Project ID	Applying Organization & Principal Investigator	Project Title	County	Requested Funds	Brief Project Description	Research Project Type
20-RP-AEU-078	University of California, Riverside Sydney Glassman	Influence of prescribed burn season on tree survival, soil microbial resilience, and carbon cycling in mixed conifer forests	El Dorado	$500,000	We leverage two existing long-term studies, Treatment Alternatives for Young Stand Resilience and Fire-Fire Surrogate, at Blodgett Experimental Forest to determine how prescribed fire season and forest age influence tree survival, soil microbial resilience, carbon strength, and greenhouse gas (GHG) emissions in mixed conifer forests. Our team will address whether conducting prescribed fires in spring vs. fall reduces or exacerbates GHG emissions to help inform forest management plans.	General
20-RP-AEU-182	University of Nevada, Reno Dr. Erin Hanan	Fuel succession: monitoring and modeling ladder fuels to balance fire risk and carbon retention	NV	$499,997	We propose to 1) develop workflows for estimating ladder fuel characteristics from terrestrial laser scans (TLS); 2) use TLS to calibrate and improve fuel succession models; 3) simulate management scenarios and assess how they affect tradeoffs between fire hazard mitigation, C retention, and streamflow across the Sierra Nevada; and (4) use machine learning to analyze model outputs and identify the key factors influencing ecosystem responses to management in different locations.	General
20-RP-HUU-073	University of Washington Dr. Susan Prichard	Restoring Resilient Landscapes in the Western Klamath Region - implications for future fires, vegetation, habitat and carbon dynamics	Humboldt	$499,716	We will use a simulation modeling platform to evaluate how to restore fire in the western Klamath Mountains and explore tradeoffs to carbon, wildfire emissions, and wildlife habitat. Specifically, we will evaluate restoration strategies within a potential operations delineation (PODS) framework and long-term implications for reducing risk to communities, culturally significant resources, and ecosystem values.	General
20-RP-MVU-122	Point Blue Conservation Science Dr. Erin Conlisk	Forecasting the impacts of climate change, land use change, and management on wildfire risk and downstream impacts in Southern California's montane forests and surrounding shrublands	Orange, San Diego, Los Angeles, Riverside, San Bernardino, Ventura	$499,723	Using a vegetation succession model, this project will explore how climate change, management actions, and projected residential growth in the wildland urban interface influence wildfire activity and downstream effects on vegetation type conversion, carbon release, and biodiversity in Southern California forests and shrublands. The resulting maps and spatial products will help managers prioritize locations for conservation action to protect co-benefits to humans and natural resources.	General

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20-RP-MVU-151	The Regents of the University of California, Santa Barbara Dr. Andregg Leander	Timing is everything: Prescribed burn season and the optimization of multiple management objectives	San Diego	$251,289	This project explores how prescribed burns outside of black oak dormancy influence oak health and recruitment. Motivated by the management needs of the Cleveland National Forest, the goal of this project is to quantify potential tradeoffs between lengthening the burn window beyond oak dormancy to ease logistical constraints; retaining high cultural, carbon and habitat value mature oaks; and facilitating oak recruitment for future forest resilience.	General
20-RP-SCU-050	Regents of the University of California Michael Gollner	Approaches to Quantifying Structural Ignition Risk in the Wildland-Urban Interface	Alameda	$498,692	We propose using a combination of empirical, physical, and data-driven techniques to develop approaches to quantitatively model structural ignition by embers as well as structure-to-structure fire spread. These efforts will lead to improved prediction of potential wildfire impacts within the WUI under extreme weather conditions through studying ember generation, lofting, transport and likelihood of structure ignition, both by embers and by structure-to-structure fire spread.	General
20-RP-SCU-105	The Regents of the University of California Dr. John Battles	Colonial-era forests of the Sierra Nevada and Southern Cascade regions: Using archival data to quantify forest structure and composition	Alameda	$208,743	Our goal is to reconstruct the structure and composition of the colonial-era forest across the Sierra Nevada and Southern Cascade bioregions. We will use historical data from the General Land Survey to build the most comprehensive and extensive perspective of what California's forest looked like prior to contemporary management. To help guide future management, we will compare differences in the historical forest to today's forest.	General
20-RP-SHU-094	US Forest Service, Northern Research Station Dr. Matthew Dickinson	Adding Value to Burn Severity Mapping with Coordinated Pre-, Active-, and Post-Wildfire Monitoring in Northern California	Shasta (note, our broader area of interest is Northern California)	$119,243	The Fire Behavior Assessment Team (FBAT) is the only team actively collecting ground data on wildfires and proposes to perform coordinated plot-based measurements of fuels, vegetation, active fire behavior, fuel consumption, and fire effects in Northern California to augment the archive that primarily contains data from fires in the Sierras. FBAT requests funds to hire two seasonal technicians and support pre-season coordination with stakeholders. Data will be used to support burn severity mapping.	General

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20-RP-LNU-049	University of California, Davis Dr. Joseph Stewart	Improving Climate-Based Seed Selection for Increased Carbon Sequestration	Yolo	$299,807	The climate is changing faster than tree populations can evolve, resulting in climate-adaptation mismatch (CAM), between trees and the environment they grow in. CAM results in reduced growth and survival with large consequences for statewide forest health, carbon sequestration, timber production, fire severity, and habitat. This proposal focuses on combatting CAM by improving techniques for selecting seeds that are adapted to the climates of planting locations.	General
20-RP-FKU-074	University of California, Davis Tara Ursell	Predicting the dynamics of fire-killed trees using tree-level and plot-level characteristics	Fresno	$39,178	This study will characterize the dynamics of fire-killed standing dead trees (SDTs or “snags”) using a unique and extensive dataset tracking SDTs for 10 years following a 1994 wildfire in the southern Sierra Nevada. I will assess how plot-level characteristics (e.g., fire severity, solar radiation) and tree level characteristics (e.g., species identity, size) influence SDT longevity. This research will enable a more targeted approach to the management of wildfire-killed trees.	Graduate Student
20-RP-LNU-069	Sonoma State University Alanna Post	Assessing the utility of handheld LiDAR to quantify forest understory structure and evaluate change following disturbance.	Sonoma	$77,367	This project will quantify forest structure changes in post-fire (Sonoma County) and managed stands (Mendocino County) via LiDAR voxel metrics. Data will be collected using a LiDAR handheld mobile laser scanner and validated using limited destructive sampling. This study will add to the relatively new and growing body of work on LiDAR remote sensing to measure forest structure as a component of forest health.	Graduate Student
20-RP-LNU-070	Sonoma State University Zane Cooper	Evaluating the utilization of 3D physics-based fire models in conjunction with terrestrial remote sensing data	Sonoma	$74,343	My proposed project seeks to expand upon the research conducted by the Bentley Lab at Sonoma State University and the USFS Rocky Mountain Research Station Fire Science Lab by integrating terrestrial laser scanning data with a physics-based model framework to estimate fire effects on biomass, forest structure, and tree mortality in a wildfire affected oak-woodland and managed conifer forest in California.	Graduate Student

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20-RP-MVU-030	University of California Riverside Joelene Tamm	Indigenous burning, Prescribed Fire, and Goldspotted Oak Borer Management	San Diego	$99,999	Agrilus auroguttatus, goldspotted oak borer (GSOB), an invasive wood boring buprestid beetle, that has caused widespread oak tree mortality throughout southern California. The proposed research on indigenous burning and prescribed fire based on traditional ecological knowledge will investigate the potential of prescribed burn programs as a management tool for managing goldspotted oak borer infestations over large areas in native California oak woodlands.	Graduate Student
20-RP-NEU-053	University of California, Merced Han Guo	Valuation of water and carbon benefits of forest restoration	Merced	$99,939	This proposed research focuses on quantifying, valuing and monetizing benefits of forest restoration, especially water-related and carbon-sequestration benefits and developing an evaluation tool for decision making on the timing of implementation for maximizing the return on the investments. To illustrate the research process and results, this research will use the in-progress French Meadows Project in the American River watershed, plus the Yuba Projects in the Yuba River watershed as case studies.	Graduate Student
20-RP-SBC-012	University of California, Santa Barbara Robert Fitch (D'Antonio)	Restoration of native plants on fuelbreaks to reduce ignition potential and enhance ecosystem services	Santa Barbara	$100,000	We are investigating how to reduce the ecological consequences of fuel modification by restoring a fuelbreak with native herbaceous species creating a green break that limits the impacts of non-native species, reduces ignition potential, and supports desired ecosystem functions. We also aim to conduct combustion tests of live plants in order to determine which species would be best suited for use on green fuelbreaks and to improve our understanding of live fuel combustion and its relation to wildfire behavior.	Graduate Student
20-RP-SBC-065	University of California, Santa Barbara Kaili Brande (Davis)	Quantifying the Relationships among Stand Structure, Fire Behavior, and Burn Severity from Prescribed Fire in California Foothill Oak Woodlands	Santa Barbara	$90,163	This project will evaluate the relationships between 3-dimensional vegetation structure and fire behavior, burn severity, and mortality risk in California foothill oak woodland and savanna ecosystems. It will collect biological and physical data, relating field data to imaging lidar data, from two prescribed burn events in Santa Barbara County. The results of this project will form predictions of fire effects on oak populations, and inform fire management for woodland health and public safety.	Graduate Student

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20-RP-LNU-106	Sonoma State University Dr. Matthew Clark	Timely prediction of wildfire burn severity in California forests with spaceborne observations of 3D vegetation structure	Sonoma	$492,779	This project demonstrates the value of GEDI spaceborne lidar for timely monitoring of forest structure for predicting future wildfire severity in North Coast, Central Coast and Sierran forests. We will use GEDI structural metrics to predict wildfire severity from large recent fires, detect disturbance for future wildfire severity prediction, create spatio-temporally continuous maps of structure and wildfire severity predictions, and compare our results to existing FRAP priority landscape maps.	State Forests
20-RP-LNU-090	University of California, Davis James Thorne	Using Landscape, Climate and Environmental Risk Factors to Identify Priority Seed Collection Areas Across California	Yolo	$339,807	California relies on post-wildfire reforestation and needs sufficient stocks of conifer seeds for climate-adaptive plantings. This project seeks to improve capacity to find and secure seed sources in the face of increasingly destructive conditions, by providing spatial tools that rank forest landscape risk factors and identify high priority areas for cone surveys based on landscape risk, inventories of available seed stocks, and the need to use climate change-suitable seeds for each location.	Synthesis & Tool Development
20-RP-LNU-116	University of California, Davis Dr. John Williams	Natural range of variation (NRV) assessment for southern California montane forests	Yolo	$183,037	We will conduct a natural range of variation (NRV) assessment of the major compositional, structural and functional parameters that define montane forests in southern California. This research will fill a critical gap in our understanding of how these forests persisted and functioned prior to climate change and major anthropogenic impacts. It will serve as a baseline for measuring current and future threats, as well as a guide for restoration and conservation.	Synthesis & Tool Development
20-RP-NEU-098	Board of Regents of the Nevada System of Higher Education on behalf of the Desert Research Institute Dr. Tran Tang	Development of Smoke Transport Probability and Risk Interactive Map from Trajectories and Climatology Analysis of 2-km CANSAC-Reanalysis Database	U.S.A	$444,966	We will generate high-resolution smoke transport probability for the 2km-CANSAC reanalysis domain for use in prescribed fire planning and emergency response. Population, school, and hospital counts within each smoke transport region will be calculated for health risk management and messaging. Climatological fire weather metrics will also be generated. Training workshops will be held for stakeholders to improve the final product and demonstrate the intended use of the data for decision making.	Synthesis & Tool Development

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20-RP-SCU-154	Regents of the University of California, on behalf of Berkeley Forests Dr. Matthew Potts	BioSum: A Tool for Forest Health Management Decision Making	Alameda	$359,322	Our project will use the USFS PNW's BioSum model to improve climate focused forest management planning and decision making, examining how proposed treatment alternatives perform at regional levels and across land-owner objectives, when tested against clear and benchmarks using a transparent model? We will work with decision makers and project managers to test different approaches, providing regional and project-specific guidance for applying best practices to achieve the "best" results based on management objectives.	Synthesis & Tool Development