



## Tree Mortality Task Force Forest Health and Resilience Working Group Minutes

October 4, 2017

CAL FIRE FRAP Office, 1300 U Street  
Sacramento, CA

- I. **FHRWG Member Roll Call:** Stewart McMorrow (CAL FIRE), Dr. Chris Keithley (CAL FIRE-FRAP), Dr. Tom Smith (CAL FIRE), Rich Wade (BOF), Kelly Larvie (CAL FIRE-FRAP), Tadashi Moody (CAL FIRE-FRAP), Heather Williams (CAL FIRE), Kevin Conway (CAL FIRE), Margarita Gordus (DFW), Joe Sherlock (USFS), Cedric Twight (SPI), Susie Kocher (UCCE), and Pete Cafferata (CAL FIRE).

**FHRWG Participants:** Liz van Wagendonk (SNC), Kristen Merrill (CAL FIRE), Topher Henderson (CAL FIRE), Kelly Keenan (CAL FIRE-RA), Tricia Maloney (UC Davis), and Dave Passovoy (CAL FIRE-FRAP).

- II. **Approval of September 2017 Meeting Minutes:** The September meeting minutes were approved. Minutes from past FHRWG meetings are posted on the TMTF website: <http://www.fire.ca.gov/treetaskforce/workinggroups>

- III. **Update on the FHRWG Reforestation Story Map**  
Heather Williams stated that the revised Reforestation Story Map is currently in the CAL FIRE "green sheet" Executive staff review process. It consists of 16 slides, as well as supporting videos, weblinks, and concise verbiage. Main topics include drought information, the bark beetle epidemic/increased fire risk, TMTF information, seed zone information, reforestation, and resources available to landowners. Some of the slides were reordered and minor text editing took place following input received at the last FHRWG meeting. When approved, the Story Map will be available to be posted on all the impacted counties' websites, as well as the TMTF website.

- IV. **Discussion on Development of a Reforestation Strategy for California**  
Stewart McMorrow led a discussion on the revised draft reforestation strategy outline. Comments received following the September meeting have been incorporated in the current version of the outline. Stewart and Dr. Steve Ostoja, California Climate Hub, will make the final changes to the document. The main subject headings are: background and foundational concepts, strategies, approaches and actions, and resources for managers. The completed outline will be reviewed by the Board of Forestry and Fire Protection, likely at their November meeting. After accepting the Board's input, a contract will be developed with the CA Climate Hub to hire authors for the various chapters. The authors will develop outlines for each chapter, which will then be reviewed and approved by the FHRWG.



Key goals include (1) incorporating knowledge from field practitioners to create a practical “toolkit” that is easily understood and used by landowners, with quantifiable outcomes, and (2) building an “all lands” strategy (applicable to nonindustrial, industrial, and USFS forestlands).

V. **Update on FHRWG White Paper Synthesis on the Long-Term Sierra Outlook**

Pete Cafferata stated that a new complete working draft for the third FHRWG white paper synthesis on the long-term outlook for the Sierra Nevada has yet to be completed. A hard copy version of an interim draft reflecting comments from Dr. Chris Fettig, Dr. Jodi Axelson, Larry Camp, and Stewart McMorrow was provided. Kelly Larvie and Tadashi Moody displayed the beta test for the GIS analysis they conducted on the Sierra National Forest to determine areas most likely to experience type conversions from mixed conifer forest to shrub and oak/grass/woodland types. Screening factors included aspect (S, SE, SW), tree mortality (>40 trees/ac from ADS), non-industrial forestland, very high fire threat (FRAP 2015 dataset), and shallow soil depth (UC Davis soil properties GIS layer (see: <https://casoilresource.lawr.ucdavis.edu/ca-soil-properties/>)).

Soil depth is problematic since the UC Davis GIS layer is composed of NRCS SSURGO data, backfilled with coarser STATSGO data where there are incomplete data. Dr. Toby O’Geen, UC Davis, was consulted regarding soil depth and available water holding capacity. He informed us that we need soil depth to hard bedrock, since trees use water in deep weathered regolith, but it is currently not available (the NRCS data provides soil depth to soft bedrock). Ryan Ferrell’s MS thesis from UC Davis provides useful information on this topic. It was also determined that a topographic position index (TPI) would be a useful layer to include in this exercise. Based on professional judgement, the following algorithm was developed for the areas most likely to experience type conversion:  
Mortality \* 3 + Aspect \* 2 + Fire Hazard + Soil Depth + Forested (non-commercial)  
The GIS result for the area near Shaver Lake was displayed for three categories (high, moderate, and low).

Future iterations will consider climate water deficit (CWD) for mixed conifer species and alternate methods for looking at tree mortality (e.g., eDaRT). Liz van Wagtendonk suggested using the Dinkey Creek Project area to test the model against other existing datasets developed with paired LiDAR. The goal is to model overall patterns in the southern Sierra Nevada, rather than potential type changes for a specific site. Kevin Conway suggested using “departure from pre-drought conditions” rather than “conversion” in the white paper.

VI. **Update on Sierra Nevada Forest Science Coordination Group**

Kelly Larvie provided a detailed demonstration of the editable web map that Liz van Wagtendonk, Tadashi Moody, and she developed for capturing research and monitoring



data being collected in the Sierra Nevada related to tree mortality. The web map allows researchers to delineate a polygon around the research or monitoring project area; they are then prompted to enter information about the project. The data can be exported to an Excel spreadsheet table from the ArcGIS web map which can be sorted and queried. Liz has produced a detailed set of instructions on how to use the web mapping tool, including definitions. Jodi Axelson and Susie Kocher have beta tested the tool.

Refinements are still being made prior to distribution of the product to our contact list with 64 people. The group suggested adding mastication and commercial harvest to the list of possible treatments. Joe Sherlock suggested including older research projects located in the main 10 county tree mortality area; this type of information will be requested along with current research in the email request (e.g., an adequate description of the types of projects to be included). **It was proposed that a small sub-working group composed of Susie Kocher, Jodi Axelson, Mark Rosenberg, Chris Keithley, Tadashi Moody, and Pete Cafferata analyze preliminary data collected for this project.**

#### VII. **New Business and Announcements**

Liz van Wagendonk provided the FHRWG with the following peer reviewed published paper, which was distributed to the FHRWG email list prior to this meeting:  
North, M.P. et al. 2017. Cover of tall trees best predicts California spotted owl habitat. *Forest Ecology and Management* 405: 166–178.

Stewart McMorrow announced that he has assembled the “Seed Zone Map Updating Sub-Group”, a new FHRWG sub-working group, to explore how to best revise the current California seed zone map (last updated in the mid-1970’s). **If FHRWG participants are interested in joining this group, they should inform Stewart.**

Heather Williams announced that reforestation topics/stories appropriate for inclusion in the TMTF One Year Fact Sheet should be rapidly forwarded to her to allow inclusion in the document.

#### VIII. **Next FHRWG Meeting**

The next meeting will be held on **November 1<sup>st</sup>**, 2:00 p.m., at the CAL FIRE FRAP office in Sacramento. Meetings after November will be held at the California Prison Industry Authority (CALPIA) office at 19<sup>th</sup> and U Streets in Sacramento.