

MtnSEON Stakeholder Forum on

Socio-ecological Research Needs in the Blue Mountains

Tuesday, January 27, 2015

Hoke 339, Eastern Oregon University

La Grande, Oregon

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Proposed Research Topics

Past stakeholder meetings in the Blue Mountains on the topic of research needs for natural resource management have resulted in the identification of priorities. Below is a generalized list of example research priorities, distilled from those meetings and interactions with stakeholders, including discussions about specific research needs at the Starkey Experimental Forest and Range near La Grande. Included is a brief narrative about each issue, as context. Topics are not listed in any particular order. Note that climate change is not listed as its own research need. We assume that each research topic would integrate climate change as appropriate to account for or predict its effects on the associated resources.

The following list was used as a starting framework for the January 27 stakeholder forum in La Grande. Stakeholders reviewed this list before the forum to ensure that it addressed key topics of interest. The list was revised during the morning session to reflect stakeholder thoughts about key topics to be addressed.

1. Rural Community Sustainability Small towns in the Blue Mountains thrive on traditional lifestyles and economies centered on ranching, timber harvest, agriculture, and recreation. These lifestyles are evolving and adapting to a changing resource base and changing resource opportunities, and are blending with emerging economies based on “high-tech” industries. Populations in many smaller towns in the Blue Mountains are declining as traditional lifestyles are “down-sized” in response to reduced resource availability on public lands. Climate change also will affect ecosystem services and lifestyles in ways that may be difficult to predict or address, but with long-term consequences for all residents in the region.

2. Management of Wildland Disturbances: Fire, Insects, Disease, Invasive Species and Herbivory Wildland disturbances are many, varied, and often unpredictable in space and time. Long-term, widespread fire suppression has led to uncharacteristically high fuel loads throughout the Blue Mountains, increasing the risk of dramatic, insect pest outbreaks, and widespread, stand-replacement wildfires. Invasive plant species are spreading throughout the region, often further increasing fuel loads. High levels of ungulate herbivory may also contribute to higher fuel loads in forest environments. The cumulative effects of these diverse disturbance agents, and their integrated management, have rarely been addressed. The frequency, extent, and intensity of these disturbances are increasing, often with undesirable effects on the environment and the ecosystem services that are vital to the economies and lifestyles in the Blue Mountains.

3. Commercial Timber Management and Production on Public Lands

Timber production in the Blue Mountains has declined from earlier peaks due to the removal of old-growth ponderosa pine and other highly merchantable timber, market conditions, and the continued evolution of land management policies. Overstocked forests need treatment, with limited funds to “tend” forests that may yield little income but compose large percentages of forestlands, and whose

management could be partially financed from commercial timber harvest. Additional options for commercial timber harvest and management warrant further discussion and resolution as part of multiple use goals on public lands and focus on sustainable communities. Effective integration of commercial timber harvest and management with that of plant and animal species of concern remains a major need and knowledge void for public land management.

4. Management of Tribal First Foods

Native American tribes in the Blue Mountains include the Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Indian Reservation, and the Nez Perce Tribe. These and several other smaller tribes traditionally lived in the Blue Mountains and relied on both animal and plant “first foods” for their survival and for ceremonies. Traditional hunting and gathering remain integral to the social and cultural foundation of these Tribes. Management to sustain tribal first foods on ceded lands, as well as reservation lands, is a major priority for public and tribal land managers.

5. Recreation, Hunting, and Access Management on Public Lands

The Blue Mountains are a “playland” for a wide variety of recreational uses. Recreational traditions include deer and elk hunting, salmon and steelhead fishing, rafting, skiing, back-country hiking, and berry and mushroom-picking, just to name a few. The economic contributions of deer and elk hunting in the Blue Mountains alone are substantial, with multi-million dollar benefits to rural towns throughout the region. The social traditions of recreation are ingrained in Blue Mountains lifestyles, and maintaining viable recreational opportunities is a high priority for many segments of society. Access on public lands for recreation, firewood cutting, and other uses has become a major controversy, based on historical uses and expectations. In addition, predator management has sparked a major societal debate in relation to management of deer and elk hunting opportunities.

6. Forest, Rangeland, and Riparian Restoration

Historical land uses of intensive timber harvest and livestock grazing, development of large road networks, conversion of native vegetation to provide livestock forage, fire suppression, and invasion of non-native flora and fauna are examples of past activities or processes that have dramatically changed many forest, rangeland, and riparian environments. A wide variety of practices are now being implemented to restore desired resource conditions and associated ecosystem services and ecological functions. The economic and ecological effectiveness of these restoration practices has sometimes been questioned, and formal research to evaluate them has often been lacking.

7. Sustaining Biodiversity and Recovering Threatened and Endangered Species

Many past land uses have resulted in extensive reductions in habitat area and quality for sensitive, threatened, and endangered species. Examples are T&E salmon and steelhead populations throughout drainages of the Blue Mountains. Old-forest habitats for some uncommon vertebrates also have declined, such as those for the white-headed woodpecker. Sagebrush habitats have also declined, with concern for species like Greater sage-grouse. Past research on the effects of forest and rangeland management on these species of concern in the Blue Mountains has been largely observational, with

few landscape-scale, manipulative studies to understand management effects and benefits in a more holistic, causal manner.

8. Sustainable Livestock Grazing, Production, and Predator Management on Public Lands

Livestock grazing has been a dominant use of public lands in the Blue Mountains since the late 1800s. Increasing market prices and continued high demand for beef will require new methods to maintain rangeland system integrity while meeting demands from stakeholders for public grazing lands. Methods of livestock management on public allotments have become a topic of increasing focus and controversy, particularly in relation to riparian management. In addition, cougars, bears, and wolves are now common across large areas of the Blue Mountains, and associated livestock losses are a major issue in some locales. The presence, effects, and management of these predators, especially wolves, is one of the most controversial societal issues in the Blue Mountains.

9. Water Resources [Added based on stakeholder input]

Water is the lifeblood of Blue Mountains ecosystems and communities, and demands for clean water from national forests and other public lands will increase as summer droughts and highly variable precipitation patterns lead to less reliable water resources. Demands are increasing, too, with more lands in agricultural production and greater needs for water by local communities.

10. Governance, Collaboration, and Public Engagement [Added based on results from stakeholder input throughout the day; thus this topic is addressed in research questions identified by stakeholders within each of the other nine topics but not by itself]

Public land managers in the Blue Mountains are tasked with creating and implementing policies that work to conserve and sustain natural resources as well as support other multiple use objectives such as recreation, timber production, and grazing. Managers consider scientific research findings and public input when making decisions. However, this process can be challenging in light of long-held distrust among agencies and local communities. Collaborative groups such as Blue Mountains Forest Partners, Umatilla Forest Collaborative, Wallowa-Whitman Forest Collaborative, Blue Mountains Adaptation Partnership, and the Southern Blues Restoration Coalition provide forums to bring together stakeholders and managers to discuss local community needs and land management objectives. Moving forward, collaboratives may serve to facilitate public engagement and build trust among agencies and communities.

Morning session

Presentation: Purpose of Meeting, Review of Agenda and Expectations -- *Mike Wisdom*

Presentation: The Mountain Social Ecological Observatory Network (MtnSEON) – *Jim Gosz*

Presentation: Objectives and Role of Blue Mountains MtnSEON Work Group – *Mary Rowland*

Question: How large of a region do the stakeholders come from?

Answer: The Blue Mountains ecoregion. Attendees are coming from Oregon, Idaho and Montana; they have a wide variety of interests.

Q: Will we get notes for these presentations?

A: Yes, PDFs will be available online.

Q: Will you be inviting National Council for Air and Stream Improvement (NCASI) folks to the Portland meeting?

A: Yes, and that may be a good way to leverage funding.

Presentation: Examples of Research Topics to Address Societal and Resource Needs – *Michael Jennings, Mike Wisdom, Mary Rowland*

Comment: We should focus more on immediate socio-ecological needs rather than climate change.

Answer: We agree that both are important.

Q: Do you have a drought model for rangelands?

A: Not now, but it could be calculated.

Q: Are there amplifying feedbacks like arctic ice melting here in the Blue Mountains?

A: Yes, bark beetles. They kill the forests that sequester carbon.

Presentation: Overview of Past and Ongoing Socio-ecological Research in the Blue Mountains – *Alan Ager, Mary Rowland*

C: These topics seem “siloed” out. We shouldn’t be looking at different topics...we should integrate them. Looking at environmental protection at the costs of jobs is what’s already been done and is not helpful.

A: You’re right, but it’s very difficult to do when scientists have specialized training (requires collaboration). But we do want to integrate more.

C: Hydrology is not on this list, but it affects all of the other topics.

A: We recognize the importance, but have not focused on it for this list.

Morning Session

*Q: How do we integrate social and ecological models that include social-ecological interactions?
Merging social and ecological systems is very complex.*

A: That's true.

C: Some of the local collaboratives are currently doing consensus building. Participants often don't know the scientific method and therefore can't put a research question together. So sometimes people may have strong positions, but these meetings are not always productive.

A: Yes, collaboratives are helpful to bridge groups. It's not easy to mesh regulatory frameworks with opinions and viewpoints.

Q: Is the social network map spatially mapped?

A: It's values mapping and human ecology mapping. We're still trying to figure out how it makes sense to do it. You can easily map landownerships, but not ideas.

Q: To what degree do other federal, state, tribal agencies collaborate on this?

A: We do work with BPA. USGS is not a big presence in eastern Oregon, but we will have more agencies represented at the Portland meeting.

Presentation: Overview of Past and Ongoing Socio-ecological Research in the Blue Mountains, cont. –
Susan Charnley, Mike Wisdom

C: I'm a private landowner participating in the East Face project, and we're concerned about watersheds, water quality, and irrigation.

C: "Resource-dependent communities" is a somewhat derogatory term.

Q: For the collaboratives project, did the researcher look at changes in the numbers of objections and appeals?

A: Yes, he did.

Around-the-table Discussion

Choose one topic that you think is important and explain why.

- **Rex Storm** (Associated Oregon Loggers): Boundaries between non-federal, private and federal forests...We need to have a better understanding about how to manage those and give special attention to them.
- **Nick Myatt** (ODFW): Access management. The presentation said research is being applied locally and more broadly, but I think it would be good to look at the social aspects of access management. What are the barriers to applying that science? What do forest managers need to do to apply access management that serves recreation needs and fish and wildlife, other ecological needs?
- **Bill Richardson** (Rocky Mountain Elk Foundation): I agree that recreation/travel management/hunting research is missing. Social aspects need more attention. People need to better understand the needs and the results of travel management. A social focus on T&E species also needed. Infrastructure, negative feedback cycles—needs further analysis.
- **Mark Penninger** (Wallowa Whitman National Forest, USFS): Travel management...science was not ignored at Wallowa-Whitman, but other things derailed its implementation. It would be interesting to look at shifting trends in hunters' values and what they're seeking out from their experiences. Camouflage, ATVs, etc...people here are more interested in quality hunting. Industry caters to more technical/instant gratification needs, and is bleeding through to the western mentality on hunting and travel management. Bottom line: Look at the contrast between eastern and western hunting.
 - ALSO: Water. Water is a common threat throughout everything. Roads are also tied into water. Wildlife, fish, etc. are all affected.
- **Bill Aney** (Eastside Restoration Coordinator, USFS): Look at scale mismatches. Planning and implementation of forest restoration work is sometimes at different scales. We understand the need to make it uniform. We don't have the tools/methods/communication strategies to be able to do planning at the landscape scale. Need to connect with collaboratives and public to communicate the value of working at that scale. We should be working at 100-200,000 acre scale, most are not (even collaboratives). This would be a social science question.
- **Tom Price** (Rancher): I like hearing about what research has been done. I have a couple of comments:
 - Looking at water and what it means to agriculture. When timberlands are managed better, there is more water to use for private landowners. Public lands should be managed for more and better wildlife habitat/forage.
 - There are not enough places to go with slash timber....not enough local infrastructure. It's not economic to chip it. Burning it would cause huge fires. We need more biofuel infrastructure.
 - Energy development and impact on wildlife reproduction and habitat. Fought battle against Antelope Ridge Wind company, but this issue isn't necessary going away. We

Morning Session

need more data to prove that energy development is not good for wildlife. Social scientists could look at potential markets.

- **Participant:** We need to get people elected who have opposing viewpoints about what data might say to review and look at data. Arguments emerging from planning process have not been helpful.
 - Has there ever been work done about vulnerability of big game to road densities, cover, and hunter densities? Use for informing the management of big game.
 - **Mike Wisdom:** New Starkey dataset with hunter movements recorded. Might be good data to use to explain what you're talking about.
- **Andrew Spaeth** (Sustainable Northwest): Work with collaboratives in the Blues. FS is an integral partner, but there are some challenges to developing trust and strong relationships between community partners and agency. No specific question, but pointing out that there is an incentive in FS system to make people move and get different experiences, which means that there's constant turnover. It's difficult for people to develop relationships. We need to better understand policy changes that might help FS respond to the needs of people in the 21st century. This would be a social question.
 - **Mike Wisdom:** Research branch of FS has a workforce that remains in local communities over scientists' careers, but not always the case in National Forest System branch.
 - **Mark Penninger** (USFS): There are a lot of student projects going on at Wallowa-Whitman, but there's no continuity between them.
 - **Participant:** No accountability between community and agency
 - **Shiloh Sundstrom** (OSU): USFS could promote more vertically within the forests rather than between.
 - **Participant:** How to build better community trust in FS?
 - **Bridgett Naylor** (USFS): I've felt intimidated by community before. Trust needs to go both ways.
- **Kerey Barnowe-Meyer** (Nez Perce Tribe): I'm an employee of the tribe, not necessarily speaking on their behalf. I have three points:
 - Fish- many have distinguished between social and ecological researching, but tribal perspective sees them as inseparable. Fisheries are the foundation for tribal culture. Tribe continues to have an interest in management actions that have an impact on fisheries.
 - Grazing- Tribe has run into issues with reserved resources for the tribe that are affected by grazing. Has tried to contact USFS with concerns and been told to "trust us" to manage resources. Not helpful or respectful. Things like self-reporting are not working and that needs to be addressed. On-the-ground impacts of various policies need to be closely investigated. Pollinator populations, riparian effects, etc. not always thoroughly measured.
 - Forest planning efforts- managing for historic range of variability. Generally those have focused on forest structure...wide variety of metrics that could be monitored in a similar way. We've just scratched the surface.

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- **Participant:** Think about time scale of projects. Most grants last 3-5 years...We need to look for sources of long-term funding. How do you take evolving research and give results to managers before it's done/before it's been peer-reviewed? Managers need research results NOW in a timely manner.
- **Shiloh Sundstrom** (OSU): There's a growing movement of collaboration in this region. What are some of the opportunities and barriers to grazing collaboration (similar to the forest collaborations currently going on)?
- **Rex Storm** (Associated Oregon Loggers): Decision makers are making tradeoff-based decisions every day. There appears to be a void in research that would guide on-the-ground decision making. We need more socioeconomic metric research. For example, what's the effect of X on Y? How can we more readily measure effects of actions on economics (especially for private landowners)?
- **Chris Heffernan** Do researchers just go off and collect data then bring information back to stakeholders or will they develop connections so that stakeholders are a part of the research? Stakeholders should be truly engaged with research.
 - **Mike Wisdom** (USFS): We have done things on the ecological research side to create partnerships. We've worked with people in management who have interest in engaging all the way through to the end... tribal partnerships included. However, not everybody wants to participate in these programs, but then they will complain about the results. We need to develop better methods to co-conduct research effectively.
 - **Participant:** Are there publications now that cite the value of this approach?
 - **Susan Charnley** (USFS): Yes, there is literature that discusses the benefits of participatory research.
- **Steve Edwards** (Blue Mountains Forest Cooperative): We need to consider change. Are our government systems at the Forest level adequate to manage forests in today's changing environment? If not, how can we go about altering these systems?
 - Looking at trust? There always seems to be a "them-vs-us" element. Could the collaborative process help with that? This would be a social science research question.
- **Tim DelCurto** (OSU): OSU is a land-grant university and needs to be relevant to the communities they serve. OSU's track record has always fallen short of addressing issues in a way that would have the biggest impact. Now we probably only have half the faculty of 20 years ago. But we currently have four new range ecologists. We are interested in looking at working landscapes. We believe that we can have timber production, livestock grazing, as well as ecological values. Most ecologists are working on ecological processes, but collaborations and communication are critical.
- **Scott McLaren** (Rancher): We're in the protein business... the models/information from the morning presentations did not mention much about population growth...where will the protein come from in the future?
 - We need to look more at the way we're managing fire—we're burning 1-1.5 million acres annually. We need to connect protein management with fuels reduction.

Morning Session

- We need to implement a policy that says we don't burn a lot of ground in a complete manner...It should be more of a mosaic and consider that the net benefit is the protein put into the population from the leftover forage. We need more "fine fuels" for the animals to eat.
- **Mark Penninger** (Wallowa-Whitman National Forest): We need more collaborative research. There is a level that collaboration occurs at right now...should we change that model? There is value at all levels (FS Supervisor as well as lower levels). We need to look at a model of collaboration that examines interactions between those levels. Look at different models of collaborations.
 - Research: Agreements about how things should be monitored/measured...we need to make sure researchers are involved in collaboration. We want to monitor/measure in defensible ways.
- **Buck Fullerton** (Boise Cascade Corporation): I don't agree with the biofuels focus...there's got to be some sort of certainty for industry to invest. Susan said there's not a lot of research about effects of timber harvest on rural communities. We have seen effects on the ground...surprised that it's not been researched. It should be.
 - Another social science research question—What happens when you don't do any management? We've virtually stopped land management on federal lands...what happens when you used to manage but no longer do.
 - Additionally, there are mounds of data about travel management, elk, etc....the problem you run into is that people don't believe that data. How do you engage people who do not *trust* data that's been produced? That's what's been happening with travel management here.
- **David Griffith** (University of Idaho): Invasive species- We talk about invasive species as biological issues. Ventenata are primarily dispersed by vehicles, livestock, crops....are of which all socially motivated. Are there patterns to the way ventenata is expanding that mirror travel patterns, etc.? I'm interested in bringing the social research to invasives biology.
- **Shiloh Sundstrom** (OSU): We could look at different pastoral systems...there's a multiple species concept (cattle-goats-sheep) in Kenya. Here, public lands grazing is typically divided by species. Is there potential research that could be done by using multiple species? With increased immigration, there's a new potential markets for "alternative" meats such as goat.

Breakout Group Sessions

Breakout Group #1: Discussion

Group Members: Chris Heffernen, Kerry Barnowe-Meyer, Art McKee, Buck Fullerton, Mark Penninger, Veronica Warnock, Bill Aney, Alan Ager, Bruce Johnson

Facilitator: Susan Charnley, Flipchart **Recorder:** Nick Norton, **Notetaker:** Mary Rowland

Opening Discussion

- Question of entire dot exercise brought up; argument was that the topics all inter-related, so does this exercise even make sense? Decided to move forward.
- **Bill Aney:** Idea that scale is an overriding issue with all of these topics.
- **Alan Ager:** How big an area do you treat for restoration or fire? What is the acceptable level of risk by society? Ecologists don't define.
- **Buck Fullerton:** Rural sustainability – all of this relates to what the soil provides. We need to make a living “from the dirt” because we don't have infrastructure in these small towns, we have “real winter,” and so we rely on natural resources. Several studies have just confirmed this.
- **Nick Norton:** Resilience of systems and communities. Perhaps easier and more relevant to use this term rather than sustainability.

Research Topic #1: Rural Community Sustainability

How do you define sustainability? What parts do you want to sustain? Rural infrastructure is supported by ranchers, loggers, etc. but newcomers come in to enjoy this infrastructure without necessarily contributing to it. Sustainability part of tribal concern, too, but very difficult to obtain data on these – what is missing? What plant species? People don't often tell.

- **Veronica Warnock:** lack of diversification in rural areas? Need viable markets for things like small diameter wood.
- Identify opportunities and barriers to sustainability?
- What are habitats of root foods and how do habitats (i.e., what vegetation communities do they exist/persist in) and climate change affect those?
- Huckleberry state and transition models exist, but not for root crops
- Scales of restoration needed to meet demands and have a product that is marketable?
- Biomass/biochar – how to establish trust in WO/agencies so that these kinds of enterprises can be started and sustainable?
- Concern for children in rural communities with natural resource-based economy - How do we diversify to keep or create jobs to keep people in towns?
- What is a socially acceptable level of fire risk? With that, how big an area can we treat? And from that, will that be sustainable in terms of market?

Breakout Group Sessions

- Barriers to mass utilization, how to overcome?

Research Topic #9: Water Resources

- What is the future outlook of watersheds and water access in the Blues with catastrophic wildfire? How will water resources be affected?
 - **Art McKee:** Riverscapes WG – climate change effects on water resources in Columbia Basin; connect with this group
- What is the balance between tribal first foods, agriculture/dams, and other users regarding water? How to not impact other users? Need to synthesize these data. How does water allocation as currently practiced affect wildlife habitat? Old water rights on WWNF impact downstream water resources.
- Rehab of streams affected by mining in WWNF – in some cases, too long in place and not recoverable
- How does distribution of water affect wildlife, tribal, other resources?
- **Veronica Warnock:** how do we address future water shortages? Storage opportunities, explore? Expensive, but perhaps aquifer management by roads/grazing to keep water? What water conservation opportunities and strategies exist?

Research Topic #8: Sustainable Livestock Grazing, Production, and Predator Management on Public Lands

- KBM – maybe not research, but good monitoring is needed (per comments made during the discussions this morning)
- How do stray sheep typically behave (domestic) after a predator attack and how does that affect disease transmission to wild sheep? Predation events scatter a flock with unpredictable consequences.
- Private lands may or may not have sheep in any one year on their lands, public lands also have variability.
- **Chris Heffernan:** Country Natural Beef sustainable grazing, but poor management is the issue – it is a people management issue, not the cow's fault. How to use cattle grazing to manage public lands?

Research Topic #3: Commercial Timber Management and Production on Public Lands

Retrospective analysis of timber harvests, public and private lands, by vegetation type and how they have regenerated (tree comp, basal area) – can we use these historic data to tease out what treatments lead to fewer outbreaks of diseases/pests, etc. and then guide future management? Tie this to climate change models – how do these interact with climate change projections?

Breakout Group Sessions

- Can we use past Historical Range of Variability of other disturbance agents, etc. to inform what we do now with restoration practices? Insect outbreaks may end up being a bigger impact than the fire impacts.

Chris Heffernan: Wildfires put more carbon in the air than anything, so why can't we do biochar and other things, biomass conversion?

Alan Ager: Fuel treatments "cost" a lot of carbon; and then there is only a low probability of a fire burning through, which will burn less hot and so release less carbon. In the end, fuels treatments are not a good solution for carbon.

Alan Ager: All of these in list tie together with arrows – some are stressors, some are processes; need to place all in flowchart based on how they interact.

Alan Ager: Scales of landscapes vs stands; BA stand scale is where collaboratives work.

Action items:

- Create flowchart of interrelations of these topics; the ones with the most interactions are likely the ones with the most importance (Alan Ager drafted one)
- Work with Riverscapes WG on water resources question

Breakout Group #1: Flipchart Notes

Research Topic #1: Rural Community Sustainability

- What are people interested in sustaining?
 - Immigration/emigration
- Subsistence uses (difficult to get tribal data on usage)
 - How are climate/management influencing root crop distribution
- Economic diversification
 - How do we create viable markets?
 - Smaller trees, etc.?
 - Creates trust?
 - Identification of barriers to diversification
 - Biomass and biochar (long term!)
 - How do we get that trust, get wheels turning?
- How do we care for rural youth?
 - Maintain job opportunities
 - Create alternate jobs (guides, etc.)
 - Maintain respect for producers. Resource management.
- What is a socially acceptable fire risk?
- What kind of effort/funds do you need to accomplish necessary treatments?
- Why can't we use excess timber for something good/just (biochar, etc.)
 - Barriers to utilization
- Carbon markets (ecosystem services)
- Will increasing fuels treatment budget actually control frequency and intensity of fire?

Breakout Group Sessions

All 10 categories are connected; should we create network models to combine integrated efforts?

Research Topic #9: Water Resources

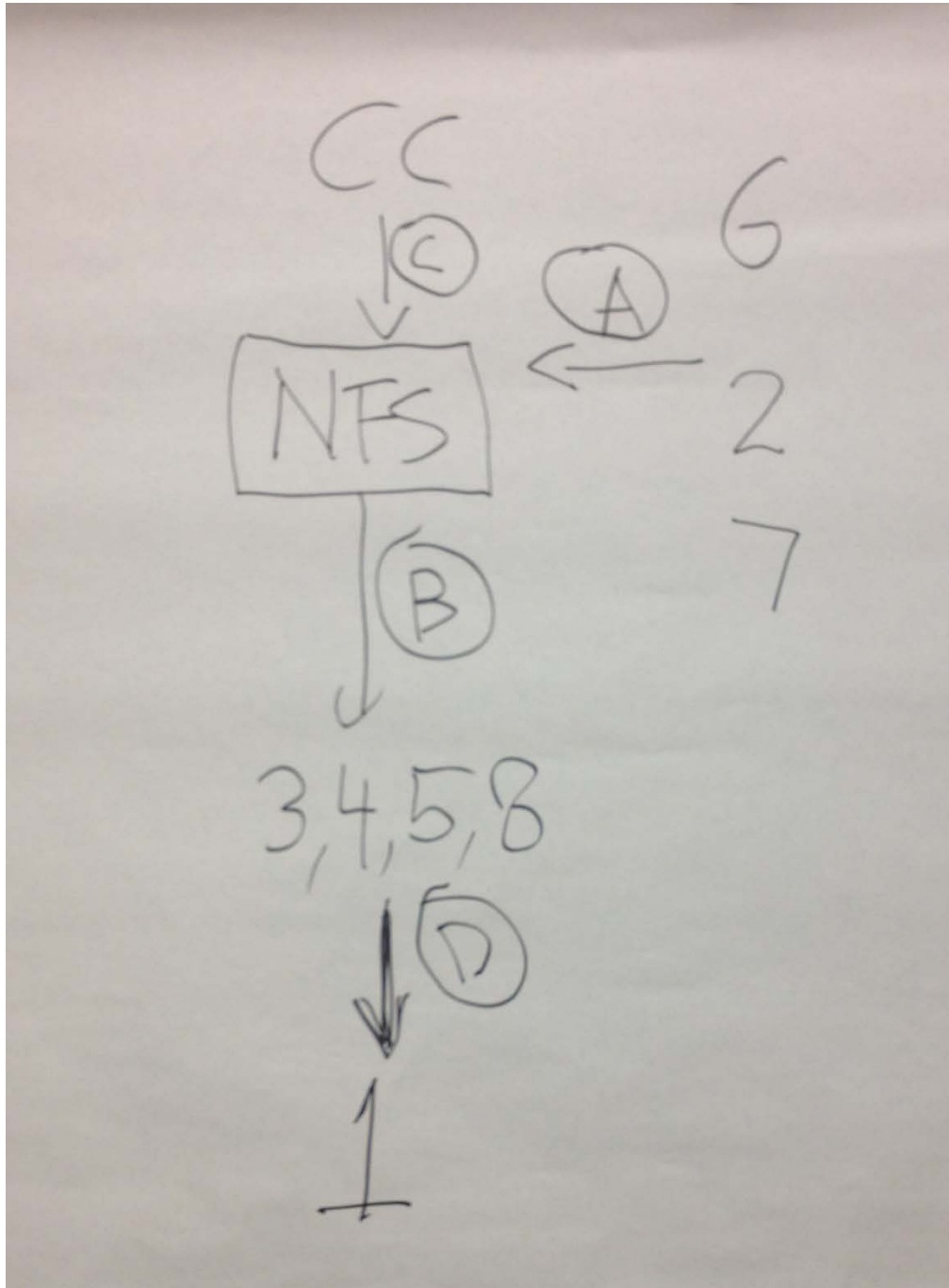
- What would happen to water systems/resources if we continue current practices?
Riverscapes w/MtnSEON
- Better understand balance between agriculture and wildlife
 - Where to increase habitat so as not to impact other users
- Water allotments/downstream resources
- Mining impact on water quality/restoration/T&E species
- Are there opportunities for water storage and water conservation to meet multiple needs?
- Distribution of water>Distribution of species>Distribution of tribal first foods

Research Topic #8: Sustainable Livestock Grazing, Production, and Predator Management on Public Lands

- Effectiveness monitoring of different grazing/management strategies
- Data on sheep as disease vectors following predator attack (dispersed domestics)
- Disease education/research on transmission between domesticated and wild sheep (fragmented ownership)
- Grazing management as a tool for profit and conservation?
- Retrospective analyses of effective silvicultural practices given historical datasets? Guiding best practices for future management.
- Can historical range of variability (mistletoe, insect outbreaks) give us insight into ways to build ecological resilience?

Breakout Group Sessions

Flow chart: Interrelations of topics



Breakout Group #2: Discussion

Group Members: Rex Storm, Jim Gosz, Steve Edwards, Jeff Fields, Larry Sandoval, Sabine Mellmann-Brown, Nils Christoffersen, Tim DelCurto, Tom Price

Facilitator: Hannah Gosnell, **Recorder:** Shiloh Sundstrom

Research Topic #1: Rural Community Sustainability

- The biggest issue is the disconnect of, dependence demeaning, interdependence of communities and the environment, understanding that interdependence is extremely important. Need to understand the broader ecosystem services.
- **Steve Edwards:** How can people be made aware of social-ecological interdependence in their communities, and how can they become more engaged in the management of those resources (collaborative governance)?
 - **Larry Sandoval:** How do we engage younger generation in all of this?
 - **Hannah Gosnell:** FFA, 4H, are they still effectively engaging working landscapes? Educational models
 - **Larry Sandoval:** What about agencies doing for youth?
 - **Hannah Gosnell:** Extension?
- **Rex Storm:** Project effects, research and identify the effect of our projects on rural communities? Forest management, range, roads, recreation, facilities, don't define beyond ecosystems, what about socio-economic effects of our forest management decisions? How to translate into meaningful data? (jobs, school enrollment) Need to define better metrics across the board (no pun intended, hehe). Real challenge is federal lands but also private lands, need to justify active management and balance the needs of the ecosystem and the communities.
- **Nils Christoffersen:** Lack of opportunities for working families to stay there and come back, big decline in population, increase in age, loss of people engaged in community activities, shallow bench of people who want to assume leadership in communities. It translates into demographics, who can make a living in these communities, the demographics are people that can work over the internet or through travel, personal wealth, entrepreneurs, cottage industry startups all good, but when you lose a mill, a mill is an ideal place for somebody who is not interested in college and to build a career from green chain to leadership, cottage industry doesn't have that, doesn't really help for families to grow incomes. How real are these perceptions and what are the best strategies to deal with these issues moving forward?
 - What will these new natural resource economies look like? What are the potential for new jobs for natural resources and public land?
 - **Tim DelCurto:** Answers are on the board, timber harvest, livestock grazing, etc. Baker County had 7 mills 80 years ago, now none, if we can improve these areas we can improve rural community sustainability.

Breakout Group Sessions

- **Steve Edwards:** How can we bring added value to the timber that is on public and private land to sustain the communities and pay for forest management?
- **Jim Gosz:** How dependent are these communities connected to the larger region? Goods and service movement between rural areas and urban centers. Rural communities are not self-sustaining anymore, global economy, dependent on statewide governance and resources.
- **Nils Christoffersen:** Lots of research on proximity to urban areas and how that contributes to rural vitality? But communities here are far away, if you try to analyze it the internet might be more important than Pendleton and Ontario? Lots of literature on recreation being the new economy, now it's not true, new research says not true, but pointed out the importance of the creative class, different attributes to some communities to innovate and experiment, tried to explain some of the factors that might have contributed to that. Another part of the new natural resource communities is the opportunities for contracts and allotments, how to connect those opportunities to local communities. Now packaging bigger projects that local contractors cannot do or do not know about. How do we keep our private contractors? How do you support local contractors?
 - What is the role of public land agencies in creating economic development through management of the resources on public lands?
 - **Jeff Fields:** What have these communities become demographically?
 - **Jeff Fields:** What types of resource offerings from the agency (type of resource, contract type) can match the communities?
 - **Steve Edwards:** During the recession in Baker community, substantial number of communities made money from firewood, not showing up on radar screen, huckleberry harvesting, mushrooms, we tend to think of forests as timber, but other things the community wants. How do we make communities resilient?
 - **Tom Price:** Isn't that minor dollars?
- **Rex Storm:** We need to define a properly functioning working forest community? We define habitat types, but not a working forest community?
- **Nils Christoffersen:** Traditional industries generate the most value, but the question is within a community like Wallowa, we don't have the same job impact we had before because we have no mill, need to think about opportunities to add value, huckleberries, firewood, is there a niche from something else?

Research Topic #3: Commercial Timber Management and Production on Public Lands

- **Rex Storm:** Need to define working circle, or where timber is important? Maybe a three county area?
 - **Tom Price:** Regional.
- **Hannah Gosnell:** What is the role of timber from public lands in different context? Mill, no mill, etc.

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- **Nils Christoffersen:** Part of good forest management in terms of restoration, if you are going to pay for it there is going to be saw logs, it's job creation but also forage production.
 - **Tom Price:** It's quantifying effective management of our public lands, helps agriculture, etc. biofuel production.
 - **Nils Christoffersen:** Headwaters Economics, for example, Wallowa-Whitman generated 37 million in revenue, and 2012 we generated 525,000.
 - **Jeff Fields:** What's the research question? That is accounting, what is the research question around management?
 - **Rex Storm:** Need data!
 - **Hannah Gosnell:** Is this an ethical or philosophical question?
 - **Tom Price:** Those kinds of numbers are important to show what we aren't generating can send a big message.
 - **Steve Edwards:** Right now three counties are dependent on one mill basically, but that mill cannot be sustained by just private lands, huge risk. What is the question? We are vulnerable, the infrastructure, knowledge is going away.
 - **Larry Sandoval:** What is the minimum to maintain infrastructure?
 - **Rex Storm:** We provided that and it was ignored by the planners.
 - **Steve Edwards/Hannah Gosnell:** How can forest collaboratives enhance the predictability of timber supply?

Research Topic #9: Water Resources

- **Sabine Mellmann-Brown:** Concerned about a decline in source of water and increase in water use, whether for spring development, drinking water, livestock, agriculture, etc... So my question is how do we manage these water sources in light of all the needs? From the wetlands and springs (only 1 percent of land cover), how do we manage that to not lose water and maintain water volumes?
 - **Hannah Gosnell:** What are the problems?
 - **Sabine Mellmann-Brown:** Public acceptance, need to modify spring development but political it is difficult to, lots of regulation on public lands, disconnect between need to manage these resources and the implementation. Question is around science transfer, how do we incorporate that more into management? Livestock and agriculture, actually not even, there is spring development.
 - **Tom Price:** We have been encouraged to do all kinds of cost-share, most ranchers have access to improve springs, etc.
 - **Sabine Mellmann-Brown:** It seems lacking.
 - **Hannah Gosnell:** How can we improve incentives to manage water resources?
 - **Nils Christoffersen:** Incentives are important, most valuable assets moving forward in the future and capitalize on that value, and if there are incentives for more efficient uses, we are seeing a great response in Wallowa County. When I

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see patterns projected, Wallowa County is going to be less at risk, I see more pressure? How do we prepare for that?

- **Steve Edwards:** I see a lot of commodity growers shifting to pivots from flood irrigation, what is the relationship between pivots and the water shed, nobody is looking at that? I've seen a number of pivots go like this?
 - **Tom Price:** That is a great question. What is that doing for the water table?
 - **Steve Edwards:** Flood irrigation puts a lot of water in the ground and pivot creates mist, flood irrigators are having to increase flooding.
 - **Tom Price:** Come back to timber, harvest more timber create more surface water. We know trees use water.
 - **Nils Christoffersen:** Short term until vegetation responds.
 - **Sabine Mellmann-Brown:** Not necessarily all of a sudden.
 - **Rex Storm:** What are the economic and social costs of water protections, riparian buffers, roads, lots and lots of protections? What does it all cost? Identify ten water protections and find the costs, what are those costs?

Research Topic #2: Management of Wildland Disturbances: Fire, Insects, Disease, Invasive Species and Herbivory

- **Sabine Mellmann-Brown:** need data on impacts of invasives on resource base, important for agencies to understand as we seek to keep permit numbers the same. Forage quality, reduced forage quantity and quality.
 - **Nils Christoffersen:** Sustains funding for invasive management, state weed board, we could say this is pittance for what we gain from it? Costs and needs of the weeds. What is the impact of biodiversity goals? Impacting a whole range of wildlife, etc.
 - **Hannah Gosnell:** Starkey is already doing this, what types of grazing systems can be used?
 - **Jeff Fields:** Broad research into herbivory, invasives, and fire connections, what's the interactions, tradeoffs, etc.? Different scenarios, feedback loops, etc.

Other Research Topics:

- **Rex Storm:** What are the smoke pollution of fires and if we don't manage the land what are the effects of no action?
- **Nils Christoffersen:** Trying to quantify the values, social values of recreation and where people like to play? There is 13 billion dollars in recreation but there is no visible recreation investment. What are people using? Important to other discussions of values of wilderness, etc. and who are they valuable to? Who benefits from the conservation? True value of recreation and social values of recreation and who benefits?

Most Important Questions:

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- Documenting tradeoffs from different forest service policies and actions? Socio-economic impacts needed, do a better job of ecological stuff but need better...

Breakout Group #2: Flipchart Notes

Research Topic #1: Rural Community Sustainability

- How can people be made more aware of social-ecological interdependencies?
- How can people be more engaged in collaborative governance? (Role of forest collaboratives?)
- How do we engage younger generations? Agency role, extensions, FFA...
- Research the effects of our FS projects (restoration, management) on rural communities. Harvest policies? Jobs? Water resource management, springs, riparian buffers...
- What do the new natural resource economies look like in the Blue Mountains?
 - New industries? Biofuel? Leverage existing opportunities?
 - How do we bring added value to our timber?
- How dependent are our rural communities on urban centers? Outgoing and incoming.
- What role do public land agencies play in creating jobs related to contracting?
- What types of resource offerings match current demographics/communities?
- What defines a resilient rural community? (PFC)

Research Topic #3: Commercial Timber Management and Production on Public Lands

- How can we quantify the role of timber production?
 - What factors are not being considered/missing?
 - What is the minimum required to sustain a timber economy? Volume and predictability of timber resources?
 - How can forest collaboratives help influence volume and predictability of timber resources?

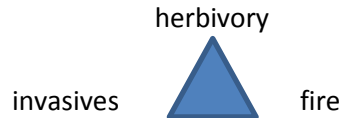
Research Topic #9: Water Resources

- How can we best manage our water resources? Balance best practices (upland water development), needs, and implementation. Focus on springs/water at the source.
- What incentives can be implemented to improve management of water resources on federal lands? Incentives are used a lot on private.
- What are the social and ecological implications of change in irrigation methods on our water table?
- What are the social and economic implications/trade-offs of the water protection legislation?

Other questions:

- What are the socio-economic impacts and impacts on biodiversity of invasive species at the local community scale? Interactions, tradeoffs of herbivory, invasives, fire:

Breakout Group Sessions



- What are the smoke pol. Effects of wildfires? Are they considered in “no action” options?
- What is the true value of recreation in the Blue Mountains? How is it distributed? Is the value aligned with the funding/focus?

Top questions:

- What are the socio-economic implications/tradeoffs associated with different management policies and practices?
 - Grazing
 - Water
 - Timber
 - Recreation
- How can we engage a larger cross-section of our community in natural resource management?
 - Incentivize
 - Education (what are we doing and how is it effective?)
 - What additional opportunities are there?
- What are the desired future conditions in our communities and what role can the FS play in getting there?
 - New Natural Resource Economy

Breakout Group #3: Discussion

Group members: Maura Laverty, Scott McLaren, Nick Myatt, Craig Ely, Bill Richardson, Marty Vavra,

Facilitator: Mike Wisdom, **Flipchart recorder:** David Griffith, **Notetaker:** Kendra Wendel

Opening Discussion

- **Bill Richardson:** Turnover vs. long-term Forest Service employees
 - Do surveys in areas where there is an old-guard vs. new guard FS
 - Old Smokey Network would be a good place to do that
- **David Griffith:** How to facilitate trust building between FS and public?
 - What are the barriers to trust?
 - Getting managers to work on a particular topic over a number of years.
 - Social issues, that's what we are lacking to turn policies into on the ground successes
- **Craig Ely:** Newspapers are creating misinformation about research.

Research Topic Priority List

- Top 3 categories (based on dots input): Research topics 2 (Management of Wildland Disturbances: Fire, Insects, Disease, Invasive Species, and Herbivory); 8 (Sustainable Livestock Grazing, Production, and Predator Management on Public Lands); and 9 (Water Resources)
- We need to try to articulate research questions and decide what we want to see addressed in research.

Research Topic #8: Sustainable Livestock Grazing, Production, and Predator Management on Public Lands

- **Bill Richardson:** We need to answer the question: If we're going to have the whole suite of predators and full range of herbivores, what do we need (forage, etc.) to keep predators sustainable?
 - Understanding effects of wolves on both wild and domestic ungulates
 - What are the management actions you need to take on the forest to sustain the prey base?
 - Understand the big picture: management of humans as hunters, predators, vegetation, and those interactions.
 - **Mike Wisdom:** We have looked at parts of that, but the vegetation aspect is lacking
 - **Craig Ely:** How do we maintain a sustainable livestock scenario in the presence of disturbance? What are the factors on the forest that support livestock forage?
- **Marty Vavra:** Fuels reduction, managing dry forest, doing thinning.... What cover patches do we need to leave for security?
 - **Mike Wisdom:** This is not related to number 8

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- **Marty Vavra:** Meadow creek research going on at Starkey...livestock component is developing best management practice to encourage cattle to be in uplands and not in riparian areas...once we get those best management practice, how do we institutionalize that and get permittees to comply? This would be a social science question.
 - **Mike Wisdom:** If we get the infrastructure (more upland water, supplemental feed etc.) those would lead to better ecological outcomes and more beef production.
 - But who pays? How do you institutionalize a new system of allotment management planning that results in better use goals?
 - **Craig Ely:** In the past, the forest made those investments.
 - **Mike Wisdom:** There's also maintenance involved.
- **David Griffith:** Is this question also relevant for private ranchers that neighbor FS allotments? It's a complex issue and should include management on multiple landownerships.
- **Bill Richardson:** We should also have a buy-in from the public. Ranchers also need to be kept in business and contributing to the community.
- **Craig Ely:** If you look at the larger blocks of private land, they have worked with private grazers and there's a collaboration when it comes to salting, watering, fencing, etc.
- **David Griffith:** There could be successful models from private lands management. How do we compare what's being done from one type of land ownership model to another?
 - **Mike Wisdom:** How do you get people to come together? How do you get that buy-in for the sharing of the investment in infrastructure?
- **Craig Ely:** Doesn't have to do with grazing, but if you look at WUIs and the support and financing they've received to support fire protection (through congress and has filtered down), that has been a big success.
- **Scott McLaren:** FS needs the funding to maintain their grazing programs (NEPA, riparian monitoring, etc.). Turnover of people involved in grazing has been another issue. Problems are addressed with "band-aid" solutions. Large-scale range improvements get overlooked because managers are trying to address immediate regulatory concerns.
- **Mike Wisdom:** Also a question of staffing...we could understand tenure and staffing a little better if they were addressed with research.
- **Scott McLaren:** Permittees are stuck with some of the infrastructural improvements and it causes economic disincentives to graze on public lands.
 - **David Griffith:** Does the shift in responsibility for fences (for example) actually impact the utility of those fences?
 - **Maura Laverty:** Increasingly, it's the permittees' responsibility because of limited budgets
 - **Scott McLaren:** Riparian fences are under a huge amount of pressure and need a lot of attention.
 - **Mike Wisdom:** We need to understand institutional barriers for infrastructure, improvements, etc.
 - **Marty Vavra:** We need to maintain an institutional memory stream.

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- **Mike Wisdom:** Record keeping, detailed decision support systems for understanding allotment conditions and managing... need to figure out a researchable question to address these concerns. File cabinets full of files that are not digitized, no GIS information, etc. There is no standard practice for these. Not an issue of the technical expertise of the range manager, but a question of the resources at hand.
- **David Griffith:** Continuity of knowledge is not necessarily just relevant to the FS. This question may have been answered by others. Tribal groups have come up with solutions for similar programs. For example, “Elders in residence programs” to maintain cultural transmission.
- **Bill Richardson:** Interesting point because he had considered how tribal gathering rights trump ESA regs (for example), so that could be a way of bringing disturbance back onto the landscape. “How do you incorporate tribal first foods aspects into sustainable grazing systems?” – Social science question

Research Topic #2: Management of Wildland Disturbances: Fire, Insects, Disease, Invasive Species, and Herbivory

- **Nick Myatt:** We have a lot of fuels built up and all of the funding is directed towards fuel removals...very concentrated, especially in WUI areas. What does that mean for deer and elk?
 - “What are the effects of extensive fuels reduction treatments to wildlife?”
 - East Face project is an example
 - **Mike Wisdom:** There have been some research into short-term responses of deer and elk, but we haven’t looked back now...10 years later at more long-term effects. Other wildlife will probably be affected as well. Any silvicultural treatments...we have a lot of observational studies but no landscape-level experiments with controls to understand wildlife responses.
- **Marty Vavra:** If we work a landscape scale, can these landscape-scale disturbances produce enough of an effect on shrubs that we don’t have to put a fence around them?
 - “How does the scale of disturbance treatments affect the desired response of good baseline forage conditions for ungulates and other wildlife?”
 - Wildlife habitat shift to private lands. Are we doing enough on the forest to keep wildlife there?
 - **Mike Wisdom:** If we had the resources to do enough work on the forest at a big enough scale, would that influence elk behavior?
 - We need to do explicit research to address this problem. As a research effort, design treatments to do everything we can to bring elk up from private lands and then have a control group to show the difference.
- **Scott McLaren:** Also ties into the fire equation. When canyons were grazed, fires were less devastating.

Breakout Group Sessions

- **David Griffith:** So far, these questions seem very ecological.
 - **Bill Richardson:** Yes, but the social aspect is always there....will people be able to accept this management change?
 - **Mike Wisdom:** It could also make a good case study if you were able to get buy-in from different groups.
 - **David Griffith:** How do you simultaneously do treatments while building support for what you're doing?
- **Craig Ely:** Elk at Starkey were leaving for adjacent private lands and not coming back to forests, the agency did a lot of treatments to draw them back up and it worked.
 - **Bill Richardson:** The forage base is depleting...we should look at this.
 - **Mike Wisdom:** This is a very feasible research question and would have a huge effect.
- **David Griffith:** Have there been any efforts here to control/address Ventenata problem?
 - **Mike Wisdom:** People are trying to get funding for that.
 - **David Griffith:** If you manage it in one lot and not in the next, it's not going to just stay on the unmanaged lot. It will move back.
 - **Mike Wisdom:** How do you map it and measure the spread?
 - **David Griffith:** At the landscape level, across ownerships.
 - **Mike Wisdom:** Right, you'd have to do that across the Blue Mountains.
 - **Marty Vavra:** And the spread to other arid communities.
 - **Bill Richardson:** What are the factors (roads, etc.) that cause spread?
 - "How to map invasive plant populations at landscape scale across management?" But field level data is also important.

Research Topic #9: Water Resources

- **Marty Vavra:** What is the impact of our increased forest canopies on the interception of moisture in the watershed?
 - **David Griffith:** What are the social drivers of increased forest canopy? Why have we been managing for this?
 - **Bill Richardson:** Some people don't want us cutting juniper.
 - **Scott McLaren:** Large trees were originally managed to shade the canopy but are now causing problems. We need to re-evaluate our priorities.
 - **David Griffith:** How do we increase communication between researchers, managers, stakeholders, and the public?
 - There are many barriers to the application of science in management.
 - **Bill Richardson:** "How can research be interpreted to and for the public?"
- **Jeff Oveson** comment: Continuing concern of the effectiveness of millions of dollars spent on restoration. – This might be under research topic 6
 - **Mike Wisdom:** Monitoring we receive is not enough to actually answer that question. "10-years later, is it effective?"

Breakout Group Sessions

- **David Griffith:** Have there been considered restoration practices on public and private lands simultaneously? How have those persisted in effect based on different kinds of tenure (10, 20 years down the line)?
- **Craig Ely:** But you need to be careful...Just because you restored a mile of stream, does not mean that the stream will produce more fish. You can't necessarily judge its effectiveness based on rigid indicators.

Research Topic #5: Recreation, Hunting, and Access Management on Public Roads

- **Nick Myatt:** Access management...there needs to be a human dimension done here. There is a vocal minority that creates public uproar over travel management, etc. Need data collected to see how public really views these topics.
 - **Marty Vavra:** What is the habitat loss associated with roads?
- **Scott McLaren:** Impact to permittee inholdings of increased recreation/visitation.
- **David Griffith:** How does political power of groups/organizations align with their usage of the forest/area?
- **Marty Vavra:** What is the current allocation of landscapes to various users?
- **Craig Ely:** In the 1980s, people wanted restricted access to woods and have fewer roads. Now they have a different take on things.

Breakout Group #3: Flipchart Notes

Research Topic #8: Sustainable Livestock Grazing, Production, and Predator Management on Public Lands

- How do we sustain predator-prey-livestock forage as a system? Multiple species of interest.
 - Distributions of prey (and predators)
 - How do disturbance events affect predator and prey populations?
 - How do livestock and wild ungulates practices affect nutrition?
- How do you get best practices buy-in from permittees?
 - How are infrastructural improvements paid for? Public/private
 - Buy in from public, implementation on private land
 - Models from private industry: successes and failures?
 - What worked from WUI fire process?
 - Land tenure effects?
 - Does tenure of managers affect policy, buy-in, and public trust?
 - Does (infrastructure and improvements) responsibility shift from managers to permittees affect protection?
 - How to maintain continuity of knowledge?
 - Indigenous models?
 - How to incorporate first food priorities into sustainable livestock management?

Breakout Group Sessions

Research Topic #2: Management of Wildland Disturbances: Fire, Insects, Disease, Invasive Species and Herbivory

- How do fire and other disturbances affect ungulate nutrition?
- How does fuel reduction affect wildlife population dynamics?
- How does scale of disturbance treatment affect succession and silviculture practices?
- How do we redistribute wildlife back, onto public lands?
- How will the public respond to such research? How to build support? Enclosure/Enclosure of public land. Cross-jurisdiction. Public-private interface from wildlife perspective?
- How to make invasive plant populations at landscape levels, across management boundaries?
 - Vectors of ventenata spread, how does it become established?

Research Topic #9: Water Resources

- What is the consequence of increase in forest canopy on interception of moisture and decline of watershed?
 - Social aspects: How is this (and related) issue affected by public acceptance and knowledge of management?
 - How to translate research to and for the public?

Research Topic #6: Forest, Rangeland, and Riparian Restoration

- What is the payback of restoration efforts?

Research Topic #5: Recreation, Hunting, and Access Management on Public Lands

- What management actions are supported by public and stakeholder groups?
Impact of permittees and inholders on access management?
- Does political power correlate with usage percentages? How are multiple resources allocated?

Research Topics #1 (Rural Community Sustainability) and 3 (Sustainable Rural Communities and Commercial Timber Management and Production on Public Lands)

- Decision support- vary prescriptions to optimize and integrate across resources.

Afternoon Discussion

Breakout Group Reporting

Breakout Group #1

Research Topic #1: Rural Community Sustainability (specifically economic diversification)

- What are the barriers to diversification?
- How do we start to get involved in the biomass industries? How do we create connection to DC and policies there?
- How do we retain employment opportunities here for rural youth?
- What is the socially acceptable fire risk?
- What kinds of effort/funds are needed to accomplish treatments at that level?
- How can we use historical databases to inform best timber management practices?
-

Research Topic #9: Water Resources

- How can we better understand the balance between balance and wildlife?
- Connect with the Riverscapes Project (other MtnSEON project)
-

The concept of scale came up multiple times. We want to think as big as possible in addressing all of these topics.

Breakout Group #2

Research Topic #1: Rural Community Sustainability

- How can people in this region be more aware of social-ecological interdependence?
- How can they be more engaged in governance of those resources?
- What role can forest collaboratives play in creating these connections?
- Do we fully understand the social and economic impacts of forest management practices?
- What are the new natural resource economies?

Research Question #3: Timber Production

Research Topic #9: Water Resources

- What are the socio-economic institutions/tradeoffs associated with different management practices?
- How can we engage a larger cross section of our community in resource management?
- What are desired future economies and what role can the FS play to get there?

We think that research tends to underinvest in socioeconomic analysis and we have a need to better understand these processes.

Afternoon Discussion

Breakout Group #3

- Overarching question: How is science research translated for the public and for managers?
- It's important to get social data on some of these long-term ecological studies.

Research Topic #8: Sustainable Livestock Grazing, Production, and Predator Management on Public Lands

- How do we sustain predator-prey livestock forage as a whole. Think about systems rather than individual resources.
- Distributions of livestock and wildlife and the shift from public to private land in Blue Mountains. What are the patterns and how could we shift that distribution back?
- How do you get best-practices buy-in from permittees? How much of it is based on translational science? How can we better communicate?
- How can we apply WUI successes to other areas (i.e. predator control)?

Research Topic #5: Recreation, Hunting, and Access management on Public Lands

- How do invasives move across public-private boundaries and how do different management regimes affect that?
- Is the power of certain interest groups (when it comes to public management decisions) correlated to actually productivity in multiple-use schemes?

Research Topic #6: Forest, Rangeland, and Riparian Restoration

- How successful have restoration projects been in terms of their original investments?

Questions for Group #3:

- **Hannah Gosnell:** We're interested in hearing more about the predator discussion.
- **David Griffith:** We talked about research to determine how best to maintain prey, forage, livestock conditions when we add predators into the mix.
- **Nils Christoffersen:** The push to treat WUIs was a unique scenario. How do you apply that to predators?
- **Alan Ager:** WUI success- what do you mean by that? There are issues of scale...the social planning process never considered the broader scale of the conservation planning process. There are still a lot of WUIs burning, so something is still not working.
 - **Mike Wisdom:** We were focusing on the social process of collective agreement and moving forward collectively.
 - **Nils Christoffersen:** The National Fire Plan identified WUIs as having a ¼ mile limit. That doesn't fit in with eastern Oregon landscape.
 - **Alan Ager:** Some communities saw lack of scale definition as creating a more flexible framework. Every community is different and has a typology of risk. Success of WUI was educating a lot of people. Brought people together and brought together various agencies to address issue.

Afternoon Discussion

David Griffith: We were mainly concerned with borrowing from successful parts of other ventures, such as WUI treatments.

Final Discussion: Thoughts and Wrap-up

Any final thoughts to share?

- **Steve Edwards** (Blue Mountains Forest Cooperative): How till we know that this input will be used? Are there ways that we can engage in this process after today?
 - **Mike Wisdom** (USFS): We'll capture everything in the notes. We have e-mails and contact information for everyone. We are having another workshop in Portland in March. We want to make sense of all this and think about some useful collaborations we can propose. Once those things are developed, we will communicate that back to all of you. We also want feedback from you to decide whether or not those are worthy efforts. We need to be strategic about the kinds of projects we can take on, the things that might be successful. We will not necessarily be pursuing every one of the research ideas we've developed here.
 - **Mary Rowland** (USFS): Once we narrow down the topics, we will send it back out and you can engage back in the research.
 - **Mike Wisdom** (USFS): You are welcome to e-mail if anything comes up in the meantime.
- **Kerey Barnowe-Meyer** (Nez Perce Tribe): Existing research is not resonating with managers in a way that researchers had hoped at the time. Major red flag... if the research is arranged today and executed, what happens in five years if people aren't able to hear or accept it? That undermines everything we're talking about here.
 - **Mike Wisdom** (USFS): Some intractable resource issues are perfect topics to address in the short-term with proposed socio-ecological research.
- **Susan Charnley** (USFS): A lot of the stakeholders who are here are involved in one or more of the collaborative groups in the Blue Mountains. I'm interested in how these collaborative groups would like to engage researchers. Should we attend meetings? Send out progress reports?
 - **Nils Christoffersen** (Wallowa Resources): Collaboratives have capacity constraints, staffing limitations, etc... I get bombarded once a week by university researchers, etc. about research interests. We could recruit university researchers to contribute to our research.
 - We're currently working with UC Boulder and U of New Hampshire looking at climate change on forest resources. This is part of an effort to provide regular updates on what the research is suggesting and how to disseminate some of this information early on.
 - The collaboratives are interested in engaging in ongoing research and are trying to figure out how to balance long-term planning for keeping up with projects and following-up on projects we've contributed to. Yes, we are interested in collaborating more.
 - **Mike Wisdom** (USFS): Nearly all research in the Blue Mountains that focuses on natural resource topics is highly leveraged with money and staffing shared among state, federal, private, university, and tribal partners. Little research would get done if it is not highly leveraged,

Afternoon Discussion

including extensive reliance on graduate students from universities. Lack of funds is the biggest issue, not the staffing. But these research questions we've developed identify millions of dollars in research needs, and could be used to help obtain research grant money.

- **Mary Rowland** (USFS): We have more university scientists than agency scientists coming to the Portland meeting.
- **Andrew Spaeth** (Sustainable Northwest): Each Blue Mountains collaborative is unique. Think about starting the conversation with them in terms of what are their research needs are. Should also leverage the unique situation in Blue Mountains. Blue Mountains Coalition brings all five together. You should use that to your advantage for disseminating and collecting information.
- **Hannah Gosnell** (OSU): For the ranchers in the room– is there a collaborative or an association for ranchers?
 - **Chris Heffernen** (Rancher): There's a PNW Stockman's group that keeps up to speed on issues. They just met on Saturday. There are other groups like the Cattlemen's Association and the Alfalfa Growers Association.
- **Jim Gosz** (MtnSEON Executive Team): This is what we hoped would happen. We think this worked really well as a working group. Promoting successes among other groups will create more successes. This process needs to continue and the responsibility to follow-up lies on both sides.
- **David Griffith** (University of Idaho): Would anybody be interested in attending another workshop (not necessarily a stakeholder workshop)? You might be receiving an e-mail.
- **Mike Wisdom** (USFS): We're looking forward to following up. We have a lot of good input for potential proposals.
- **Jim Gosz** (MtnSEON Executive Team): The PowerPoints will all be posted on the MtnSEON website.

Appendix A: Absentee Stakeholder Feedback

Jeff Oveson, Director of Grande Ronde Model Watershed

First and foremost, restoration practitioners need to know if the investment they're making results in a sustainable improvement in habitat. Did it work and will it last? Will more biological benefits accrue over time following either passive or active restoration? Will the investment need to be made again in a decade? I know there was talk among USFS fish program people some time back that we could expect to add wood to our streams on a regular basis for the foreseeable future. Are we discovering that the methods we use now to place and recruit wood are sustainable without maintenance? Do we know enough about habitat requirements and structural methods to create appropriate habitat so that redesigned streams and rivers continually build and maintain habitat naturally?

Domestic ungulates and riparian restoration: this apparent conflict exists throughout the west and we still don't know that best solution for the coexistence of these two practices. We don't understand the interactions of domestic and wild ungulates, at least as it affects riparian vegetation. We don't know if it's effective to plant riparian species without some form of artificial protection, or if riparian plantations can withstand herbivory by any or all ungulates or under what conditions riparian planting can succeed (what other factors in a given grazing allotment, for instance, impact how much pressure riparian plants receive from ungulates).

Dennis Sheehy, Local Rancher (Wallowa County)

Socio-Ecological Research Issues in the Blue Mountains

Issue 1:

Wolf-Ungulate Interaction Study in the Blue Mountains

I. Introduction

The proposed study would succeed and be derived from the current wolf-cattle study conducted by Oregon State University and the Oregon Cattleman's Association.

The wolf-ungulate interaction study will have two main components: 1) ecological interactions between wolves and ungulates- primarily domestic livestock (i.e. cattle and sheep) and elk, and 2) economic implications of wolf predation on rural communities of the Blue Mountains.

II. Interaction

Large ungulates are known to prefer certain habitats that can vary seasonally and within seasons. Wild ungulates have greater access to habitat than domestic ungulates because domestic ungulates have managed use of subsets of available habitats. Wolves currently have unlimited access to habitat.

Main external drivers of habitat use by large ungulates and wolves are:

i) Cattle: location of forage, water, and shade (high level of management but low level of security provided); ii) Sheep: location of forage, water and shade (high level of management and security provided); iii) Elk: location of forage, water, shade and security; and iv) Wolves: location of habitat and food.

Appendices

III. Questions

1. How does wolf- ungulate interaction affect use of Blue Mountain habitats?
2. How much interaction occurs?
3. Does intersection of preferred habitats have greater interaction potential between wolves and ungulates?
4. Does the presence of multiple ungulates on seasonal ranges reduce or increase wolf predation on domestic livestock?
5. Can habitat alteration (i.e. thinning, water development, roads, etc.) and grazing management strategies (i.e. timing, duration, and intensity of livestock use, livestock herding; improving winter range habitat to attract elk use, etc.) be manipulated to reduce predation on domestic livestock (reference Burkhart's hypothesis that wolves provide a useful function by alleviating high intensity ungulate use of certain preferred ungulate habitat such as riparian corridors)?
6. Does removal of dominant wolves from a pack increase or decrease wolf predation on domestic livestock (i.e. WSU publication)

Issue 2:

Restructuring domestic livestock use of public land

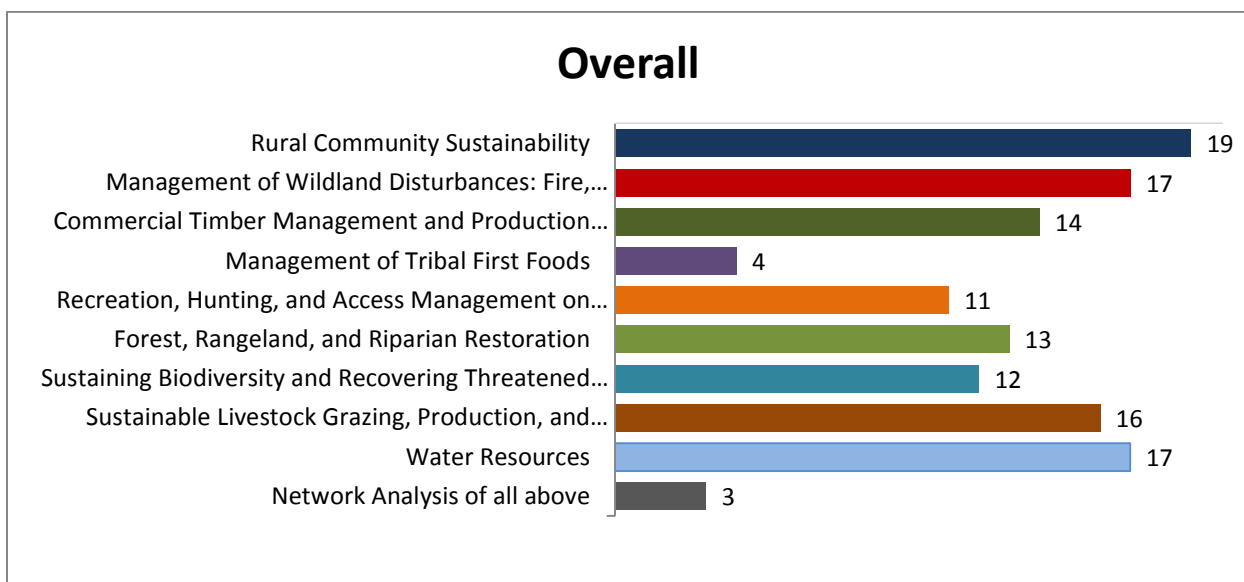
Opening closed and vacant allotments in the Blue Mountains to managed grazing use would facilitate development of grazing management strategies that improve Blue Mountain habitats and community sustainability. The study would support NEPA evaluations and determine best practice use strategies (e.g. integrating winter range use with existing summer range allotments), implementing a monitoring system designed to track impacts from grazing and climate change (i.e. such as PHYGROW), and reducing incidences of wildfire and invasive species. Prior to implementation, the current status of the vacant or closed allotment should be determined to provide a baseline to determine impacts.

Appendices

Appendix B: Dots Feedback

This was an exercise to facilitate and guide breakout group discussions. Each attending stakeholder was given five dots to disperse among the topics to communicate which one(s) he/she was most interested in discussing first. These were not intended as “votes” to decide the relative importance of the topics. Rather, it was simply a system of prioritizing order of discussion in breakout sessions. Attendees were in agreement that all of the topics were important and that they were inter-related and could be addressed together.

Topic #	Topic	Group1	Group2	Group3	Total
10	Network Analysis of all above	3	0	0	3
9	Water Resources	6	5	6	17
8	Sustainable Livestock Grazing, Production, and Predator Management on Public Lands	4	4	8	16
7	Sustaining Biodiversity and Recovering Threatened and Endangered Species	6	3	3	12
6	Forest, Rangeland, and Riparian Restoration	7	3	3	13
5	Recreation, Hunting, and Access Management on Public Lands	4	2	5	11
4	Management of Tribal First Foods	3	0	1	4
3	Commercial Timber Management and Production on Public Lands	5	5	4	14
2	Management of Wildland Disturbances: Fire, Insects, Disease, Invasive Species and Herbivory	5	5	7	17
1	Rural Community Sustainability	5	9	5	19

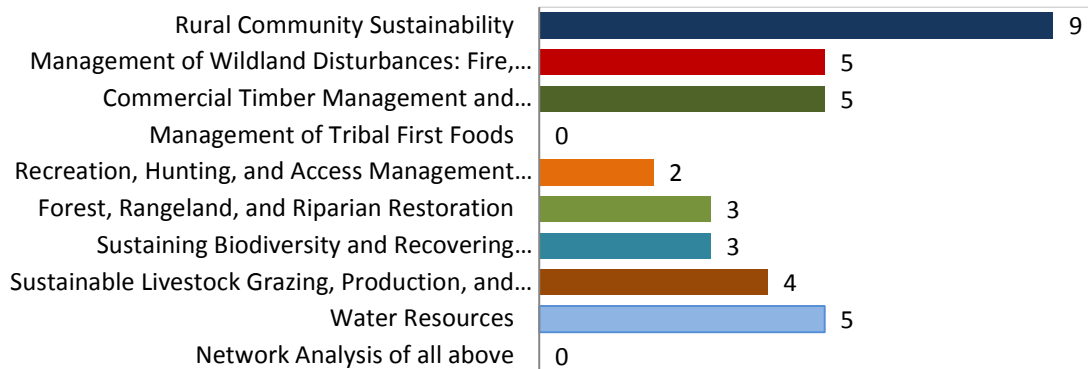


Appendices

Group 1



Group 2



Group 3

