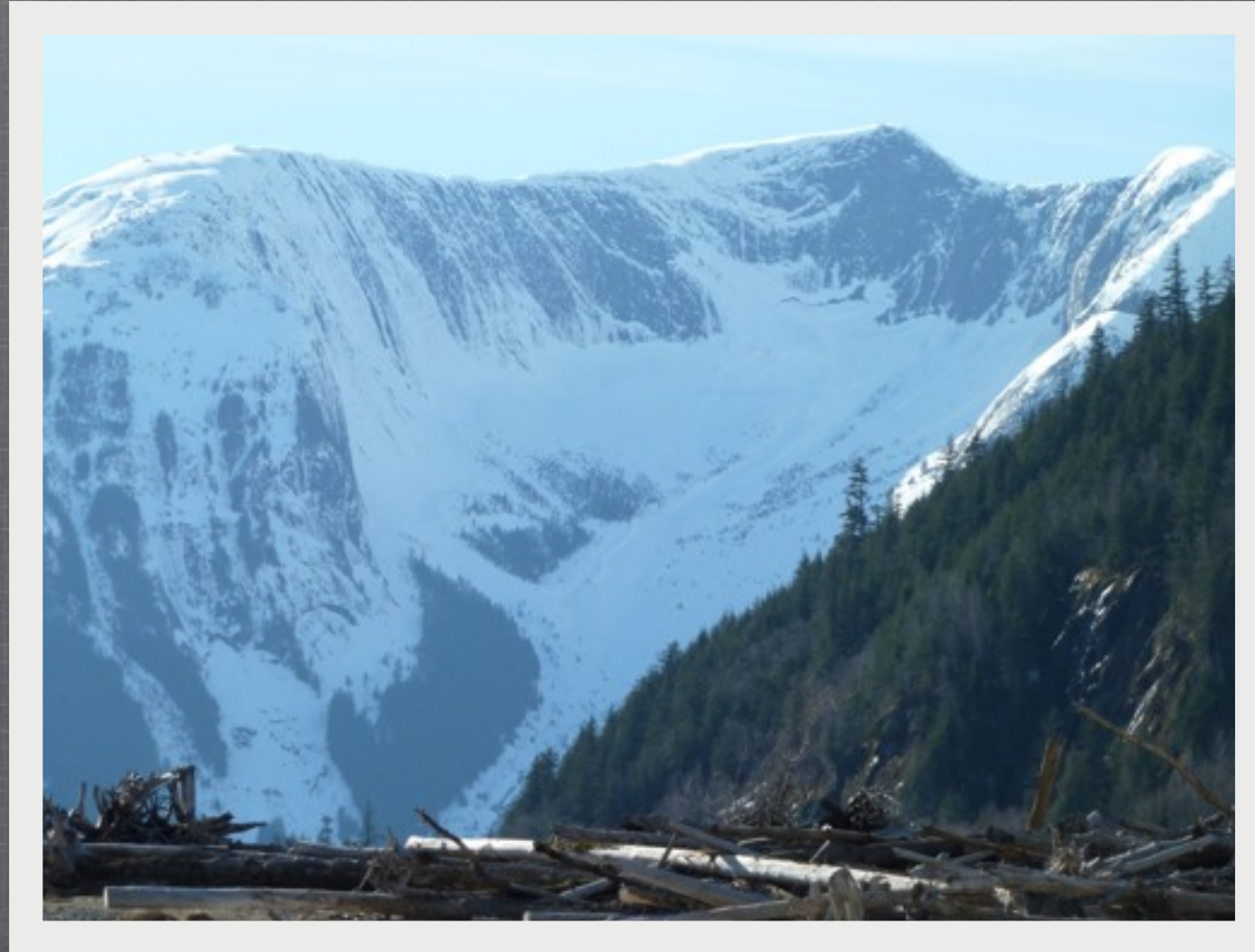


Climate Change Adaptation Planning for Northwest Skeena Communities



Presented to Terrace City Council
April 26, 2011

Funded by:

~ The Future Forest Ecosystem Scientific Council

Project Leaders:

~ Coast Tsimshian Resources, LP

~ Brinkman Forest Ltd

Research Partners & Advisors:

~ World Wildlife Fund, Canada

~ UBC Dept of Sociology

~ UBC Dept of Forestry

~ ESSA Technologies Ltd

~ Cortex Consultants

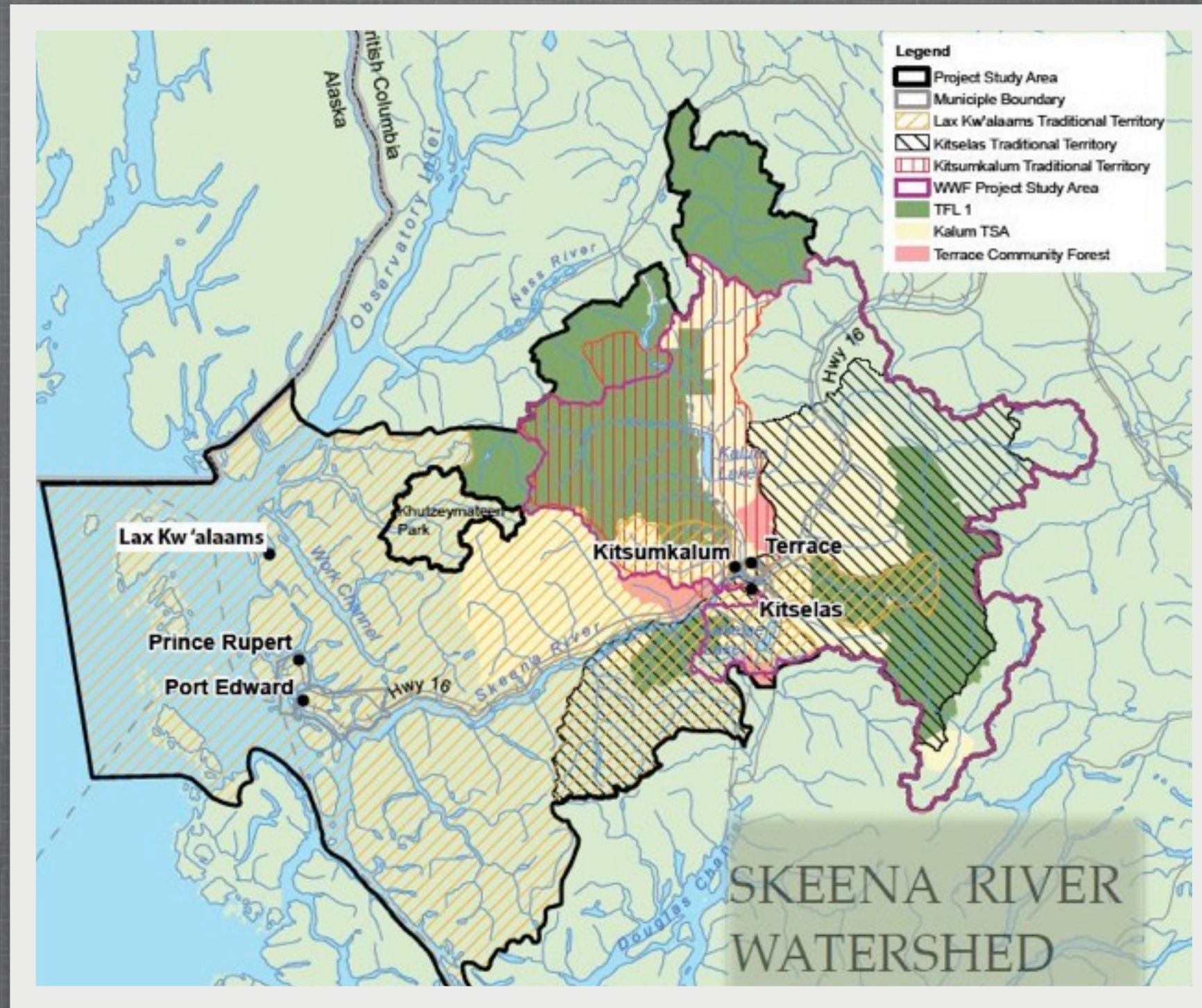
~ Environment Canada

~ BC Ministry of Environment

~ BC Ministry of Forests, Lands & Natural Resource Operations



PROJECT STUDY AREA



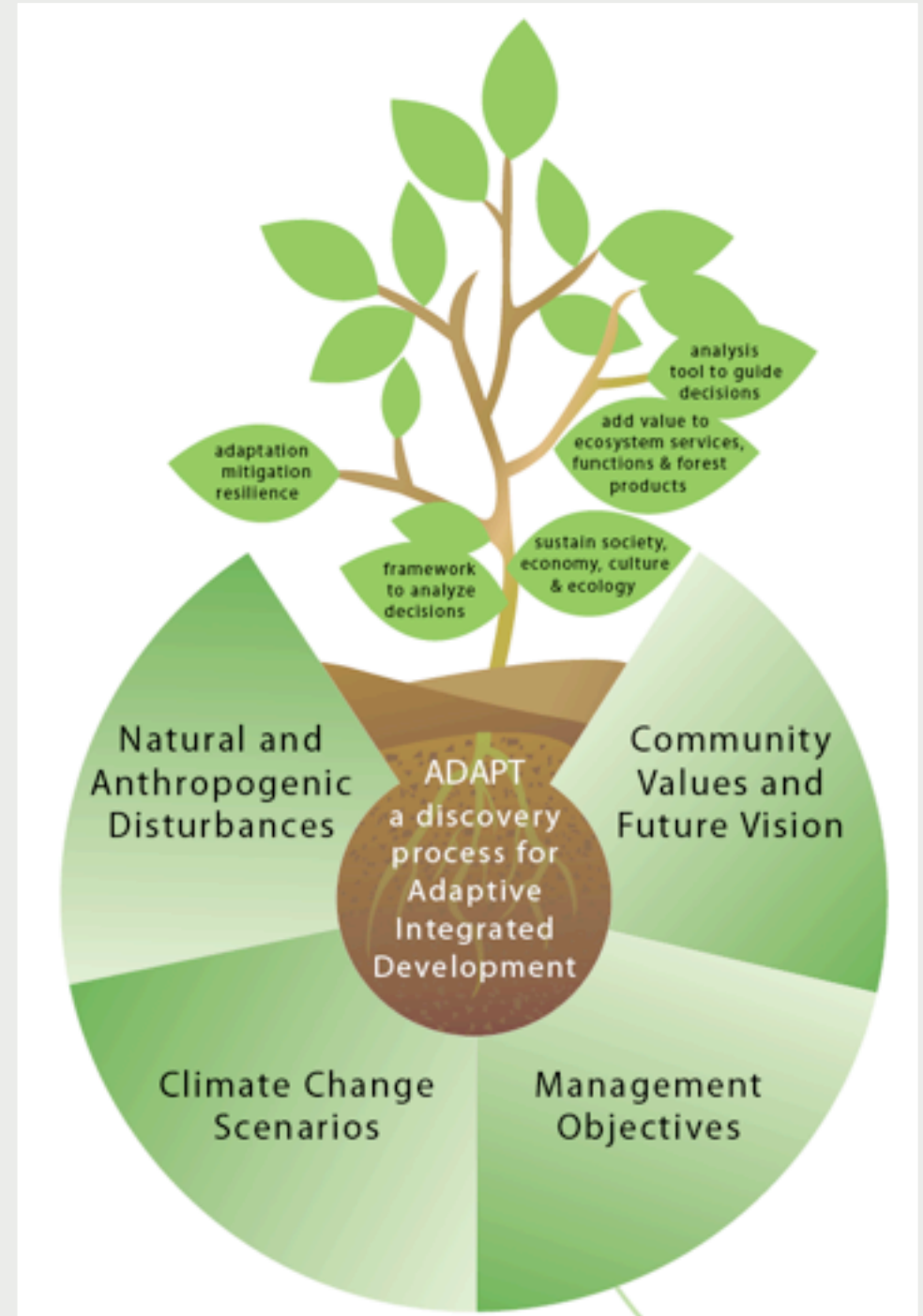
The larger FFESC study area encompasses the SRWCP study area (TFL #1 Watershed)

Research Questions

- What are the potential impacts of different climate and land-use scenarios on the water, fisheries, forest and non-timber forest values and resources of the NW Skeena region?
- How could climate change impact the cultural, social, and economic values of communities and stakeholders?
- What is the capacity for communities and stakeholders to mitigate and adapt to potential climate change scenarios?
- How could natural resource and land management be restructured to promote ecosystem resilience while optimizing opportunities for cultural sustainability and socio-economic development in light of potential climate change impacts?

PROJECT COMPONENTS

- Sociological Research
- Vegetation Modelling
- Fisheries Sensitive Watershed Monitoring Framework
- Community Engagement
- Cumulative Effects Analysis (through coordination with SRWCP)



Sociological Research

- 40 + interviews with leaders, residents, business owners, and decision makers across 4 communities
- Identify community values and assess institutional capacity to adapt to climate change
- Inform direction of biophysical modelling based on community values
- Compare traditional ecological knowledge with model results

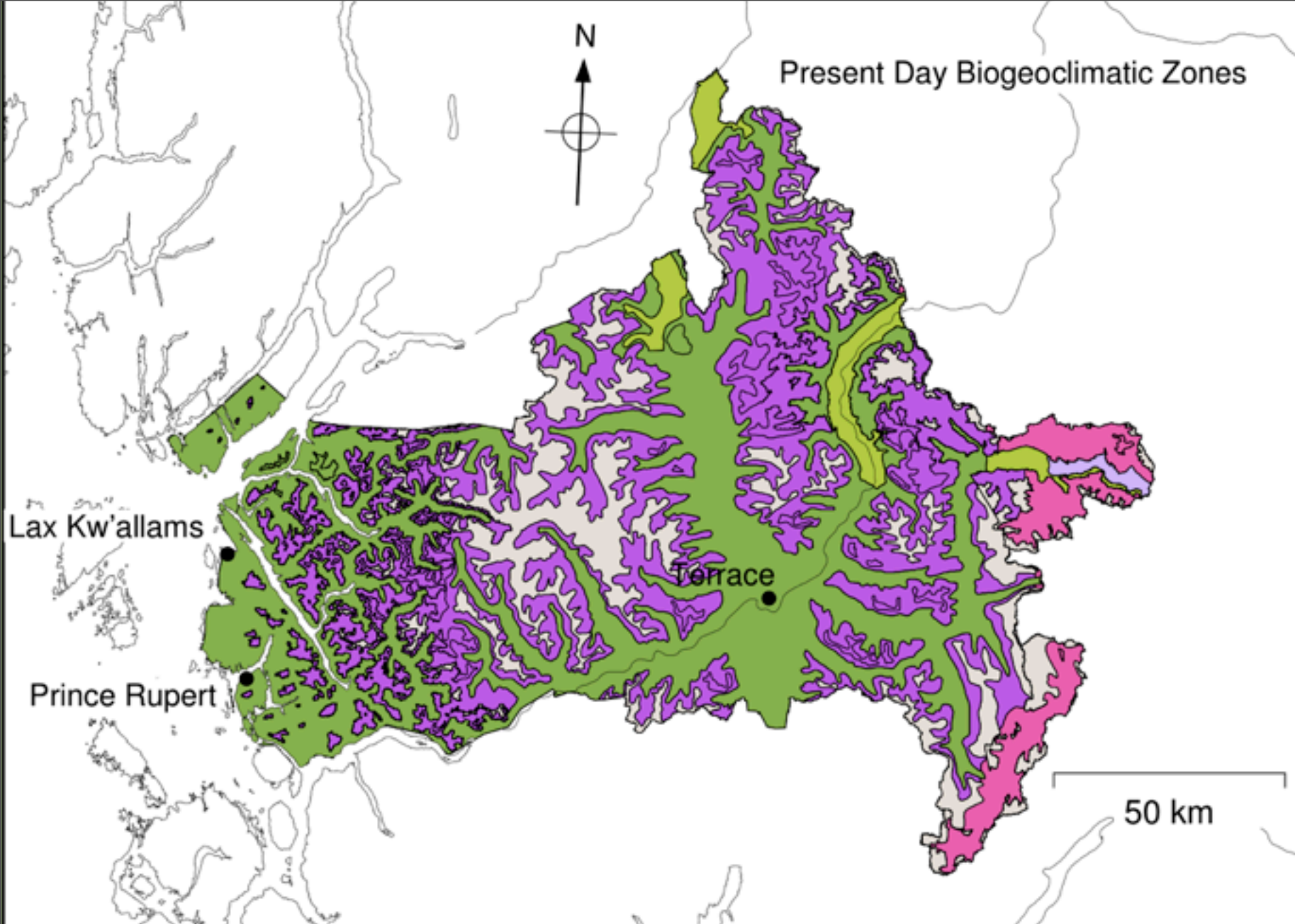


Vegetation and Climate Modelling



Predicting forest fire severity and frequency under alternative climate change scenarios is one potential application of the LPJ-Guess Model.

- Use climate scenarios and biogeoclimatic zone mapping in combination with LPJ-Guess model to predict future vegetation growth
- Defines limiting conditions of 19 tree species for the Skeena region
- Where possible, modelling of specific values, resources and regions based on sociological research findings
- Possible outputs include: future forest species and composition, carbon accounting, harvested wood and standing volume, natural disturbance levels, runoff, projections for non-timber forest products



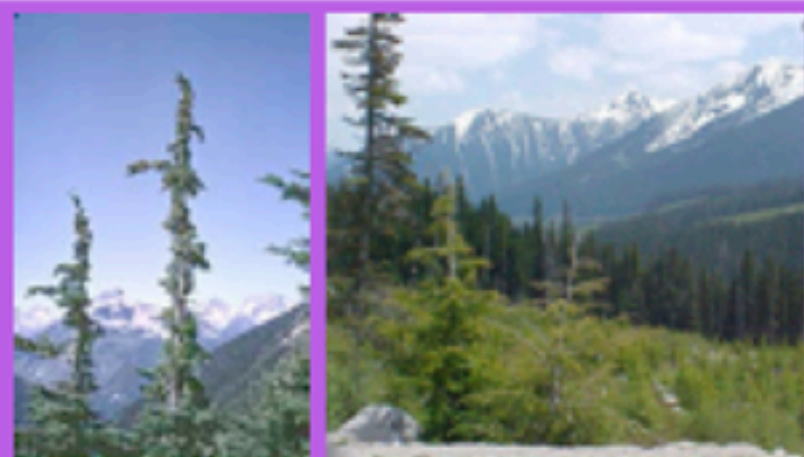
Interior Cedar-Hemlock (ICH)



Alpine Tundra (AT)



Coastal Western Hemlock (CWH)



Mountain Hemlock (MH)

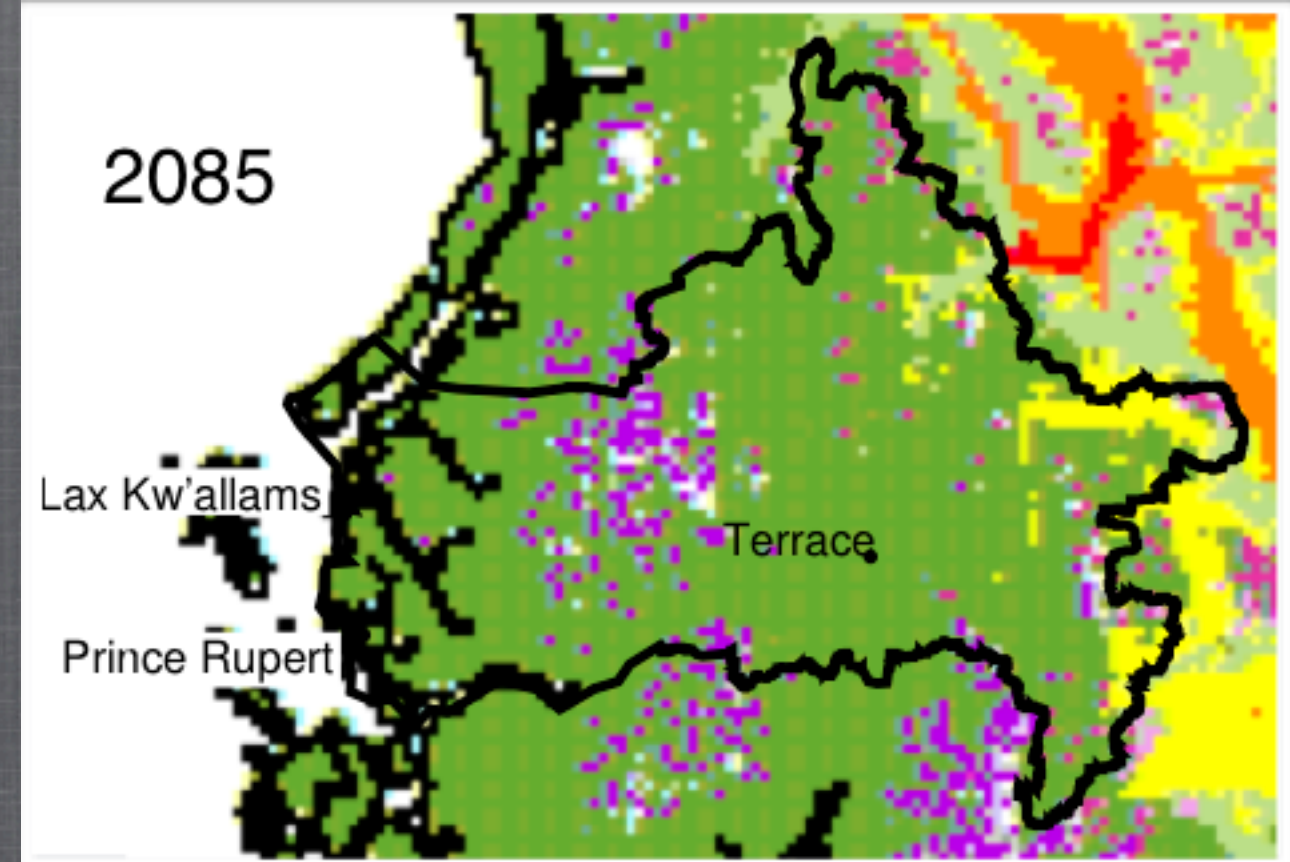
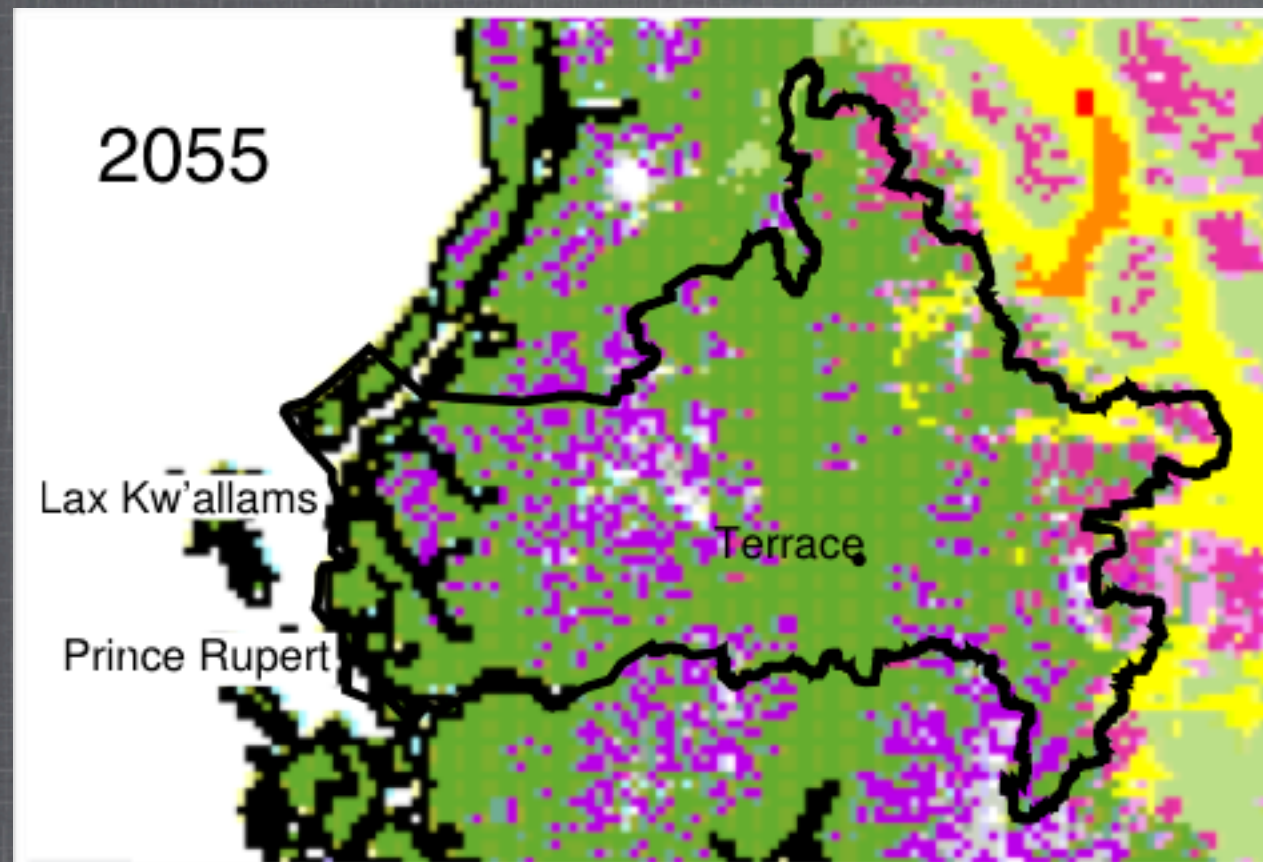
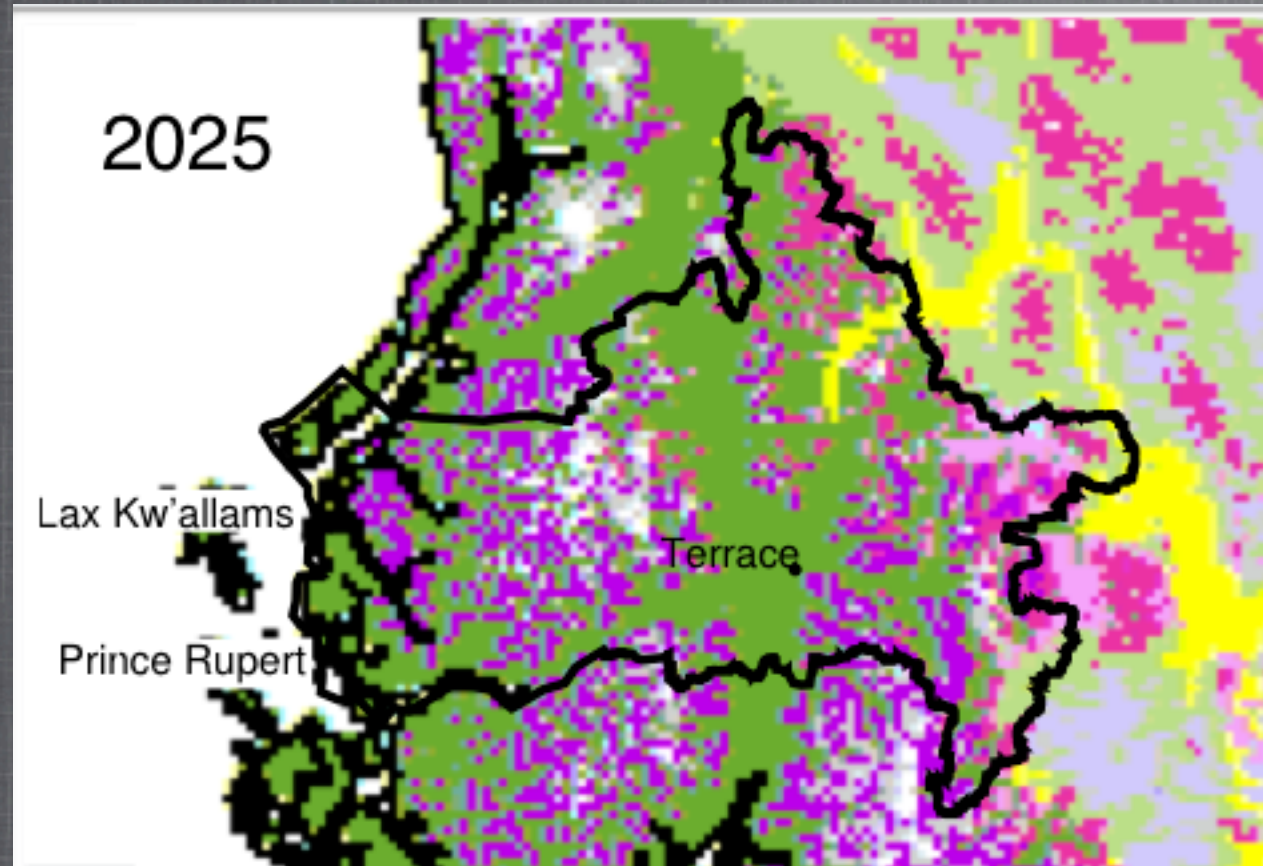


Interior Douglas Fir (IDF)



Engelmann Spruce-Subalpine Fir (ESSF)

Projected shifts in species composition over time based on the International Panel on Climate Change 2007 B2 Scenario. Expansion of CWH, encroachment of IDF, reduction of MH, ESSF, SBS, & AT. (See also Climate Change in the NW Skeena brochure).



Fisheries Sensitive Watershed Monitoring Framework

- FFESC funding enables the addition of climate change factors into monitoring framework being developed to test effectiveness of FSW designation and regulated management strategies in cooperation with MOE & NR Canada
- Compile baseline data in Lakelse Watershed
- Discussions underway to engage students from NWCC in training and monitoring as summer employment

Community Engagement

- Scenario planning with advisors and interested parties, identified through sociological research
- Tools for adaptation planning developed in collaboration with community representatives
- Community Workshops to share and review results
- Opportunities for future partnerships



How will CTR use this information ?

- Policy-relevant information to encourage restructuring of land management policies in support of adaptive, integrated management that is economically and environmentally viable
- Baseline information to assess effectiveness of operational decisions with respect to longterm sustainability
- Planning for investment and development of non-timber forest products, including carbon sequestration and bio-energy
- Scenarios used to explore integrated management of multiple resources
- A forum for community discussion around natural resources including but not limited to timber.

How will community and stakeholders benefit?

- Results of sociological, FSW, and vegetation modelling prepared and presented to all participants in various formats (maps, illustrations, reports, digital media, interactive workshops)
- Access to range of data useful for future planning and identification of impacts and opportunities related to climate change
- Project website and database of information for public use
- Sustainability matrices illustrating priorities and perceived conditions of community and environmental resources (see next slides)
- Knowledge and gap analysis to guide future regional work that will benefit the community

COMMUNITY RESOURCES

Indicators of community well-being		In my opinion, the condition of these resources was/is...											
Ranking		Under threat/ Poor condition										Flourishing/ Very good condition	Don't know
<input type="checkbox"/>	Small business development	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Outdoor recreation	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Environmental protection	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Local infrastructure (bridges, roads, river dikes, and utilities)	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Natural resource trade and exporting	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Access to education and skills training	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Heritage and local culture	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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<input type="checkbox"/>	Forest industry	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Tourism	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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<input type="checkbox"/>	Local government and city administration	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Understanding how different individuals and organizations perceive and rank community resources is a central part of the research project. This information can also be used to identify focus areas for future planning based on community values.

ENVIRONMENTAL RESOURCES

Resources important for well-being of the region		In my opinion, the condition of these resources was/is...										
Ranking		Under threat/ Poor condition									Flourishing/ Very good condition	Don't know
<input type="checkbox"/>	Mushrooms	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Salmon	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Forest health and diversity	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Rivers and waterways	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Oolichan	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Berries	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Timber Supply	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Drinking water	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	Animals and wild game	Current state	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		20 years ago	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Identifying environmental resources considered important to local communities will help to direct scientific modelling and the production of policy relevant research for integrated and adaptive management. The findings from the 'matrix' will be brought back to the community and discussed, along with possible action plans, during an interactive workshop.

For more information...

Project Website:

<http://brinkmanforest.com/ffesc>

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