FFESC Project Update

Reducing vulnerabilities and promoting resilience of BC's natural and human systems through adaptation of post-disturbance land management options.

Summer 2010

Message from the Project Manager

This is a quick update on the latest work currently underway by the project team on the Future Forest Ecosystem Science Council (FFESC) funded project – "**Reducing vulnerabilities and promoting resilience of BC's natural and human systems through adaptation of post-disturbance land management options**."

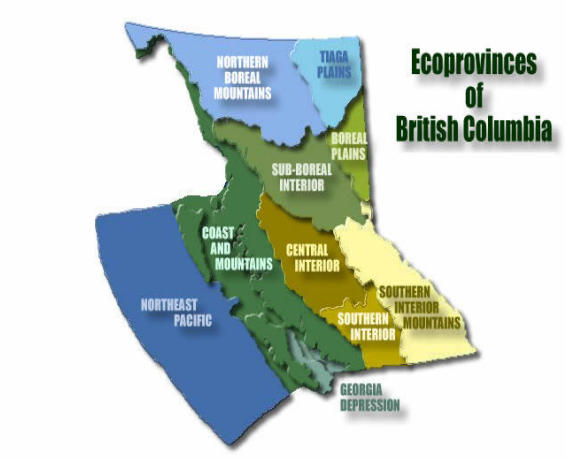
First, a recap of the project. The most demonstrable effects of climate change may be shifting natural disturbance regimes. Thus a major challenge facing natural resource managers and policy makers in BC will be in adapting post-disturbance land management decisions and activities to the climate-change related shift in natural disturbance regimes.

The overall goal of this project is to design a decision support framework for post-disturbance land management to inform adaptation strategies that will address shifts in natural disturbance regimes resulting from climate change. To define and quantify the range of potential effects of major disturbance types, as well as post-disturbance land management responses, on natural and human systems, and to support the framework, a number of topical literature-based synthesis products will be produced. The topics to be covered include forest dynamics and carbon storage, watershed function, conservation biology and ecology, and human systems, including First Nations. An additional synthesis of the projections around shifts in frequency and severity of major natural disturbance types will also be completed. This section of the project will define the regions in British Columbia most susceptible to a shifting disturbance regime which will help to focus the decision support framework. For more information on this project please contact Alan.Wiensczyk@forrex.org

Values of Interest Syntheses

Forest Dynamics and Carbon Storage

Davide Cuzner and **Kathie Swift**, members of the FORREX Forest Resources Dynamics Extension cluster, are working on the synthesis related to the effects of natural disturbances and management responses on forest successional pathways and forest carbon. They have been with working with MFR, UBC, and CFS partners and have



BC Ministry of the Environment

found significant information and research on this topic. However, one of their challenges has been to find a way to group the

information into cohesive units that make sense to local professionals. They have decided to use a modified Ecoprovince approach with 7 units to present their information and will be providing information on general successional trends for various forest types found in these units with and without natural disturbance and will discuss how these trends may change as a result of climate change. How forest management practices in response to these natural disturbances have also affected the successional pathway of these forests will also be addressed. Particular attention will be paid to identifying the transition areas that may be at risk (e.g., the drier variants within the ecosystems). Because of the wealth of information matrices and tables will be used to summarize and present the information. They have found the carbon modelling topic information to be more general in nature. A first draft of their synthesis is scheduled to be completed by the end of August. For more information on this synthesis please contact Kathie.Swift@forrex.org.

Watershed Function

Todd Redding, the FORREX - Watershed Management Extension Specialist, together with assistance from **Kevin Bladon** (Thompson Rivers University), continue to work on gathering information related to the effects of insect disturbances and management on watershed values. Information on the impacts of fire disturbance and post-fire management responses on watershed values has been completed and submitted as a first draft by an external contractor. One of the challenges they have faced in the preparation of their synthesis is a lack of information and research on the incremental effects of post-disturbance management response on watershed values. The research that does exist has been mostly limited to either clearcut salvage harvesting or studies that utilized plot or stand scale experiments with alternate treatments. Their expected first draft completion date is the end of September, 2010. For more information on this synthesis please contact Todd Redding – Todd.Redding@forrex.org.

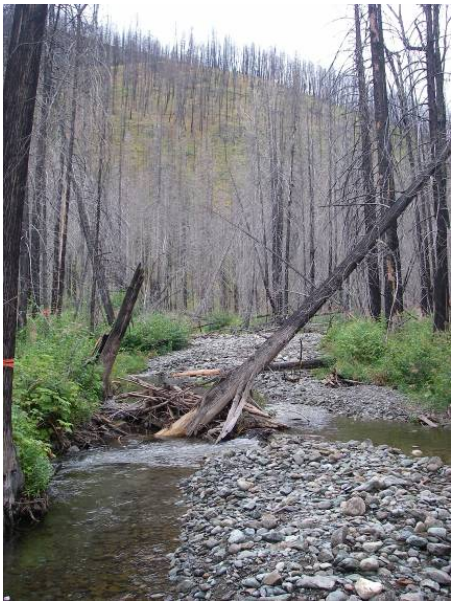


Photo: Todd Redding

Conservation Biology and Ecology

Pedro Lara Almuedo and **Don Gayton**, members of the FORREX Ecosystem Management and Conservation Biology extension cluster, are continuing to gather and analyze the literature relating to the effects of natural disturbances and management responses on conservation biology and ecological values. Based on the material reviewed to date, they will be using three wildlife communities (birds, small mammals, and arthropods) as showcase indicators of post-disturbance management effects. Similarly, they have found good material to include in their management implications/ recommendations section (particularly related to natural disturbance-based management). Challenges include limited information found to date on other wildlife communities as well as those looking at broader biodiversity levels. Geographically, their main challenge seems to be that a lot of relevant research has been done for the

boreal forest region as well as for some parts of the interior but not that much for other regions of the Province. With the wealth of interesting information they have found, keeping the scope of the paper (and hence its length) well defined and focused may be another challenge when they write up the synthesis. They are on schedule and plan to complete a first draft by the end of September. For more information on this synthesis contact Pedro.laraalmuedo@forrex.org or Don.Gayton@forrex.org.

Human Dimensions including First Nations

The Human Dimensions team, which includes **Ajit Krishnaswamy**, FORREX Socio-economics extension specialist and **Larry Joseph**, **Ellen Simmons** and **Gina Thomas**, FORREX Aboriginal Forestry extension specialists, has developed a table of contents that they plan to cover in their synthesis "Climate-change Induced Natural Disturbances Impacts on Human Systems – A Synthesis of Current Knowledge" They have held a number of synthesis team meetings and are in the process of developing their synthesis advisory group. Currently, they are continuing to gather literature to be used in the writing of their synthesis. This team has also faced the challenge of a lack of information and research on their topic area. The table of contents and minutes from their team meetings are posted on the FORREX.FFESC SharePoint site. For more information on this synthesis contact Ajit.Krishnaswamy@forrex.org.

Disturbance Regime Scenarios and Projections

Phil Burton, **Steve Taylor** and **Sean Haughian** (Canadian Forest Service, Pacific Forestry Centre) continue to work on their section of the project. Sean has completed the annotated bibliography and most of the draft manuscript synthesizing existing projections for changes to forest disturbances under climate change. They have also used an Ecoprovince approach in their summary. Their research has uncovered good information on both the fire and insect disturbance scenarios, limited information on drought, landslides and floods, and no information on any of the possible effects of climate change on other disturbance agents. Work is continuing on the completion of the draft manuscript that will be submitted to the BC Journal of Ecosystems and Management for publication in the fall. **Bryan Pettit** is expected to join the project team in September. For more information on this section of the project please contact Phil.Burton@NRCan-RNCan.gc.ca.

Decision Support Framework

The overall objective of this component of the FFESC project is to design a decision support framework for post-disturbance land management to inform adaptation strategies that will address shifts in natural disturbance regimes resulting from climate change. Although this decision framework will not provide the answers, it will show decision-makers where to go for answers to help guide them in reducing the climate change impacts of shifting natural disturbance on forest and range productivity and human systems. The decision support framework will allow decision-makers to address when, where, and what type of management interventions could be applied to support healthy ecosystems and communities under threat of increased natural disturbance due to climate change. The decision support framework will be developed within the context of an adaptive management framework, with the aim of reducing uncertainty over time and improving future management.

Kathie Swift who is leading the framework component is in the initial stages of

organizing a series of focus group meetings to gather input and material to assist in framework development. She is pulling together information on decision support tools as well as other decision support frameworks, such as the Climate Change Adaptation Framework developed in Alberta. For more information on this component of the project please contact Kathie.Swift@forrex.org.

Publication of Syntheses

It is anticipated that the topical syntheses will be collectively published together as a FORREX series publication.

Generally, one of the main challenges the teams have reported on is a lack of research and available information to include in their synthesis. A positive aspect of this is that it is allowing the teams to identify knowledge/research gaps which can be passed along to the research community as well as the research funders.

Community of Practice

The community of practice for the project is still being developed. **Alan Wiensczyk**, FORREX Ecosystems and Stand Management extension specialist and FFESC project manager is working on a letter that will be sent to prospective members of the Community of Practice to introduce them to the project and to invite them to participate in an introductory conference call/Live Meeting.

One of the challenges is making sure that the letter piques the interest of the potential CoP members. Another challenge is the organization of a meeting for a diverse group of people during the summer months.

Communities of Practice are defined as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise by interacting on an ongoing basis (Wenger et al 2002). They want to learn from each other in order to become more effective in their practice (The Ball Foundation 2009).

For this project the Community of Practice (CoP) will be comprised of key decision-makers and experts involved in reducing vulnerability and increasing resilience of forested ecosystems and natural resource dependent communities in light of climate change. The CoP will help link the decision-makers with the experts who have the information to help them make their decisions.

Send suggestions for Community of Practice members to Alan.Wiensczyk@forrex.org.

Project Team Tasks Reminder

1) Review and comments by all team members on the Project plan posted on the FORREX.FFESC SharePoint site are due August 13.
2) Suggest names for inclusion in the project Community of Practice (all team members).

This project is funded by the Future Forest Ecosystem Science Council