

Position Title: Area Forestry and Natural Resources Advisor. The program focus will be education and applied research that promotes sustainable forest management in Yuba, Butte and Nevada counties.

Position: The emphasis for this position is sustainable forest management on both private and public lands. Important issues to be addressed include forest loss to urban growth, public perceptions that threaten active forest management, range-wide forest fuel accumulation that has caused a growing high-priority issue of high-severity wildfire that threatens forests, habitat, watershed stability, water quality and quantity, as well as community wildfire resilience. Continued drought and apparent rapid climate change will lead to greater insect and disease issues with the potential for widespread tree mortality. The position requires a Masters or PhD in Wood and Fiber Science, Forestry or Wildfire Ecology and Management and a California license as a Registered Professional Forester. The position will be housed in the UCCE Sutter-Yuba office in Yuba City, which is central to service Butte and Western Nevada counties. Specialist and AES faculty support is provided by UCB Ecosystem Science faculty in the Environmental Science, Policy and Management Department. There is opportunity to interact with UCD faculty in the Plant Science, Land, Air and Water and the Biological and Agricultural Engineering Departments, as well as with the ANR Specialist in Rangeland Ruminant Nutritional Ecology at SFREC, providing support in livestock use for sustainable brush management through grazing.

Justification: This position was approved for recruitment in 2014 and recruited in September 2017. The position will be vacated in December 2019. Since its approval in 2014, the need for this position has only become more evident, given recent fire events in the proposed service area. This advisor will fill a geographical and expertise gap in programmatic coverage. Presently, the team of Forestry and Natural Resource Advisors are located in Redding, Quincy, Eureka, Ukiah and South Lake Tahoe, serving Shasta, Siskiyou, Trinity; Plumas, Sierra; Humboldt, Del Norte, Mendocino, Lake; and El Dorado, Amador, Calaveras and Tuolumne Counties. This position would provide expertise and leadership in Western Sierra forest sustainability and resilience to wildfire, insect and disease epidemics. The forests and communities of the Sierra Nevada are at considerable risk from urbanization, wildfire, insects and disease.

Wildfire is a recognized issue in the Sierra Nevada foothill communities. The overarching cause is forest fuel accumulation that results from decades of active fire suppression and lack of a commercial process to utilize biomass. This issue is exacerbated by climate change that has extended the length of fire season by increasing the period when forest fuel moisture is low and more conducive to wildfire. In the recent past the three-county area has experienced considerable high-severity wildfires that greatly impacted forests, watersheds and rural forest communities. In Nevada County, the 49er fire destroyed or damaged 144 homes and 219 other structures while burning and damaging 35,300 acres (valued at \$28 million). \$7.5 million was spent to suppress the fire. In Yuba County, two large fires (Williams & Pendola) destroyed over 130 homes. Catastrophic wildfires throughout Butte County's recent history include the 1996 Raulson Fire, 1999 Butte Complex fires, 2000 Concow Fire, 2001 Poe and HWY 70 Fire, 2003 Centerville Fire and 2004 Oregon Fire, which burned 51,437 acres, destroyed 74 structures, and resulted in 2 civilian fatalities. Last year, in 2018, the Camp Fire, the most destructive in California's history, destroyed 18,793 structures and resulted in 85 civilian fatalities. Among the issues that a Forestry and Natural Resources Advisor may address, there may be none that are of higher priority than improving forest health, addressing the misunderstanding of science-based, sustainable forest management and its relationship to fire ecology and management.

Potential clientele includes Fire Safe Councils, which are grassroots community-based organizations that share the goal of making California's communities less vulnerable to catastrophic wildfire. Fire Safe Councils include agencies (Cal Fire, Forest Service, BLM, local fire districts, county government), forest landowners, and concerned citizens. There are active Fire Safe Councils in all three counties. UCCE has been instrumental to the creation of Fire Safe Councils in Butte and Yuba Counties and integral to their education and applied research programs. ANR investment in this position has the potential to mitigate the potential for devastating wildfires. The addition to the UC forestry team will address the biomass utilization that can reduce the potential for fires (like the Rim Fire near Yosemite) from becoming a common occurrence. The Northern California

Prescribed Fire Council and the Fire Science Consortium are other groups with which this position can collaborate to guide fuel and fire management education and applied research.

Extension: There is critical need and abundant opportunity to extend research-based information on forest management and wildfire through meetings, conferences, newsletters, online publications, and social media. Potential collaborators include the Fire Safe Councils of Nevada, Yuba and Butte counties, Northern California Prescribed Fire Council, Forest Landowners of California, California Forestry Association and California Fire Science Consortium.

Research: There is abundant opportunity to define and document how fire-adapted communities implement science-based mitigation measures. The focus will be on western Sierra Nevada sustainable forestry in light of changing environmental and economic conditions. Among research opportunities is an applied research project that would address an economically viable use for forest fuel or biomass to create a private sector solution to the dynamic fuel accumulation that occurs in highly productive Western Sierra forests. Within ANR, coordinate and extend research findings through the Forest Ecosystems and Communities and Woody Biomass Workgroups. Research findings can be extended through UC California Agriculture, the Journal of Forestry, the Journal of Forest Ecology and Management and others.

ANR Network: Network with AES scientists, non-AES scientists, UCCE Specialists in the UCB College of Natural Resources, and forestry advisors in Redding, Quincy, Ukiah, Eureka and South Lake Tahoe on forest health and fire adapted communities. This position would add to the team with wood fiber utilization program leadership. It will provide data and findings from wildfire-impacted communities that are actively working on adapting to fires as the climate becomes hotter and drier. The position would bring expertise on Sierra Nevada conifer and hardwood rangeland forest environments.

Network External to ANR: The USDA Forest Service manages the underutilized Challenge Experimental Forest Research unit in Yuba County. It could allow for collaborative research projects in the fastest pine growing location in North America. Collaboration could occur with Chico State University which manages the Big Chico Creek Ecological Preserve by reintroducing fire into pine forests. Steve Quarles, Senior Scientist with the Insurance Institute for Business & Home Safety (IBHS) can be a collaborator on fire resistant home construction in fire-adapted communities. The University of Nevada Living with Fire program can collaborate on educational programs. The eXtension Community of Practice, eXtension Wildfire Information Network can be a collaborative connection with other Cooperative Extension professionals working in wildfire on a national level.

Support: The position will be directly provided by the UCCE Sutter-Yuba office. The support from Nevada and Butte Counties will be through other multicounty positions from their counties or direct cost reimbursement.

Other support: The Sierra Nevada Conservancy, US Forest Service State & Private Forestry, California Fire Safe Council, Joint Fire Science Program, UC Berkeley McIntire-Stennis and Wildfire Research Network are all potential sources of support for research and education activities.

Location: The position will be located in the UCCE Sutter-Yuba office. This is a central location to serve the three-county area. Both the western Nevada County and Butte County areas can be served within an hour drive.

Developed and proposed by: The UCCE Sutter-Yuba County Director, along with the Butte and Placer/Nevada County Directors, submits this position with internal review by UC ANR Forest Ecosystems and Communities workgroup. External feedback was solicited from the Nevada, Butte and Yuba Fire Safe Councils and the Private Industrial Timber landowners in the three-county area.