

Beyond the Bugs: The Future Range of Variability of Communities and Forest Landscapes

A conference hosted by the Colorado Forest Restoration Institute
April 19th-21st, 2010 at the Steamboat Grand, Steamboat Springs, CO

CONFERENCE REPORT



SUMMARY

Future Economic Range of Variability Groups

Generally there appeared to be more favor for investments in value added wood products than residue uses such as biomass utilization. However, each set of options faces challenges. The wood product approach is confronted with a lack of demand and a limited supply of wood. The biomass utilization approach is challenged by the perception of a limited radius of economic usefulness and transportation costs. Solutions were proposed for both sets of approaches:

- Sustainable markets
- Guaranteed supply of timber
- Synergy between local/state producers and competitors
- Information programs regarding the durability and beauty of blue-stained wood and the benefits of using local wood products
- Discussion about ecology and age class diversity and how to have an ecological sustainable system and sustainable industry

Future Social Range of Variability Groups

Social factors to concentrate on for the future focused on education, collaborative groups, and communication. Education that helps the public understand the resilience of lodgepole pine systems in the face of disturbances such as fire and mountain pine beetles thanks to ecological adaptations that include serotinous cones. Education that also helps the public absorb and respond to the nature of the disturbance driven forest and landscape systems that create the places we live in, creating a social type of resilience. The need was identified for CFRI to provide more collaborative training for place-based groups to move local forest efforts from single-issue discussions to place-based collaboratives. Where communication was concerned, the need to find definitions for terminology and provide a glossary of terms used in forest discourses was identified e.g. what do we mean by "restoration"?

Future Ecological Range of Variability Groups

After reviewing a number of factors, the future ecological range of variability discussion resulted in a number of points that included the need for future forest and wildlife diversity and means to include the benefits of fire while decreasing its risks. The most extensive discussion concentrated on the need for clear determination of ecological and social objectives of forest treatments in order to monitor ecological factors while creating sustainable local economies. The group agreed that more local economic benefits might be created if ecological conditions are not impaired. The theme that has often been voiced of "appropriately sized economy" recurred here as well. One of the rationales for these

considerations was that it is important to be considerate of the ecology of lodgepole pine forests in the areas between communities and roadless areas, where the most intensive management is likely to occur. Near communities, management is likely to be driven by fire hazard mitigation. In the wilderness, management will not occur do to its wilderness designation. However, in areas between these zones, it might be possible to mindfully manage the forest, and achieve ecological goals while supporting timber industry.

Place-based Discussions

The place-based discussions for northern Colorado and southern Wyoming, and areas in central Colorado all explored the above themes in relation to their particular capacities and challenges. Each discussion concluded the need to move beyond the immediate, mitigation focus and explore more factors, and with longer time frames in mind.

Next Steps

In response to what the Colorado Forest Restoration Institute learned from participants at this conference, we add a few notes:

1. One of the main themes that resulted is the need for long term planning for these landscapes based on identified desired conditions ecologically, socially and economically. This boiled down in two of the segments to particularly identifying what economic opportunities can be realized most readily, while conserving or enhancing the existing and future resilience of our lodgepole pine landscapes. CFRI has planned a workshop for October 22, 2010 where this particular subject will be deliberated further.

2. The Front Range Roundtable's Science and Monitoring working group has worked over the past year to create a glossary of terms as discussed in this conference's Social Range of Variability discussion. Although it is still a work in progress, its benefits may extend to the use of other forest collaboratives around the State. This working group consists of multiple stakeholders that include forest scientists, managers, CFRI, the private sector, conservation groups, non-profits and place-based representatives. Agreement has already been reached on many terms. Please go to the following website to see the progress made so far:

<http://www.frontrangeroundtable.org/SM.html>

ABOUT THE COLORADO FOREST RESTORATION INSTITUTE

The Colorado Forest Restoration Institute was established at Colorado State University in 2004 through the Southwest Forest Health and Wildfire Prevention Act, along with restoration institutes at New Mexico Highlands University and Northern Arizona University. The purposes of the institutes are to compile, translate, and apply the most current scientific information relevant to the needs of forest managers and communities in taking action to mitigate wildfire risk and restore healthy forest conditions.

CFRI emphasizes four areas of service:

- Synthesize and translate current scientific research and field-based knowledge and information to meet the needs of forest managers, landowners, and communities by producing and disseminating reports and bulletins written in non-technical jargon, sponsoring workshops and short-courses, and convening field-based forest condition assessments involving managers, interested and affected stakeholders, and researchers. Outreach and application is generally coordinated with local forest health collaborative groups, Colorado State Forest Service district foresters, and/or federal agency field units of the Bureau of Land Management, National Park Service, or US Forest Service field offices.
- Assist and support collaborative monitoring and adaptive management of forest restoration and wildfire mitigation projects by providing technical and human resources to assist collaborative forest health partnerships and land managers in developing and implementing ecological and socio-economic monitoring plans. Collaborative monitoring projects are developed and implemented in partnership with community-based non-profit organizations, the Colorado State Forest Service, and federal agencies.
- Enhance diversified economic use of wood from restoration and wildfire mitigation projects to offset treatment costs and contribute to local jobs and livelihoods by co-sponsoring networking workshops with the Colorado State Forest Service that bring together wood producers and users to learn about potential connections and new developments; contribute to analyses linking available wood supply from current and proposed treatments with existing wood utilization infrastructure, and disseminate wood biomass utilization information to collaborative forest health partnerships.
- Assist and support collaborative forest health and wildfire mitigation initiatives by consulting with collaborative partnerships regarding start-up, management, and transition issues, coordinating and communicating local needs and priorities at the state and regional level, and hosting an annual conference of collaborative forest health partnerships to facilitate learning, networking, and coordination. CFRI also provides monitoring and evaluation assistance to help collaborative partnerships adapt and evolve to achieve their shared goals

RATIONALE FOR THE CONFERENCE

The extensive and ongoing mountain pine beetle (MPB) outbreak has resulted in large numbers of dead lodgepole pine trees across Colorado and other areas of the western United States. The visual and ecological impact on these changed landscapes has resulted in questions regarding the short-term and long-term future of our forests and communities. There has been a lot of attention and activity focused on short term hazard mitigation such as reducing the risk of falling trees and fire around roads, power lines, communities and other vital areas. However, when looking long term, the mountain pine beetles are leaving a forest that will be quite different than what was here before and people are now asking: **what will these landscapes look like to our children and grandchildren?**

Forest scientists and managers use the concept of "historical range of variability" to estimate the range of ecological conditions and processes that occurred in the past. This range of variability indicates a set of boundaries between which native biodiversity has been able to persist in the face of different types of disturbance. Thinking in terms of sets of dynamic boundaries helps us understand the extremes in climate, fire occurrence and other factors that forests have evolved with and therefore what we can do, if anything, to restore forests.

In the case of lodgepole pine these HRV concepts help us understand what we can do to effectively decrease fire damage to our communities and infrastructures while allowing the forest to continue on its current ecological trajectory. Now, there is a similar concept that is designed to estimate the future sets of dynamic boundaries within which ecosystems, ecological processes and conditions may operate and this is called the "future range of variability" or FRV (Binkley and Duncan, 2009). There are many questions about the "future of our forests," and by exploring the future ecological, social, and economic conditions of our forests and communities, this CFRI conference will hopefully open dialogue across boundaries and catalyze action.

CONFERENCE FRAMING QUESTIONS

- What is the beetle leaving behind for the next future forest? What do we know, what don't we know?
- What are the desired ecological conditions that will maximize the range of social and economic values these forests provide?
- What are the trade-offs among these values?
- What unintended consequences and surprises should we be watching out for?
- What strategies can we put in place today to preserve quality future options for our children and grand-children?

PRE-CONFERENCE REPORT

The pre-conference report, "Some Ecological Considerations Regarding the Future Range of Variability of Lodgepole Pine Ecosystems in Colorado and Wyoming," was published to coincide with the conference. In this document, CFRI, in collaboration with Dr. Peter Brown, Dr. Monique Rocca, Dr. Jessica Clement, Dr. Greg Hayward, Dr. Chuck Rhoades, Byron Collins, Robert Skorkowsky and Dr. Bill Romme aimed to address some main points regarding the ecological factors related to the future range of variability of these forests. This document does not answer all questions, but provides a brief summary for a broad audience answering some of the questions about the outbreak at this point in time and the future of our forests in the central Rocky Mountain. The Colorado Forest Restoration Institute thanks all the authors and reviewers for their contributions to this effort, in particular the lead author Dr. Peter Brown.

Please visit the CFRI website to view the report: <http://warnercnr.colostate.edu/cfri-home/>

SPONSORS

Thank you to the conference co-sponsors:

- USDA Forest Service
- Colorado State Forest Service
- CO-WY Chapter of the Society of American Foresters
- Bureau of Land Management
- Denver Water
- Rocky Mountain Research Station

DAY ONE: Tuesday, April 20th, 2010

Many of the panel speakers had PowerPoint to accompany their talks. Speakers were limited to 10 minutes of presentation and two PowerPoint slides. They are available on the CFRI website at: <http://warnercnr.colostate.edu/cfri-home/>

Opening Presentations

*Incident Response Mountain Pine Beetle
Emergency Colorado and Southern Wyoming*
Rick Cables, Regional Forester, Region 2,
USDA Forest Service

*Life After the Beetles – Effects of changed
conditions on Forest plans*
Mary Peterson, Forest Supervisor, Medicine
Bow-Routt National Forest

*Life After the Beetles- A Colorado State
Forest Service Perspective*
Jeff Jahnke, Director, CSFS

Morning Panel Session: Future Range of Variability: Biophysical Perspectives

*Insects, fires, and climate change:
forecasting future forests in the Southern
Rockies*
Dr. William Romme, CSU

*Watershed Responses to Bugs and
Management*
Dr. Charles Rhoades, USFS/Rocky Mountain
Research Station

*The Future of Insect Outbreaks in Lodgepole
Pine Ecosystems*
Dr. Jose Negron, USFS/Rocky Mountain
Research Station

Mountain Pine Beetle in the Front Range
Dr. Jenny Briggs, USGS

*Predicted Response of Wildlife to Forest
Mortality from Mountain Pine Beetle*
Robert Skorkowsky, USFS

Afternoon Panel Session: Future Range of Variability: Socio-economic Perspectives

*Colorado's Recreation Economy and Our
State's Vitality*
Bryan Martin , The Colorado Mountain Club

Beyond the Bugs: A Mayoral Perspective
Tom Clark, Mayor, Kremmling, CO

*Role of the Timber Industry for the Future of
Lodgepole Pine Forests*
Nancy Fishering, Intermountain Resources,
LLC

Conservation Community Perspective
Sloan Shoemaker, Executive Director,
Wilderness Workshop, CO

*The Role of Biomass Products for the Future
of Lodgepole Pine Ecosystems*
Rob Davis, Forest Energy Corporation

*Future Range of Possibilities: A Social
Science Perspective*
Dr. Jessica Clement

*Beyond the Bugs: County Commissioner
Perspective*
John Rich, County Commissioner, Jackson
County, CO

*University of Wyoming Conference
September 2010*
Dr. Daniel Tinker: University of Wyoming

TOPICS SESSIONS

Participants spent the afternoon in small break out groups, attending concurrent topic sessions. They had an opportunity to attend two of the three sessions. The sessions were facilitated discussions designed to encourage future oriented thinking, sharing, and learning. Each session was facilitated and had experts in that specific topic area engaged in the discussion. Sessions were as follows:

A - Economic Range of Variability: What are desired economic goods and services that are important to the long-term interests of local communities, the region, the nation, globally?
Facilitated by: Bob Sturtevant, Colorado State University

Summary: This session's discussion was dominated by the needs and challenges for the Colorado timber/forest products industry. Several people voiced that there are very few current markets for local timber in Colorado and there needs to be a diverse portfolio of local products from a diverse group of companies. Value added products need to be supported over residue uses. The idea of charging a premium price for Colorado wood was mentioned a few times, and debated throughout the group. Some suggestions to increase markets in Colorado were to have tradeshow showcasing Colorado wood products, have a local wood directory and increasing credit given to local wood products in the green building certification system, LEED. The discussion then moved from solid wood products into biomass and its potential use in Colorado. Some people felt that biomass has a limited radius of economic usefulness and the cost of transportation will always been an issue. Small community use of megawatt plants within the context of local use was suggested to be the most successful.

More needs for all types of industry brought up in the discussion included:

- Sustainable markets
- Guaranteed supply of timber
- Synergy between local/state producers and competitors
- Discussion about ecology and age class diversity and how to have an ecological sustainable system and sustainable industry

In this session participants kept returning to the issue of education, and how that is the missing link between producers and consumers. There are still misconceptions about blue-

stained wood and its uses. Examples of a few misconceptions are that blue-stained wood is not structurally sound, there is something wrong with the wood because it was killed by a fungus, its moldy, it's not aesthetically pleasing people won't want it in their homes, and you need to have clear wood build with. Participants also expressed the need for consumers to be educated about the benefits of purchasing local wood products. Colorado is importing over 90 percent of its wood products and most people do not know that.

B - Social Range of Variability: Besides goods and services, what non-monetary values do we want from the next forest? What do we want to leave behind for our children and grandchildren?

Facilitated by: Jeff Jones, The Conservation Cooperative

Summary: There were a variety of topics discussed in this session including the need for education, collaborative groups, and communication. This group identified the need for a consistent glossary of terms to improve communication across organizations, jurisdictions and the variety of engaged stakeholders. For example, what is the definition of restoration? What is the definition of forests and its context?

The group felt there needs to be training offered about natural resource collaboration, how collaborative models work and how to build consensus. Participants thought that CFRI could have a role in this type of education and training. It was also mentioned how important it is when working in collaborative group to establish a "table of trust" and to try to bring all of the constituents to the table. A strategy should be put in place on how to keep the collaborative efforts such as groups established just for mountain pine beetle issues together once the epidemic is over. The questions was brought up "can these existing collaborative transition from a single topic to a placed based group?"

Education was another theme for this group's discussion. The public needs to be educated and understand that forests are fairly resilient, and these disturbances are a reality of ecosystem functions. One participant stated we humans don't live as long as trees, therefore we lack an understanding of ecological history and processes. The education needs to move beyond the reactive approach and be more proactive, for example: "Be Ready, Disturbance Happens." There was also a concern that communication language needs to be careful on what words are used and inflammatory language can scare the public. If people don't feel safe, their life, property or infrastructure, they will not engage in out of the box thinking about the future of the forests.

C - Ecological Range of Variability: What will drive the composition of the next forest, what are the uncertainties about the next forest, what are the desired conditions for the next forest and what/where do we now think management generally will be needed to reach those conditions?

Facilitated by: Jessica Clement, Colorado Forest Restoration Institute

Summary: Lodgepole pine ecosystems provide many opportunities to create ecological, economic and social benefits. From an ecological perspective, in the future there needs to be a diversity of tree species and age structure as well as diverse wildlife, herbaceous plant species and general biotic diversity. However, there is still uncertainty about the future of lodgepole pine forests and adaptive management strategies which address that uncertainty. A big unknown is how climate change will affect these forests as they recover in the future.

Participants voiced the following main points:

- It is important to articulate the objectives of treatments clearly. In some places, we want to mimic nature. In others, we need to prioritize protection of social values, such as commercial timber or community infrastructure. Once objectives are clear, we can evaluate our success at reaching these goals and change behavior accordingly.
- We want diversity of tree species and age structure in our future forests. We also want to encourage diverse wildlife, herbaceous plant species and general biotic diversity in lodgepole pine forest.
- Generally, the ecological benefits of fire are recognized. However, we must address the fears of uncontrolled fires and reduce risk in communities.
- We need to consider where we build. We need to plan to create wildfire resilient communities because they are embedded in ecosystems where fire is likely to occur.
- We must be especially considerate of the ecology of lodgepole pine forests in the areas between communities and roadless areas, where the most intensive management is likely to occur. Near communities, management is likely to be driven by fire hazard mitigation. In the wilderness, management will not occur do to its wilderness designation. However, in areas between these zones, we can mindfully manage forest, and possibly to achieve ecological goals while supporting timber industry.

DAY TWO: Tuesday, April 20th, 2010

The second day of the conference, the participants were organized in break-out groups organized by geographic region. The groups were broken into a northern area including northern Colorado and Southern Wyoming and then a southern area which covered the rest of the participants. These sessions provided opportunities for participants to apply the big-picture ideas from the previous day to specific geographic realities.

Placed Based Discussions: What could work in your place?

Northern Break-Out Group: *Medicine Bow-Routt National Forests, Colorado, Wyoming*

The group discussion here centered on the opportunities and needs and needs in the Medicine Bow-Routt National Forests. There are a lot of dead trees to work with which means there is an economic opportunity here. Biomass utilization has not happened yet, but participants hoped it would. Participants also mentioned there is scientific evidence that forest stands did not have 100 percent mortality, and that many of those trees will grow into saw logs within the next 60 years leaving room for regionally successful mills. There is also an opportunity to redefine the situation, and go beyond the battle lines that were drawn when the beetles originally hit.

Attendants identified a number of industry-related needs:

- Sort yards
- More coordinated support for creating and sustaining industry
- Having both local and regional engagement
- Financial support
- A regional wood brand that will make wood stand out and help create regional markets
- Direct treatments on the landscape

Finally, Participants mentioned the broader notion of working within disturbance-drive ecosystems. Communities and partnerships need to be thinking about fire and other disturbances into the future and what their role will be. Land use planning will be key looking to the future. Although we currently do a lot of planning and we do our best there needs to be a better approach. Wildland Urban Interface will continue to be a threat but there is also a broader landscape view to look at as well. Strategic thinking and planning must be coordinated to do landscape scale treatments.

Southern Break-Out Group: White River, Arapaho-Roosevelt and Pike-San Isabel National Forests, Colorado

The majority of this discussion focused around the future of the Colorado Bark Beetle Cooperative, a place based collaborative working together on MPB related issues. It was pointed out that the CBBC needs to better connect with local groups and vertically integrate from on the ground stakeholders to the Governors Forest Health Advisory Council. The group also needs to be brings more people to the table and pulling them into the conversation that are not yet involved, for example the ski industry.

There was also a desire from the group to keep the enthusiasm and momentum going into the future in regards to working together on forest health related issues. Bark beetles will go away and MPB will become a “dead issue.” In the 1980s, there was a great local concern over the outbreak and there was an effort to mitigate, manage and prevent MPB. When the outbreak subsided, attention to the problem disappeared, management stopped, and the timber industry died. There is a need to think beyond the immediate bark beetle situation, learn from the past and look to the future. There is hope that history will not repeat itself with the continued use of tools like collaboration and stakeholder interest.

CONFERENCE PARTICIPANTS

| Name | Organization |
|--------------------|--|
| Allen, Doug | Steamboat Ski & Resort Corporation |
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| Babler, Mike | The Nature Conservancy |
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