



California Forest Pest Council

Fostering education on the pests of California's forests since 1951

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Upcoming Events - Save the Date!

March 22 - "Forest Health in the North Coast" meeting; UC Cooperative Extension, Humboldt County; Sequoia Conference Center, 901 Myrtle Avenue, Eureka. To register, or for more information, contact Dan Stark at stark@ucanr.edu.

April 17 - Free Arborist, Tree Care Specialist, & Urban Forester Spring Sudden Oak Death Training Session; UC Cooperative Extension, Sonoma County; 133 Aviation Blvd. #109, Santa Rosa. Register at <http://ucanr.edu/SonomaSODTraining2018>. For more information, contact Kerry Wininger at kwininger@ucanr.edu.

April 24 - Free Arborist, Tree Care Specialist, & Urban Forester Spring Sudden Oak Death Training Session; UC Berkeley; Morgan Lounge, 114 Morgan Hall; Berkeley. To register, or for more information, email contact@matteolab.org.

May 1 - Free Arborist, Tree Care Specialist, & Urban Forester Spring Sudden Oak Death Training Session; UC Santa Cruz Arboretum; 1156 High St, Large Conference Room; Santa Cruz. To register, or for more information, contact Brett Hall at brett@ucsc.edu.

August 5-10 - The [6th International Conference on the Genetics of Tree-Parasite Interactions: Tree Resistance to Insects and Diseases: Putting Promise into Practice](#); Mt. Sterling, OH
November 13-14 - 2018 California Forest Pest Council Annual Meeting; More information will be forthcoming soon.

New Silvicultural Techniques for Forest Health & Restoration



Students plant seedlings & map locations at Humboldt Co. VDR study area.
J.P. Pascal Berrill, Humboldt State University

The recent 5-year drought and accompanying massive bark beetle outbreak in the Sierra Nevada region caused unprecedented conifer mortality. These are just two symptoms in a growing list of indicators that our climate is changing. California is also experiencing longer fire seasons, more extreme fires, life-threatening mudslides, species migration, and more.

To respond to these changing conditions, forest scientist Pascal Berrill (Humboldt State University) has been experimenting with new silvicultural techniques for forest restoration, such as variable-density retention (VDR). VDR involves removing undesirable and

unhealthy trees in a stand while keeping the healthy, desirable ones, regardless of their location, and then planting a new crop of trees among the healthy trees as well as in the open canopy gaps created by tree

removals. At a Douglas-fir/tanoak forest (Humboldt County) study site, non-merchantable hardwoods and low-vigor, small conifers were harvested, creating a mosaic of different densities over the landscape (66 x 66 ft patches) as well as varying light levels and competition in the understory. Different environmental factors were found to affect growth of redwood seedlings planted at the site (outside their natural range) versus the native Douglas-fir seedlings planted, although both thrived. The VDR system met management goals of recreating a patchy forest mosaic, restoring conifer dominance, and enhancing structural complexity by introducing a new age class of trees growing at different rates.

In Sierra Nevada forests, including those affected by bark beetles and wildfires, the VDR system could be applied to remove unhealthy trees and regenerate new age classes of trees. Harvest efforts could mimic a mixed-severity fire regime in which fire kills smaller trees as well as random patches of trees, promoting tree regeneration. Additionally, instead of relying on natural regeneration from the local seed source, planting seedlings selected for resistance to disease or better adapted to the changing local climates of the future could be implemented.

Planting a new age class of trees in patches of high-severity burning, especially high-priority areas for restoration (i.e., adjacent to streams, steep slopes) will help stabilize these areas over the longer term. This could be done in tandem with short-term mitigation strategies such as felling some (unhealthy/dead) trees to create physical barriers to erosion, and establishing buffer strips of low-statured vegetation. Restoration of erosion-impacted sites is more difficult, and may require establishment of different species better adapted to degraded sites that will tolerate the poor conditions, prevent further degradation, rebuild soil, and possibly act as a nurse crop creating conditions favorable for additional species to become established over time and restore biodiversity.

For more information on VDR, see Berrill, J.P.; Dagley, C.M.; Gorman, A.J.; Obeidy, C.S.; Powell, H.K.; and Wright, J.C. 2018. **Variable-Density Retention Promotes Spatial Heterogeneity and Structural Complexity in a Douglas-fir/Tanoak Stand.** Curr Trends Forest Res: CTFR-108.

Fire on the Mountain: Rethinking Forest Management in the Sierra Nevada

The **Little Hoover Commission released a report on February 19th** calling for a dramatic culture change in the way California's forests are managed to curb a disastrous cycle of wildfire and tree deaths. Among the Commission's nine recommendations, it urges the state to take a greater leadership role in collaborative forest management planning at the watershed level. The Good Neighbor Authority granted in the 2014 Farm Bill provides a mechanism for the state to conduct restoration activities on federal land, but state agencies must have the financial and personnel resources to perform this work. As part of this collaborative effort, it calls upon the state to use more prescribed fire to reinvigorate forests, inhibit firestorms, and help protect air and water quality. Central to these efforts must be a statewide public education campaign to help Californians understand why healthy forests matter to them, and elicit buy-in for the much-needed forest treatments.

Newsletter feedback and ideas are welcome. Please submit comments to caforestpestcouncil@gmail.com.

When buying firewood for camping or home heating this fall, remember to buy wood sourced local to where you will be using it, helping to minimize the spread of pests and diseases - **Buy It Where You Burn It** For a list of local firewood dealers, go to firewoodscout.org.

Sincerely,

The California Forest Pest Council



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