

# Climate change adaptation in the Harrop-Procter Community Forest

## Community Newsletter #1—Risk assessment

Climate change adaptation has become a key priority for our community forest. As reported in our Spring 2016 newsletter, HPCC and Columbia Basin Trust have recently funded a project entitled *Climate change adaptation in the Columbia Basin: An innovative and applied forest management case study*. This project will use our community forest to demonstrate how we can use climate science and risk assessment to adapt forest management to a changing climate.

The focus of the project is to develop practical management tools. For example, through this project we will:

- Identify vulnerable ecosystems, including those that protect our water supply;
- Develop partial cutting prescriptions to promote a more resilient forest;
- Design landscape-level fuel breaks to protect our community from wildfire, and;
- Identify priority forest types for conversion to more drought-tolerant species and structures

The first step in our project is a risk assessment that will prioritize key areas for protection and/or management.

### Our changing climate

Our West Kootenay climate has already changed significantly, with an average 1.6° C temperature increase over the past century. Winter snowpacks are lower and the timing of stream flows has changed. Although climate projections vary somewhat, there is widespread agreement regarding the direction of climate change, especially at low- to mid-elevations.

### Risk assessment — Wildfire

Our community forest is already at high risk of wildfire. Due to a history of catastrophic fires in the early 1900's followed by decades of fire suppression, our landscape is dominated by dense mature coniferous forest. Now we are expecting hotter and drier summers. Over the next 30 to 50 years in the West Kootenays we can expect 5 to 50 times more area burned on average each summer.

HPCC has collaborated in the development of an updated Community Wildfire Protection Plan (CWPP) for RDCK Area 'E'. We have mapped fuel types across the wildland-urban interface based



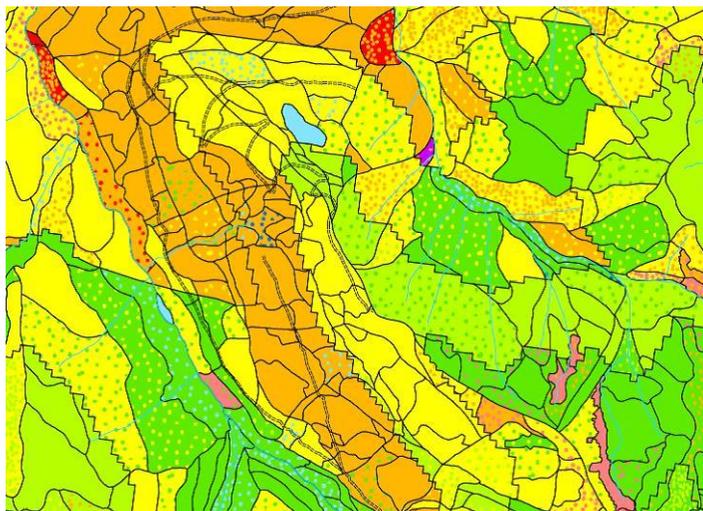
on extensive field surveys. The updated CWPP has identified several areas in Harrop-Procter as critical locations for fuel hazard reduction. As part of our climate change adaptation project, HPCC will be designing strategic fuel breaks for each major watershed.

*The Sitkum Creek fire  
as seen from  
Nelson - August  
2015*

## Risk assessment — Drought

We are mapping soil moisture regimes across the community forest to help us understand which areas are most prone to drought.

Most of our low- to mid-elevation forests are expected to experience significantly increased summer droughts in the coming years. Low elevation cedar is especially at risk. We are currently working on mapping the highest risk forest types; these areas will be prioritized for potential conversion to more open Ponderosa pine/ Douglas-fir forests.



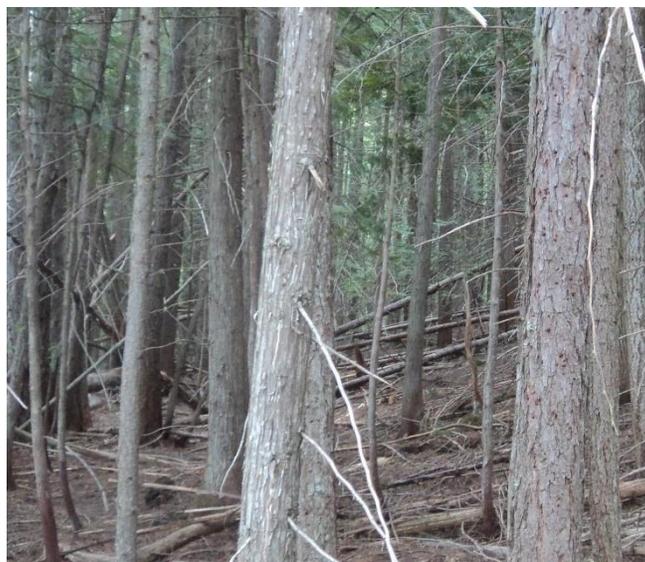
Soil moisture—East Harrop Creek area

### Absolute Moisture Regime



### West Kootenay projections for the next 30 to 50 years:

- Fall, winter, and spring will be 2° to 5° Celsius warmer and 10 - 25% wetter
- Summers will be 3° to 7° Celsius warmer and up to 30% drier
- Increased frequency and magnitude of extreme precipitation events



Typical low elevation forest, Narrows Creek



East Harrop Creek logging showing thinned forest that helps in wildfire mitigation

### Redfish Creek stream flows

Since 1967, April flows have increased by 73% while September flows have decreased by 42%.

### Public engagement opportunity

In the spring, HPCC will host a public forum to review our draft risk assessments and discuss potential management strategies.