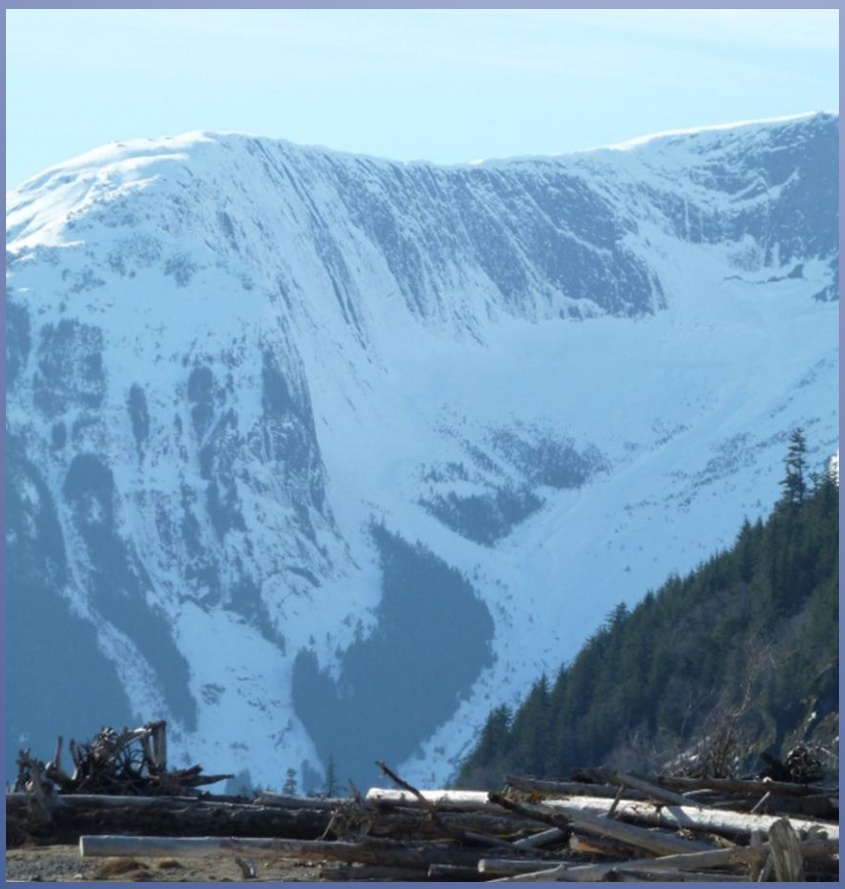

Chapter 10: Opportunities, Recommendations and Next Steps for Adaptation in the Skeena Region

Chapter 10: Opportunities, Recommendations, and Next Steps to support Skeena region adaptation

At the conclusion of this report we recognize that most of the recommendations of this research are only a beginning. These recommendations were identified based on the experience of the research team and input from community stakeholders and they highlight key actions and opportunities for new beginnings for many players in the public, private, and non-profit sector.

Specific recommendations from each community have been included in Chapter 2; neither these nor the recommendations from each of the various study areas, are repeated here.

10.1 Recommendations and opportunities for stakeholders

Resource managers, government, and local stakeholders should collectively invest in tools to support integrated adaptive management across the land-base.

The response from communities to the information and tools presented during the workshops was clear; this region is ready for watershed-scale planning that incorporates climate change projections. It is ready for cumulative effects analysis to determine how best to manage and sustain multiple resource values. Combined, the CCAP and SRWC projects have made significant advances towards developing the tools necessary to support such an integrated planning and management framework. The cumulative effects analysis framework developed through the SRWCP can be employed to support the implementation of scenario-based planning for forest management and road construction, and can also be expanded to include other land-use such as mining, energy, and pipeline developments. In addition, a number of local experts and stakeholders are trained to employ the watershed-based fish values monitoring protocol, and there is an excellent opportunity to expand the monitoring pilot beyond the Lakelse Watershed.

Government must address conflicting policy initiatives that serve as a disincentive for long-term planning, and deter collaboration among land-users.

The utility of the tools described above depends on widespread collaboration between land-users, and requires that the policies and initiatives influencing land management and tenure systems support long-term strategic planning. Currently, the planning environment for Tree Farm License 1 is structured to facilitate competition, not collaboration; and, as described in sections 7.4.1 and 7.4.2, there is a huge amount of uncertainty over how conflicting policy initiatives will affect the land-base and future access to timber. In order for forest managers to have the confidence to invest further in these tools, and to work together to plan the future of the region, government must provide clarity as to how the land-base will be divided in the future.

Government must consider legislation which supports adaptation planning that is flexible on a local scale and requires a level of accountability from all resource users.

Results from the project indicate that climate change will affect communities in the Skeena region differently and the importance of adapting to these changes must be reflected in future legislation which regulates resource use in the area. In order to increase the adoption of tools which facilitate integrated management, future legislation should address local challenges and be responsive to community values. Incorporating scenario-based planning and cumulative effects analysis will ensure resource users in the region share the responsibility of adaptation planning equitably.

Legislate and enforce protective planning, practices, and monitoring for fisheries sensitive watersheds across ALL land-use sectors.

The Skeena River and the salmon it supports are the lifeblood of the region. With increased interest from multiple sectors, there is an imminent need to ensure that all actors on the land-base plan and act responsibly when it comes to fish and freshwater values. Development proposals should be done in conjunction with other sectors, to adequately address and limit cumulative effects over space and time. An example of this would be joint planning around road construction, maintenance and deactivation to ensure that those using roads are also obligated to monitor and maintain them. In this recommendation we recognize that forest licensees are constrained by legislation governing historic practices and poor markets, so that any increased operating costs required to protect fish values could be acknowledged and covered from the tax base of those who benefit, which would be all British Columbians and Canadians.

Improve communication between forest managers and community stakeholders.

In both Terrace and Lax Kw ‘alaams, there was an expressed concern over the lack of clarity around forest management plans, and a perception that local recommendations are not always taken into consideration during planning and operations. There is also a lack of understanding about forest management planning processes, including the Forest Stewardship Plan. Coast Tsimshian Resources could partially address this issue by deploying a community liaison to share information, explain decisions, and receive and discuss concerns and recommendations from community members. Scheduling these public presentations concentrate the question of what it is important to update community members on, and help bring the material together so it can also be posted on a web site.

Explore opportunities for collaboration between resource managers who operate within the Skeena watershed.

Interest in building collaborative relationships between land managers within the region was expressed during the final results-sharing meeting. Contributing in-kind resources to further analyze data, implement monitoring assessments and communicate successes and challenges will support coherent strategies for scenario-based planning and provide mutually beneficial opportunities that increase capacity for adaptation. Increased communication between resource managers would enhance the feasibility of adopting adaptation strategies across the land-base.

Continue funding of academic-practitioner partnerships to improve reliability of modelling tools and to pilot adaptation strategies.

As discussed in section 7.4.4, government programs like the FFESC facilitate partnerships and learning opportunities that would otherwise be out of reach for many resource managers. That said, many of the proposed adaptation strategies require long term investment and the assumption of considerable risk by resource managers. Long-term research partnerships should be negotiated with guaranteed funding whose objective is to identify, explore and help insure against risks to enable resource managers to pursue new and creative adaptation strategies.

Invest in local students and colleges to create training programs around integrated and adaptive resource management, and around new tools and methods for adaptive management.

Building local adaptive capacity has been a key objective of this project. As new frameworks for resource management come into play, there is a need to train and educate current and future resource managers and employees in the methods and tools that are available to support them. Especially with the array of new capital development projects scheduled and on the drawing board for the region, it is not that there is no demand for good workers, the problem is a skills gap. Local youth are not trained for the emerging jobs and business opportunities and partnering to help develop educational programs that match the future opportunities of the region can build local capacity and encourage youth to stay and work in the area.

Empower youth with knowledge of local climate change projections and adaptation strategies, and enable them with tools, resources and mentors, to become future community leaders.

The need to engage and include youth in the development of community adaptation strategies was echoed by many community members involved in the project. The interactive toolkit (http://brinkmanforest.com/ffesc/lower-skeena-adaptation-toolkit/) is a user friendly platform making accessible many different levels of research and provides a resource for teachers, community groups and peers to share knowledge of climate change in the Skeena region. Facilitating dialogue and engaging youth will ensure a new generation of change makers continue the work that is needed to progress adaptation planning in the Skeena region.

Create a permanent repository for this, and other related projects, to provide ongoing public access to data and the opportunity to continue growing the knowledge base.

Brinkman Forest has created a project website (http://brinkmanforest.com/ffesc/) to archive the report, toolkit and other relevant information. Development of a website with greater capacity for hosting large, raw data sets would provide a long-term, robust central sharing site where both experts and non-experts can access information relevant to their needs.

Explore potential for partnerships between local resource managers, First Nations, and colleges to engage local residents and students in data collection and monitoring.

A commonly cited barrier to adaptive management is the cost of data collection and analysis for the purposes of monitoring. There is a need to train people in how to assess baseline conditions, consider probable impacts of development projects or restoration work, and install or maintain monitoring protocols that can measure these impacts or improvements. For example, the FSW monitoring protocol data collection, analysis and report writing could be completed at local colleges as a part of the education program for the mutual benefit of resource managers and students. A second option that should be explored is the opportunity to direct education and training at First Nations communities, especially as many are poised to gain increased control and responsibility for natural resource management through Treaty settlement.

10. 2 Suggestions for Future Research to Support Climate Adaptation

The Climate Change Adaptation Planning for Northwest Skeena Communities project workshops in Terrace and Prince Rupert had as its single strongest common recommendation the development of an integrated Skeena watershed regional planning network, centered somewhere in the area of Terrace (not a new idea as the old Skeena City name suggests) that includes all of the First Nation and civic communities and stakeholders in the watershed. The FFESC project was developed by Coast Tsimshian Resources and targeted an area to the west of the forest license area. Similar work was done looking at climate scenarios for the Skeena Watershed, by Don Morgan's FFESC research group and the potential is there to link these two research projects in a next phase that built on the regional desire for that kind of planning network. Developing a new independent self-governance model for local development will require strong local leadership, and will require a lot of work, including a local tax base. (One Prince Rupert proponent reported a comment once made by the CEO of StatOil from Norway: you will never have the kind of revenues coming into your region that we do from the North Sea, because there is no authorized local governance to advocate and negotiate on your behalf. When all decision making is coming from Ottawa and Victoria, locals can do is resist the stupidity of the decision maker who is at too great a distance to know any better.)

Improve information and validate results from LPJ-GUESS model.

As described in Chapter 6, there are a number of opportunities to improve the outputs and reliability of the LPJ-GUESS model. These include:

- Making available digital formats of past harvesting patterns.
- Improved inventory of vegetation on the land base and the inclusion of shrubs into the model.
- Locate weather stations at altitude to verify downscaled climate data.
- Include a more realistic soil model and root distribution model to capture ecosystem dynamics.

- Refine harvesting schemes to test impact of different approaches for adaptation purposes.
- Validation of model outputs through long-term monitoring and calibration to justify field trials based on projections.

If the model proves valid over the next time increment, field trials could be established and results could be used to support calibration and further implementation of the model's predictions.

Include snowpack accumulation in future assessments of runoff and modelling.

Include in runoff scenarios the effect of varying levels of retention on snowpack accumulation and depletion in high-elevation stands of timber. This may require monitoring controls tracking logged sites with varying levels of in-block retention levels in order to observe the impact of different variations on snowpack. A complete hydrological model watershed may have to be built which included glaciers, snow pack, run-off etc.

Build on CCAP initiatives through integration of findings from other FFESC projects

The outcomes of a number of the FFESC projects are of interest to this research team, and the CCAP team would be interested in exploring the possibility for future work that would build on this and other projects including:

- Incorporating results from the project ***Soil and Ecological Baseline Data: Improvement and Delivery*** led by Chuck Bulmer. The lack of soil data available for the Skeena region is a limitation that impacts the reliability of LPJ-GUESS projections. There may be opportunities to improve upon the model outputs using updated regional soil data.
- Regional-scale collaboration including the integration of findings from Don Morgan's project: *A multi-scale trans-disciplinary vulnerability assessment.* There may be opportunities to compare findings work towards next steps in supporting adaptation across a wider scale.

A number of other projects are of interest to the team, and some steps have been taken already to advance research opportunities. This includes a partnership between ESSA and the BV Research centre to pilot the FSW monitoring protocol in other parts of the Province. In addition, CTR is engaged in a feasibility assessment with FP Innovations to determine the potential for local processing of logs into cants and bioenergy.