

APPENDIX 1 - Climate Change Adaptation Research Projects Database March 2009 (FFESC Research Needs Gap Analysis)

No.	Funder	Research Project Title	Principal Investigator	Lead Agency	Partners	Start date	End date
1	BCKDF/CFI	Adaptability of Northern Forests to Future Climate Change	Scott Green	UNBC			
2	Benefaction	Centre for Sustainability and Social Enterprise Feasibility Study	James Tansey	UBC-Business			
3	CFCAS	A Regional Carbon Balance and GIS Model for a Sub-Boreal Research Forest in Central BC	Art Fredeen	UNBC	CFS		
4	CFCAS	Western Canadian Cryospheric Network -effects of climate on glaciers and freshwater resources	Brian Menounis	UNBC	UBC-Garry Clarke, Dan Moore		
6	CFCAS	Integrating climate variability into national estimates of forest carbon accounting (3PG Project)	Nick Coops	UBC	Can.Carbon Project		
160	CFCAS	Reconstructing Long Term Hydrological Variability and Flow Extremes on the Columbia River, British Columbia, using Varved Lacustrine Sediment	Scott Lamoureux	Queens		2002	2006
161	CFCAS	Developing a proxy climate database for the last 300 years in the Canadian Cordillera	Brian Luckman	U Western Ont.		2001	2004
162	CFCAS	Vegetation/Carbon Cycle feedbacks on Quaternary Climate	Andrew Weaver	UVic		2001	2004
7	CFI	Carbon dynamics of the sub-boreal spruce forest in the Cordilleran region of western Canada: the Interior BC Flux Station	Art Fredeen	UNBC	CFS		
8	CFI	Centre for Interactive Research on Sustainability -building	John Robinson	UBC-IRES	IRES		
10	CFI/NSERC	CRC Chair in Climate Prediction and Predictability	Youmin Tang	UNBC			
11	CFS-MPBI	Using Reconstructed Outbreak Histories of Mountain Pine Beelte, Fire and Climate to Predict the Risk of Future Outbreaks	Kathy Lewis	UNBC	MFR		
12	CFS	National Forest Carbon Accounting System for Canada (CBM-CFS3 model)	Werner Kurz	CFS	various	2002	2009+
13	City of PG	Climate Change Adaptation trends, projections and application	Eric Rapaport	UNBC			
14	EnvCan	Adaptation, Mitigation and Sustainable Development business approaches	James Tansey	UBC-Business			
15	EnvCan	Sustainability Guidelines for assessing adaptation options	James Tansey	UBC-Business			
16	EnvCan	Expanding the dialogue on climate change and water management in the Okanagan Basin	Stewart Cohen	UBC	AIRD Env Can		
17	invCan-BERM	BERMS-Boreal Ecosystem Research & Monitoring Sites - not in BC	Andy Black	UBC			ongoing
18	FFESC	Regeneration Vulnerability Assessment for Dominant Tree Species throughout the Central Interior of British Columbia	Craig Nitschke	BVRC	UBC, MFR	2008	2010
19	FFESC	A Study of Tree Species Vulnerability and Adaptation to Climate Change	Mark Johnston	Sask Res Council	unknown	2008	2010
20	FFESC	Climate change and fire management research forum	Nathalie Lavoie	MFR	unknown	2008	2010
21	FFESC	Potential impacts of climate change on the distribution of ecosystems and tree species in British Columbia	Sally Aitken	UBC	MFR	2008	2010
22	FIA-FSP	MPB outbreaks in western Canada: coupled influences of climatic variation and stand development	Dan Moore	UBC			
23	FIA-FSP	Climate Variables and Dothistroma Development: Tools for Future Risk Assessment	Kathy Lewis	UNBC	MFR		
24	FIA-FSP	Relationship between climate, forest practices and incidence of Dothistroma septospora	Kathy Lewis	UNBC	MFR		
25	FIA-FSP	Biodegradable Roads - adaptation to shorter winter logging season	Kevin Lyons	UBC			
26	FIA-FSP	Multi-scale assessment of forest carbon dynamics using remote sensing	Nick Coops	UBC			ongoing
28	FIA-FSP	Stream temperature responses to clearcut logging in interior BC	Scott Hinch	UBC			
159	FIA-FSP	The ecological resilience of lodgepole pine seed orchard crops	Joe Webber	ProSeed		2008	
29	FIA-FSP-FFEI	Improving access to high spatial-resolution climate data for climate change studies	Dave Spittlehouse	MFR	UBC	2008	
30	FIA-FSP-FFEI	Increasing the spatial range of ClimateBC	Dave Spittlehouse	MFR	UBC	2008	
31	FIA-FSP-FFEI	Preliminary assessments of climate change impacts on the carbon balance of B.C.'s forest ecosystems	Dave Spittlehouse	MFR	UBC, CFS	2008	
32	FIA-FSP-FFEI	Towards a framework for the operational assessment of ecological resilience in temperate and boreal ecosystems	Elizabeth Campbell	MFR	BVRC, UNBC	2008	2010
33	FIA-FSP-FFEI	Assisted migration adaptation trial	Greg O'Neill	MFR		2008	
34	FIA-FSP-LT	The Coastal Forest Chronosequence Sites-total carbon budget	Tony Trofymow	CFS			2008
35	FIA-FSP-MPB	The effects of MPB and salvage logging on carbon balance lodgepole pine forests of the northern-BC interior	Andy Black	UBC			2008
36	FIA-FSP-MPB	Effects of cumulative disturbances on an endangered whitebark pine-lichen ecological community of west central BC	SybilLe Haussler	UBC	BVRC	2007	2008
37	FIA-FSP-Sust	Tree species growth rates and susceptibility to insects and diseases in the southern ICH under current and possible future climatic conditions	Alan Vyse	TRU			2009+?
38	FIA-FSP-Sust	Drought Tolerance of Sub-maritime Douglas-fir Progeny	Barbara Hawkins	UVic			2009+?
39	FIA-FSP-Sust	Growth phenology and cold hardiness of 32 coastal Douglas-fir full-sib families	Barbara Hawkins	UVic			2008
40	FIA-FSP-Sust	GYMP: Representation of climate change impacts on forest growth in FORECAST	Brad Seely	UBC	MFR?		2009+?
41	FIA-FSP-Sust	Bark beetle response to climate change: a landscape-level risk model for British Columbia	Brian Aukema	UNBC	CFS		2009+?
42	FIA-FSP-Sust	Assessing ecosystem vulnerability to climate change from the tree- to stand- to landscape-level	Craig Nitschke	BVRC			2009+?
43	FIA-FSP-Sust	Determining Forest Health Impacts of Fuel Loading and Fires for Use by the CBM-CFS3 Carbon Accounting Model	Dave Spittlehouse	MFR	ESSA		2007
44	FIA-FSP-Sust	Future vegetation structure and vertebrate distributions based on changes in moisture balance and temperature	Fred Bunnell	UBC	BCMøE	2008	
45	FIA-FSP-Sust	Development and analysis of forest health databases, models, and economic impacts for BC: Spruce bark beetle & spruce; western spruce budworm and Douglas fir	Hairy Swain	UVic	PCIC		2009+?
46	FIA-FSP-Sust	Assessing Alternative Forest Management Strategies Under Climate Change	Harry Nelson	UBC		2008	
47	FIA-FSP-Sust	Underlying biological processes: the role of ectomycorrhizal fungal communities in early growth and relocation success of whitebark pine under climate change	Hugues Massicote	UNBC			2009+?
50	FIA-FSP-Sust	How will climate change affect the distribution and competitive performance of Centaurea maculosa and Linaria vulgaris in south interior grasslands?	Laughlan Fraser	TRU	MFR, Ag Can?	2008	
51	FIA-FSP-Sust	Climate and Outbreaks of Western Hemlock Looper in Coastal Forests of British Columbia	Lori Daniels	UBC			2008
52	FIA-FSP-Sust	Broad-scale investigation of the effects of streamside clear-cut timber harvesting on small stream ecosystems in British Columbia: analyses of large-scale databases to forecast impacts on physical and thermal habitats and their salmonid populations	Scott Hinch	UBC			2007
53	FIA-FSP-Sust	Long-term stream habitat and rainbow trout responses to alternative riparian management in north-central British Columbia	Scott Hinch	UBC			2008
54	FIA-FSP-Sust	Wildfire Risk in a Changing Climate	Steve Taylor	CFS		2008	
55	FIA-FSP-Sust	Effects of climate change on high-elevation plant communities and their ecological processes	Suzanne Simard	UBC	MFR	2008	
56	FIA-FSP-Sust	Modeling phenology and outbreaks of the western spruce budworm	V.G. Nealis	CFS			2009+?
57	FIA-FSP-TGV	Examining interactions between long-term climatic fluctuations and Douglas-fir productivity in the BC interior.	Scott Green	UNBC			2009+?
58	FIA-Landbase	Development of carbon measures and baseline information for sustainable forest management for the Fort Nelson Defined Forest Area	Ann Wong	CanFor	For. Econ. Solutions		2006
59	FIA-Landbase	Development of carbon measures and baseline information for sustainable forest management of CanFor coastal operations' Nimpkish Defined Forest Area (TFL 37): initial tree carbon analysis	Ann Wong	CanFor	For. Econ. Solutions		2006
60	FIA-Landbase	Development of carbon curves for addressing CSA certification requirements in the Morice and Lakes Timber Supply Areas	Brad Seely	UBC	FORRx, Morice-Lakes IFPA		2005
61	FIA-Landbase	Forest Carbon Indicators & Monitoring Strategy for Prince George Forest District and TFL 30	Bruce Bradley	CanFor	Timberline, Terra-Tree		2008
62	FIA-Landbase	Forecasting Indicators for Sustainable Forest Management: Total Ecosystem Carbon for the Fort Nelson TSA	Chris Niziolowski	CanFor	For. Econ. Solutions		2005
63	FIA-Landbase	Performance of ponderosa pine and western larch planted north of their natural range	Ken Day	UBC	Alex Fraser Res For.		2007
64	FII	Ecology and management of riparian – stream ecosystems: a large-scale experiment using alternative streamside management techniques	John Richardson	UBC			2003
65	FII-Landbase	Implications of forest management practices on carbon dynamics: a value trade-off assessment	Dave Harrison	CanFor	FORRx, UBC		2003
66	FluxNet	Vancouver Island Flux Site	Andy Black	UBC			ongoing
160	Genome Canada	Population genomics of cold adaptation	Sally Aitken	UBC	NSERC		
67	international	COMPON: Comparing Climate Change Policy Networks	David Tindall	U Minn	UBC & many others		
68	MFR-FFEI	1.2.1 FFEI Monitoring Strategy: Phase 1- Identifying what to monitor; and Phase 2 – Gap analysis of existing monitoring information	Alanya Smith	MFR		2008	2008/09
69	MFR-FFEI	2.1.1 Interdisciplinary Assessment of the Implications of Climate Change on the Province's Forest and Range Ecosystems: Phase 1: Overview (high level) Assessment	Don Morgan	MFR		2008	2008/09
70	MFR-FFEI	1.1.4 Climate change and timber supply modeling	Christine Fletcher	MFR		2008	2008/09
71	MFR-FFEI	2.2.1 Risks associated with possible increases in peak flows in Mt Pine Beetle impacted watersheds	Dave Maloney	MFR		2008	2008/09
72	MFR-FFEI	1.1.1 Climate change modeling needs assessment	Dave Spittlehouse,	MFR		2008	2008/09
73	MFR-FFEI	1.1.2 Modeling the implications of climate change on BEC classification and interpretations	Del Meidinger	MFR	CFS	2008	2008/09
74	MFR-FFEI	1.1.5 Habitat supply modeling in relation to climate change - wildlife "winners and losers"	Don Morgan	MFR		2008	2008/09
75	MFR-FFEI	3.1.1 Managing Forest and Range Ecosystems in an Era of Rapid Climate Change – A Scientific Foundation for FFEI	Elizabeth Campbell	MFR		2008	2008/09
76	MFR-FFEI	4.1.1 FFEI Climate Change Seminar Series	Kathy Hopkins	MFR		2008	2008/09
77	MFR-FFEI	4.1.2 FFEI Publications	Kathy Hopkins	MFR		2008	2008/09
78	MFR-FFEI	3.3.2 Tree Species Selection Business Information Project	Ralph Winter	MFR		2008	2008/09

79	MFR-FFEI	1.1.3 Climate change and modeling watershed processes	Robin Pike	MFR	FORREX	2008	2008/09
80	MFR-FFEI	1.1.7 Climate change modeling in support of the seed transfer framework	Sally Aitken	UBC	MFR	2008	2008/09
81	MFR-FFEI	3.3.1 Tree species selection Phase 1 General Business Requirements	Shirley Mah	MRF	For Prac. Board	2008	2008/09
82	MFR-FFEI	3.2.1 Incorporating carbon into TSR (FAIB)	Tom Niemann	MFR		2008	2008/09
83	MFR-FFEI	3.2.2 Climate change and VRI (FAIB)	Tom Niemann	MFR		2008	2008/09
84	MFR-FFEI	3.2.3 Free growing policy (FPB)	Tom Niemann	MFR		2008	2008/09
85	MFR-FFEI	3.2.4 Elimination of NSR (FPB)	Tom Niemann	MFR		2008	2008/09
86	MFR-FFEI	3.2.5 Tree species selection (FPB)	Tom Niemann	MFR		2008	2008/09
87	MFR-FFEI	3.2.6 Land deletions (CC&FC)	Tom Niemann	MFR		2008	2008/09
160	NCE-GEOIDE	Future visioning of local climate change scenarios with integrated geomatics/visualization systems.	Stephen Sheppard	UBC			
88	NCE-SFMN	Evaluating the potential effect of insect outbreaks on sustainable forest management (including effect of climate chg)	Dan Kneeshwaw	UQAM	CFS		
89	NCE-SFMN	Energy Policy and Governance in Western Canada (not narrowly focussed on climate change)	George Hoberg	UBC	various		2008
90	NCE-SFMN	Climate change and fire potential in south-central BC	John Innes	UBC			
91	NCE-SFMN	Cumulative impacts of development on forest ecosystems and First Nations of NE BC	John Innes	UBC			
92	NCE-SFMN	Climate Change Vulnerability and Adaptation for Forest Management in Canada :	Mark Johnston	Sask Res. Council	various		
93	NLUI	Clarifying the Impacts of Climate Change in Forests and in the Forestry Industry of Northern BC	Scott Green	UNBC			
94	NRCan	Climate change and low flows: influences of glaciers and groundwater	Dan Moore	UBC	CCIARN		
95	NRCan	Assessing the Capacity of British Columbia's Coastal Communities to Deal with Climate Change impacts	Ralph Matthews	UBC	CCIAP	2005	2007
96	NRCan	Being Green in a Brown World: Examining Adaptive Capacity and the Adaptation Process in Gibsons, British Columbia	Ralph Matthews	UBC	CCIAP	2008?	
97	NRCan	Climate and Climate Change Vulnerability Assessment of Northern Renewable Resource Based Communities	Ralph Matthews	UBC	CFS, UA, Penn	2005	2007
100	NSERC	Importance of nonvascular plants (mosses & liverworts) and lichens to the carbon and nitrogen economy of a sub-Boreal forest	Art Fredeen	UNBC	CFS		
101	NSERC	Climate forcing of alpine tundra ecosystems in southwest Yukon	David Hik	UofA	UBC-Garry Clarke		
102	NSERC	Carbon sequestration in mine tailings	Greg Dipple	UBC	2 mining companies		
103	NSERC	Chemical & physical properties of cellulose related to novel uses of wood products -eg MPB affected pine-not specifically climate change	John Kadla	UBC	CFS, FII		
104	NSERC	Predicting forest growth potential and climate change impacts using a MODIS satellite-constrained physiological model	Nick Coops	UBC	BIOCAP		
105	NSERC	Wide multiscale weather prediction research for complex terrain	R. Stull	UBC			
106	NSERC	Identification & selection of fast-growing poplar genotypes for carbon sequestration and biomass production	Rob Guy	UBC	BIOCAP		
107	NSERC	Adaptability of northern and high elevation forests to future climate change	Scott Green	UNBC			
108	NSERC	Abnormal migrations and premature mortality in adult Pacific salmon	Scott Hinch	UBC		2003	2008
109	NSERC	Climate warming and high mortality in Pacific salmon	Scott Hinch	UBC		2007	2010
110	NSERC	Effects of high temperatures on behaviour of salmonids	Scott Hinch	UBC	Pacific Salmon Comm		
111	NSERC	Interactive effects of multiple global change stressors on lake ecosystems	Shurin	UBC			
112	NSERC	Carbon flux and plant microbial community dynamics in low arctic tundra	Sue Grayston	UBC	IPY		
113	NSERC	Forest fertilization & identification of microbial indicators to enhance Csequestration & reduce GHG emissions	Sue Grayston	UBC	BIOCAP		?
114	NSERC	Green crop network - potential for using GMO crops wto harvest C & store in soil& for use as biofuel feedstocks	Sue Grayston	UBC			
115	NSERC	Impact of N fertilization of coastal Douglas-fir on forest productivity, C sequestration and GHG emissions.	Sue Grayston	UBC			?
116	NSERC	Potential of forest fertilization to alleviate effects of climate change-induced insect infestation, enhance resilience	Sue Grayston	UBC			
117	SERC-BIOCA	Adapting gene resource management to climate change	Sally Aitken	UBC			
118	NSERC, FRBC	Sensitivity and uncertainty of the carbon balance of a Pacific Northwest Douglas-fir forest during an El Niño/La Niña cycle	Andy Black	UBC			2004
119	NSERC, FRBC	Carbon sequestration in a boreal forest ecosystem: results from the ecosystem simulation model, FORECAST	Hamish Kimmins	UBC	CanFor		2002
120	NSERC-IPY	Climate Change Impacts on Canadian Arctic Tundra Ecosystems: Interdisciplinary and Multi-scale Assessments	Greg Henry	UNBC			
121	PICS	An examination of the merits of a "working with nature" approach rather than a traditional engineering approach to flood mitigation	Chris Jensen	UVic		2008	
122	PICS	A case study of a Prince George community climate change adaptation strategy that can be incorporated into local community planning	Ian Picketts	UNBC		2008	
123	PICS	An investigation of the interactions between mountain pine beetle outbreak history and past climate in BC	Kathryn Hrinkevich	UNBC		2008	
124	PICS	An investigation of whether individuals are more responsive to local or global climate change messages	Leila Scannell	Uvic		2008	
125	PICS	Exploration of how the Katzie First Nation, government and industry can work together using traditional and scientific knowledge to recognize the opportunities and mitigate the impacts of climate change	Tanja Hoffman	SFU		2008	
126	PICS	Forest Pests	Trevor Murdock	PCIC		2008	
127	SSHRC	Comparing Archaeological data and indigenous oral records in Tsimshian history	Andrew Martindale	UBC-Anth			
128	SSHRC	Root resource intensification and climate change in the mid-Fraser River region	David Pokotylo	UBC-Anth	UBCO		
129	SSHRC	Understanding the Social Structural Basis of Environmental Activism and Pro-environmental Behaviour: Regional, Temporal, and Sectoral Comparisons	David Tindall	UBC			
130	SSHRC	Institutional adaptations to climate change-comparison of Canada & Chile	Harry Diaz	U Regina	UBC		
131	SSHRC	Georgia Basin Futures Project	John Robinson	UBC	IRES		
132	SSHRC	Resilience and Local Capacity Development in B.C.'s Coastal Communities.	Ralph Matthews	UBC	FN & local govts	2003	2009
133	SSHRC	Regulation of GHG emissions in Canada, transition, measurement and enforcement issues	Shi-Ling Hsu	UBC-Law			
164	SSHRC	From Scarcity to Abundance: the Political Ecology of Water Use in the Okanagan Valley	John Wagner	UBC-O			
134	SSHRC?	Reconstruction of past climates of Pacific North Coast	Andrew Martindale	UBC-Anth			
135	SSHRC?	Palaeoenvironments and food chain webs	Brian Chisholm	UBC-Anth			
136	SSHRC?	Competitive effects of environmental policy (trade & economics) related to Kyoto protocol	Brian Copeland	UBC			
137	SSHRC?	Climate Change and its impact on the Kitkatla Nation-paleobotanical & oral history research	Charles Menzies	UBC-Anth			
138	SSHRC?	Ecosystem and landscape change -effects on food systems and livelihood in northern BC	Felice Wyndham	UBC-Anth			
139	SSHRC?	Linguistic research & oral history accounts of changes in animal ranges in northern BC, AB, YK	Patrick Moore	UBC-Anth			
140	SHRC-BIOCA	Economic analysis of carbon accounting in agriculture/forestry	Sumeet Gulati	UBC			
141	UBC P3	Social Discount Rate in Canada for climate change	Anthony Boardman	UBC-Business			
142	UNBC	Climate Disturbance Interactions in Boreal Forest Ecosystems-12th Annual International Boreal Foest Research Association Conference	Debra Straussfogel	UNBC			
143	UNBC	Quantifying climate change growth responses among co-occurring, ecologically distinct tree species in high-latitude regions	Scott Green	UNBC			
144	unknown	Carbon management in BC's forests: challenges and opportunities	Gary Bull	UBC			2008
145	unknown	The 100 Mile curriculum - building sustainability into education curricula	Claudia Ruitenberg	UBC-Educ			
146	unknown	Funding Reforestation Through Carbon Offsetting	Gary Bull	UBC			ongoing
147	unknown	Landslide risk management in forestry practices-not specifically related to climate change	Jonathon Fannin	UBC			
148	unknown	Historic fire regimes and fire-climate interactions in montane forests of Rocky Mtns including treeline change	Lori Daniels	UBC-Geog			
149	unknown	Fire history and ecological effects of forest fires - not specifically related to climate change	Michael Feller	UBC			
150	unknown	Stress physiology of trees - not specifically related to climate change	Rob Guy	UBC	various		
151	unknown	business solutions for sustainable forest-dependent communities	Rob Kozak	UBC			
152	unknown	value-added strategies, forest sector sustainability & competitiveness	Rob Kozak	UBC			
153	unknown	Effects of climate and landuse change on aquatic ecosystems, policy implications	Simon Donner	UBC-Geog			
154	unknown	Modeling C sequestration in model grasslands (UK grassland, not BC range ecosystems)	Sue Grayston	UBC		unknown	?
155	unknown	Advanced seed orchard design-not specifically related to climate change	Yousri El-Kassaby	UBC	MFR		
156	Yukon Gov	Climate change adaptation and sustainable forest management in the boreal forest	John Innes	UBC			
157	Yukon Gov	Identification of management indicators for the Teslin Tlingit Traditional Territory and application to State of Yukon Forests reporting	John Innes	UBC			
158	Yukon Gov	Sustainable forest management in spruce beetle-affected forests of YT, confronting rapid socio-ecological change	John Innes	UBC			
159	Yukon Gov	Climate change adaptation and sustainable forest management	Scott Green	UNBC		2009	
160	FIA-For. Gen	Conserving whitebark pine in a changing climate	Sally Aitken	UBC	Forest Genetics Council of BC		
161	FIA-For. Gen	Growth response of lodgepole pine and interior spruce to climate	Sally Aitken/Tongji Wang	UBC	Forest Genetics Council of BC		
162	Env Canada	Climate Change Adaptation, Mitigation and Linkages with Sustainable Development (AMSD)	Livia Bizikova	AIRD	UBC Forestry		
163	Env. Canada	Effects of climate change on alpine songbirds	Kathy Martin	UBC	Can Wildlife Service		