, the second most likely FS activity to impact the action area (and species) has been, and will likely continue to be, road system improvements and non-system road decommissioning, which benefit the species and its critical habitat via improved watershed condition and function. Unauthorized off-highway vehicle use in the action area has damaged resources in the past (personal observations), and recreation enforcement in this remote area will continue to prove challenging in the future. However, we aim to increase deterrence measures at the conclusion of the proposed project, by placing boulders and large down logs across user created trails and access points into Hughes Place.

Pacific Fisher

The action area is within a well-documented gap in western fisher distribution, and surrounding habitat in the French Creek subwatershed (HUC12 – Level 6) is assumed to be unoccupied as no fisher have been detected in the action area or surrounding landscape during the past 90 years.

Fishers reintroduced on private lands approximately 15 kilometers from the action area have not been observed moving toward the action area and represent the nearest fisher population. Past and present federal, state, local, private, or tribal activities on the landscape may have led to, and maintain, the disconnected fisher range we observe today, but ongoing and future FS activities in the action area and on adjacent lands have and will continue to benefit fisher habitat by decommissioning non-system roads (thereby reducing habitat fragmentation) and perpetuating resilient forest conditions. Assessing potential impacts of vegetation management on adjacent private lands is more challenging, but fisher reintroductions on private lands in the region indicates at least some land owners are interested in fisher recovery efforts.

VI. EFFECTS OF THE ACTION

The effects of proposed restoration on species and habitat was assessed across the entire action area, within three activity zones (i.e., Temporary foot trail, Temporary road, Pond construction zone) and for all four primary constituent elements of CRLF critical habitat (aquatic breeding, aquatic non-breeding, dispersal and upland habitat) within the action area.

Temporary foot trail

FS staff will access the site for five consecutive days during implementation via a temporary foot trail originating along the 23N28 road and terminating in upland habitat above Hughes Place Pond (aquatic breeding habitat). The foot trail traverses 1.8 acres of upland habitat for the CRLF and 0.8 acres of suitable habitat for the fisher (Figure 2). There is potential for direct effects (mortality, harassment) to CRLF if an individual should make a terrestrial foray into the foot trail activity zone. The likelihood of a frog foraying into the temporary foot trail activity zone is extremely low as frogs tracked via radio-transmitters at the site did not make forays > 20 meters away from aquatic habitats except when migrating between breeding and aquatic non-breeding habitats (i.e., within dispersal habitat, Wildlife Research Associates 2008), and the temporary foot trail terminates approximately 35 meters north of CRLF dispersal habitat (Figure 2). Risk of direct effects to CRLF will be highest near the terminus of the temporary foot trail, near aquatic breeding habitat. However, the trail terminates 20 meters distance from aquatic breeding habitat and CRLF awareness signage will be installed along the aquatic habitat boundary near the terminus of the foot trail prior to the start of the project (conservation measure 3b). Extremely limited frog use of upland habitat during the implementation period, in conjunction with daily surveys and frog awareness briefings to implementation staff (conservation measures 3a, j), and signage near high risk areas (e.g., at the foot trail terminus) should effectively minimize risk of direct effects to frogs along the temporary foot trail. No direct effects to fisher are anticipated in the temporary foot trail activity zone as fisher do not currently occupy the site and a relatively short implementation period (five days) coupled with human travel along the trail being the only activity in this zone would not likely result in direct effects to any fisher that should colonize the action area. A limited operating period would be implemented if fisher should colonize the site and a den is discovered within one kilometer of the action area (conservation measure 2b).

There is slight potential for indirect effects to both fisher and CRLF as a result of temporary foot trail use. Fisher prey could behavior may be impacted by short-term disturbance along the foot trail and this could impact fisher foraging success or efficiency should fisher colonize the action area before or during implementation. Ground disturbance along the temporary foot trail may

slightly increase sediment delivery to Hughes Place Pond; however, placement of sediment catchment devices (conservation measure 3l) and adherence to FS Best Management Practices (conservation measure 3f), daily water quality assessments (conservation measure 3n) and reseeding disturbed ground with material collected from adjacent native vegetation (conservation measure 4e) should adequately mitigate potential increases in sediment delivery to Hughes Place Pond, or at least quickly identify any soil mobility issues that may develop during implementation and enable FS staff to rapidly respond.

Temporary road

FS staff will partially reopen a historic road that has grown over to provide heavy equipment (excavator and backhoe) access to the site on a Monday and egress from the site on a Friday (or an earlier day in that same week). The temporary road activity zone originates at one end of the 22N77X road (southern border of section 27) and terminates at the pond construction zone, traversing CRLF upland habitat (1.9 acres total area) adjacent to aquatic non-breeding habitat (Jack Creek headwater spring) and frog dispersal habitat (Figures 1-2). The temporary road activity zone does not overlap high quality fisher habitat, but it is adjacent to suitable fisher habitat (Jack Creek headwater spring). A handful of small-diameter trees (<38 centimeters) or large shrubs may need to be removed along the temporary road to provide large equipment access, and the temporary road will be blocked (made impassable via log and bounder placement) post-implementation. Existing vegetation conditions will not significantly change as a result of using this temporary road to provide site access and egress for an excavator and backhoe. No heavy equipment will be necessary to temporarily open the historic logging road. Reconnaissance revealed that only a handful of small-diameter trees (<38 centimeters) or large shrubs may need to be removed (by hand) along the temporary road to provide large equipment access, and the temporary road will be reclaimed and blocked (made impassable via log and bounder placement) post-implementation.

There does not appear to be potential direct effects to fisher in the temporary road activity zone, as fisher do not currently occupy the site and the type and location of work coupled with a relatively short implementation period (five days) would not likely result in direct effects to any fisher that should colonize the action area. A limited operating period would be implemented if fisher should colonize the site and a den is discovered within one kilometer of the action area (conservation measure 2b). However, there is low potential for direct effects (mortality, harassment) to CRLF if an individual frog should make a terrestrial foray from Jack Creek headwater spring onto the temporary road while FS staff are using the road to access the site on a Monday or while leaving the site at the end of the week (when implementation is complete). Although completely within upland habitat, the temporary road activity zone boundary is approximately 10 meters from aquatic non-breeding habitat (Jack Creek headwater spring, Figure 2). The likelihood of a frog foraying into the temporary road activity zone (upland habitat) is extremely low as frogs tracked via radio-transmitters at the site did not make forays > 20 meters away from aquatic habitat except when migrating between breeding and aquatic non-breeding habitats (i.e., within dispersal habitat) and most frogs typically exhibited terrestrial movements of < 6 meters from aquatic habitat (Wildlife Research Associates 2008). Further, frogs will not likely occupy Jack Creek headwater spring (i.e., aquatic habitat adjacent to the temporary road) during implementation as frogs generally remain in Hughes Place Pond during summer, until autumn rains arrive (Wildlife Research Associates 2008). Should an individual

occupy Jack Creek headwater spring during implementation, there appears to be little chance of such a frog moving considerable distances, as frogs generally exhibited limited movement up- and down the spring (e.g., 10 meters) before returning to Hughes Place Pond during early winter; however, one male did move approximately 100 meters while occupying the Jack Creek headwater spring during 2007 (Wildlife Research Associates 2008). This relatively mobile male moved downstream, away from the temporary road activity zone. The Temporary road continues past aquatic non-breeding habitat along the edge of frog dispersal habitat before terminating in the pond construction activity zone (Figure 2). Frogs will not be using dispersal habitat during project implementation, so we expect no direct effect to frogs as a result of the temporary road running adjacent to dispersal habitat.

There would not likely be any negative indirect effects to fisher associated with work in the temporary road activity zone, else effects would be insignificant and discountable, as existing vegetation conditions will not significantly change within the activity zone. Should fisher colonize the action area, project subsides (i.e., wetland development) would benefit fisher and their prey. Project activities in the temporary road activity zone may indirectly impact CRLF by increasing soil mobilization and deposition in aquatic non-breeding habitat, as the temporary road (in upland habitat) passes approximately 10 meters from Jack Creek headwater spring (Figure 2). However, placement of sediment catchment devices (conservation measure 3l), adherence to FS Best Management Practices (conservation measure 3f), daily water quality assessments (conservation measure 3n) and reseeding disturbed ground with material collected from adjacent native vegetation (conservation measure 4e) should adequately mitigate potential increases in sediment delivery to Jack Creek headwater spring, or at least quickly identify any soil mobility issues that may develop during implementation and enable FS staff to rapidly respond.

Pond construction zone

The pond construction zone (1.2 acres total) overlaps both upland (0.8 acres) and dispersal (0.4 acres) habitat for CRLF and is adjacent to occupied aquatic breeding habitat (Hughes Place Pond, Figure 2). It appears that approximately half (0.6 acres) of the pond construction zone drains into Hughes Place Pond with the other half of the zone draining to Jack Creek headwater spring (Figure 2). Within the pond construction zone, two ponds (shallow basins, deepest in the center, < 20 meters in diameter) will be developed approximately 50 meters distance from Hughes Place Pond using an excavator and backhoe (at two of three sites identified in the action area, Ponds #1-3, Figure 2). Construction will involve reshaping and compacting soils onsite with heavy equipment, placement of an aquatic-safe liner and matching 16 oz. geotextile pad on top of the excavated and compacted depression, followed by placing six inches of topsoil, and woody debris, over the liner-covered and compacted soil. Shrubs and small diameter trees removed during implementation, and naturally occurring large down logs in the area, will be placed in and around ponds after construction is completed to meet wildlife habitat needs (e.g., basking sites) and to assist in controlling motor vehicle access to the area. Disturbed ground within the action area will be reseeded with material collected from adjacent native vegetation.

The highest likelihood of direct and indirect effects to CRLF during implementation of the proposed project will occur within the pond construction zone because of intense ground disturbance associated with pond excavation, including noise and vibration disturbance in

adjacent breeding (10 meters from construction zone edge) and non-breeding (15 meters from construction zone edge) aquatic habitats. As previously discussed, CRLF's are not expected to occupy aquatic non-breeding habitat (Jack Creek headwater spring) during implementation, and frogs occupying Hughes Place Pond generally occur within six meters of water (Wildlife Research Associates 2008). Although pond construction may harass individual frogs in Hughes Place Pond, the limited implementation window (five days) will minimize the duration of negative impacts. There is relatively high potential for direct effects (mortality, harassment) to CRLF if an individual should make a terrestrial foray from Hughes Place Pond into the pond construction zone during implementation. Although completely within upland habitat, the pond construction zone overlaps dispersal habitat (0.4 acres) between non-breeding and aquatic breeding habitats (Figure 2). Frogs are not expected to migrate between aquatic habitats during project implementation; however, implementation activities may elicit aberrant, or escape, behaviors in CRLF's, including movements into dispersal habitat (i.e., the pond construction zone). The likelihood of a frog foraying into the pond construction zone (upland habitat) is not expected to be high, as frogs rarely make such movements during the summer months and generally remain in Hughes Place Pond during summer, until autumn rains arrive (Wildlife Research Associates 2008). CRLF awareness signage (conservation measure 3b) will be installed along aquatic habitat boundaries near the pond construction zone prior to the start of the project. The project was specifically designed to benefit CRLF while minimizing potential negative direct effects by implementing the project: when frogs are most closely-tied to Hughes Place Pond, conducting daily frog surveys and frog awareness briefings (conservation measures 3a, j), placing frog awareness signage near high risk areas (conservation measure 3b), and maintaining a FS biologist presence in the action area during all activities (conservation measure 3e).

There is potential for indirect effects CRLF as a result of pond construction activities. Ground disturbance within the pond construction zone will increase the mobility of soil and potentially increase sediment delivery to Hughes Place Pond and Jack Creek headwater spring; however, placement of sediment catchment devices (conservation measure 3l) and adherence to FS Best Management Practices (conservation measure 3f), daily water quality assessments (conservation measure 3n) and reseeding disturbed ground with material collected from adjacent native vegetation (conservation measure 4e) should adequately mitigate potential increases in sediment delivery to aquatic breeding and non-breeding habitats adjacent to the pond construction zone, or at least quickly identify any soil mobility issues that may develop during implementation and enable FS staff to rapidly respond.

The construction zone does not overlap with high quality fisher habitat and no direct effects to fisher are reasonably expected as a result of pond construction activities, as fisher do not currently occupy the site and the relatively short implementation period (five days) and small footprint for ground disturbing activities would not likely result in direct effects to any fisher that should colonize the action area. A limited operating period would be implemented if fisher should colonize the site and a den is discovered within one kilometer of the action area (conservation measure 2b). There is slight potential for indirect effects to fisher as a result of pond construction, as prey behavior in habitat adjacent to the pond construction zone may be impacted by short-term disturbance during pond construction, which could negatively impact fisher foraging success or efficiency, should fisher colonize the action area before or during implementation. However, pond development will provide resource subsides to fisher and their

prey, should the species recolonize the area.

Proposed pond development at Hughes Place is needed to increase available aquatic breeding habitat and increase dispersal habitat quality between the existing breeding pond and adjacent aquatic non-breeding habitat (i.e., Hughes Place Pond and Jack Creek headwater spring, respectively, Figure 2). Hughes Place Pond may completely dry during late-summer and early-fall potentially stranding frogs that have been unable to complete metamorphosis before aquatic conditions deteriorate. This was apparently the situation during California's most recent drought (e.g., 2011-2017). Ponds proposed for development also will be ephemeral, gradually drying over the summer before filling again during the winter rainy season. However, we aim to maintain aquatic conditions for longer durations of the annual cycle by using an aquatic-safe liner in developed ponds, providing greater time for frogs to complete metamorphosis before migrating to adjacent aquatic non-breeding habitat. Proposed project subsidies (> quantity of aquatic breeding habitat, > quality of dispersal habitat) should increase frog productivity at Hughes Place (BUT-1) and generally promote recovery of the species through critical habitat restoration efforts. Direct and indirect disturbance to CRLF and its habitat will be punctuated (five days). Although project activities are not insignificant, a truncated implementation period during the most appropriate portion of the annual cycle significantly reduces risk to the species while providing short- (winter 2019-2020) and long-term benefits to the species. Numerous conservation measures to protect the species and its habitat will not result in discountable effect to CRLF and its critical habitat, but they should effectively mitigation potential implementation threats, or provide opportunity to identify and partially mitigate any issues that should arise during implementation.

Invasive plant treatments

Ongoing weed treatments within the action area are part of the forest's annual program of work. Treatments involve hand-pulling weeds before they set seed and hand-pruning larger species (e.g., blackberry) with clippers to the stump. FS biologists (with CRLF identification training) undertake invasive plant treatments on the FRRD and wildlife biologists with extensive experience working with CRLF are intimately involved in weed treatments within and adjacent to occupied habitat. Because of the strongly aquatic nature of CRLF and the extreme precautions taken by FRRD biologists when conducting hand-treatment of weeds near amphibian habitat, potential direct and indirect impacts to CRLF are nearly nonexistent and certainly not consequential. Hand treatments to control invasive plant populations in the action area are expected to continue indefinitely, or until populations are extirpated. There are no anticipated direct or indirect effects to fisher resulting from ongoing weed treatment in the action area. Past and ongoing FS invasive plant treatments in and around the action area may cause short-term disturbance to wildlife, but these treatments are limiting weed population growth in the area and therefore providing subsidies to all native species.

Impacts to critical habitat primary constituent elements throughout the action area

The action area (9.6 acres) is completely within critical habitat and contains all four primary constituent elements (Aquatic breeding habitat = 0.4 acres, Aquatic non-breeding habitat = 0.6 acres, Dispersal habitat = 0.5 acres, Upland habitat = 8.1 acres).

Aquatic breeding and aquatic non-breeding habitat

Activity specific analyses revealed indirect impacts via increased soil mobility in upland habitat and deposition in aquatic habitat was likely the most serious risk to aquatic habitat in the action area. Conservation measures are expected to adequately mitigate potential increases in sediment delivery to aquatic features during (conservation measures 3l, 3f) and after (conservation measure 4e) implementation, and quickly identify any soil mobility issues that may develop during implementation (conservation measure 3n). Proposed pond construction will approximately double the amount of aquatic breeding habitat in the action area (from 0.8 to 1.6 acres), and the use of aquatic-safe liners in developed ponds should increase habitat quality by retaining water for longer periods of the annual cycle. Overall, short-term risks resulting from project implementation are relatively trivial compared to significant short- and long-term benefits to aquatic breeding habitat. Substantial impacts to aquatic non-breeding habitat are not expected during project implementation; however, one project goal is to reduce off-highway vehicle use in the action area after implementation by placing boulders and large down logs across user created trails and access points into Hughes Place, which would reduce unauthorized vehicle access in and around aquatic non-breeding habitat.

Dispersal habitat

Activity specific analyses revealed proposed pond construction will transform 0.8 acres of dispersal habitat from dry meadow to wetland habitat, and this transformation will increase dispersal habitat quality between the existing breeding pond and adjacent aquatic non-breeding habitat (i.e., Hughes Place Pond and Jack Creek headwater spring, respectively, Figure 2).

Upland habitat

Activity specific analyses revealed upland habitat in the action area will experience punctuated disturbance (five days), primarily along the temporary foot trail and road and in the pond construction zone (Figure 2). Pond construction will transform 0.8 acres of upland habitat to aquatic habitat. However, remaining upland habitat will not significantly change as a result of project activities and disturbed ground within the action area will be reseeded with material collected from adjacent native vegetation. Minor short-term changes to upland habitat resulting from implementation (e.g., disturbed soil) are not expected to remain in the action area one to two years post implementation.

Western Pond Turtle monitoring

Although no by-catch of any CRLF life-stages was reported during prior dip-netting activities at Hughes Place Pond (Wildlife Research Associates 2008), the greatest direct threats (harassment and mortality) to CRLF during proposed pond turtle monitoring will be incidental capture while dip-netting male turtles in the pond. It is estimated that no more than five total days of dip netting will be necessary to capture five male turtles appropriate for GPS tracking. Prior to and during any turtle monitoring activities a FS biologist will survey the area for CRFL to avoid harassing any individuals (conservation measure 5a). Extreme care will be taken to avoid by-catch of all CRLF life-stages (egg, tadpole, undergoing metamorphosis, and adults) while dip-netting male turtles in Hughes Place Pond (conservation measure 5d). If CRLF are found during the implementation of turtle monitoring, activities will stop around the individual(s) until they move out the area or until they are re-located to a safe place by FS biologists; the relocation site will be within suitable CRLF habitat and will not exceed the natural dispersal distance the animal would travel (conservation measure 5e). Compared to dip-netting males. There is a much lower

risk of negative direct impacts while capturing female turtles through visual surveys during evening terrestrial nesting forays (Christie and Geist 2017). Females located while foraying into upland habitat will be approached with caution to minimize disturbance to any other turtles or CRLF that may have moved (unnoticed) into the area during the foray survey (conservation measure 5b). There will be increased risk of negative direct effects (harassment or mortality) to CRLF as a result of increased human activities associated with tracking marked turtles in Hughes Place (2-3 biologists will be working on the ground during turtle marking and tracking activities). However, the GPS-UHF loggers (Alle-300, Ecotone Telemetry, Sopot, Poland) we propose to deploy on turtles (N = 5 transmitters per sex) will record locations at defined intervals within daily duty cycles, and store locations until a connection is established with a hand-held or stationary base station to which locations are remotely transmitted (EP-BS, Ecotone Telemetry). We propose to use these particular GPS-UHF units to not only increase the quality and quantity of data acquisition, but also to reduce time spent chasing turtles across the landscape, and potentially impacting CRLF. By remotely downloading locational data, human impacts in the action area will be significantly reduced relative to more commonly employed VHF-radio transmitter methods, and thereby reduce probability of directly impacting CRLF during turtle monitoring activities. No significant indirect effects to CRLF are reasonably suspected during western pond turtle monitoring.

The proposed restoration project will construct two ponds within potential turtle nesting habitat (pond construction zone, Figure 2). Proposed activities in the temporary foot trail and road activity areas also may disturb nesting turtles by harassing females foraying into upland habitat to nest or through accidental nest destruction; however, ground disturbance associated with pond construction will likely pose the greatest direct threat to western pond turtle in the action area. Western pond turtle nesting phenology and space use have not been described at Hughes Place, but turtles in coastal California mate in April and May, nest from June through August, with nestlings emerging in March or April the following spring (Holland 1985, Rathburn et al 1992, Christie and Geist 2017). Concurrent with daily CRLF survey, FS biologists will search the action area for pond turtles, taking care to assist female turtles attempting to foray into nesting habitat but hindered by implementation activities. Any dispersing female turtles attempting to enter the pond construction zone during implementation will be relocated in similar, but distant, habitat and oriented away from the pond construction zone, with hope that foraying females will pursue alternative nest sites in upland habitat not under construction.

Developing two ponds at Hughes Place will provide significantly more aquatic habitat for western pond turtle and CRLF, both in the short- and long-term. Although turtle movement ecology is not known at Hughes Place, it is quite likely that implementation (target dates: June 24-28th, 2019) will temporally and spatially overlap with turtle nesting activity. Although the project will be implemented over a relatively short period of time (five days) to reduce temporal impacts to all wildlife species (including pond turtle), with FS biologists on site at all times to mitigate resource concerns (conservation measure 3e), there is a high probability that the project will have negative direct effects on the western pond turtle (harassment of nesting females, destruction of nests or individuals). Proposed pond turtle monitoring was conceived to address three general needs, or questions: 1) acquire baseline space use and habitat selection data for pond turtles in the northern Sierra Nevada, 2) evaluate pond turtle use of wetland habitat developed to assist recovery of the CRLF, 3) address two of the highest priority research/science

needs identified by the California *Emys* (*Actinemys*) *marmorata* Working Group (habitat selection and modeling to direct surveys). Proposed monitoring is aimed at providing requisite ecological knowledge to inform future conservation efforts throughout the species range while evaluating turtle use of constructed ponds relative to existing aquatic features in the action area. Proposed monitoring will not compensate for the high likelihood of disturbance to western pond turtles during project implementation, but it will provide a means of assessing interspecies benefits of the project and hopefully inform ongoing evaluation of this candidate species and future conservation efforts.

VII. CONCLUSION

The California red-legged frog critical habitat restoration project **May Affect, and is Likely to Adversely Affect *Rana draytonii*, but is Not Likely to Destroy or Adversely Modify designated critical habitat** (BUT-1) for the species. To the contrary, project implementation will approximately double the amount of aquatic breeding habitat available in the action area and significantly improve dispersal habitat quality. We anticipate frogs will experience beneficial project effects within a year of implementation and these subsidies will continue indefinitely. The California red-legged frog critical habitat restoration project is **Not Likely to Jeopardize the Continued Existence *Pekania pennanti***, and project subsidies (creation of wetland habitat) will benefit any native wildlife that should occur in the action area.

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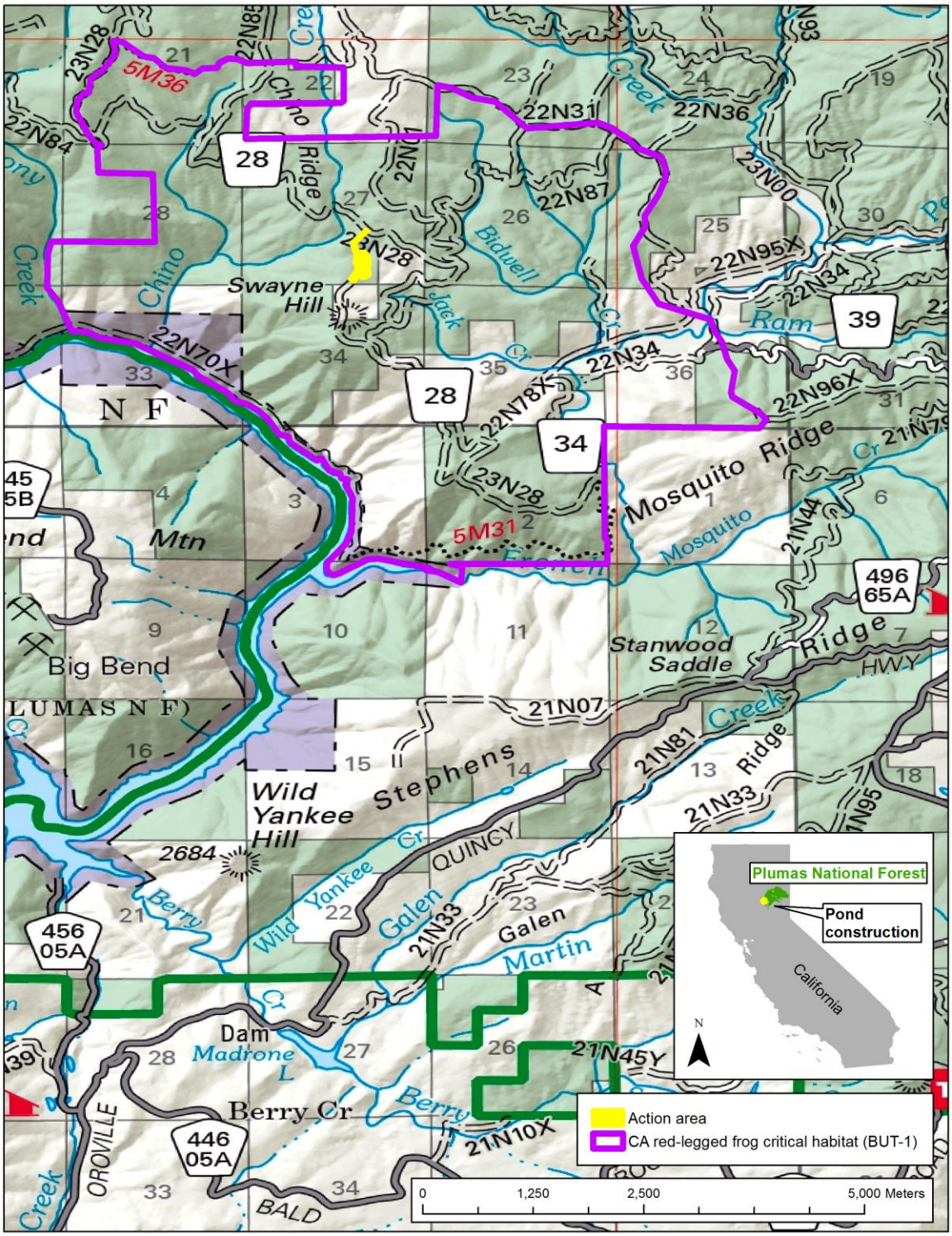

Figure 1. California red-legged frog critical habitat unit BUT-1 and action area for pond construction on Feather River Ranger District, Plumas National Forest.

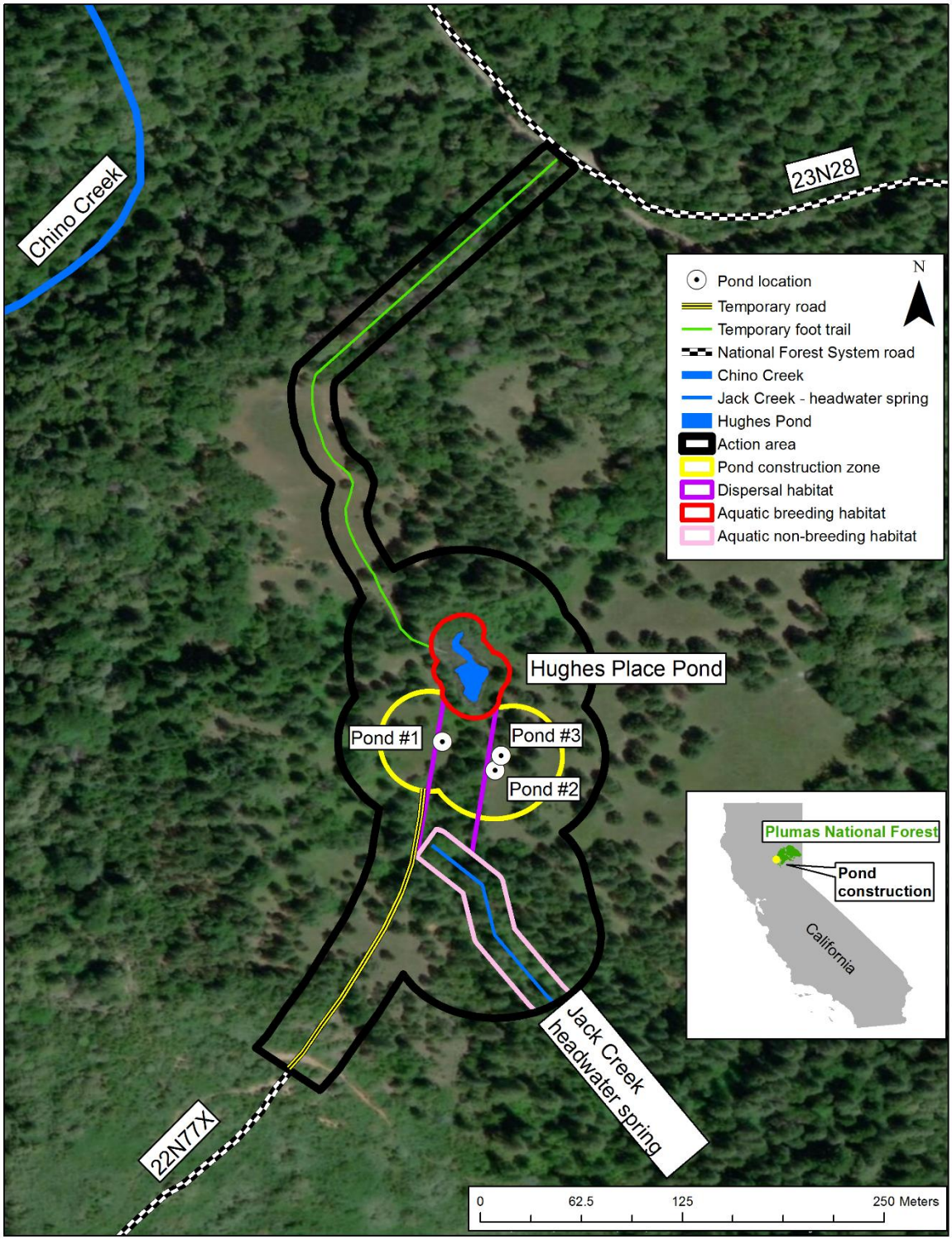

Figure 2. California red-legged frog habitat, action, and pond construction sites in and around the Hughes Place population in critical habitat unit BUT-1, Feather River Ranger District, Plumas National Forest.