

2017 EARLY SEASON REPORT
Columbia-Shuswap Regional District
Golden, BC (Electoral Area A)

Submitted by Morrow BioScience Ltd.
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Introduction

This report is provided to the Columbia-Shuswap Regional District (CSRD) for use as a projection tool to help estimate the magnitude of potential regional river flooding within Golden, Electoral Area A. The report focuses on river flooding due to the direct relationship to mosquito larval abundance potential in the area. The report will include information on current snow pack data within basins contributing to the Columbia River and Kicking Horse River, the projected weather outlook for the summer (i.e. El Nino effect, La Nina effect, etc.), and a reminder of resources for up-to-date information regarding Morrow BioScience Ltd. (MBL) early season field work. This report is an estimate of how the summer may develop based on current weather predictions and snow levels; it is possible that conditions could change in April. Monthly reports will have more thorough explanations of environmental conditions affecting mosquito larval levels. The first in-season report will be provided to the CSRD by the end of May.

Snow Pack

Snow pack can be a good indicator of how much water will come through a river system over the course of the summer. Specifically, the snow pack in the Upper Columbia basin directly relates to Kicking Horse River and Columbia River fluctuations within Golden, Electoral Area A. These fluctuations are important to track because they contribute significantly to the timing and extent of floodwater mosquito hatching.

The percentages reported in Table 1 reflect the most recent snow pack estimates¹. The weather from December through March led to an increase in snow pack across the province, especially in the south and southeast. The increase in snowpack is reflected in the slightly greater snowpack value in 2017 as compared to the snowpack from the same time in 2016. The Upper Columbia basin is currently at 100 percent of normal, as opposed to 99 percent of normal at the same point in 2016 (Table 1). Given the current snowpack and comparison to that of 2016, the potential for large mosquito site development is likely.

Table 1. Snow basin indices for basins that directly affect the City of Golden, determined for the April 1, 2017 bulletin (http://bcrcf.env.gov.bc.ca/bulletins/watersupply/2017_Apr1.pdf).

Basin	Percent of Normal Snow Pack
Upper Columbia	100

¹ http://bcrcf.env.gov.bc.ca/bulletins/watersupply/2017_Apr1.pdf

Weather

In general, ambient daily temperatures have been lower than average across southern British Columbia since December 2016 (Snow Survey and Water Supply Bulletin, 1 April 2017²). Specifically, in March, average ambient temperatures across the southern portion of the province were 0.5 to 2° C below normal. Ambient temperatures in northern BC were approximately 4° below average for March. Unstable conditions were present across southern BC, with contributions of both Arctic air and warm systems from the Pacific Ocean. The Pacific systems also brought significant precipitation, with some areas of southeastern BC receiving 200-300 percent of normal. This precipitation, coupled with the snowmelt, further add to the potential for large mosquito development sites in 2017.

According to the March 1, 2017 Snow Survey and Water Supply Bulletin² via the U.S. National Oceanographic and Atmospheric Administration, the weak La Nina conditions present in early winter officially ended in February. Neutral El Nino/Southern Oscillation (ENSO) conditions are expected through the spring, with potential El Nino conditions becoming more prominent over the summer and fall. El Nino conditions occurring in the late summer will likely not affect the freshet. Environment Canada is predicting normal ambient temperatures for the majority of BC through May.

It is likely that the freshet will peak in a more normal timeframe (ca. May). Current snow packs do not indicate that 2017 will be a significantly high-water year, although will have the potential to be slightly higher than normal. Anomalous precipitation events could alter anticipated Columbia River and Kicking Horse River levels. As a precautionary measure, MBL field technicians will start assessing sites in April within all areas of Electoral Area A.

² Available online: http://bcrfc.env.gov.bc.ca/bulletins/watersupply/2017_Mar1.pdf

Updates and Contacts

MBL recognizes the importance of being available to citizens within each of our program areas as well as keeping citizens informed of relevant mosquito abatement activities and information. In an effort to continue to provide these connection opportunities, MBL regional managers check their email and phone messages on a daily basis. Replies to email and phone inquiries are returned within 24 hours.

As a reminder, the following people may be contacted directly for any questions from Golden, Electoral Area A:

Dirk Lewis, Owner and Head Biologist
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If questions from the public arise, please direct citizens to the MBL's mosquito hotline at 1-877-986-3363 or to the MBL website contact form on our website, www.morrowbioscience.com. Additionally, interested citizens may find helpful information on our Facebook page (Morrow BioScience Ltd.). Subscribe to our Twitter feed for interesting and important mosquito facts, as well as updates from our technicians in the field.