**Flip chart notes from Drought Mortality meeting 3-12-2018**

Participants were asked to discuss the usefulness of information presented and what else could be done to develop a useful product from existing data Participants said that the data was very useful overall, especially to give the broad scale overview of tree mortality in the Sierra.

**Needs and comments on the information presented included:**

***Mortality projections:*** Projections for future mortality at the county level. What is the future of mortality? Is more mortality likely in the future? Is there a threshold of precipitation that triggers mortality? A mortality risk model would help. The work of Dr. Haiganoush Priesler (PSW) using a statistical prediction based on precipitation was suggested as a model. Here is the link: <http://usfs.maps.arcgis.com/apps/MapJournal/index.html?appid=7b78c5c7a67748808ce298efefceaa46>

***Context of mortality:*** We need to be able to contextualize mortality within the overall state or condition of the forest. What was the health and a structure before the drought? What does a healthy forest look like?

***Residual forest stand:*** What living trees are we left with after the drought caused mortality? At the local scale, what is the surviving forest and regeneration. It should be place specific and aggregate available data. This helps managers and gives some guidance within the larger scope of forest management moving forward.

***Risks associated with mortality***: Tree mortality data that is tied to critical human infrastructure such as power lines, roads, where people are going to be is the most useful to counties in the Tree Mortality Task Force area Tier 1 areas. We need to compare predicted versus actual tree fall rates. Some reports are coming in that trees are falling faster than expected or modeled for in Forest Vegetation Simulator (FVS). This is important for hazard prediction. We need on-going field monitoring.

***Local fine scale data:*** The people living in forest communities need to know how the forest is changing. Local, county level data is useful for this. We also need better forest health monitoring data state-wide from all causes not just drought and beetles.

***Spatial distribution of mortality/ refugia***: Where are the areas that are unlikely to grow back well without excessive resources being put in? Where are the marginal habitats for trees, especially with regard to fire? Where are the productive refugia for trees? Though the mortality has been very high in the Southern Sierra, resources and responses should still go there. Southern Sierra Nevada managers need help with ‘triage’. Where should thinning be prioritized because trees have a better chance of doing well? Recommendations are needed at the fine scale.

***Time frame of information:*** Recommendations provided should be based on near-term projections. What is the outlook for the next one to two years, five years, ten years, etc.

***Social impact data:*** Some small forest landowners are selling their land because they don’t want to live in a ‘sea of dead trees’. There may be a real social impact to the mortality on land tenure, land value due to tree death, costs and the ability to buy insurance. This would be a good project for a Cal grad student to identify the social impact.

***Outcomes for small landowners***: Small landowners face a big challenge to managing land– this is an unmet need. Fire Safe Councils are effective but overwhelmed. There is a limited response. The county focuses on infrastructure, but what about the rest of the property? Small landowners fall through the cracks.

***Data sharing:*** The tree mortality task forces for Placer, Amador and Tuolumne counties have identified watch trees that may die in the future while they were removing already dead trees. Would this data be useful to anyone? They’d be willing to share their information.

***Data repository:*** We need a data repository with the potential to provide insight at the county level (like the CalFire Tree Mortality Viewer) and to capture data that is available. The Tree Mortality Task Force has already started that. Where are the gaps? The Sierra Nevada Conservancy watershed information is a good example. One challenge with a repository is how to maintain it. It requires funding, commitment, and energy. It’s easier to fund projects than to fund hubs/ clearinghouses.

***Communication:*** We need better on-going connections between planners, managers, and scientists. In-person workshops are helpful to hear the broader perspective. The TMTF hosted a meeting to share lessons learned by counties in project funding. This information could be better shared with county level task forces.

**Next Steps:**

The UC Berkeley team is going to be collecting additional data in the summer of 2018 and will consider hosting another meeting on this year’s data next year. They will be posting the presentations from the workshop on their website and will send everyone an email the materials are available.

**Evaluation:**

Participants thought the meeting had a good use of time, good flow and good food. In the future they suggested starting later since it’s a long drive for some. A longer meeting is OK. So, it’s probably best not to have the meeting on a day when the larger TMTF meets. The meeting could go from 10-3. Also, more breaks and time for presenters and Q&A would help. As would getting information ahead of time to study up. Panels of presenters in the afternoon would be helpful.