FY24-25 Forest Health Research Program Grant Awards

Research Project Type	Proposal Name	Recipient	Project Description	Funding Request
General	Assessing Southern California Chaparral Fuel Treatment Outcomes	Carla D'Antonio, The Regents of the University of California, Santa Barbara	Currently, fuel treatment in chaparral often leads to undesirable type-conversion to highly ignitable non-native annual grasses. We propose to conduct a spatial analysis on the drivers of post-treatment type conversion. Furthermore, we will evaluate the ability of post-clearing pile burning to favor post-treatment recovery of native species and prevent or reduce subsequent type conversion.	$ 309,107.00
General	Enhancing fuel characterization and recovery following wildfire in the redwood range: preparing for a more fiery future	Kristen Shive, University of California, Berkeley	Wildfire activity and severity is on the rise in coast redwood forests. Although redwoods are adapted to survive severe fire, it can have negative effects on habitat, timber quality and human communities. To support better fuels management in the redwood range, we propose to fill two key knowledge gaps: 1) postfire fuels dynamics and 2) fuel load estimations specific to redwood forests.	$ 679,982.00
General	Restoration of Chaparral Mosaics Post-Wildfire	Don Hankins, Chico State Enterprises	Rediscovering and maintaining a mosaic of culturally significant flora within mixed evergreen scrub communities in high severity areas within the 2024 Park Fire footprint, with a focus on chaparral and oak woodland transition zones. Partnering with the Mechoopda Tribe, we plan to use multiple treatment types to manipulate these communities while studying the influences of these activities.	$ 749,899.00
General	*Projecting responses of California's oak woodlands to restored fire regimes and future climate*	*Lara Kueppers, The Regents of the University of California*	*We will measure prescribed and cultural fire effects on oaks and other culturally important species. We will calibrate a dynamic vegetation model using multi-site observations for oak woodland structure, and for management and wildfire effects. We will run the calibrated model statewide with alternative management and climate scenarios to inform management planning for climate resilience.*	*$ 749,857.00*
Graduate Student	Remote Sensing applications to Detect Home Ignition Zone Mitigations in Northern California	John Stevens, San Jose State University Research Foundation	We aim to assess how well remote sensing can detect hazards and mitigations in the Home Ignition Zone using high resolution aerial imagery, LiDAR data, machine learning image classification, and geospatial analysis to detect hazards and assess mitigation levels. Preliminary findings indicate we can accurately define building footprints, create defensible space zones, and measure fuel spacing.	$ 80,030.00
Graduate Student	Assessing the potential for forest treatments to reduce post-wildfire erosion hazards to drinking water supplies	Mimi Payne, Desert Research Institute	The proposed research aims to guide strategic placement of forest restoration treatments above reservoirs to minimize impacts of post-wildfire erosion to drinking water supplies. The Water Erosion Prediction Project model will be used to simulate and quantify post-wildfire reservoir sedimentation as a function of restoration treatment type, terrain, reservoir proximity, and wildfire hazard.	$ 100,000.00
Graduate Student	Recovery and structure of bird biodiversity in high-severity fire patches	Auxenia Grace Privett-Mendoza, The Regents of the University of California on behalf of its Los Angeles campus	This project will use long-term monitoring data to evaluate how large, high-severity fire patches affect birds. I will examine multiple dimensions of biodiversity, test threshold and site-specific effects, and simulate future climate scenarios. Insight into the patterns and mechanisms underlying post-fire biodiversity will facilitate more informed decisions when defining post-fire management.	$ 99,427.00

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Graduate Student	Preferable burn windows in California: climatology of favorable conditions for managed fire	Ashwin Thomas, UC Merced	We plan to estimate preferable burn windows in California from conditions associated with managed lightning fire and conditions established as favorable for prescribed fire. An empirical estimation of preferable burn windows can support future management decisions to leverage opportunities for lightning fire activity to achieve multiple resource benefit objectives.	$ 99,991.00
Graduate Student	The Impacts of Native Field Soil Ectomycorrhizal Inoculation Treatment on Outplanting Seedlings in the Fire-Impacted Sierra Nevada	Dustin Lower, UC Davis - Department of Plant Biology	This project tests whether live soil microbial inoculation and acetic acid application enhance Douglas-fir seedling establishment and post-fire soil regeneration in severe burn scars. By assessing seedling success, microbial communities, gene abundance, and gene function after two years, this research will provide insight into scalable reforestation strategies.	$ 99,999.00
Graduate Student	Meadow Restoration in the Klamath Mountains: Developing a Multi-Factor Prioritization Methodology	Claire McCoy, The Regents of the University of California	This project would join wildfire models, local knowledge, critical salmonid habitat maps, and meadow inventories to develop a prioritization methodology for meadow restoration projects in the Klamath Mountains. The proposed analysis would highlight regional hotspots where meadow restoration would provide maximum synergistic benefits for fire, drought, and salmonid resilience.	$ 73,844.00
Special Topics	A Cost-Benefit Framework for Evaluating State-Level Fuel Treatment Strategies	Matthew Wibbenmeyer, Resources for the Future	RFF proposes a generalized economic modeling framework to evaluate costs and benefits of state wildfire hazard mitigation strategies that extends the C+NVC model to address fuel treatment planning, incorporating consequences for damages, suppression costs, and choices over managed fire. This research will provide key insights to decision-makers to evaluate and plan fuel treatment projects.	$ 279,166.00
State Forests	Carbon Retention and Resilience in Southern Coast Redwood Forests: The Role of Management, Wood Products, and Wildfire	Anthony Vorster, Colorado State University	This project evaluates selective harvest effects on carbon, structure, and fire resilience in southern coast redwood forests. Using Soquel Demonstration State Forest's harvest history, we integrate field inventory, terrestrial LiDAR, and modeling to assess carbon dynamics, resilience, and harvested wood product storage. Findings will inform climate-adaptive management and restoration practices.	$ 733,095.00
Synthesis and Tool Development	Open Forest Observatory 2.0: A user-friendly platform enabling rapid, low-cost forest and fuel inventory for treatment planning and monitoring by fusing UAV and	Derek Young, The Regents of the University of California, on Behalf of its Davis campus	This project addresses current limitations in forest monitoring and fuel mapping by enhancing the Open Forest Observatory to include user-friendly tools for rapid, low-cost understory inventory using ground-based 360° imagery, complementing existing over-canopy UAV mapping capacity. It also transforms the platform into a modern interactive web app for data processing, sharing, and access.	$ 749,652.00
Synthesis and Tool Development	Scaling Science-Driven Vegetation Treatments through Immersive BurnPro3D Landscapes for CAL FIRE Prescribed Fire Planning and Training	Ilkay Altintas, UC San Diego	BurnPro3D unlocks the use of site specific vegetation and optimal ignition strategies for prescribed burn training, planning and implementation as well as smoke management. We will develop a scalable next-generation vegetation treatment approach at CAL FIRE through burn planning at demonstration state forests, IC training and virtual prescribed fire training modules.	$ 745,000.00
Synthesis and Tool Development	Forest residues utilization in California: knowledge synthesis on carbon benefits and economic effects	Julie Ballweg, USDA Forest Service Forest Products Laboratory	We aim to synthesize knowledge about forest residues utilization alternatives and develop a workbook tool for estimating life cycle assessment-based greenhouse gas emissions and potential benefits of substituting fossil-based equivalents. Additionally, the project will estimate the regional economic effects of identified scenarios for forest residue utilization.	$ 327,676.88