

FOREST FIRES, THE WATERSHED AND SOURCE WATER

Location: Rotary Room, Montrose Cultural Centre, 9839 103 Ave Grande Prairie
<https://binged.it/2IEQ5gy>

Date: October 30, 2019

Time: 2:00 pm – 5:30 pm

Registration fee: \$20

Agenda Items

- 2:00 pm** Registration
- 2:30 pm** Welcome & Housekeeping
- 2:35 pm** **Adam Norris** – Mighty Peace Watershed Alliance
- An overview of the Peace Watershed and how the forested land base contributes to Source Water for many communities in the Watershed. In the face of threats to our resources, proactive planning at a Watershed scale can help reduce the risk to source water.
- 2:50 pm** **Dr. Uldis Silnis** – University of Alberta
- Shifting climates have substantially increased the severity and scope of wildfires in fire prone regions of western U.S. and Canada raising concerns over potential impacts to water resources in key forested source water regions. However, while severe wildfires may represent an upper end-member of watershed disturbances that can impact water, broad generalizations based on watershed impacts observed in other regions are difficult because these can vary strongly across hydro-climatic regions. Long-term and on-going research on impacts of several particularly severe Alberta wildfires (2003 Lost Ck., 2006 Horse River [Ft. McMurray], and the 2017 Kenow Mtn. wildfire) on hydrology, water quality, and stream health have shown both some similarity, but also substantial departure from wildfire impacts noted in other regions. These have important implications for provincial watershed protection and climate change adaptation strategies in the face of shifting climates.

3:50 pm

Dr. Colin Cooke – University of Alberta & Government of Alberta

Following the devastating 2016 Fort McMurray wildfire, we initiated a multi-faceted water quality monitoring program to understand the potential water quality impact(s) of the fire. Automated, high-frequency monitoring of flow and water quality showed distinct, precipitation-associated signatures of ash-transport in rivers draining extensive (800–100,000 km²) and partially-burned (<1–22%) watersheds, which were not evident in nearby unburned regions. Post-fire river water quality sampling showed episodic increases in suspended sediment concentrations that were exceptional relative to long-term records and occurred more frequently as watershed sizes decreased. These multiple lines of evidence indicate that low-relief landscapes can mobilize wildfire-related material to rivers similarly, though less-intensively, than headwater regions. However, we suggest that uneven mixing of small, heavily-impacted tributaries with large rivers may explain differences observed in the magnitude and duration of wildfire signals observed in high-order rivers relative to headwater streams. Our results suggest that wildfire impacts on river water quality can be evident at very large scales and have implications for communities that depend on these water resources.

4:50 pm

Mike Williamson – Alberta Agriculture and Forestry

Forest Areas in Alberta are developing risk-based Wildfire Management Plans that consider wildfire as both a threat to values and a potential opportunity for the ecosystem. Future mitigation, preparedness and response options will be based on this plan.

5:30 pm

Wrap up

