



Spring Runoff Outlook

April 1, 2025

Prepared by: Flow Forecasting & Operations Planning - Water Security Agency

Executive Summary

- The Water Security Agency continuously monitors moisture conditions and forecast weather patterns to prepare for spring runoff.
- The amount of spring runoff depends on fall soil moisture, snowpack water content and how quickly the snowpack melts.
- In fall 2024, most of Saskatchewan experienced below-normal precipitation, leading to dry conditions at freeze-up, especially in southern and northern Saskatchewan.
- Winter precipitation has been variable across the province, ranging from below normal in south-central and northern Saskatchewan, to above normal in parts of the southwest and west-central portions of the province.
- Runoff is well underway across most of the southwest and areas close to the US border. The slow melt to date has resulted in observed peaks that have generally been near to below normal.
- At this time, it is anticipated that the runoff across most of northern Saskatchewan will be below normal due to dry fall conditions and a below normal snowpack to date.
- Due to an above normal snowpack in the area between Saskatoon and Regina extending east to the Quill Lakes area, an above normal runoff response is projected.
- The remainder of southern and central Saskatchewan is now expected to see a near normal runoff response. In many areas, this is downgraded from the March report due to the below normal precipitation received over the last month in combination with minor melting.
- Snowfall throughout the remainder of the spring, and the melt rate, is expected to have a significant impact on runoff yields.
- Most major water supply reservoirs in southern Saskatchewan are at or near normal levels.
- Most reservoirs are expected to be near normal levels following the spring runoff, except for some reservoirs in the southwest, which are expected to be lower than normal this summer but are expected to have enough water for full irrigation this year (i.e., Harris and Downie).
- The Water Security Agency is monitoring basin conditions and managing Lake Diefenbaker based on snowpack and precipitation. Currently, Lake Diefenbaker is above normal levels for this time of year.
- The current operating plan for Lake Diefenbaker is to continue to capture a portion of the prairie runoff to reach a target elevation of 553 metres by early May. This is an above normal elevation for this time of year, and at this elevation most needs can be met. This plan still focuses on retaining water supplies to ensure safe, reliable drinking water for communities.
- In the Souris River Basin, reservoirs are projected to be within normal operating ranges following the spring runoff.
- All lakes within the Qu'Appelle River Basin are expected to remain in the normal operating ranges.
- In the Churchill River Basin, dry conditions are expected to result in lower flows and lake levels this year.
- In the Quill Lakes Basin, above normal runoff volumes are expected this spring.
- Long-range forecasts predict precipitation accumulations that range from below normal in the south to above normal in the north from April to June. Above normal temperatures are expected for the same time period.
- The Water Security Agency will continue to monitor and report on landscape conditions and water supply reservoirs to allow for a timely response to changing conditions. The agency continues to work internally and across government to support residents in times of drought or flooding.

Cover Photo: Moose Jaw River above Thunder Creek, March 25, 2025
(Jared Ryan, Water Security Agency)

Spring Runoff Potential

Summary:

- Snow melt runoff is well underway across the southwest and across the areas close to the US border.
- At this time, it is anticipated that the runoff across most of northern Saskatchewan will be below normal due to dry fall conditions and a below normal snowpack.
- The area between Saskatoon and Regina extending east to the Quill lakes is expected to see above-normal runoff due to a higher snowpack still present.
- The remainder of central and southern Saskatchewan is expected to see a near normal runoff response, which, in many cases, is a downgrade from the March forecast due to lower precipitation and minor melting over the past month.

To facilitate preparations for spring runoff in 2025, the Water Security Agency (WSA) issues this preliminary runoff outlook. Figure 1 shows the projected snowmelt runoff potential for the province, based on conditions as of April 1, 2025. Near normal climatic conditions between April 1 and the spring melt were assumed when developing the spring runoff potential map. The runoff potential was determined based on the conditions at freeze-up (Figure 2) and the snowfall received to date (figures 3 and 5).

Forecasted peak levels for select lakes and reservoirs are included in Table 1, and peak flow estimates for select watercourses are included in Table 2. Table 3 has the observed peaks for the locations that are currently snow free.

Runoff is well underway across most of the southwest and areas close to the US border. Warmer daytime temperatures combined with freezing overnight temperatures over the past month has resulted in a slow melt. With the slow melt, sustained flows have continued over the past month, but no significant peaks have been recorded. Most

streams and rivers have experienced near to below normal peaks with near to above normal runoff volumes due to the slow melt.

Most of the Churchill River Basin and further north is still expected to see a below normal runoff this spring due to dry fall conditions and a below normal snowpack. The exception is the eastern parts of the Churchill River Basin around Sandy Bay and Flin Flon extending north to the southern part of Reindeer Lake, where due to above normal precipitation over the past month, a near normal runoff this spring is now forecast. Reindeer Lake is currently low and flows in the Churchill River Basin are generally below lower quartile for this time of year. With the dry conditions and low water levels throughout much of the north, an above normal runoff is needed to produce near normal runoff in this area this spring.

An above normal runoff potential is expected this spring in the area between Regina and Saskatoon and extending eastward towards the Quill lakes. This area still has an above normal snowpack, so based on normal conditions going forward from now until melt, peak flows are expected to be near a 1 in 5-year event in this area.

Across the remainder of the snow-covered areas in southern and central Saskatchewan, the below normal precipitation over the past month has resulted in a downgrade of the runoff potential for many areas. The runoff is now expected to be near-normal.

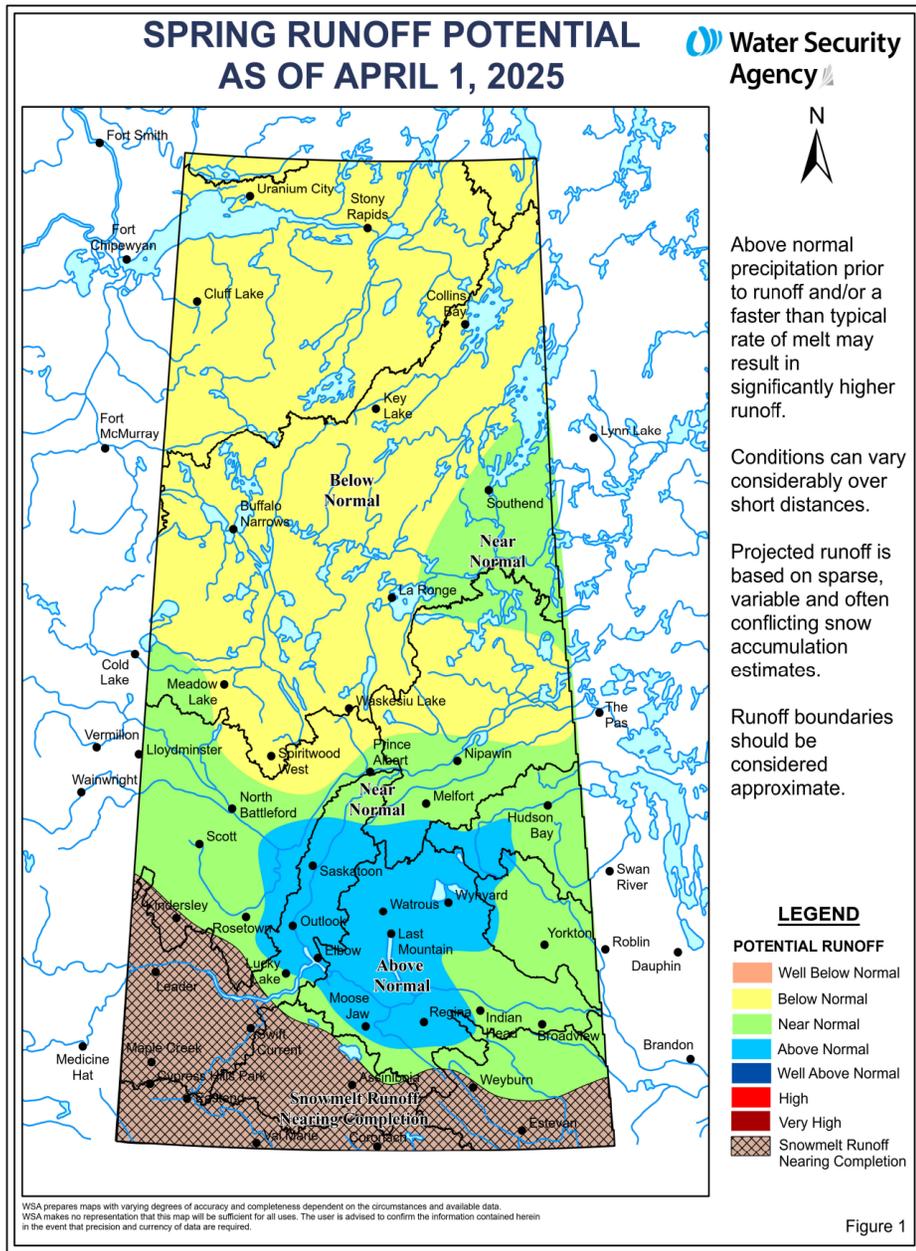


Figure 1: Spring Runoff Potential as of April 1, 2025

Category	Description	Approximate Frequency of Expected Flow
Well Below Normal	Little to no runoff is expected	<< 1:2 year event
Below Normal	Some runoff is expected	< 1:2 year event
Normal	Flows are expected to be average and will generally not exceed channel capacity in most reaches	≈ 1:2 year event
Above Normal	Flows from snowmelt runoff will exceed natural channel capacity in some areas	≈ 1:5 year event
Well Above Normal	Significant out of channel flow and some flooding will likely occur	≈ 1:10 year event
Very High	Significant flooding is likely to occur	≈ 1:25 year event or greater

- Above normal precipitation prior to runoff (especially if it occurs as rainfall), and/or a faster than normal melt, could result in significantly higher runoff than presently forecast.
- Below normal precipitation prior to runoff and/or a slow melt, could result in significantly lower runoff because of lower runoff volumes than presently forecast or the snowmelt runoff recharging soil moisture.
- Mid-winter melt events or rain events on frozen soils can increase runoff yields and estimates from snowmelt accumulation because these events cause the runoff to go into the streams instead of a portion of it infiltrating into the soil like it normally would.
- Figure 1 applies to local runoff as opposed to the main stem river flows on major systems, such as the Qu'Appelle and Saskatchewan rivers.
- This forecast is based on limited data and should be used as a general guide for large geographical areas. Local conditions may vary significantly from the regional conditions and boundaries. Figure 1 should be considered approximate.
- Once the ice breaks, ice jamming can result in localized out-of-bank flows and flooding, even for below normal flows.

Table 1: Provisional Forecast for Saskatchewan – April 2025

Lake/Reservoir	2025 April 1 Level (metres)	Forecast* 2025 Peak Spring Levels (metres)	Shoreline ¹ Level/FSL (metres)	Normal Summer Level (metres)	2024 Peak (metres)	Recorded Historical Extreme	
						Level (metres)	Year
Anglin	515.32	515.5	515.	515.3	515.7	516.05**	2013
Big Quill	519.54	520.1	521.47 (spill)	515.0	519.9	520.92	2017
Boundary	559.87	560.8	560.83	560.5	560.5	561.15	1979
Buffalo Pound	509.27	509.8	509.47	509.4	509.6	511.45	1974
Candle Lake	494.05	494.5	494.50	494.4	494.5	495.25	1973
Cookson	752.18	752.0	753.00	752.5	752.5	753.35	1979
Crooked	450.68	452.2	452.30	451.7	451.7	454.40**	2014
Echo and Pasqua	478.47	479.3	479.30	479.1	479.1	480.98	2011
Fishing	529.84	530.6	529.70	528.5	530.2	530.92	2011
Good Spirit	484.33	484.8	484.60	484.6	484.9	485.68**	2010
Grant Devine	561.06	562.2	562.00	561.5	562.0	566.58**	2011
Jackfish	529.17	529.5	529.40	529.4	529.5	530.0	1985
Katepwa and Mission	478.29	478.6	478.70	478.3	478.4	479.58	2011
La Ronge	364.02	364.4	364.10	364.4	364.3	364.98**	2020
Last Mountain	489.91	490.6	490.70	490.2	490.3	492.09	1955
Moose Mountain	620.17	620.3	620.30	620.3	620.8	621.9	2011
Nickel Lake	562.35	563.8	563.00	562.8	563.5	564.0	2011
Rafferty	549.48	549.9	550.50	550.0	549.9	554.05**	2011
Round	441.78	443.0	443.28	442.4	442.0	445.70**	2014
Wascana	570.57	570.8	570.60	570.5	570.7	572.23	1974

* These forecast peaks are based on a typical spring precipitation and rate of melt. Above normal precipitation and/or rapid melt may result in significantly higher levels.

** Occurred after spring runoff during summer event(s).

Table 2: Spring Runoff Forecast

Basin and Location	April 2025 Forecast*		2024 Spring Peak Flow (m ³ /s)**	Historical Spring		
	Peak Flow (m ³ /s)	Peak Flow Frequency		Normal Year	Recorded Maximum Spring	
			Flow (m ³ /s)	Flow (m ³ /s)	Year	
ASSINIBOINE RIVER BASIN						
Assiniboine River at Sturgis	60	1:5	37	30	111	1995
Whitesand River near Canora	85	1:5	113	36	247	1995
Assiniboine River at Kamsack	175	1:5	222	78	488	1995
QU'APPELLE RIVER BASIN						
Qu'Appelle River near Lumsden	77	1:5	15	31	436	1974
Qu'Appelle River below Craven	45	1:5	5	20	141	1974
Qu'Appelle River below Loon Creek	55	1:5	6	26	163	2011
Qu'Appelle River near Hyde	78	1:5	36	35	254	2011
Qu'Appelle River near Welby	85	1:5	119	40	345	2011
Moose Jaw River above Thunder Creek	22	1:2	8	24	252	1974
Moose Jaw River at Burdick	26	1:2	8	30	368	1974
Wascana Creek at Regina	36	1:5	5	20	102	1974
Lanigan Creek above Boulder Lake	16	1:5	19	9	56	2006
Pheasant Creek near Abernethy	9	1:2	8	7	47	1976
Cutarm near Spy Hill	11	1:5	26	6	35	1955
BEAVER RIVER BASIN						
Beaver River near Dorintosh	75	<1:2	52	92	654	1962
LAKE WINNIPEGOSIS BASIN						
Red Deer River near Steen	47	1:5	15	20	102	1972
Red Deer River near Erwood	155	1:2	109	150	878	2006

Basin and Location	April 2025 Forecast*		2024 Spring Peak Flow (m ³ /s)**	Historical Spring		
	Peak Flow (m ³ /s)	Peak Flow Frequency		Normal Year	Recorded Maximum Spring	
			Flow (m ³ /s)	Flow (m ³ /s)	Year	
NORTH SASKATCHEWAN RIVER BASIN						
North Saskatchewan River near Deer Creek	500	1:2	490	454	1660	1974
Eagle Creek near Environ	15	1:2	5	12	136	1970
North Saskatchewan River at Prince Albert	800	1:2	525	718	3880	1974
SASKATCHEWAN RIVER BASIN						
White Fox River near Garrick	28	1:2	16	26	160	1974
Torch River near Love	48	1:2	93	43	170	1955
Carrot River near Armley	70	1:2	15	71	377	1974
Carrot River near Smoky Burn	190	1:2	100	200	816	1972
SOURIS RIVER BASIN						
Long Creek near Noonan	17	1:2	5	19	183	2011
Yellow Grass Ditch near Yellow Grass	6	1:2	5	7	79	2011
Souris River at Ralph	18	1:2	4	25	118	1979
Jewel Creek Near Goodwater	7	1:2	0.1	4	44	2011
Moose Mountain above Grant Devine Lake	18	1:2	16	18	99	2011
Souris River near Sherwood	7	<1:2	15	32	388	1976
MISSOURI RIVER BASIN						
Frenchman River near Ravenscrag	12	<<1:2	15	30	200	1952

* These forecast values are based on typical spring precipitation and typical rate of melt. Above normal precipitation and/or rapid melt may result in significantly higher flows.

** Provisional data, subject to change

Table 3: Observed 2025 Spring Peak for Snow Free Areas

Basin and Location	April 2025 Observed*		2024 Spring Peak Flow (m ³ /s)**	Historical Spring		
	Peak Flow (m ³ /s)	Peak Flow Frequency		Normal Year	Peak Flow (m ³ /s)	
				Flow (m ³ /s)	Flow (m ³ /s)	Year
SWIFT CURRENT CREEK BASIN						
Swift Current Creek below Rock Creek	25.8	1:3	16	18	85	1955
Rushlake Creek above Highfield Reservoir	3.3	<1:2	5	7	38	1969
OLD WIVES LAKE BASIN						
Notukeu Creek near Vanguard	19.6	1:2	8	25	210	1952
Wood River near Lafleche	22.8	<1:2	8	35	292	1952
MISSOURI RIVER BASIN						
Battle Creek at Alberta Boundary	0.4	<<1:2	11	5	20	1985
Battle Creek near Consul	2.0	<1:2	5	5	65	1967
Lodge Creek near Alberta Boundary	3.5	<<1:2	22	14	110	1952
Denniel Creek near Val Marie	8.5	1:2	22	9	43	2011
East Poplar River above Cookson Reservoir	2.5	<1:2	4	5	30	1982

* These forecast values are based on observed peak flow to date. Above normal precipitation and/or additional snow followed by a rapid melt may result in significantly higher flows.

** Provisional data, subject to change

Fall Precipitation and Soil Moisture Conditions

Summary:

- Fall 2024 was generally drier than normal across the province.
- Following a heavy rain event early in September, the remainder of the fall was generally drier than normal across the province.
- With the two dry months leading up to freeze up, most of central, northern and southeastern Saskatchewan went into the winter with drier than normal soil moisture conditions.

In fall 2024, WSA developed a hydrological drought risk map (Figure 2) that illustrates the risk to surface water and shallow groundwater supplies for 2025 based on the fall 2024 conditions.

As outlined in the *2024 Conditions at Freeze-up Report*, across most of the province, precipitation accumulations in the fall were less than normal, which resulted in generally dry conditions at freeze-up. Conditions were driest across south-central and northeastern Saskatchewan. In west-central Saskatchewan, heavier rainfall in the early fall resulted in near normal soil moisture conditions going into freeze-up. Across the remainder of the province, topsoil moisture conditions were generally below to well below normal.

Two mid-November snowstorms brought 10 to 80 cm of snow across Saskatchewan, with east-central regions receiving the highest amount. These early snowfalls could lead to two possible outcomes: 1) Areas where the snow partially melted and refroze may experience reduced infiltration capacity in spring due to frozen and sealed-off topsoil. 2) In regions where early snowfall remained, insulation from the snowpack may have reduced frost penetration, leading to higher spring infiltration and lower runoff.

DROUGHT RISK 2025

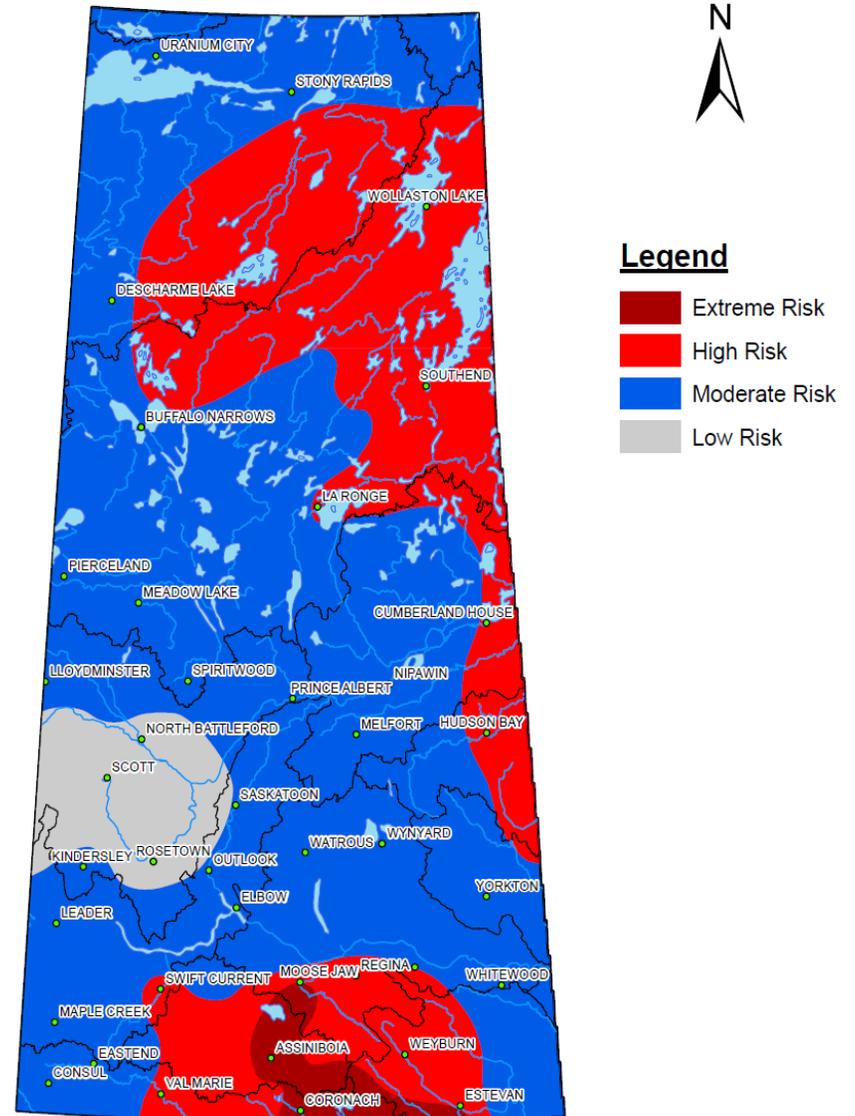


Figure 2: Drought Risk Map Based on 2024 Fall Conditions

Winter Precipitation

Summary:

- Precipitation accumulations this winter generally ranged from near normal to above normal across the province, with some pockets, particularly in the southeast, receiving below normal accumulations.
- Intermittent warming and cooling temperature patterns in the southwest and the lower portions of the Souris River Basin have resulted in those areas being nearly snow-free at this time, after generating lower runoff volumes than were initially expected based on the snowpack measured at the end of February.
- In other areas of the province, runoff has not started, and a significant snowpack remains.

Point snowfall data, mapped as a per cent of average precipitation received from November 1 to March 27, 2025, is provided in Figure 3. This map is created from a relatively small number of sites across Saskatchewan. Based on this information, winter snowfall to date has been near to above normal across most of the province. The exceptions are areas along the southern and eastern borders of Saskatchewan, where winter precipitation has been below normal to date. A late-winter snowstorm occurred March 27 and 28 and resulted in snow accumulations of up to 25 cm in a band across central Saskatchewan, which included Lloydminster, Saskatoon and Yorkton and is illustrated in Figure 4. The heaviest snow occurred in the Yorkton area.

Since the last runoff report, west central and the area between Regina and Saskatoon received near to above normal precipitation (Figure 5). The remainder of the province received below to well below normal precipitation.

An estimate of the current snow water equivalent available in the snowpack, as derived by the Canadian Land Data Assimilation System

within the National Surface and River Prediction System (CaLDAS-NSRPS) produced by Environment and Climate Change Canada, is shown in Figure 6. This figure shows that nearly all of the southwest and the lower portions of the Souris River Basin are currently snow free. Figure 6 also highlights the continued existence of a heavy snowpack in the area between Saskatoon and Regina extending east.

Snow surveys were completed by Water Security Agency staff at 126 sites across Saskatchewan from February 24 to 27, 2025. The total water equivalent (snow and ice) that was measured is shown in Figure 6 and the ice layer measured at the soil surface is shown in Figure 7. An ice layer had formed at the soil surface at several locations, particularly in the southwest, but with the slow melt, it appears that the initial presence of ice did not increase the rate of runoff significantly. In areas around Lake Diefenbaker and in the Wascana Creek Basin where ice layers were observed, but runoff is not yet underway, the presence of ice may cause observed runoff water equivalent that runs off the land into reservoirs.

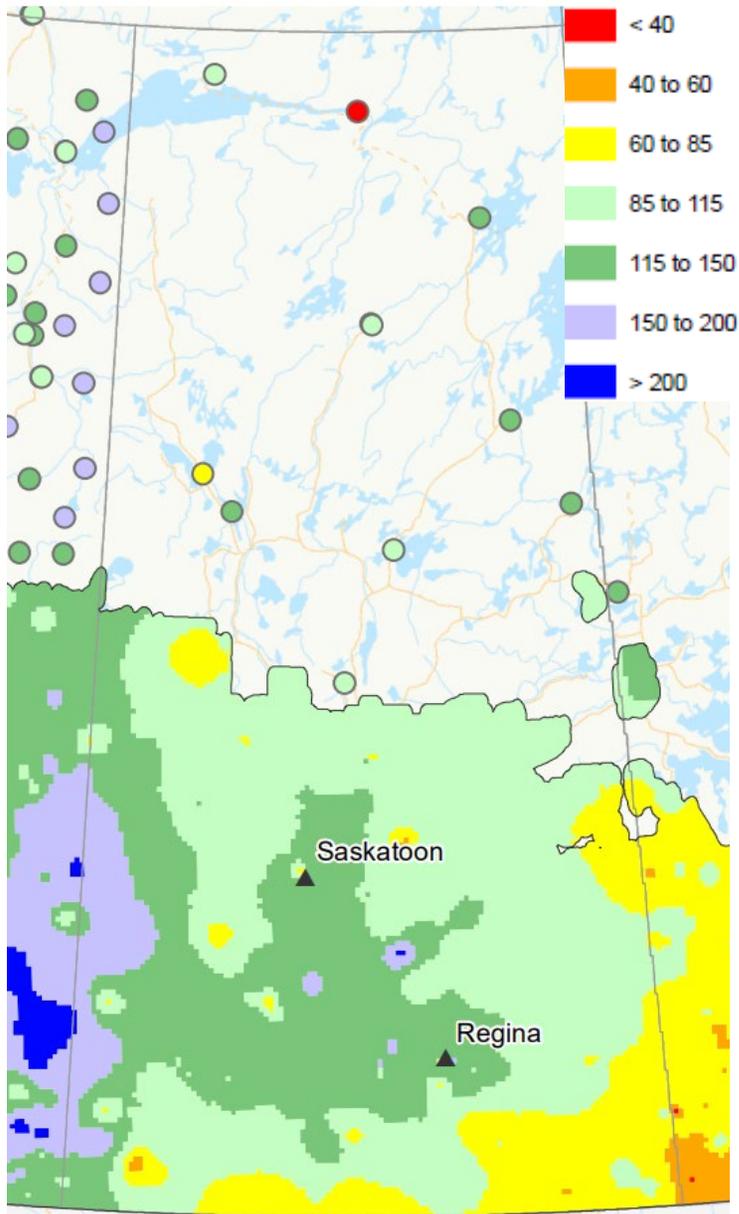


Figure 3: Per cent of Average Precipitation (November 1, 2024 to March 27, 2025)
Map courtesy of Agriculture and Agri-food Canada

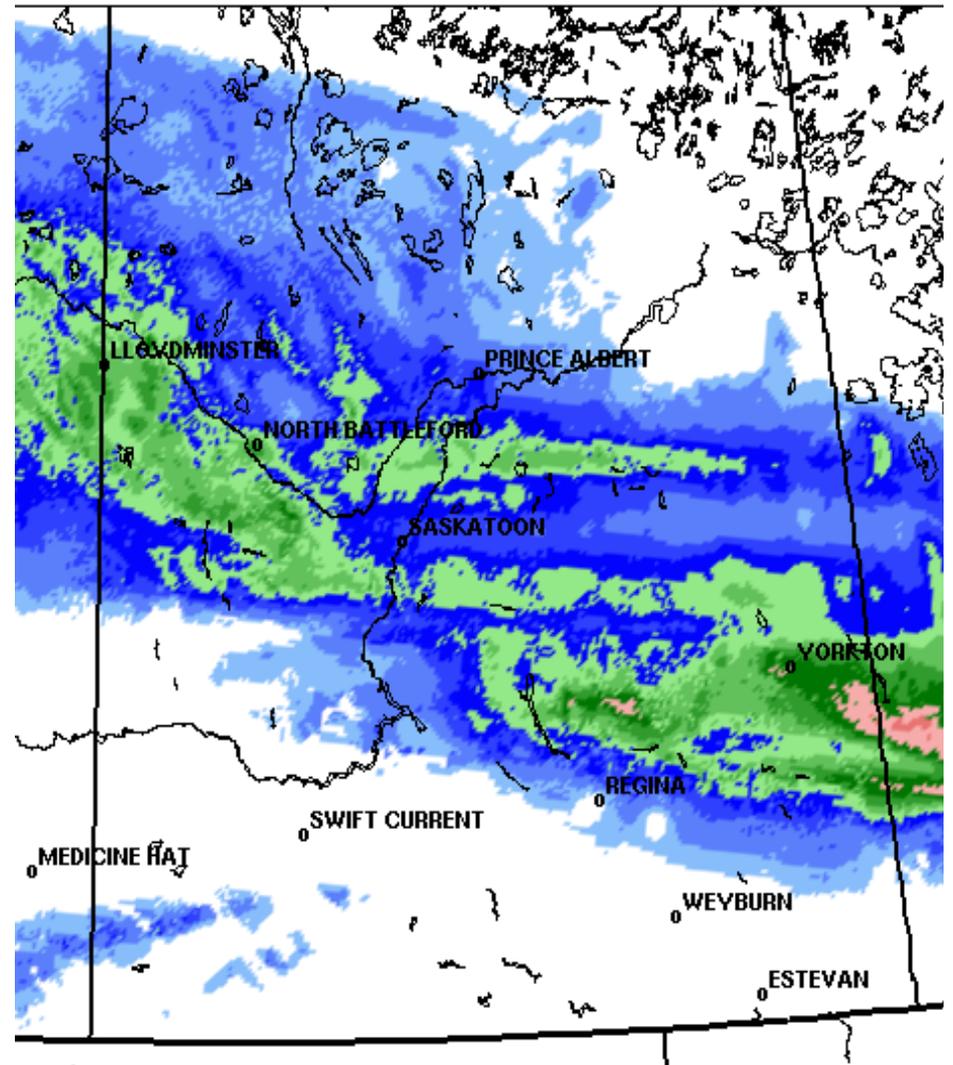


Figure 4: Snowfall Received (cm) in the March 26-27, 2025 Event
Map Courtesy of Environment and Climate Change Canada

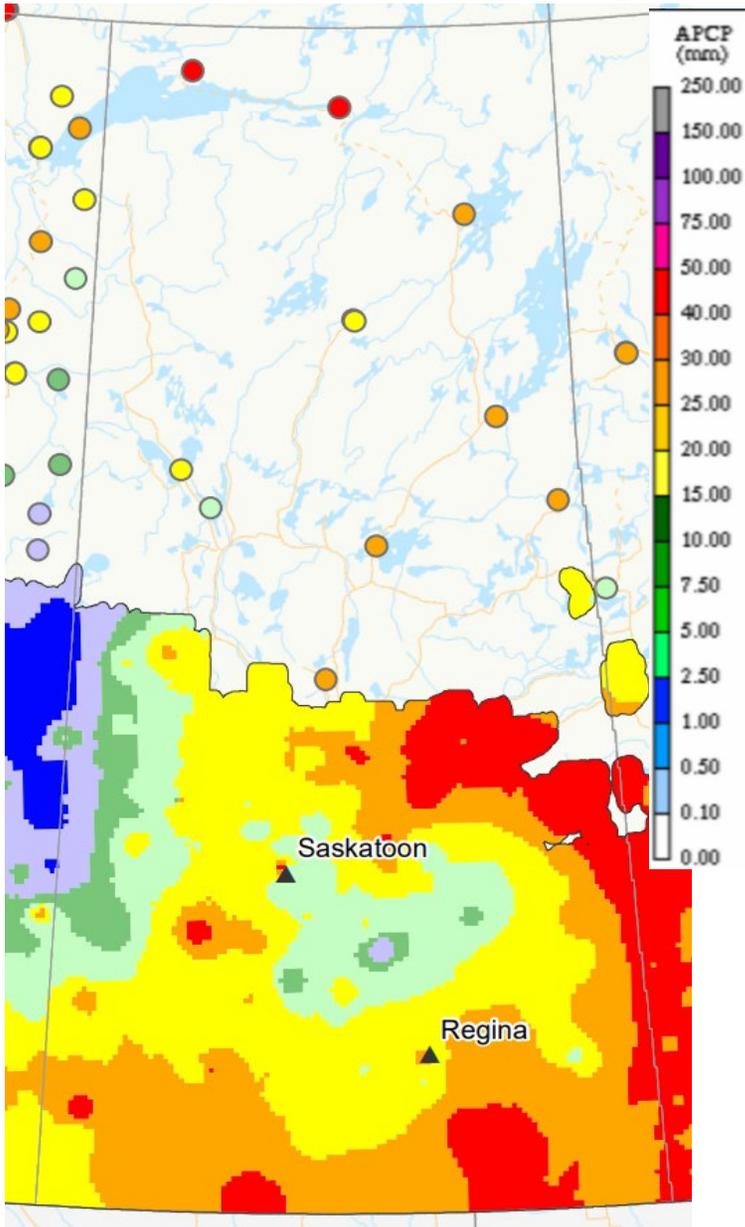


Figure 5: Per cent of Average Precipitation
(March 1 to 31)
Map courtesy of Agriculture and Agri-food Canada

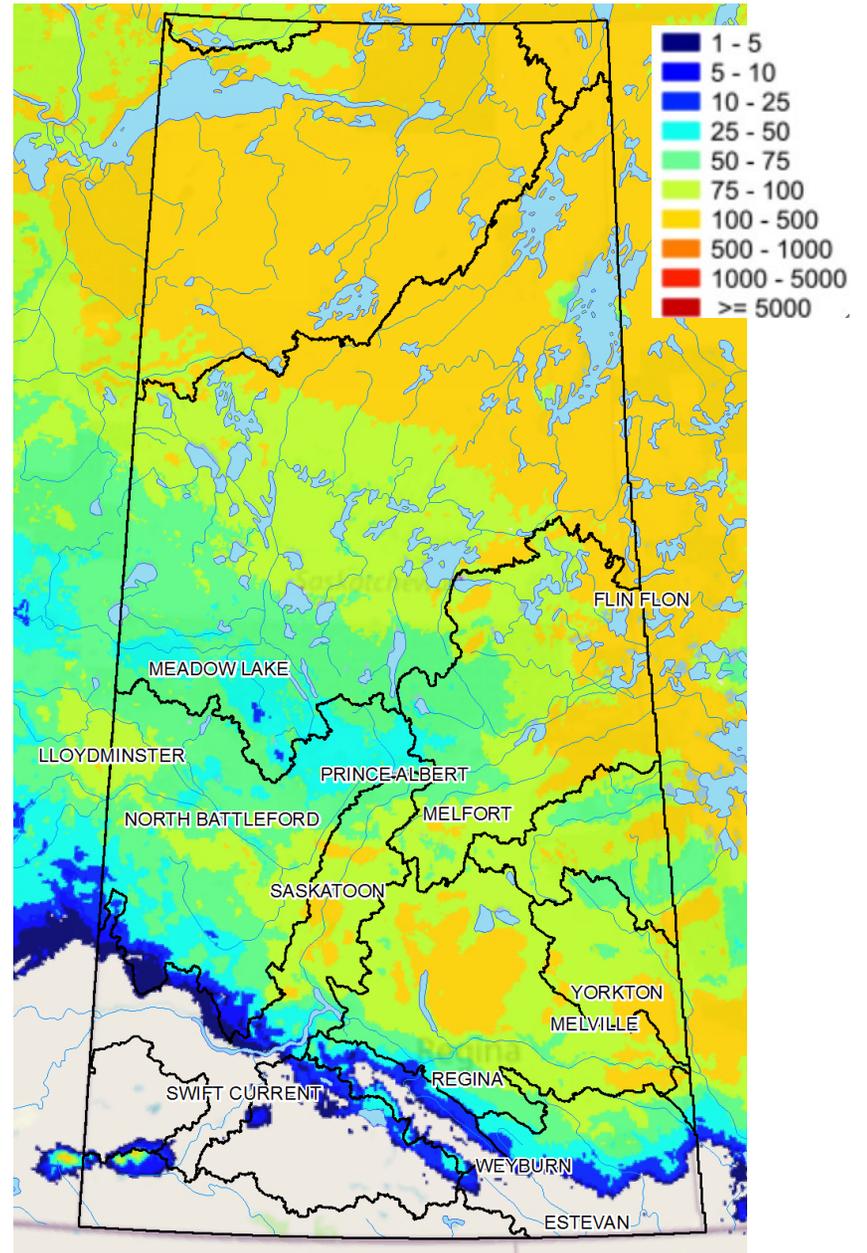


Figure 6: March 31, 2025 CaLDAS Map (mm SWE)
Produced by Environment and Climate Change Canada

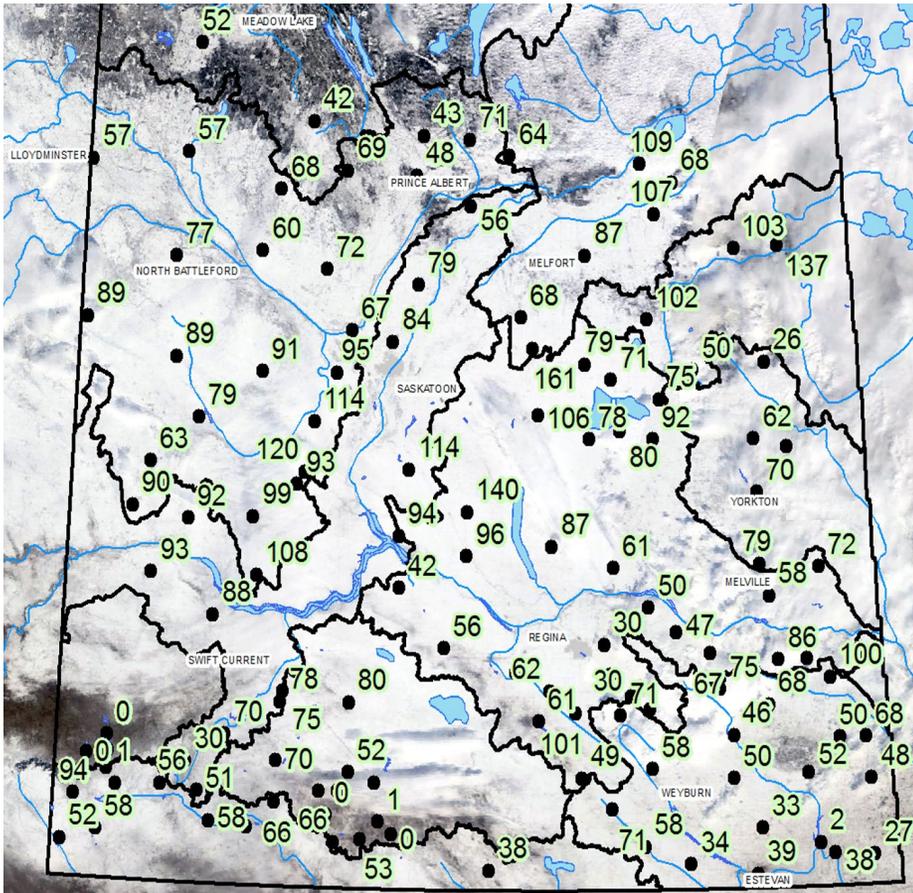


Figure 7: Feb. 24-27, 2025 Snow Survey Total Water Equivalent (mm)
Background Image: February 26 (NASA)

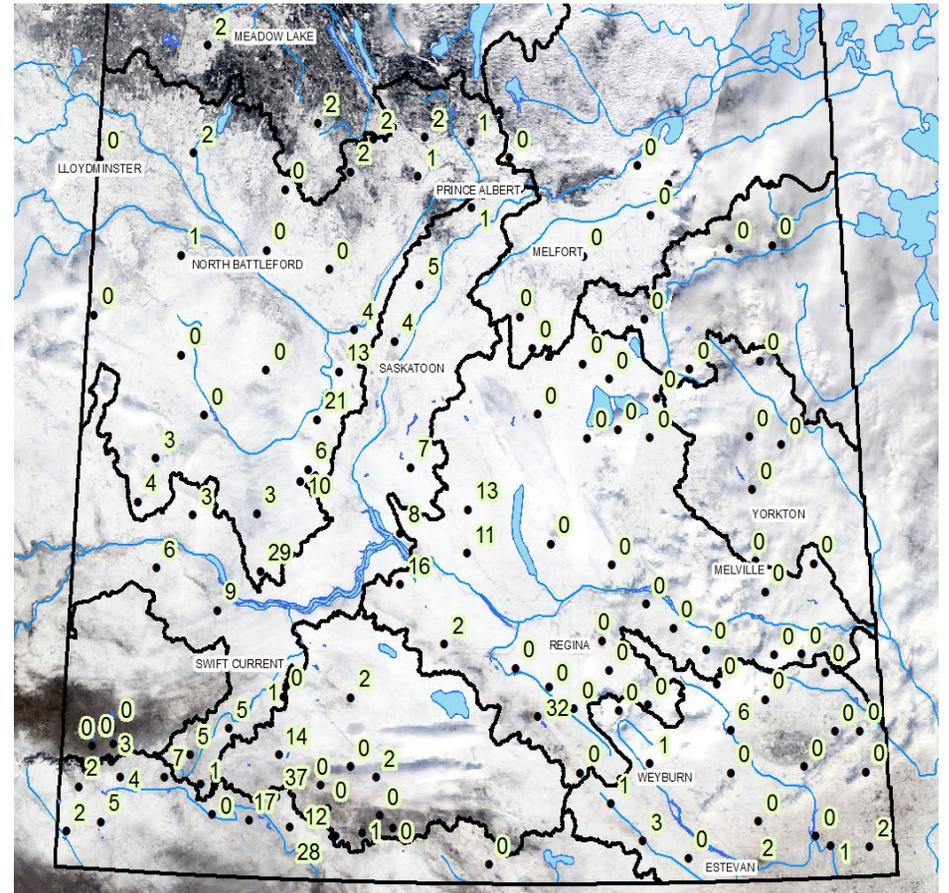


Figure 8: Depth of ice layer observed (mm) during Feb. 24-27, 2025
Snow Survey
Background Image: February 26 (NASA)

Drought Risk

Summary:

- Most major water supply reservoirs are at or near normal levels for this time of year.
- The driest area is northern and southeastern Saskatchewan where an above normal snowpack would be needed to see a near normal runoff this spring.

WSA uses two different products to help identify areas at risk for drought. The first is the Canadian Drought Map from Agriculture and Agri-Food Canada (Figure 9). This product defines drought conditions based on a number of different data sources, including factors such as temperature and precipitation indicators. The categories in this product range from abnormally dry, which signifies conditions that historically occur about once every three years, to exceptional drought conditions, which historically only occur about once every 50 years. This product is not focused on hydrological drought (i.e., the stream flows and water supply); therefore, Saskatchewan developed the Hydrological Drought Map.

The Hydrological Drought Map is the second product used to help identify risk of drought in the province (Figure 10). This product is an indicator of the water supply conditions across the province. It uses monthly stream flow averages, monthly reservoir elevation averages and the six-month Standardized Precipitation-Evapotranspiration Index (SPEI) to define hydrological drought in the province. The categories in this product range from near normal and above, to extreme and exceptional drought.

The Canadian Drought Map for February 28 is shown in Figure 9. This map shows that, due to continued dry conditions this winter in the southeast along the US border, conditions are still ranging from abnormally dry to moderate drought. Conditions also remain abnormally dry across a good portion of northern Saskatchewan.

The Hydrological Drought Map for October 2024 is shown in Figure 10. This map is only updated in the open water season and shows that, in the fall, most of northern Saskatchewan was experiencing moderate to severe hydrological drought conditions. The remainder of the province was generally showing mild drought conditions. This map is not updated in the winter as most streams are frozen. This figure will be updated again in spring but helps advise on fall drought conditions.

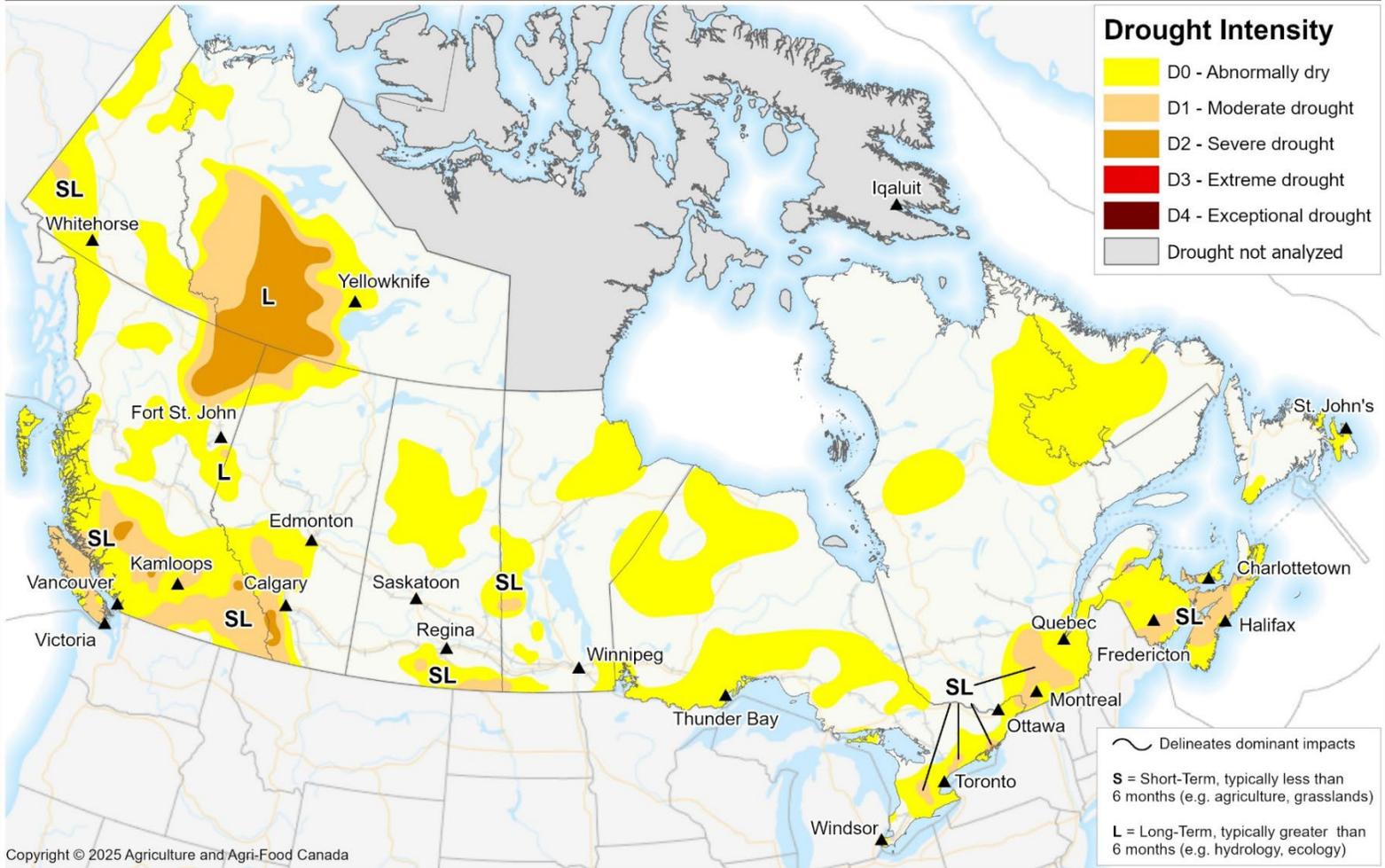
The six-month SPEI map is shown in Figure 11. SPEI is a normalized drought index that uses climate data to identify areas where drought conditions exist. The SPEI values are a relative measure of surface water surplus (positive values) or deficit (negative values) in an area. The values take the current precipitation minus the potential evapotranspiration and compare it to the average value at a location. The result is normalized, so the higher the negative number, the drier the conditions are. This map shows that over the past six months, conditions have generally been drier than normal across southeast Saskatchewan, in the east along the Manitoba border and in the area north of Saskatoon. In contrast, most areas along the Alberta border have been moderately wetter than normal during the same period.

These figures show that the driest areas in the province are in southeastern and northern Saskatchewan. Across most of northern Saskatchewan, an above normal snowpack would be needed to see a near normal runoff this spring.



Canadian Drought Monitor

Conditions as of February 28, 2025

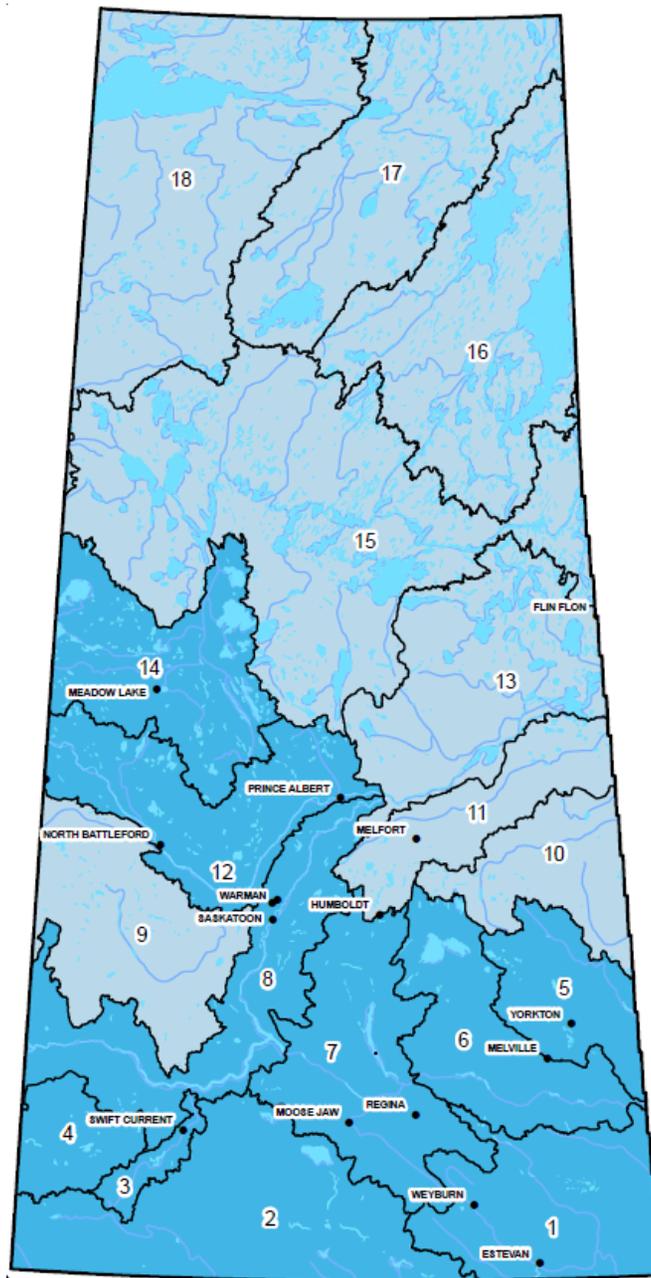


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Prepared by Agriculture and Agri-Food Canada's National Agroclimate Information Service. We also acknowledge various provincial, territorial and non-government organizations whose reports and assessments are consulted. The Drought Monitor focuses on broad-scale conditions. Regions in northern Canada may not be as accurate as other regions due to limited information.

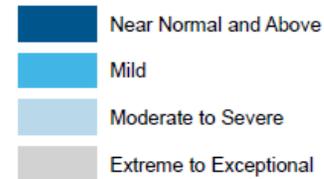
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www.agr.gc.ca/drought

Figure 9: Canadian Drought Monitor – February 28, 2025
(Map courtesy of Agriculture and Agri-Food Canada)



Legend

Hydrological Drought



Basins:

- 1 - Souris River
- 2 - Big Muddy Lake/Missouri River/Old Wives Lake
- 3 - Swift Current Creek
- 4 - Cypress Hills North
- 5 - Assiniboine River
- 6 - Quill Lakes/Lower Qu'Appelle River
- 7 - Wascana/Moose Jaw/Upper Qu'Appelle River
- 8 - South Saskatchewan River
- 9 - Eagle Creek/Battle River
- 10 - Lake Winnipegosis
- 11 - Carrot River
- 12 - North Saskatchewan River
- 13 - Saskatchewan River
- 14 - Beaver River
- 15 - Churchill River
- 16 - Reindeer River/Wollaston Lake
- 17 - Black Lake/Kasba Lake
- 18 - Lake Athabasca/Tazin River

Note:

The Saskatchewan Hydrological Drought Indicator is made up of three individual indicators combined equally to demonstrate the stress on water availability in a hydrological basin:

1. The SPEI or Standard Precipitation-Evapotranspiration Index is based on climatic data designed to show onset, duration and magnitude of drought conditions with respect to normal conditions. It is a measure of how dry the landscape is over a period of six months.
2. Stream Flow Indicator is a measure of how the flows over a month deviate from the average flow.
3. Reservoir Capacity Indicator is a measure of how full the reservoirs are or how the level of the reservoir compares to the average reservoir level over a month.

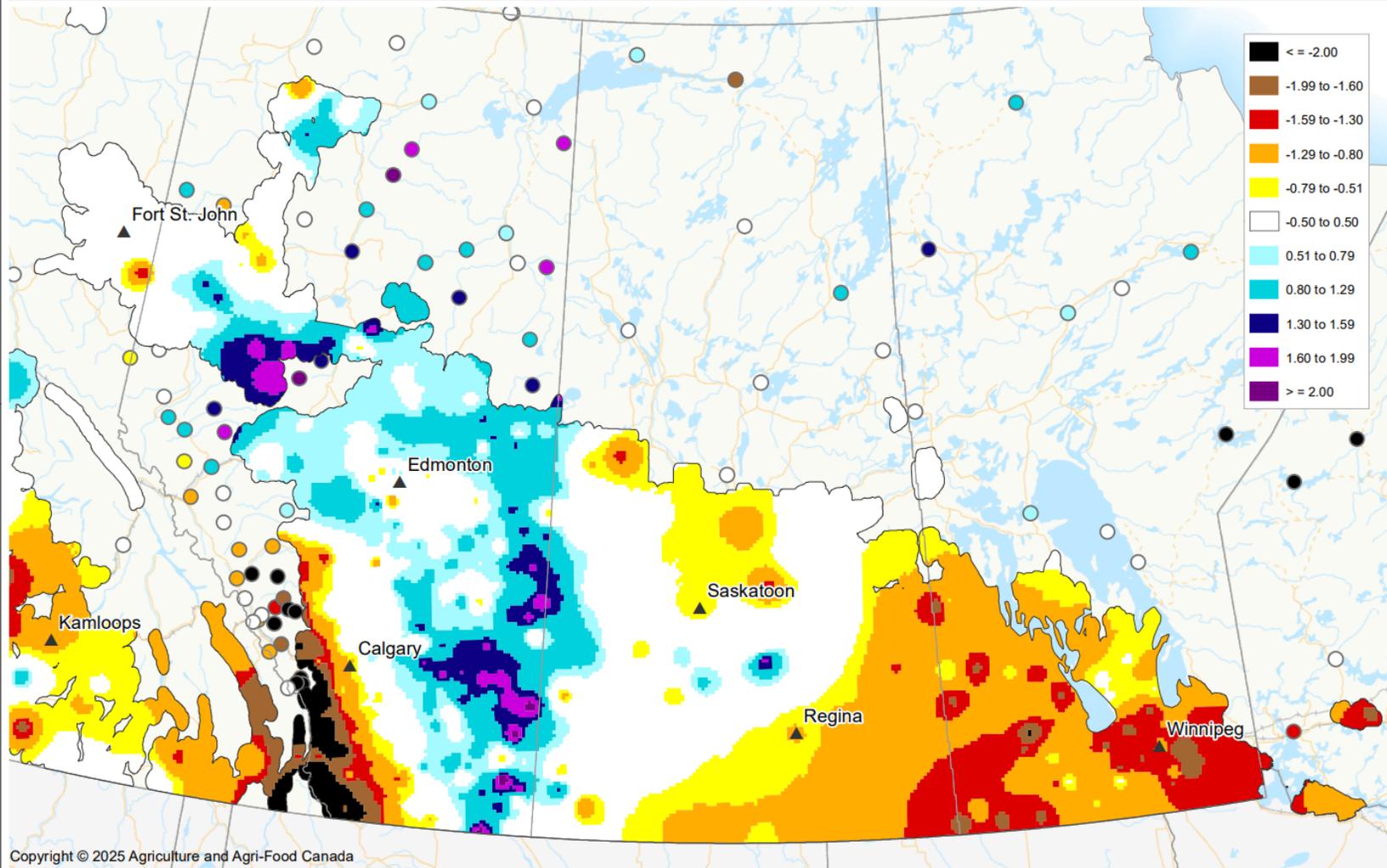
As an example, when all three indicators are low, a severe hydrological drought is indicated meaning the general water supply in a given basin is in jeopardy.

Figure 10: Hydrological Drought Map for October 2024



6 - Month Standardized Precipitation Evapotranspiration Index (SPEI)

as of March 24, 2025



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Prepared by Agriculture and Agri-Food Canada's Science and Technology Branch. Data provided through partnership with Environment Canada, Natural Resources Canada, Provincial and private agencies. Produced using near real-time data that has undergone some quality control. The accuracy of this map varies due to data availability and potential data errors.

Created: 2025-03-25
www.agr.gc.ca/drought

Figure 11: Six-month Standardized Precipitation-Evapotranspiration Index (SPEI) for March 24, 2025 (Map courtesy of Agriculture and Agri-Food Canada)

Water Supply Conditions

Summary:

- Most major reservoirs are within their normal operating ranges for this time of year.
- With runoff starting earlier this year in the southwest, some reservoirs, like Reid, Junction, Altawan, Cypress, Eastend, Newton and Avonlea are above normal levels for this time of year.
- Some reservoirs in the southwest (Highfield, Cypress, Harris and Downie) are not expected to fill, but are expected to have enough water for irrigation this year.
- Lake Diefenbaker is currently above normal levels for this time of year.

Currently, most of the reservoirs in southern Saskatchewan are at or slightly above normal levels for this time of year. Figures 12 to 15 show the status of various reservoirs in the southern region compared to their historical averages as of March 31. Runoff in the southwest started earlier than normal this year. For that reason, some reservoirs like Reid, Junction, Altawan, Cypress, Eastend, Newton and Avonlea are near the full supply levels. .

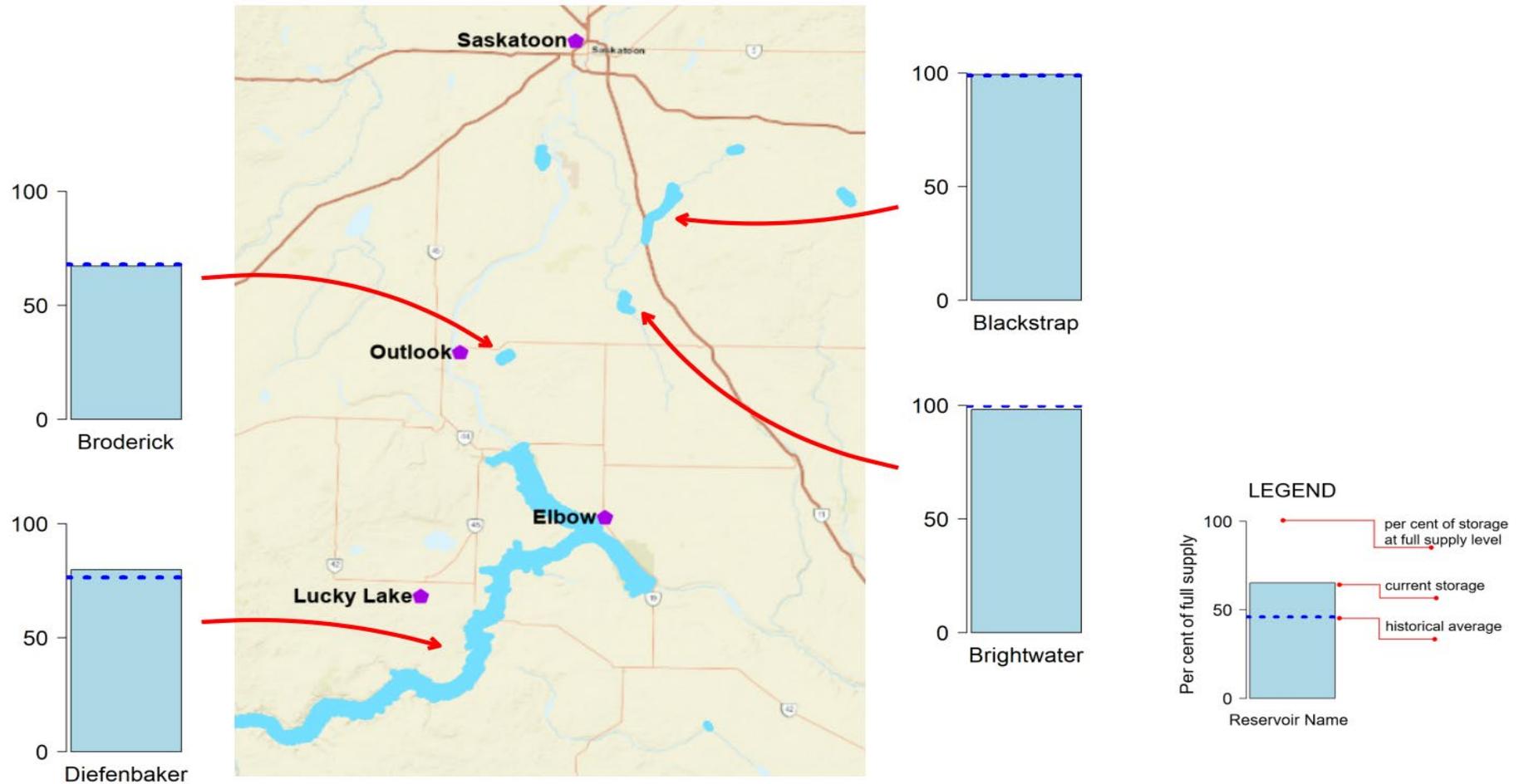
Some reservoirs like Highfield, Cypress, Harris, and Downie are not expected to fill this year, but are still expected to have enough water for full irrigation. There are no anticipated concerns regarding water supply at this time.

With projected snowmelt inflows, it is expected that most reservoirs in southeastern and central Saskatchewan are anticipated to stay within their desired operating ranges following the snowmelt.

Lake Diefenbaker is currently approximately 1.2 metres higher than normal level for this time of year.

Central Saskatchewan Reservoir Levels

March 31, 2025

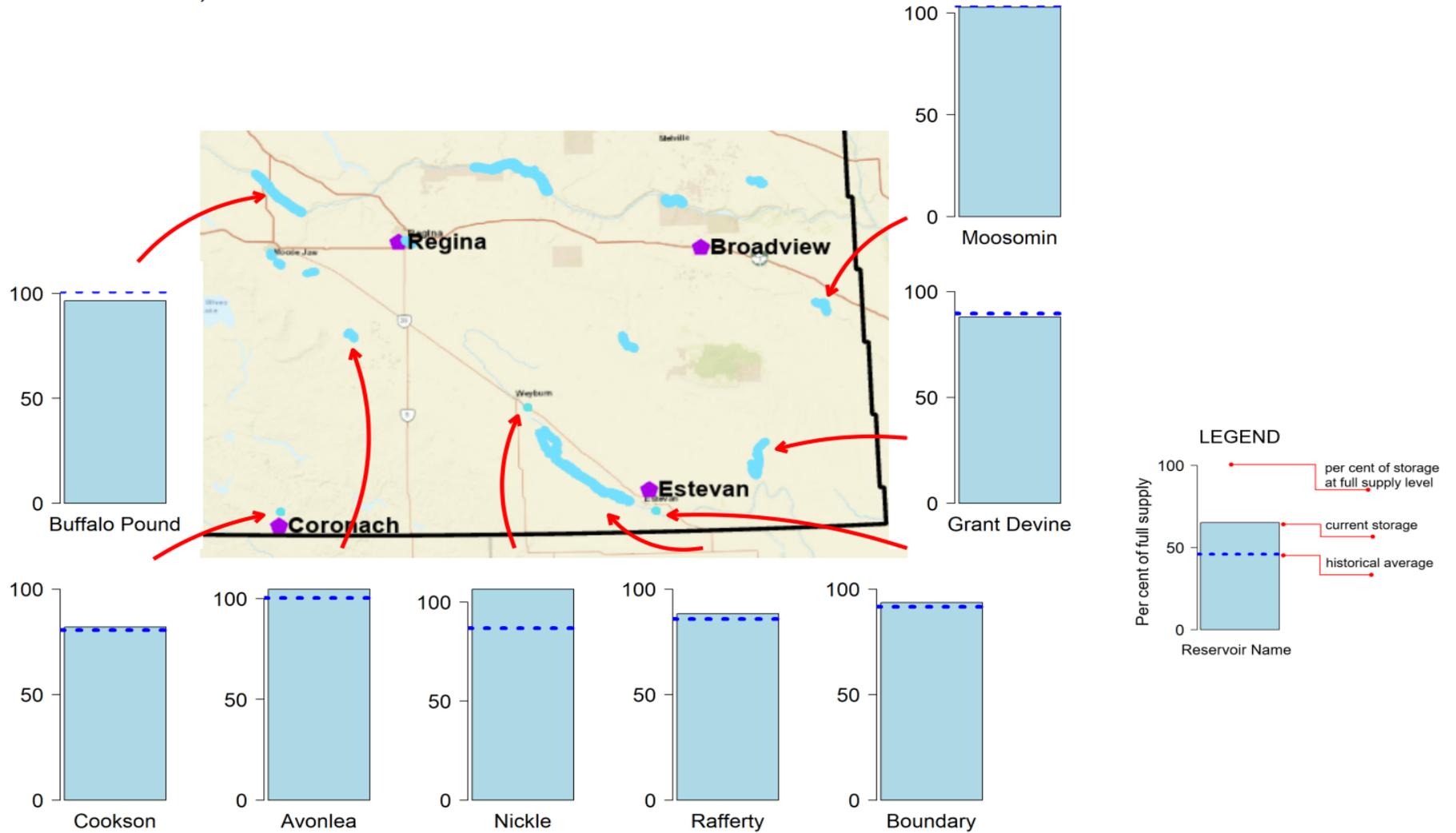


Created on 2025-03-31

Figure 12: Reservoir Conditions in Central Saskatchewan as of March 31, 2025

Southeastern Saskatchewan Reservoir Levels

March 31, 2025

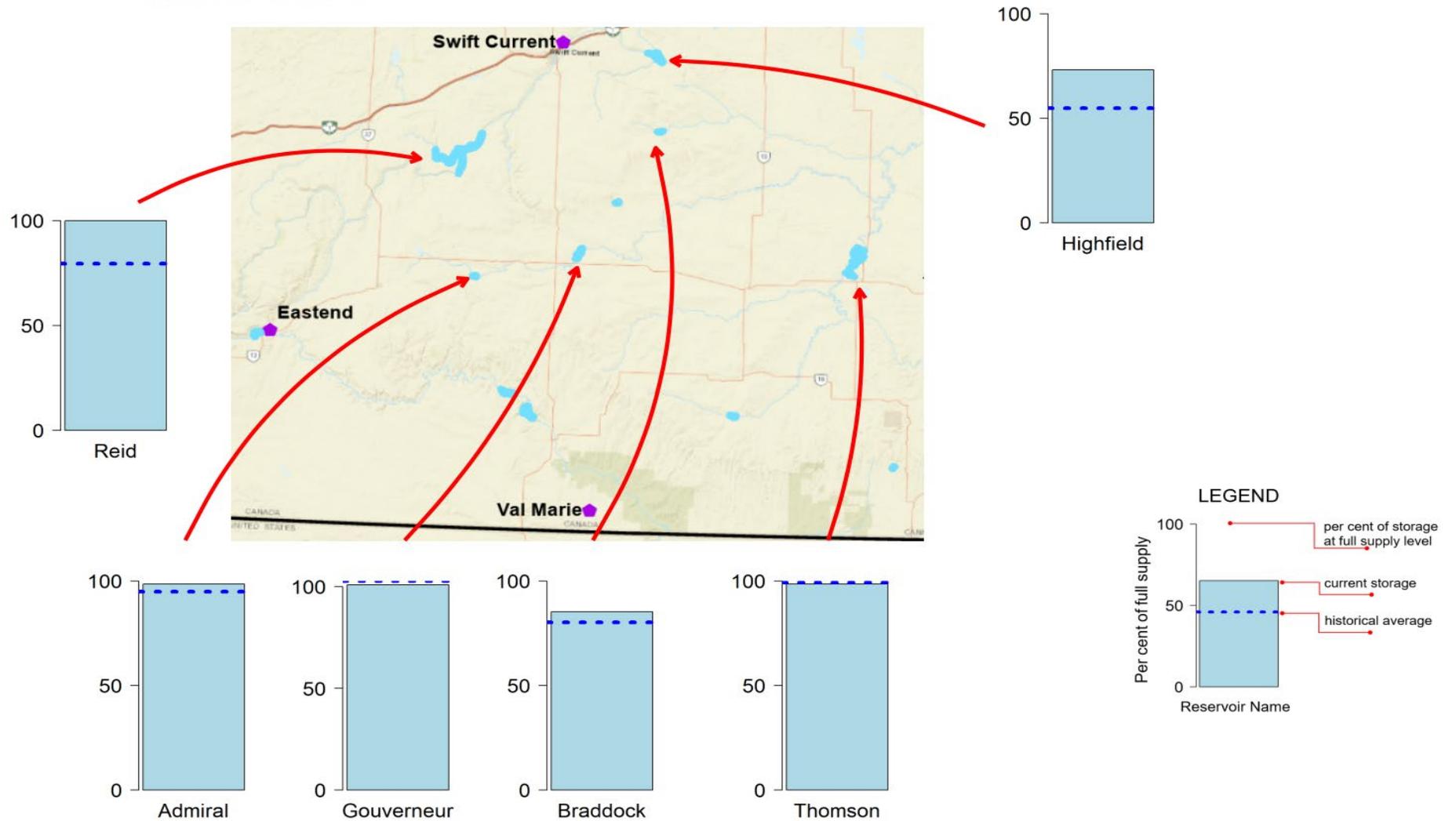


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Figure 13: Reservoir Conditions in Southeastern Saskatchewan as of March 31, 2025

South Central Saskatchewan Reservoir Levels

March 31, 2025

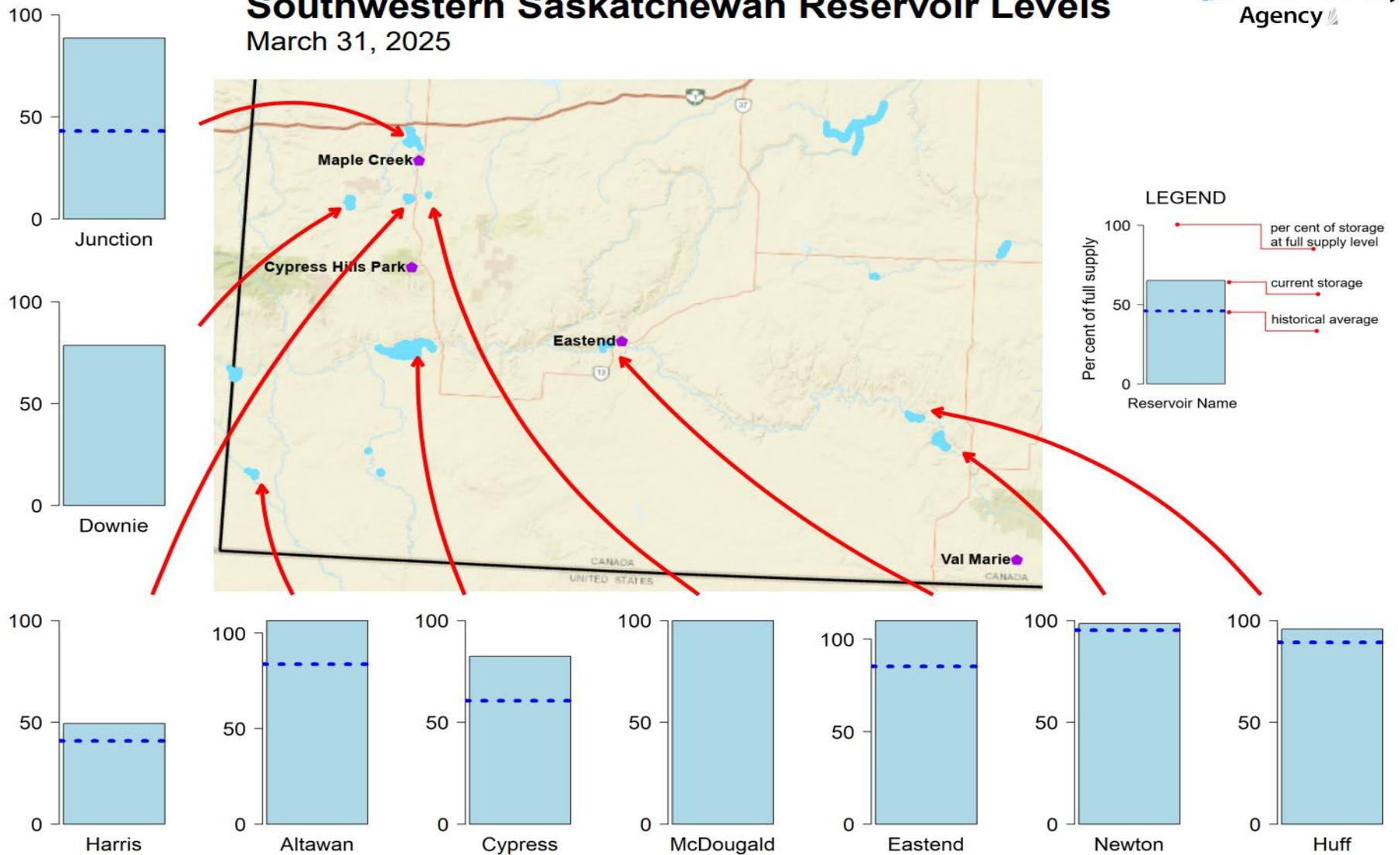


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Figure 14: Reservoir Conditions in Southcentral Saskatchewan as of March 31, 2025

Southwestern Saskatchewan Reservoir Levels

March 31, 2025



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Figure 15: Reservoir Conditions in Southwestern Saskatchewan as of March 31, 2025

*Insufficient historical data to create an average for Downie and McDougald.

Major River Systems

Summary:

- The South Saskatchewan River Basin is expected to see a near to slightly above normal runoff from the prairie portion of the basin this spring. The runoff from the mountains is expected to be lower than normal this year.
- Near to below normal inflows are forecast for the Souris River Basin.
- The lakes in the Qu'Appelle River Basin are expected to be in normal summer operating zones following the spring melt.
- Dry conditions in the north are expected to affect flows and lake levels this year in the Churchill River Basin.
- The Quill lakes are expected to see an above normal runoff response this spring.
- Runoff is near complete in the Swift Current Creek, Big Stick, Old Wives Lake, and Frenchman River basins.

Saskatchewan River Basin

Lake Diefenbaker is currently above median water levels for this time of year, sitting approximately 1.2 metres higher than the normal level. Throughout the winter months, water releases were slightly below normal.

Flows on the North Saskatchewan River have consistently remained slightly below normal throughout the winter. Flows are expected to pick up to near normal throughout April as spring runoff progresses.

Within the Alberta region of the watershed, prairie runoff is near complete in the Oldman and Bow River basins and has started in the Red Deer River Basin. In the Saskatchewan portion of the basin, upstream of Lake Diefenbaker, most of the snowpack has already

melted. Snowmelt from the prairies is expected to be near to slightly below normal.

The snowpack in the mountains, which contributes significantly to May and June flows in the Saskatchewan River Basin, ranges from below normal to well below normal. Lower snowpack does not necessarily mean low flows on the system, as high flows in May and June often are the result of rain-on-snow events, which cannot be forecast this early.

The current operating plan for Lake Diefenbaker is to continue to capture a good portion of the prairie spring runoff with the objective of reaching a target elevation of 553 metres by early May. This target elevation is above normal for this time of year, and at this elevation, most needs can be met.

Souris River

Over the past month, runoff has started in the Souris River Basin. Currently, the snow is virtually gone from the Long Creek Basin and below the reservoirs. As a result, Boundary Reservoir has started to increase and is expected to reach its full supply level early in April. Any excess water from Boundary will be diverted to Rafferty.

The snowpack in the upper portions of the Souris River Basin is near normal, and no significant runoff response has been observed yet. Both Grant Devine and Rafferty reservoirs remain below their February 1 drawdown target elevations.

A near normal runoff response is still forecast for inflows into Rafferty and Grant Devine reservoirs. Grant Devine is still expected to fill this spring, and Rafferty Reservoir is expected to be in the normal operating range.

Qu'Appelle River

Most lakes in the Qu'Appelle River Basin are at near normal elevations for this time of year. The release from the Qu'Appelle River dam has been maintained around 2 m³/s all winter.

Based on the current snowpack accumulations and the fall conditions, snowmelt runoff in the Qu'Appelle River Basin is expected to generally see an above normal runoff response due to a heavy snowpack. Above freezing temperatures throughout March resulted in a lot of the snowpack consolidating, but no significant runoff response has been observed.

At this time, all the lakes in the Qu'Appelle River Basin are expected to be in the normal summer operating ranges following the spring runoff, except for Round Lake, which is expected to be low due to ongoing land control constraints.

Churchill River Basin

Winter precipitation in the Churchill River Basin has been near to below normal. With the dry fall, the runoff response across the basin is expected to be below normal. Flows throughout the Churchill River Basin are currently below normal for this time of year. With a below normal runoff response expected, flows are expected to remain below normal into the summer months.

Lac La Ronge is currently near the lower end of its operating range. Reindeer Lake is also well below normal. Above normal inflows are needed this spring to bring the lakes up to near normal elevations.

Fishing Lake

Snowpack in the Fishing Lake area is currently above normal. The area received near normal precipitation over the past month. With the heavy snowpack and with fall conditions only slightly drier than normal, an above normal runoff is expected.

Quill Lakes

The Quill lakes are currently at an elevation of 519.53 m, which is near the same elevation as this time last year. The basin is currently expected to see an above normal runoff this year, as a result of the above normal snowpack present and fall conditions that were only slightly drier than normal. Assuming near-normal snow conditions continue until the snow melts, the Quill lakes are expected to peak near 520.1 m from the snowmelt runoff, near the peak level observed in spring 2024. Rainfall runoff could result in higher levels in late spring or summer.

Battle, Middle, Lodge Creeks Basins

Snowmelt has begun in lower portions of the Battle, Middle and Lodge basins, while the headwaters still retain a diminishing snowpack. A near normal runoff response is still anticipated. The Cypress and Altawan reservoirs are currently above normal elevations for this time of the year. Altawan is full and Cypress is expected to be in good shape following the spring runoff.

Old Wives Lake Basin

Snowmelt runoff is virtually complete in the Old Wives Lake Basin. The runoff response was within the near-normal range. With the slow melt, the majority of the basin saw near to below normal peak flows. Thomson Lake is now near its full supply level.

Frenchman River Basin

Lower portions of the Frenchman River are now snow free and have been for some time. The headwaters still have some snow, but melting has started, though no significant runoff has occurred yet. Eastend, Huff and Newton reservoirs are currently at above normal levels for this time of year. The reservoirs are all expected to be near full following the runoff this spring.

Big Stick Lake Basin

Since the warm spell at the end of February, snowmelt has been ongoing in the Big Stick Lake Basin, with runoff nearing completion in this basin. Junction and Downie reservoirs are currently above normal for this time of the year, Harris is at normal levels and McDougald is full. Given the current conditions, Harris and Downie are not expected to fill, but full irrigation allocations are anticipated this year.

Swift Current and Rush Lake Creek Basin

The Swift Current Creek Basin has been seeing a snowmelt runoff response since the end of February, with the snowpack continuing to diminish in the headwaters and the lower portions now almost snow-free. The runoff potential remains in the near to above-normal range. Reid Lake is currently full due to snowmelt runoff from the headwaters and simultaneous local flows below the reservoir.

The Rush Lake Creek Basin has less snow but is still expected to see a near-normal runoff this spring. Highfield is currently higher than normal for this time of year and is expected to fill from the snowmelt runoff.

Long Range Forecasts

Summary:

- The long-range forecasts predict varying precipitation across the province for the next three months, from slightly below normal precipitation in the south to above normal precipitation in the north.
- Generally, above normal temperatures are expected across the province over the next three months.

The three-month spatial anomalies maps for precipitation (Figure 16) and temperature (Figure 17) covering the April 1 to June 30 forecast period show the expected long-range precipitation and temperature trends in relation to 30-year climate normals.

Most long-range precipitation forecasts predict slightly below-normal precipitation accumulations in the far southern Saskatchewan and above normal accumulations in the north for April through June. All long-range models are predicting generally above normal temperatures across the province during this same period.

It is important to note that seasonal weather forecasts are statistically unreliable, and their skill is particularly poor for predicting precipitation. However, good agreement among various long-range products indicates a higher degree of confidence.

Next Forecast

WSA does not anticipate issuing another province wide Spring Outlook Forecast this year, as runoff will be well underway. Starting in May, WSA will issue Water Supply Conditions Reports monthly until November 2025, which will be released on wsask.ca.

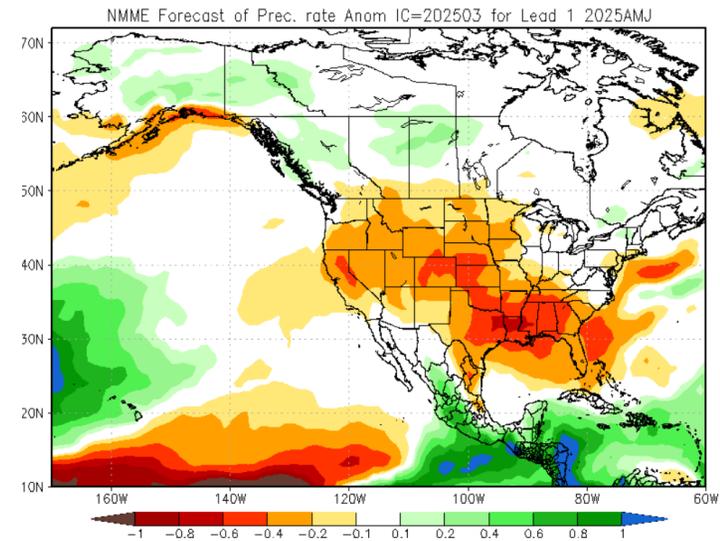


Figure 16: North American Multi-Model Ensemble Precipitation Anomaly Outlook for April 1 to June 30, 2025 (Map courtesy of the US National Weather Service)

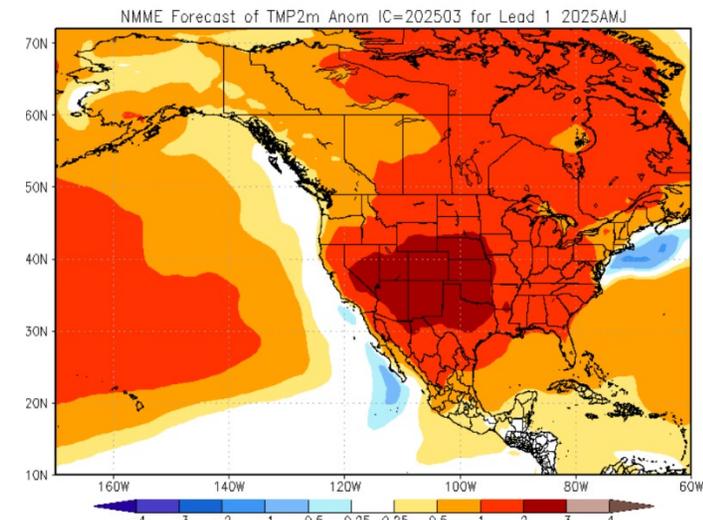


Figure 17: North American Multi-Model Ensemble Temperature Anomaly Outlook for April 1 to June 30, 2025 (Map Courtesy of the US National Weather Service)