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FORESTLAND STEWARD IS A JOINT PROJECT OF CAL FIRE, PLACER COUNTY RESOURCE CONSERVATION DISTRICT, UC COOPERATIVE EXTENSION, AND USDA FOREST SERVICE TO PROVIDE INFORMATION ON THE STEWARDSHIP OF PRIVATE FORESTLANDS IN CALIFORNIA

EDITORIAL COMMITTEE:

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Christine McMorrow, CAL FIRE

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John Ramaley, CAL FIRE Ricky Satomi, UCCE Yana Valachovic, UCCE Dana Walsh, USFS

Early Career Mentorship BY RICKY SATOMI

The decline of forestry professionals represents a critical barrier to forest management across California. As state and federal action plans call for accelerated forest treatment, the demand for foresters to evaluate risks, develop management plans, and implement projects has also grown. At present, over 40% of natural resource employers have identified workforce shortages (Shasta College 2018, Kelly 2019, California Forestry Association 2021, North State Development Collective 2022), with emphasis on the need for technical planning and implementation staff. Meanwhile, the number of Registered Professional Foresters has fallen from 1,341 to 1,111 over the past 15 years. This ongoing shortage of qualified foresters, archeologists, CEQA/NEPA planners, biologists, and other natural resource experts represents a significant barrier to management on both private and federal forests.

The shrinking forestry workforce is frequently attributed to changing public values towards forests and forestry, diversification of natural resource degree options, inflexible course requirements, low wages, gaps in faculty staffing, and low diversity in the profession (McGown

2015, Sharik 2015). Rising tuition, inflated cost of living, and rural working environments can also serve as barriers, particularly for individuals from low income and nontraditional backgrounds. Professional licensing requires seven years of apprenticeship, or a degree from an accredited institution (UC Berkeley, Cal Poly Humboldt, or Cal Poly San Luis Obispo) with three years of apprenticeship. These barriers become even more apparent when comparing forestry to professions with similar education and training requirements.

Recognizing both the need for more professionals and difficulty attracting a diverse workforce, the **Forestry and Natural Resources Career Mentorship Program** (clfa.org/mentorship) was developed in 2020 by the California Licensed Foresters Association and University of California. The program has since received CAL FIRE funding support through the Placer County Resource Conservation District.

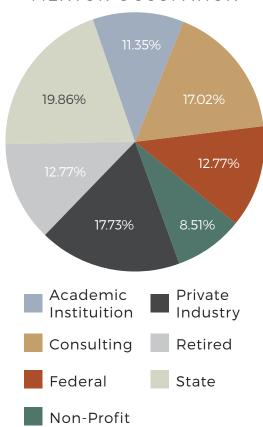
This program facilitates student transition from the classroom into the profession by providing tailored mentorship, professional development trainings, and subsidizing travel for in person professional experiences. By pairing students (mentee) with a practicing professional (mentor), the program helps students build a professional network and find colleagues that reflect their values and experiences as they navigate the diverse career opportunities within forestry. This collaboration also recognizes that a person's identity and sociodemographic background can limit opportunities in fields such as forestry and encourages the inclusion and support for traditionally underrepresented students, particularly those who identify as women, Black,

"Mentors and mentees are paired based on shared interests and career goals to provide opportunities for learning and mentorship beyond what is available through classroom instruction."

Indigenous, people of color (BIPOC), and/or LGBTQIA. Mentors and mentees are paired based on shared interests and career goals to provide opportunities for learning and mentorship beyond what is available through classroom instruction.

The key to program success is balanced representation of both the student and professional perspectives when navigating current challenges in forestry and natural resources. The program is led by a volunteer steering committee comprised of professionals from various forest sectors and leverages direct input from student representatives in the planning of program activities. The formal program occurs between October and June to align with the academic year, facilitating opportunities for the mentor to support their mentee in academic, professional, or personal development. Participants meet monthly to share questions, provide updates, and participate in trainings which include topics of: Diversity, Equity, Inclusion, and Justice, resume building, interview practice, and career panels. In addition to formal trainings, the mentor can provide professional skills training, field visit opportunities, and access to various professional conferences.

MENTOR OCCUPATION



| | PROGRAM YEAR | | | |
|--------------------|--------------|-----------|-----------|--|
| | 2020-2021 | 2021-2022 | 2022-2023 | |
| Mentors Applied | 60 | 73 | 63 | |
| Student Mentees | 21 | 54 | 56 | |



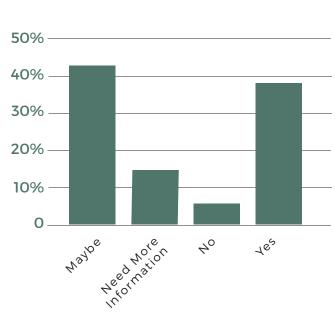
Since its formation, over 250 individuals have participated in the program with 131 students mentored across 7 forestry programs (Bakersfield College, Cal Poly Humboldt, Cal Poly San Luis Obispo, College of the Redwoods, Reedley College, Shasta College, and UC Berkeley).

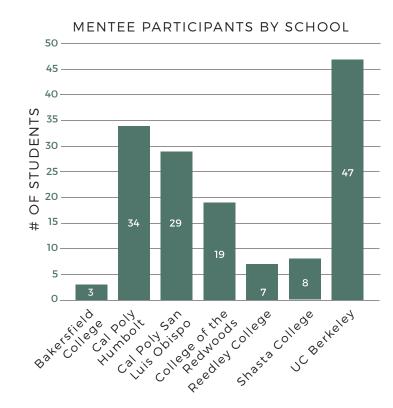
Registered Professional Foresters (RPFs) comprise 50% of the mentors with a wide range of forestry sectors represented. Participating mentors include, but are not limited to licensed RPFs, licensed timber operators, burn bosses, and pest control advisors. Of the participating mentors, 20% identified as BIPOC while 13% identified as LGBTQIA. Mentors also identified assisting mentees with career exploration as the most desired outcome from their participation.

Overall, 80% of student participants were interested in or considering acquiring their RPF license with 15% needing more information and 5% not interested. Students expressed interest in a wide variety of topics including forest restoration, GIS, hydrology, operations, private land management, soils, and wildland fire management. Of the student participants, 36% identified as BIPOC while 30% identified as LGBTQIA. Students also identified exploring career paths as the highest priority program outcome, followed by developing professional communication skills and networking with forestry professionals.

 The 2022-2023 cohort is currently active with 55 mentorship pairs across California. To date, the program has hosted eight professional skills and DEIJ trainings, and will be coordinating with upcoming winter conferences to host in-person events in 2023. To learn more information, or donate, visit the page at clfa.org/mentorship.

MENTEE INTEREST IN OBTAINING RPF LICENSE







A CALL FOR

Stewardship

I was born and raised in the foothills of the Sierra Nevada mountains east of Sacramento. My father was Nisenan, born in 1909 and passed in 1988. He lived as a child in the land he called home that stretched from Butte to El Dorado Counties. He was one of eight brothers and sisters living on a mining claim on the North Fork of the American River. By the time he was born, many of the traditional California Native life practices had been modified by suppression or forgotten. Burning, though, continued to be a tool used to manage their immediate surroundings.

My memories of burning are thoughts of cool evenings when the fires we had set earlier were burning down to the last embers. My sister, brother, and I were enlisted to watch the dying flames and stir them into neat piles of ash and small brickettes. Later we would rake the piles out, spreading the cold remnants as far as the rack tines could toss them. We burned leaf litter and "mountain misery" (Chameabatia foliosa) and dried stalks of "sticker" grasses along with small branches and pinecones from the nearby Ponderosa Pines and acorns from the Black Oaks.

The burns we did in the early spring were organized to clean up the debris left from winter, and the fall burns took care of the last of the spring and summer growth. I remember my cousin often setting large broadcast burns among the new cedar tree sprouts. I didn't ask why, and I don't think it was his objective, but the resulting burned landscape was always full of bracken fern by the next spring. He was just satisfied to see the cedars gone.

Burning was fun and exciting for me. I was not taught the rationale for the practice. My family was far removed from the historic reasons for using fire to produce the resources for survival. But when I look back and recall, the environment was freer from invasive plant species and pines dying from bark beetle infestations. There were fewer manzanita patches and buck brush only skirted the edges of the property.

I've lived on the same property for the last seventy years. The Sugar Pines we once gathered nuts from are long gone. Most of the pines we once played hide and seek around are also gone, except for the ones alive but weak from drought. The manzanita patches have encroached on the pastureland and buck brush is too thick to walk through. The bracken fern is sparse, and the mountain misery grows a foot tall. Air quality regulations and restricted permitted burn days have caused additional challenges to putting fire on the ground. The land has languished and cries for care



The Mosquito fire came within a mile and half of this property last year. It is only from the aggressive fire suppression measures that I have a home left. The large homestead I live on is a tinderbox of brush and stressed oaks and conifers. I can imagine my father's sadness. I welcome the changing attitude towards the use of controlled fire to manage forest debris and reduce wildfire risk. It is a step in the right direction. However, I am disappointed that there isn't more discussion about the future outcomes beyond the economic value of our native timber resources or housing developments.

Our native plant and animal communities supported thousands of people for thousands of years. To address the ecological changes necessary for long-term sustainability, we must avoid management decisions that focus only on short-term monetary gains. California Indian tribes tended their homes for the products they needed to survive over long periods of time and changing climate conditions. The techniques they employed to cultivate these products came from knowledge gathered and handed down in practice for generations. It is the concept of "stewardship" that needs to be considered.

Burning is integral to the "stewardship" of California. It was the intense care by the original occupants that created the fire dependent ecosystem characteristic of the diverse ecology. One must recognize that this resilient diversity took hundreds of years to develop. If the intent is to provide resources for sustainability, then environmental managers must look beyond one generation and one outcome. Cultural burning does not measure success by the mortality rate of any species. Success is an outcome that benefits the wildland family, including its human inhabitants. Success is measured by regeneration and growth. We need to commit to the time it will take.

A'ho.

Respectfully submitted, Frances Ragle



Reduce, Remove, or Rearrange:

FUELS MANAGEMENT OPTIONS OTHER THAN BURNING

For small private landowners, forest management requires the foresight for long-term stewardship that achieves sustainability and promotes biodiversity. Recent wildfires have highlighted the importance of fuels management in creating and maintaining a resilient forest. The use of mechanical thinning followed by prescribed fire has been shown to be an effective method of reducing the probability of high severity impacts during a wildfire. The initial method of fuels mitigation is an important consideration for private landowners, as it plays a strong role in the ease and expense of follow-up treatments.

Aside from cut, pile, and burning, a method of removing fuels through pile burning, several other mechanical and chemical treatments may be useful in a long-term management plan. Mechanical fuels mitigation tactics are often used in tandem with burning, chemical, or grazing treatments. Integrated management is an important way of achieving forest resiliency while working within the confines of financial and permitting restraints. To learn more about planning and permitting fuels reduction projects in California, reference this **publication** through the **University of California Agriculture and Natural Resources**. Landowners interested in buying or selling wood products as part of their forest management plan must work with a Registered Professional Forester and may want to consider applying for the California Forest Improvement Program (CFIP)* through CAL FIRE.

*CFIP: To learn more about the California Forest Improvement Program, visit: www.fire.ca.gov





| METHOD | DESCRIPTION | PROS | cons |
|----------------------------------|--|--|--|
| Chipping** | Small to moderate diameter trees (usually < 12") are processed through a tracked or tow-behind chipper and broadcast back onto the property. | Reduces ladder fuels quickly No smoke Long operating season | Slope limitations Expensive Cleaning is required between usage to prevent invasive species contamination from one site to the next. Fuel is not removed, but instead is rearranged and may remain a concern for future wildfires. For very large scale projects, deep chip beds may limit gas exchange and nutrient viability in soil. |
| Mastication | Material is processed using a rotary head to grind and chop fuels. The equipment must match the size of the trees targeted for removal. | Reduces ladder fuels quicklyNo smokeLong operating season | Slope limitations Expensive May require multiple passes with the machine for the necessary results (adding to cost) Cleaning is required between usage to prevent invasive species contamination from one site to the next. Fuel is not removed, but instead is rearranged and may remain a concern for future wildfires. |
| Biomass or Cogen Plants | Vegetative material is cut, chipped, and transported to a biomass facility. This method removes the cut material, however not all forested properties are in close proximity to a facility that can process it. | Removes fuels from siteNo smoke | Several pieces of equipment are required for this type of operation. Generally, the cut material is chipped and loaded into a truck on site for transportation to the biomass facility. Landowners may be limited by biomass plant locations Biomass plants can only reasonably accept wood waste from within a ~ 50-mile travel zone. Availability of accessible roads poses limitations for small landowners and chip trucks. |
| Herbicide | Chemicals are applied (either injected or sprayed) into trees and shrubs to control their growth. The treated vegetation dies on site. | No slope limitations A licensed pesticide applicator can help select the best product for the vegetation type to reduce mortality among non-target species. No smoke Often used to control re-sprouting species | Best used as a maintenance tool following initial fuels reduction and in combination with other tactics as the targeted trees remain on site. |
| Air Curtain Burner | An air curtain burner is a container with an open top and an air compressor to help fully combust burning material. The process helps reduce the amount of particulate matter and smoke released when processing material. | Generates less smoke than open burning Generates less particulate emissions than open burning | Requires large equipment to bring the burner to the site. Landowners must consult with their local air district to acquire necessary air quality permits. |
| Lop & Scatter | Small diameter fuels and brush are cut and distributed (not piled) onto the landscape. | · No slope limitations | Hand crews are required and may be limited in availability. Encourages sprouts Fuel remains on site and may pose risks during future wildfires or prescribed burns. |

**Chipping: Many local resource conservation districts or fire safe councils have Chipper Programs that offer subsidized chipping services. These programs are generally available for residents and small landowners (<20 acres). Explore your community's local programs to find out if there is a program for you.

Policy Changes ADDRESS BARRIERS TO PRESCRIBED FIRE

By Lenya Quinn-Davidson

Increasing the pace and scale of prescribed burning to address the goals of the Governor's Wildfire and Forest Resilience Task Force requires work at all levels – including changes in legislation and policy to address the barriers associated with liability in prescribed burning. In the past couple of years, Governor Newsom signed two major bills into law to reduce the burden of liability for landowners, certified burn bosses, and cultural burn practitioners.







Though liability is commonly cited as a primary barrier to the use of prescribed fire in California and elsewhere, the specifics are often unclear. Many questions emerge: what kinds of liability are we talking about, and how real are the risks? We know from extensive published literature that prescribed fires escape control less than one percent of the time, and that only a small percentage of those escapes cause any kind of damage. For this reason, we have very few examples or case studies to help us understand the risks of this work. This is encouraging because it demonstrates that actual risk is quite low, but it can also make landowners and practitioners uneasy because they don't have a clear sense of what might happen if, by some rare chance, things go wrong.

There are two primary elements to prescribed fire liability, and recent legislation has aimed to address them both. The first is probably the most common concern among the public: that a prescribed fire will escape control and cause damages to another person's property. The other is less obvious, but is in fact a more common concern for prescribed fire practitioners: the idea that a prescribed fire could escape control and that the burner would have to call in additional support from CAL FIRE or other fire suppression entities. The landowner or burn boss could then be responsible for those (potentially very costly) fire suppression costs.

Senate Bill 332: Fire suppression costs related to prescribed fire

In 2021, Governor Newsom signed Senate Bill 332 into law. The bill was authored by Senator Bill Dodd, and addressed liability associated with fire suppression costs for prescribed fire. Previously, landowners and burn bosses could receive a bill for fire suppression costs. The bill changed the state's liability standard to say that those practitioners would only be responsible for suppression costs if they could be shown to have been grossly negligent in their burning. In other words, if someone is being reckless in their use of fire, of course they should be held responsible, but if they are employing best management practices, have the appropriate permits, and are trying to do good work, the state will have their back. Notably, SB332 defined terms related to cultural burning, and gives cultural practitioners the same level of protection as a state-certified burn boss. Go to leginfo.legislature.ca.gov/ and search for SB332 in 2021/2022.

Senate Bill 926: Prescribed Fire Liability Pilot Program, Prescribed Fire Claims Fund

In fall of 2022, Governor Newsom signed another important prescribed fire bill—this time addressing the potential for third-party damages related to prescribed fire. Senate Bill 926, also authored by Senator Dodd, will operationalize a \$20 million dollar claims fund for prescribed fire. This fund, for which funds were allocated in the state budget the previous fall, will serve as a kind of state-backed insurance fund for prescribed fire, providing coverage for projects where insurance has typically been unavailable or prohibitively expensive. SB926 provided structure

and guidance for the design of the fund, encouraging a collaborative development process and a speedy rollout to ensure the fund is operational as soon as possible. A group of agency and practitioner partners is currently working to propose guidelines and recommendations for the fund, in hopes that it will be providing coverage for projects sometime this spring. Go to **leginfo.legislature.ca.gov/** and search for SB332 in 2021/2022.

As you can see, these important pieces of legislation collectively address the two most important aspects of prescribed fire liability, and should increase the comfort of landowners, burn bosses, and cultural practitioners in California. These bills are also providing inspiration to other western states, which are grappling with many of the same issues.

To find out more about how landowners are safely engaging with prescribed fire, contact your local prescribed burn association at **calpba.org**.

NEW CAL FIRE ONLINE BURN PERMITTING SYSTEM

Homeowners and land management stewards use pile burning, broadcast burning, and agricultural burning to manage vegetation and dead woody debris. Public Resources Code (PRC) 4423 delineates differences in burn permit requirements on state responsibility area (SRA) lands, where fire suppression is managed by the local CAL FIRE Units. According to PRC 4423, burn permits are required year-round in Zone A or southern California counties (Mono, Inyo, San Bernadino, Santa Barbara, Ventura, Los Angeles, Orange, Riverside, San Diego, Imperial). In Zone B, or all other counties not included in Zone A, permits are required when determined by the local CAL FIRE Unit.

CAL FIRE has launched its new Online Burn Permit App at **burnpermit.fire.ca.gov**. This new platform offers the public a user-friendly way to request a burn permit for residential hazard reduction, larger broadcast burning projects, cultural burning, agricultural burning projects, and agency supported fuel reduction burning projects. The permits are for projects that are located within the State Responsibility Areas and other jurisdictions where CAL FIRE has authority to require them. CAL FIRE has hosted an online platform for requesting residential hazard reduction burn permits since 2019. Assembly Bill 642 (Friedman, 2021) required the Department to develop and deploy an automated system for issuing the additional burn permit types.

The public can now fill out the application forms from their computer or smart device, anywhere they have internet access. Once the application is submitted, a CAL FIRE representative will review and process the information. If a site visit is required, the Department representative will schedule a time with the applicant and move the project forward. This was all done with paper forms and phone calls in the past. Now the applicant will receive email confirmations throughout the process and the Department will have easy access to the records electronically rather than digging through files.

Monitoring the Airshed: THE ROLE OF AIR QUALITY IN PRESCRIBED BURNING

Many forest landowners are familiar with CAL FIRE and its role in wildfire suppression, backyard burning, and prescribed fire permitting. However, the California Air Resources Board (CARB) plays an equally important role, managing the smoke impacts which inevitably follow the flames. The regulation and permitting associated with smoke distribution is a critical element of prescribed burning and ensures that smoke production is not negatively impacting public health. For landowners interested in using prescribed fire as a tool to manage their lands, they must acquire appropriate permits from their local air quality management district.

To find out which air district manages your neighborhood's airspace, visit: arb.ca.gov/californiaair-districts.

How do I acquire a smoke permit?

To acquire a smoke permit, call your local air district and they will help you determine which permit fits your needs. Some air districts require fees for the permitting process. In addition, if you are planning a large broadcast burn or are located near a vulnerable community (i.e., hospital, school, etc.), a Smoke Management Plan may be required. In addition to the permitting process, landowners wishing to burn must check that it is a 'permissive burn day.' This is a determination made by the local air district that is based on air quality forecasts. These forecasts may be impacted by high levels of particulate pollution or inversion layers that would cause smoke to negatively impact communities instead of rise and disperse.



CARX DECEMBER 2022

In December 2022, the third cohort of the California State Certified Prescribed Fire Burn Boss (CARX) program successfully completed the class at CSU Chico. The University of California Cooperative Extension, in partnership with other cooperators including CAL FIRE, the Cattleman's Association, and Prometheus Fire Consulting, provided a range of training, technical support, financial assistance, and peer networking to aspiring burn bosses throughout the state. Graduates of the program may be eligible for gross negligence under SB 332 and develop a robust private sector to help private landowners and burn practitioners implement prescribed fire programs. To learn more, explore the Office of the State Fire Marshal's webpage (osfm.fire.ca.gov).



CAL FIRE

John Ramaley, Deputy Chief of Forestry Assistance; john.ramalay@fire.ca.gov

CAL FIRE Forestry Assistance Specialists (FAS)

Find the FAS for your county.

Mayra Negrete (mayra.negrete@fire.ca.gov) and Kevin Kiniery (kevin.kiniery@fire.ca.gov) (Alameda, Contra Costa, Fresno, Imperial, Inyo, Kern, Kings, Los Angeles, Merced, Mono, Monterey, Orange, Riverside, San Benito, San Bernadino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Stanislaus, Tulare, Ventura):

David Ahmadi (david.ahmadi@fire.ca.gov) (El Dorado, Nevada, Placer, Sacramento, Sierra, Sutter, Tahoe Basin, Yuba):

Shane Larson (shane.larson@fire.ca.gov) and Andrew Hubbs (andrew.hubbs@fire.ca.gov) (Glenn, Lassen (West), Modoc, Shasta, Siskiyou, Tehama (West), Trinity (East));

Alex Stone (alex.stone@fire.ca.gov) (Butte, Colusa, Lassen (East), Plumas, Tehama (East))

Zsolt Katay (zsolt.katay@fire.ca.gov) (Alpine, Amador, Calaveras, Madera, Mariposa, Tuolumne)

James Robbins (james.robbins@fire.ca.gov) (Del Norte. Humboldt)

John Ramaley (CFIP@fire.ca.gov; (Lake, Marin, Mendocino, Napa, Solano, Sonoma, Yolo)

California Association of Resource Conservation Districts (RCDs)

916-457-7904; staff@carcd.org

Natural Resources Conservation Service (NRCS)

Chris Zimny, State Forester; 530-400-4627; chris.zimny@usda.gov

UC Cooperative Extension Forest Advisors

Mike Jones (Mendocino, Sonoma, Lake); 707-463-4495; mjones@ucanr.edu

Susie Kocher (El Dorado, Amador, Calaveras, Tuolumne); 530-542-2571; sdkocher@ucanr.edu

Lenya Quinn-Davidson, Area Fire Advisor, (Humboldt, Trinity, Siskiyou, Mendocino); 707-445-7351; Iquinndavidson@ucanr.edu

Ricky Satomi (Sutter, Yuba, Butte, Nevada); 530-822-6213; rpsatomi@ucanr.edu

Ryan Tompkins (Plumas, Sierra, Lassen); 530-283-6125; retomkins@ucanr.edu

Bill Stewart, Emeritus: 510-643-3130: billstewart@berkeley.edu

Yana Valachovic (Humboldt, Del Norte); 707-445-7351; yvala@ucanr.edu

Rob York, (Statewide); 530-333-4475; ryork@berkeley.edu

Kristen Shive, (Statewide); kshive@berkeley.edu

USDA Forest Service

Dana Walsh, Forest Legacy and Stewardship Program Manager; 530-450-5555; dana.walsh@usda.gov

FORESTLAND STEWARD // WINTER 2023

WINTER 2023 // FORESTLAND STEWARD

Events Calendar:

NATIONAL CONVENTION

Society of American Foresters (SAF) National Convention:

"Forestry: It's in Our DNA" Sacramento, October 25 to 28

Register here: eforester.org

California Wildfire and Forest Resilience Task Force

Upcoming Meetings:

March 30, 2023: Sacramento May 11 – 12, 2023: Central Coast

Archived meetings and videos can be found **here**.

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California Forest Stewardship Workshops

Trinity County

Online beginning March 14, 2023 - May 9, 2023 and in-person field day Saturday, April 1st

Fresno-Madera Counties

Online beginning May 3, 2023 - June 28, 2023 and in-person field day, Saturday, May 20th

Santa Clara County

Summer 2023. Registration coming soon.

Join the workshops to understand and protect your forests by developing a Forest Management Plan. Registration for the workshops is \$60. Sign up online. For questions, contact Kim Ingram, kcingram@ucanr.edu.

Forest Landowners of California (FLC) Annual Meeting

Ukiah Valley Conference Center, May 5 - 6, 2023

Registration information will be available on the FLC website: **forestlandowners.org**.