Island Lake Technical Committee

Spring Refill 2020

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March 5, 2020
Island Lake Basin
Bottom Line Up Front

- Greater than 95% Chance of Refill under normal condition

- Main Drivers
  - Wet Soils
  - 7-9” Snow Water Equivalent in snow pack
Setting Up Current Conditions

- A very wet fall primed soils prior to freeze-up

- Deep snow pack mainly from two major storms in the end of November and the end of December
  - 24” is average for snow depth 3/5
    - Range is 21” to 30”

- Precipitation in the basin is 4” above normal

- Little frost in the ground due to insulating snowpack
Above Normal Fall Precipitation

September to March 5th precipitation 4” to 5” above normal
Soil Moisture

- Above normal fall precipitation = above normal soil moisture
- No Drought condition
- River model shows full contents for every parameter of the soil profile
Soil Moisture

- Ranking soil Moisture
- 90th – 95th Percentile
Soil moisture is very high on March 5th Basin Average of 7” snow water equivalent.
Water in the Current Snowpack

- 6 to 9 inches of water being held in the snowpack in the Basin
Water in the Current Snowpack

Generally 90th to 100th ranking of snow water in the Basin
Weather Outlook

• Near term – Chance for snow March 14\textsuperscript{th}-16\textsuperscript{th}

• March – Signal towards above normal precipitation and temperatures. Melt during day refreeze at night.

• Three Month Outlook March, April, May
  • Slight lean towards above normal precipitation
  • No signal of above or below normal temperatures
Short Term Outlook - Precipitation

Slight lean towards above normal Precipitation Mar.
Signal for Above Normal Temperatures March 2020
Higher Confidence in Above Normal Precipitation Mar-May
Spring Outlook - Temperature

Equal chance of above/below normal Temperatures Mar-May
Hydrologic Outlook - Refill

- Greater than 95% chance of Refill under normal condition
- Nearly certain refill under Dry refill rules
Greater than 95% Chance of Refill - Normal
100% of Refill - Dry

Chances of Exceeding River Volume at Cloquet River at Fredenberg 1NNW-Island Lake (ILRMS)
Forecast for the period 03/31/2020 - 07/14/2020
This is a conditional simulation based on the conditions as of 02/23/2020

Exceedance Probability

Volume (AC-FT)

Fill + Outflow Below 100,000 AC-FT
2020 Refill - Summary

- Above normal precipitation 2019 (especially wet Fall)
- Above normal soil moisture
- Weather Outlook

Hydrologic Outlook
- Greater than 95% Chance of Refill under normal condition
- 100 % chance of refill under dry drawdown rule.