**Forsythe II Multiparty Monitoring Group (MMG)**

**June 22, 2019, 9:00 AM to 2:00 PM**

**Mixed Conifer Units Field Trip**

**Meeting Summary – DRAFT**

**ATTENDANCE**

*Group Members:* Teagen Blakey, Chad Buser, Aurelia DeNasha, Lynne Diebel, Mark Foreman, Angela Gee, Alex Markevich, Yvonne Short, Susan Wagner, and Kevin Zimlinghaus

*Facilitation:* Heather Bergman and Dan Myers

**OVERVIEW**

*Note: Field trip participants met at the Forsythe Trailhead at 9:00 AM and proceeded on foot and by car to several locations near Forsythe Trailhead and Unit 48 selected in advance by Teagen Blakey and Kevin Zimlinghaus for characteristics that they believed would inform the MMG’s discussion of landscape-scale values in mixed conifer units. This summary is organized by the stops that the group made by various locations (in chronological order). For additional details on each stop, see the handout entitled “MMG Field Trip – Mixed Conifer June 22, 2019” attached to this field trip summary.*

**FORSYTHE TRAILHEAD STOPS**

***Forsythe Trailhead***

* The MMG will also be taking field trips centered on lodgepole pine units (August 14) and wildlife considerations (September 11), so group members were asked to save big-picture questions on those subjects until those field trips.
* Each stop that Zimlinghaus selected for this field trip is a post-treatment portion of a mixed conifer unit treated between 2011 and 2014. The stops vary by directional aspect (north- or south-facing), fuel loading, density, wildlife presence, cover type, etc.
* Wildfire mitigation work was done in this area by the USFS as part of the Lump Gulch project, which was formalized in 2008.
* The MMG discussion began in 2014 and initially focused on the Lump Gulch and Forsythe I projects. Shortly thereafter, cutting was proposed near Nederland. Some group members said that cutting near town took place within the Lump Gulch project, while others said that the Town of Nederland’s Board of Trustees asked the USFS to cut near town after the Lump Gulch project.
* Zimlinghaus distributed a handout summarizing the objectives of the Forsythe II project, the habitat structural stage designation system used by the USFS, the relevant portions of the Forsythe II Decision Notice for a given cover type, etc.
* MMG members expressed concerns that a 2017 map of treatments under the Forsythe I project indicated that the edges of treatments would be straight lines rather than more natural-looking scalloping. The USFS stated that scalloping was not included in the Decision Notice for Forsythe I but was featured in the Decision Notice for Forsythe II.
* Zimlinghaus also presented an aerial photograph map showing basal area densities and species across the project area. It showed some treatments planned by the Boulder Ranger District’s previous silviculturist (who left in 2013). That silviculturist often thinned trees from the understory up to a certain diameter cap. Since Zimlinghaus took over in 2014, he has preferred to treat for full forest structure (at projects like Taylor Mountain and Gold Lake).
* None of the units that the group planned to visit on the field trip were part of the Winiger project.

***Stop 1***

* Stop 1 was located on a south-facing aspect and was treated as part of a Long-Term Stewardship Contract in 2013. The treatment unit (but not necessarily the specific spot where the group stood) had a basal area density between 50 and 100. The habitat structural stage for the unit was coded as 4B (i.e., between 40% and 70% of the cover consists of trees with a diameter at breast height (DBH) of 8.9 inches or more).
* The unit was at approximately 8,000 feet in elevation and lay in the transition zone between upper montane and lower montane forest. It featured light fuel loading and was located close to a popular campground, which explains why most of the downed woody material appeared to have been taken for firewood.
* The unit was thinned from below by the previous silviculturist. The cutting guides called for the USFS to remove all ponderosa pine between 2 and 4.9 inches DBH, all lodgepole pine between 1 and 8.9 inches DBH, all Douglas fir between 1 and 7.9 DBH, all but one Rocky Mountain Juniper in a given acre, and all beetle kill.
* Some group members stated that the site was aesthetically pleasing in terms of its diversity in tree species and size. The fuel load was light, so while prescribed fire could be reintroduced to the unit, it might not carry easily.
* Group members expressed concerns that the USFS would use the fact that most of the project area lay in the wildland-urban interface (WUI) as justification for treatments that were not necessary to meet the stated goal of the project: reintroducing fire to the landscape.
* Some group members stated that the basal area density was probably too high to sustain a healthy, uneven-aged stand structure over time, given the probable carrying capacity of the area. A beetle outbreak could kill most or all of the large trees in this stand because there were too many trees competing for limited water and nutrients. These group members would want to reduce the square footage of basal area from around 100 to 50-60 in this unit. However, other group members said the stand looked healthy and suitable for the reintroduction of fire, which is the stated goal of the Forsythe II project.
* The USFS cannot use mechanical equipment on this unit, so prescribed fire will be necessary to disturb the soil enough for ponderosa trees to colonize the area. Once small ponderosa have grown at this stop for five years or so, the stand will have more sustainable structural diversity.
* The historic basal area density of the stand would have been 30-50 square feet. That forest would have been genetically diverse enough to resist a beetle outbreak, but the abnormal density of the current forest makes it susceptible to fire and insects.
* A fire with a score of 50-90 on the fire severity index in this stand could be easily suppressed with isolated tree torching in an area with this sort of basal area density. Some Douglas firs and trees adjacent to them could be lost to ladder burn, but mortality would be low overall.
* The presence of trees with live branches growing on the ground in this unit indicates that it has probably been at least 100 years since a fire burned on this unit because they would have almost certainly burned in any fire in the meantime.
* The USFS is working to meet all of its project objectives (except for those relating to defensible space) uniformly in vegetation treatments. No single one of the Forsythe II project’s objectives (improving forest health, minimizing fire danger, etc.) takes precedence over the others on the project scale, but some might take precedence over others on a unit-to-unit basis. It was suggested that some units further out away from town could be prioritized for forest health objectives and units closer to town could be prioritized for fire prevention objectives. The USFS reiterated that the principles underlying its landscape-scale approach were drawn in part from the Rocky Mountain Research Station’s General Technical Report (GTR)-373, which participants were encouraged to review. GTR-373 advocates for a return to the historical norm (for lower montane forests) of a mosaic of clumps, individual trees, openings, and ladder trees on the landscape.
* Group members were asked to envision how their preferences for treating this unit would shift if certain variables in the forest's structure were different. For example, if there were more (and younger) stems in this area, ladder fuels would probably pose a larger risk to the survival of more trees in the stand because the branches of the younger trees would be closer to the ground. The resulting tree mortality would probably leave a mosaic of structural diversity.

***Stop 2***

*Note: This stop is listed as "Stop 3" for the Forsythe Trailhead portion of the field trip outlined in the overview handout.*

* This stop was on the other side (and north aspect) of a nearby ridge from Stop 1, in the transition zone between the upper and lower montane forest. It featured more lodgepole pine and Douglas fir, a basal area range of 60-120 square feet per acre, moderate fuel loading, and a habitat structural type of 4B (see above). Large pines, several snags, and considerable blowdown were visible. The unit included more patch cuts implemented by the previous silviculturist, who also thinned vegetation from below up to a diameter cap. The USFS wants to bring prescribed or natural fire through this area to Stop 1.
* Group members questioned why the USFS was not doing more thinning from below in lodgepole units, which seems to be the recommendation of fire scientists. The USFS does not want to eradicate understory trees in lodgepole areas by thinning from below, because it would harm structural diversity and the ability of the forest to perpetuate itself
* The efficacy of treating this area was questioned because it is so close to a heavy-fuels area across the unit boundary. If a fire hit that area, the treatment here would not do much good. In fire conditions like those typical of the summer of 2018, firefighters would have a decent chance to protect nearby homes and Gross Reservoir from a fire in this area, but probably not if conditions were severe.
* In the right conditions, prescribed fire could be used with minimal tree mortality in this area, but only if some of the fuels in the stand were removed beforehand. Prescribed fire could reduce remaining surface fuels, raise the canopy, thin regenerating trees, and eliminate heavy fuel accumulation. That would mean less risk of spotting embers taking hold here in a wildfire. Prescribed fire would also scarify the soil, helping Douglas fir, ponderosa pine, and limber pine take hold in the area.
* If this stand is not thinned or burned, small trees would create unacceptable ladder fuel risks for prescribed fire within 15 years or so. Group members agreed that it was urgent for the USFS to use prescribed fire in this area.
* Limbing the trees in this area could reduce ladder fuel risk.
* Group members stated that the forest was a little too open at this stop and that thinning should be kept to a minimum to preserve the canopy while working to clean up surface fuels.
* This stop was manually treated approximately five years ago, and the ground has recovered its natural look already. In patch cuts, it takes much longer for the ground to look natural again.
* The USFS stated that thinning is an appropriate treatment for mixed conifer units, but not for lodgepole units, because lodgepole stands naturally grow and die in unison with one another. A group member stated that a lodgepole thinning treatment on private land conducted 50 years ago looks much more aesthetically pleasing today than nearby patch cuts created by the USFS in lodgepole stands around the same time.

***Stop 3***

*Note: This stop is listed as “Stop 2" for the Forsythe Trailhead portion of the field trip outlined in the overview handout.*

* The group walked back past Stop 1 to Stop 3, which lay on the north aspect past another nearby ridge. This stop was also in the upper montane/lower montane transition zone.
* In the Forsythe I project, the USFS cut all small trees to a certain diameter cap at this stop. Many of the remaining, larger trees were felled by windthrow or pine beetles, creating a clearing. The remnants of those trees were visible on the slope. The stand mostly featured lodgepole pine and Douglas fir, but ponderosa on the edges of the clearing had a chance to cast their seeds into the unit. The clearing also included seven visible wildlife piles. The Decision Notice for Forsythe II allows the USFS to create up to three piles per acre.
* USFS staff were not sure what the species classification for this area was before the Forsythe I treatment, but it seemed to be mostly lodgepole pine and Douglas fir with some ponderosa pine.
* Group members stated that, even five years later, this area did not look recovered from the treatment and that patch cuts generally took at least ten years to look natural again. The clearing included many unsightly stumps, as well. Unlike the Winiger project, the Forsythe II Decision Notice allows the USFS to leave stumps up to six inches high on north aspects if they are crosshatched.
* Some group members said that it would be more effective to fight a fire on the ridge above this clearing than in the clearing itself. That strategy would also allow firefighters to create a buffer between any prescribed fire or wildfire and dense fuel areas nearby. Other group members said that the USFS could use that justification to cut a buffer anywhere in the project area.
* The USFS would prefer this area to feature more ponderosa because ponderosa is more fire resistant and will adapt better to the projected warming and drying of the climate in this area than Douglas fir or lodgepole pine. A mix of species types would allow one tree species or another to capture the area in the event of a large die-off of another species in a changing climate.
* Group members questioned the need for wildlife piles in areas like this and stated that they looked artificial. From a firefighting perspective, the spacing between the piles in this clearing was sufficient to prevent a fire from spreading rapidly from hitting these “fuel jackpots” in rapid succession.
* The boundary of this treatment was a straight line instead of more desirable scalloping.
* There were concerns that removing cover like this (particularly near Nederland) was depriving elk of places to hide.

**UNIT 48 STOPS**

***Stop 1***

* Group members drove from the Forsythe Trailhead to Unit 48 near Lazy Z Ranch. The first stop was a short walk from the parking area. The area is scheduled for manual treatment within the Forsythe II project. The USFS plans to hand-cut, pile, and burn trees below 6-8 inches DBH. Trees between 8-10 inches DBH will also be thinned but will be left on the ground. By contrast, mechanical units typically featured more centralized piles with left biomass left on landings. There will be ten times more surface fuels on this unit after the treatment, but much of that will be burned.
* There was a lot of elk scat visible at this stop, indicating the presence of an elk corridor. Group members expressed interest in protecting key elk habitat and tracking elk (which are considered a Management Indicator Species by the USFS) on the landscape.
* Elk are a Management Indicator Species because other species (like mountain lion) depend on them. The USFS is not currently analyzing mountain lion in this area, but it can if the public interested in seeing that sort of analysis.
* USFS wildlife biologists said that this stop might be favored by elk because it is an intersection of winter range, summer range, and a migration zone. They also stated that elk often follow grazing routes established multiple generations earlier and prefer a combination of open browsing areas and cover.
* Fire suppression has reduced the overall availability of open grazing areas and forage for ungulates in the US. Limited forage forces elk into specific areas.
* Group members stated that there are several residential areas near this stop and that the elk were using this area as part of a corridor between those residential areas. They reiterated their concern about the impact of planned treatments near Nederland on narrow elk migration corridors there.
* A study of woodland caribou and other mammal species in old-growth forest in Canada showed that logging was the most stressful of several analyzed disturbances for the animals. Wildlife like the forest to remain the way it is.
* There was a considerable amount of slash on the ground at this stop. Group members stated that there was less slash here than north of Winiger Ridge.
* Even mild fire conditions could lead to a canopy fire in this area given the relatively high surface fuel levels. Much of the surface fuel was partially rotted, making it highly receptive to fire. Generally speaking, larger logs burn in higher, more intense fires, but smaller logs serve as carrier fuels.
* There was a lot of deadfall at this stop because there has not been fire at this location for at least 200 years (which is apparent because much of the decomposed wood is pushed far into the ground because there is very high cohort size variation). Lodgepole pine and Douglas fir have exceeded their carrying capacity in this area and are decaying
* The USFS wants to encourage ponderosa (which is shade-intolerant and needs room to grow healthily) in this area by reducing the basal area density of existing trees by 30% and creating clumps and gaps by retaining most of the ponderosa in the unit. The USFS could make the pure lodgepole inclusions in this area into patch cuts without harming the overstory.
* This unit was identified as ponderosa-dominant based on the USFS’s aerial survey of the project area. The aerial survey classified units based on the species that formed a plurality of the visible stands.

***Stop 2***

* The group drove to another portion of Unit 48 in a transition area between a stand of mature ponderosa forest and a stand of short, dense, and misshapen trees. Some group members said that the shorter stand probably has not seen fire for a few hundred years. Others said the trees were not that old.
* Several group members said that the mature ponderosa looked healthy, natural, and well-spaced and that human intervention could encourage noxious weeds and create unsightly stumps.
* The mature ponderosa in this area probably grew up conically as a cohort and then leveled off when they ran out of additional nutrients in the soil. It is unclear why there seemed to have not been fire in the larger, well-spaced stand (as shown by the presence of highly-decomposed logs) in a long time, but this could be determined by a dendrochronological analysis. The openings in the mature stand are probably present because the soil is shallow and seedlings cannot get enough water.
* The USFS wants to create structural and age-class diversity in the project units. At this stop, that would mean maintaining larger trees and cutting smaller ones to remove ladder fuels. Once openings have been created, the remaining forest (which will have been pared of stunted or chlorotic trees) will be able to release seeds into the openings. Group members supported the USFS’s approach of removing smaller trees and preserving larger trees in this area.
* If the USFS implemented its proposed approach in this area, firefighters could suppress a fire here. However, many of the older trees would probably be torched. Prescribed fire could not be used in the shorter, denser stands without killing most of those trees.
* Sparks from nearby railroad tracks pose a fire risk to this area. The USFS wants to reduce the basal area density in the stand of shorter trees (which has 15-25 more trees per acre than it should) by 40-50%.

**PROJECT TIMELINE UPDATE AND KEY TAKEAWAYS**

Boulder District Ranger Angela Gee provided an update on next steps for the Forsythe II project. Group members discussed her comments and key takeaways from the field trip. Their conversation is summarized below.

* Inclement weather and the government shutdown last winter pushed the USFS’s schedule for this process further out than was originally intended. As a result, the landscape-scale values meetings (on mixed conifer, lodgepole, and wildlife) are taking place this summer, in the middle of field season. The USFS has brought a crew onto the unit through October, and the crew is almost finished with its step transects work. Their next priority will be marking trees and implementing prescriptions. Given that much of the area around Lazy Z and Boy Scout Ranches was treated in Phase 1 of the project and that many of the prescriptions for nearby units are similar, the USFS asked the group if they would be comfortable with the field crew starting to mark units for Phase 3 in this area in July. MMG members would be welcome to visit units and review the field crew’s work.
* Group members supported the USFS’s proposal to move forward with the Lazy Z Ranch units because the prescriptions for this area are manual treatments and similar to work done nearby last year. They said that they would monitor the USFS’s work on those units. They also said that they were not ready to support treatments near Boyscout Ranch because they are not sure about the justifications for using mechanical treatments on lodgepole units in that area.
* The USFS said that it would start with the manual units near Lazy Z Ranch. The mechanical treatments near Boyscout Ranch would not happen until later in the summer.
* Several group members stated that MMG members had already provided most of the relevant Avenza points for the units in question. The deadline for Avenza input on Phase 3 units is June 30. The MMG will discuss Avenza points and their implications at the July 22 meeting.
* The marking scheme for the Lazy Z Ranch units will be the same as the scheme used last year. MMG members expressed a preference for marking trees to be removed rather than marking trees to be left uncut because the paint is unsightly. The USFS said that marking as few of the trees as possible is most efficient.
* Group members asked the USFS whether its crews would treat the Lazy Z units differently based on the discussion of elk corridors on this field trip. They also stated that Colorado Parks and Wildlife was monitoring elk in this area and that Boulder County is conducting a third-party study of the effects of nearby developments on wildlife. The USFS wildlife biologists said that they would take a closer look at elk considerations on these units and work with the silviculturists to write the relevant prescriptions accordingly.
* Group members expressed concerns that the USFS is cutting too much in areas where it wants to reintroduce fire.
* The USFS said that it would reconsider the need for maintaining the current proposed number of wildlife piles based on fuels considerations and wildlife needs.
* The Magnolia Forest Group supports preserving large trees and thinning small trees over the converse. The USFS wants to promote structural diversity in any situation.

**NEXT STEPS**

* MMG members are encouraged to provide input and suggestions on the structure, stops, and content of this field trip to inform the lodgepole pine field trip in August.
* The next MMG meeting will be on Monday, July 22, from 6:00 PM to 8:15 PM at the Nederland Community Center. Landscape-scale values in lodgepole units will be the primary topic of discussion.