

Science and Management Symposium
Lessons Learned from Extreme Drought and Tree Mortality in the Sierra Nevada:
How Can Past Events Inform our Approach Forward?

Tuesday July 25th, 2017

[USFS Wildland Fire Training & Conference Center](#), Thirty Mile Meeting Room (N106)



Target Audience: Federal, State, and Private Forest Managers, Line Officers, Foresters, Special Interest Groups, University and Federal Scientists, Tribal Members and Managers, Interested Stakeholder, and Partners

Summary: The US Forest Service has estimated that over 102 million trees have died in the Sierra Nevada since 2010; other parts of the State have also experienced increased rates of tree mortality. This unprecedented tree mortality event has been attributed to the combined effects of historical land management practices, including fire suppression, drought, climate warming, and insect outbreaks. Mindful that future projections indicate warmer temperatures and increases in fire activity, it is prudent to carefully examine the relative contributions of these factors in influencing patterns of tree mortality on the landscape. This science and management symposium will provide a forum where experts and managers can share findings, results, and experiences from the tree mortality event to help build a framework for development, planning, and implementation of future forest management strategies and activities. Our intent is to treat the topic generally, setting the stage for future symposia that will more explicitly examine the potential suite of management actions (e.g., reforestation, fire & fuels management, and partnerships & opportunities) for sustaining California's forests.

Guiding Questions:

1. What are the past events that contributed to tree mortality?
2. What are the conditions, activities, and actions that influenced patterns of tree mortality and survival on the landscape?
3. What are the expected conditions for the future?
4. What are the options for future forest management?

Drought & Tree Mortality Symposium PowerPoints will be posted at:
<https://www.climatehubs.oce.usda.gov/content/california-drought-and-tree-mortality-symposium>

8:00 AM – 8:30 AM	Arrive/Check-In <i>Continental Breakfast Available Until 10:00AM</i>	Thirty Mile (N106A)
8:30 AM – 9:00 AM	Welcome <i>Symposium Kickoff</i> -- Caelan McGee, CCP – WFTC Staff – Cynthia West, USFS, WO OSC – Jeff Marsolais, USFS, R5 -- Steve Ostoja, USDA Climate Hub	Thirty Mile (N106A)
9:00 AM – 10:00 AM	Considerations of the Past and Expectations for the Future (Moderator: Chris Fischer) <i>Session Objective: To provide an overview and understanding of the historic drought and tree mortality in California Forests</i> <i>The Sierra Nevada Tree Mortality Event: Historic Context and General Patterns</i> – Marc Meyer, USFS R5 <i>What Killed over 100+ Million Trees in the Sierra Nevada? The Biological Basis for How Trees Persist and Thrive</i> – Nancy Grulke, WWETAC <i>Which Environmental Conditions and Actions Contributed to Tree Mortality and Associated Resource Effects?</i> – Chris Fettig, USFS PSW <i>California’s Tree Mortality: Lessons from the Intermountain West</i> – Jodi Axelson, UCB Coop Ext. <i>Panel: All/Group Questions</i>	Thirty Mile (N106A)
10:00 AM – 10:30 AM	Break	
10:30 AM – 11:30 AM	Patterns & Drivers of Tree Mortality: From the Tree to Landscape (Moderator: Koren Nydick) <i>Session Objective: Taking a closer look at factors that have led to patterns of mortality and</i>	Thirty Mile (N106A)

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survivorship: considering what lived, what died, where and what might have influenced the result?

Species-Specific Patterns of Mortality vs. Survivorship

- Ramiro Rojas, USFS R5
- Lauren Pile, USFS R5

What are the Spatial-Temporal or Other Patterns of Mortality vs. Survivorship?

- Adrian Das, USGS

Density Matters - Forest Thinning Treatments Reduce Drought Stress and Tree Mortality in the Sierra Nevada

- Christina Restaino, UC Davis

Is There a Relationship Between Tree Mortality and Fire Susceptibility?

- Phil van Mantgem, USGS

Panel: All/Group Questions

11:30 AM – 1:00 PM

Lunch

1:00 PM – 2:00 PM

**Moving Forward with Changed Conditions: The Future of California Forests with Climate Change & Extreme Events
(Moderator: John Battles)**

Thirty Mile (N106A)

Session Objectives: An overview of future conditions that will affect California Forests, including increased temperatures, changed precipitations, and increased climatic water deficit, and providing visions for future management approaches.

- Becky Estes, USFS R5
- Malcolm North, PSW
- John Exline, USFS R5
- Koren Nydick, NPS
- Helge Eng, Cal Fire
- Bob Kingman, SNC
- Kim Carr, NFF

Panel: All/ Group Questions

2:15 PM – 3:30 PM

Concurrent Expert Stations

Cookies, Brownies, Coffee, Ice Tea, & Lemonade Available

Session Objective: Considerations for future management actions - a survey of options for next steps.

Instructions: The three panels will be running concurrently. Please initially attend the station you selected in your pre-symposium survey. You are welcome to switch topics part way through this session.

Station 1: Thirty Mile
(N106A)

Station 2: Rattlesnake
(N107)

Station 3: Dude
(N109)

Expert Station #1: Reforestation

- Moderator: Jodi Axelson, UCB Coop Ext.
- Malcolm North, PSW
- Jessica Wright, PSW
- Joe Sherlock, USFS R5
- Marty Gmelin, USFS R5
- Jodi Axelson, UCB Coop Ext.

Expert Station #2: Fire and Fuels Management

- Moderator: Christy Brigham, NPS
- Craig Thomas, Sierra Forest Legacy
- Robin Wills, NPS
- Helge Eng, Cal Fire
- Tony Caprio, NPS
- Jennifer Anderson, USFS R5

Expert Station #3: Partnerships and Opportunities

- Moderator: Liz van Wagtendonk, SNC
- Bob Kingman, SNC
- Kim Carr, NFF
- Jonathan Birdsong, NFWF
- Sarah Campe, SNC
- Lauren Pile, USFS R5
- Connie Zipperer, USFS R5

3:30 PM – 3:45 PM	Moderators Organize Report Outs (Break for Others)	Thirty Mile (N106A)
3:45 PM – 4:15 PM	Concurrent Session Report Outs (Moderators: Lara Buluç and Steve Ostoja) -- Jodi Axelson, UCB Coop Ext. -- Christy Brigham, NPS -- Liz van Wagtendonk, SNC -- Sarah Campe, SNC	Thirty Mile (N106A)
4:15 PM – 4:45 PM	Large-Group Discussion	Thirty Mile (N106A)
4:45 PM – 5:00 PM	Closing Remarks	Thirty Mile (N106A)