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Upcoming Events

AGM on April 26

This year's AGM will be on Wednesday, April 26th, 2023 at the Scout Island Nature Center in Williams Lake, starting at 6:00 p.m. The evening will begin with a pot luck dinner followed by brief reports from the Executive and the annual election of directors at 7:00 PM. Details regarding how to participate in the meeting by zoom will be sent out to members via email in mid April. Please contact Peter Opie at peter&skye@telus.net for more information or if you are interested in becoming a director.

Activities Update

2022 hikes and those planned for 2023

1) Upper Eagle Tree Pasture

On June 19th eight individuals enjoyed a memorable hike through grassland and forest ecosystems impacted by the major wildfire of 2021 in the Protected Area. Several stops were made to observe and discuss both short and long term impacts of the fire to vegetation within grassland, wetland and forest ecosystems. The vegetation response to the fire varied greatly



Hiking through one of the most completely burned forests in the Protected Area on the northeast side of Airport Flats.

over the local terrain and hike participants were often impressed with how quickly some areas had begun to recover.

2) Goose Lakes Chain

On September 11th approximately 20 individuals enjoyed a great hike along the Goose Lake chain, on the north side of Churn Creek, out to Cougar Point and back. Several stops were made to discuss fire history in the area, the impacts of cattle grazing on riparian vegetation and, at a range enclosure (no cattle use), to observe grassland condition both inside and outside the enclosure. Unfortunately, the outstanding views from Cougar Point of the Churn Creek valley were obscured due to dense smoke generated by several active wildfires south of the Protected Area.



Planned Hikes For 2023

We expect to organize at least two day hikes for all members again in 2023 to explore more scenic and ecologically interesting areas in the Protected Area. These will likely include a hike to China (aka Koster) Lake and the east side of Clyde Mountain. However, we are very open to suggestions for other areas you would like to explore. When dates and locations have been confirmed, we will let all members know by email and on our website and face book page

Membership and Donations

Membership renewals are due again by the end of March and before the AGM. Please encourage others to become members. Both individual (\$20.00) and family (\$30.00) memberships remain unchanged. Membership forms are available on our website at: www.friendsofchurn.ca. We are a registered charitable organization and tax receipts will be provided for any donation, other than fees, of twenty dollars or more.

Project Updates

Ecosystem Restoration Efforts Continue



In 2022 we were again successful in securing funding from the Federal Priority Places initiative and the Cariboo Chilcotin Ecosystem Restoration Committee for planning and overseeing the cutting of Douglas-fir encroachment on grasslands and ingrowth in forests within the Lease Pasture and Alkali Flats projects areas. This funding also allowed us to coordinate bucking and piling of thicker areas of slash within the Dry Farm northwest project area. Stswecem'c Xget'tem Development Limited Partnership (SXDLP) crews cut approximately 48 hectares within Lease

Pasture and 18 hectares within the Alkali Flats project areas and amassed several hundred piles of slash. In the winter of 2022-23 Friends of Churn volunteers spent several days burning many of the slash piles.



Piled slash from cleared tree encroachment on grasslands



Slash pile burning by Friends of Churn Creek volunteers

Feature Article

Wetlands in a Changing Climate Synopsis of a Friends of Churn Creek Project

Climate change in the Central Interior of BC is predicted to include shorter, warmer winters with greater rainfall and less snowfall, an increased number of days with above freezing temperatures and possibly more extreme summer temperatures. Because these predicted climate changes may affect the dynamics and sustainability of wetlands (as well as other ecosystems) in the Protected Area (CCPA), they are of concern to BC Parks and the Friends of Churn Creek. The Friends of Churn Creek are monitoring wetlands of the Protected Area in order

to order to better understand and predict the likely effects of a changing climate on wetlands and make recommendations for measures to mitigate detrimental effects.

Our general approach is to document seasonal and year-to-year water level changes in wetlands and relate these changes to environment differences including rainfall, air temperature, snow pack, soils, and size of local watershed. From these relationships, we are forming a basis for determining which environmental factors most affect wetland water dynamics and then for predicting the response of wetlands to anticipated climate changes.

We have documented and mapped the presence of more than 60 wetlands in Churn Creek P.A. Of these, we have selected 12, which have a range of ecological conditions, for hydrological and vegetation monitoring. Water depths are currently being monitored twice daily by data loggers in five of these wetlands and manually each month in the remaining seven wetlands. So far all wetlands show a similar pattern of rapid rise of water levels following mid to late winter snowmelt and a mostly steady decline through the spring and

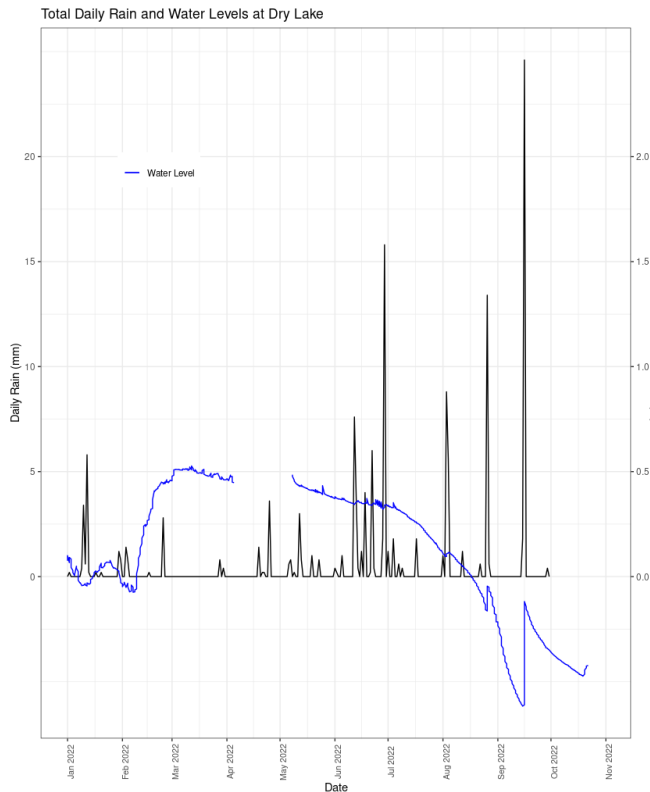


Data logger casings of a well to monitor water depth and 3 piezometers to measure ground water head in the wetland and adjacent riparian zone..

Feature Article (cont)

summer season. The height of the late winter rise and the rate of subsequent summer decline differ from year to year and across different wetlands. Water level declines are interrupted briefly by major summer rainfall events.

Although factors affecting wetlands are very complex, we are using a standard wetland water balance model, which states that a change in water volume (depths) in a wetland reflects the difference between



Precipitation events and water levels in a marsh (Dry Lake) in 2022. Water dropped below the surface in mid August but rose briefly following rainstorms.

water input and output. Water input includes surface runoff of snow meltwater and rainwater, shallow ground water input from surrounding soils, direct input of rain or snow, and streamflow. Output variables include losses to ground water beneath and adjacent to the wetland, evaporation, vegetation transpiration, and overbank streamflow.

Two weather stations in the Protected Area are providing data on precipitation (mostly rainfall), air temperatures, wind, and humidity at low and high elevations. Snow cover and its water equivalent are being monitored through standard snow course sampling at three or more sites and by time lapse cameras. Evaporation pans will be installed in 2023 to measure the amount of water lost through evaporation and to relate this amount to recorded weather conditions including air temperature, wind, and humidity.

Presence of shallow ground water flow into and out of a wetland is being documented by piezometers which measure hydraulic head differences between different points adjacent to and within a wetland. Water level drop in some wetlands appears to be slowed by shallow ground water input, especially through sandy soil layers. However, the high clay

content of soils surrounding most wetlands implies that shallow ground water input and output is extremely slow and small relative to surface runoff and evapotranspiration.

Preliminary data suggest that wetland water level dynamics are related primarily to two principal factors: 1) input via mid to late winter snow melt runoff and 2) losses via spring to summer evapotranspiration. A changing climate with less snow and more frequent extreme summer temperature events, will likely cause some wetlands to disappear, especially at low elevations and others to have shorter flooded periods. In 2023 we will expand monitoring of wetlands and install evaporation pans, additional data loggers and another weather station to further document and confirm preliminary interpretations in collaboration with research/teaching staff and a graduate student from BCIT/SFU.