



Tree Mortality Task Force Forest Health and Resilience Working Group Minutes

December 6, 2017

CALPIA Office, 2125 19th Street
Sacramento, CA

- I. **FHRWG Member Roll Call:** Stewart McMorrow (CAL FIRE), Dr. Tom Smith (CAL FIRE), Kelly Larvie (CAL FIRE-FRAP), Tadashi Moody (CAL FIRE-FRAP), Kevin Conway (CAL FIRE), Margarita Gordus (DFW), Joe Sherlock (USFS), Dr. Jodi Axelson (UCB), Sherry Hazelhurst (USFS), and Pete Cafferata (CAL FIRE).

FHRWG Participants: Liz van Wagtendonk (SNC/UW), Kristen Merrill (CAL FIRE), Topher Henderson (CAL FIRE), Coreen Francis (BLM), Emily Meriam (CAL FIRE-FRAP), and David Pegos (CDFA).

- II. **Approval of October 2017 Meeting Minutes:** The October meeting minutes were approved (no meeting was held in November). 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**
Emily Meriam stated that the revised Reforestation Story Map remains in the CAL FIRE “green sheet” Executive staff review process. It consists of 16 slides, 4 maps, and supporting videos and weblinks. Main topics include drought information, the bark beetle epidemic/increased fire risk, TMTF information, seed zone information, reforestation, and resources available to landowners. **When approved, the Story Map will be available to be posted on all the impacted counties’ websites, as well as the TMTF website.**

Emily informed the group that she provided a presentation on the evolution of the Reforestation Story Map during the California Natural Resources Agency “GIS Day Conference” held on November 6, 2017 (see: <http://calfire-forestry.maps.arcgis.com/apps/MapJournal/index.html?appid=85211567f6f44f1bbe67e5fb5765fee0>). A YouTube video of the presentation is posted at: <https://www.youtube.com/watch?v=h6viKQjR0hc> (Emily’s presentation begins at the 5:28 minute mark).

- IV. **Discussion on Development of a Reforestation Strategy for California**
Stewart McMorrow summarized the status of the reforestation strategy for California. A detailed outline for a comprehensive project was finished in early October. Dr. Steve Ostoja, California Climate Hub, provided a high cost proposal to produce the document with a lengthy timeline. CAL FIRE Executive staff decided to truncate the project, resulting in a revised, shortened version of the outline. The new version places strong emphasis on



incorporating knowledge from field practitioners to create a practical “toolkit” that is easily understood and used by landowners, with quantifiable outcomes. A revised proposal is expected shortly from Dr. Ostoja. It is anticipated that a postdoctoral researcher will oversee and write the majority of the document, with limited assistance from experts in various reforestation topics. Stewart informed the group that the USFS’s Reforestation Framework for Dinkey Creek provides a good example of a pragmatic approach that can be used as a model for the current project.

Sherry Hazelhurst stated it is critical to get reforestation information out to nonindustrial landowners quickly (e.g., April 2018). She suggested widely publicizing existing or new webinar websites, fact sheets, and white papers regarding reforestation—including possibly having Steve Ostoja set up a new reforestation workshop in the spring with a short proceedings. Jodi Axelson said that Susie Kocher’s successful reforestation workshops for UC Master Gardeners and associated information are good educational tools that are available (e.g., “What to Plant After Tree Loss” brochure; see:

<http://www.fire.ca.gov/treetaskforce/downloads/TMTFMaterials/UCCE%20Central%20Sierra%20Master%20Gardeners%20-%20What%20to%20Plant%20After%20Tree%20Loss.pdf>).

Also, webpages hosted by UC ANR Cooperative Extension are potentially useful (e.g.,

http://ucanr.edu/sites/forestry/Tree_Mortality/, <http://anrcatalog.ucanr.edu/pdf/8237.pdf>).

Stewart stated that he would assemble a new FHRWG subcommittee/action team to plan how to rapidly disseminate reforestation information to small landowners.

V. **Update on Progress Made by the Seed Zone Map Update Group (FHRWG Subcommittee)**

Stewart McMorrow stated that the goal of the Seed Zone Map Update Group is to seek an appropriate update to seed zone delineation through exploration of existing and emerging technologies and science. Key questions include what is working, and what is not working about the current seed zone system. The group has met four times, including on December 5th at the USFS Institute of Forest Genetics in Placerville to come up with action items for furthering this project and to visit an active provenance test. They heard presentations from USFS geneticists, seed bank managers, reforestation managers, and silviculturalists. Action items discussed included (1) reviewing and compiling a revised list of seed transfer guidelines, (2) standardizing collection information at the seed bank, (3) standardizing seed bank archive policies and procedures, (4) developing individual species adaptability characteristics, (5) further developing the seed lot selection tool for use in California, (6) developing climatic analysis of existing seed zones, and (7) performing synthesis of existing provenance studies to help inform these questions.

VI. **Update on the Third White Paper on the Long-Term Outlook for the Sierra Nevada**

Pete Cafferata summarized the genesis and timeline for the third FHRWG white paper titled “Synthesis of Relevant Studies Exploring the Long-Term Outlook for Sierra Nevada Forests following the Current Bark Beetle Epidemic.” The first draft was produced on September



1st, and subsequent working drafts have been produced that incorporate comments from six reviewers. Recent information from Jodi Axelson's research project utilizing data from 3 of the 8 sites being studied throughout the Sierra Nevada has been incorporated in the draft paper. Data were from a poster Jodi presented at the 2017 California Forest Pest Council Annual Meeting titled "Post-Drought Mortality in Sierra Nevada Mixed-Conifer Forests of California." Jodi informed the group that data from plots installed in Yosemite and Kings Canyon-Sequoia National Parks show that incense cedar and black oak mortality occurred in all size classes due to drought, whereas mortality for white fir, sugar pine, and ponderosa pine was concentrated in larger size classes, due to bark beetles' preferences for larger host trees. Mortality by bark beetles was concentrated in old attack categories (pre-2017). Mortality at the Plumas site was much less than at the Yosemite and Kings Canyon-Sequoia sites. New attacks were greatest for fir engraver at the Plumas site and mountain pine beetle at Yosemite.

Modeling work for the white paper continues to determine areas most likely to experience type conversions from mixed-conifer forest to shrub and oak/grass/woodland types without active reforestation efforts. Previously, Kelly Larvie and Tadashi Moody conducted GIS analysis using several screening factors (aspect, tree mortality, nonindustrial forestland, very high fire threat, and shallow soil depth) for the Shaver Lake area in the Sierra National Forest. Digital soil depth data to hard bedrock were not available on a statewide basis. Tadashi and Kelly have developed a new set of GIS modeling criteria for a second modeling iteration. Filtering criteria include vegetation type (Montane hardwood-conifer, ponderosa pine, Sierran mixed conifer, Jeffrey pine, white fir), and management type (nonindustrial). Scoring criteria include mortality (>40 TPA), wildfire hazard potential (federal data set—high or very high), aspect (S, SW, SE), and topographic position index (TPI) data. TPI will include several metrics (slope shape (convex or concave), elevation, distance from a watercourse), and is still under development.

Liz van Wagendonk stated that Kristen Shive, PhD candidate at UC Berkeley, has collected post-fire data on a suite of vegetation characteristics in Yosemite National Park that may prove very useful in validating modeling results produced. **Pete Cafferata volunteered to contact Kristen to attempt to obtain a PowerPoint presentation summarizing her data. Additionally, Pete will contact Dr. Toby O'Geen, UC Davis, regarding the availability of a new digital data layer for soil depth to hard bedrock.** The end result of the GIS modeling will inform landowners regarding the general locations where successful reforestation will be most challenging. Sherry Hazelhurst stated that we must consider how the data will potentially be used (e.g., affecting potential funding opportunities).

VII. **Update on Progress Made by the Sierra Nevada Forest Science Coordination Group (FHRWG Subcommittee)**

Pete Cafferata briefly summarized the goals of the Sierra Nevada Forest Science Coordination Group, including identifying ongoing research and focused monitoring projects



related to tree mortality in the Sierra Nevada. Liz van Wagtendonk, Kelly Larvie, and Tadashi Moody have produced a geodatabase for capturing research and monitoring data being collected in the Sierra Nevada related to tree mortality. The web-based survey tool allows researchers to delineate a polygon(s) around their 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. The site address is: <http://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=3d9ca2f2bc524d40a1ecedf078b6f5bc>

The survey tool was launched on November 15th, with a detailed email message sent to 60 researchers requesting data input by December 15th. To date, we have received input from 9 researchers, and we are in discussion with 5 others regarding how to input their data. Some researchers appear to be hesitant to attempt to use the geodatabase, apparently thinking that it is too time consuming. A conference call will occur on December 8th with Liz, Kelly, and Pete to determine how to best remedy this issue. A very brief video may be produced to demonstrate the ease of use of the tool (e.g., providing a general project boundary or emailing shapefiles). It is likely that subcommittee members will have to contact individual researchers to capture their project data. **Jodi Axelson suggested sending a second large group email message asking very simple questions to gauge their interest (e.g., do you have appropriate data? are you willing to contribute? do you need assistance?). It was also suggested to put the hyperlink for the geodatabase on the TMTF website.**

VIII. **New Business and Announcements**

Sherry Hazelhurst announced that the US Forest Service may release the new tree mortality numbers next week at the TMTF meeting at the Capital.

IX. **Next FHRWG Meeting**

The next meeting will be held on January 3rd, 2:00 p.m., at the CALPIA conference room in Sacramento.