

Central Interior Workshop Notes

June 5-7

Kamloops - June 5, 2007

Name	Affiliation	Contact
Louis Gosselin	Thompson River University (TRU)	Not for general distribution, NCC maintains a master contact list. Please contact us for more information.
Rod DeBoice	Ministry of Forests and Range	
Adrian Wall	DFO	
Heather Stalberg	DFO	
Karyn Sutherland	FORREX	
Tom Dickinson	TRU / Kamloops Naturalists	
Andrea Barnett	BC Cattleman's	
Art Tautz	MoE	
Coral deShield	Fraser Basin Council	

Impacts Comments:

- Climate change: loss of glaciers
- Mountain Pine Beetle (MPB)
 - Ponderosa in south; lodgepole in north
 - Also Western Pine Beetle
 - Watershed hydrology – loss of canopy impacts peak flow
 - Hydrologists have prioritized watersheds – include in atlas
 - ~ 103 First Nations communities in Beetle impacted area – affecting traditional and cultural land uses
 - First Nations Forestry Council (FNFC) President - Chief David Walkem (email: dwalkem@nicolavalley.com) and Vice-President - Chief Lynda Price (unrcc@telus.net) - <http://www.fnmpb.ca>
 - First Nations Mountain Pine Beetle Initiative" (FNMPBI) - Dan George (Prince George) - www.fnmpbi.com
 - Communities in Central Interior – sawmill towns, economic development and diversity (e.g. turning to minerals/mining)
 - Hat Creek – coal gas is issue
- Agriculture lands
 - Sectioning off land
 - Golf course / hobby farm
- Stump Lakes etc – lakeshore development
 - Sensitive ecosystems are close to water and these are impacted by development

- Water extraction – degree of threat – Rod Ptolemy
 - Nicola drainage – temperature sensitive system (shade removal issue)
 - FRBC funded research
 - Nicola Water Use Management Plan (WUMP)
<http://www.nicolawump.ca>
 - Bruce Beach -Tolko
 - Jerry Canvel – Merritt - Aspen Planners Ltd
- Potential impact - independent hydro power generation
- Invasives
 - Perch – spinning rod
 - Plants (e.g. knapweed)
- Contact re: land use planning – Phil Hallinan – Thompson Regional manager for Fraser Basin Council phallinan@fraserbasin.bc.ca;
<http://www.fraserbasin.bc.ca/programs/tr.html>
- Roads and linear
- Commercial recreation: lodges (also fishing and ATV) – especially impact on lakes and rivers
 - Recreation tends to target rare ecosystems

Data & Target lists comments/contacts:

- Ecological Reserves have lists of plant species found there
 - See Evelyn Hamilton. Stewards for each ER should have
- Federation of BC Naturalists – swans of South Thompson
- NGO collecting bird data – Rick Howie
- Breeding Bird Atlas – Dick Cannings
- Nicola Similkameen Innovative Forest Society
- Thompson Nicola Regional District (TNRD): GIS based habitat mapping for Sockeye and Lake Char (could also be in DFO Mapster)
 - DFO contact - Bob Harning
- For Okanagan: SOSCP and OCCP: people sitting on the boards have datasets
- Gardeners in the area: mark on calendar when 1st bird show up etc
 - Provide info for climate change assessment
- Kamloops bird count (May 24)
- Scout Island Nature Centre (Williams Lake): Sue Hemple
- MoE Wildlife Branch: Doug Jury
- First Nations Traditional Ecological Knowledge (TEK). Lots of resources expended on collection
- Upper Nicola Band has a successful data sharing partnership with Nicola Similkameen Innovative Forest Society
 - Linda Simon – FN Forest Council CEO

- Nicola Tribal Association: Upper Nicola and 3 other FN sharing data across traditional territory in Upper Nicola/Upper Similkameen
- BC Hydro Water Use Plans: water, water management, flow, fish distribution, wildlife
 - Kevin Conlin [see Kristy Ciruna for contact info]
- PEM being done local to Nicola
- Forestry company inventory of roads
- First Nation Forest Council: 8.9 million in government funding: agreed to collect data to provincial standards
 - 88-90 of 103 communities have submitted impacts to Council (but will they share?) Brenda Almjam. Linda Simon

EAU_BC Comments:

- Small lakes in Cariboo: If drop lakes less than 1.0 hectares, will misrepresent the region (types of water resources available); Small lakes and **wetlands** are important components for small species.

Watershed Decision Support Tool/System Comments:

- ECA – Equivalent Clearcut Area
- Wetlands – saline lakes (often small lakes) have different species use (waterfowl etc)
- UBC Okanagan Campus – water resources research
- Dave Coult – Forest Service water research
 - Understory in Pine forest: trying to get industry to leave stands with good understory.
- Amphibians
- Threat: Impervious areas. Use satellite imagery
 - Lawns in urban areas considered impervious
- Ducks Unlimited and Canadian Wildlife Service – wetlands for Chilcotin – habitat assessment
- **Q:** Will DSS include future scenarios – change over time (e.g. provincial invasives). **A:** Yes, we will be incorporating predicted future states of nature wherever possible. For example, predicted beetle kill, effects of climate change etc.

Sharing:

- Allow agencies to share priorities (share with funding partners)
- **Q:** Will the indicators be dynamic? (Can indicators be interchanged) **A:** Partially, indicators will be updated as new information becomes available and as funding allows, but they will not be real-time live.
- Fraser Basin pilot: includes portions of each of 3 Beetle Action Committees



- Share info with ILMB – opening of Land Use Plan (going to cabinet) with regards to impact of MPB
 - Ken Gorslan – Kamloops Regional Director
- Feedback from Okanagan potential users
- Groups: providing and collecting data

General Comments/Questions:

- If we are going to use slides showing clear cuts and dead trees on slopes as examples of impacts due to MPB, need to show positive alternative. E.g. Bowron Lake clear-cut 30 years after...healthiest forest around.
- Maintenance of DSS? **A:** TBD over next 2 years. Response: this is a risk
- Other risks? **A:** collecting data for short term, then stopping – alienate partners
- Funding? **A:** foundations, partners, independent, as well as government (there are advantages to doing this work outside of government – alternative funding)
- Expert input to water DSS? **A:** through expert review/workshops of priorities and goals; how/what captured; we would work to incorporate expert input
- Roll-up? How far up/down roll-up? And links with Hectares BC? **A:** Could roll up since our analysis units will likely be 3rd order watersheds and these are nested within larger drainages. DST will not go to the stream reach scale at this point. NCC is on HaBC project team to ensure linkages

Williams Lake - June 6, 2007

Name	Affiliation	Contact
Kristina Luke-Airey	Technopro Forest Management	Not for general distribution, NCC maintains a master contact list. Please contact us for more information.
Norm Zirnhelt	BC MoE	
Sandy Hart	J.S Hart & Associates	
Richard Case	RL Case & Assoc.	
Barbara Coupe	Arboreal Communications Services	
Chris Swan	BC MoE	
Pat Teti	BC MoFR	
Peter Shaughnessy	NCC - Tatalayoko	

Impacts Comments:

- Land use impacts
 - Regional or local scale?
 - Local – impact is mountain bike
 - Regional – impact is MPB and associated hydrological impacts
 - Agricultural – major use in region
 - Along rivers
 - Impact on water supply – lots of water withdrawal
 - Water licensing – big problem
 - Licensed to available supply – overuse
 - Riparian damage from agriculture
 - Livestock impact stream bank
 - Development to shoreline – removal of vegetation
 - Small landowners often overlooked – not addressed in regional sense – cumulative impact
- MPB impact on hydrology – not uniform
 - Differentiate lake sensitivity in terms of nutrients and sediment transport
- Road maintenance for silviculture – brings different problems
- Recreation issues – related to road access – causes fragmentation
- Cut blocks – causes fragmentation – conflict (salvage quick or save recreation values)
- Grasslands – conflict – mountain bike and motorized use – landscape cannot handle pressure
 - ATV and dirtbikes: motorized use is big issue across the province
 - No designated “go to” regions or areas to avoid for snowmobile
 - Resource roads widely used
- Mining: Fish Lake tailing pond proposal

- Retention planning
 - where are:
 - ecological values highest
 - non-pine / understory
 - valuable wildlife habitat and linked corridors (cross watershed and within watershed)
 - needed for planners to implement enhanced retention targets suggested by chief forester
 - Inspire / motivate planners to consider long term impacts

Data & target lists comments/contacts:

- Ministry of Environment: list of high priority land acquisition for region
- ILMB data contact: Robin Hoffos (planning leader Williams Lake)
 - Sub-regional plans
 - Biodiversity
- Ecosystem data: Julie Steciw (Regional Biologist Williams Lake)
- Sensitivity Analysis to hydrological impacts – John Youds (Section Head Ecosystems Williams Lake)
- 3rd order watershed analysis – logging and beetle susceptibility – on web (Forest Practices Branch? – “Pine Beetle Stewardship”)
 - http://www.for.gov.bc.ca/hfp/mountain_pine_beetle/stewardship
 - [also includes impacts info]
- Southern Interior Region hydrological abstracts database
- MPB Bibliography – MoF? – on same website as above
- C-CBAC: Conservation – Richard Case
- Williams Lake Naturalists
- Baker Creek Conservation Society – Tracy [note –Baker Creek Cons. Society participated in NCC session in second week of June]
- MoF Wildlife Habitat Ecologist – Harold Armleder– Mountain Cariboo; mule deer
- Federal species at risk – see Harold Armleder or John Youds
- Cariboo Chilcotin Conservation Society – Marg Evans
 - Has list serve which can be used to distribute requests
- Don Laurence – DFO in Williams Lake
- Quesnel River Research Centre – Likely
- Local First Nation Bands – Tribal Councils – TNG – Tilko National government office in Williams Lake
- Guide Outfitters and Trappers associations
 - Flip through old land use plan
 - ILMB should have list of participants



EAU_BC Comments:

- Environment Canada benthic biota – 5 clusters for Fraser River (referring to slides with biota on bottom – why not start with biota on top)
 - Different where like to live
- OK and Skeena – lots of data
- Stephanie Sylvester – Environment Canada – key contact for this
- **Q:** Is it being published or open for review? **A:** Both, very soon.

Watershed Decision Support Tool/System Comments:

- Climate change as part of DST
 - Christine Weiss – Future Forest Ecosystems Initiative – Kelowna
- UBC: There are 2 other modelers besides Marcus we should be in contact with
- Long term economic analysis of trade-offs?
 - Future benefits of leaving wood or harvesting.

General Comments/Questions:

- **Q:** What about connectivity in 2024 when the beetle have killed all the pine? **A:** connectivity team will work with group thinking about other values.

Prince George - June 6, 2007

Name	Affiliation	Contact
Michael Stalberg	Ministry of Environment	Not for general distribution, NCC maintains a master contact list. Please contact us for more information.
Chris Ritchie	Ministry of Environment	
Leslie Mckinley	Ministry of Environment	
Ellen Pettecrew	UNBC	
Stephen Déry	UNBC	
Todd Whitcombe	UNBC	

Impacts Comments:

- Include airsheds
- MPB structure in ecosystems
- Mining – waxes and wanes – look at future potential
- Tourism and use of aquatic
 - Systems that were isolated now being developed
 - Houseboats, personal watercraft – vacationing on water, not on edge
- ATV – chewing up soil – happening in our lifetime
 - “Everybody has them”
 - Animal and bird displacement
- Important to separate impacts from energy and impacts from mining
 - All future development
 - Seismic lines/corridors – open access for ATV
- Independent power – will fracture ecosystems
- Leases for water rights: sustainable energy – run of river generation
- Effects of no glaciers – although there are no glaciers in Central Interior, water in CI is fed from glaciers upstream

Data & target lists comments/contacts:

- ** requested to put list of data compiled on website
- Local projects done by licensees – pulled together lots of data
 - Ecosystem representation for Vanderhoof Forest District
 - Contacts with stakeholders
- Will Mackenzie – wetlands
- Laura Friis – herpetology (Nancy-Anne)
- MoE Ecosystem Section – Ecosystem biologist
- MoFR, ILMB
- Forest Licensees – FIA Funded project – will be accessible

- Contacts through FORREX and FBC
- Canadian Forest Service – Northern (Prince George) office
- UNBC – GIS students do independent GIS studies
- Relationships with licensees
- BC Mines – Lake sediments – made public
- BC Lake Management Society – historical information on lakes in “our” region
 - 15-20 lakes
 - Bruce Carmichael
- Watershed Assessments – related to (conducted because of) impacts of MPB
- Remote Sensing – NASA Satellites etc – available on-line
- Wildlife Fisheries Group
 - 3 research basins
- McGregor model forest
- UNBC Research Office – active list of research projects. Also available on-line.

EAU_BC Comments:

- **Q:** What defines a mainstem? **A:** Mainstem refers to a river ecosystem type that has a high stream magnitude when compared to the stream magnitude of its primary drainage network (is connected to lots of branched streams).
- **Q:** Why isn't Englishman River a mainstem? **A:** Would have to look into the data further.
- **Q:** Did we work with Environment Canada in developing EAU_BC? **A:** Some of the data came from Environment Canada, but they weren't a major partner.

Watershed Decision Support Tool/System Comments:

- Quesnel River Watershed. UNBC hired GIS staff to put together DB for entire watershed
 - Soil, remote sense etc
 - Usable tool for researchers, particularly oversea researchers looking for part of province to conduct specific studies
 - Sees our tool as something similar, but on broader geography.
- **Q:** Are we working with Environment Canada in developing this tool? **A:** Not at this point.

General Comments/Questions:

- None.

Smithers - June 7, 2007

Name	Affiliation	Contact
Greg Brown	Pembina	Not for general distribution, NCC maintains a master contact list. Please contact us for more information.
Kara Jenne	Northwest Community College	
Gary Baptiste	MoE / OWHC	
Stefan Schug	Office of Wet'suwet'en	
Katharine Staiger	NWCC	
Don Morgan	MoFR Research, BV Centre	
Aaron Trewbridge	Bulkley Valley Research Centre	

Impacts Comments:

- **Q:** What scale? **A:** We'll include as much information as possible at different scales. However, everything is rolled up into 500 hectare hexagons (terrestrial impacts) or 3rd order watersheds (terrestrial impacts).
- Independent power producers (IPP) – looking at all watersheds
 - Certified green power could result in new power corridors
- Natural disturbance regimes
 - Parminter 1982
 - Doug Steventon – Morice TSA – Range of natural variability and how to deal with in forestry
- Temporal challenges
 - Changes in site series / fire ecosystems
 - Changes in development
- Landslides – stability and climate change
 - Martin Goertsma – Prince George Regional Office
 - Jim Schwab / Dave Wilford – geomorphology and natural disaster – links to climate change
- Linear projects – new power, pipe, rail
 - NW part of central interior still relatively undisturbed
- Thresholds for water quality
 - Water quality identified as important value in LRMP
 - Morice Lake – should show as important
 - Proposal to put in mine – Cortex did analysis
- Ranching – orthophosphates
 - Doesn't take much to tip system
- Lucky Shipline Mine – proposal for Nanica
 - If goes through will result in powerline around lake
- Lots of powerline proposals – potential impacts

Data & target lists comments/contacts:

- Water Use Plan – Morice LRMP
- Wet'suwet'en have an ecosystem classification of their traditional territory
 - 122 ecosystems, 42 are less than 1% of study area (small slivers in landscape)
 - Work with PEM and First Nations traditional knowledge
 - **Q:** how will we incorporate this type of information? **A:** attribute the information to the planning units (500 hectare hexagons and 3rd order watersheds). Work with data provider to ensure accurately represented. Ensure values are captured in target lists.
- Complex dynamic systems
 - Species depend on seral stages – natural dynamics
 - Account for temporal changes
- Range of Natural Areas
 - Craig deLong
 - John Slat – wilds forests – written with Pojar et al
 - Trevor Goward – ancient forest ecosystem – especially ICH
- Rocky Mountain Trench – sub-xeric Pine mushroom
- Site data for BEC (sites/plot data)
 - Will Mckenzie (MoFR Research Branch – Smithers)
 - Also contact for wetlands and alpine
 - BC systems with NW Pacific State
- NW Systems research
 - Alan Banner (Dennis Lloyd for the area)
- Ecology
 - Craig DeLong – Prince George ecologist for Vanderhoof to McBride and north
- Go to regional science for Smithers
- Caribou – species at risk
 - Dale Seip – MoFR Wildlife researcher – Prince George area
 - Debbie Cichowski – Tweedsmuir
 - Ric Marshall – Smithers
 - Ann Hetherington – animals committee
 - Ian Hatter – provincial Caribou specialists – Mtn Caribou strategy
- ****Be sure to X-walk Terrestrial Ecosystems [if using Natureserve categories]**
- Karen Pimart – habitat manager – good conduit – did work on Taku
- Northern strip of Central Interior going into Boreal
 - knowledge poor for BEC (lines wrong)
 - lots of pressures there
 - data hole (gap)
 - Lots of information in environmental assessments, but work buried

- First Nations
 - Office of Wet'suwet'en
 - Dave Dewit – lands manager
 - Carrier – Sekanni
 - Williams Lake
- Wolverine – species at risk
 - Found in ICH by trappers
 - Seem to be increasing populations
 - Eric Leroth – MoE Victoria
- Goshawks – should not be in the SAR list (very adaptable) but species of concern
- Connectivity
 - Andrew Fall (Cortex) – SELES – paper on connectivity and caribou
- Talk to regional ILMB
- Land use plan – didn't work to level of detail available (largest scale data)
- [review LRMPs for values of important to each table] – NCC
- Wet'suwet'en – interpretive matrix
 - 101 plant communities important to First Nations and valued for traditional use
 - Being added to ad work with elders
- PEM for Bulkley being redone
 - Timberline in Prince George
- Columbia Basin
 - Key ecological functions
 - Key cultural functions – use of landscape (e.g. berries)
- Include local significance vs. global significance
- Some animals provide ecological function which cannot be replaced
 - Categorized function (is different than umbrella species)
 - How to maintain functions given ecosystems are changing?
 - Bruce Marco – USFS wildlife researcher
- New PEM/TEM – upper Bell-Irving
- RESCAN [consulting firm] has lots of data (localized studies)

EAU_BC Comments:

- Riparian does not come up in TEM mapping, so this is good
- Do e-mail blitz when EAU_BC in warehouse, and also 2 page brochure
 - What it contains
 - Some potential uses
- **Q:** Can we put gazetted names and some other “hard to get” data into this? **A:** Gazetted names are not currently part of EAU BC, but could be linked by watershed code in future.

- **Q:** Does it included whether lakes are a dimictic or monomictic system – should be part
 - Oxygen etc relies on etc.
 - **A:** This factor is included indirectly since data on lake characteristics (e.g.dimictic/monomictic) is not available for most lakes in BC. To address this temperature (max July epilimnion temperature) and degree days above 4°C (influences turn-over) were calculated for each lake.

Watershed Decision Support Tool/System Comments:

- Threat: Cattle in riparian – poop in lakes and rivers
 - Doesn't take much phosphates to alter system
- Year 2 for province-wide system seems very aggressive (if year 1 is only for Fraser Basin)
- Threat: coalbed methane in headwaters – local issue
 - Headwaters of Nass and Skeena – gas tenure – subalpine grasslands
 - Coppan watershed
- DFO Skeena watershed atlas
 - “BC 16” programs – feeds to FISS?
 - Federal fisheries – related to escapement
 - Alan Godesfeld
- Make final product available as GIS layers – so can bring into own GIS
- Babine/Morice inventories – some areas data rich, some data poor
 - Gary Baptiste 12 years Wet'suwet'en fisheries
- Water quality workshop middle/end July
 - What Wet'suwet'en want to see in water use plan
 - Agricultural impacts – biggest threat in Morice
 - Cows in streams (once out of sight of roads) – DFO not monitoring

General Comments/Questions:

- ***Smithers impacts/targets are different than in Cariboo
- People from MoE and ILMB planners were not aware of this ERA project
- Too much species approach
 - Look at plant communities and build up
- LRMP not signed off yet – cattle and mining want in
 - important to Wet'suwet'en – 90% of salmon from there – high values
 - Distinctive reaches: Morice Lake, Nanica River, Upper Morice

Hardcopy Questionnaire Comments

- Very relevant for watershed aspects of land-use planning
- As with any subjective merging of multi-parameter models like this, it would be useful and educational to have transparent algorithms or factor weightings that would be visible on the website
- I think it's important to figure out how to incorporate subjective info from watershed groups that have existed for 20+ years

Conclusions from Week 1 Workshop:

- Use three tiers when collecting data, because of size of region and distinct characteristics of sub-regions (what's important in Smithers differs from what's important in 100 Mile House):
 1. Data covering entire Ecoregion
 2. Data covering 1 of 8 sub-regions in study
 3. localized data
- Implement methods for communicating where we are in process, draft results etc., either through email newsletter, or updated page on the website? Maintain connections built through roadshow workshops. Start to look at when our next workshops or events will be held in the region?
- Keep up to date list of contacts for each team to ensure good communication and less overlap.
- Develop clearer description of Watershed Decision Support Tool
- We should consider having different weightings for impacts in different areas. Particularly the Smithers workshop emphasized and raised some different concerns.