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Probabilistic Hydrologic Outlook

National Weather Service Grand Forks ND

119 PM CDT Thu Sep 26 2024

...DEVILS LAKE OUTLOOK FOR FLOOD POTENTIAL...

Devils and Stump Lakes  
Long-Range Probabilistic Outlook

The National Weather Service provides long-range probabilistic hydrologic outlooks for Devils and Stump lakes between January and September. They will not be provided between October and December. Depending on the season, the high or low water probabilities may be omitted due to their applicability to the hydrologic situation.

.OUTLOOK SUMMARY...

Note: This outlook incorporates a daily average of 350 cfs worth of pumping operations on Devils Lake from May 15th through October 30th.

Since the last outlook issuance, precipitation has continued to run above normal. The summer season (months of June, July, and August) ended generally 1 to 3 inches above normal across the basin. The start of the fall season (i.e., much of the month of September) has also been above normal in regards to precipitation by 1 to 2 inches. Therefore, this month's non-exceedance numbers increased slightly

once again.

Climate outlooks continue to indicate a strong signal for above normal temperatures through the end of September and into the beginning of October. Below normal precipitation is also expected over the course of this period. By mid-October, climate outlooks indicate no strong signal either way for above, below, or near normal temperatures or precipitation through the remainder of the fall.

Lastly, note that this will be the last non-exceedance outlook issuance for 2024. The first outlook of the new year will be issued on January 23, 2025 and include the set of exceedance numbers.

#### .Current and Previous Record High Lake Levels...

- \* The current height of Devils Lake is 1449.8 feet NGVD29.
- \* The current height of Stump Lake is 1449.6 feet NGVD29.
  
- \* The most recent USGS provisional record daily average height for Devils Lake at the Creel Bay gage:
  - ...1454.30 feet on June 27 of 2011
- \* Previous records:
  - ...1452.05 feet on June 27 of 2010
  - ...1450.93 feet on June 27 of 2009
  - ...1449.20 feet on May 9 of 2006
  - ...1449.18 feet on June 17 of 2004
  - ...1449.17 feet on August 2 of 2005

Note: All previous records are recorded in NGVD29.

#### .Chances of Devils and Stump Lakes Falling Below Given Lake Levels...

The probability of not exceeding a given lake level is the

percentage of lake level falls that are below that level for all the years that were run through the model using the precipitation and temperatures for those years during the valid period of the outlook.

Interpretation Aid: There is a 50 percent chance that Devils Lake will fall below 49.6 feet during the valid period and only a 5 percent chance that it will fall below 49.5 feet.

Probabilities for Non-Exceeding Listed Lake Levels

FROM SEPTEMBER 23, 2024 TO DECEMBER 29, 2024

LOCATION	95%	90%	75%	50%	25%	10%	05%
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Devils Lake.....							
CREEL BAY	49.8	49.8	49.7	49.6	49.6	49.5	49.5
Stump Lake.....							
EAST STUMP LAKE	49.7	49.7	49.7	49.6	49.6	49.5	49.5

The non-exceedance value for a listed percentage is the value where that percentage of all model cases run were below that lake level for the specified valid period of the outlook.

.OUTLOOK SCHEDULE...

- Between January and May, only the high water exceedances will be provided with valid periods ending at the end of September.
- Special Spring Flood and Water Management Outlooks will be issued in late February and early March.
- For June and July, both high-water and low-water exceedances will be provided.

- For August and September, only the low-water exceedances will be provided with valid periods ending at the end of November.
- No probability of exceedance/non-exceedance information will be given from October through December, since lake freeze-up levels will be given in the fall outlooks previously issued.

.ADDITIONAL INFORMATION...

The long-range probabilistic outlook is based on high and low lake levels that were calculated for the valid period using multiple scenarios of temperature and precipitation from 1949 to 2018 and current conditions of the lake, snowcover (in winter), and soil moisture.

By providing the complete range of lake level probabilities, the amount of risk associated with long-range planning decisions can be determined. These probabilistic outlooks are part of NOAA`s National Weather Service`s National Water Prediction Service (NWPS).

A YouTube video on "How to Interpret River Outlook Products" is at:

[www.youtube.com/watch?v=pSoEgvsnpv4](http://www.youtube.com/watch?v=pSoEgvsnpv4)

This outlook is also presented as probability graphs of lake height for the full period as well as weekly probabilities. The outlook graphics and explanations that help in interpreting these outlooks are available on the NWS Grand Forks NWPS web page at:

[www.water.noaa.gov/wfo/fgf](http://www.water.noaa.gov/wfo/fgf)

Wind and wave forecasts for Devils and Stump lakes are available for

a 7-day period when the lakes are sufficiently ice-free at:

[www.weather.gov/fgf/lake\\_info](http://www.weather.gov/fgf/lake_info)

If you have any questions, contact the NWS at 701-772-0720.

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