2022 California Forests: Targeted Headwaters Resilience Implementation and Monitoring

2022 RFP APPENDIX

OVERVIEW

This RFP Appendix contains summaries of specific project needs and ideas to guide applicants when developing proposals and provides insight into the current needs expressed by regional land and wildlife managers. Applicants may choose to develop one or more of the recommendations found in the project descriptions below, or simply use these summaries to prompt other proposal ideas that align with goals for NFWF's 2022 Targeted Headwaters Resilience RFP. Applicants are not required to propose projects that respond to RFP Appendix, however the items below do indicate clear priorities for some of the key forest resilience areas. Note, not all areas detailed in the RFP have projects described in this appendix. Priority projects in this appendix include project needs for 1) Transportation Infrastructure and Aquatic Organism Passage Improvements on USFS Lands, and 2) Fuels Management Project Monitoring and Species Response.

Questions about potential project proposals should be directed to NFWF Program Director, Angie Carl.

Transportation Infrastructure and Aquatic Organism Passage Improvements on USFS Lands

The US Forest Service is seeking partnership assistance to address transportation infrastructure repairs and aquatic organism passage improvements on Forest Service-lands throughout Region 5 (California). In particular, the following projects were brought forward as high priority considerations for potential applicants. Project needs are listed by the National Forest where they would occur.

Eldorado National Forest

King Fire Significant Erosion and Potential Erosion Sites Project – Supplement
The King Fire Significant Erosion and Potential Erosion Sites (KFSEPES) Project is a large-scale project on the Eldorado National Forest that was initiated in 2019. The purpose of the KFSEPES Project is to fix select priority SEPES on the Eldorado National Forest that were identified on haul routes associated with timber sales implemented under the King Fire Restoration Project (KFRP) Record of Decision of September 2015. The KFRP decision included 91 miles of road reconstruction and 169 miles of road maintenance on permanent roads, however, additional damage was sustained

following a 2016/2017 winter characterized by a series of atmospheric rivers that caused widespread flooding across the state and additional storm events in the winter of 2017/2018.

This project will complete a portion of the original KFSEPES Project proposal specific to Forest Service Roads (FSR) 11N80 and 12N34. Priority needs include design and implementation work that is expected to include road drainage replacement and improvements, road reconditioning, debris removal, excavation and embankment reconstruction of the fill slope, and slope protection.

SEPES were identified as required by Central Valley Regional Water Quality Control Board (CVRWQCB) Order R5/2017-0061 (Waste Discharges Requirement General Order for Discharges Related to Timberland Management Activities for Non-Federal and Federal Lands) and are defined in the General Order (Attachment A, pg. 2; and Information Sheet, pg. 16). The determination of which SEPES to include in the KFSEPES Project was based mainly upon current and potential future impacts to water quality (i.e. the amount of sediment transported to streams), with preference given to perennial and intermittent streams. The roads selected were also determined to be the most important for access across the Forest (particularly for fire fighters and other emergency personnel), and in many cases are the only routes into large areas of the forest.

The identified road repairs and improvements fall under a Categorical Exclusion for which a "case file and Decision Memo are not required: FSH 1909.15, section 32.12, "(4) Repair and maintenance of roads, trails, and landline boundaries." 36 CFR 220.6(d)(4). A review by an interdisciplinary team was completed to validate that there would be "no extraordinary circumstances." The project also qualified for a Categorical Exemption under the California Environmental Quality Act (CEQA). Additional information for this project can be found here.

Klamath National Forest

Kelly Gulch/Tiger Fork Stream Crossing Improvement
Klamath National Forest seeks to replace the existing culverts at the Kelly Gulch and Tiger Fork crossings with an open bottomless arch culvert to allow unrestricted passage of Coho salmon and steelhead trout. These improvements will restore access to 0.4 miles of habitat necessary for all life stages of trout and SONCC Coho salmon upstream of the Kelly Gulch crossing, and an additional 0.06 miles of habitat upstream of the Tiger Fork crossing.

Replacing the culverts at each crossing with an open bottomless arch culvert will increase the amount of accessible spawning, rearing and refugia habitat for salmon and trout in the Kelly Gulch and Sugar Creek systems and aid in the recovery of Coho salmon populations in the North Fork Salmon River and Scott River watersheds, respectively. These improvements will also allow for sediment and debris to move naturally through the systems during high flow events, greatly reducing the possibility of blockage and subsequent crossing/road failure. The Kelly Gulch crossing is located on Forest Service Road #40N39, and provides important access into the area for cooperators, fire suppression activity, resource protection, and public recreation. Additional information for this project can be found here.

Lovers Road Decommissioning
Klamath National Forest seeks decommission of 3.11 miles of roads to prevent failure and sediment delivery to streams during floods. Work will remove road fills and culverts from stream crossings, outslope road surfaces, and remove unstable fills. This project is a requirement of the North Coast Regional Water Board as a condition for enrolling the Lovers Canyon Project under the Waiver of Waste Discharge Requirements. The project would treat 16 legacy sediment discharge sites that are at high risk of failing during floods. The primary benefit is a reduction in fine sediment in downstream salmon habitat. Work through this project will complement a 319(h) grant proposal to complete all remaining sediment control work in the watershed. Improvements will aid de-listing from EPA's Section 303(d) list of impaired waters. Additional information includes a location [map](#) and [Lovers Canyon Project EA](#).

Sierra National Forest

Duff Creek Aquatic Organism Passage
Sierra National Forest seeks to construct an AOP (Aquatic Organism Passage), with a bottomless arch culvert (pipe to be provided and delivered by the Forest Service). Other work includes constructing stream simulation, paved approaches to the AOP, and object marker installation. The project also includes the demolition and removal of the existing steel culvert, dewatering and erosion control.

In 2015 The Duff Creek AOP was awarded and a Notice to Proceed Issued (NTP). Submittals were approved for the Bottomless arch culvert and it was delivered. Shortly thereafter a forest closure and stop work order was issued due to fire severity. A stop work order was issued by the CO. After delays the project was unable to commence and has been on pause since. Hazard tree removal may need to be incorporated into the project plans to help prepare the project site. The forest paid for the bottomless arch culvert material and it is stored on the Bass Lake Ranger District. Additional information for this project can be found [here](#).

Fuels Management Project Monitoring and Species Response
Conversations with key regional forest management stakeholders have identified an array of important potential regional fuels monitoring concepts and needs/goals to advance understanding and assessment of forest/fuels management projects and their impacts/effectiveness for at-risk species (e.g. northern spotted owl, California spotted owl, fisher, etc).

Effect of Fuels Treatments on Forest Prey Base
For forest predators such as spotted owls and mustelids, the extent (e.g., % of area) and intensity (e.g., degree of habitat change) of fuels treatments are useful metrics for quantifying potential impacts on prey and foraging. Understanding the relationship between the planned habitat changes in foraging habitats and any anticipated changes to the prey base would be useful to project planners. Monitoring project would design methodology to evaluate prey species and associated habitat before and after fuels treatment or fuel break construction, in comparison to control areas, while accounting for variability across sampling sites and local forest conditions. Project would potentially have value for both short-term, site specific effects (There is an immediate need for these kinds of information for some

species, such as Coastal Marten), and could be coupled with meta-analysis given the abundance of published papers on forest thinning, small mammal and bird responses to habitat changes, etc. to generate general regional guidelines and/or recommendations for forest managers. Project design would necessarily be at the appropriate scale to account for prey occupancy, density, and/or movement within the landscape, not just within treated area(s).

Use existing high resolution wildlife GPS data to examine landscape pattern effects on wildlife for optimization of fuel treatment locations

Multiple years of GPS data exists for species like spotted owls, fisher, and marten, over various landscapes in CA and OR. Combining these data and using them to examine effects of different landscape patterns on demography and/or occupancy of various species, would help land managers optimize placement, timing, and size of various types of fuels treatments. Taking a landscape scale approach to identifying fire risk (and thus fuels treatment needs), and how the needed treatment may affect wildlife if implemented in various areas and configurations, will allow the planning of landscape treatments in a way to meet multiple objectives. This effort would focus on compiling, collating and examining relationships between existing wildlife GPS data and available vegetation data from multiple sources and should not require any new data collection.

Marrying fuels vegetation and wildlife habitat metrics to inform fuel treatment design optimization

While significant study has looked at the effectiveness of fuels treatments in modifying fire behavior and shaping post-fire vegetation outcomes, scientific understanding is much less clear on both (1) effects of fuels treatment on wildlife habitat for sensitive species; and (2) extent to which vegetation must/can be modified to successfully modify fire behavior while minimizing effects to wildlife habitat. This is largely because vegetation metrics used to describe wildlife habitat suitability, wildlife habitat selection, and wildlife habitat – demographic linkages are different than vegetation metrics used to describe fuels inputs to fire risk projections and fire behavior models. In the former, analysis typically relies largely on satellite derived metrics of canopy cover, vegetation type, and tree size (frequently from eVeg, CWHR, and GNN), while the latter often relies on satellite, modeled, or field metrics of fuel type, fuel profile, ladder fuels, canopy base height, and canopy bulk density. Because the two sets of metrics do not coincide, it is very challenging to design fuels treatments, and model their projected effects on both fire

behavior and wildlife habitat simultaneously, which is necessary to optimally design treatments to balance multiple short- and long-term objectives. Broad scale monitoring efforts have examined tradeoffs and co-benefits of fuels treatments on species occupancy over time for some species at the rangewide scale. The broad geographic range and resolution of utilized data often necessitates the model include certain assumptions of how fuels treatments affect both species habitat and fire severity. With new fine-scale data coming online (like the CA Forest Observatory, LiDAR and SilviaTerra), there may be an excellent opportunity to integrate this additional data and refine generalized model results.

Addressing this question to improve existing models for at least one of the region's key species of interest would be highly valuable to the USFS and regional land managers.

Assessing effects of different types of fuels treatments across ownerships using existing long-term population information:
Using existing long-term and broad scale population/demographic information, assess the effects at the landscape scale of different types, configurations, intensities, patterns, and timing of fuels treatments on one or multiple wildlife species across multiple land ownerships. Assessments of fuels treatments in general (combined categories of many different types of work) at small scales (the scale of a few to tens of individuals) and over short time periods (one to a few years post treatment), exist and answer some preliminary questions. However, landscape scale siting, design, and pace of implementation of broad networks of fuels reduction management across multiple ownerships necessitate information at broader scales and, at the same time, with more specificity to inform optimal design, timing, and pattern to meet multiple objectives.