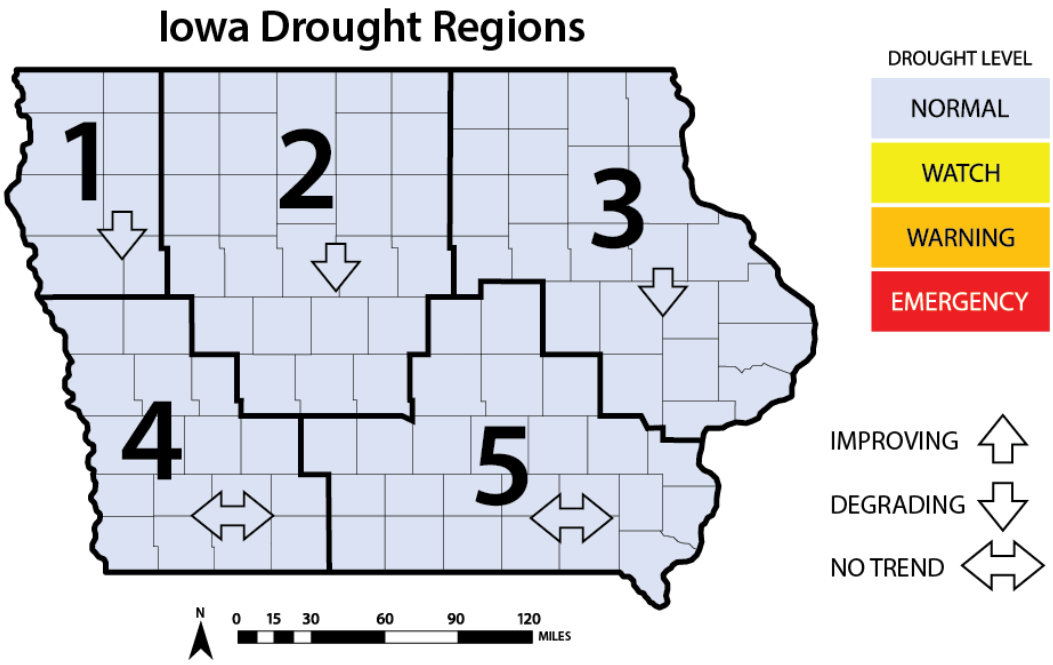
IOWA DNR
DEPARTMENT OF NATURAL RESOURCES

WATER SUMMARY UPDATE

Published Date February 6, 2025 | Issue 164

A snapshot of water resource trends for January 2025

IOWA DROUGHT CONDITIONS



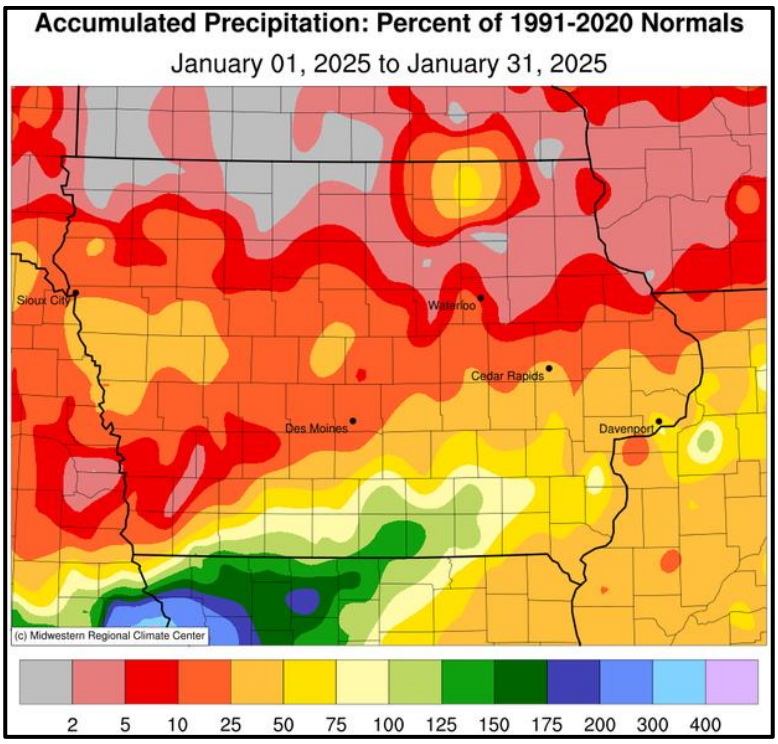
CONDITION SUMMARY - DRY JANUARY

Even though January saw below-normal precipitation, drought conditions remain stable across the state. Last month, the preliminary statewide precipitation totaled 0.32 inches or 0.65 inches below normal. November and December precipitation was 1.28 inches above normal, improving statewide conditions going into January, which is typically Iowa's driest month of the year. Soil moisture and stream flows are considered normal despite some deterioration in January. The final February precipitation outlook issued by the National Weather Service's Climate Prediction Center (CPC) indicates a slight chance for above-average precipitation for the eastern half of the state.

January Precipitation and Temperature

Iowa's preliminary statewide precipitation totaled 0.32 inches, or 0.65 inches below normal. Most of the northern one-third of Iowa experienced the driest January in 153 years of statewide records; multiple stations reported no measurable precipitation. Only a pocket of south-central Iowa reported above average precipitation with Bloomfield observing the month's highest precipitation of 2.04 inches. The statewide average snowfall was 1.7 inches, 6.6 inches below normal. The highest snowfall total was measured near Cedar Rapids.

The statewide average temperature was 18.4 degrees, 1.1 degrees below normal. Iowa Falls reported the month's high temperature of 63 degrees on the 30th, 36 degrees above normal. Emmetsburg and Pocahontas reported the month's low temperature of -22 degrees on the 22nd, on average 29 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”.

90-day SPI values for all Drought Regions in January (comparing November, December, and January precipitation) are above zero. 180-day SPI values are all negative, with only Drought Region 4 improving slightly.

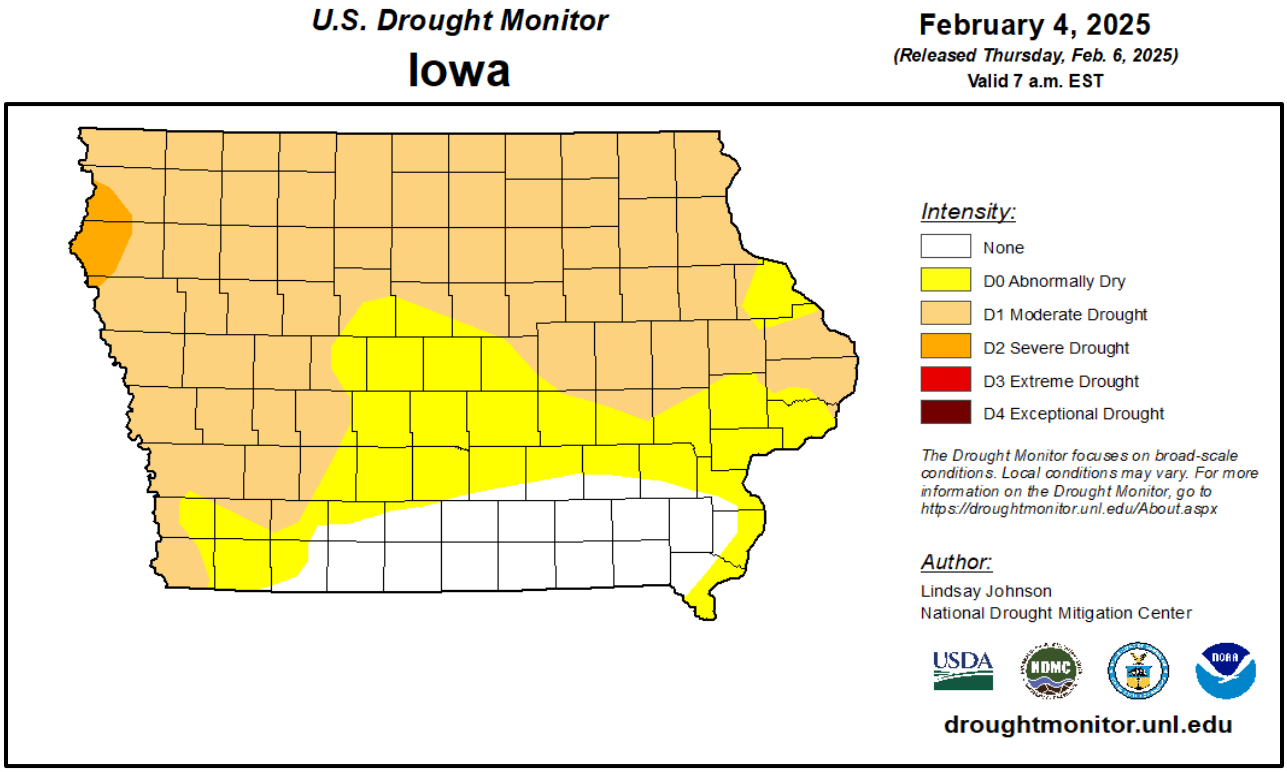
Drought Region	3-month SPI	6-month SPI	IDP Classification ↑ = improving ↓ = degrading ↔ = no trend
1	+ 0.5	- 1.2	Normal ↑
2	+ 0.7	- 0.9	Normal ↔
3	+ 0.6	- 0.7	Normal ↓
4	+ 1.0	- 0.5	Normal ↔
5	+ 0.7	- 0.5	Normal ↓

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 four of the five drought regions have improved, with Drought Region 5 with a slightly lower value.

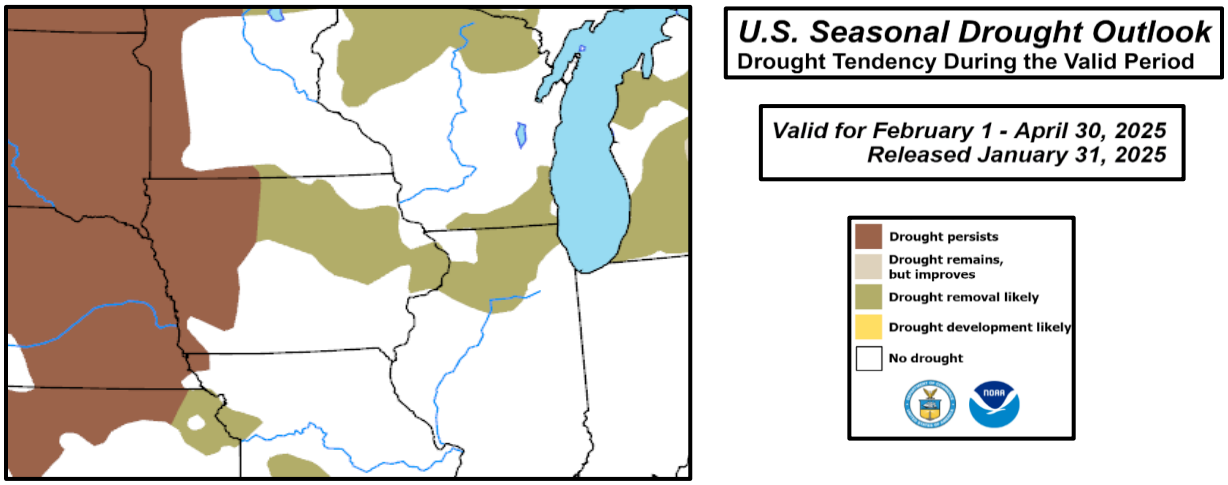
According to the US Geological Survey, in January streamflow levels remain mostly normal across the state. Compared to January 2024, Regions 3 and 4 in a Drought Watch and Region 5 in a Drought Warning with SSI values of -1.27, -1.02, and -1.84 respectively. It should be noted that during the winter season, USGS streamflow data may be impacted by ice formation and backwater.

US Drought Monitor and Drought Conditions

The current US Drought Monitor (USDM) shows similar drought conditions compared to December's map published in the January Water Summary Update. However, drought conditions improved compared to the end of October. At the end of October, about 37 percent of Iowa was rated as D1 - Moderate Drought, and 50 percent was rated as D2 - Severe Drought. By the end of January, D1 - Moderate Drought area had increased to 54 percent and the D2 - Severe Drought area had decreased to less than one percent. An unseasonably dry January, which is already the driest month of the year falls in the driest part of the year explains the continued drought conditions. The most recent USDM, released on February 6, shows a continuation 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.



The Seasonal Drought Outlook released on January 31 by the CPC, valid through April 20, 2025, shows the potential for drought persistence in the western and northwestern portion of Iowa, and no drought or removal over the rest of the state. This outlook considers the impacts of recent precipitation as well as seasonal precipitation outlooks. Drought conditions tend to be stable during the winter months, so improvement or removal is seen as a positive development.



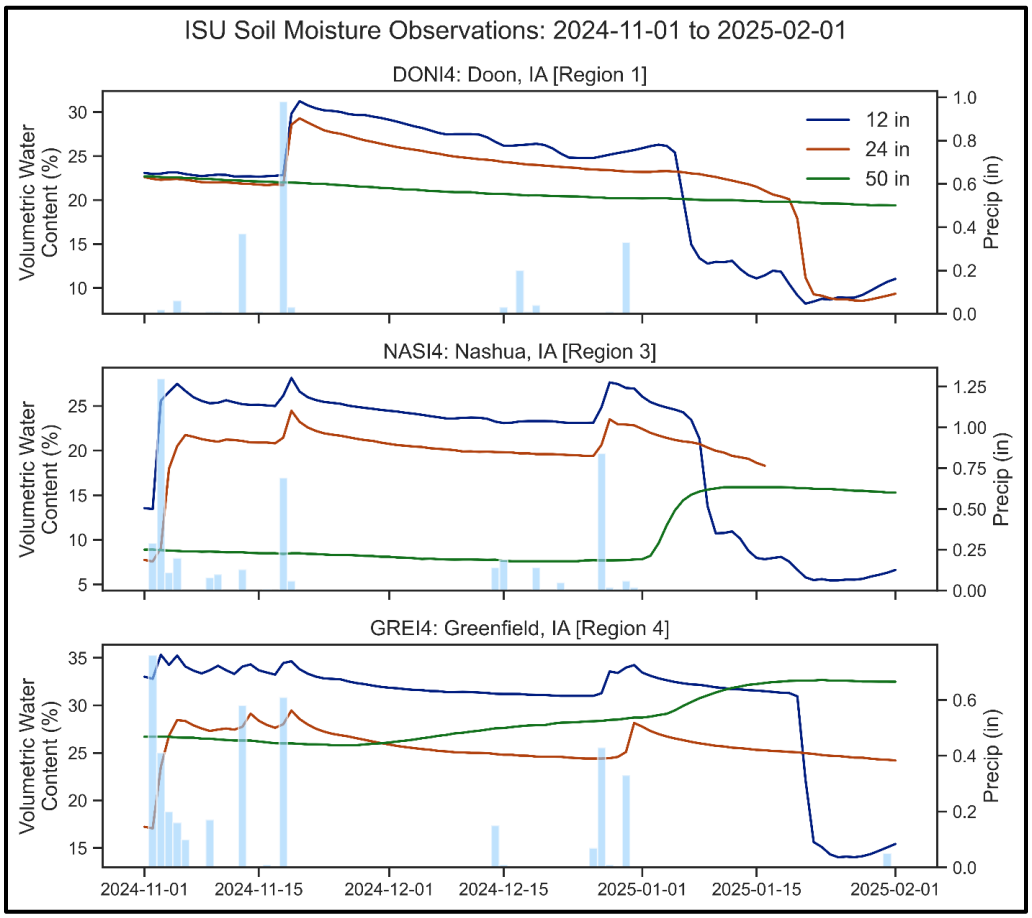
Other Water Resource Information

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 consistent with USACE forecast levels. Storage should be slightly below normal levels by the end of the calendar year, which will allow for flood storage in 2025.

January Soil Moisture

The Iowa Geological Survey reports that surface soil moisture conditions look considerably lower than the previous month across the state. This is consistent with the absence of precipitation in January and can be seen in the figure below. Additionally, soil moisture sensors can misinterpret frozen water as very dry soil.



Additional Information

This edition of the Water Summary Update continues to reflect use of the 2023 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: The Iowa Drought Plan.

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 ..... elliot-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 Center.....felipe-quintero@uiowa.edu, 319-384-1727