

*ClimateNews is a snapshot of new and emerging climate change adaptation and mitigation activities in the Natural Resource Sector.*

**This issue includes:**

- FLNR Climate Action Plan Summary
- Climate Action Plan Updates
- the Recreation Sites and Trails Program
- Biogeoclimatic Ecosystem Classification (BEC) and Ecological Research program
- 2014 Economic State of B.C. Forests
- Carbon Engineering Atmospheric Carbon Capture Project – Squamish B.C.
- and more!

## FLNR Climate Action Plan Summary

December 17, 2015

### Introduction

In recent decades, British Columbia faced land management challenges driven in part by climate change: record-setting wildfires, the Mountain Pine Beetle outbreak, landslides and debris flows and pressure on freshwater resources from floods and droughts. This summer was no exception.

Sixty-four temperature records were broken in communities across B.C. during the hottest June on record for numerous places around the globe. On June 15, province-wide snowpack levels reached a record low: 5 percent of normal snowpack for that time of year.<sup>1</sup> Other impacts included severe forest fires, level four drought (the highest rank) and fisheries closures on many rivers and streams due to low flows and high water temperatures.<sup>2</sup> The 2015 fire season, like 2014's, was close to triple the average area burned for the last 20 years.

The Ministry of Forests, Lands and Natural Operations (FLNR) is taking heed. In September 2013, FLNR released a ministry wide Climate Change Strategy that aims to

<sup>1</sup> River Forecast Centre, Ministry of Forests, Lands and Natural Resource Operations, 2015.

<sup>2</sup> Attributing extreme weather events to climate change is complex; however, the international climate science community links climate change with increases in extreme events. Climate change itself, is considered permanent (IPCC, 2013).

embed climate change into how the ministry conducts its business. The strategy required all ministry regions and program areas to complete a Climate Action Plan (CAP) by March 31, 2016 (FLNR, 2013)<sup>3</sup>. CAP leads received support from CIB as needed.<sup>4</sup>

At the request of FLNR executive, the ADM approved Climate Action Plans were reviewed and risks, gaps and opportunities consolidated into a Climate Action Plan Summary. This summary is available for internal ministry use at: <https://gwww.nrs.gov.bc.ca/flnr/node/1557>.

### Background

FLNR is undertaking climate action in a time of renewed political interest. On November 27, 2015, the Premier released the Climate Leadership Team's recommendations in advance of the United Nations' 21<sup>st</sup> Annual Conference of Parties (COP21) in Paris. The Climate Leadership Team in their recommendations to government "the provincial government has frozen the current \$30/per tonne carbon tax until 2018 in order to allow other jurisdictions to catch up to British Columbia. The province would only consider an increase in the carbon tax under a regime where emission-intensive, trade-exposed industries are fully protected from any carbon tax increase."

<https://news.gov.bc.ca/releases/2015ENV0074-001983>

Government is releasing a draft plan for public review, based on the team's recommendations with the intent to finalize by March 2016. The plan will identify how B.C. will meet the legislated greenhouse gas reduction targets set in 2008. FLNR continues to participate on internal working groups for the Climate Leadership Plan.

<http://engage.gov.bc.ca/climateleadership/>

In addition to the Climate Leadership Plan, three Ministers' Mandate Letters identified climate change as a priority: the Minister of Forests, Lands and Natural

<sup>3</sup> This internal performance measure was carried forward to March 31, 2016.

<sup>4</sup> CIB collaborated with leads to develop their plans by participating in working groups, coordinating workshops, and providing resources including the Climate Action Plan Roadmap that described a method for completing a climate action plan.

Resource Operations, the Minister of the Environment and the Minister of Agriculture. FLNR is responding to this priority using extensive work already underway or completed in Resource (Forest) Stewardship and BC Wildfire Service.

### FLNR Climate Action Planning (CAP) Update

FLNR continues work towards its March 31, 2016 deadline for all parts of the ministry to have climate action plans; a requirement of the FLNR [Climate Change Strategy](#). Many parts of the ministry are well on their way and have completed an approved plan. Others have held workshops and are now actively developing their plans.

Plan leads work with staff in the Climate Change and Bio-economy Section, participate in monthly calls and access materials through a private workspace. Questions? Contact [Nancy.Bronstein@gov.bc.ca](mailto:Nancy.Bronstein@gov.bc.ca)

### National Symposium on Climate Change Adaptation, Ottawa April 12 to 14, 2016.

The National Symposium on Climate Change Adaptation will be hosted in Ottawa, Ontario from April 12 to 14, 2016.

"This event will highlight the multitude of research, information and tools that have been developed to understand and manage climate risks."

Given the importance of integrating climate change considerations into the Ministry's operations and the several staff are likely to attend and present at the symposium.

<http://adaptationcanada2016.ca/>



### The Recreation Sites and Trails Program

By Tennessee Trent, Recreation Sites and Trails Branch Trails Manager



Recreation Sites and Trails BC (RSTBC) manages more than 1,350 recreation sites and over 800 trails around the province. RSTBC provide opportunity for public recreation for all British Columbians and Canadians. These sites and trails support tourism and economic opportunities for rural communities.

RSTBC has developed a Climate Action Plan to manage the effects of climate change. As recreation sites are in all areas of the province, there will be variable effects, depending on which area of the province the sites are in.

Some of the effects the RSTBC Climate Action Plan identified are that insect attacks such as sawfly, gypsy moth or bark beetle that defoliate or kill trees will require more recreation site management for removing danger trees. These sites can then be replanted with a variety of seedlings such as Douglas fir, spruce, pine and cedar ensuring the next generation of forests.

In 25-50 years, the snowpack could be at a higher elevation in some parts of the province, rendering some parking facilities for snowmobilers unused. Climate forecasting will help identify where new infrastructure will be needed or other infrastructure rendered obsolete. New provincial sites may need to be developed that are located at the new snow levels, for outdoor snow enthusiasts, skiers and snowmobilers.

The camping season would be extended as a result of warmer longer summer extending into the current fall.

## Biogeoclimatic Ecosystems Classification and Ecological Research Program

The Biogeoclimatic Ecosystem Classification (BEC) and Ecology Research Program manages and researches the province's extremely diverse landscapes, strong regional climatic gradients and complex local site variations. Over the past 30 years, BEC has provided the ecological framework and an ecologically based working language for ecosystem management in British Columbia.

The province is a leader in ecologically-based management in North America.

The program established and developed a framework, classification system, knowledge and tools that are based on a scientific understanding of the province's ecosystems and the variables that affect them. The BEC program is committed to science and scientific principles that will ensure the BEC system will sustain its outstanding utility and reputation.

BEC staff use practical solutions, sustainable ecosystems and an ecological ethic. British Columbia has benefited greatly from the BEC Program's ecologically-based framework, common language and practical tools for forest and range management. Ecologists seek to understand climate patterns and how they interact with ecosystems. Changes to vegetation and ecosystems may result in new site series classification. One of the lenses into new stocking standards is climate change.

BEC and ecosystem classification is useful in understanding climate change. BEC shows what we have now, and what we can do now at the stand level. As the climate changes, sites will become even hotter and drier. This change will affect tree species that are not drought tolerant, such as western red cedar. Sites that become wetter would be a benefit to western red cedar and Douglas fir.

Using BEC to understand limiting factors on a site can help understand future limiting factors and options. For example larch may be perfect to plant by 2050, but right now the climate is not ready for it. Larch may be adapted in 5 to 10 years.

More information can be found at <https://www.for.gov.bc.ca/hre/becweb/index.html>

## 2014 Economic State of B.C. Forests

By Alex Barnes

B.C.'s forest sector showed improvement in sales value and investment in 2014, even though lumber and pulp volumes changed little and harvest declined. The increase in sales is due to changes in the exchange rate and product prices.

Chinese demand for logs, lumber, and pulp continued to play a key role in the B.C. forest sector. Of note is that Russia and Europe are beginning to take some market share from Canada. The U.S. and Japan continue as major markets. More robust and diversified global demand would support further improvement in the B.C. forest sector. Innovations and investments in new markets, products and technologies will make the sector more resilient and competitive.

Lumber prices are expected to increase over the next several years with stronger demand (mainly from China and a recovering U.S. market) and weaker timber supply (Mountain Pine Beetle impacts and other harvesting AAC constraints). However, lumber prices and housing starts have continued to be weak throughout 2015. China continued as the world's largest importer of logs and lumber in 2014, and is projected to continue as a major importer, though financial uncertainties in 2015 have raised questions about the strength of Chinese demand.

Pulp prices increased from 2013 to 2014, though the future is less certain due to the decline in printed media, with prices declining so far in 2015. Foreign market demand for wood pellets and logs is expected to continue to be strong. The full report is online at: <https://www.for.gov.bc.ca/het/economics-economic-state.htm>

## Project Benefits from Climate Change Student Internship Funding

Brendan Brabender (Forest Carbon Technical Analyst, FLNR) was awarded funding from the [Pacific Institute for Climate Solutions \(PICS\) Internships Program](#) to hire a student for the 2016 season. Brad van Dyck a University of Victoria Master's student will be joining Competitiveness and Innovation Branch in January 2016.

PICS Internships support students from UBC, UNBC, SFU and UVic to work on projects that align with PICS research themes.

## Carbon Engineering constructs new Atmospheric Carbon Capture Project in Squamish B.C.

Calgary-based “Carbon Engineering (CE) is constructing their \$9-million pilot plant that will capture about one tonne of CO<sub>2</sub> per day”<sup>1</sup>, in Squamish, B.C. Atmospheric carbon capture is innovative technology. Currently, Carbon Engineering is a world leader in atmospheric carbon capture.

Carbon Engineering is a “private company financially backed by investors that include Bill Gates and Murray Edwards. The carbon management technology was developed by Professor David Keith’s research groups at the University of Calgary and Carnegie Mellon University.”<sup>2</sup>

“This project will remove carbon dioxide from the atmosphere, with the goal of turning the carbon into gas and “supply liquid fuel to the transportation sector with zero net CO<sub>2</sub> emissions.”<sup>3</sup>

Other industries where this technology could be used are oil and gas industry. The CO<sub>2</sub> from the atmosphere can be supplied for enhanced oil recovery. “The produced oil is refined and the fuel is burned, the life-cycle carbon intensity is still less than half of today’s conventional fuels.”<sup>4</sup>

Further information can be found at <http://carbonengineering.com/about-ce/>

Gemma Karstens-Smith “Calgary company unveils groundbreaking carbon capture project in Squamish, B.C.” *The Canadian Press* (2015).

<sup>2,3,4.</sup> Carbon Engineering Industrial- Scale capture of O<sub>2</sub> from Ambient Air website, Media Release CE Awarded Funding from CCEMC.

<http://carbonengineering.com/about-ce/>

### ClimateNews Link

Here is one interesting webinar.

Partnership for Water Sustainability: “Feast and Famine Workshop: Flood and Drought – What happened to the balance?”

<http://waterbucket.ca/cfa/2015/11/08/feast-and-famine-workshop-flood-and-drought-what-happened-to-the-balance/>

## UBC’s Tall Wood Building



A rendering of the Tall Wood Building residence. Credit: Acton Ostry Architects UBC Media Release October 1, 2015

One of the tallest wood buildings in the world will soon be constructed at UBC, providing housing for hundreds of students. The \$51.5-million residence building will stand 53 metres tall (about 174 feet).

Construction of the 18-storey tall wood student residence began in fall 2015, and the building is set to open in September 2017. It will house 404 students in 272 studios and 33 four-bedroom units. There will also be a ground-floor lounge and study space for commuter students.

“This project shows that when it comes to building with wood, B.C.’s innovation cannot be beat,” said Steve Thomson, Minister of Forests, Lands and Natural Resource Operations. “By taking advantage of new building technologies, we are also expanding our markets for B.C. wood products – and supporting jobs in the forest sector.”

The tall wood building will consist of a mass timber superstructure atop a concrete base. Wood is a sustainable and versatile building material that stores, rather than emits, carbon dioxide. UBC aims for the building to achieve a minimum LEED Gold certification, a rating system that evaluates how environmentally friendly a structure is in its design and energy use.

The project’s architect, Vancouver’s Acton Ostry Architects, is working in collaboration with tall wood advisor Architekten Hermann Kaufmann from Austria. Fast + Epp, another local firm, is the structural engineer. <http://news.ubc.ca/2015/10/01/new-ubc-student-residence-to-be-among-worlds-tallest-wood-buildings/>