

CAL FIRE Forest Health Grant Awardees 2019/2020 -- California Climate Investments

FOREST HEALTH -- COMPETITIVE AWARDS

Project Title	Applicant	County	Grant Award	Project Description
California Forest Shared Stewardship Support Program	USDA-Forest Service, Regional Office	Statewide	\$2,655,000.00	The California Forest Shared Stewardship Support Program (CalForSSS) aims to facilitate USFS and CAL FIRE technical support to forest restoration Collaboratives and Implementation Partnerships to increase the pace and scale of forest restoration in California. It will establish, 1) a Collaborative Support Program, to build consensus; and 2) an Implementation Partnership Support Program, with four Shared Stewardship Advisors, to more effectively plan and implement forest restoration projects across all lands.
Case Mountain Forest Health	Bureau of Land Management	Tulare	\$4,547,240.00	The Bureau of Land Management will treat 1,142 acres utilizing a combination of fuels reduction, pest management thinning, prescribed fire, and biomass utilization on BLM and private lands in Tulare County. This will be done in collaboration with Tulare County RCD, David Cairns (private landowner), local tribes, and researchers from University of Nevada, Reno.
Climate Adaptive Forest Management	The Regents of the University of California on behalf of Berkeley Forests	Nevada	\$1,679,628.64	Forest health, resilience, and carbon storage will be enhanced on the 1,500-acre Grouse Ridge Research Forest through a diverse suite of treatment options and an ongoing commitment to long-term monitoring. This project will ultimately serve as a demonstration site for students, landowners, and other stakeholders, and thus have a far-reaching impact on future forestland management, research and policy creation.
East Fork Scott	USDA-Forest Service, Klamath National Forest	Siskiyou	\$4,489,005.00	The density in forested stands, around meadows, and along roads will be managed using mechanical and manual thinning and prescribed fire on 9,678 acres within a 31,752-acre boundary near the community of Callahan in Siskiyou County. Project goals are to improve forest health and resilience, enhance meadow and oak woodland habitat, manage sensitive plants, improve forage for large game, reduce sediment input from various sources, protect and enhance riparian habitat and shade, and improve firefighter and public safety.
Forest Health in San Mateo County - A Collaborative Approach	San Mateo Resource Conservation District	San Mateo	\$2,553,334.00	A diverse group of local, state, and private entities, will implement forest health practices on four project sites totaling 459 acres to improve forest stand health and watershed processes, reduce catastrophic wildfire risk, and increase carbon sequestration. Activities will provide benefits at a landscape scale across the northern Santa Cruz Mountains, and have been developed in collaboration with a similar proposal across the southern Santa Cruz Mountains.
Forest Health in Santa Cruz County - A Collaborative Approach	Resource Conservation District of Santa Cruz County	Santa Cruz	\$2,736,367.74	In partnership with Santa Cruz Mountain Stewardship Network members, the Amah Mutsun tribal band, and private landowners, the RCD of Santa Cruz County will take a balanced approach (including fuel reduction, pest management, reforestation, and research) to improve forest health and fire resiliency on 506 high-priority acres of state responsibility lands in Santa Cruz County.
Improving Forest Health in the Yurok Community Forest & Salmon Sanctuary	Humboldt County Resource Conservation District	Humboldt	\$4,315,392.52	This project involves pre-commercial thinning, restoration and fuels reduction on young overstocked post industrial properties that were acquired by the Yurok Tribe and the Western Rivers Conservancy over the last decade. In addition this project will build a critical fuels break on the boundary of the Yurok Salmon Park and repair necessary transportation infrastructure for maintaining management capacity across a significant portion of the Blue Creek Salmon Park and the Yurok Community Forest.
Jose Basin Fuels Reduction	Highway 168 Fire Safe Council	Fresno	\$5,000,000.00	This is a multi-jurisdictional project that will treat 3,610 acres to address tree mortality, fuel reduction and carbon sequestration. This project was developed cooperatively between the U.S. Forest Service and the Highway 168 Fire Safe Council to further the benefits of five of the state's 35 priority fuels reductions projects implemented on the Sierra National Forest and surrounding lands.
Mendocino National Forest Fuel Reduction Partnership: Smokey Project	Glenn County Resource Conservation District	Glenn	\$1,378,469.00	Located primarily in Glenn County, this landscape-scale land management project will restore and maintain healthy forests and conserve working forests by implementing fuels reduction, fire reintroduction, treatment of degraded areas and conservation of forests to 7,059 acres. A total of 636 acres of mechanical thinning will provide for long-term carbon sequestration.
Saving San Diego's Last Mixed Conifer Forest	Fire Safe Council of San Diego County	San Diego	\$4,994,674.59	The Fire Safe Council of San Diego County and five implementation partners will perform fuels reduction, reforestation, and pest management on state, tribal, and private lands within Palomar Mountain to prevent catastrophic forest habitat loss. Partners will work collaboratively to protect this priority landscape against wildfires and other environmental threats, while increasing carbon sequestration and habitat space for owls to ensure protection to San Diego communities, wildlife, and forests.
Shasta College Heavy Equipment Logging Operations	Shasta College	Shasta	\$1,827,167.36	Shasta College will expand its successful Heavy Equipment Logging Operations certificate workforce training program while broadening student education and experience in reforestation. Funding will leverage current momentum and a new Registered Apprenticeship program while continuing to engage the emerging workforce and new industry partners.
Trinity Community Protection & Landscape Resilience - Phase 2	The Watershed Research and Training Center	Trinity	\$3,802,897.00	An expansion and continuation of a 2017 Forest Health project, this second phase will increase the geographic scope of treatments, pace of implementation, and acres treated on the landscape. This Phase II project includes five distinct fuel reduction activities: roadside and ridgetop shaded fuel break construction/maintenance, plantation thinning, reforestation, prescribed fire, and biomass removal/utilization.

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Upper Little Stony Post Ranch Fire Restoration	Colusa County Resource Conservation District	Colusa	\$1,822,529.00	Through reforestation, biomass removal, pest control and fuels management, the project will help restore the watershed and forest on private lands and complement adjacent projects within Mendocino National Forest aimed at watershed health and habitat restoration.
Yuba Foothills Healthy Forests	Yuba Water Agency	Yuba	\$4,561,649.00	Federal and private partners will conduct extensive forest management across 5,375 acres in and adjacent to, low-income communities. Utilizing fuel reduction, prescribed fire, pest management, reforestation, and biomass utilization, the project will provide benefits to forest health and vigor, climate change resilience, species composition, stabilized carbon and sediment, catastrophic fire risk reduction, improved water yield, and direct support for hydro and bio-energy fuels and local jobs.
Total CAL FIRE-CCI Investment=			\$46,363,353.85	

CAL FIRE Forest Health Direct Grants 2019/2020 -- California Climate Investments

FOREST HEALTH -- DIRECT AWARDS

Project Name	Applicant	County	Direct Award	Project Description
California Mobile Biomass Harvesting and Biopower Unit (CARIBOU)	Lawrence Berkeley National Laboratory	Statewide	\$5,833,565	This project will develop and deploy a mobile woody biomass conversion unit that complements fire reduction efforts. The unit integrates a mill, a rotary inverted gasifier developed at SUNY Cobleskill University, microturbines that produce biopower developed at Scaled Power Incorporated, and life-cycle and economic analysis carried out at Berkeley Economic Advising & Research LLC. The unit will process up to 500 lbs/hr (bone dry) and generate biofuels, biopower and biochar.
California State Parks Forest Health	California Department of Parks	Statewide	\$5,756,207	State Parks will treat 1,400 acres in 11 separate park districts across California. Treatments will improve stand characteristics and increase biodiversity, thus reduce the risk of catastrophic wildfire, increase carbon sequestration and make the forest ecosystem more resilient to climate change. Treatments include forest thinning, vegetation removal, pile and broadcast burning, herbicide use, invasive species removal, pest treatments and biomass reduction via chipping and/or mastication.
Central Valley Forestry Corps	Fresno Area Workforce Investment Corp./Fresno Regional Workforce Development Board	Fresno	\$1,675,200	The Central Valley Forestry Corps (CVFC) will foster the health of our forests and address unprecedented tree mortality by engaging in fuel reduction and pest management. The CVFC is a partnership comprised of the Fresno Regional Workforce Development Board, Reedley Community College, the Fresno Economic Opportunity Commission's Local Conservation Corps, and the Associated California Loggers.
CHIPS Workforce Development	Sierra Nevada Conservancy	Calaveras	\$498,132	The goal of the Intertribal Stewardship Workforce Initiative project is to leverage active tribal engagement to recruit, train, equip, and deploy a minimum of eight additional tribal crews throughout the Sierra Nevada. Work proposed under this project includes outreach to and coordination with 14 tribal organizations, development of cooperative agreements, assistance with workforce recruitment and training, purchases of equipment to support the crews, project contract development, and workforce deployment.
Fire Adapted 50 - Wildland Fire Protection Program	El Dorado Resource Conservation District	El Dorado	\$2,491,000	The project is an all-lands hazardous fuel reduction project aimed at creating fire resilient forest ecosystems and fire-adapted communities. The landscape encompassed is representative of the current state of the Sierra Nevada as evidenced by the devastating effects of recent fires, drought and insect-associated tree mortality.
Forest Resilience Project -- Tahoe Central Sierra Initiative	The Nature Conservancy	Placer, Sierra, Nevada	\$3,300,000	Located within the TCSI area, the project will implement thinning and prescribed fire in the Truckee, American, and Yuba River watersheds. The Independence Lake Preserve is a 2,300-acre TNC nature preserve. The French Meadows Project is in the headwaters of the American River in the Tahoe National Forest and includes nearly 28,000 acres. The North Yuba Forest Partnership is 275,000-acre North Yuba watershed where TNC and its partners are expanding on the partner-based approach.
Lake Tahoe Community College Forest Health & Job Placement Program	Lake Tahoe Community College District	El Dorado	\$480,000	The program will increase skilled workforce urgently needed to accelerate the pace of forest treatments and reduce wildfire risk. The program will offer employable certificates, associate degrees and training for forest restoration jobs in the field and in project planning and management. Develops standard curriculum coordinating with other community colleges and aligns to accreditation standards required for registered professional foresters.

Total CAL FIRE-CCI Investment= \$20,034,104.12

CAL FIRE Forest Legacy Grant Awardees 2019/2020 -- California Climate Investments

Project Title	County	Grant Award	Project Description
Arcata Community Forest (Jacoby Creek Tract) Expansion – Swaner	Humboldt	\$430,000.00	This project will add the “Swaner” property, a privately-owned 114-acre forested parcel, to the Arcata Community Forest (ACF). The property shares a 1.5-mile boundary with the ACF Jacoby Creek Tract and is at risk of forestland conversion if acquired by a private buyer. In addition to its timber value, the Swaner parcel includes important wildlife habitat and is included in a Wildlife Conservation Board Conceptual Area Protection Plan.
Mattole Headwaters Forest Conservation Easement	Humboldt	\$4,276,164.48	The Mattole Headwaters Forest Conservation Easement, consisting of 3 Tracts conveyed in 2 Phases, will protect and enhance the condition, function and resilience of 1,222 forested acres that contain five Mattole River tributaries with 3.57 miles of pristine coho salmon spawning habitat. The Project provides critical Habitat for 14 Threatened & Endangered species and 17 more Climate-Vulnerable and Species of Special Concern and contains a 70-acre stand of 1,000-year-old redwood trees.
Wagner Forest Conservation Easement	Humboldt	\$2,750,000.00	The Wagner Forest is a family-owned, 3,348-acre working forest distinguished by productive conifer stands and cold-water streams within a North American stronghold for wild Pacific salmon. The Northcoast Regional Land Trust (NRLT) and the Wagner family are partnering to place a conservation easement on this keystone property—completing the protection of 15,000 contiguous acres of privately-owned working forestlands in one of the most biologically significant watersheds in California.

Total CAL FIRE-CCI Investment= \$7,456,164.48

CAL FIRE California Climate Investments (CCI) Program - Forest Health Research Grant Awards -- 2019/2020

Project Title	Applicant	County	FY 2019-20 Funds Awarded (Phase 1 only)	Total Funds Requested	Project Description	Key Words
Project Type: General						
Implications of increasing the scale of managed wildfire on forest carbon stocks and pyrodiversity	The Regents of the University of California on behalf of Berkeley Forests	Mariposa and Madera Counties	\$281,222	\$422,391	Managed wildfire is a promising approach for increasing the pace and scale of ecological restoration in California's fire-adapted forests. Many benefits of the practice have been documented, but implications for forest carbon dynamics, pyrodiversity, and biodiversity remain understudied. We propose to leverage and expand our long-term managed wildfire research program to fill these important knowledge gaps, and aid management of forests threatened by increasingly severity disturbances.	managed wildfire; forest carbon stocks; pyrodiversity
Assessing smoke-plume injection height as a function of sub-canopy wind convergence of prescribed burns in the Central Sierra Nevada	University of Nevada, Reno	Nevada/Sierra	\$171,145	\$171,145	During prescribed fires, we will study the subcanopy wind and pressure response with a network of met stations and concurrently measure plume rise dynamics with ground-based lidar. We will establish empirical relationships that correlate near-surface wind measurements and atmospheric stability with plume dispersion. In the future, a few well-placed sub-canopy wind speed deployments can be used to inform the fire management of conditions that will facilitate predicting fire behavior.	prescribed fire; smoke - plume dispersion
Public health effects of increased prescribed burns for wildfire management	Sequoia Foundation	Statewide, plus one community for an enhanced community engagement effort.	\$315,000	\$499,942	The study will describe the public health impact of increasing prescribed burns. Exposure data will be generated and analyzed to assess its impact on health outcomes, assessing effects under a baseline scenario and then projected increased target burn scenarios. The relationship between particulate matter (PM2.5) and health outcomes will be assessed using historical data and applied to target burn scenarios. Community engagement will assess symptoms and knowledge regarding prescribed burns.	prescribed fire; PM 2.5; public health concerns
Evaluating forest resilience and carbon recovery using a chronosequence of co-located pre-, active-, and post-wildfire measurements in California mixed-conifer forests	Michigan State University	Plumas	\$284,509	\$453,078	This project evaluates the influence of pre-fire conditions and fire behavior on forest carbon loss due to fire and its recovery over time, using a globally unique database of coordinated pre-, active-, and post-fire data collected from active wildfire incidents in California mixed conifer forests over a 17-year period. It will quantify immediate fire effects from the existing database and re-measure the existing network of plots to evaluate forest recovery and carbon resilience after fire.	forest carbon dynamics post-wildfire; forest recovery
Effectiveness and optimization of forest fuels reductions for biodiversity conservation in a changing Sierra Nevada ecosystem	San Jose State University Research Foundation	EI Dorado	\$250,113	\$499,825	A century of fire suppression and changes in forest structure, coupled with anthropogenic climate change, have dramatically altered disturbance regimes in the Sierra Nevada ecosystem. We will explore how wildlife communities have been affected by recent forest management and severe wildfire across the Sierra Nevada bioregion, and model the future effects of alternative fuels reductions strategies and altered fire activity on species constraining the pace and scale of fuels restoration.	fuel reduction; wildlife habitat changes
Project Type: General (updated 7/3/2020)						
Vegetation Trends and Cycles in the Fire-Prone Landscapes of Lake, Napa, and Sonoma Counties	Pepperwood Foundation	Lake, Napa, and Sonoma	\$210,009	\$210,009	We will examine the relationship between fire and vegetation across a region which has suffered some of California's most devastating recent wildfires. Integrating historical and recent data (1870-2019), we will develop a detailed understanding of fire/vegetation cycles across a diverse landscape with wide variations in fire history (return intervals <10 to >100 yrs). Results will inform site-specific actions to minimize catastrophic fire and emissions, maximize carbon sequestration, and build public support.	wildfire regime; vegetation dynamics; vegetation management
Measuring wildfire impacts and post-fire recovery of shrubland biomass under different climate conditions	University of California, Davis	10 Counties in Southern California	\$333,869	\$333,869	Despite the prevalence of shrublands in southern California there is limited data on the carbon they store; how this is impacted and recover after wildfire; and how other ecological services such as water are impacted. This project intends to improve mapping of biomass using newly available lidar data, field validate biomass maps across sites with different climatic conditions and time since fire, and re-run hydrological models informed by these data. Project outputs can contribute to improved resource management of these shrublands.	wildfire impacts; shrubland carbon storage; So Cal ecosystem evaluation
Project Type: State Forests						
Simulating the heterogeneous consequences of widespread forest health treatments for California mixed conifer forest resilience to climate change and wildfire	The Regents of the University of California	Multiple counties in the mixed conifer forest zone	\$282,202	\$499,660	We will use data-constrained, process-based vegetation modeling to examine the long-term consequences of forest health treatments, specifically thinning and prescribed burning, on future forest CO2 emissions and resilience to drought and wildfire in a changing climate. We will support implementation of the Forest Carbon Plan by providing stakeholder-informed projections that vary in assumptions regarding management, future climate, and existing stand conditions across California's mixed conifer forest.	vegetation modeling; fuel reduction
Sierra Nevada-wide provenance trials to support climate-based seed zones and reforestation efforts	Board of Regents, NSHE, obo University of Nevada, Reno	Nevada	\$252,974	\$499,745	Use of locally-adapted seed is the foundation of reforestation, but unprecedented megafires and rapid climate change are likely to drive regeneration failures under a business-as-usual reforestation policy. We will pair Sierra Nevada-wide provenance trials with landscape genomics to quantify seedling success and local adaptation to climate in five economically and ecologically important conifers. Our objective is to identify provenances with high tolerance for climatic variability to guide seed and species selection in reforestation.	reforestation; climate adaptation; provenance trials
Project Type: Graduate Student						
A physiological approach to assess the resilience of Sierra Nevada forest communities following prescribed burns	UC Santa Cruz	EI Dorado	\$88,238	\$88,238	With fire becoming of increasing concern, it is critical to understand which vital functions of trees suffer most due to high temperatures. I will take a physiological approach to determine the effects of fire on xylem and cambium function in both lab and field experiments. I will use prescribed burns at four field sites across the Sierra Nevada to determine species compositions and ecological conditions that allow for resilient forest ecosystems following fire.	prescribed fire; physiological impacts from fire; forest resilience to fire
Vulnerability in California's carbon stocks: understanding post-fire regeneration in the state's high elevation forests	University of California, Davis	Tulare	\$53,835	\$53,836	Though California high elevation forests are seen as a reliable carbon sink by the state, recent changes in fire behavior and stand dynamics threaten to compromise their resilience. Similar changes in low elevation forests have resulted in inadequate tree regeneration leading to ecosystem degradation and carbon loss, but little is known about the response of high elevation forest to fire. I will provide the first empirical documentation of how fire severity and post-fire climate affect tree regeneration in California's high elevation forests.	post-wildfire; regeneration
Project Type: Synthesis and Tool Development						
Development of rapid-response post-wildfire water quality sampling guidelines to determine watershed and natural resource asset conditions and priorities for future recovery	Lawrence Berkeley National Lab	Butte	\$50,000	\$50,000	To aid in post-wildfire rapid-response and strategic decision support for water sampling, I propose to develop guidelines for post-wildfire water sampling strategies that agencies can use to develop rapid-response protocols and aid in strategic decision support for site and water quality constituent selection across watershed surface and groundwater systems. These guidelines will be developed based on a foundational science driven approach including fundamentals of flow and reactive transport chemistry and biogeochemistry in flowing waters.	water quality; post-wildfire; sampling protocols; science synthesis

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Project Title	Applicant	County	FY 2019-20 Funds Awarded (Phase 1 only)	Total Funds Requested	Project Description	Key Words
Addressing common misconceptions about dry forest restoration and fuel treatments	University of Washington	Multiple	\$54,369	\$54,369	We propose to synthesize recent literature supporting management that restores the role of fire to fire-adapted forests in the western United States. The synthesis will address common misconceptions about forest restoration and fuel reduction treatments as well as confusion in the literature around evidence for departures in current fire behavior and associated changes in spatial patterns of forest composition and structure. In a set of two peer-reviewed articles, we will summarize science-based recommendations and ongoing research needs for restoring structures and spatial patterns that demonstrated resistance and resilience to warmer climate, fire and other agents of change.	forest management; forest restoration; fuel reduction treatments; science synthesis

Total CAL FIRE-CCI Investment: FY 2019-20
\$2,627,486