

## Meeting Synopsis

On Monday, January 30<sup>th</sup>, 2017 the Burney-Hat Creek Community Forest and Watershed Group met for a full-group meeting. The USFS introduced both the new district ranger for the Hat Creek Ranger District and the Partnership Coordinator acting as liaison for the Collaborative. The status of the Crossroads CE was discussed and the initial objectives reviewed. A lunch presentation on snow monitoring was given by Dr. Scott Tyler of the University of Nevada – Reno. Funding opportunities were discussed in depth, particularly CALFIRE Greenhouse Gas Reduction grants and their potential link to the Good Neighbor Authority.

## Attendees

Janine Book	Dave Hays	Lori Martin
Steve Buckley	Kristy Hoffman	Dale Newby
Deb Cesmat	Pete Johnson	Jeff Oldson
Danny Cluck	Bobette Jones	John Owen
Don Curtis	Jonathan Kusel	Todd Sloat
Linn Gassaway	Trish Ladd	Scott Tyler
Ryan Hadley	Doug Lindgren	Shawn Wheelock

## Action Items:

- **J. Owen** to revise November meeting notes to accurately reflect description of SDI. **DONE**
- **J. Owen** to send doodle regarding the Monitoring Working Group webinar – finalize date. **DONE**
- **B. Jones** to make IDT notes available following the next meeting.
- **Sierra Institute** to connect with PG&E representatives regarding meeting attendance.
- **J. Oldson** to review timeframe for comments regarding CALFIRE grants. **DONE**
- **Sierra Institute** to determine next meeting date. Send doodle out for March full-group meeting. **DONE**
- **Sierra Institute** to compile past outreach material for newsletter submission. **DONE**
- **USFS** to provide updated project list at each full-group meeting.

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## USFS Staff Introduction

- Janine Book is the new district ranger for the Hat Creek Ranger District.
  - Janine served as a line office on the Plumas National Forest as well as the Deputy District Ranger.
  - Janine worked for the BLM for three years where she gained experience with Collaborative groups.
  - Janine also worked on GIS modeling including critical habitat models.
  - Other experience includes NEPA planner and educator.
- Bobette Jones has transitioned to her new position as Partnership Coordinator.
  - Bobette has worked primarily in the Lassen Area throughout her career.
  - She began as a timber marker and eventually shifted into fisheries and ecology.
  - Bobette has a strong landscape ecology background and previous to her new position, worked on monitoring efforts with the BHCCFWG.

## Approval/Modifications

- The November meeting notes were approved with two modifications to the section describing the Stocking Density Index (SDI).
- **Action Item:** J. Owen to revise November meeting notes to accurately reflect description of SDI.
- The January agenda was approved with the following modifications:
  - K. Hoffman requested time to provide an update of Sierra Nevada Conservancy (SNC) grant opportunities.
  - L. Martin and T. Ladd of McArthur-Burney Falls State Park (State Park) requested time to provide updates on State Park planned/ongoing projects.

## Monitoring updates, webinar announcement

- The Monitoring Working Group is planning a web-meeting to discuss the following topics:
  - Draft monitoring strategy – additions, edits, and revisions.
  - Prioritization of monitoring questions: the prioritization scores and how they will/should be used in the planning process.
  - 2017 monitoring activities: discussion and approval

- Communication tools: examples of monitoring briefs and distribution discussion.
- A doodle will be sent out to group members to determine an appropriate date during the week of February 13<sup>th</sup>. **Action Item: J. Owen** to send doodle regarding the Monitoring Working Group webinar.
- L. Martin asked about the purpose of the webinar; are the monitoring activities proactive or reactive?
  - The webinar will focus on monitoring activities that are both proactive and reactive; although, they are largely proactive. There are certain strategies developed in response to the environment, but the goal is to address overall system health.
- D. Curtis asked if the prioritization of monitoring questions will be discussed.
  - B. Jones said it is a safe assumption that the results of the prioritization will be presented and discussed.
- B. Jones mentioned monitoring briefs; these 1-2 documents will summarize the ongoing monitoring activities and results. The webinar will include a discussion on how best to share the briefs with the collaborative and other stakeholders.
- T. Sloat emphasized the importance of following through with the topics discussed in the meeting. For example, the Sluicibox project was discussed at the November meeting, although, no further discussion has taken place.
  - The group would like to have an updated project list available to review and discuss at meetings. G. Mayer of LNF was previously responsible for providing this list at meetings but does not regularly attend currently. **Action Item: LNF** representatives to provide project list at the next full group meeting. **Action Item: USFS** to provide an updated project list at each full-group meeting.

#### Implementing the Vision Part I: Crossroads IDT meetings and planning

- B. Jones is now the Interdisciplinary Team (IDT) leader for the Crossroads Project.
- The project boundary has not changed. Fuels reduction and density related mortality remain the focus of the project.
- A Project Initiation Letter (PIL) will be addressed at the next IDT meeting. There was one signed previously, but there was an incomplete section.
- R. Hadley recalled a discussion regarding an aquatic species issue within the Crossroads boundary.
  - B. Jones believed the issue was discussed, but the area was avoided in the project planning.
- B. Jones said the USFS is on a hiring freeze, but the initial stages of the NEPA process can move forward; this includes defining the “proposed action” and “purpose and need” which are then communicated to the public. The subsequent steps involve scoping and defining alternatives.
- Stand exams will determine if certain areas are suitable for treating.

- D. Newby commented that the treatment should include thinning and removal of some green vegetation. This process was never discussed in depth but should be considered for effective treatments.
- B. Jones believes the planning process may have been hurried; she agrees that certain aspects will require more attention.
- J. Oldson noted that following treatments with chemicals can be a cheaper option.
  - This option is considered less viable for the USFS operating under federal guidelines.
- R. Hadley asked if Crossroads was written as an EA, as opposed to CE, how many acres would be included?
  - The size is dependent on surveys.
- B. Jones is open to exploring new options; although, it may be best to continue with the project as planned and consider reevaluating the initial objectives.
- The group agreed to expand the initial objectives of Crossroads to include thinning of green trees.
- D. Hays noted that the Farm Bill CE is a useful tool but not in all cases. There is, however, some leverage with Region 5 in using a CE and being successful.
- T. Sloat inquired about the internal USFS process for determining project priority.
  - J. Book said there is a program of work meeting and the projects receive “tier” designations. There has not been a program of work meeting recently. Crossroads is currently in the top 3 of priority projects.
- J. Oldson asked if there is a mechanism to stay ahead of the game, before the trees die and lose their value.
  - B. Jones said she is unaware of a mechanism that can act quickly. There are certain tools that allow proactive thinning, but the USFS is not fully capable of acting quickly enough.
- J. Oldson noted that the public wants to see the forest treated and it should remain at the forefront of priorities.
- **Action Item:** B. Jones to make IDT notes available following the next meeting.
- J. Kusel agreed that the pace of treatments is an ongoing issue within collaborative forestry. Sierra Institute is currently planning an All-Lands Meeting on May 23<sup>rd</sup>, 2017 to address the issue of pace and scale, among other topics.
- J. Kusel recommended that Collaborative members participate in USFS public meetings regarding Crossroads. The project is very visible to the local community. There is an opportunity to let community members know who is involved and the process behind the project.
- There are multiple private parties with land adjacent to the Crossroads project boundary. It would be beneficial to have PG&E representatives attend the Collaborative meetings.

- **Action Item:** **Sierra Institute** to connect with PG&E representatives regarding meeting attendance.

#### Current Grant Opportunities: how and who applies

- CALFIRE Greenhouse Gas Reduction (GGR) funds are available. There were draft grant guidelines circulated for comments, but the comment period closed on December 30, 2016.
- The CALFIRE funding is landscape focused; there is an emphasis on collaborative and multi-ownership projects.
- The question was asked of whether the CALFIRE funding could be used on federal land.
  - This funding would be a good opportunity to utilize the Good Neighbor Authority (GNA).
- GNA has been part of meeting discussions for a while; the only way to move forward with GNA is to highlight projects that are suitable for using this authority.
- GNA requires federal land that is in need of treatment and has value; state funds are used to implement a project on the federal land.
- It is important to note that funding and compliance are separate in the case of GNA. In other words, state funding is used, but the project must comply with NEPA guidelines.
- L. Gassaway noted that CEQA can be developed to conform with the majority of NEPA guidelines; it is a matter of awareness at the onset of the process. **Future Meeting Topic:** NEPA/CEQA crosswalk.
- The group considered drafting a letter to submit as a comment for the CALFIRE grants. The letter would ask to extend the grant timeframe from three to five years.
- **Action Item:** **J. Oldson** to review timeframe for comments regarding CALFIRE grants.
- T. Sloat and J. Oldson volunteered to serve on an ad hoc subcommittee to develop a comment letter for the CALFIRE grants.

#### McArthur-Burney Falls State Park (State Park) update

- T. Ladd discussed two upcoming projects at Burney Falls State Park.
- One project is fuels management. The project is funded through deferred maintenance money for hazardous tree removal.
- The activities will go through February and into the park's opening season.
- **Action Item:** **T. Ladd** to provide fuels management maps for distribution.
- In addition to the deferred maintenance funding, The State Park plans to hire additional staff to augment the current workforce.

- D. Lindgren suggested leaving the trees in light of the revitalized biomass market in the area. There is an opportunity to utilize the biomass market at this time.
- T. Ladd said the projects were planned prior to the biomass plants renewing their contract. However, she is thankful to the Collaborative for providing alternatives for subsequent projects.
- T. Ladd said the State Park is disposing of biomass in other ways as well. For instance, there is a community firewood give-away planned for surplus wood.
- J. Kusel noted that the biomass contracts happened seemingly overnight. It was only two meetings ago that the biomass plants were on the verge of closing.
- The second State Park project relates to a USFS grant that was received around four years ago. One component is a thirteen acre fuel reduction at Clark Creek. There is still slash on the ground at Clark Creek that may have to be burned next season.
- J. Kusel inquired about the opportunities for local employment for the State Park projects.
- T. Ladd replied that they have lost their contracting officer in the district; the main priority was staying on schedule with the hazardous tree removal. There are likely opportunities to hire locally in future projects.
- L. Martin said it is at times difficult to account for private vendors in their projects.
- D. Newby stated that a part of the Clark Creek project was supposed to be a timber sale; although, there are not a lot of valuable trees in that area. To fulfill the timber sale as stipulated in the grant, he suggests moving the waste through the biomass market.
- State Parks had previously put out the timber sale for bids on two occasions – without success.
- D. Lindgren said he scoped the area, but concluded the added costs were too high; he suggested reorganizing the contract to eliminate some of the added costs.
- J. Kusel thanked T. Ladd for providing the State Park projects update; he recommended an open line of communication between the State Park and Collaborative members.

#### Sierra Nevada Conservancy (SNC) Grants

- K. Hoffman discussed the Sierra Nevada Conservancy (SNC) Prop 1 grants.
- There will be no funding round in March, 2017; there will be a funding round in September, 2017.
- The grant guidelines have changed somewhat, including opportunities for meadow restoration. Previously, meadows were not accounted for in the guidelines.
  - The project will need to remain a forest health project, but will require a meadow component as well.

- Pre-applications are required for these grants; the pre-application is due on September 1, 2017.
- Funding will begin in December 2017 – potentially – or March 2018.
- The grants include:
  - Planning grants for up to \$75,000
  - Implementation grants up to \$500,000

#### FLAP Funding

- Federal Lands Access Program (FLAP) funding relates to projects that provide access to, are adjacent to, or are located within Federal lands.
- J. Oldson mentioned the Tamarack Road that leads to Burney Gardens. It is a “long, nasty haul” as is.
  - The county is willing to do it. If the USFS is willing, the county will support the project.
- The county is considered the appropriate lead for this initiative. Patrick Minturn is the director of Shasta County Public Works and is the county representative in this case.
- J. Book was interested in the project and would be willing to consider a letter of support to the county with more information regarding the project.

#### Lunch Presentation: Snow Monitoring Results

- Presentation by Dr. Scott Tyler of University Nevada – Reno.
- There is conflicting information regarding thinned trees and snow melt in the Sierra Nevada.
  - In the Rockies, thinned trees result in snow staying longer. However, in the Sierra Nevada this is not the case. Trees back radiate long wave radiation, melting the snow in the Sierra Nevada.
- A fiberoptic cable allows for temperature measurements every five inches along the length of the cable. When spring arrives, areas that have consistent temperature have snow, those that fluctuate indicate snow melt. This is an effective method for monitoring snow remotely.
- Other instruments used include sap flow sensors. Placed in the tree, this sensor provides an approximation of how much water the tree is transpiring.
- The snow monitoring has been largely focused on rain, as there has not been adequate snowpack throughout the monitoring period.
- A question was raised about the effects of these systems on water flow.
  - S. Tyler said is it challenging to show a measurable change in stream flow. For example, the pine beetle infestations in Colorado are clearly disrupting the system, but there is no change in the stream flow.
- There was a comment that juniper removal seems to show a large increase in water availability.

- There is typically an increase initially, but the system redistributes over time.
- A group member asked if the monitoring includes subsurface flows.
  - The subsurface flows are pretty well buffered; you might only see a change on a scale of ten years or more.
- A summary of the snow monitoring study can be found at the **end of this document**.

### Forest Vulnerability Map Introduction

- Danny Cluck, USFS entomologist, was introduced to the group.
- D. Cluck began a presentation of a “forest vulnerability map”.
- D. Cluck collaborated with GIS technicians to create a map highlighting areas of concern to inform the allocation of resources.
- The GIS team digitized a vegetation layer from 1915 for Lassen National Forest. The tree species are more generalized in this layer.
- D. Cluck pointed out areas of tree mortality acquired from surveys within the last year.
- The map also shows areas that LNF has completed the NEPA process.
- D. Cluck noted that the map was intended to be functional through certain omissions. For example, areas that are unlikely to be treated and steep slope areas are not included.
- The map also accounts for areas that have already been treated in the last 25 years; in addition, Eiler and Bald fire areas have been removed.
- There is a need to account for Stand Density Index (SDI) on the map. SDI would be valuable for identifying areas of value for timber sales.
- Within the CFLR area on the map, there are many high density stands that meet all the risk criteria. These areas are likely to be more cost effective and have the greatest overall impact.
- T. Sloat asked what areas, within the CFLR boundaries, stand out in terms of potential projects?
  - The Badger area, for one. There is a significant area north of Panner, in Bear Wallow Country. The plantation in Whittington as well.
- High Hazard Zones were discussed. High Hazard Zones were designated following the governor’s emergency proclamation in response to tree mortality. The Tree Mortality Task Force created two tiers of hazard including:
  - Tier 1: addresses human health and safety
  - Tier 2: damage to natural resources and fire potential
- The hazard tiers relate to biomass plants, in that they are required to take a certain percentage from high hazard zones. It is a graduated percentage and increases over time.



## Implementing the Vision Part II: the next big project(s)

- J. Kusel asked the group how they can respond to the data that has been presented.
  - B. Jones said the Badger area has a lot of potential. The surveys are done and it is an overall favorable area. Badger also opens opportunities to work with the Lassen National Park.
- T. Sloat raised the idea of GNA. It requires the USFS to say they are interested in treating a certain area, but do not have the funds to accomplish it.
- D. Hays asked if there is anything objectionable to implementing GNA on LNF.
  - The group agreed that there are no barriers at this time.
- J. Kusel wants the group to keep in mind how the big projects are affected by the end of the CFLR program. The end of the program should be incorporated into the long term vision.
- The Forest Vulnerability Map, although relatively new, will be a valuable resource in identifying project areas. A good next step would be to identify four or five areas in preparation for implementing GNA. With further guidance on GNA, these projects can be ready to go.
- The group generally agreed that a good goal would be to determine prioritization of project areas by the fall 2017; then, project design can take place during the next field season.
- T. Sloat emphasized that there is no better time for planning than now (late winter). While planning takes place, the USFS can concurrently vet the results.
- T. Sloat proposed a process of monthly meetings to meet planning needs. A full group meeting would occur, and the next month a strategic planning committee (of which all can participate) would take place to advance the planning process.
  - The group agreed with this strategy.
  - Following the full group meeting in March, the strategic planning committee would meet in the subsequent month (April).
- **Action Item:** **Sierra Institute** to determine next meeting date. Send doodle out for March full-group meeting.

## Outreach and Communication Plan, publications

- L. Martin discussed the State Park newsletter.
  - There is a summer newsletter that augments a standard State Parks brochure. The group can make a submission that will be highlighted in the partnership section.
- T. Sloat recommended that past outreach material be utilized to complete the submission.
- L. Martin requests that the submission be made in mid-february.

- **Action Item:** **Sierra Institute** to compile past outreach material for newsletter submission.

#### Recreation discussion

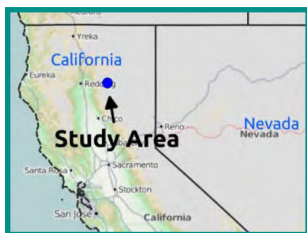
- T. Sloat said that he is working with an individual who is interested in pregressing recreation in the area. The individual is willing to meet with interested parties and coordinate projects. Currently, there is limited knowledge on the recreation opportunities in this area.
- A long term goal could include a master plan for recreation.
- L. Martin inquired about independent organizations who put together recreational guides/material (e.g. Wonderland society)
  - There is some information, but it needs to be a larger conversation. For instance, identiifying what facilities need improving and what kind of funding is available.
- **Future Meeting Topic:** Recreation information, planning

#### Identification and Prioritization of Future Meeting Topics

- Recreation information, planning
- NEPA/CEQA Crosswalk
- CALFIRE GGGRF grants and Good Neighbor Authority



*Forest thinning does affect the timing and magnitude of water fluxes into and out of the forest soils. However, as soils in all treatments dry out, there was no significant 'gain' of water to the watershed.*

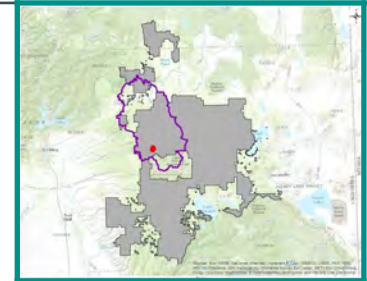


## Monitoring hydrologic responses to forest management treatments: *preliminary results from the Panner Timber Sale.*

The purpose of this project was to monitor the water balance and hydrologic changes in response to several thinning treatments implemented under the Panner Timber Sale. Treatments included diversity thinning and group selection, as well as no thinning in a spotted owl Home Range Core Area (HRCA), which serves as a control.

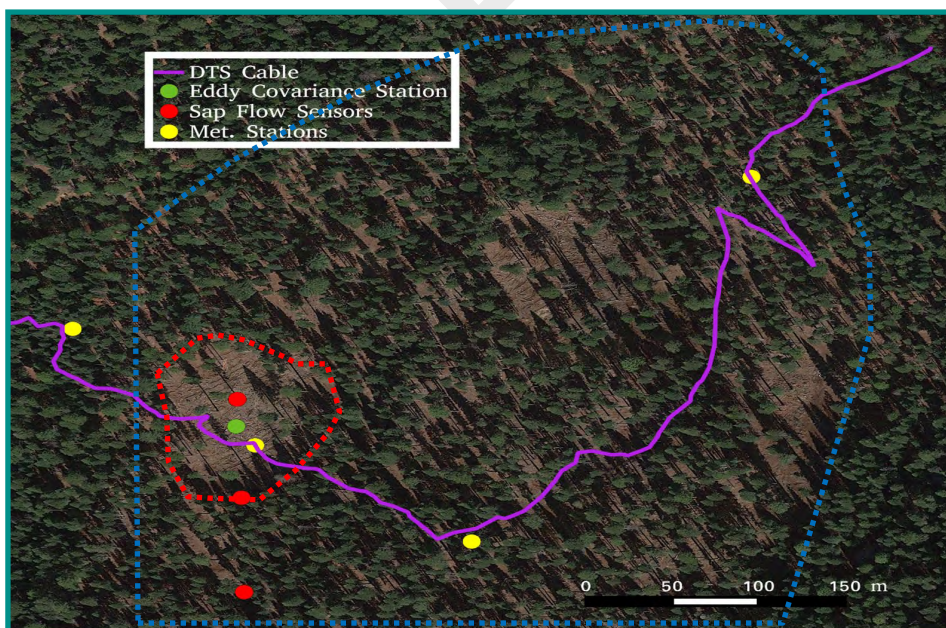
### Key Findings

- The study site, situated in the southwestern portion of the Basins CFLR Project area, appears to have transitioned from having primarily snow-dominated precipitation to a rain-dominated one.
- Thinning was shown to postpone the onset of the growing season, due primarily to cooler conditions in the canopy.
- Thinning preserves soil water for late summer, as compared to an unthinned forest, and therefore improves drought resilience.
- The Group Selection treatment resulted in slightly higher soil moistures at the end of the summer season, however legacy trees within the Group Selection treatment continued to show signs of stress from the lack of moisture.
- All soils dry out, so there was no net water 'gain' to the system by thinning.



*Project Location, the Basins CFLRP, and Lassen N.F.*

*Thinning operations are expected to preserve soil moisture longer into the summer, improving drought resilience and reducing tree mortality.*



*Google Earth image of the treatment sites, showing locations of the wireless weather stations, tree sap flux monitoring and distributed fiber optic cable for monitoring snowmelt across the sites. The Group Selection and Diversity Thinning areas are roughly outlined in red and blue, respectively.*



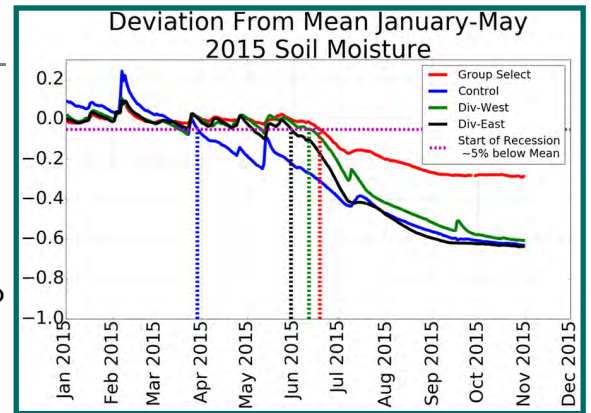


## Project Overview

Forest thinning for fuel reduction and habitat restoration has become standard practice, yet its affect on the annual hydrologic budget of forests with maritime-dominated snowpack is not well quantified. Thinning should reduce the amount of rain and snow that is intercepted by the canopy, however changes in the amount of light and long wave radiation on the forest floor post-thinning may lead to earlier snowmelt and a possible earlier onset of fire season. At the Panner Site, a series of thinning treatments were conducted in 2011, ranging from no thinning in a spotted owl HRCA, to radial thinning with retention islands (Diversity Thin), to near-complete overstory removal in a group selection.

Continuous monitoring of the treatments began in late 2013, with four installations of wireless-linked hydrologic monitoring stations measuring air temperature, humidity, solar radiation, wind speed, soil moisture and soil temperature. These stations report to a central computer, and data are streamed by cellular modem four times per day (publically available at <http://data.cuahsi.org/>). Each station has a dedicated automatic camera to record snow depth and passive samplers to monitor snow melt. In 2014, monitoring was expanded to include tree sap flux measurements on four ponderosa pine trees in the Group Selection and Diversity treatments as well as snow sublimation monitoring using an eddy covariance tower.

Although the site was initially chosen to monitor the effects of thinning on snow retention, it has received primarily rain since monitoring began in 2014 and has not had a permanent winter snowpack. Because of this apparent change in the rain/snow transition elevation, continuous monitoring of rainfall was initiated in 2016 to begin to assess the hydrologic impacts of thinning in a *rain-dominated* forest.



*The beginning of forest transpiration (when soil moistures drop below the purple dashed line) was significantly earlier in the unthinned (Control) plot. However, both the Control and Diversity thinning areas fully deplete the soil moisture reservoir by the end of the water year.*



*Game camera image of the control site. The dense canopy results in average winter temperatures warmer than any of the other treatments.*



*The Group Selection treatment had warmer daytime winter temperatures, however during spring and summer, elevated radiation and greater mean wind speeds led to greater water stress of the isolated seed trees.*



*The Diversity Thinned site shows much higher levels of light penetration, but also had cooler daily temperatures during the winter and early spring.*