

DROUGHT MANAGEMENT WATER STATISTICS MONTHLY UPDATE

Issue

In preparation for the 2024 outdoor watering season, the Drought Management Water Statistics Monthly Update is provided to Council for information.

Motion Proposed by Administration

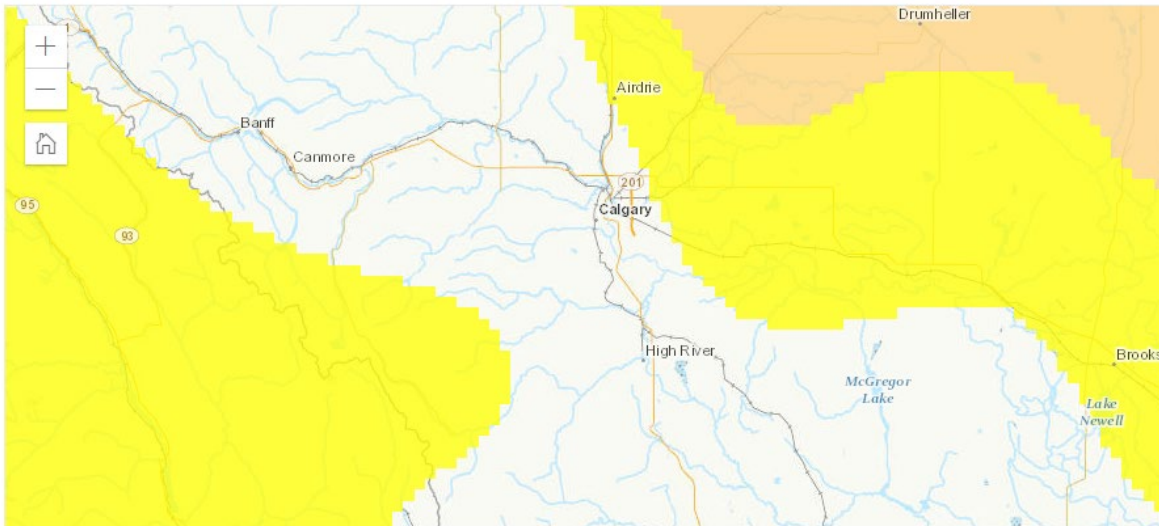
That the Drought Management Water Statistics Monthly Update for June 2024 be received as information.

Report, Analysis and Financial Implications

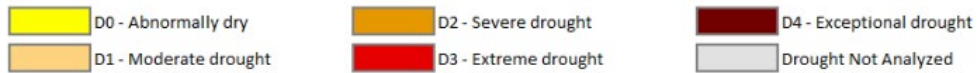
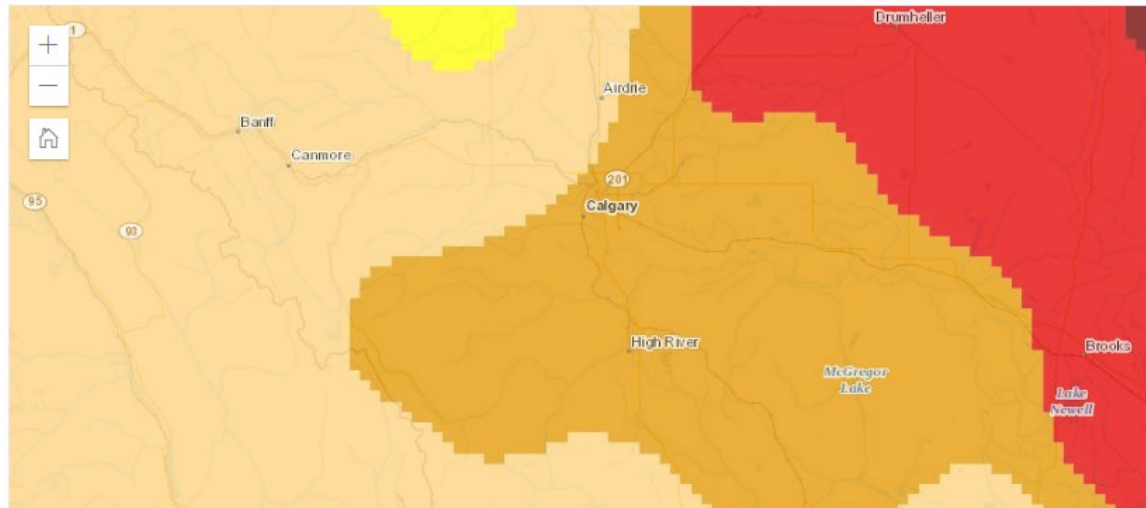
Monthly Drought Metrics	Result
Canadian Drought Monitor (Calgary region – drought conditions).	Drought not analyzed – drought conditions removed (as of May 31, 2024). See Map #1 and notes below (March and April comparison).
Drought Outlook (for end of following month)	Conditions continue to improve. See Map #2 below.

Drought Map #1 – Two (2) months provided (April and May)

Drought conditions as of May 31, 2024



Drought conditions as of April 30, 2024

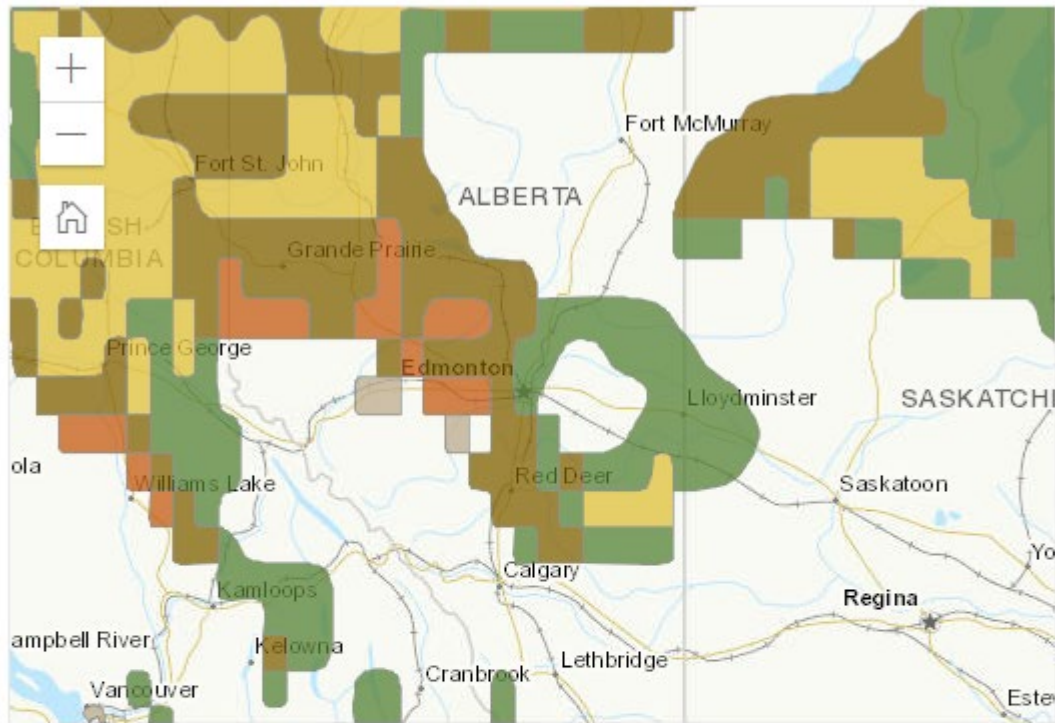


May 2024 Drought Assessment






The Prairies received a significant amount of precipitation this month. As a result, the increased water levels, coupled with precipitation in both April and May, helped to alleviate long-term precipitation deficits and led to the removal of drought conditions throughout the Foothills area towards Calgary and further south near the Canada – USA border.

Drought Map # 2

Drought Outlook for end of the following month



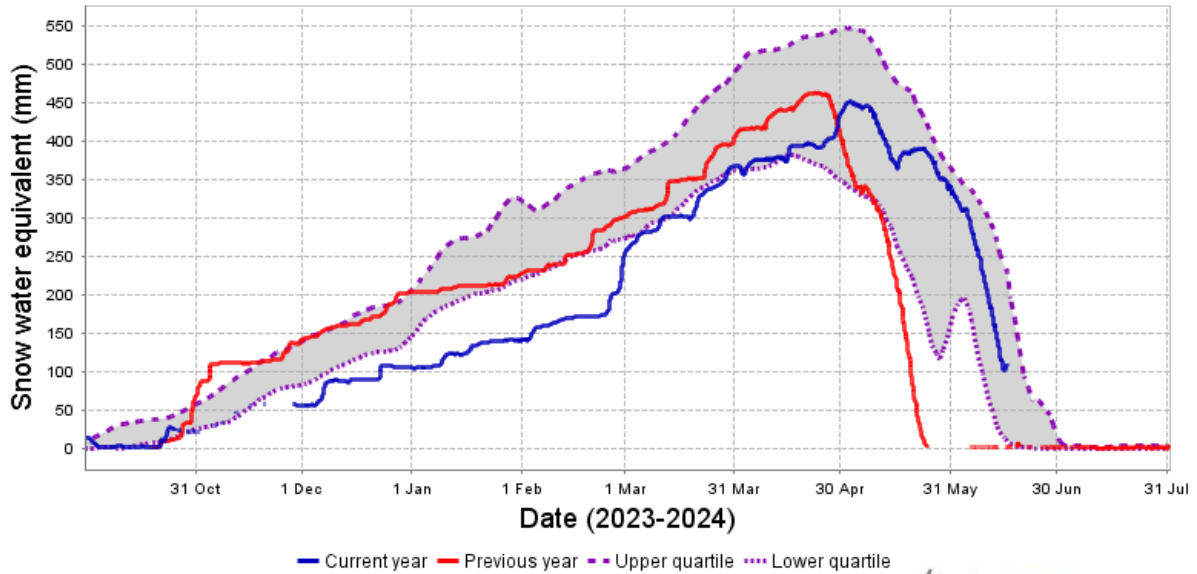
Legend for drought outlook:

-  Drought Removal
-  Drought Improves
-  Drought Develops
-  No change in drought
-  Drought Worsens

Mountain Snowpack - Mount Odlum
Monitoring Station

June 17, 2024 – 109mm - at historical
average levels. See graph below.

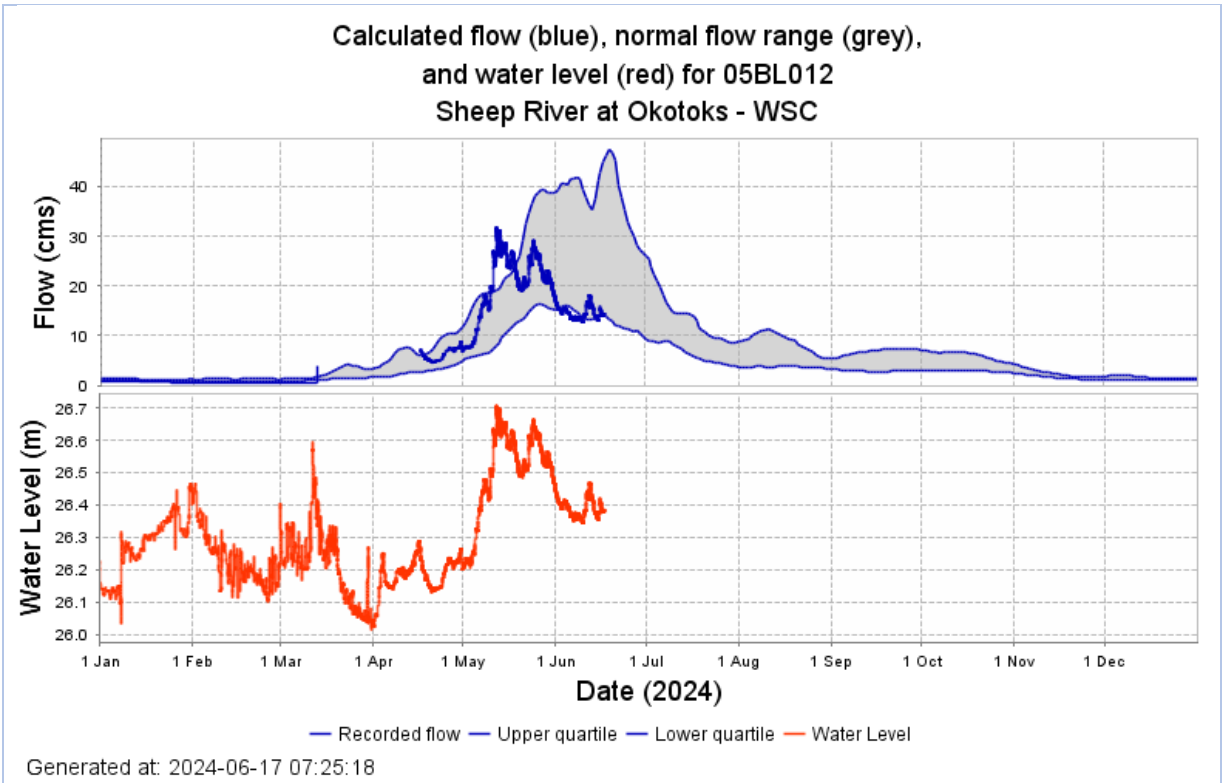
Snow water equivalent for the current year (blue),
the previous year (red), and the normal range (grey)
for station 05BL812
Mount Odlum - EPA



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<p>Mountain runoff forecasts – Bow River Basin</p>	<p><u>Below average to average</u> for May to September period (average for Sheep River).</p>
<p>Sheep River flows (taken from Diamond Valley and Threepoint Creek flow stations)</p>	<p><u>River Flows as of June 17, 2024:</u> Combined Flow – 14.8 m³/sec Instream Objective – 9.44 m³/sec Note: ‘Combined Flow’ is Black Diamond + Threepoint Creek. <i>At present, there is no water shortage advisory issued for the Sheep River.</i></p>



Well Production Capacity vs Water Demand	Production Capacity: 11-12 MLD Water Demand: 8.2 – 9.8 MLD (week of June 10 to 16) <i>MLD = mega liters per day</i>
Reservoir Levels (as of May 8, 2024)	90-95% - normal operating levels (Stage 1 Water Conservation Schedule)

References

Canadian Drought Monitor Classification scheme

Drought categories are based on precipitation percentiles that generally relate to the statistical return period.	
D0 - Abnormally Dry	1 in 3 year event
D1- Moderate Drought	1 in 5 year event
D2 - Severe Drought	1 in 10 year event
D3 - Extreme Drought	1 in 20 year event
D4 - Exceptional Drought	1 in 50 year event

<https://agriculture.canada.ca/en/agricultural-production/weather/canadian-drought-monitor>

Mountain Snowpack

Measured in "snow water equivalent" (mm), compared with the historical average (% of historical average).

<https://rivers.alberta.ca/>

Mountain Runoff Forecasts

Based on predicted stream flows for the period of March – September (2024).

<https://rivers.alberta.ca/>

Sheep River Flows

Information relating to Sheep River flow rates (taken from Diamond Valley & Threepoint Creek flow stations). Includes any posted water advisories and instream objectives (during spring/summer months). Yearly flow graph provided for Okotoks flow monitoring station.

Well Production Capacity vs Water Demand

Current total well production capacity (raw water supply) compared with water demand (treated water to distribution). Based on seven (7) day average, measured in mega litres per day (MLD). Total well production is influenced by groundwater levels (i.e. production increases or decreases with groundwater levels).

Reservoir Levels

Operating levels across three main reservoirs: South Reservoir, Zone 2 North and Zone 3/4 North.

Strategic Plan Goals

<input type="checkbox"/>	Responsibly Managed Growth	<input checked="" type="checkbox"/>	Demonstrated Environmental Leadership
<input type="checkbox"/>	Strong Local Economy	<input type="checkbox"/>	Enhanced Culture & Community Health
<input type="checkbox"/>	Organizational Excellence		

Equity/Diversity/Inclusivity Impacts and Strategy

n/a

Environmental Impacts

In the years 2022-2023, several river basins in Alberta faced critical water shortage conditions attributed to below-average precipitation, diminished snowpack, and elevated temperatures. These conditions have persisted into 2024, worsened by a robust El Niño winter forecast, anticipated above-normal temperatures, and minimal precipitation projections.

Alberta is currently in water shortage management stage 4 (out of 5). However, there have been improvements observed across the province, particularly in the Foothills area towards Calgary. Specific data on precipitation levels, temperature anomalies, and snowpack measurements can provide additional context for understanding the severity of the situation.

Concurrently, efforts to mitigate the impacts of the water shortage through conservation measures and sustainable water management practices are underway, with recommendations for individuals and communities to participate in water-saving initiatives.

Public Participation Strategy

n/a

Alternatives for Consideration

n/a

CAO Comments

This drought monitoring report highlights the monthly changes in indicators to ensure readiness to potential changing conditions.

Attachment(s)

n/a

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June 17, 2024