



April 2020
Volume 1, Issue 2

Maintenance & Development Practices Around Joseph Creek

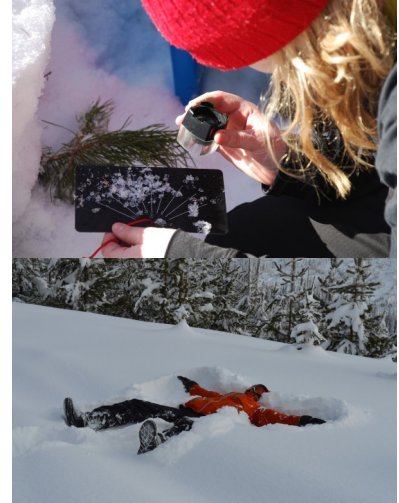
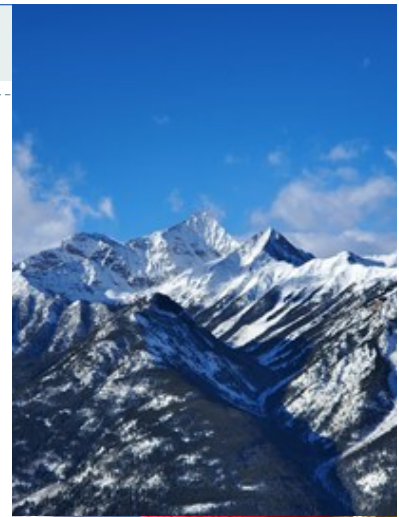
SNOWPACK

People living in the East Kootenay love the snow and everything it offers; they love playing outside and enjoy the beauty of a fresh snowfall. High in our mountains snow will accumulate and form thick layers known as a snowpack. Snowpack is necessary because in the late spring and early summer they feed our streams and rivers as they melt. Joseph Creek headwaters originate from the snowpack on Joseph Mountain and each year the amount of snow that accumulates varies depending on the local weather. It is important for us to understand the scientific data to help forecast floods, streamflow, and water levels.

The province of British Columbia has near-real-time automated snow weather stations located in mountainous regions. The areas selected for the weather stations are covered in snow for a substantial portion of the winter, the nearest station to our watershed is located on Moyie Mountain. The information collected from Moyie Mountain is compared month to month and year to year and is available to the public. This is crucial for water supply and flood forecasting. <https://aqrt.nrs.gov.bc.ca/Report/Show/Snow.2C10P.Automated%20Snow%20Weather%20Station%20Graph/>

Snowpack is also important for sensitive mountain ecosystems. It can protect plant and animal life from extreme temperatures. It also has an impact on food availability due to melt-off timing and water availability. Certain species are adapted to the snowpack and abnormalities can have impacts on populations.

Snow affects ecosystems and people in many ways. A key way to help protect our snowpack is through continuous studies and monitoring projects.



Sandbags

As we head into the annual spring freshet, those who live in low lying areas or areas of the city that traditionally see some flooding, you are encouraged to visit the self-fill sandbag station located at the Public Works yard on Cobham Avenue.

The station has bags and sand, but you will need to bring your own shovel. Please practice safe physical distancing when visiting the site.





EARTH DAY

The first Earth Day occurred in 1970 and each year on April 22 over 1 billion individuals

take action against climate change. Simple everyday changes can have a positive impact on your mental health, your community, and the Earth.

Changes like paperless billing, going to the refill store and shopping second-hand. Columbia

Outdoor School is partnering with Mt. Baker High School to host an educational event at Idlewild for grade 5 & 6 classes.

Take part in Earth Day activities by packing yourself a waste-free lunch and by getting outside to pick up litter in the community.

UPCOMING

Directional Flushing Program

The City of Cranbrook does an annual water main flush starting generally in April. This helps address issues with potable water distribution through the system. By controlling the direction of the water in a single direction at a high velocity, it can remove sediment, scale, and biofilm. This improves water quality and lowers the chlorine demand. Pipe life is also increased by the reduction of corrosion in the system.



The flushing will normally run from April to June and residents may notice dirty water for a short time. There is no health concern, and it can be solved by simply running the cold tap until it is clear.

STORM SEWER SYSTEM & JOSEPH CREEK

Storm Sewer System

The municipal storm sewer system collects rainwater and surface water runoff from roads and parking lots into natural channels and catch basins (storm grates) and transports it to various points around Cranbrook including Elizabeth Lake and Joseph Creek.

Street sweeping work in Cranbrook generally begins in early March, dependent on how much accumulated snow remains from the winter. Street sweeping helps to ensure stormwater drains are free from winter sand and salt – reducing pollutants/sediments

draining into the stormwater systems.

Several community groups have painted fish symbols beside storm water grates to remind people that these drains are not treated and drain directly into water bodies.



How does the water flow?

Joseph Creek flows North from Joseph Mountain through the City of Cranbrook, Area C of the RDEK and through the community of ʔaq'am into the St. Mary's River.

Combined with Gold Creek Joseph Creek helps to fill the Phillips Reservoir the primary drinking water source for the community.

SPECIES CORNER

Joseph Creek and the surrounding area is habitat for these species. This newsletter will highlight a couple of these species. If you are interested in finding out more about these and other species please go to the Restore Joseph Creek website www.restorejosephcreek.ca Kootenay conservation program.

Super Cool Turtles!

Painted turtles are among the most well-known wildlife at Idlewild Lake. Perhaps less known is their journey from egg to pond. Eggs are laid in adjacent fine gravel soils in June, then hatch in the fall. But the young stay in the nest for their first winter. They can “supercool” to survive freezing temperatures without damaging their tissues. They can even freeze for short periods of time. Come spring, they emerge and make their way to the Idlewild wetland. In subsequent winters and into adulthood, turtles overwinter in the mud at the bottom of either the main lake or the wetland pond.



Deer

In Cranbrook, there are two primary deer species, Mule deer and Whitetail deer. They can be identified by their tails and ears. Mule deer have larger ears and smaller tails with a black tip. Whitetail deer have smaller ears and no surprise, a whitetail. In the winter, deer populations in the community tend to increase. Winter is hard on many species and the city offers a refuge from the harsh conditions. They require food, shelter, and security for survival; the urban lifestyle we have adopted can also benefit other species. Predators tend to avoid busy centers and buildings offer warmth and protection.

Goats

Invasive plant species are resilient and competitive. There can be adverse impacts to the environment and economy if not managed properly. Herbicides are an effective method of control but can also have negative consequences. Goats are an alternative method for controlling invasive species, they can be taught to target graze certain plants to decrease the competitive advantage. Goats will consume the upper plant structure, and this prevents the plants from photosynthesizing. They have sharp molars and specialized enzymes in their stomachs so they can return organic matter into the soil without spreading new seeds. When implemented properly the goat method can be successful in restoring the balance of invasive vegetation.

EDUCATION & SCIENCE

What can you do? There are opportunities that exist throughout the creek system to restore or enhance aquatic and riparian ecosystems. If you live on the creek, consider:

- Clean up any litter in riparian zone.
- Use gravel or kitty litter to de-ice sidewalks.
- Avoid the use of pesticides/fertilizers.
- Planting native species when planting.
- Planting a native tree to provide shade and habitat structures over the creek.

In the community, you can help us restore the Creek by:

- Cleaning up any litter you see blowing around within the community.
- Keep stormwater drains free of debris and other pollutants.
- Report invasive species to 311. Take a picture of the plant and send this information to the City. We will map these and work to remove.

Consider adopting a portion of the creek. If you belong to a community group who might be interested in adopting a portion of the Creek, Columbia Outdoor School will work with you to identify projects and opportunities to restore the creek in your adopted section.

CITY CORNER: DRINKING WATER



Gold Creek and Joseph Creek both contribute to the Phillips Reservoir southeast of the City of Cranbrook. The reservoir holds roughly 2.3 billion liters of water, the equivalent of 920 Olympic-sized swimming pools. The reservoir acts as a holding tank to help settle particulates before it is sent to the treatment facility.

Water Treatment

Once the water has settled, the City measures the turbidity. Turbidity is the measurement of suspended solids in water such as sand, silt, and clay. This is important because contaminants like viruses and bacteria can become attached to suspended solids. The next step is to add fluoride and chlorine injections, the chlorine will destroy any unwanted bacteria or viruses that did not settle out. Then, before the water leaves the treatment facility, it is monitored for chlorine residual, pH, conductivity, dissolved oxygen, and temperature. To ensure safe drinking water, the City must meet the requirements under the *Drinking Water Protection Act* and Drinking Water Protection Regulations.

Water Temperature

Although it is not a required measurement from the federal government for water quality, certified operators still collect data related to the temperature of the water. Temperature will indirectly affect the health and aesthetics of water quality. It can have an impact on the formation of biofilms, corrosion, and disinfection processes. In natural water systems, the temperature can affect the amount of oxygen. Colder water will have higher dissolved oxygen levels than warmer water. Dissolved oxygen is important for a healthy ecosystem; fish and aquatic species need oxygen to survive. During the wintertime, even if temperatures are decreased, oxygen levels can become depleted because of the layer of ice at the surface of our lakes and reservoirs. Fortunately, species native to the region have adapted themselves to these conditions. They can slow their metabolisms and stay warm by burying themselves in the mud!

