



# Rainy River/Rainy Lake Basin Summer 2024

Tuesday July 9, 2024 Briefing

**This information is provided for situational awareness on river and lake levels. No update scheduled at this time.**

Recent Past Weather	Forecast Weather Next 1-14 Days	River and Lake Levels - Current and Future	Impacts Observed So Far	Key Messages to stakeholders and the public
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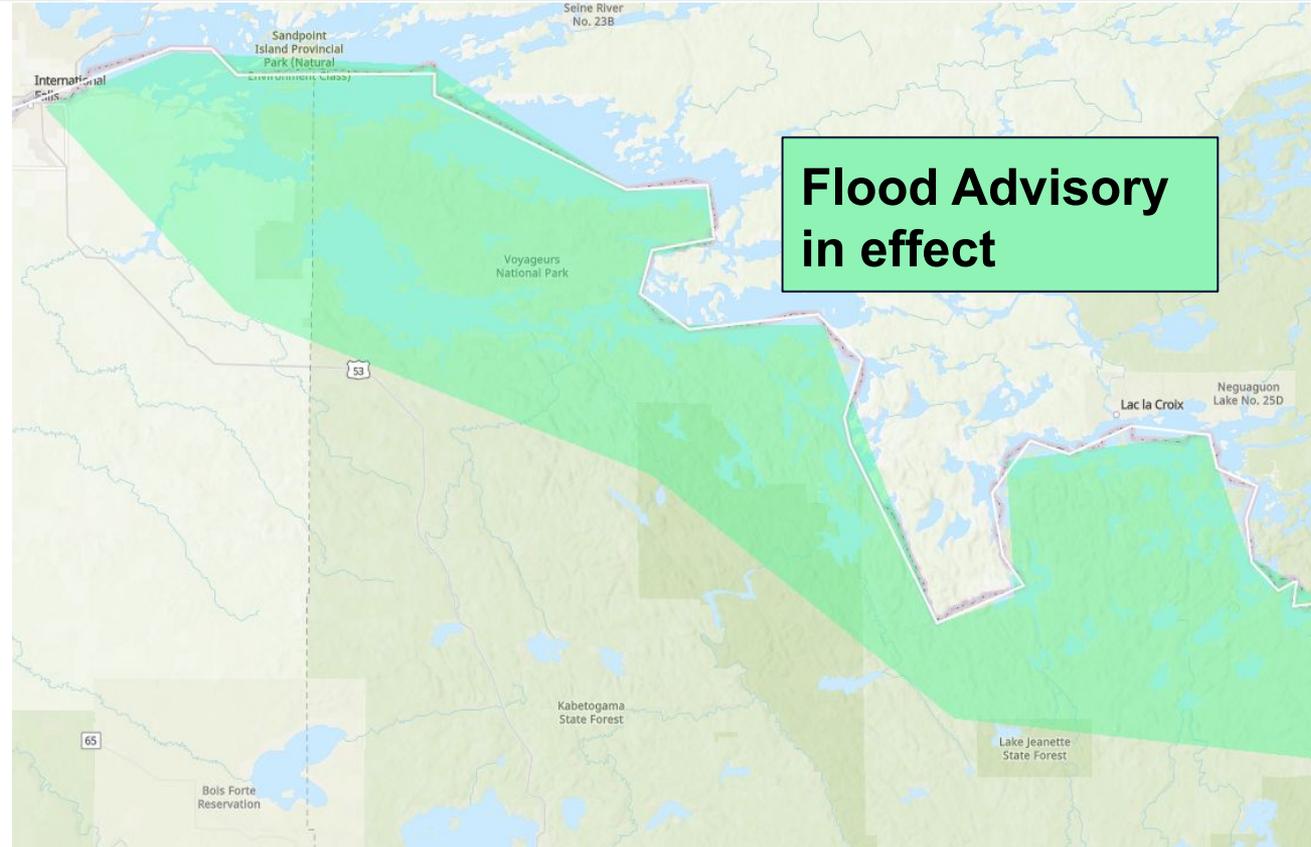


# Basin Overview - What are we focusing on?





# Headlines Currently In Effect



- High water, minor flooding continues.
- **Rates of rise should continue to slow**, and lakes should crest over the next 7 days.
  - Lac La Croix crested 7/8
  - Crane Lake may crest mid this week
  - Namakan/Kabetogama may crest late this week into the weekend
- **Primary impacts to lowest structures** including docks, boat houses, and buildings/road right near the shoreline.
- Boaters should expect high water, potentially hidden underwater hazards (including submerged docks), and strong currents.





# Recent Past Weather





# Recent Past Weather

Rainfall Last 38 Days **At Seagull Lake** (Since June 1) **2024** and **Normal**

- Rain total June 1st to July 1st was 4th highest for that period (2.91" more than normal)

Accumulated Precipitation - GUNFLINT LAKE 10 NW, MN

Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values

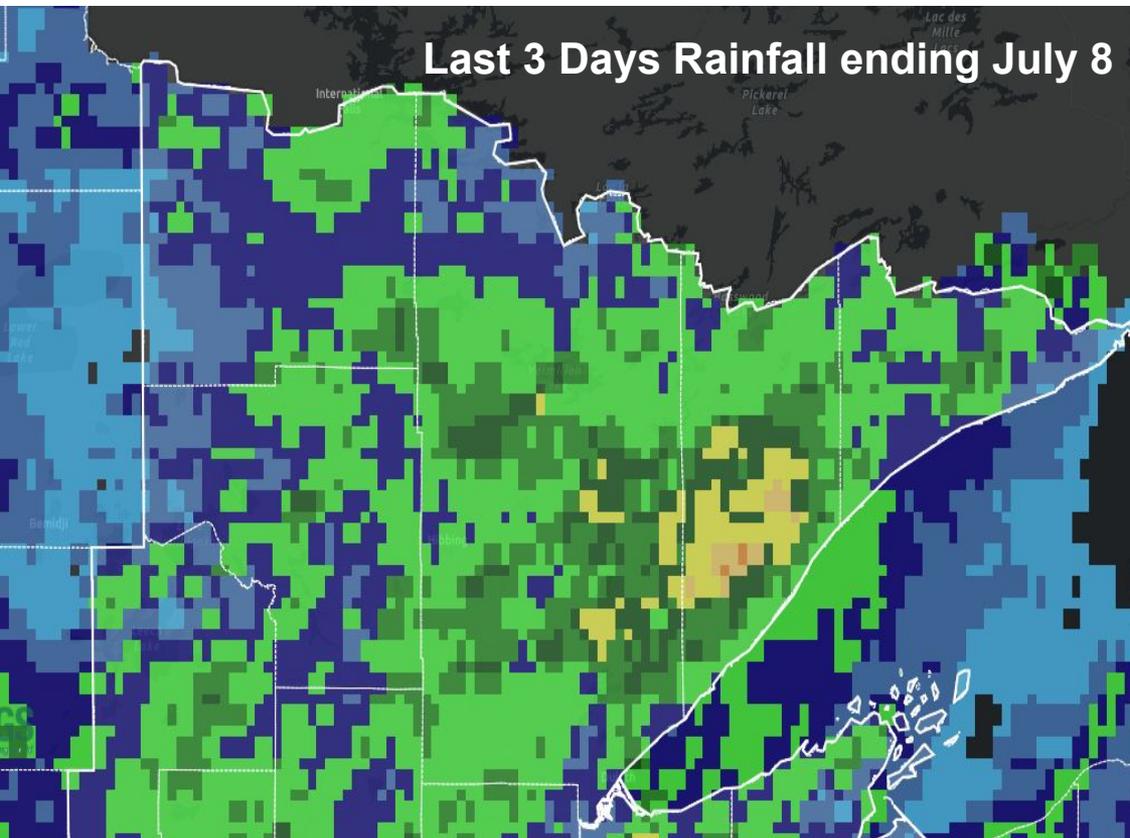


Powered by ACIS



# Recent Past Weather

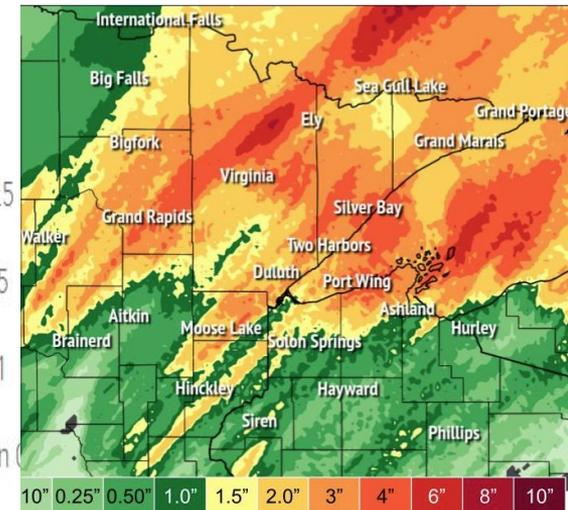
Last 72 Hours (Ending Monday Morning, July 8th)



RAINFALL (inches)



Recent additional rains along the border - June 18th saw 3-8" (below)

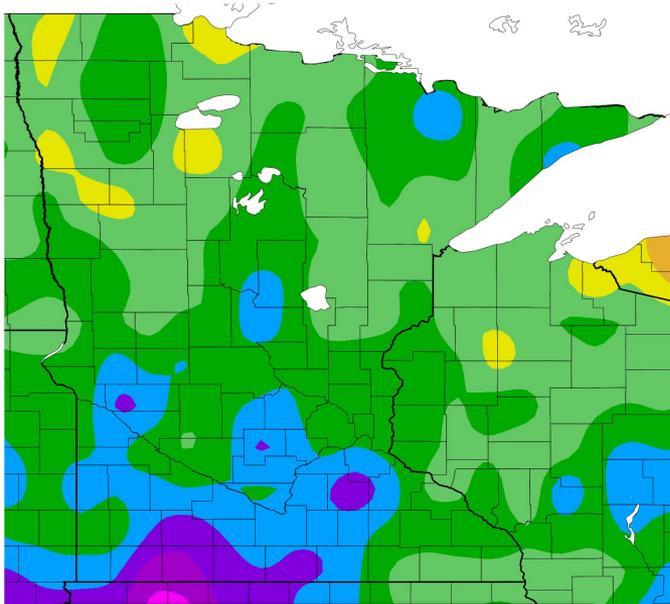




# Precipitation Departure from 1991-2020 Normals

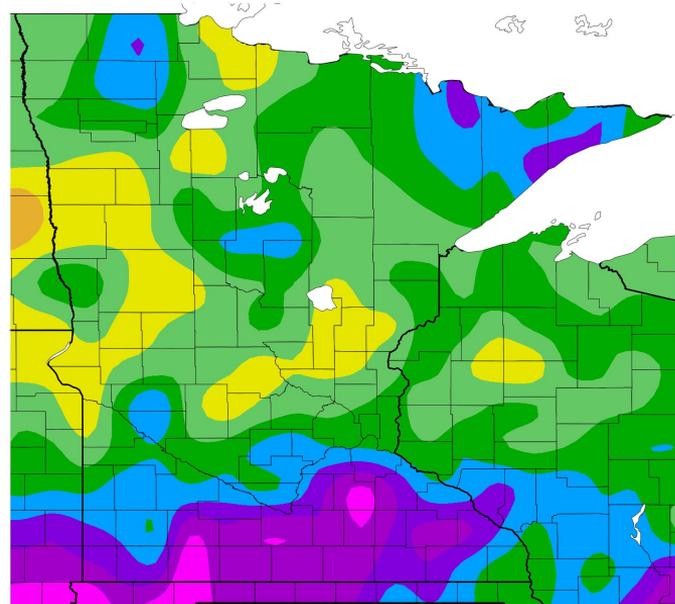
Inches above or below normal precipitation for the period.

Departure from Normal Precipitation (in)  
10/1/2023 – 7/6/2024



**Water Year (since Oct 1)**

Departure from Normal Precipitation (in)  
6/8/2024 – 7/7/2024



**Last 30 Days**

Generated 7/7/2024 at

Regional Climate Center:

ated 7/8/2024 at HPRCC using

NOAA Regional Climate Center



National Oceanic and Atmospheric Administration  
U.S. Department of Commerce

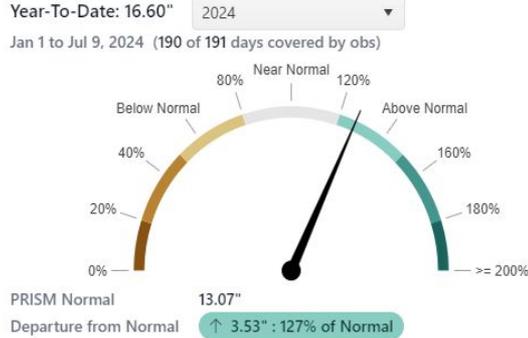
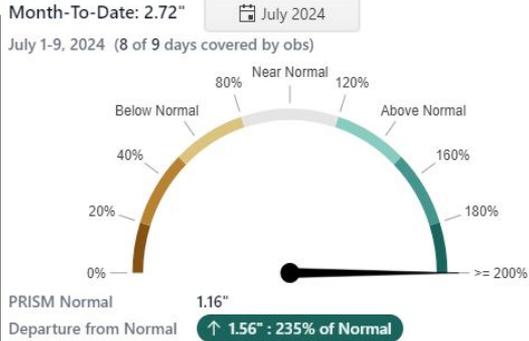
National Weather Service  
Duluth, MN & North Central River Forecast Center



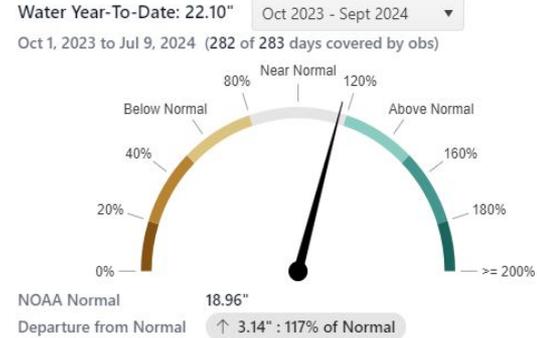
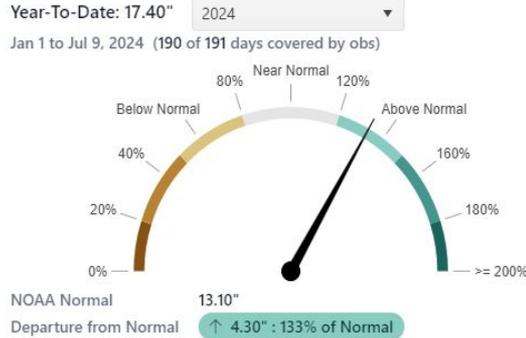
# Basin Precipitation Climatology

## Near Normal to far above normal precipitation observed

International Falls



Ely





# Forecast Weather

Next 6-14 Days



National Oceanic and  
Atmospheric Administration  
U.S. Department of Commerce

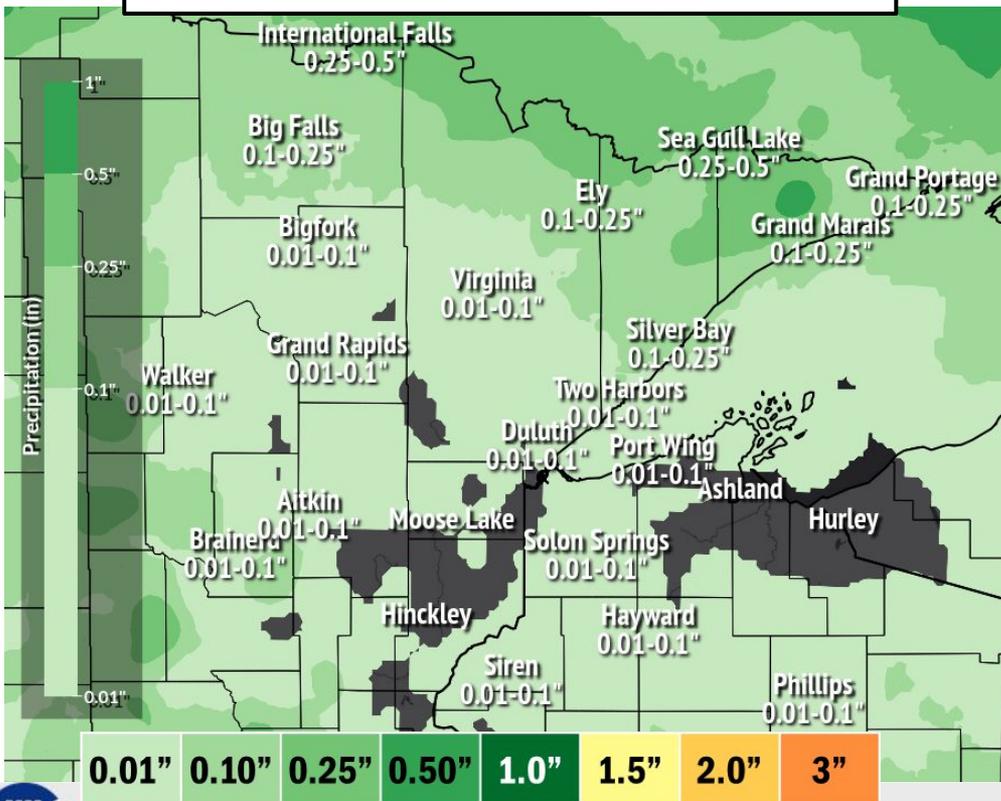
National Weather Service  
Duluth, MN & North Central River Forecast Center



# Precipitation Forecast - Current NWS Forecast

## Basin Average Precipitation

### Forecast Rainfall 7/9-7/16



- Light scattered showers through late week - minimal accumulations
- Next chance this weekend, light to moderate rainfall possible

### Probability of Precipitation Forecast (%)

	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17
	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed
Big Falls	15	20	10	35	35	25	30	15	10
Crane Lake	10	30	15	30	30	30	30	20	10
Ely	15	40	20	20	25	30	30	20	10
Grand Marais	20	30	20	10	20	35	35	20	10
Hibbing	15	35	20	20	30	30	30	20	10
International Falls	10	15	10	35	35	30	30	15	10
Kabetogama	10	20	10	35	35	30	35	20	10
Orr	15	30	20	30	35	30	30	20	10
Seagull Lake	20	50	20	15	25	35	35	20	10
Silver Bay	15	25	15	10	20	25	25	20	10

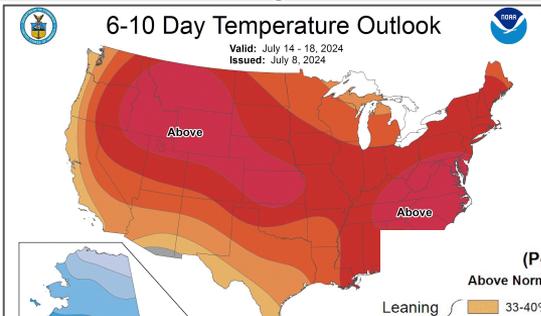




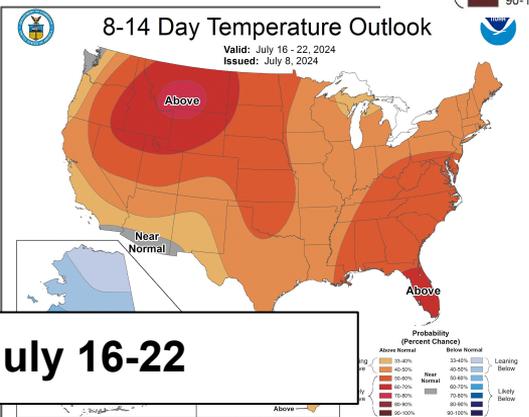
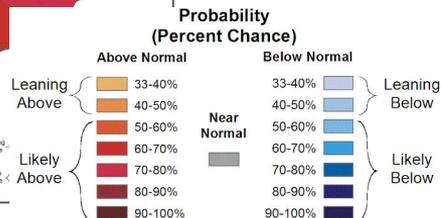
# Temperature and Precipitation Outlooks Days 6-14

Pattern shifting to above normal temperatures and normal precipitation

Temperature Outlooks



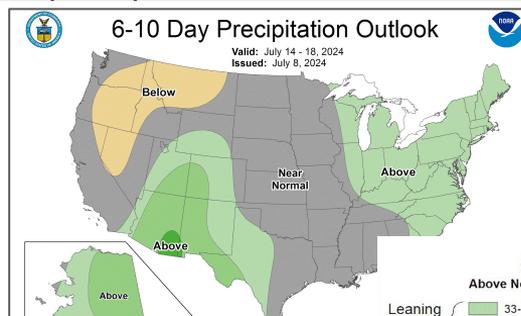
July 14-18



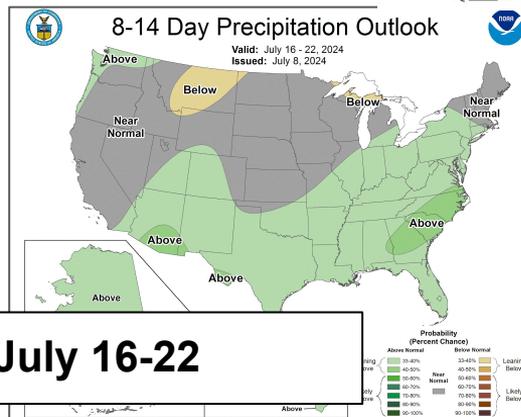
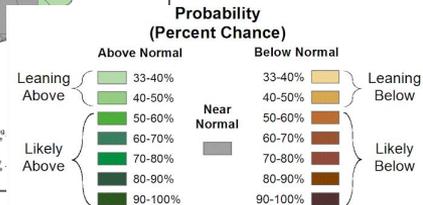
July 16-22



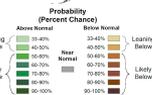
Precipitation Outlooks



July 14-18



July 16-22





# Current & Expected River/Lake Levels

Next 6-10 Days and Beyond





# Rainy Headwaters

## South Kawishiwi River near Ely

### HEFS - 10 Day River Level Probabilities

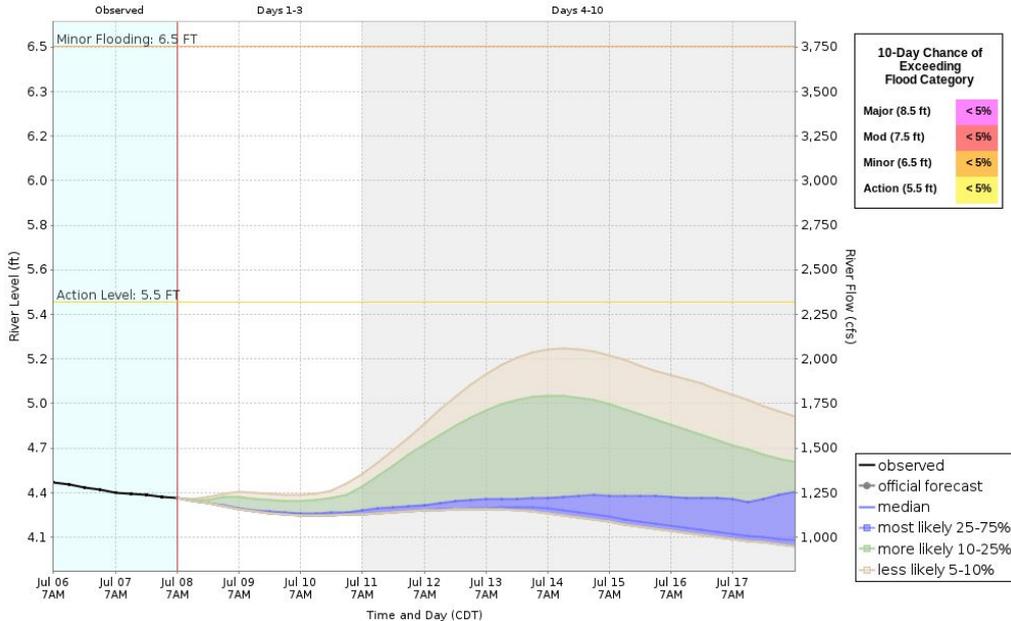
Based on Hydrologic Ensemble Forecast Service Model Simulations Used to Estimate the Range of Possible River Levels

### Ensemble Forecast for South Kawishiwi near Ely



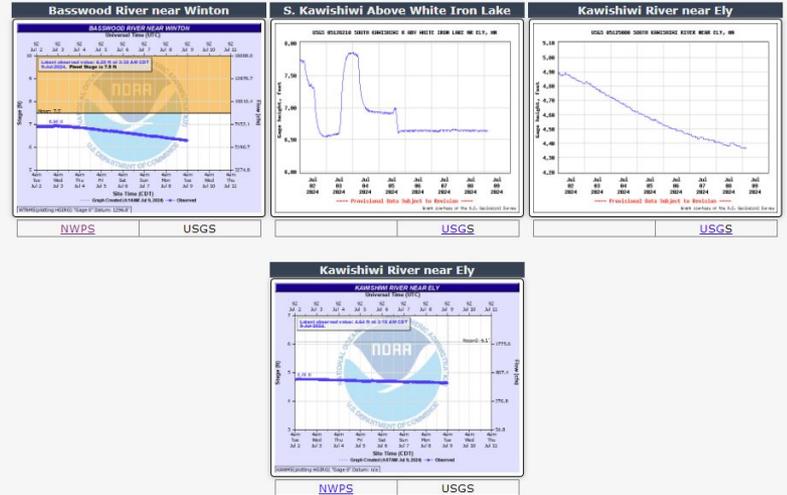
Jul 08 - Jul 18, 2024

South Kawishiwi River at Ely 9SE (SKRM5)



Model runtime: 07:00 AM CDT Jul 08 2024  
North Central River Forecast Center

### Rainy Headwaters



- Levels continue to recede far in the eastern headwaters.
  - Lac La Croix crested 7/8
- Minor rises in the headwaters possible with future rises.



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U.S. Department of Commerce



# Vermilion River near Crane Lake

[Click here for hydrograph](#)

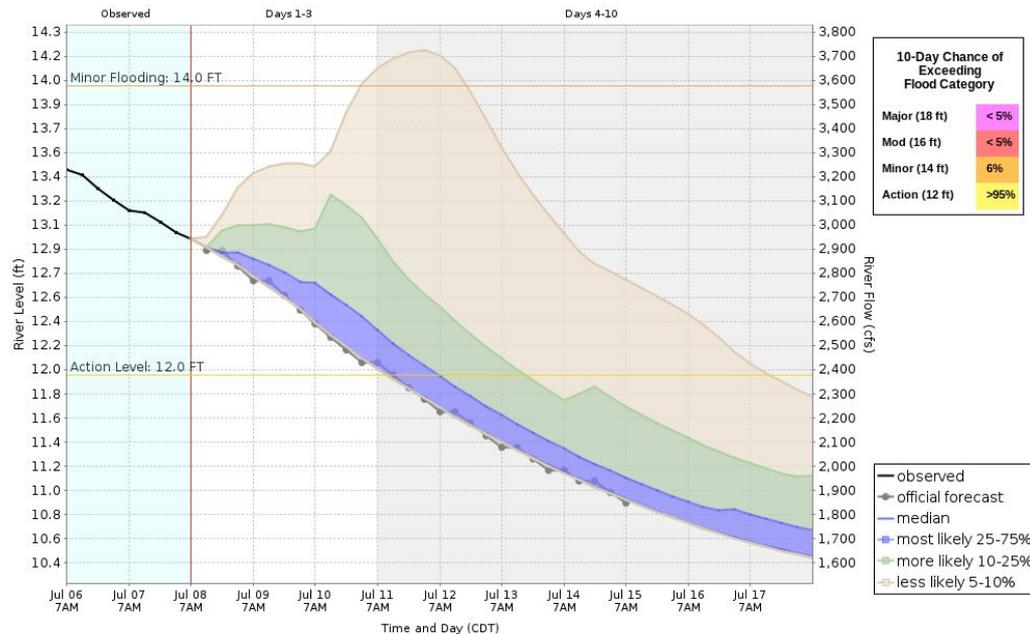
## HEFS - 10 Day River Level Probabilities

Based on Hydrologic Ensemble Forecast Service Model Simulations  
Used to Estimate the Range of Possible River Levels



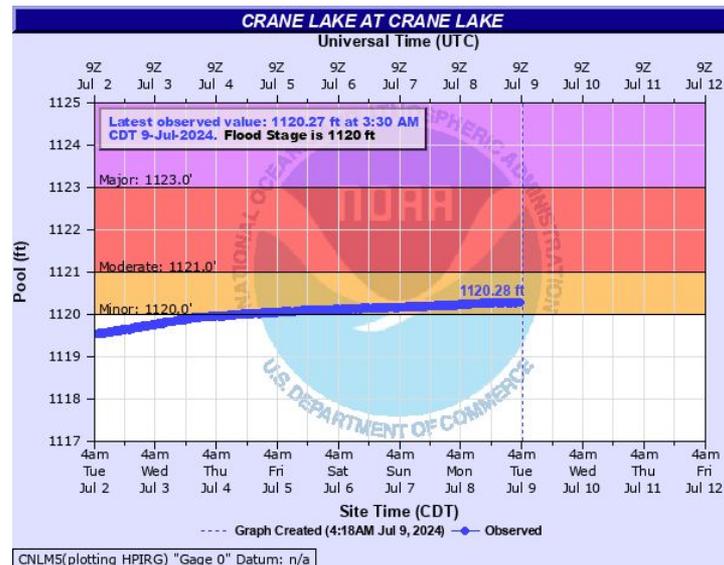
Jul 08 - Jul 18, 2024

### Vermilion River at Crane Lake 4W (CLKM5)



Model runtime: 07:00 AM CDT Jul 08 2024  
North Central River Forecast Center

- Vermilion River levels continue to fall.
- Crane Lake may peak July 10-11. Additional rises of a couple inches or less possible.





# Namakan Lake (and Kabetogama Lake)

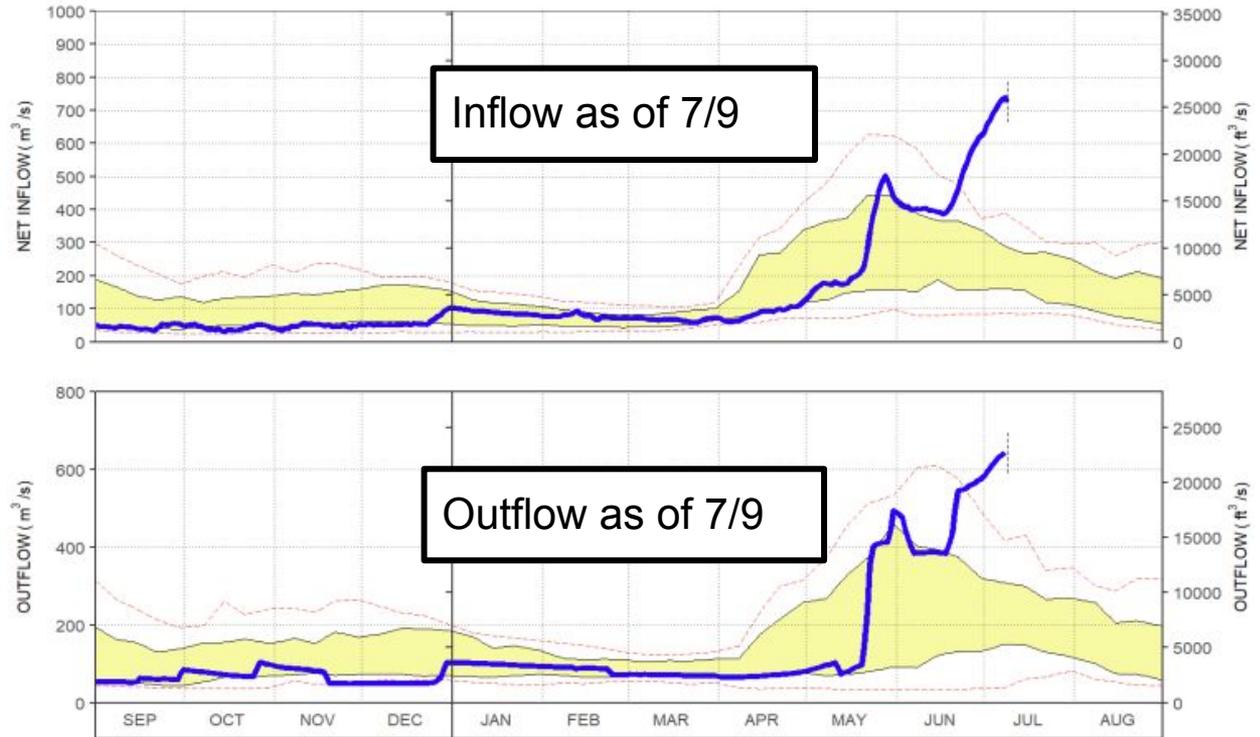
Namakan Lake Inflow / Outflow

## Inflow

Inflow beginning to slow and may crest soon.

## Outflow

Outflow still slightly lower than inflow, so expect slow rises to continue. Dam operators working to maximize outflow, per [latest water level notices](#).



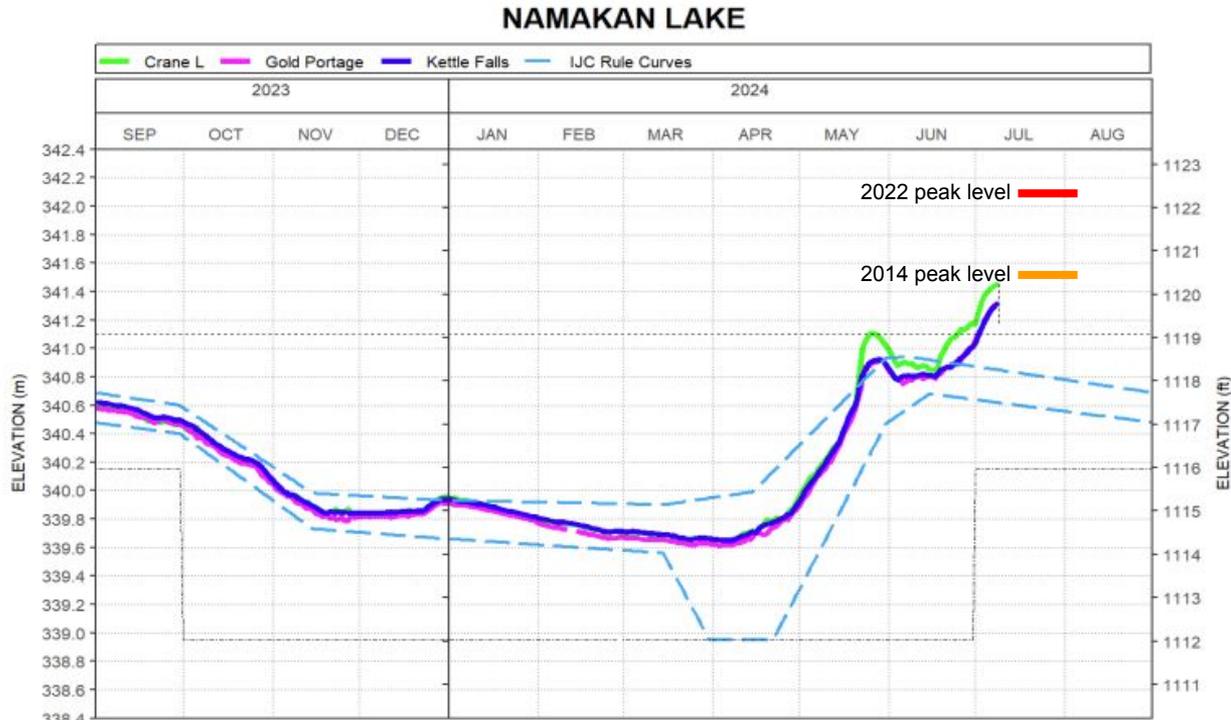
[Link to Plot Legend](#)





# Namakan Lake (& Kabetogama Lake)

## Namakan Lake Levels



Data as of 7/9

Lake levels exceeding the rule curve by ~ 1-1.5 feet.

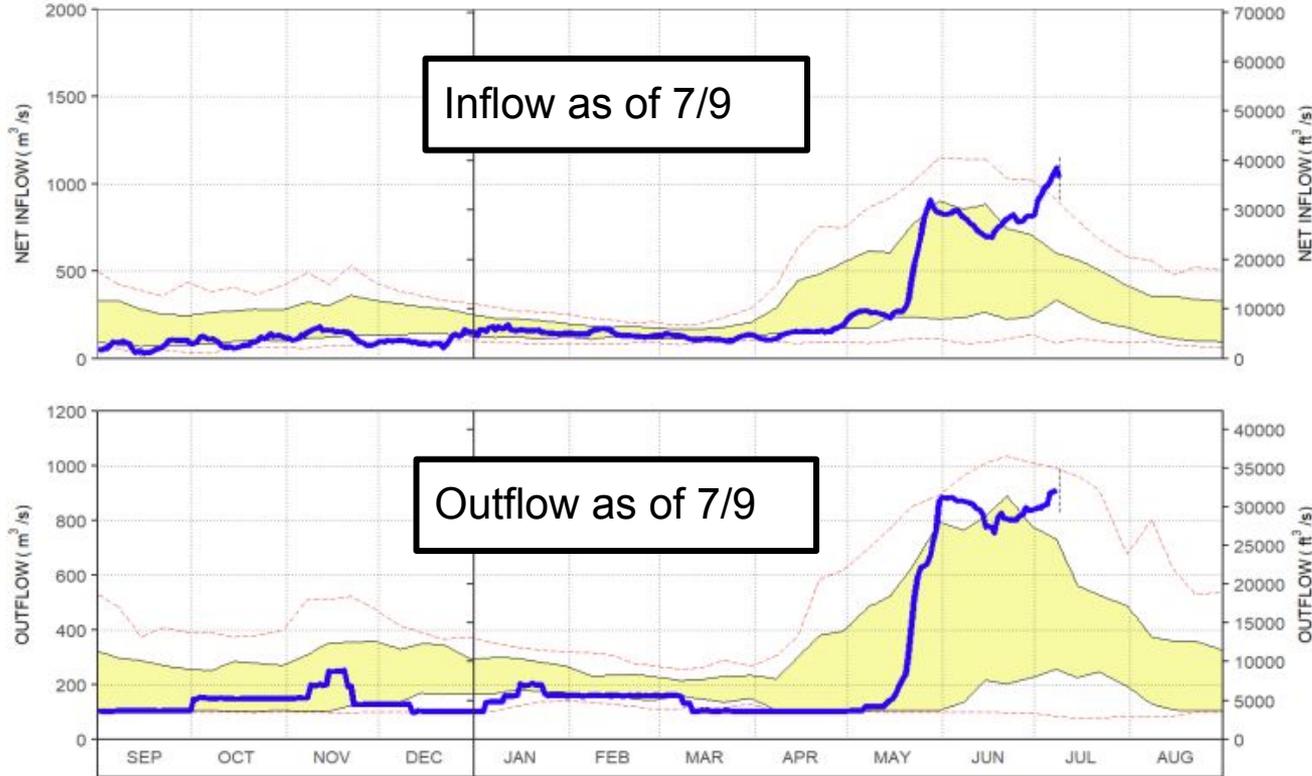
Level increases continue as water slowly moves through the system. **Rates of rise are slowing.**

Water levels may crest late this week into the weekend.

[Read about active regulation by The Water Levels Committee](#)



# Rainy Lake Inflow / Outflow

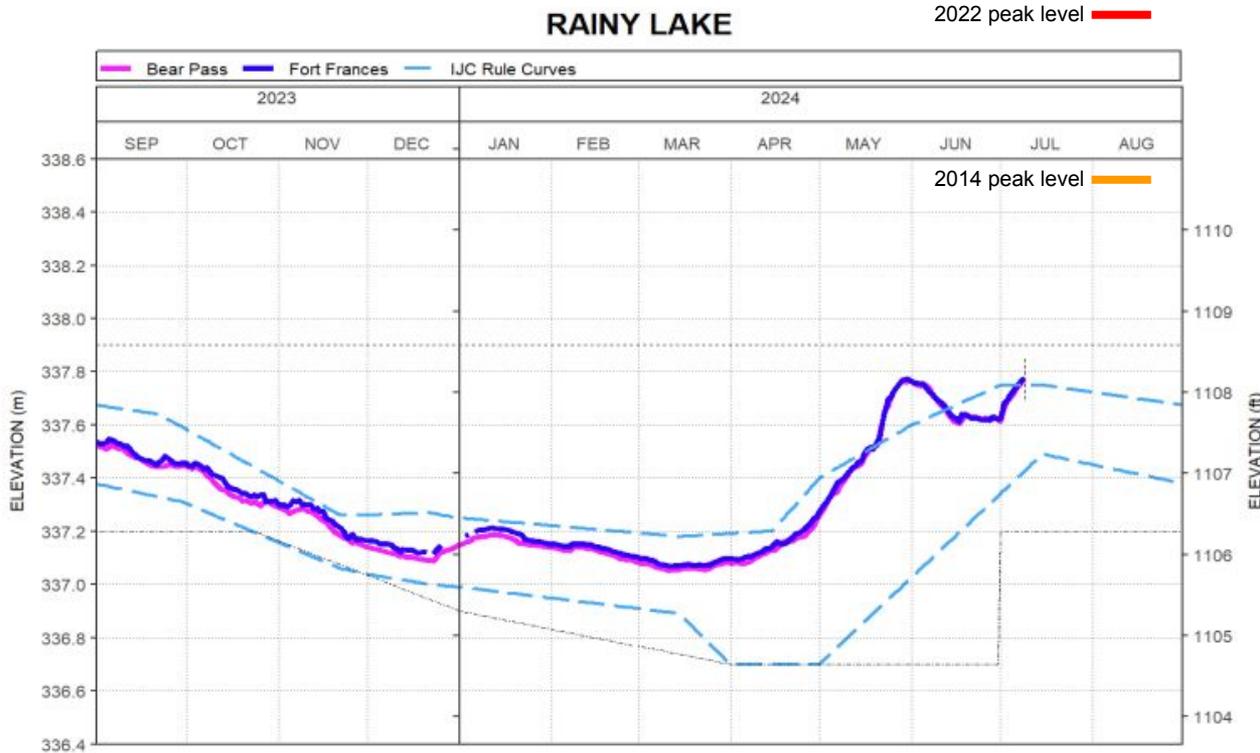


Inflow exceeding outflow by about 8000 cfs. Dam operators working to maximize outflow, per [latest water level notices](#).



# Rainy Lake

## Rainy Lake Levels



Lake levels rising, just exceeding rule curves

Inflow is greater than outflow, **which will keep levels steadily rising.**

**Lake levels remain far from water levels in previous flood events.**

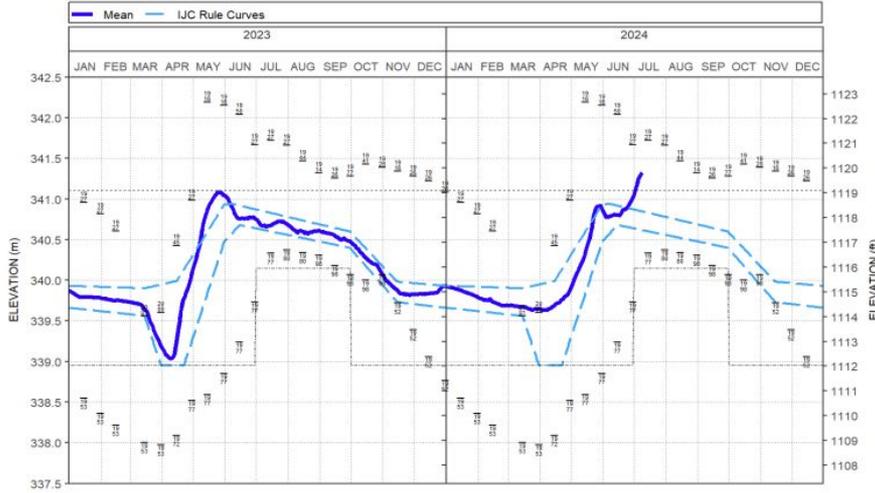
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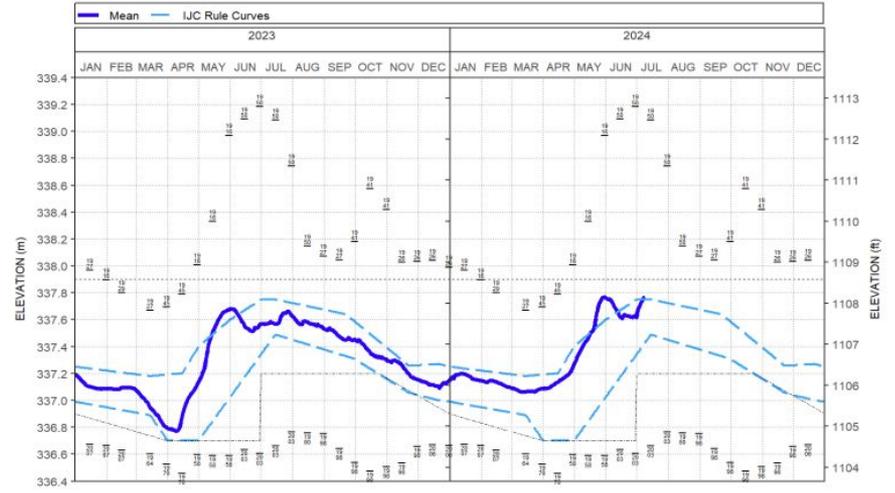
# Historical Context- Rainy and Namakan Last Two Years

As of 7/9/2024

### NAMAKAN LAKE



### RAINY LAKE



- Rises this spring just outside rule curve on Rainy Lake were similar to those from snowmelt during Spring 2023.
- **Additional rises on Namakan Lake approaching Summer 2014 levels. Still 3 ft below 2022 peak crest.**





# Rainy River Below International Falls Dam

Rises from recent rainfall and Rainy Lake outflow

## Littlefork River at Littlefork

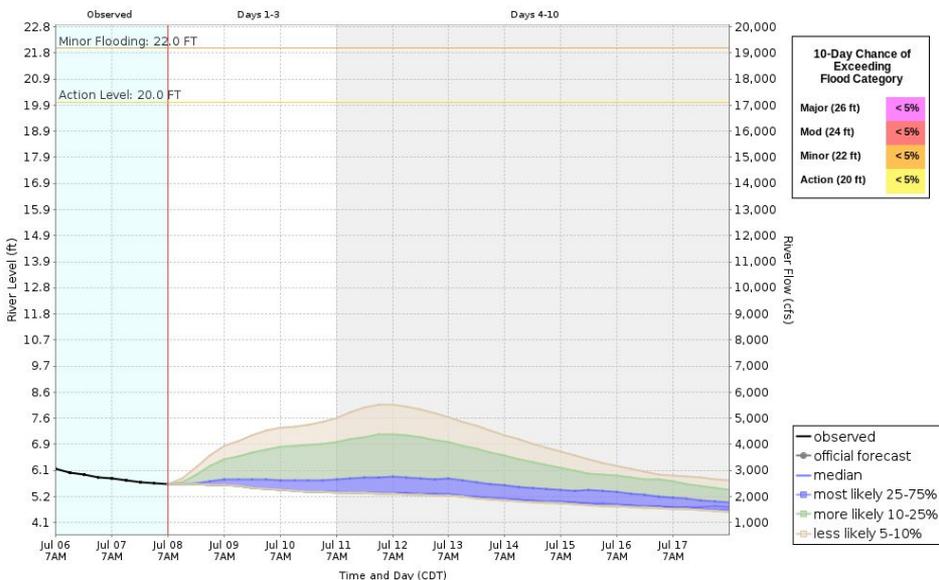
### HEFS - 10 Day River Level Probabilities

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Jul 08 - Jul 18, 2024

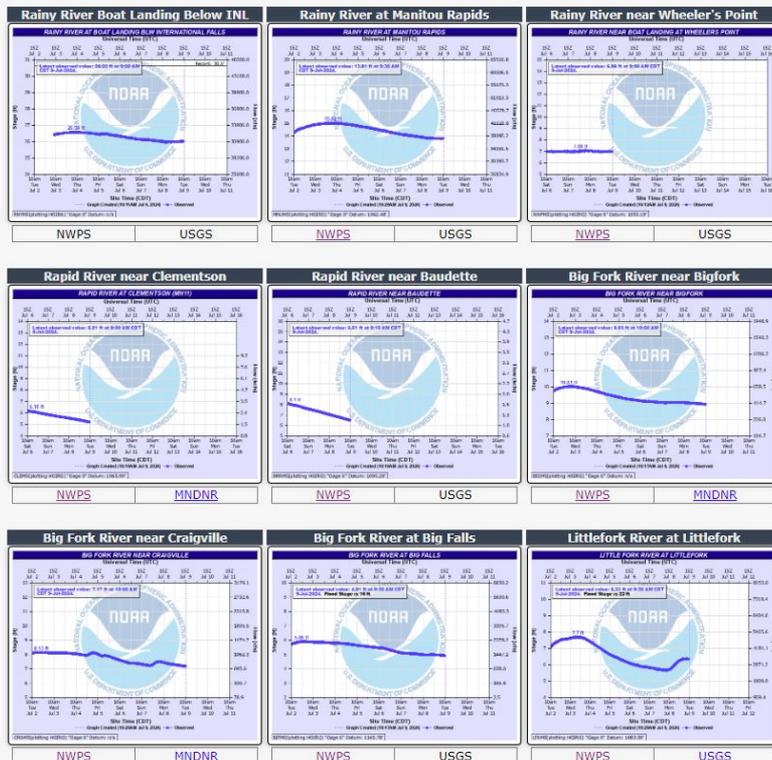
### Little Fork River at Little Fork 10SW & Rvr (LFKM5)



Model runtime: 07:00 AM CDT Jul 08 2024  
North Central River Forecast Center

## Current Data - Last few days

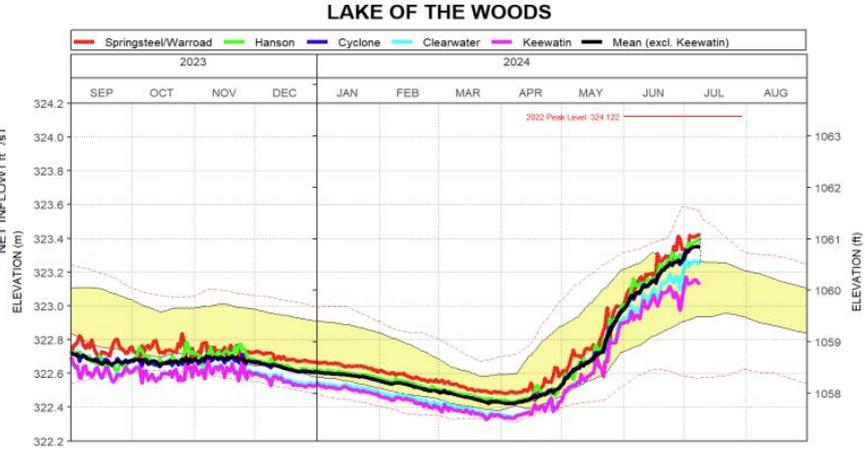
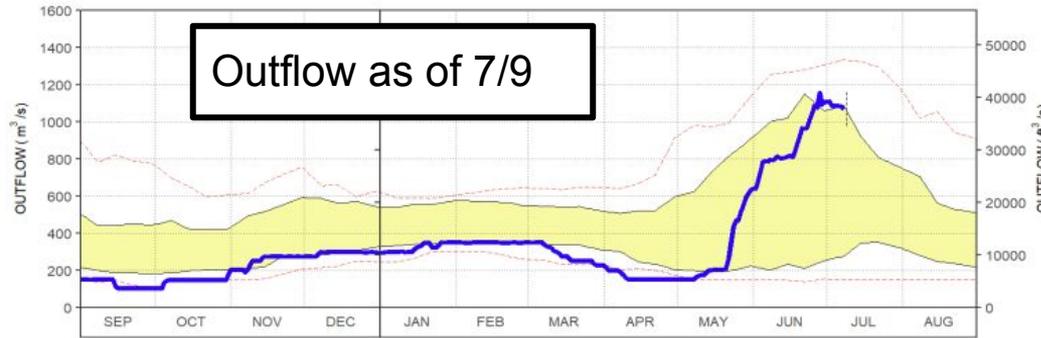
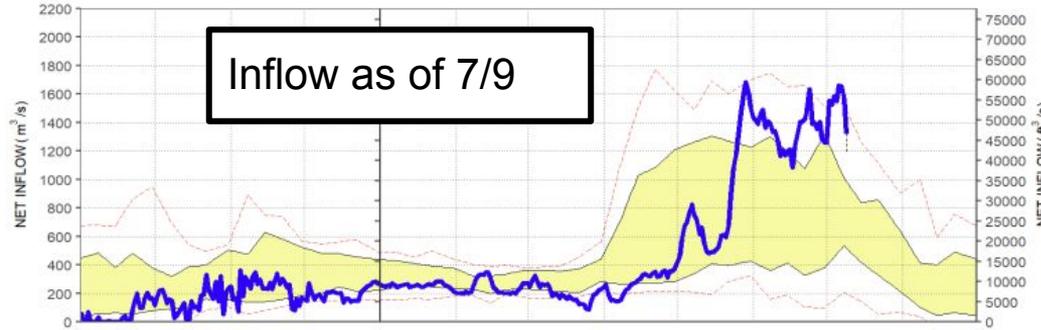
Rainy River past International Falls/Fort Frances





# Lake of the Woods

## Observed Inflow/Outflow and Levels



Inflows high with higher releases from Rainy Lake and contributions Rainy River tributaries. Lake levels starting to come above normal.





# Summary

Report your impacts to NWS Duluth!

- **River flows are still high** across the headwaters but cresting. **Gradual rises continue on Crane, Kabetogama/Namakan, and Rainy Lakes** as excess water slowly works its way through.
  - Lake levels may crest this week through this weekend. Namakan crest could be close to its 2014 peak. Rainy Lake still feet below previous flood levels.
- **Water moves slowly through the system and will be slow to come back down.**
- Expect impacts to the lowest structures including docks, boat houses, and buildings/roads that are the closest to the shoreline.
- Dam operations: [Read about active regulation](#)

Find more information at <https://www.weather.gov/dlh/rainyriverbasin>



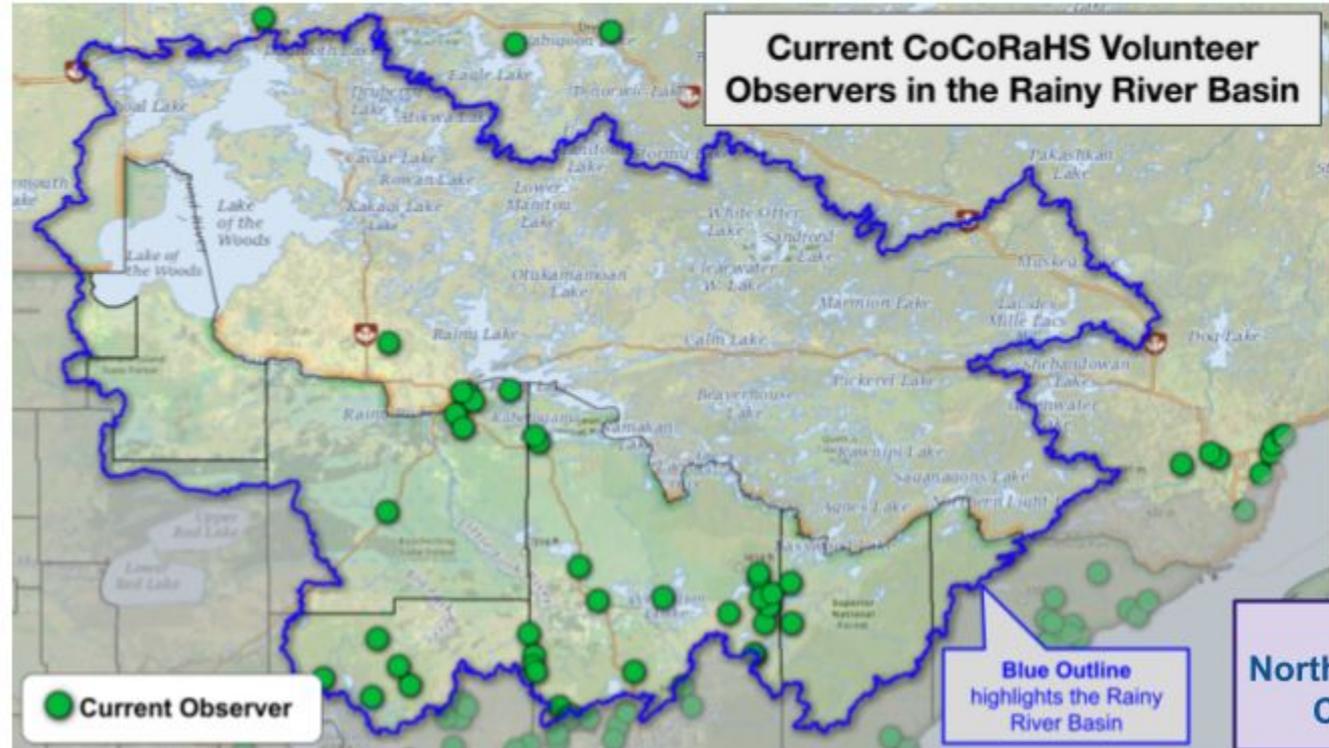


# Help Predict Future Flooding

**YOUR REPORTS can help NWS better predict flooding!**

Please help us fill in the gaps on the map below!

## Current CoCoRaHS Volunteer Observers in the Rainy River Basin



## Interested?



1. Sign up at [cocorahs.org](http://cocorahs.org)
2. Purchase an official CoCoRaHS rain gauge (OR, if you just want to report snowfall/snow depth, you just need a good yardstick!)
3. Report rain, snow, and snow depth (snowpack depth) \*daily using the CoCoRaHS website or app daily each morning

*\*Reporting only when you can such as after major storms is OK - but daily observations are best!*

### Have Questions?

Northeast MN: [ketzel.levens@noaa.gov](mailto:ketzel.levens@noaa.gov)

Canada: [canada@cocorahs.org](mailto:canada@cocorahs.org)



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National Weather Service  
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