



**DROUGHT MANAGEMENT WATER STATISTICS MONTHLY UPDATE**

**Issue**

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 September 2024 be received as information.

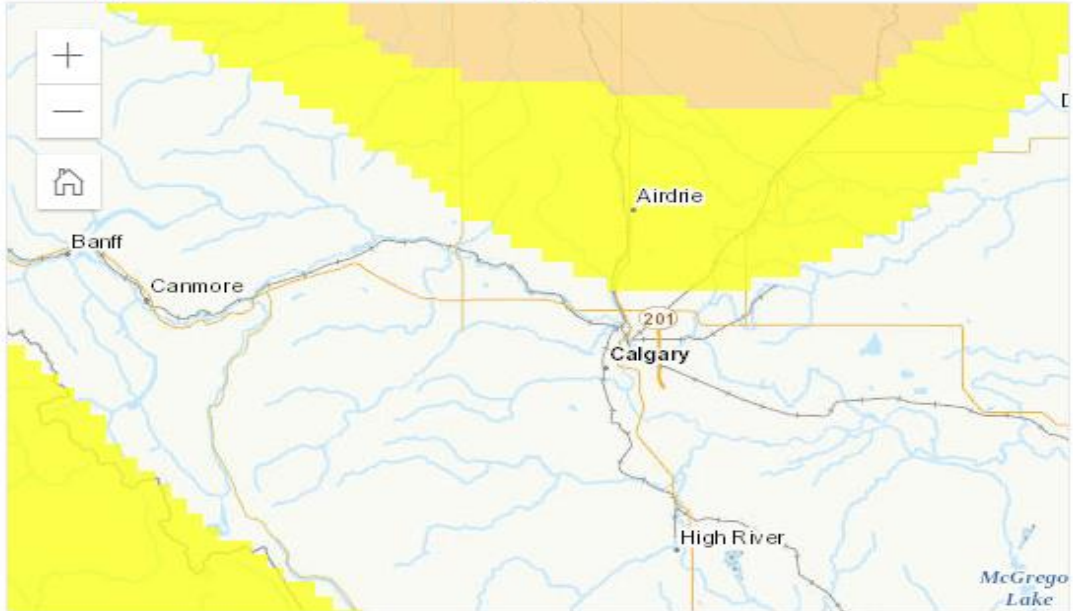
**Report, Analysis and Financial Implications**

With the conclusion of the summer and drought season, this will serve as the final Drought Report for the year.







| Monthly Drought Metrics                                     | Result   |
|---|--|
| Canadian Drought Monitor (Okotoks region - soil conditions) | No drought conditions identified (drought status remains unchanged).<br><br>Much of southern and western Alberta received more than 150% of normal August precipitation<br><i>Source: Canadian Drought Monitor</i> |
| Drought Outlook (for end of following month)                | No forecasted drought conditions   |
|   |  |

Drought Map # 1 - Current as of August 31, 2024

Drought conditions as of August 31, 2024

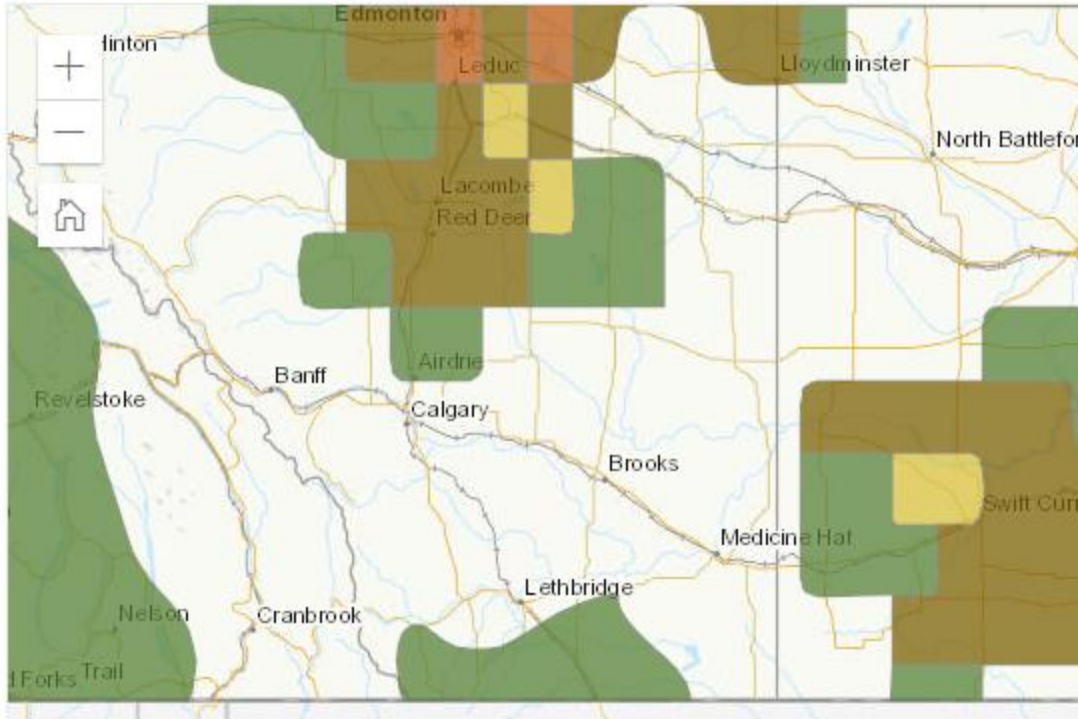


Legend for current drought conditions:






-  D0 - Abnormally dry
-  D1 - Moderate drought
-  D2 - Severe drought
-  D3 - Extreme drought
-  D4 - Exceptional drought
-  Drought not analyzed

Drought Map # 2

### Drought Outlook for end of the following month



Legend for drought outlook:

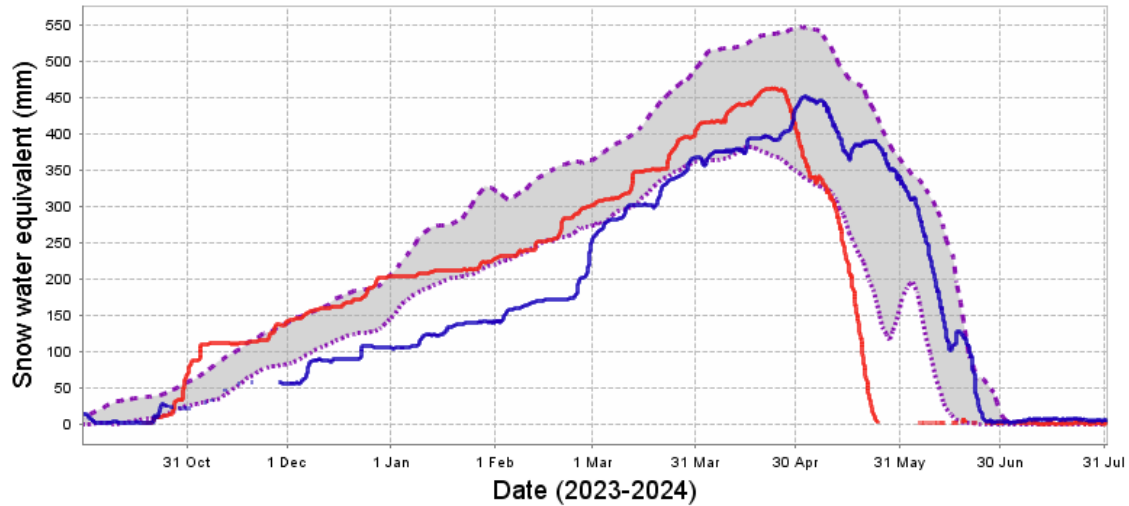
-  Drought Removal
-  Drought Improves
-  Drought Develops
-  No change in drought
-  Drought Worsens

Mountain Snowpack - Mount Odlum  
Monitoring Station

September 12, 2024 – 11mm

**Note: minor snowfall accumulation in  
mid-late August.**

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



Generated at: 2024-09-12 13:40:54



|   |  |
|---|--|
| <p>Mountain runoff forecasts – Bow River Basin</p>                                      | <p><u>August to September period:</u> Below average to average</p>   |
| <p>Sheep River flows (taken from Diamond Valley and Threepoint Creek flow stations)</p> | <p><u>River Flows as of September 12, 2024:</u><br/>                 Combined Flow – 4.63 m<sup>3</sup>/sec<br/>                 Instream Objective – 2.79 m<sup>3</sup>/sec<br/>                 Note: 'Combined Flow' is Black Diamond + Threepoint Creek. <i>At present, there is a low flow advisory issued for Threepoint Creek. As of September 12, 2024 we are meeting Instream Objectives for the Sheep River combined flows (Black Diamond + Threepoint Creek).</i></p> |
| <p>Well Production Capacity vs Water Demand</p>   | <p>Production Capacity: 11.0-12.0 mega litres per day (MLD)<br/>                 Water Demand: 9 – 11 MLD (September 2 – 9)</p>  |
| <p>Reservoir Levels (as of May 8, 2024)</p>   | <p>90-95%</p>  |

## 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).

### *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

From 2022 to 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.

As per the Alberta Environment Drought Map, the Bow River Basin is currently in drought stage 3 out of 5 (as of August 18, 2024). Given increased precipitation in August, there continues to be improvements observed across the province, particularly in the Foothills area towards Calgary. Further to this, the Calgary region is currently out of a drought state as per Environment Canada (as of September 2024). 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.

## Community Engagement Strategy

n/a

## Alternatives for Consideration

n/a

## CAO Comments

This report represents the last drought monitoring report for this year. A water usage report highlighting the usage and demand for water will be presented for information in October.

## Attachment(s)

n/a

Prepared by:  
Davey Robertson  
Water Manager  
September 06, 2024