MEETING SUMMARY | Dinkey Collaborative Full Group Field Visit

May 20, 2011

Dinkey Landscape Restoration Project, Sierra National Forest

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1. Welcome and Introductions

Mosé Jones-Yellin, Dinkey Collaborative project manager for the Sierra National Forest, welcomed the participants to the Collaborative's first field visit and reviewed the agenda. Facilitator Dorian Fougères, Center for Collaborative Policy, noted that the intent of the field visit was to provide members with an opportunity to learn about and explore actually existing field conditions, and thus to advance abstract discussions and debates that occurred in the full collaborative meetings. In particular this first field visit was designed to allow members to explore questions around fisher occupancy attributes and den sites, as well as surface and ladder fuel treatments. The group would visit five locations spread among three different areas.

A note on the content of this meeting summary: Upon arrival at each location, a professional from the Forest Service, typically Carolyn Ballard, District Fuels Officer, or Ramiro Rojas, District Silviculturalist, would review the fire and management history and the general characteristics of the site. Additional Forest Service professionals would then supplement this overview with their detailed understanding of particular issues in that site. This meeting summary does not

include each of these overviews, but instead focuses on the questions and discussions that occurred at each location.

2. Fisher Habitat within Clarence Burn: First Location

Rebecca Green, Forest Service, led participants up a slope in the Clarence Burn unit to examine a historical fisher den. She noted that the vegetation had a combination of openness as well as opportunities for concealment. The oak tree used by the fisher provided both a rest structure and a denning cavity. Ms. Green added that the area was used by the fisher in late March, which was quite cold this year, and this site is exposed to the sun and warmer than the other den site the group would visit. Mr. Rojas noted that the basal area was 120 square feet in this area, which was quite open and good for oak and pines. The area was midslope, north facing, and a pine area, so ideally might be somewhat denser.

- Greg Schroer, USFS, noted that the canopy had several layers and that each could have different importance for the fisher. Speaking generally about the area, he noted that the overstory had light coverage, while the mid-level and understory had fairly heavy coverage. He asked if Forest Service models could pick up small trees less than six inches in diameter (saplings), to which Mr. Rojas replied that the data was there so the analysis could address this if structured appropriately.
- Ms. Sue Britting asked what was known about heartrot in oaks versus cavities that heal over. Ms. Britting wondered whether it would be possible to manage for the creation of cavities by creating seams if there were enough oaks. Mr. Rojas replied that it would theoretically be possible, although there would be a tradeoff between rot and vigor.
    - Ms. Britting asked whether cavities developed the same way in conifers. Mr. Rojas explained that they typically are the result of mortality or fungus.
- Mr. Alan Gallegos, USFS, asked whether it was important for fisher to have oaks specifically. Mr. Craig Thompson, USFS, replied that it depends on the landscape; the cavity is what's critical. Conifers also have cavities due to woodpeckers or lightning scars. At the same time Ms. Green noted that around half of the dens they had found involved black oaks, so perhaps this was more than anecdotal.
- Ms. Pam Flick asked about cavity depth, to which Ms. Green replied that they do not have a measurement for this particular den, but they can be very deep.
- Mr. Schroer noted that in this site the overstory could eventually kill the oak, but with only the ability to treat surface and ladder fuels the open canopy could not be maintained. Mr. Gallegos agreed, noting that in 20 years the cedars could grow large and soil moisture could become a limiting factor that killed the oak.

    - Mr. Thomas noted that perhaps multiple burns could maintain an open canopy. Ms. Ballard noted that fire budgets have been reduced in recent years and that it was hard to maintain existing sites where fire had been used previously.
- Mr. John Mount noted that oaks importance beyond simply fisher.

A. Protecting Surrounding Structures

- Mr. Thompson pointed out that based on remote cameras they knew fisher also used small trees as routes to reach cavities. He noted a researcher had written a master's thesis describing how fisher used large structure rest sites that were surrounded by small dense stands.
    - Mr. Craig Thomas asked whether it was possible to pick up leaners and dead pines by design or description. In this location he noted that the small dense cedar could be construed as overabundant, and hence removed. The challenge was to create prescriptions that would prompt field crews to recognize the possibility of such structures as related to dens.
    - Mr. Rojas noted that contractually this was very difficult because contractors want simplicity. Nonetheless it seemed possible.
    - Mr. Schroer suggested that an amendment of the Standards and Guidelines dealing with den sites could involve the use of metal reserve stickers and circular buffers.
    - Mr. Thomas replied that the problem is that crews would not know whether the area was being used. Ms. Britting suggested that an amendment was unnecessary. She noted that Dinkey North & South tried to anticipate this need, and felt that a project could be designed appropriately.
    - Mr. Keith Ballard noted that in another site on the north side involving sugar pine, they had oaks and sought to also preserve habitat, so designated small trees with big blue dots and told crews to conduct no submerged harvest for 35' or to the dripline of the crown. They did this for approximately 4 oaks per acre.

3. Fisher Habitat within Clarence Burn: Second Location

After a short walk, Ms. Green introduced the group to a fisher den site in a riparian area. She noted that the area was cooler and had a wetter understory, and that the tree had a series of woodpecker holes. The area contrasted significantly with the previous location. In response to a question, she replied they had not analyzed the importance of proximity to water.

Mr. Thompson added that the thermal conditions are very different, and fisher used these areas seasonally. This site had a far denser canopy and the option of more vertical movement.

The site was also nearer to a road, which was associated with higher mortality since large predators used the roads.

Mr. Rojas noted that this area would be characterized by the General Technical Report (GTR) 220 as a canyon zone with denser vegetation and wetter conditions. It was also north-facing. He noted the stand had 200 square feet basal area.

- Mike McGrenn asked whether fisher used the dens of other species. Ms. Green replied that they cannot create their own dens, and often used cavities created by pileated woodpeckers. Mr. McGrenn suggested it would be important to consider the interaction among species that are indirectly important or related to fisher, like snags and insects that create cavities
- Mr. Thompson asked whether burning in this location was atypical or difficult. Ms. Ballard explained that burning was restricted within 300' of a riparian area; if the fire backed in to this area from elsewhere that was okay, although it would rarely burn in a downward direction. She noted that in extreme events riparian areas burned hotter than elsewhere because their high fuel loadings.
    - Mr. Meyer noted that the historical fire regime in a riparian area has been shown to be similar to uplands, although it would burn later in the season. Historical fire suppression activities likely increased the amount of fuel in this area and changed the current behavior.
    - Mr. Mount noted that fires can actually burn downward at hotter temperatures during the night, as this area often gets sustained downslope winds.
- Mr. Thomas noted that the denning cavity in the cedar tree being examined had burn marks that suggested it was created by fire, not drought. This supported the idea of using fire not only for fuels and safety, but also for biodiversity.
    - Mr. Meyer noted that the GTR 220 recommended multiple tools, so perhaps prescribed fire could be used in this riparian area.
- Ms. Britting noted white fir nearby and asked if this was typical. Mr. Rojas replied that he believed it was encroaching from the road, and that historically there would be minimal fir here.

A. Riparian Conservation Areas

- Mr. Gallegos noted that riparian conservation areas and streamside management zones forbid the use of mechanical treatment unless it would enhance or maintain beneficial uses. The default action was to do nothing. He felt that this could be a mistake since it would increase the fire risk.
    - Mr. Ray Laclergue suggested that this might be addressed through the use of appropriate technology like lower ground pressure devices. He noted that local

operators did not have such equipment, however, nor a large enough incentive to purchase it.

- Mr. Larry Duysen explained that only one cut-to-length operator existing in the valley, in El Dorado County, and it was doubtful he would move here.

4. The Boundary between Virginia Burn and Soaproot Project Area: Part 1

Ms. Ballard explained that the area on the north side of the road (a southern-facing slope) had been burned three times, while burning on the south side of the road would require significant preparation. Mr. Rojas noted that the Soaproot area's trees were 90-100 years old in the overstory, with perhaps 200-300 year old oaks, and that it was historically logged by the Peterson Mill. He noted it contained several examples of ladder fuels.

A. Biomass Processing and Chipping

- The Honorable Ron Goode asked whether any of the fuel was used for biomass processing, and whether it would help to extract that first. Ms. Ballard replied that access is very challenging, and that typically roads in this area are too narrow with too tight of switchbacks.
- Mr. Rich Bagley noted that Southern California Edison had researched biomass and was willing to bring this in, but needs a third party to build the plant and has nobody interested. The location could be on SCE or Forest Service land, although the latter was recommended because its lower elevation.
- Mr. Goode asked about the use of chippers. Ms. Ballard replied that if this was done by hand it would be slow progress. In other areas masticator chipping had been done and left on-site.
    - Mr. Duysen noted that in Auberry the economics had worked for chips, but a trip to the Valley would cost more. He noted that the one plant on the Valley floor used 80% agricultural materials. Stewardship money could be used to get material to Fresno, but Terra Bella Mill would be further and more expensive.
    - Mr. Ballard asked whether masticator chipping leaves too much material. Ms. Ballard noted that the heat intensity is very high despite the short burn duration, and that this can easily kill trees. Wind also moves the fire quickly, creating its own fire hazard.
    - Mr. Laclergue added that although material degrades readily, the top later looks the same after many years.

- Ms. Ballard noted that there is always the question of how much brush returns. One seeks to have a canopy closure that is open enough to reduce fire, but closed or shady enough to prevent the return of brush.

B. Ladder Fuels

- Ms. Britting asked about the persistence of ladder fuels after treatments with regard to a tree that had 15 feet height-to-crown. Mr. Rojas suggested that ladder fuels would no longer present a threat.
    - Mr. Mount noted that this depends partly on the intensity of a fire. Even if ladder fuels were removed, he felt that in this area a ground fire on a hot day would take the fire up to the crown. He suggested it is a moving scale, rather than a clear line.
    - Ms. Britting noted that importance of fuel arrangement. Mr. Rojas agreed and suggested that horizontal dispersal was critical to providing fire resilience, and that it would be essential to define for a marker or burner what they should space away from.
    - Mr. Bagley echoed the importance of fuel arrangement, noting that in this case the incense cedar would stimulate a crown fire by convection. Species consideration was hence important as well.

C. Other Questions and Comments

- Mr. Laclergue asked whether the Soaproot side would look similar in terms of bear clover if treated like the Virginia Burn. Mr. Meyer noted that a suite of other species would also sprout if the fire were not too severe, so there probably would be a small increase accompanied by other shrubs.
- Ms. Anne Lombardo asked that if fisher predation is a problem, area open areas bad? Ms. Ballard replied that the F16 fisher moves through the area, and uses a variety of sites. The current fire return interval is three times in 15 years, so close to the historical landscape.
    - Ms. Britting added that the challenge is to create a variable landscape, and avoid saying that desired conditions apply to every part of a unit.
- Mr. Goode asked how material would be pulled out by a contractor. Mr. Rojas explained that a contractor would remove all merchantable and non-merchantable material at the same time to a landing location, and then burn it in piles.
    - Mr. Thomas noted that burn pile restrictions are less severe that open underburns. Ms. Ballard elaborated that there are daily restrictions on piles for which the Forest Service gets simple notices, while underburns require management plans, 21-day advance notice, daily calls, and numerous other requirements.

    - Mr.Thomas suggested then that it would be hard to use fire as the first entry, so perhaps first one would thin the trees and pile burn.
- Mr. Thomas asked whether a 12" cedar tree would have commercial value. Mr. Duysen replied it would, and have more value than pine. Mr. Thomas asked about the number per acre volume needed to make mechanical treatment cost effective. My. Dusyen suggested that 5000' per acre would be ideal, although some areas can get by with as little as 3000' or 4000' per acre. It depends on the species, size, and haul distance.
- Mr. Laclergue noted that with regard to snags they seem everywhere with lots of bugs in the trees and blown tops. Ms. Ballard noted that bug kills will cause a conifer to collapse in three years, and do not create snags.

5. The Boundary between Virginia Burn and Soaproot Project Area: Part 2 – Spotted Owl Nest Area

Following the 10S50 road, Mr. Rojas noted that this area was a north-facing slope and characteristic of Sierra mixed conifer, moving to pine, which were dying. He noted that the area was relatively more dense, at 240 square feel basal area. The area had a spotted owl nest and was originally designated a Protected Activity Center (PAC), though was subsequently designated a defense zone, which takes precedence accordingly to the 2004 Record of Decision. Mr. Tom Munton, USFS, noted that owls had nested here repeatedly, and that there were two nest trees.

- Ms. Britting asked why the area had been changed to a defense zone. Ms. Ballard explained that this was a result of the number of structures on the Twin Ponds property; the defense zone totally overlaps the PAC. Defense concerns dominate planning, but the area does require increased canopy cover as compared with areas that do not have sensitive species.
- Mr. Meyer asked whether spotted owl habitat included conditions that were not common to fisher, given that both used late seral habitat. Mr. Munton replied that conditions overlap, although he thinks owns are probably more constrained with canopy cover near nesting and roosting areas; heterogeneity is essential.
    - Mr. Schroer noted that several species need larger live and dead structures, decadence, and cavities, and coarse woody debris on the forest. Mr. Schroer felt there was a dichotomy in the Standards and Guidelines which limited what one could do with the overstory over time, simplifying the forest. Spotted owl used areas that had multi-layered canopies. This area had a range of canopy layers in a small area of the landscape. Similarly, fisher use a range of habitats in their home range. This area seemed consistent with the GTR 220.

- Mr. Thomas noted white fir in the overstory and asked about the historical change in composition. Mr. Rojas noted that 1920 crews data suggested the area was better for mixed conifer than pine, perhaps 60% pine before logging. White fir had low volumes that were directly related to basal area and canopy cover. In non-logged sections pine might include 40-70% of the stand. Based on elevation and more frequent fire here one would expect more pine.
- Mr. Bagley observed that there were large numbers of ladder fuels in the untreated area.
- Mr. Mount pointed out patches of the treated area where herbaceous species were growing. He noted their importance for the larger food chain.

6. Soaproot Project Area Bug Kill

The group walked further along the 10S50 road to the final destination. Mr. Rojas noted this area had many trees killed by insects. He noted that drought had a delayed impact on mortality. Under increased density conditions trees relied on deep water which takes longer to recharge. The Society of American Foresters had a recent article on this. He noted that increase populations had increased and more mortality was likely this summer. Mr. Munton also pointed out another spotted owl nesting tree.

- Mr. van Velsor asked whether nest trees were a primary limiting factor for spotted owl. Mr. Munton replied that this was generally not the case.
- Mr. Laclergue asked whether the bug cycles were exacerbated by the blowndowns from past winters. Mr. Rojas replied yes, although this involved ips beetles rather than the western pine beetle that was killing trees. Both ips beetles and turpentine beetles (at the bottom of the trees) predispose the trees to western pine beetles. Mr. Ballard added that snapped tops can attract the beetles. Mr. Rojas noted that snapped tops were density related.
- Mr. Meyer noted in work at the Teakettle Experimental Research Station that insects were the proximate mortality factor but the pathology involved root disease, drought, and high density for sugar, Jeffrey, and Ponderosa pine. One weakened tree could also induce pocket mortality.
- Mr. Rojas noted that precipitation had changed over time, and despite having a good average actually involved spikes. During this period density, temperature, and drought frequency had increased. Teakettle had shown that dense stands relied more on an increased snowpack, so reduced precipitation could lead to a death spiral, and that this was happening across the forest with climate change.

A. Scaling-Up the Use of Fire as a Restoration Tool

- Mr. Thomas asked about the possibility of doing single and second entry burns.
    - Ms. Ballard noted that the Forest's targets included 30,000 acres a year, but this is virtually impossible given stochastic conditions, staff limitations, and air quality restrictions. It is extremely difficult to scale up the burn program. Changes in administration, leadership, and staff also make this more difficult.
    - Mr. Bagley noted that it would thus be important to have realistic expectations about what could be done in the foreseeable future with prescribed fire. Even if air quality district restrictions were lightened, politically this would be difficult.
    - Mr. Thomas noted that his organization, Sierra Forest Legacy, was pressuring the air quality districts to talk about the difference between natural pollution and auto pollution. They were working with the U.S. Environmental Protection Agency on landscape burning projects. The California Public Utilities Commission needs to establish prices that support ecological biomass removal at appropriate sites for restoration. There are numerous public benefits from such work, including clean water, forest health, and biomass (compared with natural gas).

7. Debrief of the Field Visit

Members then reviewed the day. They noted that they appreciated the additional stop to compare the two fisher dens. In some cases people are rushed to move through sites, but in this case it was important to take extra time.

It was noted that the Air Board representative, Shawn Ferreria, cannot attend field visits on Fridays because of restrictions on state employees. The group agreed to plan future field visits to include Wednesdays rather than Fridays. Mr. Rojas noted that many parts of Soaproot are in worse condition than the areas visited today, and that perhaps a future trip would visit more dense stands.

Mr. Rojas noted that new modeling information for Soaproot was almost available, and he would notify the group when it was. He also noted that he would share a report discussing entomology and tree density. The facilitator noted he would add this to the Collaborative's living library.

Mr. Jones-Yellin closed the field trip by thanking people for their time and discussions, which had raised many questions as well as provided new ideas about how one might move forward.

8. Attendees

1. Rich Bagley
2. Carolyn Ballard
3. Keith Ballard

4. Sue Britting
5. Dirk Charley
6. Larry Duysen
7. Robbin Eckman
8. Pamela Flick
9. Dorian Fougères
10. Allan Gallegos
11. Rebecca Garcia
12. Ron Goode
13. Julie Gott
14. Rebecca Green
15. Mosé Jones-Yellin
16. Ray Laclergue
17. Anne Lombardo
18. Steve Marsh
19. Mike McGrann
20. Marc Meyer
21. John Mount
22. Tom Munton
23. Ramiro Rojas
24. Janet Sanchez
25. Greg Schroer
26. Kim Sorini-Wilson
27. Craig Thomas
28. Craig Thompson
29. Jamie Tuitele-Lewis
30. Mandy Vance
31. Stan Van Velsor