

**USDA FOREST SERVICE REGION 5 SIERRA CASCADES
SMALL GROUP BREAKOUT AND DISCUSSION NOTES
DIALOG REPORT #12
WATER, WATER ...WATER – EVERYONE IS TALKING ABOUT IT AND SO ARE WE
FEBRUARY 27, 2014**

The following pages summarize the small group discussion points and flip chart notes from the facilitators at the Dialog.

Morning Session

For the morning session the groups were asked to respond to the following questions:

1. How do we continue current uses and trends and manage the forests better?
2. What is the relationship of water or the impact of it in the Sierra Nevada and Cascades range?
3. At what point in the process do you analyze for cumulative impacts to do work on the landscape before a catastrophic fire?

(An audience member asked this question following the morning speakers' presentations. Some groups chose to discuss this question as well.)

GROUP A

Question: **How do we continue current uses and trends and manage the forests better?**

Discussion Key Points:

- Burning continues to rise from discussions as a way to manage forests debris and control fires.
- Funding sources for forest projects and programs continue to be a challenge.
- Group engaged in an exploration of the idea of a hydrologic cap and trade.
- Downstream water users seem to be removed from the discussion. Farmers and end users need to realize how their actions impact the forest and take on some responsibility, which ideally shows up in some kind of revenue or payment.

Discussion Items:

- There was engaged group conversation about different kinds of projects in the forest – on Forest Service land. The Forest Service is not selling land and this is misinformation.
- There have been many projects approved in the past 12 years, just about all of them. But the prescribed burn approvals do not keep up.
- The prescribed burning is only treatment for 20 percent of the land.
- The Forest Service does not have the resources or the staff to do the treatment of all surface fuel.

Question: What is the relationship of water or the impact of it in the Sierra Nevada and Cascades range?

Discussion Items:

- Forest Service scientists need funding. One way to obtain additional funding is to get money from downstream users to treat forest because the water they used will benefit.
- Water is a commodity for downstream users. It comes for free.
- The Forest Service should treat the water. They can show how to manage it so that there continues to be cold, clean water coming from the Sierra watershed.
- People perceive water to be free. Water is not free; there is a cost, what is the fair market value?
- Water rights: charge for the recognition.
- A “need to change” is for downstream water users to pay for the costs.
- If there are energy credits and “cap and trade” for other industries, then why not have a “hydrology cap and trade,” or a “watershed cap and trade?” How could that happen?
- A water bond would be a good opportunity to raise money as well as start a “cap and trade” conversation.
- With increasing “pace and scale,” the President recently proposed a new emergency fund for fire response similar to how FEMA has funds set aside for emergency response.
- There are cumulative effects beyond California.

GROUP B

The participants discussed forest management in the context of the question about analyzing cumulative impacts.

Question: At what point in the process do you analyze for cumulative impacts to do work on the landscape before a catastrophic fire?

Discussion Highlights:

- There are lots of agency discussions on this topic but funding is often the issue; most funding goes to fighting fires instead of prevention, land management or analyzing cumulative impacts.
- NEPA (National Environmental Quality Act) does not lend well to balancing catastrophic risks to short term risks.
- NEPA process can be used by groups (that may not represent stakeholders in area) to hold up projects. It should be reformed so that this doesn’t happen. Lots of time and money are spent by the end of the process.
- Policies of organizations managing the forest and fires need to be flexible and in some instances changed. For example, some fires should be left to burn as a management strategy, but some policies and air quality regulations do not allow for this.
- When fire strikes there should be evacuations and responses similar to hurricanes; it’s a natural disaster that comes with living in the forest.

- Public education is needed to help people to understand the importance of investing in forest management.
- Leadership at forest management and fire organizations can make a big difference in what is accomplished (creating community buy-in for managing forests and letting fires burn).

GROUP C

Note: This morning group consisted of about 6 people and most were serving under the Forest Service in similar capacities (the one different person was an individual who worked for a conservancy group).

Question: What is the relationship of water or its impact in the Sierra Nevada and Cascades Range?

Discussion Items:

- There were no water agency representatives (except for the invited speaker, but no utility or other representatives) at the Dialog. This was seen as a huge drawback. Without having all the groups involved, it was questioned how this process can work if only some of the interests are present.
- There was a major concern about funding and how it impacts the Forest Service's ability to handle their water obligations.
 - Where will this funding come from?
- There needs to be more research about the benefits of meadow restoration to prove its vibrancy to the ecology of the forest and water management.
- If vegetation needs to be removed, it needs to be done carefully and with great planning and foresight.
 - It was noted that experimental tree removal to see what happens without a specific plan has usually led to unanticipated detrimental effects.
- Worst parts of the forests need to be thinned.
 - Funds for this thinning are not at the levels they should be.
- Balance is key to managing the relationship between the forest and water.
 - Whitewater rafting, fishing, habitat needs and animal needs must be put into perspective of which takes precedence.
 - Natural setting versus people's recreational needs?
- Forest Service does not have all the answers. Collaboration between all the entities is essential.
- Although there needs to be increased levels of water, there needs to be a balance of ensuring a high level of water quality.
- There is a tradeoff of the fragmentation of the goals of different groups (which causes policy issues). Example given was the priority of building temporary roads versus permanent roads. How do we minimize roads, but maximize utility of the roads? Different groups have different beliefs, so there is a lack of consistent direction.

Question: How do we continue current uses and trends and manage the forests better?

Discussion Items:

- The current trend of water usage and management is unsustainable.
- Issues need to be evaluated concerning the watershed and charging.
 - It was suggested that mandated water metering across the State would be a great way to monitor usage.
 - This could help manage externalities and usage better overall.
- People will show more willingness-to-pay if they see the benefit of the water they receive in a better information campaign.
 - Understanding where water comes from and how the “system works” is key.
- The “plug and pond” is not getting a visible return.
 - It works in some places, but does not work in others.

GROUP D

Question: At what point in the process do you analyze for cumulative impacts to do work on the landscape before a catastrophic fire?

Discussion Items:

- Short-term versus long-term analysis. Can the Forest Service do an analysis on impact of timber sale versus the impact of a catastrophic fire? Analysis showing active versus no management risks or cumulative effects is missing from NEPA process.
- Point in process is Forest Plan level.
- Forest Service has more resources and capacity at Forest Plan level to complete the analysis. The Forest Service does not have the resources at project level.
- Need active management on landscape to prevent catastrophic fire (reduce fuel loads).
- Increase risk to spotted owl is catastrophic fires.
- Catastrophic fire is a statement of failure in management.
- Fuel loads need to be addressed at landscape scale.
- Decision makers should take more risks.
- Need balance. When is fire going to be catastrophic?
- Want conditions in the forests that support historical levels of fire.
- Collaborative process is way of future—Dinkey Creek as an example.
- Need federal money to feed these processes (collaborative).
- Forest Service needs to be proactive on reducing fire and the associated costs.

Question 2: How do we continue current uses and trends and manage the forests better?

Discussion Key Points:

- Timber sales to fund treatment for water management.
- Lack of adequate resources (staff) to complete environmental review.

- Need to focus on increasing trust in stakeholder groups to increase effectiveness and time of NEPA process.
- Need to integrate new science into Forest Plan and management.

GROUP E

Question: **At what point of the analysis process will cumulative impacts on the forests, in pre-fire condition, will be translated into economic costs?**

Discussion Key Points:

- Consider developing demand side, not just the supply side service fees, to support forests and water infrastructure maintenance.
- Urban water consumers need education on how the forests are critical to providing clean supply of drinking water.
- Identify ways to bring forest monitoring current and up-to-date with the best available science so that forest resources are more easily and quickly identified as being available for access and use by those who seek economic production.

Discussion Items:

- Surveys in El Dorado Forest are necessary, but not enough surveying is done since there are not enough specialists and planners to do the assessment of resources after fires.
- Sierra Nevada Mountains are the headwaters for California. The Water Plan is a more comprehensive now that it includes forests.
- How to show the economic benefits of the forests and economic impacts of fires on water supply?
- Water supply from forests is not assessed on the water bills by urban consumers.
- The Rim Fire was the first time the media and others showed the linkage of forests and water supply for cities.
- It becomes a question of how to engage an urban population on water issues. San Francisco is connected to Hetch-Hetchy, and the city's residents understand that the forests supply their water.
- The Forest Service needs to engage urban populations to educate them on where their water comes from.
- It would be good to engage the irrigation water districts during the relicensing process.
- Opportunity for direct connection with district populations, but what about the rest of the State, especially the southern region that receives water from northern California?
- We need to provide education to people in southern California about where the water they use comes from (i.e. it is water purchased in Northern California).
- Think about end users, they could pay more and a maintenance fee to help support forests in northern California.
- Water conservation is good, but then there is less money available for maintenance of water infrastructure.
- We need to engage the public since all water is for public use in California.

- California doesn't reinvest in the water infrastructure.
- There needs to be a fourth cost tier for using drinking water as irrigation, for example, in wine growing regions, drinking water is used to irrigate the grape crops.
- May need statewide water policy on water use (since we transport water around the State).
- Avoided cost survey provides state /locals with information about the cost of forests services post-fires.
- We need advance payments for recovery of forests after fires.
- Rural economics need healthy forest for recreation and tourist money (via Hotel Tax), and with fires, there is a 75 percent decline in revenue from the loss of tourism.
- The issues are interconnected and need a holistic approach.
- There is a lot of focus on the supply side of forest services, but what about demand side economics of a forest?
- One barrier of economics of forest services is not being able to use non-merchantable trees for biomass; for example, at the Sonora Plant.
- What are the cumulative impacts in the Toulane of owl packs? There are laws and regulations that call for monitoring of the packs, but there is a large back-log. The forests rely on timber sales to support forest monitoring efforts. Other funding sources (such as end user fees can help support reinvestment for clearing projects.
- There needs to be an updating of the monitoring frequency system, is three years unreasonable? Is the science faulty? We need the best available science in Forest Service plans to help identify which sections of the forest are available for economic use like timber harvesting, biomass collection, and other services.

GROUP F

Question: **What is the relationship of water or the impact of it on the Sierra Nevada and Cascades Range?**

Discussion Items:

The group identified a number of problems relative to water management issues. Key items from that discussion include:

- A large part of the California's population is unaware of where water comes from and that the Sierra is the source of many people's water.
- Hydropower facilities are all outdated; they lose 20 percent of water through usage and this is water that farmers need downstream.
- Farmers do not show up and participate during hydropower relicensing processes.
- More claims on water than available water.
- Water is being lost faster than management projects are moving forward.
- There is no mechanism for investing in the headwaters through the California Water Association.
- Forest Service is perceived to not be getting involved enough due to political critics.
- Livestock is contributing to degradation of meadows, streams and other areas.

- In the Sierra National Forest only 6 of 6,000 meadows are healthy and even those need restoration work.
- Perceived lynchpin of problems: getting issues of use and supply connected; old issue to get downstream users to invest back into the headwaters.

The group subsequently initiated a discussion around possible solutions. Key items from that discussion include:

- Important question to investigate is what is happening in the Sierras that impacts the rest of water users in the State.
- Many management improvements can and should start in the headwaters.
- State policy principles have been approved to manage headwaters; hopefully, these will soon be utilized to improve future headwaters management.

Question: **How do we continue current uses and trends and manage the forests better?**

Discussion Items:

- The question implies a big assumption that continuing current uses and trends is a positive thing; group doesn't necessarily agree with that assumption.

The group also initiated a solutions discussion for this question:

- **NEPA flexibility.** A more flexible and adaptive NEPA process would be helpful as getting changes through NEPA takes too long.
 - Improve timing of when cattle can be put out and removed and consider tying the cattle industry into forest management practices (managers in the Sierra National Forest are attempting to address these and other challenges).
 - Enable NEPA to come in and reverse past actions (e.g. broken stream flow).
 - Note that even where NEPA exclusions are permitted the process takes too long (e.g. fixing streambed alterations).

GROUP G

Question: **When do you analyze cumulative impacts so that sales of timber harvest plans can proceed before a fire hits an area?**

Discussion Items:

- Cumulative impacts should be looked at as 'short term versus long term benefits and impacts.' As the Forest Service manages for multiple things, you need to look at impacts over time, scope and treatment options.

Question: **What is the relationship of water or the impact of it in the Sierras?**

Discussion Items:

- Regarding water, there are a range of treatments that could be done around water. For example, the water quality study on the Mokelumne River is modeling sediment results from different treatments.

Question: **How do we continue current uses and trends and manage the forests better?**

Overall Discussion Items:

- We also need to change the dialog – move from a ‘reactive approach’ to a ‘proactive approach.’
- Education or lack thereof, is still a hurdle. There is a lot of miss-information out about fire intensity, and treatments. We need a ‘Smokey the Bear’–type of campaign to help spread the right messages.
- We need to link meadow restoration with treatments. Granted there are encroachment issues and other unknowns, but not doing anything, is not helping matters any.
- Drought – the town of Mineral being impacted by lack of tourists. The tourism economy is suffering because of the drought

Discussion Highlights on Conflicting Interests:

- Catastrophic fire outweighs mitigations for timber harvest. Supervisor from Tehama County wants more flexible regulations about timber harvest.
- Timber harvest is so difficult right now (many regulations, i.e., threatened and endangered species) that there may be no trees to harvest soon.
- Forest Service financial resources are not sufficient for the amount of trees there are to harvest. Money is now going toward planning, assessment making, NEPA, sale administration, and pre-sale treatment to make a sale viable.
- Create a collaborative for snow management motorized vehicular resources.
- The laundry list of mitigations necessary for timber harvest (or any action in the forest) prohibits what can be done on the ground. It also does not allow for people trying to influence the process fairly (by public participation and doing what is required). People who have influence and know how to work the system get what they want, which is unfair.
- (There is a) need to modify rules in response to certain events – such as allowing salvage logging. There should be an emergency sale determination/ hazard sale process.
- Need to streamline rules more because timber is going to waste.

Discussion Highlights Water Storage:

- Restore the holding capacity of damaged meadows to change timing and release of water.
- Can’t manufacture water, but we can change the timing of the release.
- Change watersheds to release water slowly.

- Drought is making soils hydrophobic, making it more difficult for soil surfaces to absorb water (and soils to hold moisture).
- Need more research on how to prolong rate of delivery of water.
- There needs to be better design (... maybe treatment of?) of legacy roads.
- Better design of roads for water retention and water quality.
- Roads shed water too quickly and basically can serve as water conveyances and increase the drainage density of watersheds.
- Maintenance, mitigation, and management of roads.
- Need to address the theft of the water by pot growers. They not only divert water but they pollute the water they leave behind.
- Law enforcement needs to address natural resource damage from:
 - Marijuana
 - Front country camping (prolonged camping denudes natural resources)
 - Dispersed camping (see above)
 - Response from Dean Gould, Sierra National Forest Supervisor: Forest Service supports California Department of Fish and Wildlife (DFW) for policing marijuana grows
- Participant proposed an action item for people to ask their Congresspersons and Senators to give money to the Forest Service for all the above mentioned things.

Afternoon Session

After the panel presentations, the planned questions for the afternoon breakouts allowed for exploration of the topic of water within the context of values and interests, and ecological, social, cultural and economic considerations. These discussions were to be framed within the topics of Meadows / Rivers, Streams and Riparian Ecosystems; Vegetation, Wildlife and Fire; and Diversified Recreation.

There were four questions offered to start the conversations with each table grouping:

1. What most threatens the watershed, water source or the water quality in the context of these (topic emphasis areas)?
2. If stewardship and sustainability are paramount, what best management practices contribute to such? How do we maintain sustainability?
3. Based on the current conditions and trends, what would you like to see as potential desired conditions in the "Preliminary Need to Change"?
4. What practices would help the forest management in its planning efforts (to eliminate conflicts, support and sustain uses, etc.)?

TABLE TOP DISCUSSION -- Group A

The group's discussion for the afternoon began to focus more and more on the meadows and rivers. They also spoke to the Forest Service leadership and ability to work collaboratively. In talking about "water" in the social, economic and ecological context, the group shared several points summarized below:

- Success story: A restored meadow project resulted in the beavers returning. Ranchers complained that there was less water coming to them downstream.
- The water rights are a challenge to the restoration projects. If a rancher owns land above or below a reservoir, the rancher has control.
- There is lots of information available on current meadow conditions. We need to have clarity around what “degradation” means and what we mean when we use it. What is the baseline? What is the point we are trying to “restore” back to?
- For many grazing can be a detriment. What happens when a stream cuts into a meadow and grazing is allowed? Grazing is blamed for the detriment. The animals weaken the banks, this potentially increases the velocity of the water and the cuts through the meadow, in turn and in time, the meadow dries out.
- “Pond and Plug” is a process used to improve the land. State Water Board has declared that Pond and Plug is not a water rights issue. The problem is with the people downstream.
- A plan revision effort could work to bring meadows back to life. But one participant felt like the Forest Planning process is the wrong place to deal with these issues. All meadows are different. In his opinion, the attempt to write a set of standards for all forests is only going to be open to litigation. There needs to be supporters to the recommendations.
- Solutions vary based on situation.
- Farmers and Ranchers can and have the responsibility to improve their own lands. It is not a Forest Plan issue but an environmental issue.
- Current Forest Service leadership is being collaborative and everyone is following the rules and procedures. There should be Memorandums of Understanding (MOUs) to establish a way for the stakeholders and the Forest Service to “discuss policy before pen comes to paper.”
- A disconnect exists where we want to be and the thresholds. There has to be a threshold that we want to meet. For some, that threshold can only be met with long – term effort and “heavy lift”.
- Generally, federal law applies to federal land but there is no federal water law. There are statewide water rights (that have to apply to federal land).

TABLE TOP DISCUSSION – Group B

The participants discussed all four questions outlined on the agenda. Below each question are the main points the group mentioned.

Question 1: What most threatens the watershed, water source or water quality in the context of these areas?

- **Meadows /Rivers, Streams and Riparian Ecosystems**
- **Vegetation, Wildlife, and Fire**
- **Diversified Recreation**

Discussion Items:

- It would have enriched the conversation to have water agencies present to discuss how much water they need for communities they serve.
- Denver's water board is paying for water restoration and hoping it will pay off.
- Water agencies are not going to raise rates to help restore meadows.
 - Consumption and demand is a concern.
 - How do we conserve and reduce consumption.
 - Agriculture has practices that heavily use water. Is there a way to incentivize better practices? Perhaps linking crop insurance premiums to water consumption, reward those who use water efficiently.
- Management of meadows and water delivery pattern
 - There are multiple reasons to restore meadows, works in some places and not others.
 - Certain behaviors can be negative for meadows (removing conifers, running cows through meadows).
- Cutting trees to increase water yield
 - Not heard of much in Tahoe area.
 - First priority of Forest Service is protecting forests not preserving water.
 - When thinking about ecology, there could be some benefits to water quality but thinning the forests has consequences to wildlife.
 - There are always cheerleaders for thinning for water and reducing fuel loads during drought cycles and there is some truth but it has limitations.
 - This holistic approach can improve condition, reduce fire risk, result in gains in water and soil and maybe improve some species conditions.
 - Difficult to look at larger landscape when forest land is a checker board of private and public lands, difficult to manage with this kind of disbursement.

Question 2: If Stewardship and sustainability are paramount, what best management practices contribute to such? How do we maintain sustainability?

Discussion Items:

- Many best practices look like paper shuffling and box checking, not actual work in forests.
 - Sometimes information collection is good and helpful.
 - Forest Services says "here is what we do to protect water."
- Before and after monitoring is needed to see if situation really did improve and often funding isn't there for this.
 - Need information to adjust practices (more a comment about non-profit groups getting funds for a project and claiming it worked without actually doing any before and after analysis).
 - Maybe the Forest Service monitors one out of five projects and does more robust monitoring, the Forest Service can't afford to do it for all projects.
- Could be opportunity with "cap and trade." Currently metrics are not there and they are feel good projects but "cap and trade" will want metrics to give money.

Question 3: Based on the current conditions and trend, what would you like to see as potential desired conditions in the Preliminary Need to Change?

Discussion Items:

- David's presentation is related to this question.
 - Forest Service tries to get closer to hydrograph.
 - Stream temperatures, aquatic passage...trying to address those things.
 - Most rivers are dammed, trying to change flows for critically dry years.
 - Trying to balance recreation use with environmental concerns.
 - If using water for fish and habitat, less recreation.
- Desired condition is in the eyes of the person.
 - What is natural range of variability? Or what was it in the past?
 - Objective should be to restore pre-Euro or pre-fire suppression conditions.
 - But why? Because we think that's the proper situation for systems to function but how do we know?
 - What are we trying to achieve and for whom?
 - Maybe going to previous structure will help maybe not.
- Needs to be something on conservation issue.
 - Forest Service has very little ability to influence consumer behavior.
 - Are their disincentives that could help with conservation?

Question 4: What practices would help the forest management in its planning efforts (to eliminate conflicts, support and sustain uses, etc.)?

Discussion Items:

- So many laws and regulations that people have the impression that land managers have more discretion than they do.
 - Need to have managers that have good decision-making abilities if given more discretion.
- NEPA process means people get heard.
 - Needs to be constrained but in times of litigation not going to go away.
- Take more resources to get better science and not much reward.
 - Staffing levels are so low; need more funding for staff to do work.
 - Information highway – bombarding Americans, staff faces constant interruptions.

TABLE TOP DISCUSSION – Group C

The presentations in the morning and afternoon along with the mix of stakeholders at the table spurred a lively and thought provoking discussion about water values. The quantity of water produced by the National Forests and the large portion of water used by agriculture and the gap between the two brought up questions and issues to be addressed in the Forest Planning Revision process.

The participants' dialogue generated the following questions and thoughts:

- Forest Service Lands provide majority of water in California
- Funding of water management
- How to tell a story about importance of Forest Service management to Congress to get funding necessary to manage for water values
- What does water management look like?
- What is the Desired Future Condition (DFC) for water values?
- How do we relate Forest Service management to water values?
- Documenting social and economic values provided by Forest Service daily management activity
- How does the Forest Service provide accurate social and economic analysis at the project or Forest Plan level
- Forest Services needs to define DFC for water values
- Management of water values
- Paying for water management

The group felt there are four topic areas the Forest Service did not address either adequately or not at all:

- **How Forest Service Analyzes and Defines Water Values**
- **Short-Term versus Long-Term Risk**
- **Social and Economic Values**
- **Desired Future Conditions for Water Values**

How the Forest Service Analyzes and Defines Water Values

The actual quality and production and storage of water capacity were not addressed directly in the Forest Plan or revisions. It was always a byproduct of another issue (i.e., threatened and endangered species). However, it is one of the underlying mandates of the Forest Service.

The presentations in the morning and afternoon brought up the following points:

- Major Mandate of the Forest Service to provide water values
- Majority of water comes from Forest Service Lands
- Water is of major importance to California and the world given that California produces food for the world.
- Economic significance of food production for world
- Significance of water quality and quantity for California

Overall Discussion Items:

- Given all of the above, it is hard to believe the Forest Service is not allocated the \$300 million (Chris Nota's presentation in the morning) to manage the resource.
- The Forest Service is a small player in water use (referring to the slide showing that 80 percent and 10 percent water users). Eighty percent of water use is agriculture!

- The Farm Bill is \$500 Billion. Should some of that funding be allocated to the USFS to maintain or increase water storage/production capacity?
- The Forest Service needs to understand the key connections/people to draw attention to the importance of managing for water on the Forest Service lands and develop language in the bill for allocating funding to the Forest Service.
- For example, a participant brought up the East Bay Municipal Utility District's project on the El Dorado. They have been allocated \$12,000 for outreach. What should they focus on? -- Education? Stakeholder discussions?
- Someone suggested emphasizing the benefits of management of water. Conditions affect the quality and quantity of water. People care about benefits!
- The subject of fracking and its effects on water has not been addressed in this conference. Need to look at the cumulative effects of fracking in relationship to water issues.

Social and Economic Values

USFS can do a better job documenting the activity they do on social and economic values. This work is generally not an allocated budget item yet is part of daily activities. Opportunities to increase awareness of what the Forest Service provides in social and economic values are:

- Relate activities to social and economic values
- Document activities that provide social and economic values
- Document activities that provide support to local communities
- Relate activities to water quality and quantity
- What activities are supporting water values to local communities
- Correlate vegetation management and other management activities to water values and social and economic values.
- Provide economic analysis support at the forest/project level. This maybe a person or a group outside of the Forest Service.

Short-Term versus Long-Term Risk

The group spent time in the morning talking about this issue and it again came up in the afternoon discussion, as all of these issues are interrelated and interdependent on each other. This subject was in response to managing the forest including PAC's (*note taker did not clarify PAC*) to minimize the impact of catastrophic wildfire. The question is why doesn't the Forest Plan include an alternative or analyze the alternatives for short and long term risks for catastrophic wildfire? The fire in 1987 and the Rim Fire in 2013 were brought up as examples. Could the Rim Fire have been avoided with management?

One participant answered that the short-term risk always out-weighs the long-term risk because it is predictable. The decision maker will always opt for the short-term risk.

This question evoked the questions:

- How do we balance the risks?
- How do we evaluate the values?
- What is the desired future condition?

- The condition before the fire may not be the Desired Future Condition?
- Is this an opportunity to experiment with desired condition?
- Do we use North's research to relate activities to water quality and quantity?
- Forest Service needs to correlate levels of vegetation management to water quality and quantity.
- Purpose & Need statement drives NEPA process and needs to be revised to accommodate complex issues.
- Forest Service needs to analyze water like they do board feet. They need to figure out how to do this.

TABLE TOP DISCUSSION – Group D

Question: What most threatens the watershed/water quality in the Sierra?

- Climate change; fire/overstock of fuels; and conflict in use (recreation/grazing).

Question: What Best Management Practices (BMPs) can be used to aid in restoration/sustainability?

- Meadow restoration (meadows are 'safe' areas in case of fire) to include BMPs for grazing, plug and pond and increase in native riparian plants.

Question: What practices would help managers in their planning efforts?

- Develop a criteria for prioritizing meadow restoration to include the cost for restoration (bringing in equipment, etc.); evaluation of soil health (has it dried up or degraded too much to even benefit from restoration); bring back beavers; and put some meadow restoration in to the hands of private companies or non-government organizations (NGOs) to help foster a sense of value, volunteerism and ownership.
- Collaborative efforts are seen as very beneficial and productive so long as they do a good job of identifying stakeholders; have a feedback mechanism to show how input is being used and that people are truly being heard; and they support a common good.

Question 1: What most threatens the watershed, water source, or water quality in the context of these areas: Meadows, rivers, streams and riparian ecosystems; vegetation, wildlife and fire; diversified recreation?

- Erosion, turbidity, sedimentation, change in channel morphology, bank erosion (from Dave Herbst, stream scientist)
- Damage depends on severity of wildfire
- Fire may create early seral stage

Recreation:

- Fishing
- Erosion and increased sedimentation
- Re-introducing fire can address conifer encroachment on meadows
- Fire shuts down recreation until restoration occurs

Riparian:

- “Wicking” can be addressed by management. Need more management options. Also need more research to engender more management options.
- We have been using management ideas from other ecological examples (such as riparian management from the Pacific Northwest, which does not necessarily translate to California ecology). We need research to follow up with research on what actually pertains to California.
- This is a good time to look at how to manage riparian areas.
- More flexibility in management is necessary in riparian areas.

Question 2: If stewardship and sustainability is paramount, what best management practices contribute to stewardship and sustainability?

Sustainability:

- Education – and the foundation of education, which is good research.
- Coupling monitoring to research.
- Funding monitoring over time.
- Effectiveness monitoring.
- Must have well-designed monitoring.
- Need adaptive management with feedback from monitoring.
- Consistency within and between Forest Service districts (in monitoring and methods).
- There is currently inconsistency in data to establish status and trends.
- Desired conditions statements are aspirational statements – not necessarily based on science or actual conditions.
- Need to define desired conditions and reference conditions in natural terms – need to do so in the least-disturbed systems with the most intactness.
- Monitoring should be consistent and science-based.
- Need consistent data to establish status and trends.
- Data collection should be methodical and systematic between and within Forest Service districts.
- Desired outcomes should be based on use.
- Reference conditions are a moving target.
- Natural range of variation across space and time – reference conditions need to accommodate that.

Stewardship:

- Think of users as stewards.
- Stewards need buy-in
- Use collaboration (of Forest Service staff and stakeholders) as a means to generate buy-in and partnership
- Partners and stakeholders will be more invested in the success of the program. They will be better informed. There will be better success of projects and less conflict.

Question 3: Based on the current conditions and trends, what would you like to see as potential desired conditions in the Preliminary Need to Change?

- Desired condition = RESILIENCY
- Recreation – not harmed by fire.
- Minimize high severity fires.
- User prescribed fire to promote resiliency and managed fire.
- Need more social science about forest management -- where do people get information about forestry? How do they process it?
- Need better data about what fire actually does on the landscape – including information about emissions.
- Emissions from fire are a matter of “*when* and *how* and not if.”
- Educate the public about the use of fire in forest management.

Question 4: What practices would help the forest management in its planning efforts (to eliminate conflict, support and sustain uses, etc.)?

- More collaboration
- More research
- More funding

TABLE TOP DISCUSSION – Group E

Overall Discussion Highlights:

- There is an evolving conversation between Forest Managers and ranchers through the use of best science to inform ranching practices. This is an example of how more densified (diverse and frequent) data can inform management practices, and water hydrology could benefit from more monitoring and improved science.
- There needs to be more sharing of the monitoring data and funding for monitoring.
- There are demand side issues to analyze and make policy decisions to resolve. Management and policy decisions cannot solely focus on supply issues.
- There needs to be better understand of how agencies’ funding and budgets impact science and planning efforts.

Question 1: What most threatens the watershed, water source, or water quality in the context of topic areas?

- Fires, lack of resiliencies, over stocking of the forest with timber.
- Less robust riparian systems than in the past. Every stream has hydro projects on them, thus there is less riparian support.
- Increasing retention of water in the various stages of the watershed, it may improve the opportunity for non-consumptive uses.
- Grazing impacts meadows and riparian systems. We need better managed grazing systems.
- Now have new managed system that uses rotational grazing permits.

- There needs to be flexibility on the time for grazing to allow optimal meadows conditions so that the water supply is not impacted by the presence of the cattle.
- High elevation grazing needs to be out of stream. There needs to be off-stream watering sources for grazing.
- Too many ranches using trucks, not moving cattle around by horse which is a more sustainable practice since that allows for the cattle to be grazed in remote and diverse locations that do not need placement of roads to access.
- The cattle ranching community has evolved to be more responsive to the land issues and conditions. This has occurred because of more thorough and good science and engagement with the ranching community. We need to continue to invest in good science instead of guessing on the conditions, and the impacts of the science.
- The conversation with ranchers is evolving because of the better science and better forest management, which has helped allow for meadow restoration in the forests.
- Conifer encroachment is another concern.
- Forest Service management has been greatly improved by the use of advance planning conversations with stakeholders. This is how management practices have evolved.

Question 2: If Stewardship and sustainability are paramount, what best management practices contribute to such? How do we maintain sustainability?

Discussion Items:

- We should request that homeowners install water meters to monitor water consumption: however, this is a highly political issue.
- The majority of water consumption goes to agricultural uses. At the macro level of water use there needs to be change.
- Agriculture is a competitive use of water, but farmers want to be in control of the use of the water and direction of how to use water.
 - It is important to identify what other benefits can help them improve efficiency on the land.
- Can we save water in agricultural use? Westlands and Kerns Irrigation District are making changes to water use.

Question 4: What Practices would help the forest managers in its planning efforts (to eliminate conflicts, support and sustain uses, etc.)?

Discussion Items:

- Help make the public aware of successes through a collaborative process.
- For desired conditions, there is a concern about the extreme range of science information available for forests. For example, what is the desired condition for the canopy cover in a forest? Is there a middle ground on the science to support the desired condition listed in the Forest Plan? There needs to be discussion of the science, beyond the message of sustainability.

- We need to be careful on how messages to forest manager about forest thinning impacts water production. 10 percent forest culling can be significant for water production especially given the level of work to produce water output for the Forest Service and maintenance. The cost of water goes up when there is less forest available to produce the water. Only wine growers can afford to purchase water from reduced forests if the price is extremely high.
- Maintenance costs should be based on the ability to manage to reduce extreme fires.
- We need long-term monitoring and funding to conduct the monitoring. Hydrology doesn't have the science data sets yet, and there is a need to "densify" (diversify and increase the data) the information to inform the management practices.
- Forest Service research branch struggles to pay for administrative costs. During the budget negotiation process, the Forest Service's Research and Development funding was cut as it was separate from the full Forest Service's management budget. There is a need to revamp the Forest Service's budget to be able to address changes needs.
- Water needs to be affordable, and there are other water sources such as recycling water, and reuse of water.
- On the Mokelumne River, the managers are now looking at ways to capture storm water. Others are looking at ways to reassess surface water as water supply during the wet years.
- There is a need to have experimental forests to try different or innovative management practices outside of NEPA requirements.
- An example of an experimental forest is the Pacific Gas and Electric (PG&E) program in conjunction with the University of Berkeley (UC Berkeley) researchers and California Department of Forestry and Fire Protections (CalFire) managers to test different management practices.

TABLE TOP DISCUSSION – Group F

Question 1: What most threatens the watershed, water source or water quality in the context of these (listed) areas?

Discussion Items:

- Cattle grazing and pollution that comes from those animals.
- Logging and fire diversion
 - How do we best manage all these threats is important.
- Increasing the diversity of the people who use the forest for recreational purposes. This includes expanding it to minorities and the poor who might not otherwise take advantage of the opportunities to visit the forest.
 - However, a discussion began about the consequences of expanding recreational use. The concern is that it could lead to further decline in water resources.
 - How do you do this to not have an effect on water resources?
- There was a discussion about the positives, negatives, and legality over charging fees on different types of recreation.

- Fees charged should be scaled to the impacts that the activity has on the environment.
- Charging for a “good” can have negative impacts.
- Recent court case was cited where it was ruled that fees must be scaled back.
- Recreation is more an emphasis on public lands.
 - Does there need to be an education component on how to take care of the environment while enjoying it? For example, do you need to supply poop bags for dogs?
- A discussion about thinning began.
 - Thinning does reduce threats.
 - Do we take a utilitarian view to ecological restoration (For example, thinning a certain number of trees will result in particular benefits such as a number of trees saved or a number of habitats saved)? Is that the right thing to do? Or is to preserve trees at all costs?
- There was a worry that involving the private sector more to run lands will cause greater harms to the environment and weaker accountability.
- Pay-to-go revenue as a budgeting model is not good for organizations to properly manage water resources. Unpredictability deters long term water management.

Question 2: If stewardship and sustainability is paramount, what best management practices contribute to such? How do we maintain sustainability?

Discussion Items:

- Funding is key:
 - Should more funding come directly from water users?
 - Fire needs to be funded from another budget. It is soaking up a lot of the Forest Agencies budget to deal with non-fire related objectives.
 - A suggested strategy is taking money and applying it to meet the objectives and priorities of forest and water management so that the money is best spent when efficiently applied to specific and direct goals.
 - The split between the U.S. Department of Agriculture (USDA) and the Forest Service is not good.
 - Charging for water use (fees or taxes) is a great economic tool to lead to incentives on how water is used.
- A big discussion began on the fact that hydroelectricity, irrigation groups, and the agriculture industry were not present at the conference. Their absence was a huge issue.
 - The process seem as if it was diminished in scope because a whole different side of the issue would not be heard and would, in turn, not hear about what is going on with other interests. This is creating a bubble around water issues that will burst if all the groups are not brought together.

Question 3: Based on current conditions and trend, what would you like to see as potential desired conditions in the Preliminary Need to Change?

Discussion Items:

- There needs to be lots of change in general because the current trends and system structure is not sustainable.
- Roads need to be maintained better. Roads need to be prioritized in what needs to be maintained the most.
 - Need to demonstrate on the budget why road maintenance is important.
 - Decreasing the road maintenance budget makes it really hard to fix problems as they come up.
 - It was suggested that more money was especially needed in the deconstruction of old roads.

Question 4: What practices would help the forest management in its planning efforts?

Discussion Items:

- We need to increase the ability to manage fire and “prescribed fires.”
- Issues on economics need to be focused on how it can change incentives for people’s perception of water and the forest (ever since they are interconnected).
- Fire causes the most problems and must be dealt with.
 - However, the budget should be separate for fire.

TABLE DISCUSSION -- Group G

Question 1: What most threatens the watershed, water source or water quality in the context of these areas?

- **Meadows /Rivers, Streams and Riparian Ecosystems**
- **Vegetation, Wildlife, and Fire**
- **Diversified Recreation**

Respondents generally identified threats that applied to all listed ecosystem types as:

- Natural conditions in pre-settlement times different than now, so fires burn differently; also burn differently because management avoided in many areas
- Groundwater development affects surface water flows
- Lack of quantification of federal water rights
- Grazing or lack of grazing management
- Roads and unauthorized Off-Road Vehicle (ORV) use
- Overstocked forests
- Illegal marijuana cultivation
- Lack of beaver
- Fire exclusion
- Uncertainty of climate linked to use/behavior changes
- Air pollution
- Legacy activities (e.g. mining, grazing and timber harvest)
- Lack of maintenance of water storage and delivery infrastructure

Question 2: If Stewardship and sustainability is paramount, what best management practices (BMPs) contribute to such? How do we maintain sustainability?

Discussion Items:

- Forest Service has an established set of BMPs
 - Use of water bars
 - Road construction practices
 - Stakeholder collaboration
- Monitoring feedback loop is critical to evaluate good performance during and after implementation; currently limited
- Ensure greater use of information collected during monitoring to ensure BMPs are working; refine as necessary (adaptive management – e.g. three-year cycle)
- Ensure adequate funds to support monitoring
- Streamline the BMP process
- Cultivate better awareness and involvement of downstream users
- Increase efficiencies to scale up management efforts

Question 3: Based on the current conditions and trend, what would you like to see as potential desired conditions in the Preliminary Need to Change?

Discussion Items:

- Establish a network of shaded fuel breaks
 - Break may be mapped already; look towards implementation
 - Ensure funding for break maintenance
- Introduce prescribed fire following treatment
- Need to ensure restoration projects are economically sustainable
- Reconnect flood plains
- Restore natural range of variability in riparian areas
- Dampen hydrographs (normative)
- Establish resilient forest conditions (e.g. fire, insects, diseases, climate change etc.)
- Enhance ability of streams to meet water quality standards (management maintains good conditions)

Question 4: What practices would help the forest management in its planning efforts (to eliminate conflicts, support and sustain uses, etc.)?

Discussion Items:

- Computer model gaming
 - Improved data access
 - Integration of data sets
 - Trade off analysis
- Utilize partners to do work

- Need NEPA flexibility in relation to managing livestock
- Facilitate great public input on “proposed actions”
 - Frontload scoping documents
- Increase use of third-party facilitators
 - Increase documentation of public collaboration

Remote Participants Notes

Note: As is standard practice for the Sierra Cascades Dialog. A simultaneous set of conversations is held with meeting participants at the Inyo National Forest Supervisor’s Office in Bishop, California.

The group discussed questions #3 and #4.

Question 3: Based on the current conditions and trend, what would you like to see as potential desired conditions in the Preliminary Need to Change.

Question 4: What practices would help the forest management in its planning efforts (to eliminate conflicts, support and sustain uses, etc.)?

Discussion Items:

- Overall meadow condition issues include:
 - Grazing can be a stressor
 - Roads and recreation can also be a stressor
 - Desired condition: Reduce stressors within meadows to allow for conditions to improve
- There are different meadow types in the Sierra. The Framework only addresses meadows in a broad context; we need to adjust management to address all meadow types. Need to make sure all the current literature is used.
- Assessment reports identified meadows in poor, fair, and non-functioning conditions. Plan revision, and therefore desired conditions should address these issues.
- Monitoring Plan – would this document have any meadow, riparian, or aquatic requirements? If so then these areas need to be added in the Need to Change.
- The planning process feels like a regional effort, with templates that cover the region and are not forest specific. This makes the documents (desired conditions, need for change) disconnected from one another. This disconnect could also lead to leaving interested parties out of the process.
- The Assessment Report had 15 Chapters; therefore the Need to Change should also have 15 emphasis areas, or at least cover all those Chapters. This report showed data that was lacking and changes that were needed in management. The revision should be addressing this.
- If the NOI (Notice of Initiation) is too exclusive (only a few emphasis areas), then our proposed action and therefore alternatives might not be able to address other areas that need to change.

- Water is too important a resource in the Sierra Nevada to NOT be included in the Need for Change.
- Meadows are identified as an emphasis for other planning efforts in the State of California, including DFW's Wildlife Plan and other area water plans.
- There is new and conflicting science on meadows which need to be addressed and included in the planning process.