

The Resilient Forests Newsletter features tools, projects, and news “bites” that speak to adapting forest management in a changing climate. This information is important for BC forest managers and decision makers. We welcome your thoughts and suggestions for making the newsletters as useful as possible. Thanks for reading!

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Adaptation – A New Way of Thinking

In the past, forest managers could rely upon the tried and true: known growth and yield, and a history of pest and fire occurrences backed by decades of empirical data. As climate changes and becomes more variable, it is clear that the future will not be the same as the past. Forest managers are increasingly called upon to think across multiple scales and develop strategies that will succeed across a range of possible future conditions. Success will hinge upon our ability to manage the forest and landscape as well as the stand.



Tools for Adapting Forest Stewardship to a Changing Climate

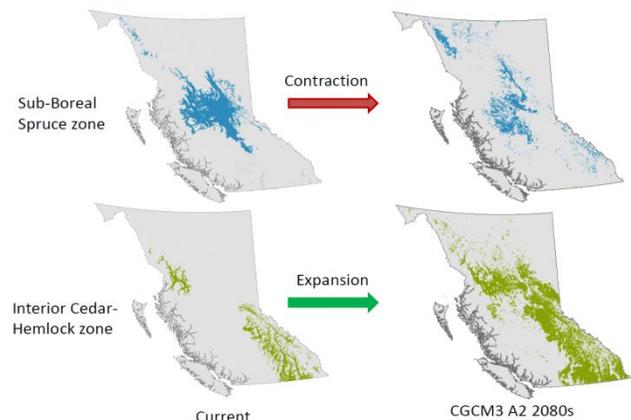
Successful adaptation requires policy, guidance, planning mechanisms, and decision support tools to assess regional climate change, anticipate ecosystem effects and make robust decisions in the face of uncertainty. This section highlights tools to help assess potential effects and adapt forest management plans and practices.

How is your regional climate projected to change?

Free web-based tools, ClimateWNA, ClimateBC and Plan2Adapt, provide regional projections of future

climates. ClimateWNA generates high resolution historical and future climate data for western North America. **ClimateWNA** can generate seasonal and monthly climate variables for a specific location on a map.

ClimateBC is a subset of ClimateWNA (same functions, smaller size). **ClimateBC-Map** is a newly developed Google Map-based web version. A two-minute tutorial of Climate-BC Map is available at <http://www.genetics.forestry.ubc.ca/cfcg/ClimateBC40/tutorial.pdf>. **Contact:** tongli.wang@ubc.ca



As shown by this map, projected climate changes will affect ecological zones differently (some will contract while others expand). ClimateBC was used to create this information. Results differ depending on models, scenarios, and time periods selected.

ClimateBC can be used, for example, to:

- Generate precipitation estimates in areas without records for hydrological purposes;
- Assess which seed sources are suitable for moving in the direction of climate change (i.e. selection of ‘warmer’ seed sources for transfer to cooler planting sites); and,
- Investigate how BEC units may change over time with changing climate, and which units may be most at risk.

ClimateWNA’s data is used in Plan2Adapt.

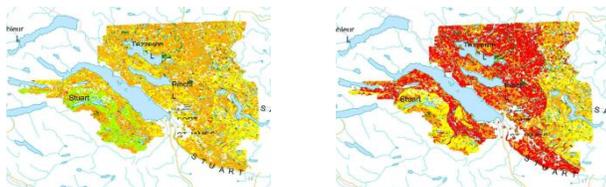
Plan2Adapt provides maps and climatic data summaries by regional district, time period, and season. You can use it to see projected changes in climate variables such as growing degree days, the frost-free period, or snowfall. A new *Impacts* tab points to potential impacts for various sectors including forestry, hydrology, biodiversity and fisheries.

Websites:

<http://www.genetics.forestry.ubc.ca/cfcg/ClimateBC/ClimateBC.html> & <http://pacificclimate.org/tools-and-data/plan2adapt>

Can Drought Analysis Inform Regeneration Decisions?

The freely available **Stand Level Risk Analysis and Decision Support Tool** predicts the risk of stand-level tree species mortality from the impact of drought. This knowledge can be used to develop tree mortality risk maps. Practitioners can then select tree species that will be at a lower drought risk in the future when soil moisture may be more limited. The tool is currently being used to support work on the Williams Lake TSA Type 4 Silviculture Strategy.



Current risk, based on contemporary climate (left) compared to projected risk based on future climates (2020 – right) generated using data from the Risk Analysis Tool.

Website: http://www.for.gov.bc.ca/ftp/HFP/external/!publish/ClimateChange/Seminar_Series/2012/DeLong/

Contact: s.craig.delong@gmail.com

Type 4 Silvicultural Strategies Address Climate Change and More

Climate change both presents opportunities and compounds forest stewardship and forest management challenges facing BC forest managers. We expect increased fire and pest disturbance, flooding, drought stress and unforeseen “surprises” including extreme weather and storm events.

While provincial strategies exist to address many of these challenges, management activities and investments must be spatially linked to long term objectives at the management unit level. Type 4 Silviculture Strategies provide a process to identify key objectives and manage local issues. They:

- Develop a spatially explicit five-year plan for silviculture investments;
- Provide direction on species selection, landscape level retention, harvesting priorities, local issues, and climate change considerations;

- Utilize existing collaboration between Resource Practices Branch, district stewardship staff and key industry stakeholders;
- Use Land Base Investment Strategy funding to support strategy development (e.g. hiring contractors to conduct analysis, modelling, etc.);
- Provide a foundation for a more comprehensive future process.

These strategies begin to address climate change by examining the projected shifts in local climate, the effects on tree species and fire, and identifying and prioritizing action for high risk areas. Type 4 strategies are underway in several TSAs: Prince George, Quesnel, Morice, Lakes, Williams Lake, 100 Mile House, and the Okanagan.

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NEWS Bites



New Resilient Forests Workshop

This workshop will increase the capacity of forest resource practitioners in government, industry and BC Timber Sales to adapt their planning, practices and decision-making for a changing climate. Five regional workshops will be held from February to March 2013.

Contact: Kathy.Hopkins@gov.bc.ca

New Tree Species Selection Tool provides the best available information for informing tree species selection decision-making at the stand and landscape level in the context of a changing climate.

Website: <http://www.for.gov.bc.ca/hfp/silviculture/TSS/tss.htm>

Contacts: Kevin.Astridge@gov.bc.ca, Shirley.Mah@gov.bc.ca

New Forest Adaptation Policy, Tools and Knowledge Website

This web portal provides BC forest managers with access to relevant forest policy, tools and knowledge to assist in forest stewardship. We aim for forests that are resilient to changing (and increasingly variable) climatic conditions and other pressures.

Website:

<http://www.for.gov.bc.ca/het/climate/knowledge/index.htm>

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