

Notes from Oak Knoll Range Allotment field trip (taken by Lauren McChesney)

7/11/2016

Attendees:

Lauren McChesney
Dan Henklein
Greg Laurie
Wendy Coats
Bryan Yost
Don Flickinger
Bill Wall
Ruth D'Amico
Carl Van Orden
Joni Grazier
Jan Curtis-Tollestrop
Bonnie Allison
Dave Bowden
Gregg Riegel
Sandy Wyman
Jessica Celis
Clint Emerson
Susan Maiyo
Mark Hocken
Pat Hochhalter
Mark Gonzales
Steve Grazier
Leo

(+ 7/12 Dave Weixelman and Stephanie McMorris)

I. Pre-site Discussion:

a. History of project (Wendy):

- i. DN/FONSI signed in 2010 (then litigation)
- ii. One big issue: cattle drift from KNF to RRS
- iii. There was at least a draft drift strategy
- iv. Work on mitigating to the extent possible; monitoring work
- v. Drift used to be much more intense, but is now reduced overall (some years as low as 0); but drought also emphasizes (and fire also reduced drift)
- vi. Drift was a relevant issue raised by the public
- vii. At the time, the decision was to focus effects on the KNF, rather than where cattle were not authorized to go.
- viii. We were upheld in District Court on multiple counts (NFMA, suitability, capability, Forest Plan consistency, NEPA, direct, indirect, and cumulative effects, Clean Water Act effects related to Oak Knoll level of monitoring/mitigation)
- ix. Appealed to the 9th Circuit

1. Upheld on all counts except that we didn't analyze effects of drift onto RRS.
2. Didn't vacate decision, but asked for Supplemental EA (if possible)
3. Team looking at data, Supplemental EA. KNF taking the lead on writing the Supp. EA, but RRS will have chance for input
4. Court didn't stipulate any additional monitoring than what was proposed (what was in the EA was found to be sufficient). We really just need to make sure important effects were analyzed. One area is monitored in RRS: McDonald Basin (Wagner Allotment); it is consistently at 0-5%, which is normal for wildlife utilization). The only cows that go into McDonald basin are drift cows from KNF.

b. Now:

- i. There's now better communication between the KNF and the RRS.
- ii. There's better communication of the Crest Strategy.
- iii. The Forests are trying to get permittees to work together and develop a strategy on their own
- iv. RRS: cows start low; they're not allowed in the high country until July 1st. KNF is trying to hold permittees back from wet meadows until July 15

c. Problem with drift and possible solutions

- i. Fences: Don't work along this crest (snow takes them out)
- ii. Let down fences a possibility? Maybe, but lose Hs a lot.
- iii. There's a more popular style (tin cup hooks)
- iv. Temporary fence?
- v. The EA looked at analysis for fence and decided not to do it because of the expense; it's now off the table.
- vi. Permittees were taking cows up to the top too quickly. Now keeping them low, salting down low, and using corrals. Some mitigation is already in place since 2010, but there are still some "problem cows." The problem cows are always the most productive ones, which is why permittees are reluctant to get rid of them.
- vii. [Wendy can share the adaptive management strategies that are already in the EA]
- viii. Joint range rider effort to address wolves?
 1. Mark Hocken is trying to get permittees to come up with a strategy themselves. There are not enough cows for them to hire someone to do it (they'd need a grazing association). There have been two big meetings with all KNF and RRS permittees. Look into: a grant to hire a range rider to see if it would work? This might pay for a couple years.
 2. Virtual fences with ear tags? Arizona State University is experimenting, but OSU has taken it off the table since they weren't able to make it work.

- d. A couple RRS permittees didn't go on this year because of too much snow. Regulations: supposed to have at least 90% use, but this isn't really right when the permittee does it voluntarily. Annual operating instructions have some flexibility.
- e. Reminder: think about different assumptions at different spots (e.g, KNF cattle only, both, and look at other ungulates grazing)
- f. The 9th Circuit didn't provide any specifics for exactly what to look at. We just need on-the-ground data and to work with the RRS to support the FONSI. We'll need to separate out drift effects from legacy effects of grazing (plus that of gophers, elk, etc.). For example, from 1-150 elk (increasing recently) have been seen as far as Silverfork and as low as Brick Pile. They mostly seem to go back to the KNF. Hunting regulations tie in with the coast (November-December), when the area is full of snow. The KNF hunting season is September/October. Elk like to follow cattle (so it behooves the permittee to have something to show how the allotment looked when the cattle left, rather than when the elk leave)
- g. Nested frequency? On the RRS. On the KNF: rooted frequency (doesn't use a nested frame). One weak spot: RRS doesn't have sufficient plots. 2003 and 2010: Donomore plots and 2010 or 2011 Glade Creek: nested frequency. There's no tying together between KNF and RRS or using the data for implementation. Note: The Court is not asking for monitoring data! The KNF is hesitant to add further monitoring, but interested if some can be implemented with minimal impact. The Court didn't even clarify whether it should be one year of data collection or more. In court, we couldn't use the monitoring data on drift that came after decision (because we could only present what was used for the decision). In the last 5-6 years there has been much lower drift than the historical data. It's hard to change the permittees, but also hard to change the cows (it takes about 3 years, since it has to fit in with their livestock operations).
- h. Education program for watchdog groups? Ruth: there hasn't been one yet; unsure the groups would be receptive to it. Mark H.: both RRS and KNF have worked quite a bit with KSWild, but having a FS retiree file a declaration on behalf of the plaintiffs did not help. The Applegate Ranger (Donna Mickley) has been very supportive (she also filed a declaration on behalf of the KNF).

II. Site Visits, Day 1

- a. Ashland Allotment: in the 70s-80s there was drift from KNF, but that has been stopped. Created in 1890 – municipal watershed.
 - i. Observations: Meadow with lots of false hellebore/corn lily (indicator of past disturbance). Barren area (from sheep?)/ sediment fan. Control site, but not nearly at potential.
 - ii. Mark Gonzales (NRST): Creeks and Communities Strategy. Greg is part of the Rangeland Health Team (for more arid systems). Google NRST for trainings.
 - iii. PFC: Proper Functioning Condition. Issue: how to separate a reference site v. a legacy site that's recovering. First, know what potential is, and then compare. Also, altered potential (replaces "capability"). Determine which water system. Determine what potential of the site is so we can use it as a baseline. E.g., lotic systems: some people have the expectation that

willows should be there (but they are mostly oxygen-loving plants so need running water and open deposits).

iv. Observations as a group:

1. Watershed: Mostly spring-fed systems, really high along the crest (perched aquifers? Sue guesses it's more from a snow source). Lots of fractures in granitic rocks feed the water. Fractured bedrock collecting water and it's leaking out. North facing, so gets more snow.
2. Elevation is about 6,000 feet, which is probably into the snow zone (so too high for big floods).
3. Growing season: end of June in the best spots, July 1 for others, through September. These streams are more stable, not susceptible to big floods, and temperatures are more stable.
4. We need to distinguish between microsites. Page 102 of the text: schematic of successional states. PFC (proper functioning condition): provides values. If FAR (functional at risk): this changes management. Stable systems have the resilience to withstand disturbance events (eg., Mark G's Forest Plan says that 80% of the forest should be in PFC (because natural disturbance events will keep it from being 100%). → "Dynamic stability": Look at pattern, dimension, and profile. KNF does not have PFC listed but does have the requirement to manage within the natural range of variability. EPA and the Water Board say to take 75th percentile, and the KNF negotiated with them to take it to 80th percentile because of our data.
5. This site doesn't have any nested rooted frequency plots. We're not just looking at the riparian area. Different soils in different spots: where best to take samples/make plots? Want to be able to compare between sites, but also get representation of site differences (here ~sandy loam; forb-rich meadows. How much from grazing disturbance and how much from gophers?)
6. Note: Ask Jeanne/Juan re: old photos of the area (barrens)

v. Discussion as a group after looking around:

1. For potential/ reference sites: landform, soils. Lots of variability. Granitic soils, really erosive. Sediment fan into cirque basin. Hydrology: spongy, wet channel got lower gradient at bottom. If going to use as a reference stream, there's lots of variability so will need to match channel gradient and soil. Is this what our managed streams look like? Very fine materials on banks. Erosion on meadow wall (not through the moraine yet)
2. How to run transects through a meadow? Perpendicular to the contour? This creates an average, so very difficult to detect changes because it's already averaged between differences (try to hold moisture constant).
3. Weixelman transect: wetter, drier, and driest

4. Parallel transects: one could act as a canary to show if improving or going down. Issue: make sure to get info that's actually about the effects of grazing.
5. The stream channel: high walls on outside, meanders were cut. Monitoring would help see what percentage are doing that. Fixed length with MIMS – substrate important. Hoof impacts: Fines pushed in.
6. NCRWQCB: Shade is important. → three different indicators we can look at. (note: we've shifted the conversation from PFC to MIMS)
7. Lots of forbs but also sedges and rushes.
8. PFC should help inform you of where you need to put monitoring. Could help separate out zones; look at areas most impacted by grazing and drift (botanical). This is very general.
9. Where are the sensitive areas? Watch groups say everywhere that we're going is sensitive. Transport reaches: ok. Response reaches are more sensitive. Target those transient reaches between them. *Tawsia heloae* (sp.?) rare plant. Critical areas? Might not just be wetlands. Caution: don't just presume it would be impacted by cattle. It's in protected habitat, where cows wouldn't normally want to congregate.
10. Our bounding of analysis didn't include RRS (we normally don't do it, because we're not authorized for RRS; novel approach and RRS wants to make sure their permittees don't need to reduce their numbers because of KNF drift. RRS Dep. Supervisor said we should tie in the fact of drift to plans and documents so that every time one cow drifts, it doesn't stop everything (not condoning, but difficult). Compliance also came up in the case and the court found we're in compliance with the process (upheld). Within 3-4 days of noticing drifted cattle, KNF has to contact permittees (not the RRS).
11. Photopoints might be sufficient, because otherwise it might imply there is a problem when there isn't.
12. The first site is not an ideal reference site. It could be a "control site," but not a "reference site." Vegetation: there are patches of late seral, but down in the bottom there's erosion, pussy paws (persistent early seral species).
13. Dan Henklein thinks there's a basic misunderstanding about where rare/sensitive plants (on convex lands) vs. where the drift is occurring (concave). All RRS sensitive plants are on decomposed granite. The lupine is only found here on Mt. Ashland, but the ski resort doesn't seem to impact it. There are no endangered plants. There is a listed moss in McDonald Basin (in bottom) that is globally rare, on exposed ridges (and a liverwort?), but *Tawsia* was the only thing mentioned in the lawsuit.
14. Spot 1: hard to classify its potential because it's so variable.

15. Main concern for botany: there's a high priority invasive species (houndstongue, especially) and Dyer's Woad coming over the ridge now. We have an infestation of houndstongue in Stirling corral (totally on the KNF side); it could be vectored up and over.

16. Main analysis:

- a. Species of concern? (from a physical function standpoint; e.g., tamarisk – physical function isn't bad, but maybe brought in).
- b. How much is outside the control of the FS?
- c. Hydro conditions? P. 133: Rosgin (to determine potential of stream types)
- d. Vegetation along each channel type
- e. Note: the "checklist" is now "assessment form" because we want more than just checks, we need comments.
- f. Revised riparian plant list on pg. 119 and relative abundance, wetland indicator status, root classes, invasive, etc.
- g. We are not going out and doing a bunch of assessments (that's MIMS)
- h. ?: why are we using the term "reach" when we're looking at more than streams? → "Stratum" (if all behave the same way). But Donomore is a different stratum because of the physical setting, plants, soils.
- i. Stratification is trying to sort by various things (e.g., legos: can sort by shape, size, color) to try to find out what the most sensitive are and focus on them.
- j. McDonald Basin (stop 2): will see some impacts, but it's getting a lot better. Where are the worst impacts? The environmental groups complain about all of them. Alex Hole especially: not part of that allotment from the lawsuit, but it gets a lot of drift. The 2010 EA only addressed the Beaver Creek Allotment, not the other 3. Future: we'll need to evaluate drift for other allotments (the EA already focused on minimizing drift, but will never completely eliminate it)
- k. Survey concerns:
 - i. Botany: typically do pre-field work, then focus on certain areas. WC: we still need that pre-field work. It's not one and not the other; this should inform the process. PFC: includes some consideration of upland effects.
 - ii. The advanced soil survey that types out soils has never been done for this area. If doing from scratch: would want some broader surveys (we need to be careful what we're trying to get out of this). PFC does not replace individual resource assessments;

you can always collect more. PFC gives a basic starting point. We need to gather data (qualitative and quantitative) to support FONSI and that drift is not significant.

- iii. Looks like 2009 was peak for drift, and then decreased from 2010 (because of the decision with adaptive management went into effect and there were controls to mitigate drift).
- iv. Difficulty: to differentiate the condition caused by livestock v. the condition because of legacy uses. Listen to concerns, and educate people about serious impacts on the system (putting current conditions into perspective).

b. Site 2: McDonald Basin (Wagner Creek Allotment).

- i. History: In the mid-90s there was an EA. Permittee was restricted from going into the basin for ~3 years because of overgrazing. He's still not grazing there because he doesn't want to get "blamed for something he didn't do"
- ii. General observations:
 - 1. Dirt bike disturbance present (from about August 2015, when bikes came in and did damage – mud bogging – because the gate was open.
 - 2. Old road system present
 - 3. Has a survey transect. Going to read again this year.
 - 4. Potential to be a reference site?
 - a. GL: no trampling of banks, no visible foraging (but two old cow pies found). Above: there's a trail above the creek (maybe from 5-10 years ago; unclear if cattle path or other). If from cattle, it's right along the stream bank.
 - b. History: In the 90s: there were 50 head in this allotment, but an additional 20-50 from KNF. The RRS permittee was suspended because of the condition of the high country. After that, the only cows here have been from KNF (used paint guns on problem cows, but they're high producers so permittees don't want to cull out, and there haven't been consequences to them). ~2008, 2009: meeting between RRS and KNF: hadn't been any penalties to permittees. Now: a couple drift cows still come here, but they're out within 3-5 days. It's cyclic: it's cooler here than on the KNF, so if hot on KNF, it pushes the cows over. MH: pretty sure cows haven't been in here yet this year, but elk are starting to come in here. Note: don't automatically assume trails are from cows; could be old deer or elk trails.
 - 5. Veg perspective: more degraded here than in the first spot (except for right by the riparian area). There's lower biodiversity. Even

when the cows came in, they wandered up rather than hanging out. Veg people think it's a recovery site. → leading v. trailing indicators.

6. Lots of roads everywhere, and missing some of the other components. Here: Rumex, St. John's wort. General disturbance is greater (non-natives brought in from cows on roads). On KNF: dry areas seem to have been impacted the most; not the case here. The barren area here perhaps used to be a dry meadow patch (still residuals of needlegrass).
7. There were more bees at Site 1.
8. Here it's high on some forbs and natives that you wouldn't expect here, but it has lower biodiversity. The two sides of the channel are different; overall, more diversity on the slope. No forbs of concern for noxious weeds, invasives, etc.
9. From a grazing perspective, it looks like this site was really "hoses" and is now coming back.
10. This is a much larger basin; approaching 4% gradient (steeper than the first site). The stream has step pools. Still fine textured soils.
11. Table for determining root stability based on the root characteristics of plants in the book
12. Here seems more diverse along the stream than at Site 1 (but Site 1 had a different community and shading from willows). Site 1 was better drained.

Day 2 (7/12/2016). Attendee additions: Stephanie McMorris and Caden Miller (YCC)

III. Pre-site discussion

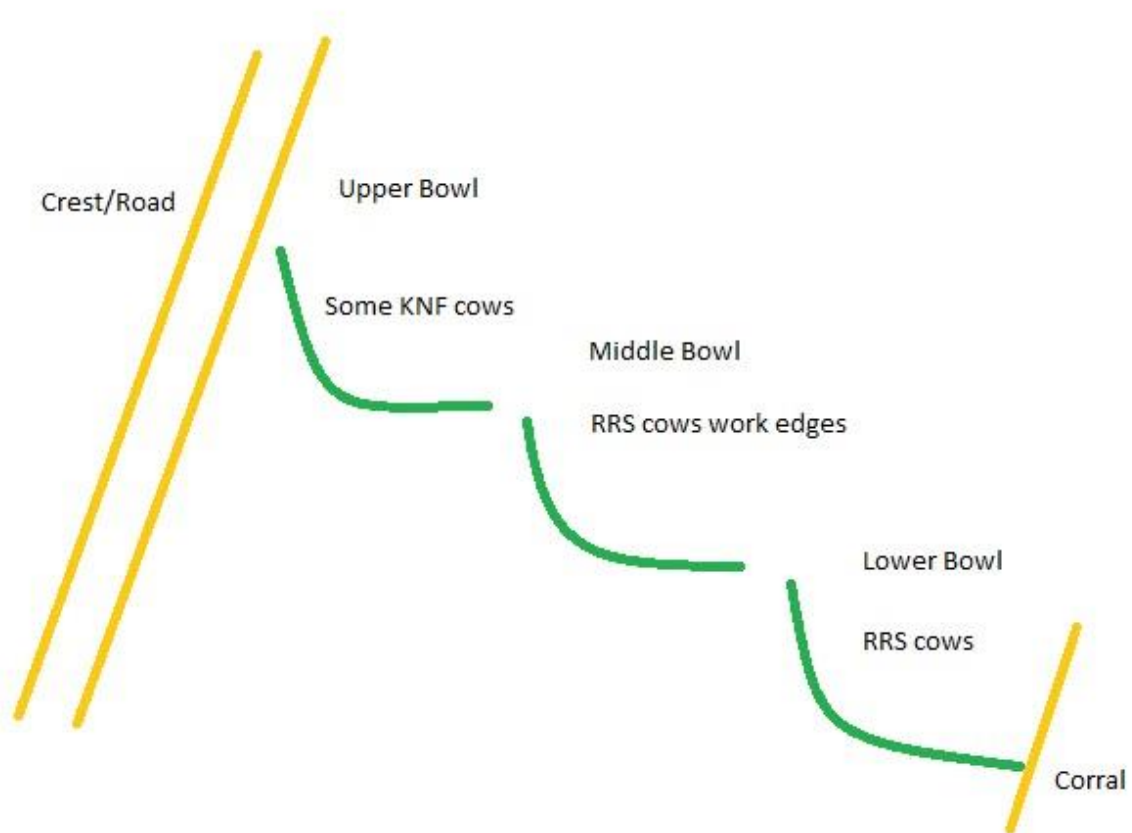
- a. End goal: what we need: quantitative or qualitative data to show that KNF cattle are causing an impact or not on RRS to reaffirm our FONSI. Yes impact or no.
- b. Did people get enough info to make an assessment from yesterday?
 - i. Veg: it's hard to just take a little while, so thinking going to spend another day going out to the sites again. There's a partial plant list now, but no abundance data. The big group is not right for the analysis they do. Jessica was just comparing the two sites, not really thinking about potential. She thinks she has a good qualitative picture, but not real data (Sandy pointed out you don't get real quantitative data from PFC). JC: Not really comparing to a community; just looking at biodiversity. Problem: disturbed sites sometimes have more diversity (need to look more at function). JC: revise to native v. non-native; she wants a botanical inventory of the sites. Sandy thinks we need to look at potential at some point to relate to the drift issue.
 - ii. DH: the control site has been ungrazed (by permitted livestock) since the 1920s (but with some trespass). There are severe legacy sites where we lost the A horizon. MH will be taking transect photos (at Site 2) this September again.
 - iii. MG: not sure how much botanical inventory would tell us about drift → need to go to the most impacted sites, because yesterday we couldn't show impacts from drift. Today: Silverfork: both cows come in, but little from

KNF. There are three bowls: KNF cows only make it to the top one. Other sites with more disturbance: Elliot Creek/Alex Hole is a bigger issue, but it's outside of the lawsuit. Miller Glade is subject to drift (but probably out of the lawsuit); it looks like it's undergoing type conversion.

- iv. BL: wants to see every site (even briefly) in order to be able to respond to a judge that he's seen the site and knows what it looks like. SW: Timing is an issue – look to see before and after drift (with photographic evidence) to say whether there are impacts or not.
- v. ***The PFC approach for botany might not be appropriate. This is the best time of year to see sites at their best (without grazing). We should do another visit early-mid October to see the most impacts
- vi. Brief overview needed
 - 1. Botany: do need to know if the sensitive species is being impacted or not. If there aren't current botanical surveys that have been done, they will need to be done. Quick looks at multiple sites will help determine where to focus.
 - 2. Soil: need to know if compaction from cattle or not
 - 3. Range: utilization or not
 - 4. MH: Keep monitoring to a minimum. Decide where photopoints are needed. Go through stratification and delineation process for setting up photopoints.

IV. Introduction to today's sites

- a. Glade Creek: little bowls, going downhill, most forage at the base
 - i. Steeper, more distinct channels
 - ii. EA and DN evaluated in 1993 (with Wagner). There are 76 head, either May 1 through September 30, or June 1 through October 30th, or fewer numbers within AUMs.
 - iii. The EA and permit were done different ways (and signed by the same person).
 - iv. Upper and lower pastures; some fencing.
 - v. From the Quartz fire: cows didn't go on (burned the lower area). Up to half – $\frac{3}{4}$ of the cows now stay lower until July.
 - vi. Terrain: cirque, glacially carved. Tighter basin than McDonald. Lots of little springs. Geology: getting out of decomposed granite and into mixes, lenses, ultramafics, serpentine. The west-facing slope has terracing.
 - vii. There's a road in the lower part.
 - viii. About 30,000 acres in the upper bowl. Drier than McDonald.
 - ix. There is a grazing BMP (but cows didn't go in that year): national protection. No other BMPs in place.
- b. Silverfork Basin: Beaver/Silver Allotment
 - i. Has vehicle tracks
 - ii. The basin wraps back to Elliot Basin and Applegate Lake



- iii. Permittee 1: ~89 head in lower country in Beaver/Silver (Squaw Peak). Up here (at the crest) allowed July 1. Donomore July 1; another 45 there and 50 here.
- iv. Permittee 2: Dutchman. Sally Glade, Yale Creek. ~69 head. They work their way up Yale Creek and come up into Silverfork too. Lower country: April 1. Not allowed up here until July 1.
- v. It's believed that the terracing was put in (~50s, 60s) to control erosion; this might need to be confirmed.

V. Site visits

a. Glade Creek

- i. On the way: Sheep Camp Springs, barrens. No more sheep grazing since ~50s on the KNF.
- ii. Elk scat on terracing.
- iii. At the base: Not a distinct trail. Upland slopes with springs where legacy cattle impacts are likely. Probably less diverse than other sites, but no bare ground; well established plants. Microptera.
- iv. Corn lily patches, some cow parsley, lots of yarrow. Cedalsia oregana (pink spike). Lots of elk tracks. ~5 old cow pies.

- v. Soils: in meadow: 12" A horizon, really nice loam, gravelly.
- b. Dan Henklein's personal observations for Silver Fork Basin:

The Silver Fork Basin is a north-facing headwaters cirque defined by gentle ridgeline topography. The bounding slopes are forested with Shasta Red Fir of varying density and canopy. Eastern bounding slopes are more open below the uppermost reaches, transitioning from dry meadow to a mountain brush type up to Dutchman Peak: these are the slopes that were terraced along the contours during the 1960s. Currently, these terraces are difficult to distinguish from below.

Taken as a whole, the basin represents a concave landscape; but at smaller scales with the headwaters cirque topography is variable and includes small convex areas near the basin floor, and a series of terraces of benches dividing a lower basin from and upper basin. Meadow vegetation dominates along the basin floor, with water receiving landscapes supporting wet meadow vegetation close to the perennial drainage, dry meadow vegetation extending up the eastern bounding slopes toward Dutchman Peak, and mesic (moist) meadow vegetation in intermediate areas. The Silver Fork of Elliot Creek flows along the west side of the headwaters basin, supporting dense growth of willow (*Salix* sp.?) along the stream channel. It is joined by a series of intermittent of seasonal seep-fed rivulets (flowing on date of observation) flowing down from the east side of the basin. Landscape positions defined by variable meso-topography on the basin floor differ enough to govern development of a mosaic of diverse habitats including a sagebrush-rabbitbrush-buckwheat (ARTR-CHNA-ERIOG) patch on a gravelly knoll or fan, and small patches of fir (*Abies magnifica shastensis*), and expanded areas of mesic and wet meadow vegetation that extend well beyond the immediate channel of the Silver Fork.

From the lower basin south up the drainage to the upper basin, the visual aspect of the meadow in all its phases (wet> mesic> dry) is dominated by seeded meadow foxtail (*Alopecurus pratensis*). The height of this species may produce a false impression of actual dominance. Species present understory include ballhead sedge (*Carex microptera*) and clustered sedge (*Carex praegacilis*), both of which species were abundant and vigorous. Many unusual species of small stature and unknown significance were observed in the lowest strata of the herbaceous understory, including popcorn flower (*Gnaphalium palustre*) and *Navarretia intertexta*. Other grass species persisting from 20th century seedings include Kentucky bluegrass (*Poa pratensis*) and pubescent wheatgrass (*Thinopyrum intermedium*). As one travels from the bottom of the lower basin toward the upper basin, the seeded grass species appear to decrease in density and dominance.

Downstream from the meadow-dominated headwaters cirque where stream gradient increases, a dense, closed-canopy fir forest crosses and fills the drainage.

VI. Closing group discussion

- a. Silverfork observations:

- i. Some old cow pies, some trampling. It looks like it was seeded in the past. Nonnatives are prevalent, such as reed canary grass.

- ii. MH: “what’s the problem here?” is the best thing he heard today. There were lots of issues back in the 80s, 90s, but improved now. A lot has been solved, and we’re moving forward.
- iii. SW: potential that the stream channel is deeply incised. Evidence of stream outside. Alders growing to the toe of bank, then Garrison creeping foxtail (invasive, but highly nutritious, not stabilizing). Three types of willows, intermediate wheat grass. Seeps, at least with intermittent flow. Fine soils, vegetated well. Other ephemeral channels, very dry, gravelly (no excessive erosion though). In every wet place: reed canary grass, sedges, scirpus, willow. Some evidence of the low willows being eaten (looks consistent, so probably elk or deer, while snow was on the ground because it’s uniform). Nothing was mushroomed. There was one cow trail well away from the stream channel. Higher: vehicle, OHV damage. In the meadow areas: false hellebore (quite a bit) but no significant erosion going down to the stream channel. Question: will small channels downcut to match? Willows line the stream, except at the bottom where it’s forested.
- iv. DH: mesotopography within the basin with lots of diversity. Similar to control meadow. In the middle: convex landscape that supports sage brush and rubber rabbit brush: codominant in shrubby, native community (first time Dan has seen it in a native community). Lower bowl: dominated by nonnatives, amazingly productive. Mosaic of different types. He was disappointed to see so many introduced plants there. Lots of *C. microptera* (on a gradient from the lower bowl to the upper: introduced species declined and natives increased). Garrison creeping foxtail brought in to the North for livestock forage. Sandy arguing more for function (and thinks ground cover better than bare ground; she thinks the natives are starting to take over). There’s a dirt bike track going right around the second meadow (really fresh).
- v. BY: Very productive, no overbrowsing. Lots of planting (from long ago) but really good ground cover. Lots of elk and deer signs. Lots of human disturbance (jeeps, trucks, cycles; found 1 huge tire (MH: probably from the guy last year who rolled his vehicle, and then tried to roll the tire downhill); no sign of the vehicle today. A jeep has gone through some of the springs; there are fresh tracks, grass laid down (Note: call LEO, ranger). Not sure needs a reanalysis. Just before grazing, now, and October.
- vi. DB: struck by how much non-natives there are; it’s obviously seeded (an improved pasture). Reed canary grass (invasive) at the bottom is a concern (Dave took a GPS point there). Cows eat it early in the season, but not later. A few patties were in the main meadow, but not much in the way of cow signs. One site had hoof prints and impaction (not on the stream bank; below the second bowl). Very little sign of cows (maybe because that area is difficult to walk through). There’s a punched-out hole (~6’ in diameter, 2-3’ deep): pretty symmetrical, so could have been dug by people, but it’s potentially a cow watering hole.

vii. GR: walked from top down. It seemed like a high, sub-alpine bowl without grasses at the top. There's Idaho fescue or green fescue at the top. You can't really see the trenches in the photos until you get down there (probably to stop soil flow). Going down: fescue to Poa, mountain broom (native grasses). Then, as soil became deeper, picked up corn lily, then tall forb system, and then lots and lots of alter (no evidence of grazing; one old patty, none current). It's beautiful in the middle of the meadow. He doesn't see any evidence that would trigger him to say there's a problem. There are elk impacts now, and he found a nice motorcycle track; the biggest issue is keeping people out. He saw one set of rills that looked like it had been initiated by gopher activity. There's lots of rodent activity. Woody species looked great. Lots of animals; seems to be functioning well as a system. There's alpacura (sp?): stabilizes better than Timothy (but difficult to get out once in). Greg took lots of pictures and could put together a little report. There's an open area fluffed up from frost heaving; pure organics, but watch for future headcut potential. There's some compaction; he's assuming elk [Jonie found evidence of localized compaction here in years past]. Shallow roots, histic properties (high organics).

b. Glade Creek observations:

- i. JG: Similar geology, metasedimentary, volcanics, gravelly soils on top. Top: crest barrens (debate on what generated); some trenching. Bottom: really nice dark gravelly loam. A horizon at least 12 inches. Lots of nice fine roots. Hiking up further: interested to see if change induced by false hellebore, but still dark loam, no compaction (but it can take a long time to change). The glade is smaller than Silverfork (more fingers, timbered). Narrowed valley bottom. Three fingers, but meet as one, then into Wagner Creek.
- ii. Lots of good vegetation for wildlife species. Lots of sedges and grasses. Forbs not as developed. Little signs of cow use (old patties and hoof prints). Small mammal tunnels everywhere. Great horned owl feathers. Wide variety of pollinators (bees, hummingbirds, etc.). Above: shooting stars still in bloom, with little blue butterflies (the gray blue butterfly is on the sensitive list). Deer or elk signs throughout.
- iii. BL: some benches. Deer and elk signs (livestock might not want to get in). Benches slowly recovering (some areas where cows like to concentrate (old). Keep track of drift, but it looks good.
- iv. Benches with mesic meadows. Headed in the right direction. Carexes seeding in well (mesic): look healthy. Carex microptera: very high. Some springs with some hoof punching, but couldn't tell if from cows or elk.
- v. MH: Glade Meadows looked better than the control site. Stream channel rooted with alders and willows, stable. This was encouraging. No recent disturbance signs.
- vi. SB: Amazing amount of water coming off the hillside. Looked great.
- vii. SM: Mosaic of vegetation types. Very few introduced species. Disturbance level much less. Very little cow signs. Lots of fresh elk

tracks. Lots of the creeks have good slope on them, so cows probably not prone to access. Very little that would draw cows into the creek. Probably don't need to go back at the end of the year.

- viii. JC: Nothing alerting. Burrowing small mammals, elk, and old cow pies. Come crests with only Caliptrilium could be disturbed by cows, but really steep going down. Noticed non-native species.

[A person drove up to the group: she had reported the previous damage at Silverfork – she noticed last Thursday, but it had already been done then. She had been checking on a sensitive butterfly species. While she was in the meadow, a big silver truck raced by. She saw this the same day as the Wrangle Camp issues]

- ix. MH: don't forget about the administrative side. Resources look good, but let's not forget about administration (we're not failing on it; just keep conscious of it).
- c. Plan for tomorrow
 - i. Alex Hole in a.m. (Dan wants to see Miller Glade too, but Mark advocating more for Alex Hole because it gets more public scrutiny). Meet at Wards Fork Gap at 9am. Mark H. asking NRST to talk to Applegate DR that they saw legacy signs, but no signs of current grazing problems.
 - ii. MG: idea: facilitated meeting with environmental groups and ask them to articulate their specific concerns about the sites (rather than just "it's devastated").
 - iii. Dave pointed out that no one from recreation was present. Yesterday there were people on the PCT taking pictures of cows below them: it was an educational opportunity missed. We could talk about how not every place will be "pristine" because it's a dynamic system and we're a multiple use agency. Sandy: we need to be careful about our own language too (e.g., "invasive" v. "introduced species").
 - iv. DH pointed out that we did invite environmental groups to join us in Fort Jones last time we had NRST out, and they all declined. MG: worth it to keep inviting, and then we can show we invited them if they refuse, and the administrative record will show they're not contributing. SW: we could consider trainings with different environmental groups to show what we're looking at, our mission, etc.

Notes from Dan Henklein:

7/13/2016

DISCUSSION (round-robin) NOTES

Alex Hole (noted but not germane to HCOK-EA)

MARK HOCKEN

Alex Hole is the most impacted site visited. It appears to be already at or close to the grazing utilization standard for RR-SNF. First the elk come in, then the cows come in afterward. When cows enter the area, the elk do not linger. Production is low with plants never exceeding low stature in height. The area looks like end-of-season now with early season elk use. Solutions? Change in management. Ideas? No 100% solution but solutions may include: (1) log barriers to livestock access; (2) pre-NEPA proactive measurement of utilization; (3) attempts to attribute use (to elk vs. RR-SNF livestock vs. KNF drift livestock.)

DAVE WEIXELMAN

Nutsedge (*Scirpus microcarpus*) and the *Carex* sp. present in Alex Hole are late successional species. They are scattered throughout the meadow area, intermingled with early successional species like dwarf monkey flower (*Mimulus primuloides*). These late-seral species can recover very quickly with reduction in grazing pressure.

Donomore Meadows

DAN HENKLEIN (KNF Range Specialist) [*Personal Observations*]

Donomore Meadows also represents a headwaters basin north of the Siskiyou Crest. It is bounded on the north by a spur-ridge that extends to the west from the Siskiyou Crest proper, terminating in Donomore Peak. Between the Crest ridge and Donomore Peak lies an east-west trending saddle defines the headwaters of Donomore Creek, originating from several sources. The entire headwaters basin of Donomore Creek may be a gently carved glacial cirque. It differs from other headwaters basins north of the Siskiyou Crest on RR-SNF in that the basin presents a southern exposure as a result of the defining spur ridge to the north and a stream channel that proceeds first south, then west, before merging with Ward's Fork of Elliot Creek.

The eastern two thirds of Donomore Meadows is under private ownership. The westernmost portion under RR-SNF administration consists of two intermittent drainages or swales that flow south into Donomore Creek, and a northern intermittent tributary with associated stringer meadow that flows southeast into Donomore Creek closer to the headwaters. The stringer meadow was not investigated. As a result, the landscape position of the RR-SNF portion of the meadow appears to represent a footslope: the drainage swales represent concave portions of this footslope. The easternmost of the two swales is seep-fed and relatively broad, with a gentle gradient of from 0-5%, slightly steeper immediately below the seep, and steepening before it enters Donomore Creek proper. From the seep, low gradient slopes lead uphill to the [fir] forest margin to the west, and downhill to private land on the east. A strong moisture gradient governs development a variety of herbaceous plant communities from the drainage to the forest margin. Wet meadow indicated by Northwest Territory sedge (*Carex utriculata*) grades to mesic meadow dominated by clustered sedge (*C. praegacilis*). The mesic component encompasses its own moisture gradient: California danthonia (*Danthonia californica*), Kentucky bluegrass (*Poa pratensis*), and thickspike wheatgrass (*Elymus lanceolatus*) are all associates where moisture is

favorable. A dry meadow upland community dominated by Idaho fescue (*Festuca idahoensis*) occupies a narrow band along the margin. Here the fescue associates with an allium-like species tentatively identified as *Tofieldia* sp.

This swale illustrates the ideal location for a Weixelman-type long-term monitoring plot, with three discrete moisture-defined communities running parallel adjacent to the swale, along a reach long enough to accommodate three 100 meter traps within each separate association.

JONI BRAZIER (RR-SNF Soil Scientist)

A pit was dug in the wettest part of the swale to look for signs of gleying or mottling (redoxomorphic features). Water was encountered at 4" down. The soil was revealed to be histic, very rich, saturated, with abundant decaying organic matter in the upper horizons. From 15" down to 22" there was more grittiness on hand-texturing. The soil contained a greater percentage of a mineral component than of organic matter: it was not gleyed, and remained a rich, dark, organic soil. Pebbles in the soil were of a lighter color of uncertain geology, probably metamorphic. The site is a perennial wet meadow but probably will not class as a wetland.

JESSICA CELIS (RR-SNF botanist)

Vegetative diversity is high. Some ruderals are present. Big patches of Idaho fescue were observed: a healthy sign.

GREG LAURIE (KNF hydrologist)

Downstream from the swale, the stream channels exhibits headcuts. These may have been caused by installation of a culvert below the meadow. To try to restore the floodplain by removing this culvert could cause a big mess.

BILL WALL (KNF Fisheries Biologist [detail])

At one time, the area was perfect beaver habitat. The channel jumps back and forth and tries to gain sinuosity.

BRYAN YOST (KNF Wildlife Biologist)

The road culvert channelizes the stream, hinders development of streamside hardwoods (alders, willows) and sinuosity: all the energy of streamflow is in one place now.

MARK HOCKEN (RR-SNF Range Specialist)

RR-SNF-permitted cattle arrive in Donomore Meadows around July 1st. Drift cattle from KNF have been observed in Donomore Meadows as early as June 1st. On Donomore Meadows the drift problem is mostly administrative. Drift cattle may pop in and out of the area during July; usually in groups of about 5.