Indiana Water and Soil Moisture Conditions Indiana Department of Natural Resources

The state of Indiana received below normal precipitation over the week of October 24-30, 2024. The state received 0.00"-0.75" of rainfall with amounts generally lowest in the south and highest in the northwest.

Mean temperatures for the week ranged from slightly below to above normal for the state. Mean temperatures ranged from 48.4°F to 62.4°F. Departure from normal temperature ranged from -1.3°F to 10.2°F.

4" soil water content from the Purdue Mesonet Data Hub on October 31, 2024, has continued to decrease and indicates a range of 3.5% (very sandy soil) to 23.1% available water with a statewide average of 14.8%.

Soil moisture data from the NASA SPORT Real-time 3km Land Information System is ranging from <5 to 15% in much of the state and isolated areas in southern Indiana with up to 45% available water in the 0-100cm soil depth.



Figure 1. Accumulated rainfall (in.) for October 24-30, 2024, from MRCC.

0.00

0.00

0.00

0.00

0.00



USDM for the State of Indiana

For October 29, 2024, the USDM identifies the southeastern third of the state with "abnormally dry" "Moderate conditions. drought" conditions were identified in the west-central portion of the state and along the northern border. "Severe drought" conditions were identified in the northern third of the state. A small area of no drought was identified in along the eastcentral border of the state.

Figure 2. US Drought Monitor for the State of Indiana on October 29, 2024.

Reservoir Levels as of October 31, 2024

Reservoir	Brookville	Cecil Harden	Cagles Mill	Monroe	Patoka	JE Roush	Salamonie	Mississinewa
Winter Pool ¹	740.0	640.0	636.0	538.0	532.0	737.0	730.0	712.0
Summer Pool ¹	748.0	662.0	639.5	538.0	536.0	749.0	755.0	737.0
Current Pool ¹	745.4	655.6	637.9	536.4	533.4	742.99	742.54	736.50
% Utilization ²	-0.03	-4.78	0.15	-6.29	-13.34	0.0	0.0	0.3

Table 1. Reservoirs managed by United States Army Corp of Engineers.

Table 2. Reservoirs managed by Citizens Energy Group* and NIPSCO**.

Reservoir	Eagle Creek ^{3*}	Geist ^{3*}	Morse ^{3*}	Lake Freeman ^{4**}	Lake Schafer ^{4**}
Normal Pool	790	784.26	809.44	610.35	645.15
Current Pool	788.15	783.80	809.36	610.45	645.15
% Utilization ²	-8.6%				

¹All units in feet and datum NGVD29

²Percent of designed flood storage utilized. The other named reservoirs are not designed for flood storage.

³All units in feet and datum NAVD88.

⁴All units in feet Local Datum.

Groundwater Monitoring Network as of October 30, 2024

Groundwater wells across the state are generally reporting below normal but range from low to above normal. Data is reported from the U.S. Geological Survey Ohio-Kentucky-Indiana Water Science Center.

Table 3. Groundwater level rankings relative to normal.						
Low	Much Below	Below				
<5%	5-10%	10-25%				
Bartholomew 4	Harrison 8	Benton 4				
Clark 20	Jasper 13	Elkhart 4				
Decatur 2	Marion 39	Fulton 7				
Hamilton 7	Martin 5	Jefferson 5				
Knox 7	Parke 6	Noble 8				
Knox 8	Posey 3	Shelby 2				
La Porte 9	Vigo 7	Whitley 3				
LaGrange 2	-					
Morgan 4						
Randolph 3						
Tippecanoe 18						
Vanderburgh 7						
Wells 4						
Near Normal						
25-75%						
Boone 17	Grant 8	Newton 8				
Cass 3	Lake 13	Pulaski 7				
Grant 10	Marion 35	Wayne 6				
Above	Much Above	High				
75-90%	90-95%	>95%				
Delaware 4	None	None				



Figure 3. Map of USGS real-time groundwater monitoring wells.

Streamflow Conditions as of October 31, 2024

Streamflow conditions are generally below normal across the state. There are 39 gages reporting normal conditions for the date. There is 1 reporting above normal, 0 reporting much above normal, 0 reporting an all-time high for the date, 62 reporting below normal, 23 reporting much below normal, and 14 reporting an all-time low for the date.

Currently, 42% of stream gages indicate steady flow conditions; 42% are increasing and 13% are decreasing.

Average observed streamflow at real-time USGS observing sites over the past 7-days ending October 29, 2024, averaged 2% reporting an all-time low, 25% much below normal, 39% below normal, 32% near normal, 1% above normal, 0% much above normal, and 0% reporting an all-time high.

USGS and NWS report 0 gages in "action", "minor flood", or "moderate flood" stage. The NWS Long Range Flood Outlook predicts no gages in any flood stage, with a 50% or greater chance of exceeding river flood levels.



Figure 4. Map of USGS streamflow gages for Indiana.

NOAA 7-Day Quantitative Precipitation Forecast

For October 31, 2024, the 7-Day Quantitative Precipitation Forecast valid for October 31-November 7, 2024, predicts 1.00"-3.00" of rainfall across Indiana with lower amounts in the east increasing to the west. The precipitation is predicted to occur throughout week.



Figure 5. NOAA 7-Day Quantitative Precipitation Forecast, October 31 – November 7, 2024.

NOAA National Weather Service 6-10 Day Outlook

The 6-10 Day Temperature Outlook for November 5-9, 2024, projects a 60-80% chance for above normal conditions for the state. The Precipitation Outlook projects a 33-50% chance of above normal precipitation for the state.



Figures 6-7. 6-10 Day Temperature and Precipitation Outlook for the US

Acknowledgments:

Prepared by DNR-Division of Water, Resource Assessment with data from the following organizations:

Temperature and precipitation data: Midwestern Regional Climate Center CoCoRaHS Mapping System

Soil data:

NASA, Short-term Prediction Research and Transition Center Purdue Mesonet Data Hub

Reservoir data:

US Army Corp of Engineers, Louisville District US Army Corp of Engineers, Chicago District Citizens Reservoirs at NWS River Observations <u>NIPSCO Hydro Plant Lakes</u>

Groundwater data:

U.S. Geological Survey Ohio-Kentucky-Indiana Water Science Center

Streamflow data:

USGS National Water Dashboard NWS River Forecasts USGS WaterWatch

Drought data:

US Drought Monitor

Forecast:

National Weather Service, Climate Prediction Center National Weather Service, Weather Prediction Center