Water Security Agency

wsask.ca

Spring Runoff Outlook

March 3, 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.
- At this time, it is anticipated that the runoff across most of northern Saskatchewan, and parts of the southeast will be below normal due to dry fall conditions and a below normal snowpack in these areas.
- An above normal runoff response is forecast for most of central and parts of southern Saskatchewan due to an above normal snowpack in combination with ice layers.
- An above normal runoff response is forecasted for the area around Lake Diefenbaker and in the Wascana Creek Basin due to heavy ice layers, which could result in a greater runoff response than the snowpack indicates.
- Snowfall throughout the remainder of the winter, and the melt rate, is expected to have a significant impact on runoff yields.
- Runoff has already started across some areas in the southwest including the Maple Creek area, the Big Stick and Old Wives basins, and in lower portions of the Frenchman River Basin.
- Most major water supply reservoirs in southern Saskatchewan are at or above normal levels.
- Most reservoirs are expected to be near normal levels following the spring runoff; however, if conditions do not improve, some reservoirs in the north (i.e., Reindeer Lake) may continue to be lower than normal this year.
- 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 capture a portion of the prairie runoff to reach a target elevation of 553 m by mid-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 remain within normal operating ranges.
- 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, an above normal runoff event is expected this spring.
- Long-range forecasts predict normal precipitation and near normal temperatures across Saskatchewan from March to May.
- The Water Security Agency will continue to monitor and report on landscape conditions and water supply reservoirs closely to allow for timely response to conditions. The agency continues to work internally and across government to support residents in times of drought or flooding.

Cover Photo: Frenchman River at Highway 37, Feb. 24, 2025
(Jenna Coates, Water Security Agency)

Spring Runoff Potential

Summary:

- At this time, it is anticipated that the runoff across most of northern, and parts of southeastern Saskatchewan will be below normal due to dry fall conditions and a below normal snowpack.
- Parts of southern and most of central Saskatchewan are expected to see an above normal runoff potential as a result of an above normal snowpack in combination with wetter than normal fall conditions.
- Snowmelt runoff has started in the Maple Creek area, in lower portions of the Frenchman River and in the Old Wives Basin.

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 March 3, 2025. Average climatic conditions between March 3 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 this winter (figures 3 and 5).

A below normal snowpack, in combination with the generally dry fall conditions, has resulted in below normal runoff expectations across most northern Saskatchewan and parts of southeastern Saskatchewan. A rapid melt and additional precipitation are likely needed to replenish surface water supplies across northern and south-central areas of the province.

An above normal runoff response is forecast for the Regina area, the Swift Current area, and most of central Saskatchewan this spring due to an above normal snowpack present. Snowfall throughout the remainder of the winter, and the melt rate, is expected to have a significant impact on runoff yields. A slow melt will result in most of the snowpack recharging the soil column, where as a fast melt will result in more runoff than anticipated due to less infiltration.

Snowmelt runoff has started in parts of the southwest. In the Maple Creek area in the Big Stick Basin, in the lower portion of the Frenchman River Basin and in the Wood River Basin above Thomson Lake (Old Wives Basin), most of the snow is already melted and runoff is underway.

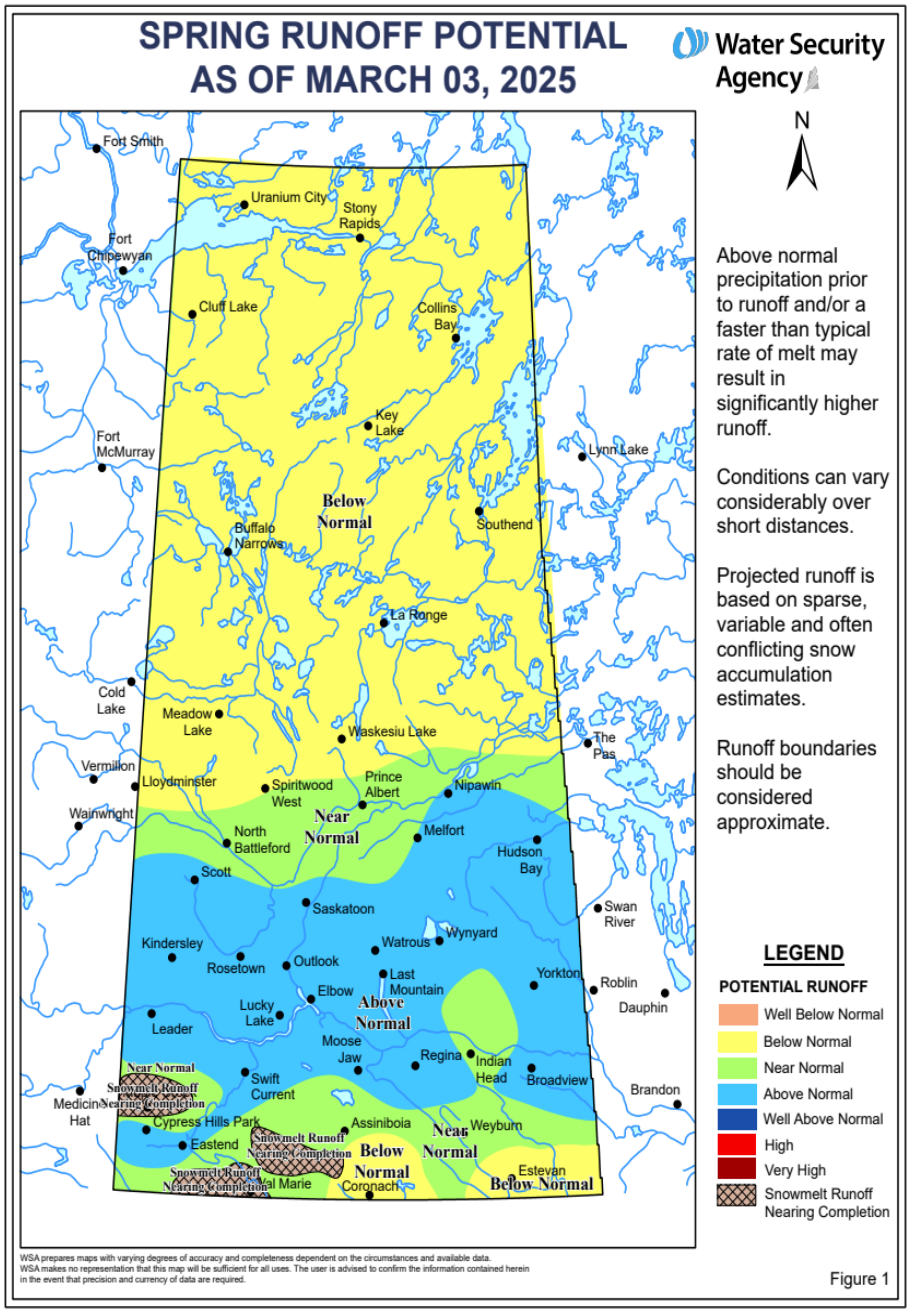

Figure 1: Spring Runoff Potential as of March 3, 2025

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 as a result 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 – March 2025

Lake/Reservoir	2025 March 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	515.4	515.5	515.40	515.3	515. 7	516.05**	2013
Big Quill	519.5	520	521.47 (spill)	515.0	519.9	520.92	2017
Boundary	559.7	560.8	560.83	560.5	560.5	561.15	1979
Buffalo Pound	509.3	509.8	509.47	509.4	509.6	511.45	1974
Candle Lake	494.2	494.5	494.50	494.4	494.5	495.25	1973
Cookson	751.5	752.0	753.00	752.5	752.5	753.35	1979
Crooked	450.5	452.4	452.30	451.7	451.7	454.40**	2014
Echo and Pasqua	478.5	479.5	479.30	479.1	479.1	480.98	2011
Fishing	530.0	530.5	529.70	528.5	530.2	530.92	2011
Good Spirit	484.4	484.8	484.60	484.6	484.9	485.68**	2010
Grant Devine	561.0	562.2	562.00	561.5	562.0	566.58**	2011
Jackfish	529.4	529.5	529.40	529.4	529.5	530.0	1985
Katepwa and Mission	478.2	478.6	478.70	478.3	478.4	479.58	2011
La Ronge	364.1	364.3	364.10	364.4	364.3	364.98**	2020
Last Mountain	489.9	490.6	490.70	490.2	490.3	492.09	1955
Moose Mountain	620.2	620.3	620.30	620.3	620.8	621.9	2011
Nickel Lake	562.4	563.8	563.00	562.8	563.5	564.0	2011
Rafferty	549.3	549.9	550.50	550.0	549.9	554.05**	2011
Round	441.7	442.9	443.28	442.4	442.0	445.70**	2014
Wascana	570.6	571.1	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	March 2025 Forecast*		2024 Spring Peak Flow (m^3/s)**	Historical		
	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	58	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	60	1:5	8	24	252	1974
Moose Jaw River at Burdick	80	1:5	8	30	368	1974
Wascana Creek at Regina	44	1:5	5	20	102	1974
Lanigan Creek above Boulder Lake	18	1:5	19	9.3	56	2006
Pheasant Creek near Abernethy	17	1:5	8	6.9	47	1976
Cutarm near Spy Hill	12	1:5	26	5.6	35	1955
BEAVER RIVER BASIN						
Beaver River near Dorintosh	72	<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	175	1:5	109	150	878	2006

Basin and Location	March 2025 Forecast*		2024 Spring Peak Flow (m^3/s)**	Historical		
	Peak Flow (m^3/s)	Peak Flow Frequency		Normal Year Flow (m^3/s)	Recorded Maximum Spring Flow (m^3/s)	Recorded Maximum Spring Year
NORTH SASKATCHEWAN RIVER BASIN						
North Saskatchewan River near Deer Creek	850	<1:2	490	900	1660	1974
Eagle Creek near Environ	40	1:5	5	12	136	1970
North Saskatchewan River at Prince Albert	405	<1:2	525	433	3880	1974
SASKATCHEWAN RIVER BASIN						
White Fox River near Garrick	30	1:2	16	26	160	1974
Torch River near Love	50	1:2	93	43	170	1955
Carrot River near Armley	140	1:5	15	71	377	1974
Carrot River near Smoky Burn	330	1:5	100	200	816	1972
SWIFT CURRENT CREEK BASIN						
Swift Current Creek below Rock Creek	40	1:5	16	18	85	1955
Rushlake Creek above Highfield Reservoir	21	1:5	5	7	38	1969
SOURIS RIVER BASIN						
Long Creek near Noonan	13	1:2	5	19	183	2011
Yellow Grass Ditch near Yellow Grass	6	1:2	5	7	79	2011
Souris River at Ralph	20	1:2	4	25	118	1979
Jewel Creek Near Goodwater	3	1:2	0.1	4	44	2011
Moose Mountain above Grant Devine Lake	18	1:2	16	18	99	2011
Souris River near Sherwood	14	<1:2	15	32	388	1976
OLD WIVES LAKE BASIN						
Notukeu Creek near Vanguard	41	1:3	8	25	210	1952
Wood River near Lafleche	52	1:3	8	35	292	1952

Basin and Location	March 2025 Forecast*		2024 Spring Peak Flow (m^3/s)**	Historical		
	Peak Flow (m^3/s)	Peak Flow Frequency		Normal Year Flow (m^3/s)	Recorded Maximum Spring Flow (m^3/s)	Recorded Maximum Spring Year
MISSOURI RIVER BASIN						
Battle Creek at Alberta Boundary	10	1:5	11	5	20	1985
Battle Creek near Consul	6	1:2	5	5	65	1967
Lodge Creek near Alberta Boundary	15	1:2	21	14	110	1952
Frenchman River near Ravenscrag	50	1:5	15	30	200	1952
Denniel Creek near Val Marie	11	1:2	22	9	43	2011
East Poplar River above Cookson Reservoir	3	<1:2	4	5	30	1982

* 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

Fall Precipitation and Soil Moisture Conditions

Summary:

- 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 dry two 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.

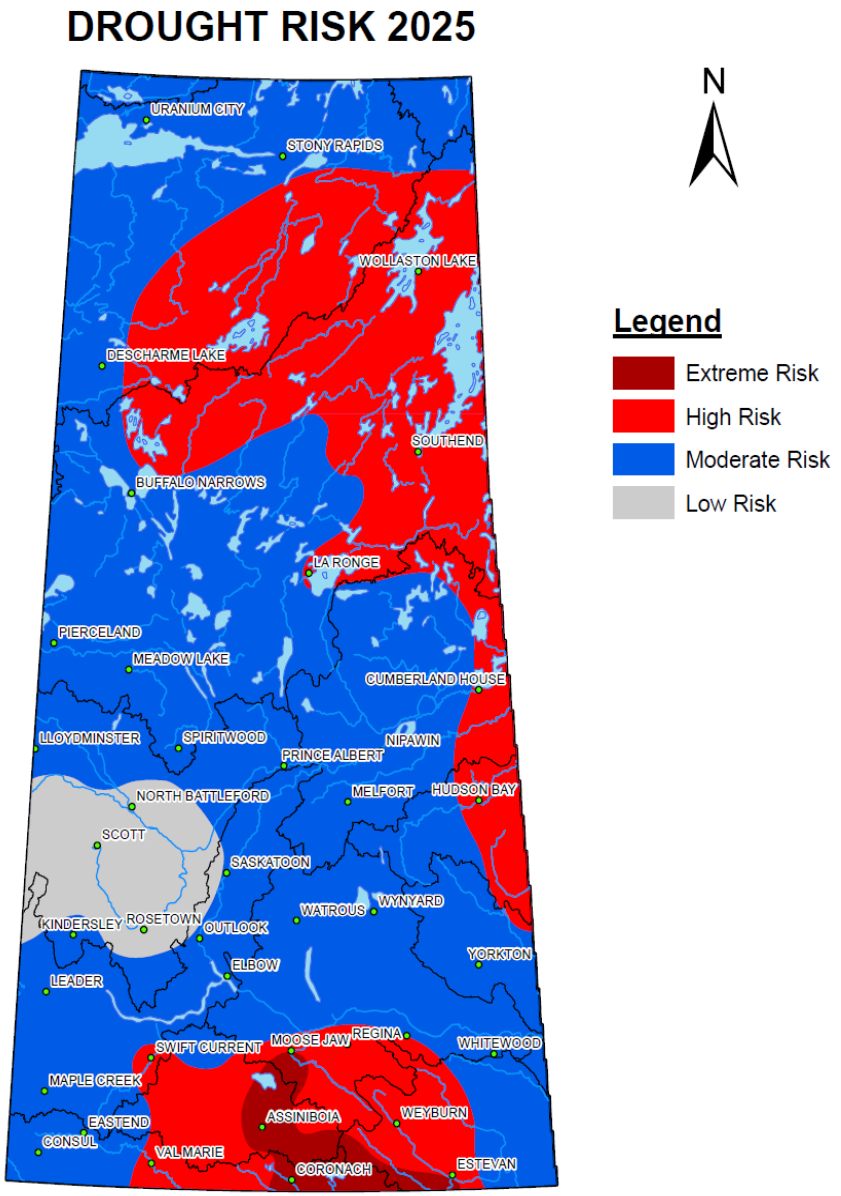

Figure 2: Drought Risk Map Based on 2024 Fall Conditions

Early Winter Precipitation

Summary:

- Precipitation accumulations so far this winter have generally ranged from near normal to above normal across the province. The exception is along the southern border of the province where below normal accumulations have been recorded.
- Snow surveys conducted February 24 to 27, 2025 measured a heavy snowpack in much of central Saskatchewan, parts of the Cypress Hills and areas near Regina.
- Heavy ice layers are present around Lake Diefenbaker and in the Wascana Creek Basin.

Point snowfall data, mapped as a per cent of average precipitation received, is provided in Figure 3. This map is created from a relatively small number of sites across Saskatchewan. Based on this information, winter snowfall has generally ranged from near to above normal across most of the province. The exception is in part of southern Saskatchewan along the border where winter precipitation has been below normal to date.

An estimate of the current snow water equivalent available in the snowpack, as derived by the National Oceanic and Atmospheric Administration (NOAA) National Weather Service's National Operational Hydrologic Remote Sensing Centre (NOHRSC) SNOw Data Assimilation System (SNODAS) product, is shown in Figure 4. This figure shows that several areas in the southwest, including the Maple Creek area and parts the Old Wives Lake Basin are nearly snow-free. Snowmelt runoff is underway in these areas and the majority of the snowpack has either infiltrated into the soil or has been converted to runoff.

Figure 4 also highlights the continued existence of a heavy snowpack in the Cypress Hills area extending towards Swift Current. A heavy snowpack is also shown in the Regina area. The snowpack across much of central Saskatchewan is above normal. The above freezing temperatures seen at the end of February resulted in the consolidation of the snowpack, but any melt likely infiltrated into the soil and thus did not result in any significant runoff at this point in time.

In parts of the province, a thick snowpack combined with dry soil conditions and intermittent warm spells led to shallow frost penetration in the ground. In areas where spring runoff does not occur during a fast warm-up period, much of the currently available snowpack may be absorbed into the dry ground below.

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 5 and the ice layer measured at the soil surface is shown in Figure 6. In areas where an ice layer has formed at the soil surface, the soil infiltration capacity may be reduced, which may result in more water running off during the spring thaw.

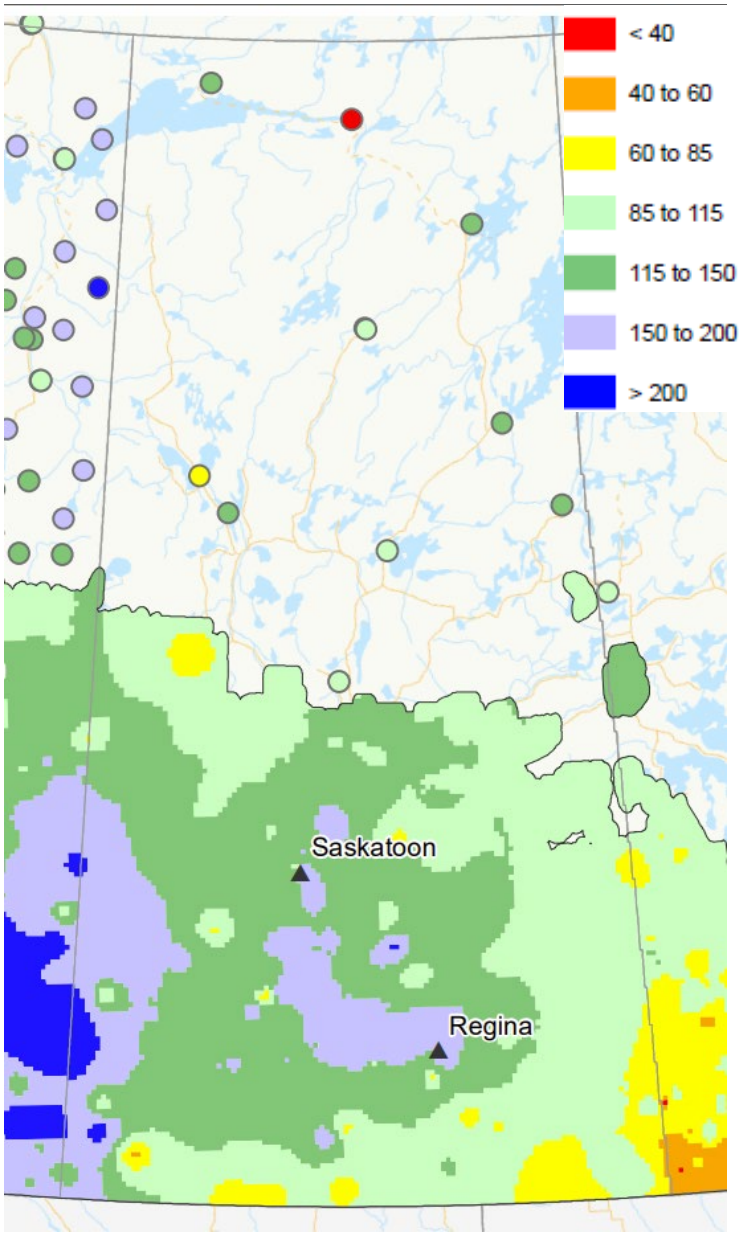

Figure 3: (November 1, 2024 to February 27, 2025)
Per cent of Average Precipitation
Map courtesy of Agriculture and Agri-food Canada

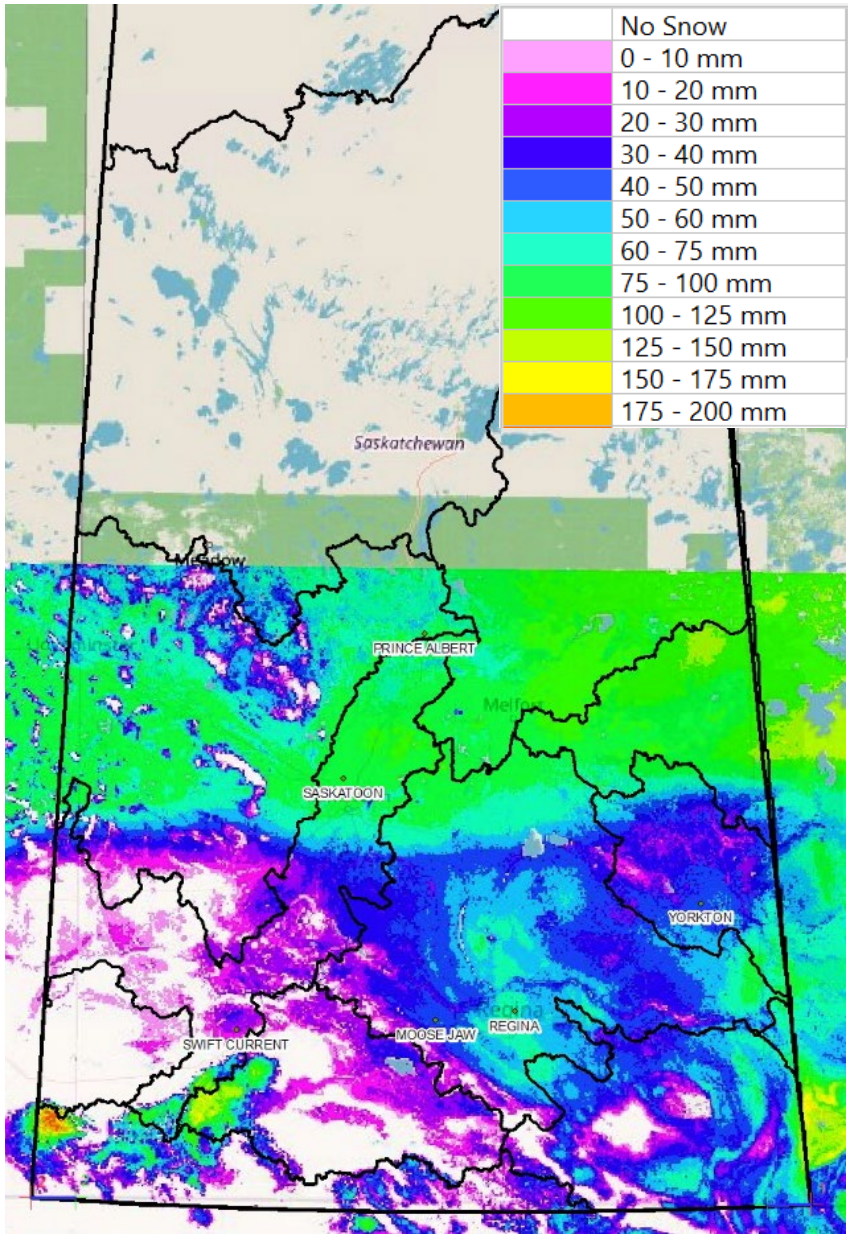

Figure 4: February 28, 2025 SNODAS Map
Produced by NWS/NOAA

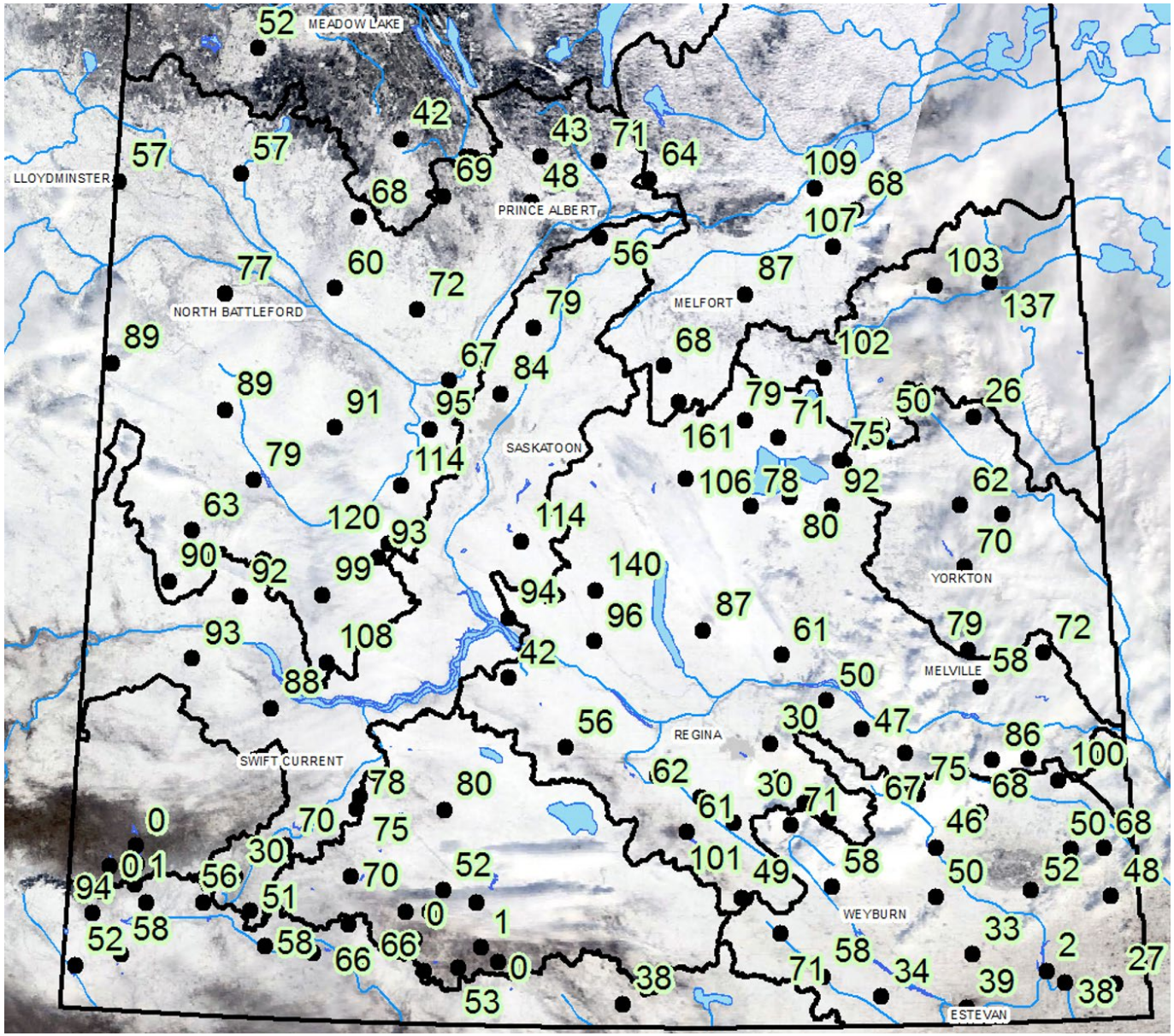

Figure 5: Feb. 24-27, 2025 Snow Survey Total Water Equivalent (mm)
Background Image: February 26 (NASA)

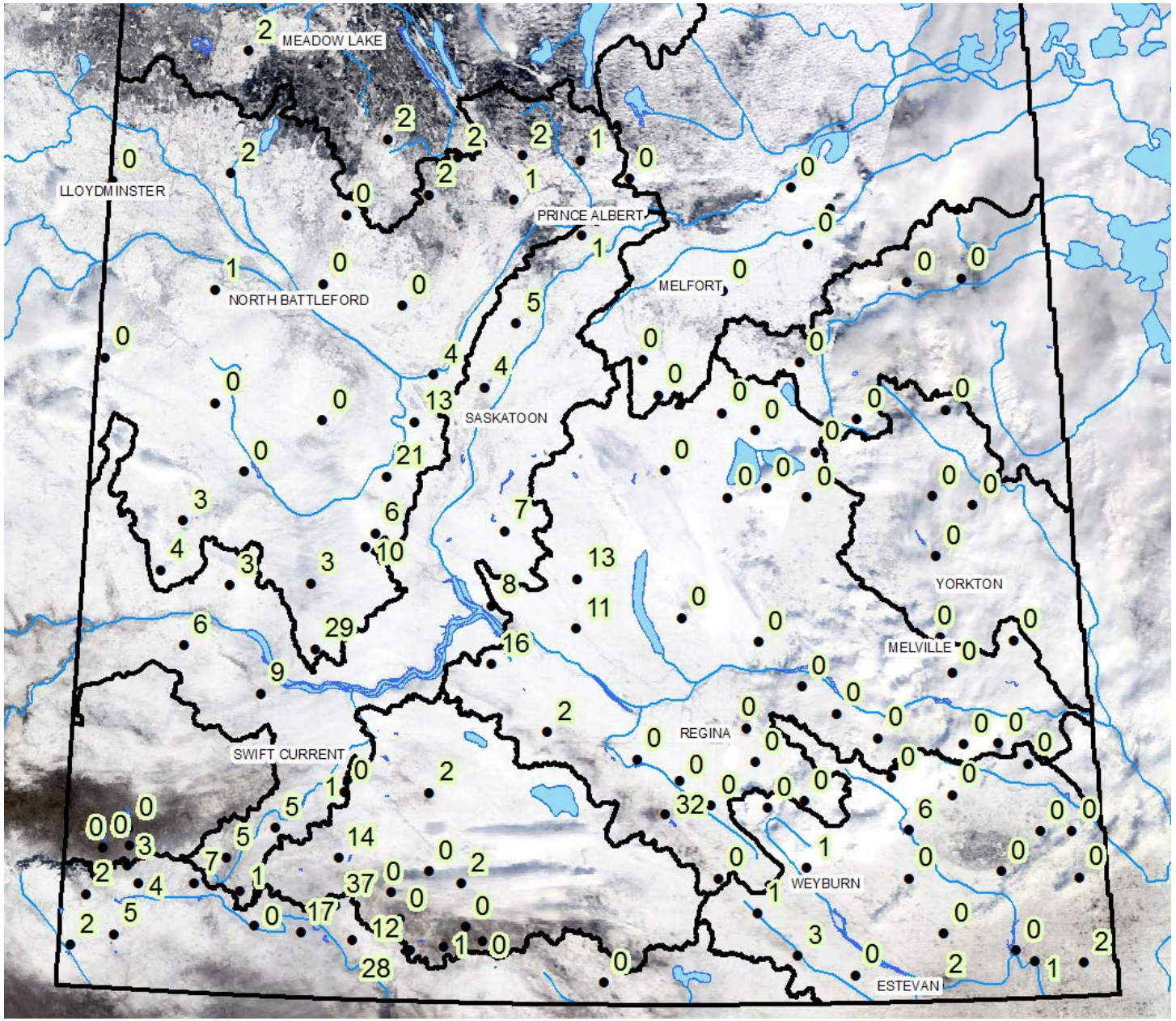

Figure 6: Depth of ice layer observed (mm) during Feb. 24-27, 2025 snow survey

Drought Risk

Summary:

- Most major water supply reservoirs are at or near normal levels for this time of year.
- The driest area is northern 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 7). 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 8). 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 January 31 is shown in Figure 7. This map shows that, due to the localized dry spell this winter, conditions have deteriorated in some patches across the southeast where conditions are now ranging from abnormally dry to moderate drought.

The Hydrological Drought Map for October 2024 is shown in Figure 8. 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 9. 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 and along the Manitoba border. In contrast, most areas along the central western border with Alberta 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.

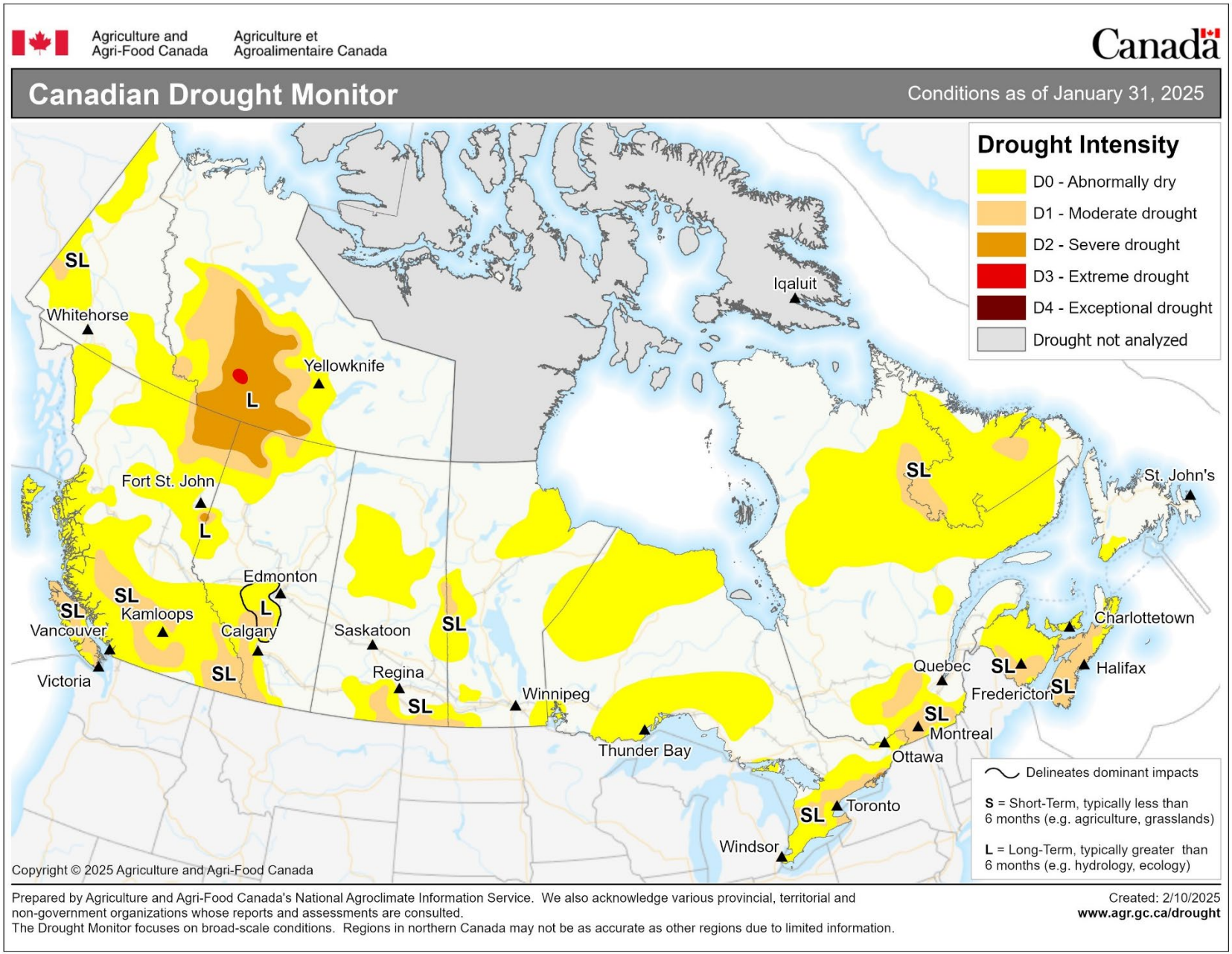

Figure 7: Canadian Drought Monitor – January 31, 2025
(Map courtesy of Agriculture and Agri-Food Canada)

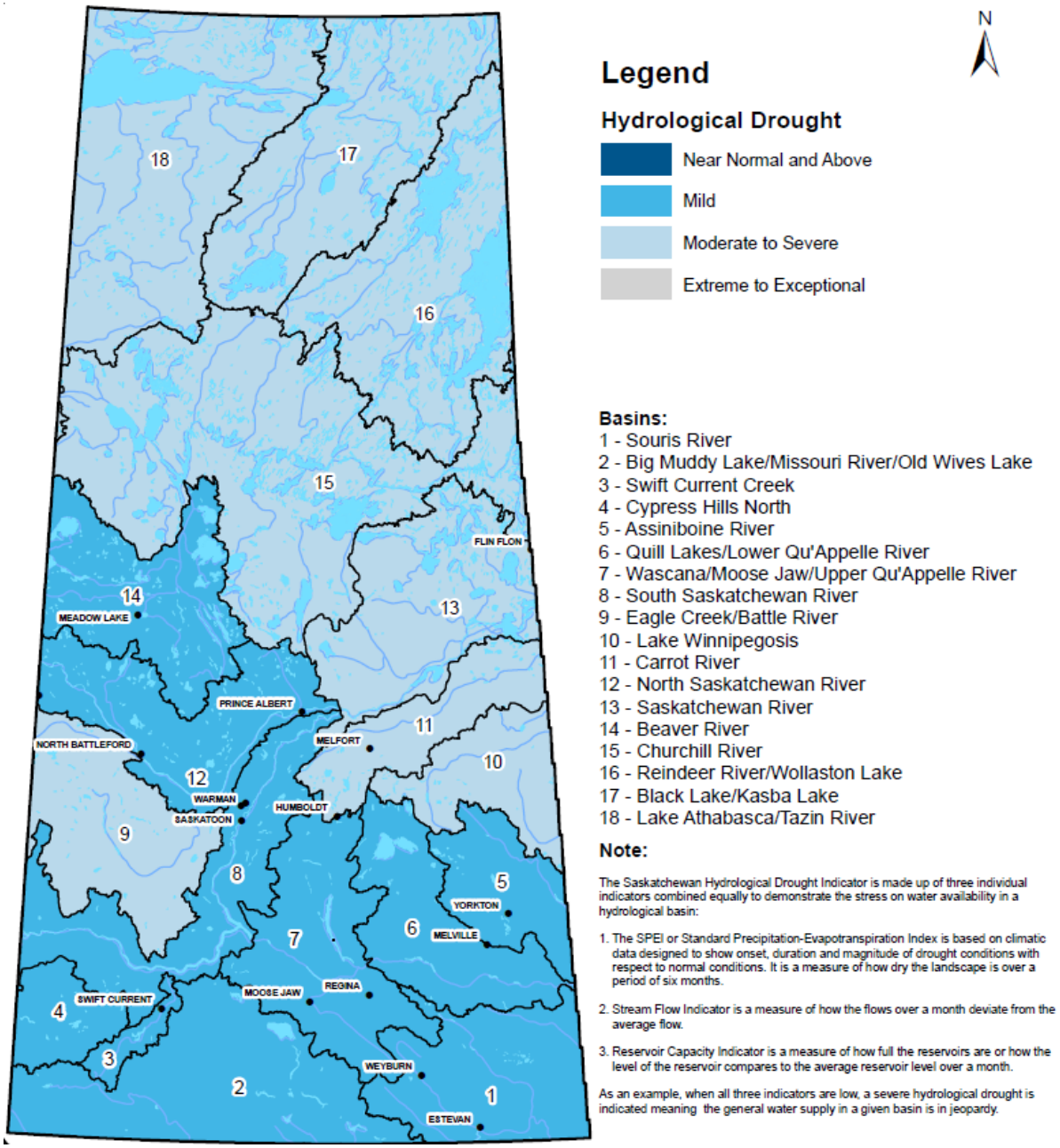

Figure 8: Hydrological Drought Map for October 2024

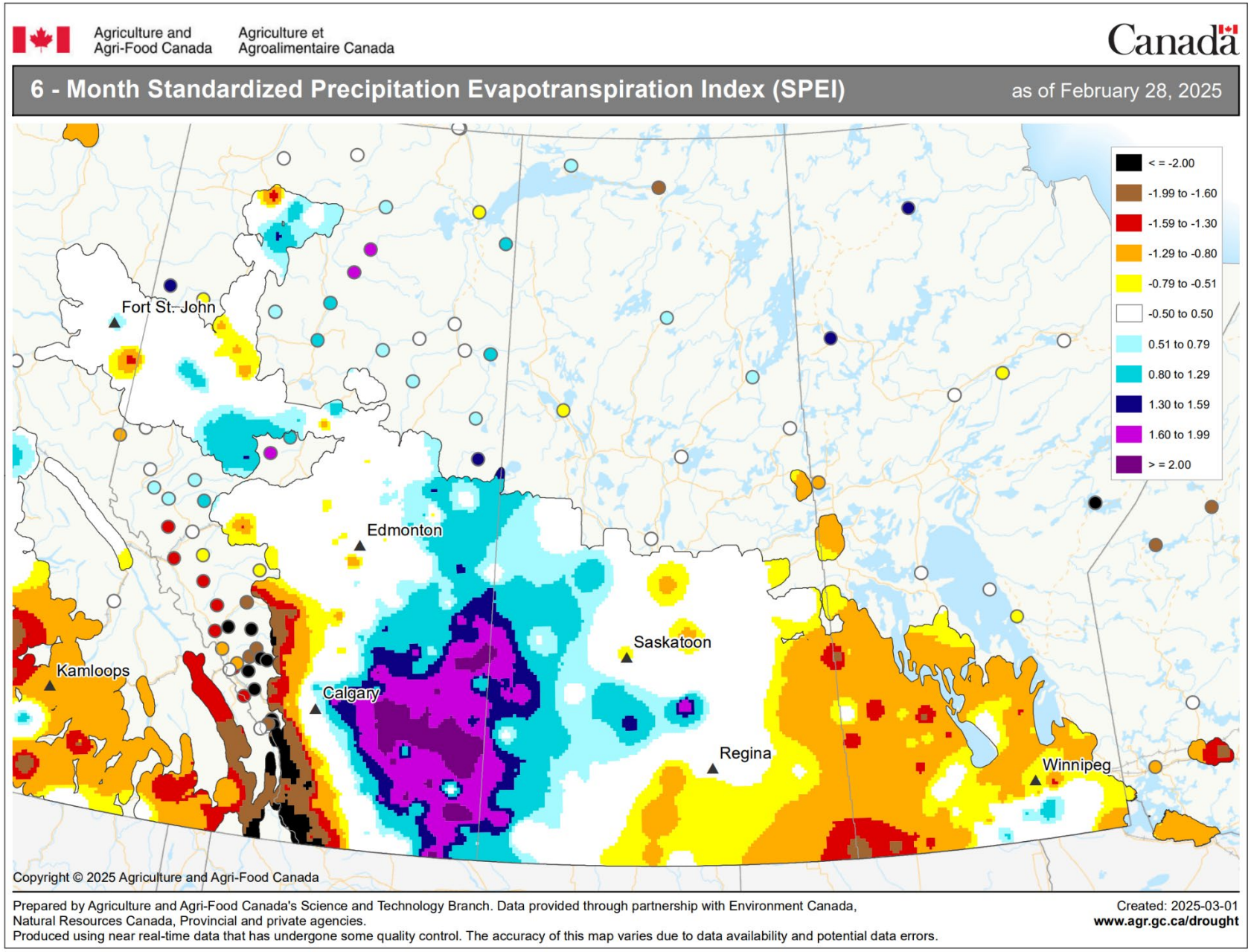

Figure 9: 6-month Standardized Precipitation-Evapotranspiration Index (SPEI) for February 28, 2025
(Map courtesy of Agriculture and Agri-Food Canada)

Water Supply Conditions

Summary:

- Most major reservoirs are within their normal operating ranges for this time of year.
- Some reservoirs in the south, like Avonlea and Highfield are below normal levels.
- Lake Diefenbaker is currently above normal for this time of year.

Most major water supply reservoirs in southern Saskatchewan are currently at or near their normal operating levels for this time of year. Figures 10 to 13 show the status of various reservoirs in the southern region compared to their historical averages as of March 3. Most reservoirs are near historical normal elevations. The exceptions are Avonlea and Highfield, which remain lower than normal; however, there are no anticipated water supply concerns at this time.

With expected snowmelt inflows, most reservoirs in southeastern and central Saskatchewan are anticipated to stay within their desirable operating ranges after the snowmelt.

Lake Diefenbaker is currently about 1 metre higher than normal for this time of year.

Central Saskatchewan Reservoir Levels

March 03, 2025

Water Security Agency

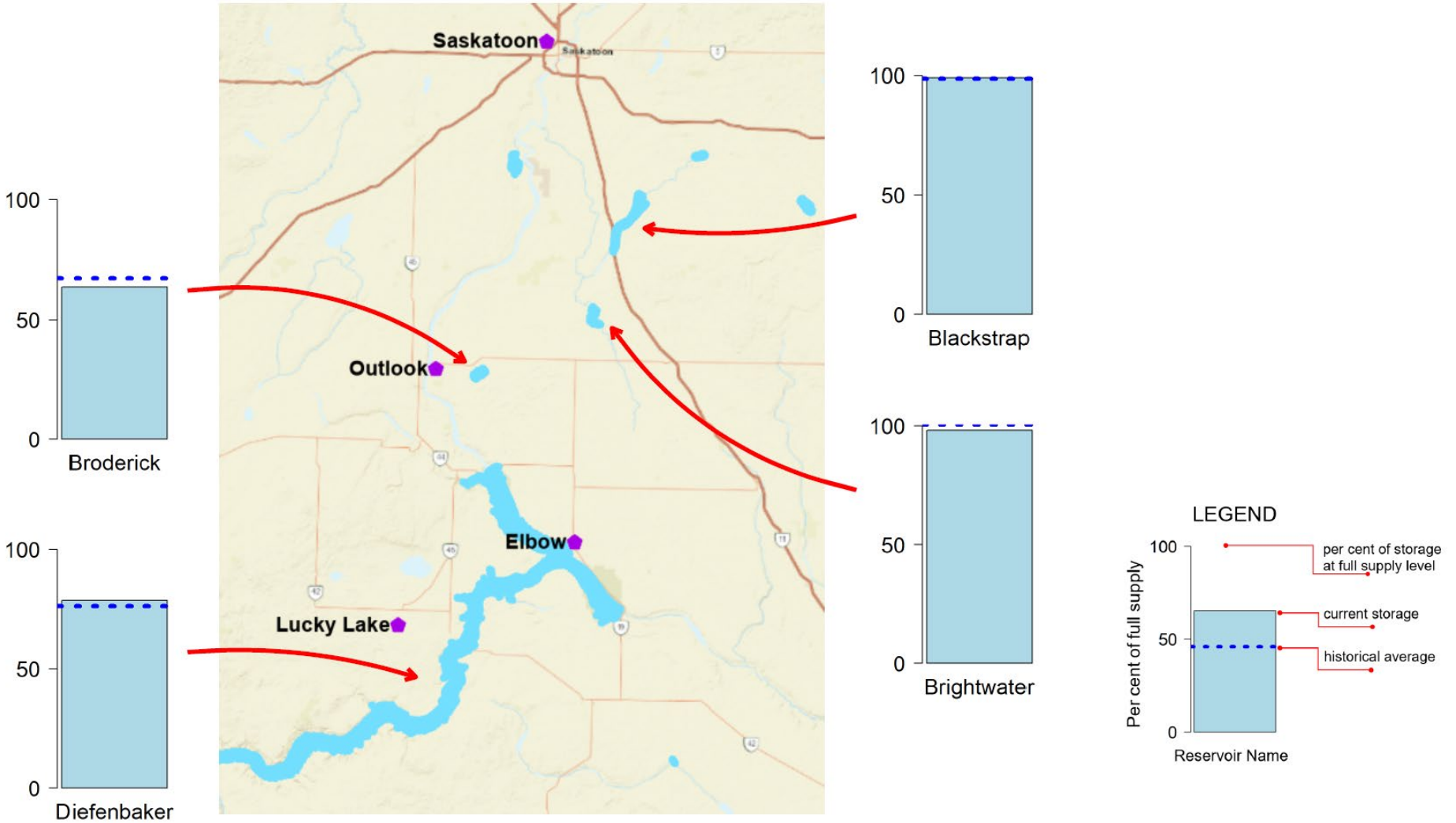

Figure 10: Reservoir Conditions in Central Saskatchewan as of March 3, 2025

Southeastern Saskatchewan Reservoir Levels

March 03, 2025

Water Security Agency

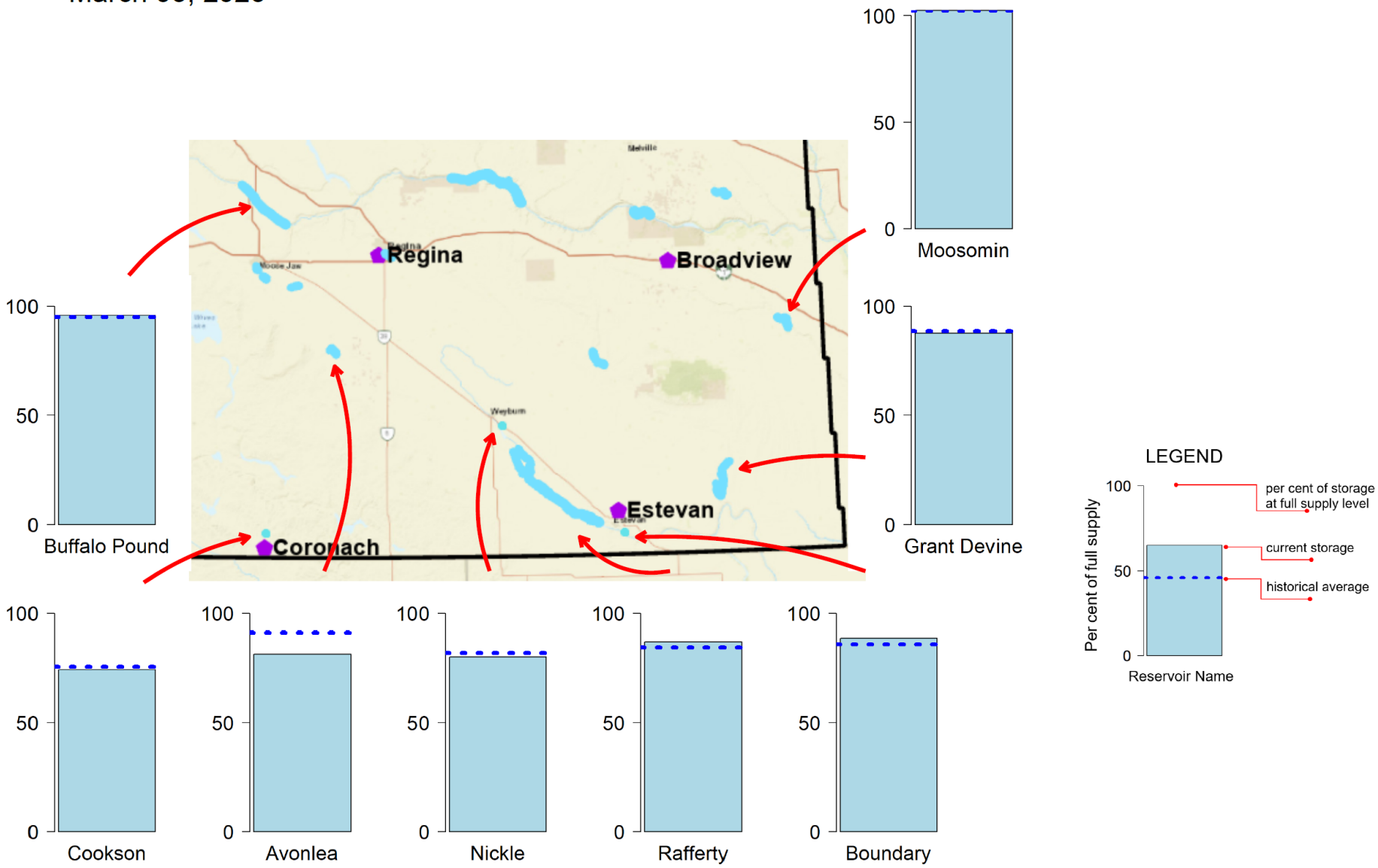

Figure 11: Reservoir Conditions in Southeastern Saskatchewan as of Feb. 28, 2025

South Central Saskatchewan Reservoir Levels

March 03, 2025

Water Security Agency

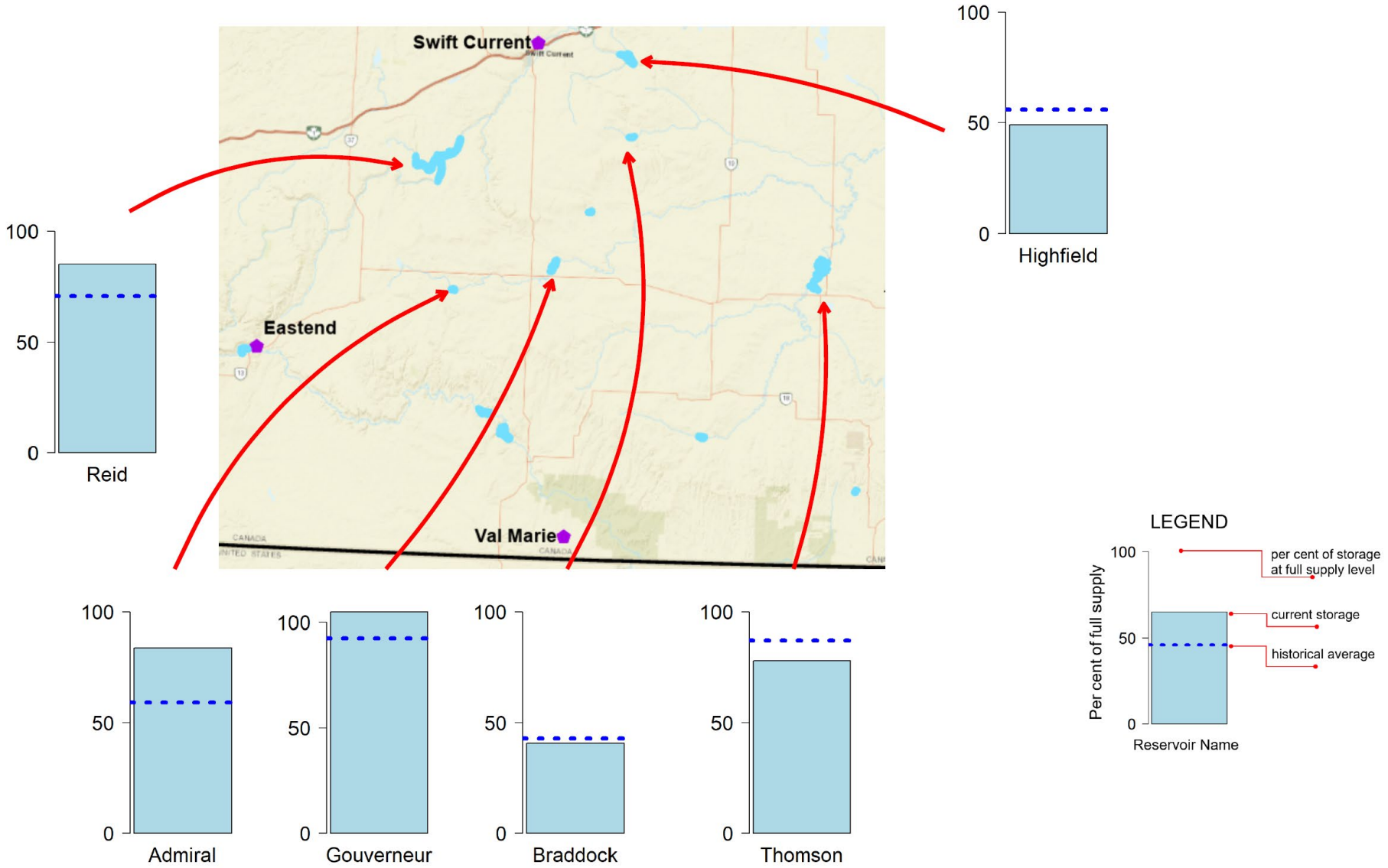

Figure 12: Reservoir Conditions in Southcentral Saskatchewan as of Feb. 28, 2025

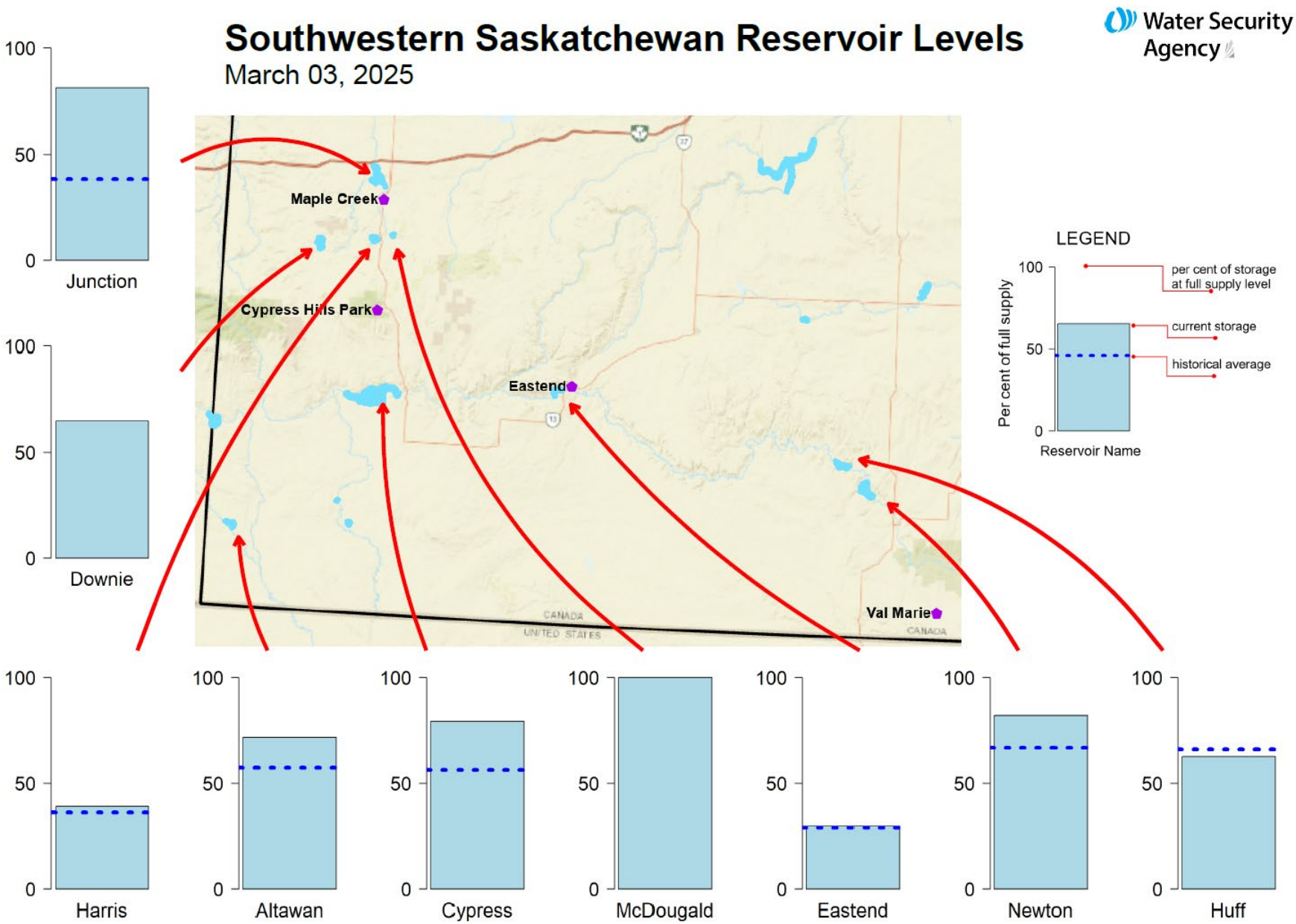

Figure 13: Reservoir Conditions in Southwestern Saskatchewan as of March 3, 2025

*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 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 a near normal runoff response this spring.
- Runoff has started in the Big Stick Basin, the Old Wives, and lower portions of the Frenchman River basins.
- The Swift Current Creek Basin has seen some runoff response due to the warm weather at the end of February but still has a lot of snow remaining.

Saskatchewan River Basin

Lake Diefenbaker is currently above median levels for this time of year, sitting approximately 1.1 m higher than at the same time last year. Releases have been maintained slightly below normal this winter. Flows on the North Saskatchewan River have remained slightly above normal throughout the winter months.

In the Alberta prairie portion of the basin, the only significant snowpack remaining is in the Red Deer River Basin. The Oldman and Bow River basins are virtually snow free. The Saskatchewan portion of the basin has an above normal snowpack. Snowmelt from the prairies is expected to be near to slightly above 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. If mountain snowpack remains below normal, the operation plans are to capture a larger percentage of the prairie runoff in Lake Diefenbaker this spring to help increase water levels. Late spring and early summer rainfall in southern Alberta, which typically can account for a significant percentage of the annual precipitation, cannot yet be predicted, but will also play a critical role in reservoir inflows.

The current operating plan for Lake Diefenbaker is to capture a portion of the prairie runoff to reach a target elevation of 553 m by mid-May. This is an above normal elevation for this time of year, and at this elevation most needs can be met.

Souris River

Currently, both Grant Devine and Rafferty reservoirs are below their February 1 drawdown target elevations. The snowpack in the basin generally ranges from above normal above the reservoirs to slightly below normal below the reservoirs.

A near normal runoff response is forecast for inflows into Rafferty and Grant Devine, and Boundary reservoirs. Flows below the reservoirs are also forecast to be near normal this spring due to a limited snowpack. Both Boundary and Grant Devine reservoirs are expected to fill this spring. Any excess water from Boundary will be diverted to Rafferty. Currently, Rafferty Reservoir is expected to be in the normal operating range.

Detailed forecasts for the Souris River Basin are developed on or near the first and fifteenth of each month, beginning in February, up until the snowmelt runoff event. These forecasts can be found on wsask.ca.

Qu'Appelle River

Most lakes in the Qu'Appelle River Basin are at near normal elevations for this time of year. The releases from the Qu'Appelle River dam have been maintained around 2 m^3/s for the duration of the winter.

Based on the current winter 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. Warm temperatures at the end of February 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, with the exception of 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.

Quill Lakes

The Quill lakes are currently at an elevation of 519.53 m, which is the 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 current snowpack present and fall conditions that were only slightly drier than normal. Assuming near-normal snow conditions continue until melt, the Quill lakes are expected to peak near 519.9 m from snowmelt runoff, similar to the peak level observed in spring 2023. Rainfall runoff could result in higher levels in late spring or summer.

Fishing Lake

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

Battle, Middle, Lodge Creeks Basins

Snowmelt has begun in lower portions of the Battle, Middle and Lodge basins. The headwaters still have a heavy snowpack, and an above normal runoff response is still anticipated. Cypress and Altawan reservoirs are currently near normal elevations for this time of the year. Given the current conditions, these reservoirs are expected fill this spring.

Old Wives Lake Basin

Snowmelt has started in the southern parts of the Old Wives Lake Basin. Across the remainder of the basin, the runoff potential is expected to be near normal. So far, the runoff response has been near to slightly above normal. Early releases were made from Lafleche Dam to clear the stream downstream of ice and snow in anticipation of needing to release more water this spring. Thomson Lake is expected to be full following the spring runoff this year.

Frenchman River Basin

Snowmelt has started in the southern part of the Frenchman Basin. In the headwaters, no significant runoff response has occurred yet. Here the runoff potential is expected to be near to above normal this spring. The reservoirs in the system are at normal to above-normal levels for this time of year and are expected to fill following the snowmelt.

Big Stick Lake Basin

With the warm weather at the end of February, the snowmelt has begun in the Big Stick Lake Basin. The Junction, McDougald, Harris and Downie reservoirs are currently at normal to above-normal levels for this time of the year. Given the current conditions, these reservoirs are expected to be near normal or even full in the spring.

Swift Current and Rush Lake Creek Basin

The Swift Current Creek Basin has started to see a snowmelt runoff response due to the warm weather at the end of February; however, the basin still has a lot of snow remaining. The runoff potential remains in the near to above-normal range. Reid Lake is expected to fill this year. This basin could see high flows especially if the runoff in the headwaters occurs at the same time as the local flow below Reid Lake.

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

Long Range Forecasts

Summary:

- The forecasts are calling for near normal precipitation for the next three months.
- Generally, near normal temperatures are expected over the next three months.

The three-month spatial anomalies maps for precipitation (Figure 14) and temperature (Figure 15) covering the March 1 to May 31 forecast period show the expected long-range precipitation and temperature trends in relation to 30-year climate normals.

Most long-range precipitation forecasts are predicting near normal precipitation accumulations across the province for March through May. All long-range models are predicting generally near normal temperatures across the province during this same period. The exception is in the southeastern corner of the province where slightly above normal temperatures are expected.

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 will issue another Spring Outlook Forecast in early April unless runoff is underway. Spring Runoff Outlooks will be released on wsask.ca.

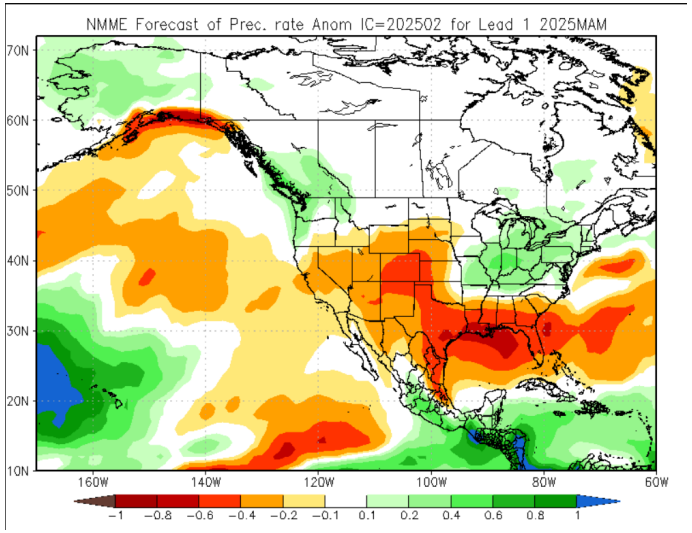

Figure 14: North American Multi-Model Ensemble Precipitation Anomaly Outlook for March 1 1 to May 31, 2025
(Map courtesy of the US National Weather Service)

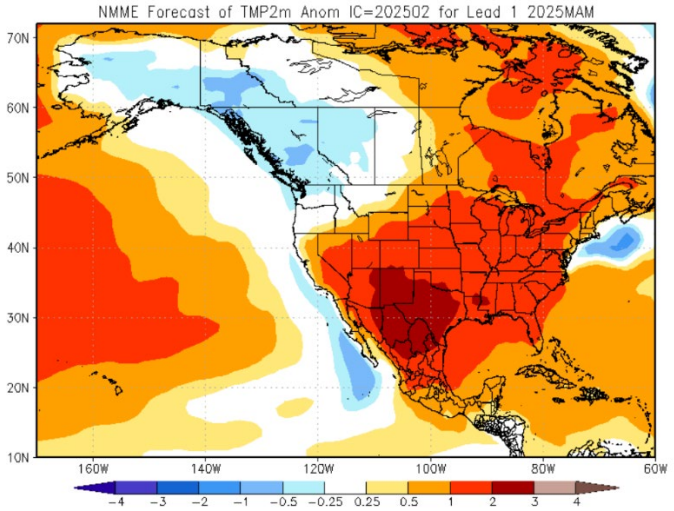

Figure 15: North American Multi-Model Ensemble Temperature Anomaly Outlook for March 1 to May 31, 2025
(Map Courtesy of the US National Weather Service)