

Summer Seasonal Outlook

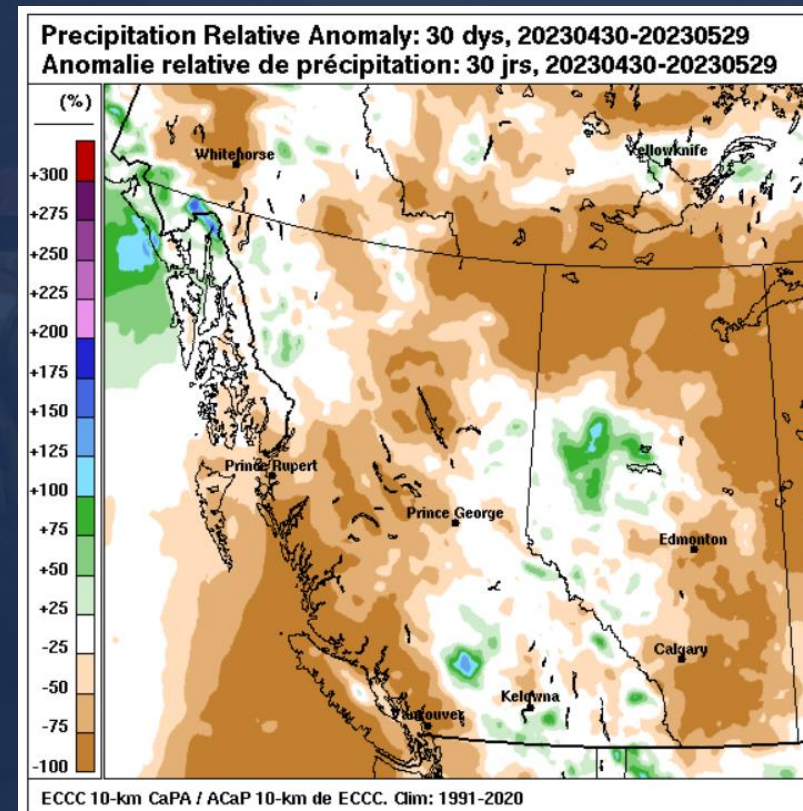
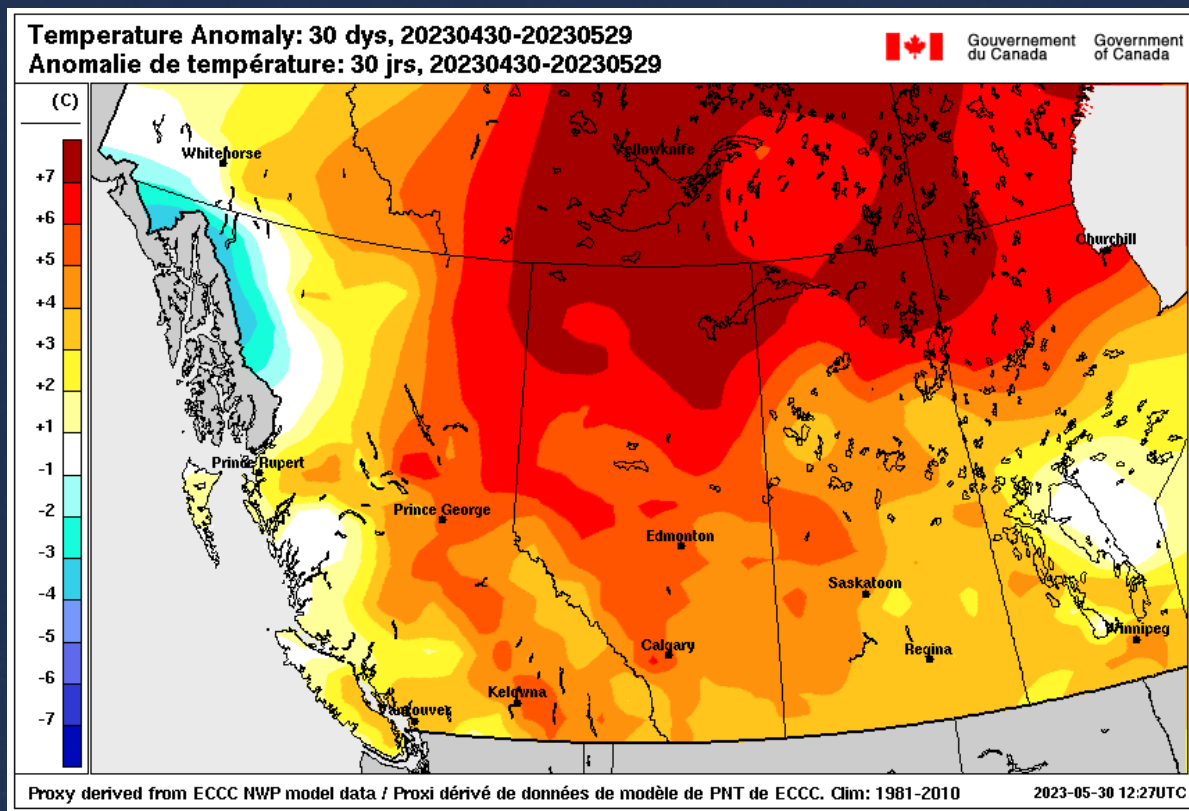
BC Wildfire Service - Predictive Service Unit

Issued June 1st, 2023



BC Wildfire
Service

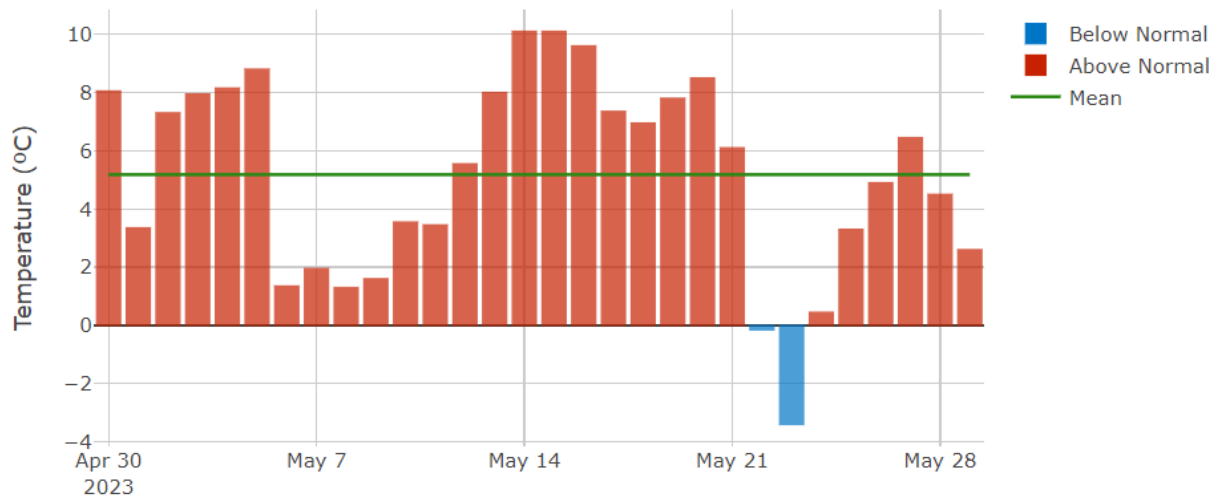
May Recap



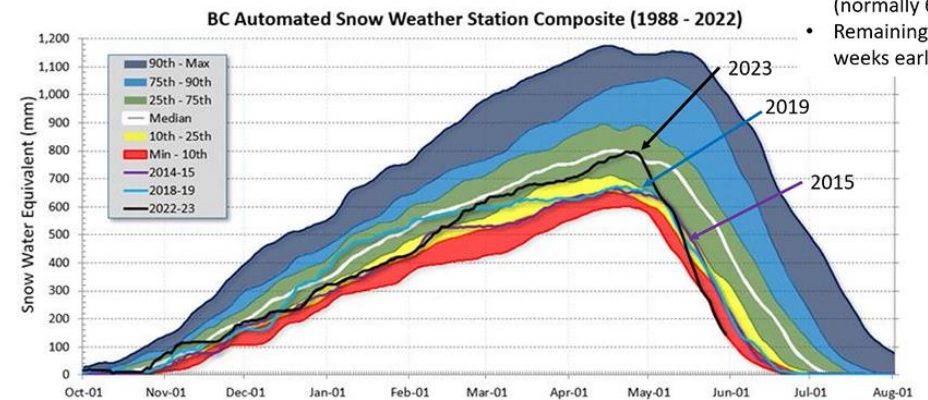
- Conditions in May were significantly warmer and dryer than historical averages.
- An exceptionally strong ridge of high pressure through the middle of May delivered record-breaking temperatures with countless daily and monthly record high temperatures falling across western Canada.
- The blocking ridge also resulted in a prolonged dry spell. The only significant rain event came May 22-23 when 40-60 mm fell over the southern Peace region.

Record Breaking Heat

Running Mean of Daily Temperature Departures
Williams Lake, B.C.



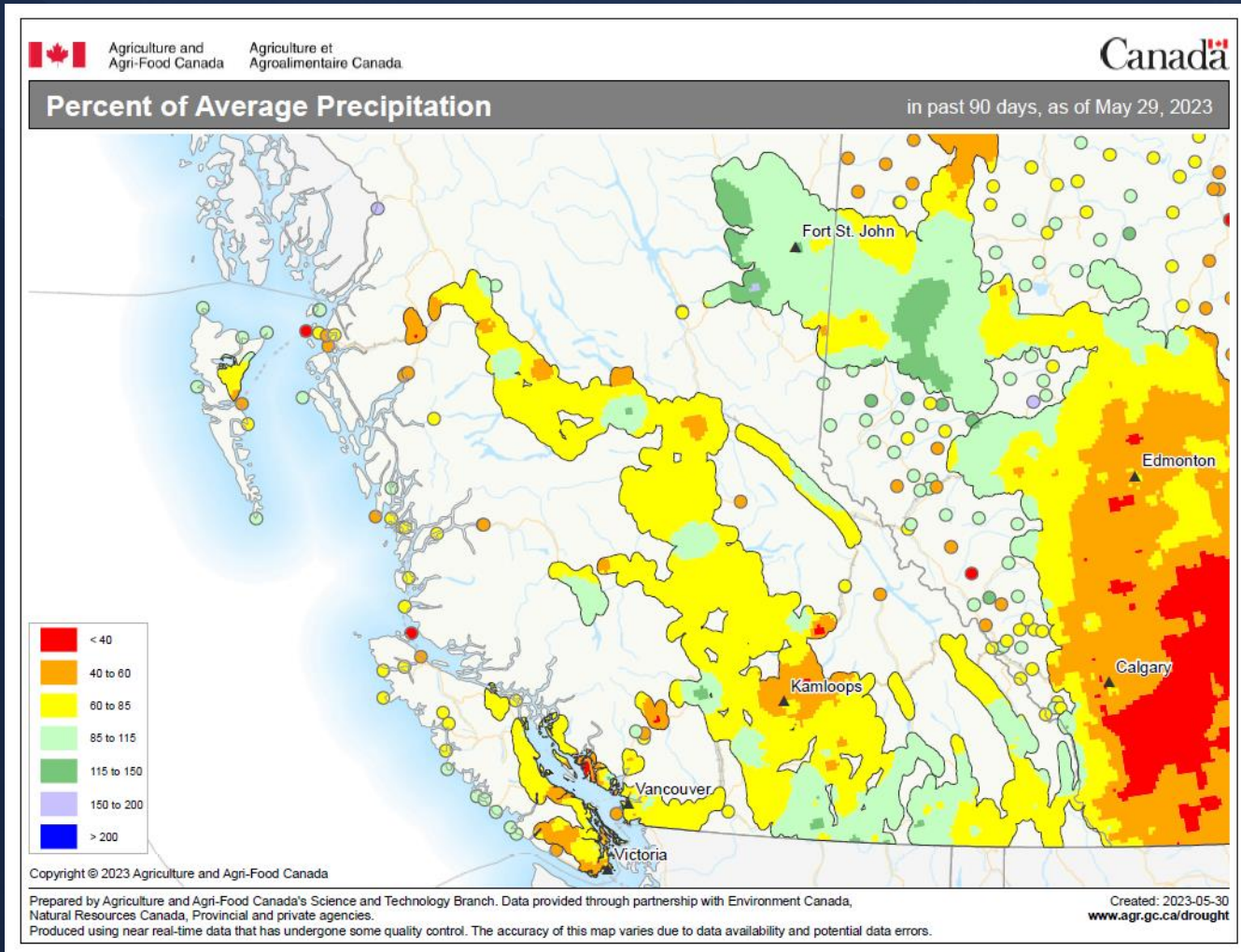
Snow Water Equivalents – Provincial Summary



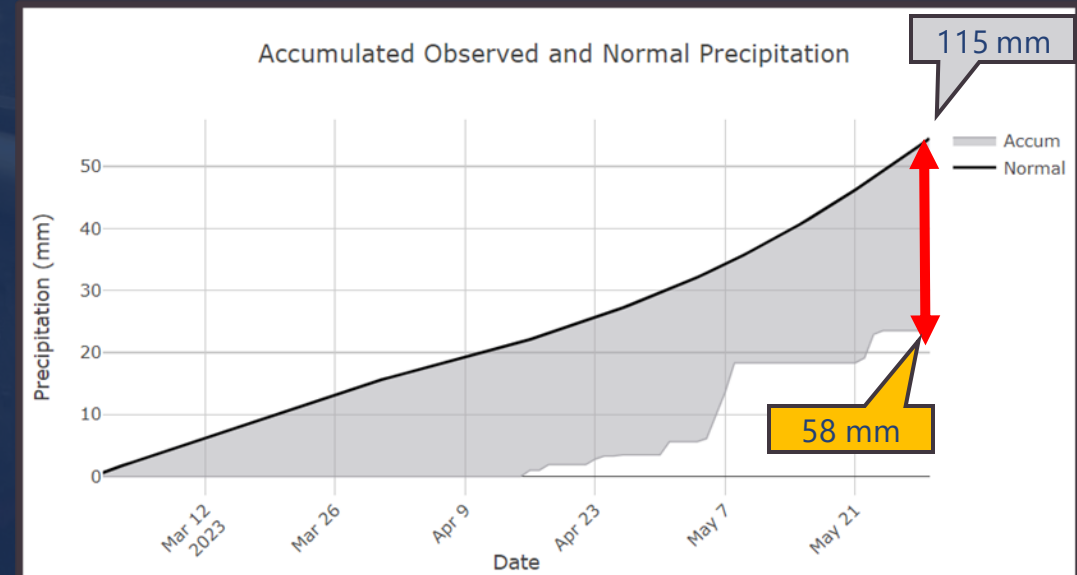
- 18% of snowpack remaining (normally 62% at this time)
- Remaining SWE amount 3 weeks early

Average daily temperatures were consistently 3 to 10 degrees above normal through much of May which accelerated snow melt making high-elevation fuels snow-free and receptive to lightning 2-4 weeks earlier than normal.

Longer term dryness

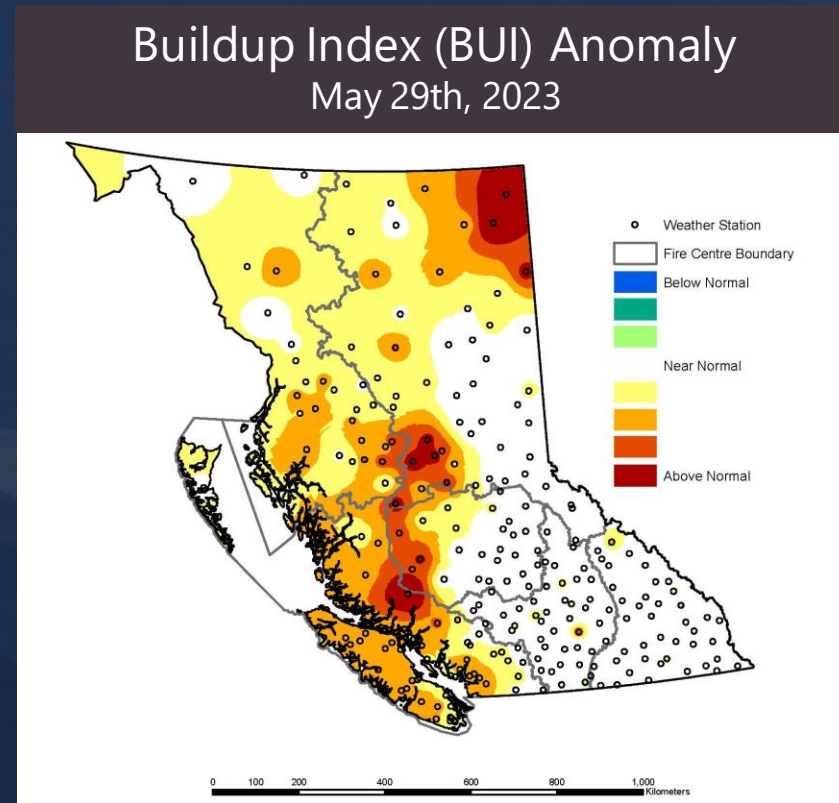


Precipitation at Prince George



Many areas continue to observe significant drought deficits. For example, Prince George has only recorded 58 mm of rain over the past 90 days versus the historical normal of 115 mm.

Current Conditions

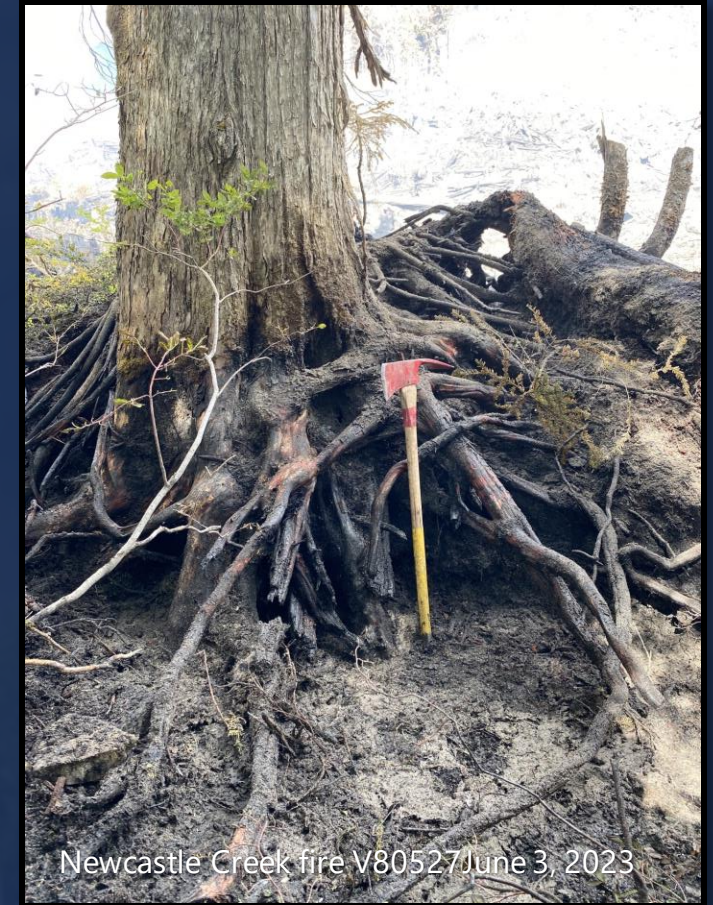


- The Buildup Index (BUI) represents the total amount of fuel readily available to burn.
- The BUI values are anomalously high for this time of year for the Mid-Coast, western Cariboo, Nadina, Vanjam, and northeast corner of the province.

Recent Fire Behaviour



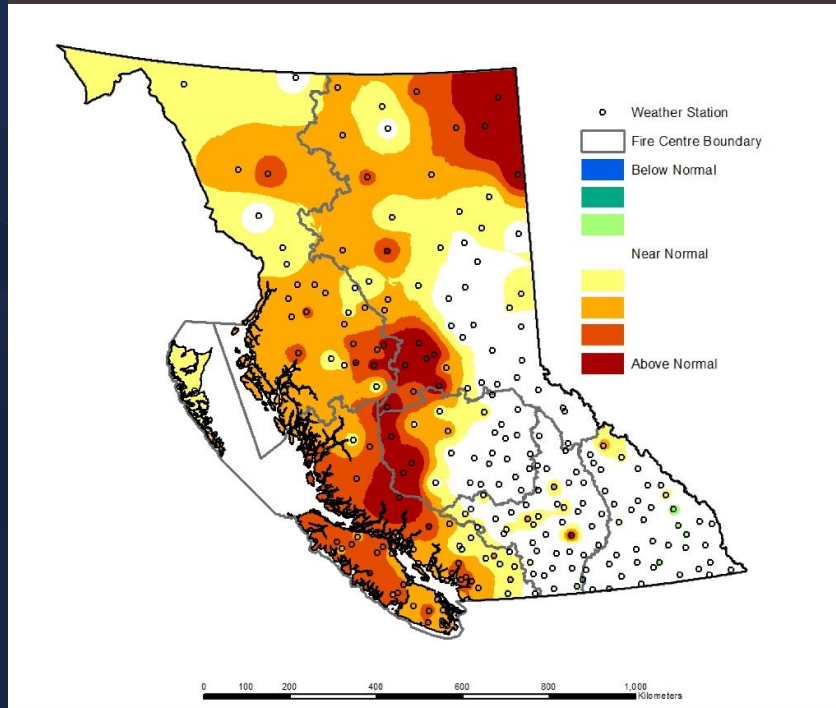
The lightning caused Donnie Creek fire G80280 which is 136 km southeast of Fort Nelson and was discovered May 12th is now at 240,480 hectares. This fire made a 30 km run just 5 days after receiving 40 mm of rain. This is a great example of how fast the fuels and fire weather indices are rebounding after rain events in the Northeast corner of the province.



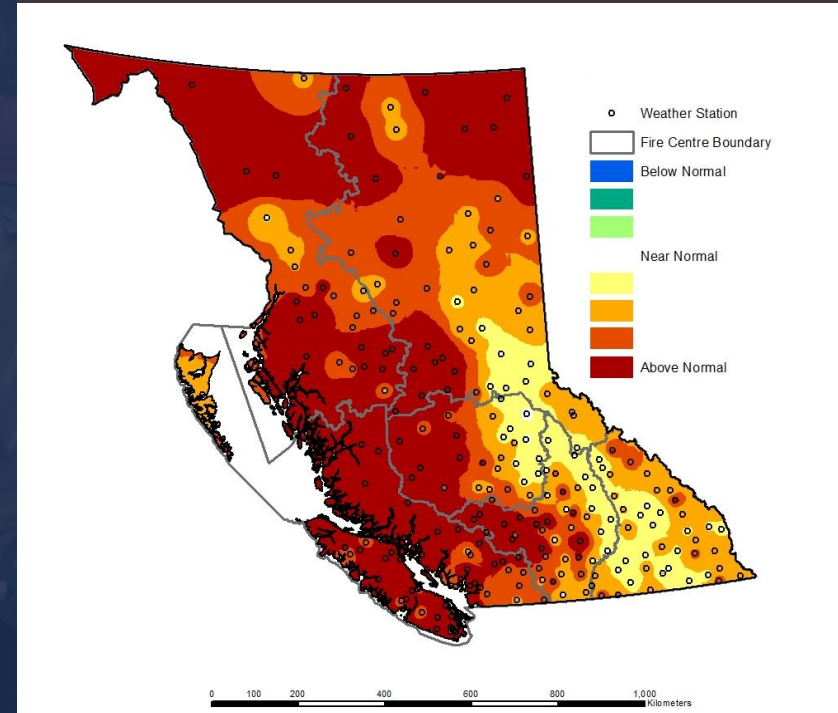
The Newcastle Creek fire V80527 near Sayward on Vancouver Island is reflecting deep drought conditions with burn depths approaching one metre.

Forecasted BUI slide

Buildup Index (BUI) Anomaly
Projected "Normal" June 30, 2023



Buildup Index (BUI) Anomaly
Projected "Dry" June 30, 2023



- Current models suggest we will be having a "dry" June which will make the dry BUI anomaly more likely to reflect field conditions on June 30th.

Impact of High BUI Values on Operations

High Buildup Indices (BUI) represent an increased availability of fuels that are prone to burn.

Higher BUI results in fires that burn hotter and “deeper” such that fires require more resources and time to contain.

Large scale lightning events causing numerous new fire starts will challenge resources and pose a containment risk.

Should elevated winds accompany lightning events and associated starts, the potential for fires to grow very large increases substantially.



How much rain to return to Normal?

For example, current BUI: 135 – Extreme Fire Danger

Normal early June BUI: 40

What would it take to return to normal BUI?

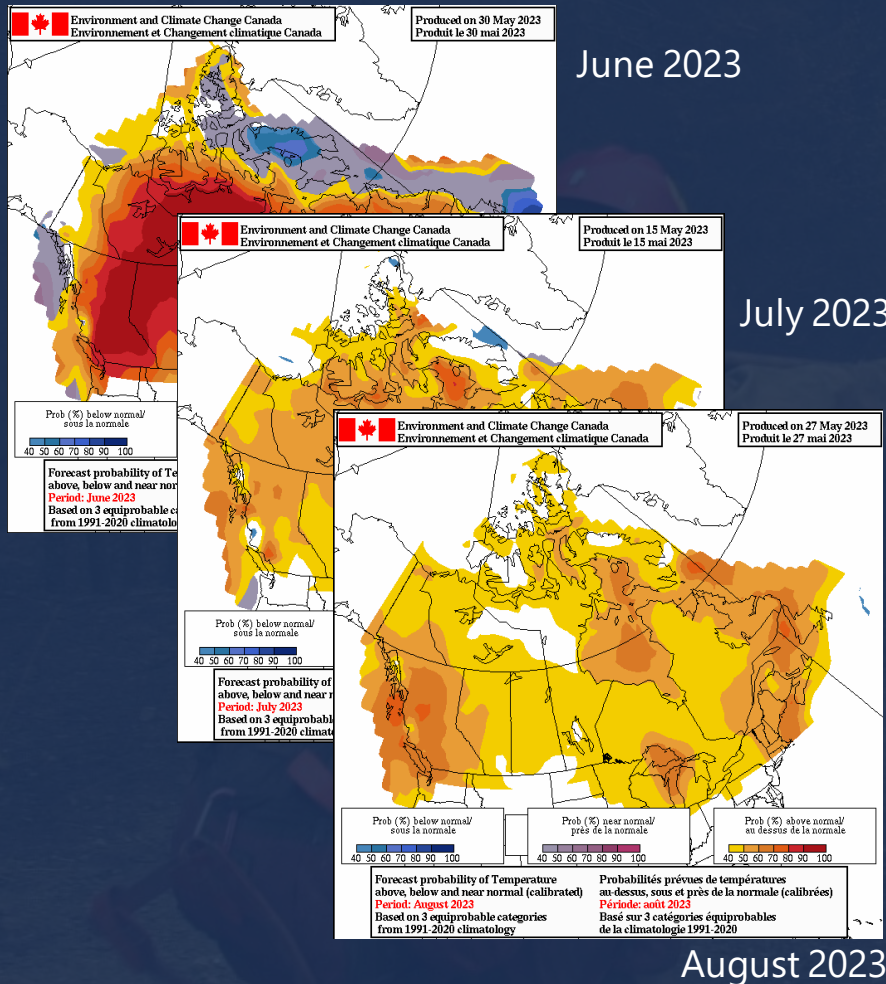
- Above-normal, prolonged, and semi-regular rainfall.
- 2-3 mm per day is required to affect the BUI.
- To lower BUI to 40, we would need 10 consecutive days with 3+ mm of rain each and every day.

BUI – Build Up Index	
0-40	Low Fire Danger
41-70	Moderate Fire Danger
71-120	High Fire Danger
121+	Extreme Fire Danger

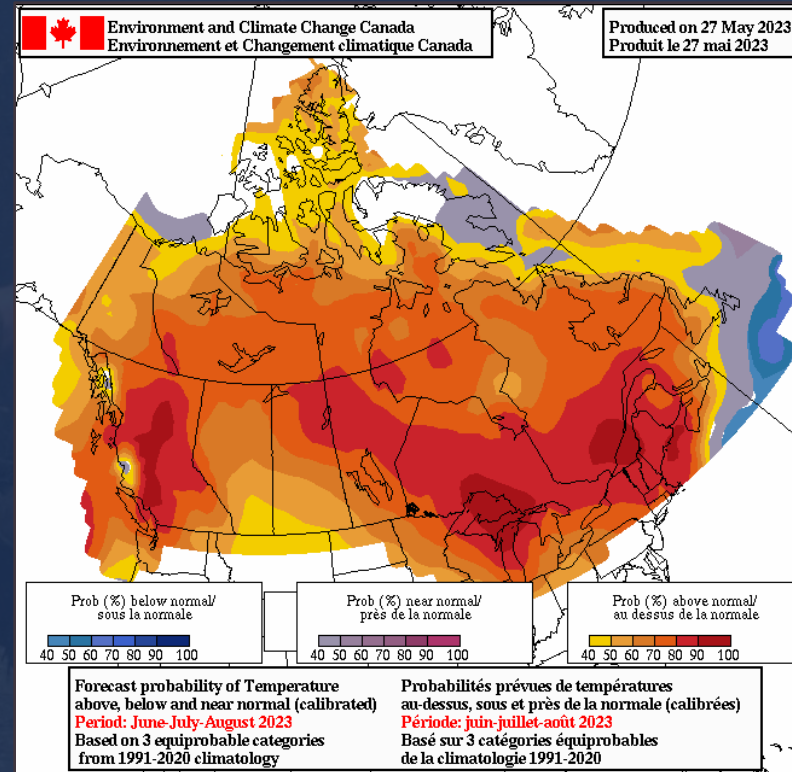
Returning to Normal		
# of Days with 2-3 mm of rain to reach normal BUI (40)	Drying days to reach to High Fire Danger (70)*	Drying days to reach Extreme Fire Danger (120+)*
10	5	14

*Drying day defined as 25°C, relative humidity of 30%, no rain.

Summer Outlook - Temperature

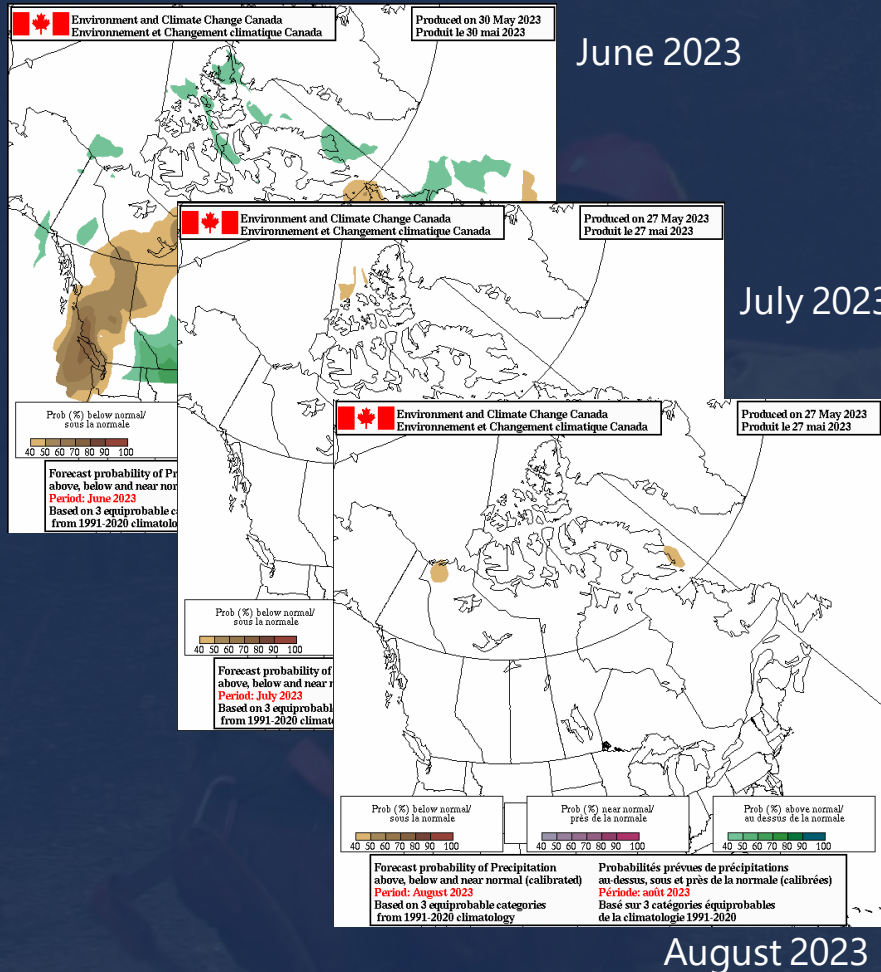


Temperature outlook for June-July-August 2023

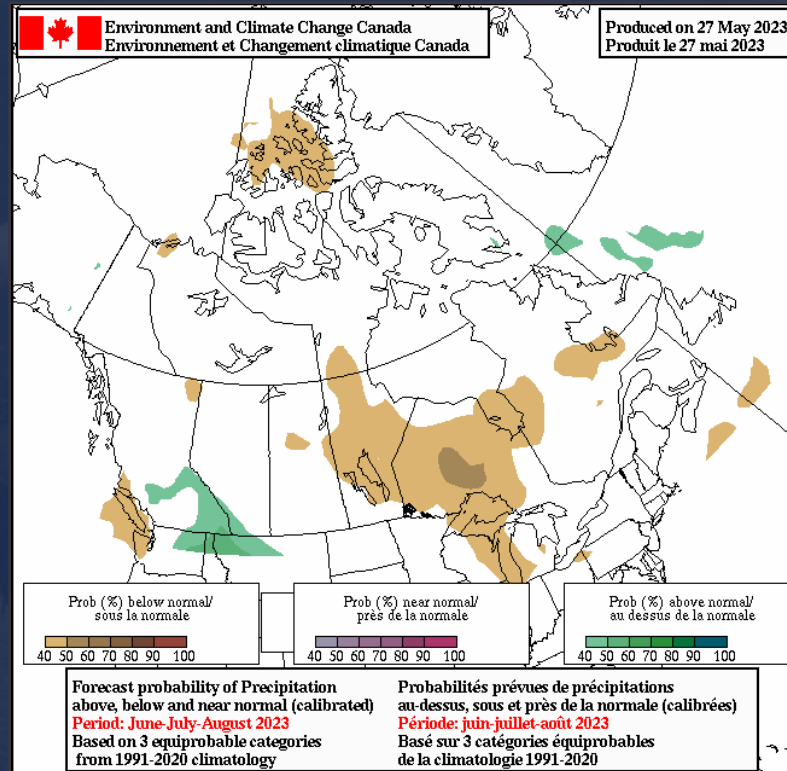


- The latest seasonal guidance from Environment and Climate Change Canada is indicating a high probability of above normal temperatures through June.
- Following an early June heatwave, the longer-range guidance supports additional warmer than normal temperatures through the remainder of the summer.
- Warmer than normal weather will favor effective drying conditions and increase the efficacy of ignition from both lightning and humans in starting and sustaining wildland fires.

Early Summer Outlook - Precipitation

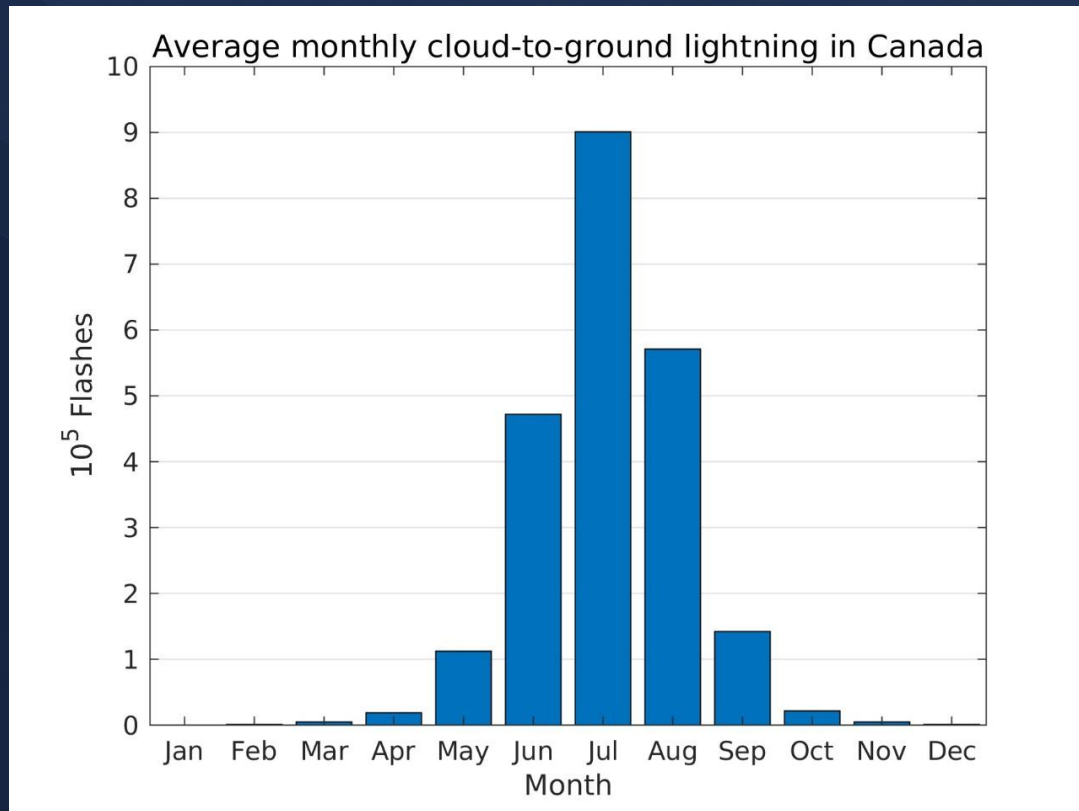


Precipitation outlook for June-July-August 2023

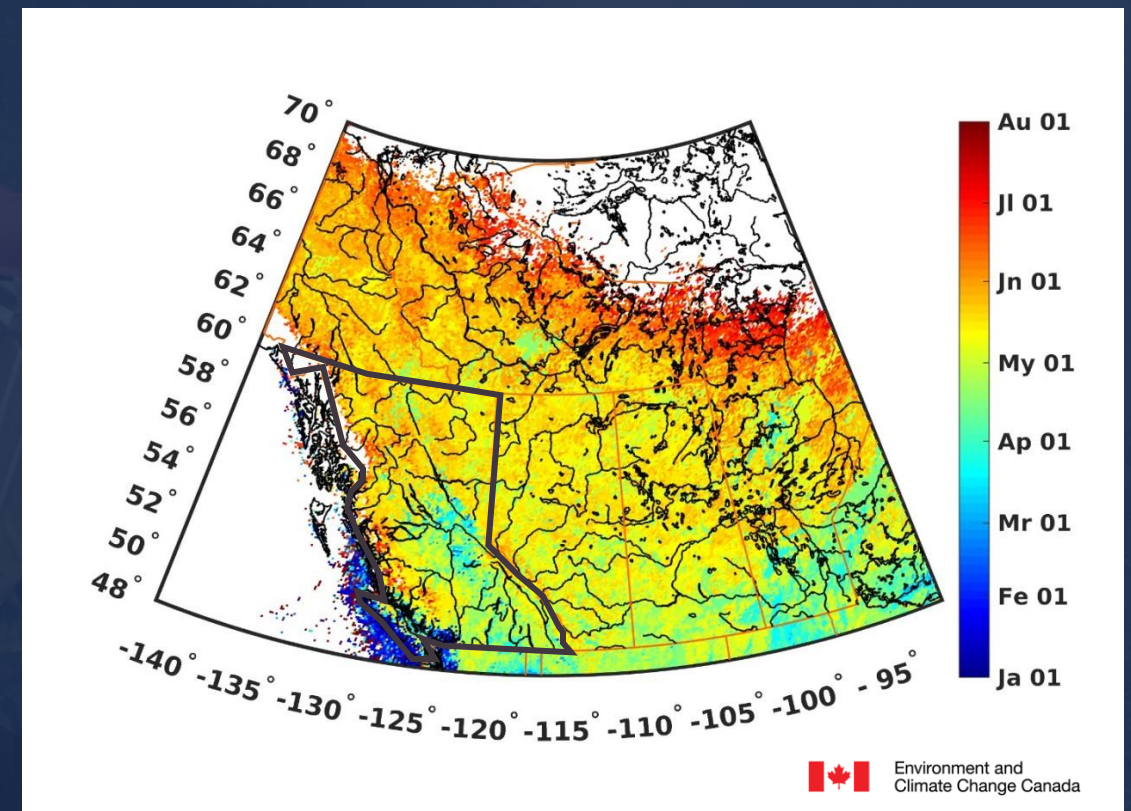


- The ongoing drier than normal conditions are favoured to continue through June.
- Beyond June, there is no clear signal for precipitation heading into July and August however those are typically our driest months of the year.
- Currently, there is no indication of ample rainfall amounts sufficient enough to alleviate the elevated drought conditions in portions of the province.
- It's important to highlight the limited accuracy of long-range precipitation forecast.

Lightning Season



Historically, lightning frequency in Canada increases markedly into June then peaks in July. Given the recent dry pattern and accelerated snow melt, fuels are snow free and receptive to lightning ignition, some 2-4 weeks earlier than normal.

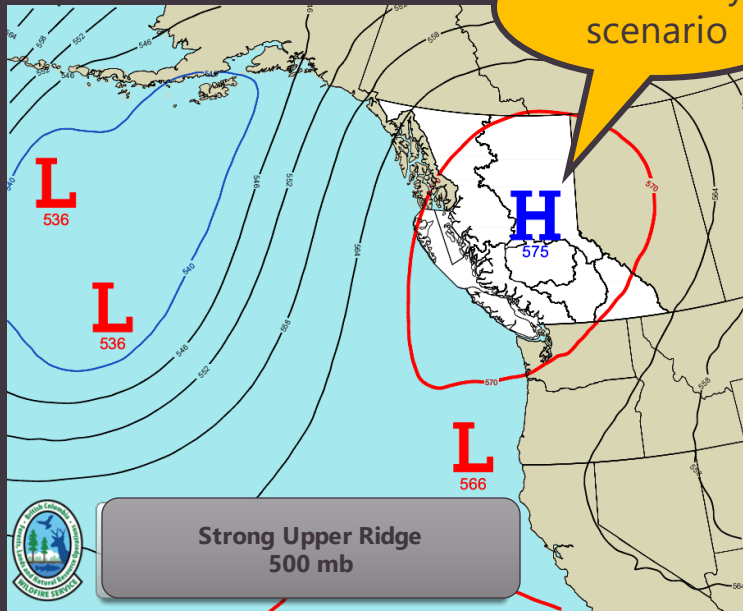


Average date of the beginning of the lightning season in western Canada (1999-2018)

Possible Scenarios

Scenario 1

Dry



The strong ridge of high pressure building through June 10th will exacerbate the already dry conditions in many regions.

Scenario 2

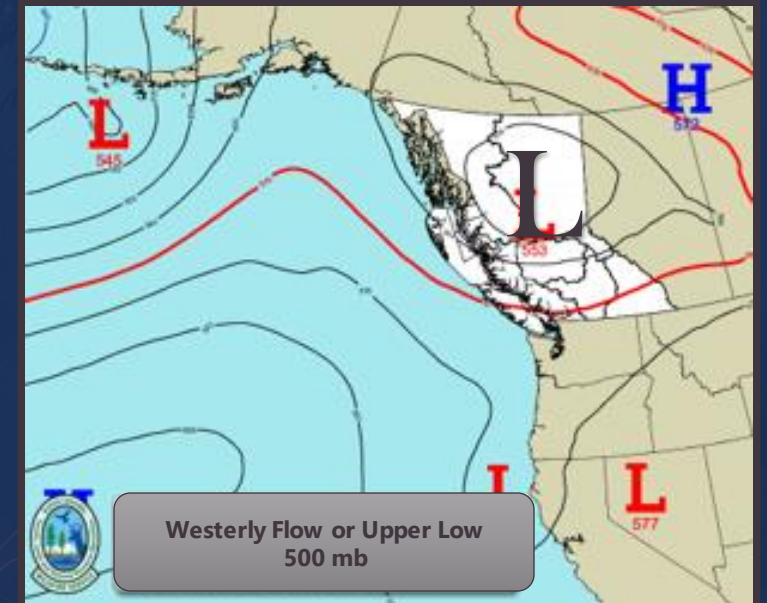
"Normal"



A "normal" summer pattern typically sees the California high pressure system stretch northwards to lie off the coast of B.C. delivering seasonal temperatures and relatively dry conditions.

Scenario 3

Wet

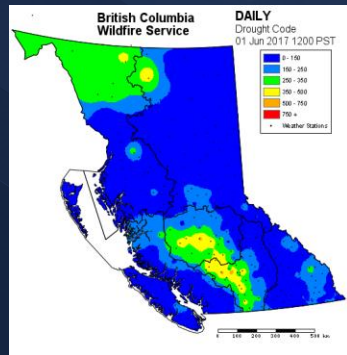


An active westerly flow pattern or stationary upper low-pressure centre would result in wetter than normal summer conditions. An upper low appears possible beginning around June 15th. Its staying power remains uncertain.

Comparing to recent years

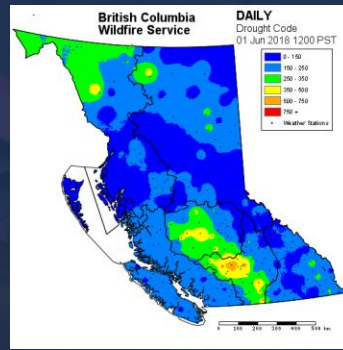
2023

2017



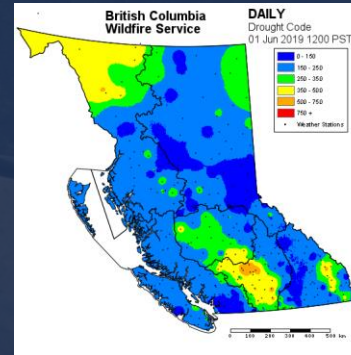
1,200,000 ha.

2018



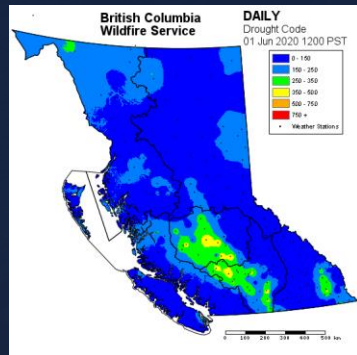
1,354,284 ha.

2019



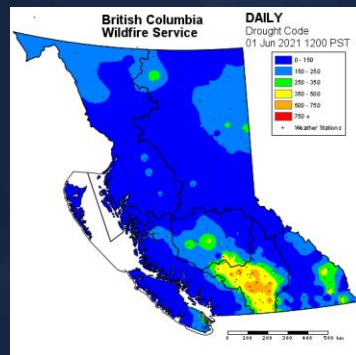
21,138 ha.

2020



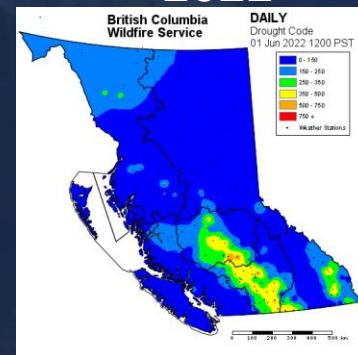
15,000 ha.

2021

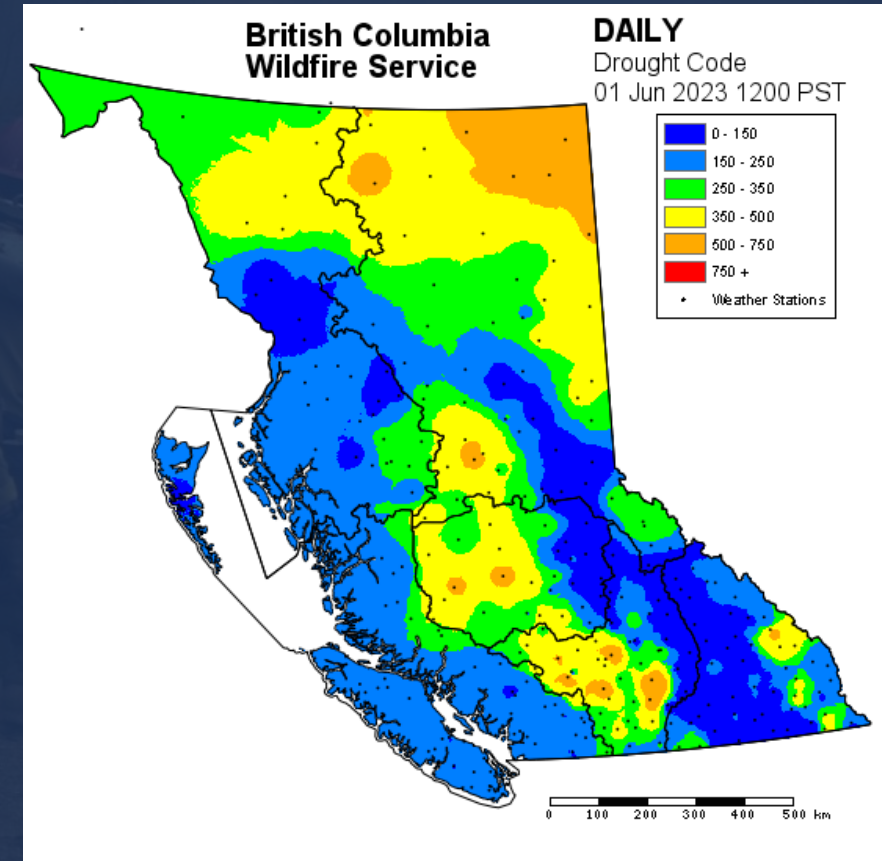


869,279 ha.

2022



133,437 ha.



As of June 1st, 2023: 351,240 ha.

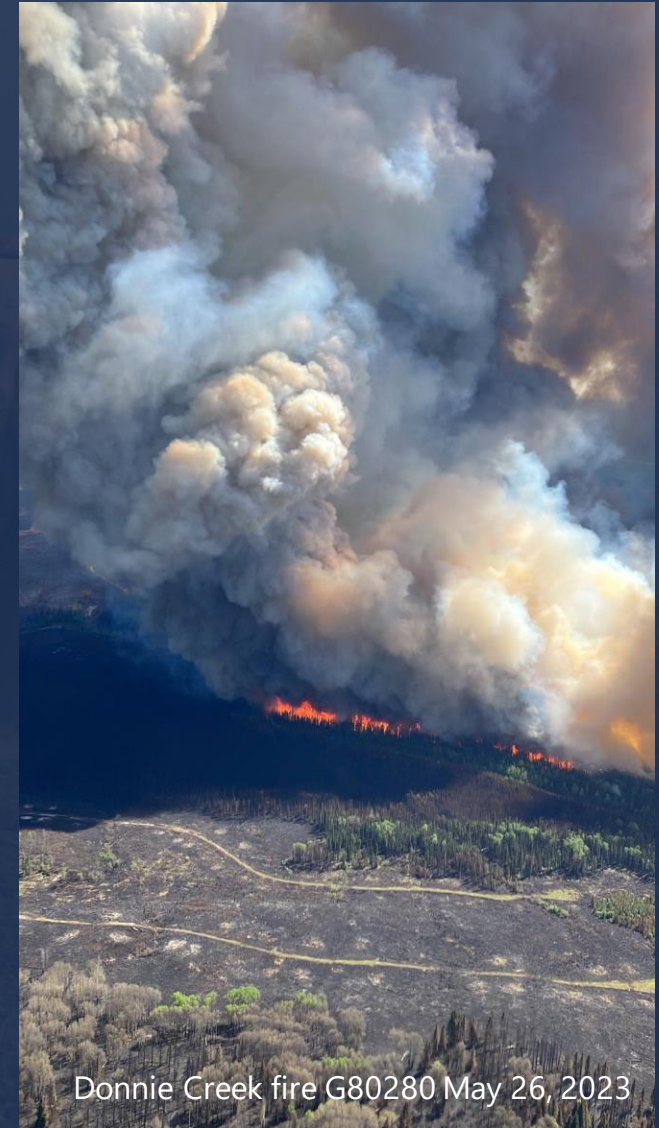
Grass Curing

- Refers to the moisture content of grass, less moisture = more cured (drier).
- Often estimated by observing ratio of dead vs live (green) grass.
- Determines how quickly fire can spread.
- The rate at which grass cures will determine when many parts of Southern BC will have the potential for large fire growth – currently slowed by a high percentage of green grass.
- Curing will accelerate under upcoming hot, dry pattern.



Key Points for Summer 2023 Outlook

- Our fuels are increasingly available to burn due to antecedent drought conditions that will not recover this summer.
- With our high elevation fuels now snow-free, we expect an earlier start to lightning ignited fires than usual.
- Nationally, wildland fire fighting resources are in high demand and inter-agency resource sharing may be limited this summer.
- Widespread lightning events will rapidly escalate provincial fire load. Any accompanying wind events will increase the risk for large fires and likely surpass our suppression capacity.
- It's more important than ever to be diligently cautious with fire this summer and report all fires as soon as possible. Widespread fire bans and prohibitions can be expected as fire hazard increases.



THANK YOU.

Questions?

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BC Wildfire
Service