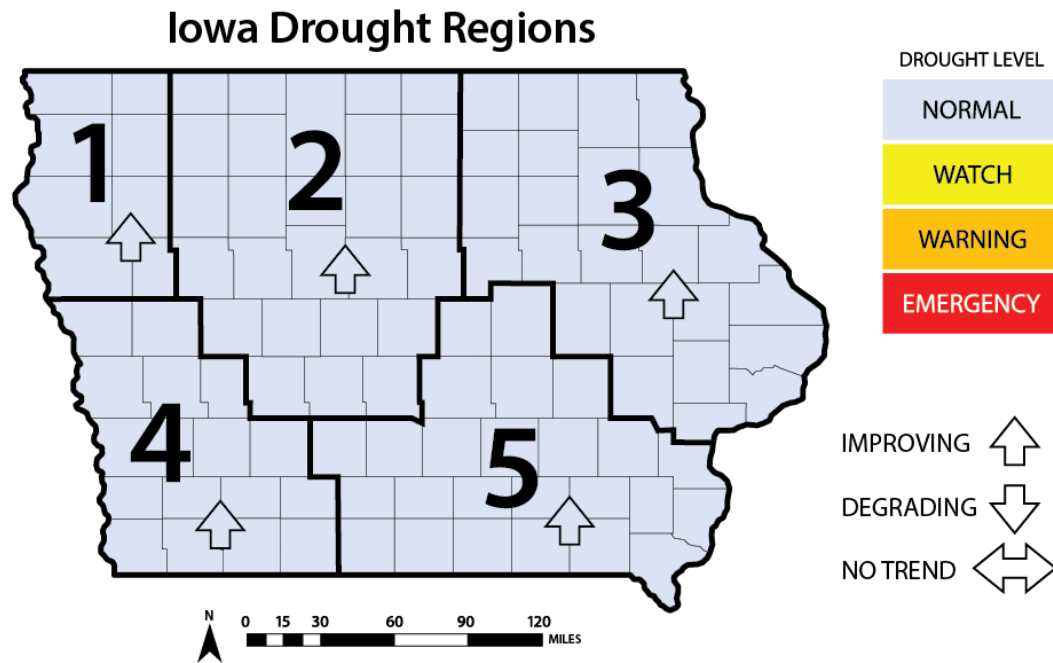


WATER SUMMARY UPDATE

Published Date December 5, 2024 | Issue 162

A snapshot of water resource trends for November 2024

IOWA DROUGHT CONDITIONS



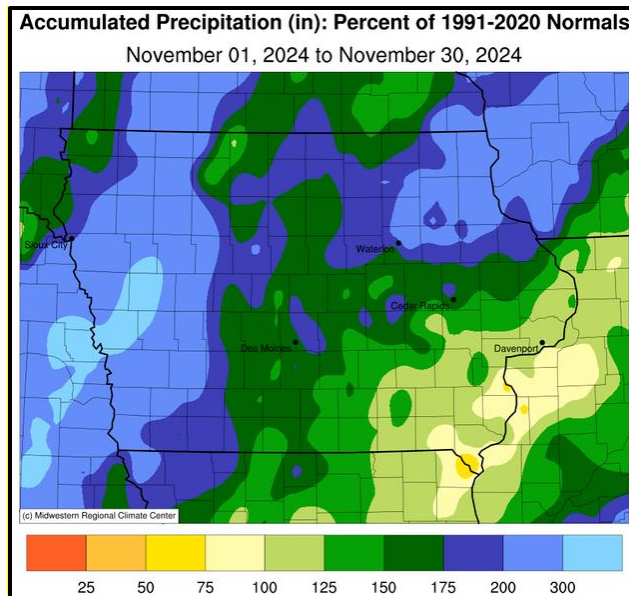
CONDITION SUMMARY - NOVEMBER TRENDED WETTER

After a very dry fall, the precipitation that fell at the end of October and into November improved drought conditions for most of the state. For November, the preliminary statewide precipitation totaled 3.25 inches, or 1.43 inches above normal. Rainfall in September and October was almost 3.5 inches below normal. Soil moisture and stream flows showed some recovery at the end of October, and are considered normal. Rainfall that came in November continued to improve conditions state-wide. The final December precipitation outlook issued by the National Weather Service’s Climate Prediction Center (CPC) had no clear signal for the third driest month of the year.

November Precipitation and Temperature

Iowa’s preliminary statewide precipitation totaled 3.25 inches, or 1.43 inches above normal. Despite the above-normal precipitation in November, the total precipitation in the autumn months of September, October, and November totaled 5.67 inches, or 2.32 inches below normal. Monthly precipitation totals ranged from 1.53 inches in Swea City to 6.00 inches in Schleswig. Sioux City reported the highest monthly snowfall at 1.2 inches.

The statewide average temperature was 40.1 degrees, 4.1 degrees warmer than normal. Columbus Junction and Donnellson reported the month’s high temperature of 71 degrees on the 4th, 16 degrees above normal. Primghar reported the month’s low temperature of 0 degrees on the 30th, 21 degrees below normal.



Standardized Precipitation Index (SPI)

The SPI is an index based on accumulated precipitation for various time scales. SPI is the most commonly used indicator worldwide for detecting and characterizing meteorological droughts. The SPI indicator measures precipitation differences based on a comparison of observed total precipitation amounts over the period of interest with the long-term historical precipitation record for that period. Droughts are characterized by negative SPI values, while positive SPI values indicate wet periods. The range of SPI values is between -3 and +3, denoting “extremely dry” to “extremely wet”.

Both the 90-day and 180-day SPI values for all Drought Regions in November (comparing September, October, and November precipitation) are increasing. All the SPI values have improved over the last month, and they reflect the above-normal rainfall in November compared to the dry months of September and October.

Drought Region	3-month SPI	6-month SPI	IDP Classification ↑ = improving ↓ = degrading ↔ = no trend
1	- 0.8	- 0.2	Normal ↓
2	- 0.6	0.0	Normal ↓
3	- 0.6	+ 0.2	Normal ↓
4	- 0.2	- 0.2	Normal ↔
5	- 0.5	0.0	Normal ↓

Standardized Streamflow Index (SSI) and Streamflow

SSI is a metric that compares current streamflow against the historical record to determine how far away the current streamflow value is from the river’s historical mean observed on the same date. SSI values in all five drought regions have improved due to recent wet conditions, with Drought Regions 1 and 2 returning to normal conditions.

Drought Region	October SSI	November SSI	IDP Classification ↑ = improving ↓ = degrading ↔ = no trend
1	+ 0.4	-0.03	Normal ↓
2	- 0.40	+0.04	Normal ↑
3	- 0.40	-0.11	Normal ↓
4	-0.73	-0.55	Normal ↑
5	- 0.89	+0.11	Normal ↑

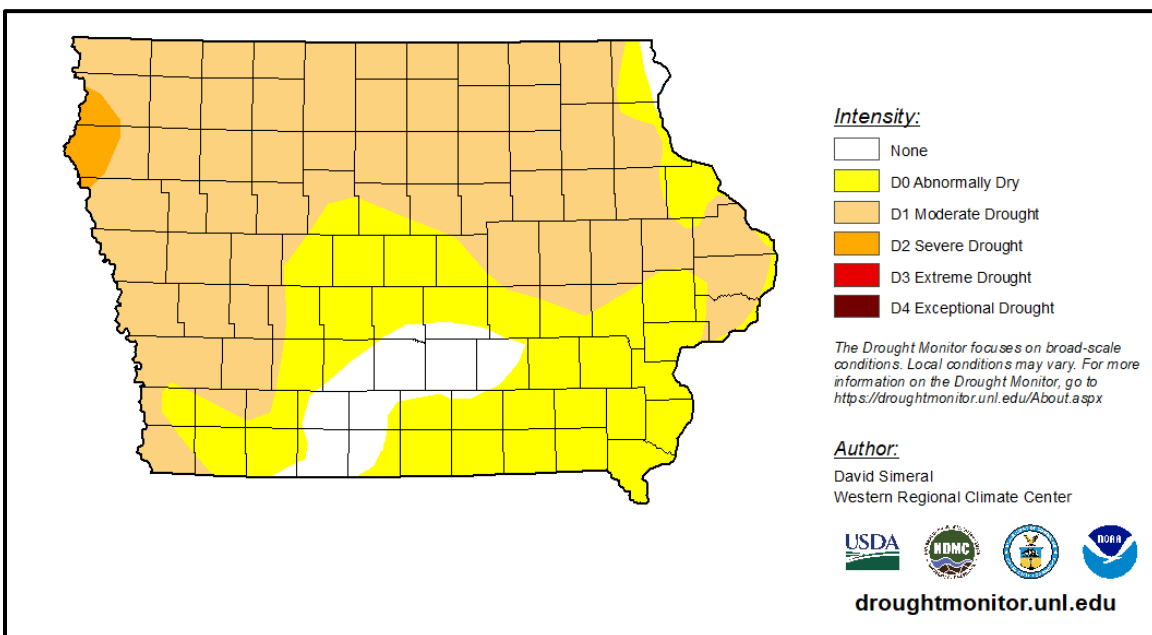
According to the US Geological Survey, the above-normal precipitation in November resulted in a return to normal streamflow levels across the state. Compared to November 2023, only Drought Region 1 was classified as having normal conditions, and Region 4 and 5 in a Drought Warning with SSI values of -1.62 and -1.99 respectively.

US DROUGHT MONITOR AND DROUGHT CONDITIONS

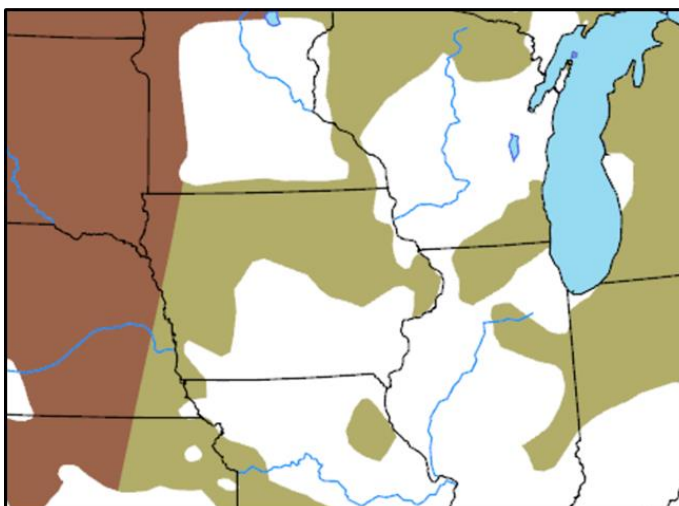
The current US Drought Monitor (USDM) shows the impact of the wet November. At the end of October, about 37 percent of Iowa was rated as D1 - Moderate Drought, and 50 percent was rated as D2 - Moderate Drought. By the end of November, D1 - Moderate Drought area had increased to 59 percent and the D2 - Moderate Drought area had decreased to one percent. The rain that came at the end of October and through November has helped to alleviate these conditions. The most recent USDM, released on December 5, shows improvement in conditions across portions of the state, with only one area of D2 - Severe Drought covering about one percent of the state in northwest Iowa.

U.S. Drought Monitor Iowa

December 3, 2024
(Released Thursday, Dec. 5, 2024)
Valid 7 a.m. EST

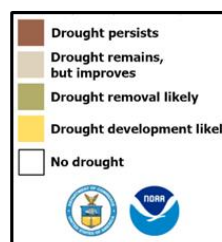


The Seasonal Drought Outlook released on November 30 by the CPC, valid through February 28, 2025, shows the potential for drought persistence in a small portion of northwest Iowa, and drought improvement or removal over the rest of the state. This outlook considers the impacts of recent rainfall as well as seasonal precipitation outlooks. Drought tends to be stable during the winter months, so improvement or removal is seen as a positive development.



U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for December 1, 2024 - February 28, 2025
Released November 30, 2024



OTHER WATER RESOURCE INFORMATION

Border River Conditions

Current conditions on both the Missouri and Mississippi Rivers show generally normal flows. On the Missouri River the US Army Corps of Engineers reports that total reservoir storage peaked for the year in July, and is following their forecast levels. Storage should be slightly below normal levels by the end of the calendar year, which will allow for flood storage in 2025.

October Soil Moisture

The most recent United States Department of Agriculture's National Agricultural Statistics Service (NASS) report issued on November 25 shows improvement over the past week in both topsoil and subsoil moisture levels. The percentage of the topsoil designated as short or very short of soil moisture decreased slightly from 36 percent to 34 percent, while the values for subsoil decreased from 59 percent to 55 percent. The Iowa Geological Survey also reports that soil moisture conditions during the month of November improved.

ADDITIONAL INFORMATION

This edition of the Water Summary Update continues to reflect use of the 2023 [The Iowa Drought Plan](#) (IDP), which was developed as a collaborative effort between the Department of Natural Resources, the Department of Agriculture and Land Stewardship, and the Department of Homeland Security and Emergency Management. The IDP can be seen in its entirety on the DNR's website.

For additional information on the information in this Water Summary Update please contact any of the following:

General Information, Jessica Reese McIntyre, Iowa DNR.....Jessica.ReeseMcIntyre@dnr.iowa.gov, 515-725-9547
State Climatologist & Drought Coordinator, Justin Glisan, IDALS.....Justin.Glisan@iowaagriculture.gov, 515-281-8981
Standardized Streamflow Index (SSI), Elliot Anderson, IGS elliott-anderson@uiowa.edu, 319-335-1575
Stream Flow, Dan Christiansen, USGS dechrist@usgs.gov, 319-358-3639
Stream Flow, Mike Anderson, Iowa DNR..... Michael.Anderson@dnr.iowa.gov, 515-725-0336
Soil Moisture, Filipe Quintero Duque, Iowa Flood Centerfelipe-quintero@uiowa.edu, 319-384-1727