

Dolores Watershed and Resilient Forest (DWRF) Collaborative

Meeting 20

8-2-17, 1:30 - 3:30 at Dolores Water Conservancy District Office

In Attendance:

Dan West, Josh Dellinger, Jerald Peabody, James Dietrich, Duncan Rose, Ernie (Sunny) Fraser, Steve Garcher, Floyd Cook, Amanda Brenner-Cannon, Dewayne Findley, Phil Ayers, Bill Baker, Shauna Jensen, Ashley Downing, Liz Manus, Eric Janes, Derek Padilla, Ken Curtis, Pam Wilson, Mike Znerold, Bruce Short, Mike Preston, Thurman Wilson, and Rebecca Samulski (facilitating)

Pine Beetle Presentation – Dan West, Colorado State Forest Service Entomologist

Dan West made a presentation based on how he has seen things progress with pine beetle infestations in southwest Colorado over the past few years. Dan is the entomologist for the State Office of the Colorado State Forest Service, located in Fort Collins. While other parts of Colorado have had large pine beetle outbreaks, our part of the State hadn't in recent memory, until now. Dan was asked to consult on an infestation in Lone Mesa State Park a few years ago and since has been following the spread of beetle-killed trees there, in Lake Canyon and surrounding areas, and a concurrent outbreak in Cherry Creek.

The State Forest Service flies and maps insect and disease infestations annually and publishes the results. Aerial detection surveys of trees killed by pine beetle in our area have shown a large increase in size over the last seven years, as shown below. The trees that are mapped are the recent faders, the ones that are dying that year.

Year	Acres
2011	8
2012	492
2013	1,478
2014	1,628
2015	3,620
2016	6,643
2017	10,584

The dead trees found in 2011 were in lots of small pockets. Increasingly larger pockets were found in 2012 and 2013. By 2017 the pockets were still increasing in size and there were many new, small pockets moving out from the older ones. You can't tell which type of beetle is killing the trees from the aerial surveys; the fade pattern is basically the same, starting at the top of the tree and working down.

There are three types of pine beetles in Colorado: mountain pine beetle (*Dendroctonus ponderosae*), western pine beetle (*Dendroctonus brevicomis*), and round-headed pine beetle (*Dendroctonus adjunctus*). All three are present here but the dead ponderosa pine trees that we have been seeing the last few years appear to be the result of round-headed beetles. Most of the damage farther north in Colorado has been from mountain pine beetle. There is not much scientific literature about round-headed pine beetle, which has a range from Guatemala to northern Colorado. And the available research is from southern New Mexico in areas with a different stand composition and a different climate from here.

Round-headed pine beetles are obligate parasites. They have to attack new live ponderosa pine trees each year. Adult beetles fly from the host trees in October and November and attack new trees, where they build L-shaped galleries that can be over three feet long. The L-shape allows resin that contains chemicals that are toxic to the beetles to drain and collect in the bottom. Before the adult beetles die they lay eggs higher in the galleries that overwinter in the trees. They hatch around March and then go through several larval stages before they mature beginning in August.

Entomologists and foresters first assumed that the mortality in our area was from a combination of the three different species of beetles but examination of both captured beetles and their galleries showed that it is almost entirely round-headed pine beetles. The galleries look different, with mountain and western having more scrolling patterns rather than the long L-shape of round-headed. 392 out of 425 captured beetles were identified as round-headed with the remainder being mountain.

Western and mountain pine beetles typically kill older, weakened individual trees. Round-head pine beetles typically kill clusters of adjacent trees, including younger trees.

The literature describes round-headed pine beetle outbreaks as climbing quickly for about two years and then breaking up in one year. It is alarming that it is still building here after a much longer period. We don't know why that is happening.

The Colorado State Forest Service spent about \$50,000 masticating the trees killed in Lone Mesa State Park. The Forest Service currently has several timber sales in areas hit by the beetles. There is also some logging on the Jackson Ranch in the Cherry Creek area where another infestation is located.

There are several reasons why people should care about the outbreaks. One is the change in hydrologic regimes. Water runoff will likely occur earlier in the year, resulting in different reservoir fill patterns. Dead trees pose a recreation hazard. There is a loss of deer and elk thermal cover. Grasses and forbs cure off earlier, creating an earlier fire season. There is a loss of live trees that could produce commercial timber products but the dead trees are infected with a blue stain fungus that can add value to decorative wood products such as paneling over a short time span.

No one knows why this is happening now. The oldest knowledgeable people don't remember having something like this happen in our area. It is hard to predict how the outbreak will end. We are not likely to get a long enough period of sustained cold to get a beetle die-off. Much of it is occurring on ground where logging is feasible but it takes a good bit of work and time to prepare an area for timber sales and logging. More moisture and healthier trees would help by flushing pitch tubes with more resin, carrying beetles out of the trees.

The Colorado State Forest Service will continue to work with the US Forest Service to monitor and study the situation. Dan worked with the Dolores Ranger District staff to put in some chain-wide (66 feet) transects earlier this year to measure the percentage of trees infected. The infection rate varied from 0.5 to 22.5 percent in seven transects. They will also continue to put out traps with odors that attract beetles to measure the number and types. So far almost all of the beetles trapped have been round-headed. They are putting temperature probes in trees to study when the beetles fly. If they see beetles emerging in March or April, it would mean that we are getting two generations a year (which we don't currently think is happening). They are also putting up emergence cages to capture adults next season.

There was a question about whether firewood removal contributes to the spread of the beetles. Dan said no, the beetles have already flown by the time firewood is removed.

There were some questions about how stand densities and thinning might affect the situation. Dan said the research from New Mexico was focused on that topic but that it might not be that applicable here because those stands were mostly mixed conifer rather than pure ponderosa pine and were more dense to begin with. Dan's personal observation is that he is finding more beetles in dense stands but he can't say anything based on (the scant) scientific literature. This is one of the research objectives of the transects with the SJNF and in a proposal for future research. At high stand densities pheromones don't disperse as much, which results in more attraction and the trees are less vigorous.

A copy of Dan's slide presentation is available [HERE](#). Dan's phone number is 970-491-7282 and his email address is Dan.West@colostate.edu. The group requested that Dan give an update in another year or so and he said he would be willing to do that.

Updates:

Mike Preston gave an update for the timber working group. They are focusing on three key categories: supply security, market connections, and building industry capacity. The group met on Nov. 27th and really clarified many federal land contract options. The immediate work that came out of this included a team to put together a wood product market study and a team to investigate woody biomass energy generation opportunities which both met on Dec. 2nd.

Becca asked and received approval from the group to drop the “a” in DWaRF and use DWRF as the acronym, continuing to pronounce it the same way.

Becca made a presentation to Empire Electric Association (Manager Josh Dellinger attended this meeting), and the Greater Dolores Action group. She has an update scheduled with the Montezuma Community Economic Development Association Director on the Timber Industry Team.

Derek reported that the Taylor/Stoner aspen and spruce vegetation management decision might be ready by the end of the month. Work on a resulting timber sale called Fox Den on Taylor Mesa could start as early as January. (The Final Decision Notices for both the Aspen and Spruce Fir components of this project have been signed. The documents are posted on the project webpage at <https://www.fs.usda.gov/project/?project=48355> . The project received one pre-decisional objection which was reviewed and it was determined that the project may proceed.) They are also close to releasing a draft EA on prescribed fire.

Liz met with Lee Swenson, an advisor for Senator Bennet on Colorado Rural Policy, and shared a little bit about the existence of the DWRF Collaborative.

Duncan reported that the Dolores River Anglers three-year study on climate change with Mountain Studies Institute won the 2017 Colorado Trout Unlimited Exemplary Project Award.

Ken, Mike and Becca discussed the opportunity to apply for a WaterSMART grant from the Bureau of Reclamation. Up to \$50,000 per year for two years is available to either start or develop a watershed management group. No match is required. The application is due at the end of January. The Water Conservancy District has done several of these in the past and has a feel for how to go about it. They asked Thurman to join them on the core team and will be sending a clear task for input into the grant to those who volunteered, or that the group thought would be key informers, for specific topics.

Facilitation

- Strategic action planning – Becca and Mike
- Source water protection plan – Rich L and Duncan R
- Facilitation of teams – Becca and Mike
- Note taking - Becca

Outreach and Communications - Celene, Ellen R., Becca, Jimbo review

- Plan –
- Outreach materials – \$700 new funds dedicated
- Website development – estimate from DWCD
- Site visits on private lands integrating forest, soil, water conservation - Becca

Project Monitoring Plan – Aaron K and Anthony C

Next Meeting: The group agreed to generally keep to the first Wednesday, 1:30 to 3:30 schedule in 2018, but to look at an alternative for January, perhaps Tuesday, January 9. Becca will poll the group. (Sticking with January 3rd per the poll)

Notes by Thurman Wilson with Becca Samulski edits