



Overview of Winter Conditions

Winter conditions across the Winnipeg River basin have been unusual so far this winter. Mild temperatures and average precipitation occurred in late fall over the months of October and November. This trend continued into December with very little snowfall in the first few weeks and ice slowly forming on the major lakes. In the last week of December, two to three weather systems crossed the basin bringing rainfall or snow-rain mix. Between December 25 and 27, total precipitation amounts ranged from upwards of **30 mm of rain** around Rainy and Namakan Lakes and 10 to 20 cm of snow north of Dryden (Fig. 1).

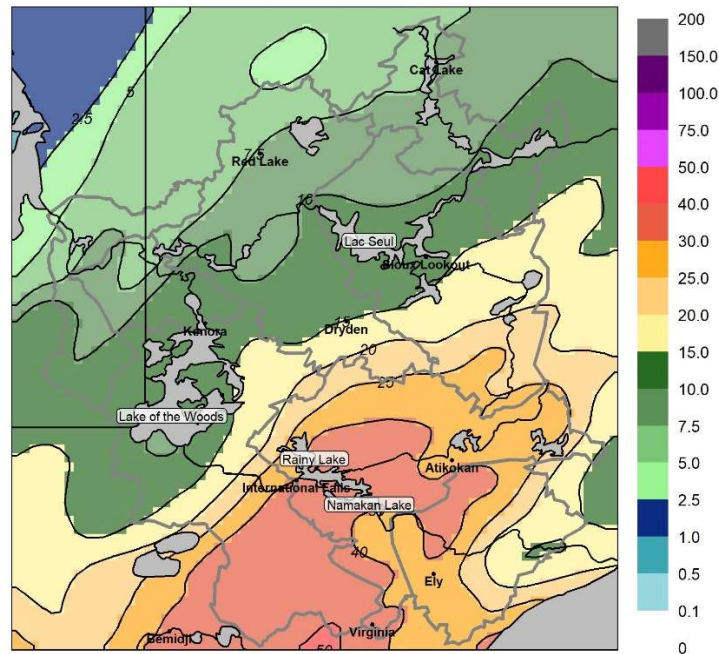


Figure 1. Total Precipitation (mm) from December 25 to 27, 2023. Source: Canadian Precipitation Analysis)

Conditions changed dramatically in the first week of January as extremely cold temperatures hit the basin for several days. These cold temperatures were accompanied by very little snowfall and did not help the limited snowpack covering the basin at this point. In the latter half of January, another swing in conditions was developing, this time with a shift to well above normal temperatures by the end of January. Daily highs reached **10°C in Fort Frances, 8°C in Kenora and 6.5°C in Sioux Lookout** on January 31. There was evidence of the already minimal snowpack starting to melt from these warm temperatures.

As of the time of this notice, snow depths across the basin are well below normal. Most snow measurement stations from Environment and Climate Change Canada (ECCC) and Ontario's Ministry of

Natural Resources and Forestry (MNR) are recording between 10 and 20 cm of snow depth. Some areas farthest north near the headwaters of Lac Seul and around Lake St. Joseph have 30 to 40 cm of snow depth. In basins upstream of Lake of the Woods, snow depth is near an all-time low, with the State of Minnesota estimating 4 to 8 inches (10 to 20 cm) of snow depth, ranking at or near the lowest amounts ever recorded (Fig. 2).

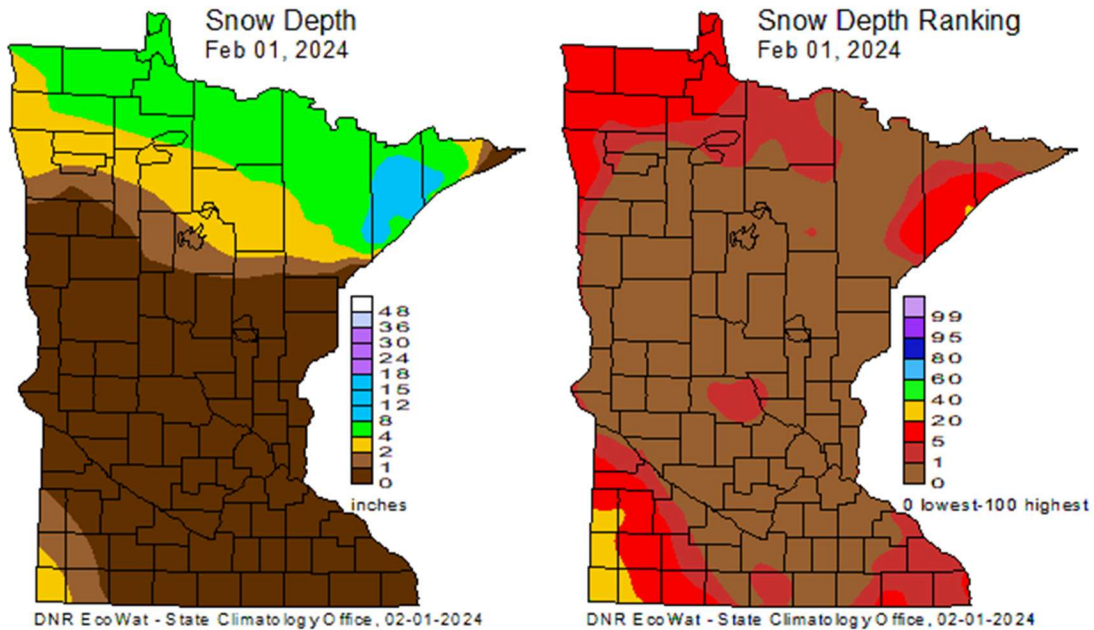


Figure 2. Snow Depth (left) and Snow Depth Ranking (right) maps for Minnesota.
 Source: <https://www.dnr.state.mn.us/climate/snowmap/index.html>

Status of the Major Lakes and Regulation Decisions

The level of Lake of the Woods has declined very little since the end of fall, having come down only 11 cm since November 11 (Fig. 3). This is well in line with the [Regulation Strategy](#) the LWCB adopted in October, where emphasis was placed on monitoring lake level drawdown while helping to provide minimum flows on the Winnipeg River for hydropower production. In the Regulation Strategy, an end-of-winter level target range for March 31 was set to between 322.38 and 322.5 m.

Over the month of January, two small outflow increases of 25 m³/s were directed at Lake of the Woods, raising the authorized outflow to 325 m³/s. These outflow increases were made in response to increased inflows to the lake due to the December precipitation and outflow increases at Rainy Lake upstream. With more water coming into the lake, the lake level was no longer declining and had stabilized close to 322.6 m.

With the very low snowpack in January, it may seem counterintuitive to increase outflow and draw down the lake. However, consideration must be given to the remainder of the winter and lake refill mechanisms in the spring. The basin could receive considerable precipitation, in the form of snow or rain, in February and March. And by spring, there are factors other than snowpack that contribute to lake refill; the most important being spring rainfall, which is impossible to predict months ahead of time.

Gradually lowering the lake to an end-of-winter target that provides storage, but also leaves a buffer for heavy spring rainfall, is the preferred regulation strategy.

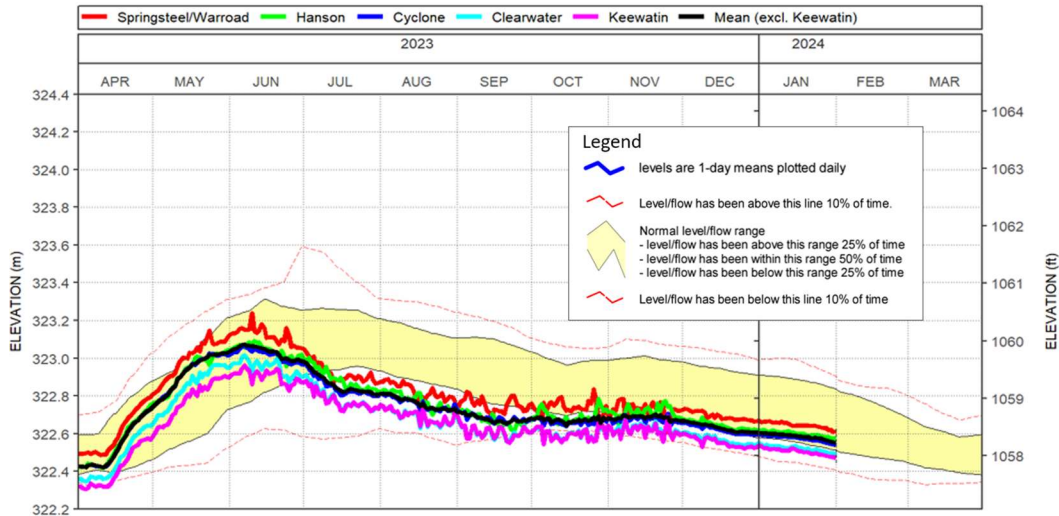


Figure 3. Lake of the Woods water level as of January 31, 2024.
 Source: <https://www.lwcb.ca/pdf/LakeoftheWoods.pdf>

The level of Lac Seul has been drawn down at a much higher rate, 9 to 10 cm per week, to provide minimum flows for hydropower production on the English and Winnipeg Rivers (Fig. 4). In this basin, available storage was below average heading into the winter and inflow to the lake has remained low (since June of last year). Due to the low snowpack and potential for continued drought conditions in the spring, outflows from Lac Seul will be reduced as of early February. These outflow reductions will slow the rate of lake level decline and attempt to target end-of-winter levels most suitable for all interests.

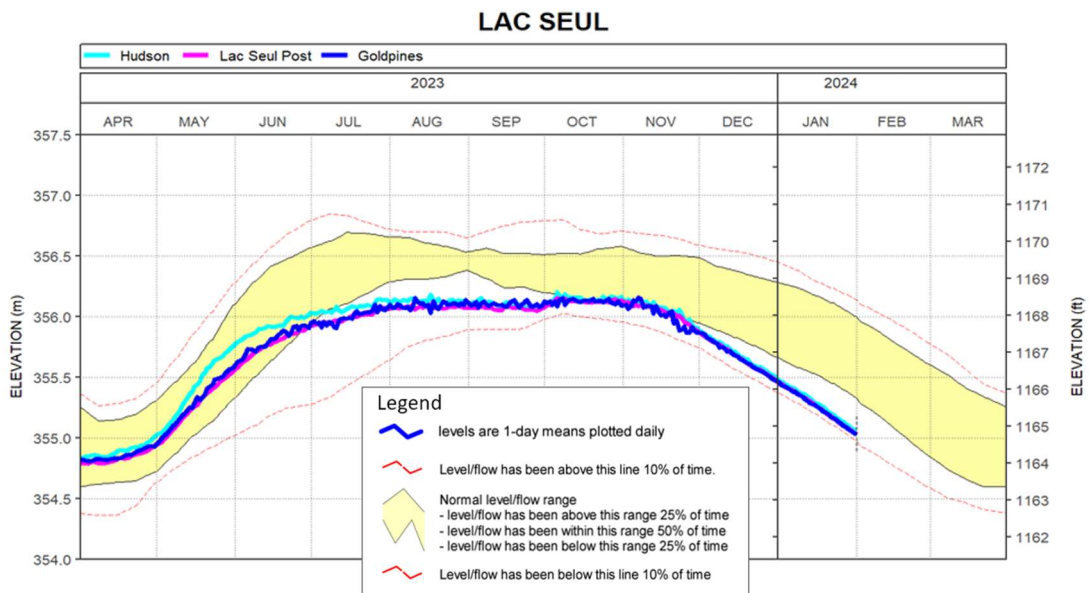


Figure 4. Lac Seul water level as of January 31, 2024. Source: <https://www.lwcb.ca/pdf/LacSeul.pdf>