



Spring 2024 Flood Outlook for Iowa

February 15, 2024

10:26 AM

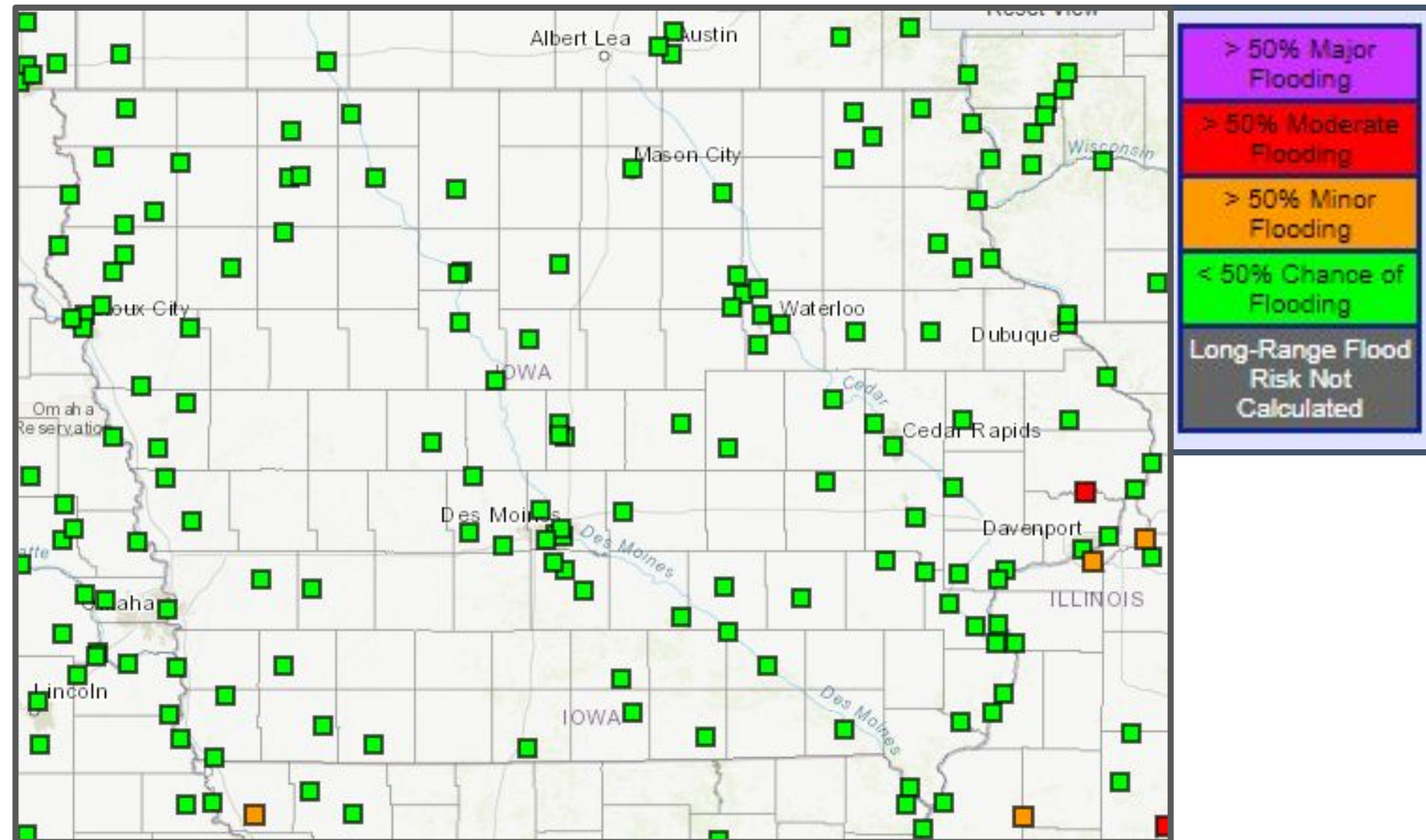
Overview

Key Messages

- Near to below normal spring flood threat for all rivers.
- This outlook pertains mainly to rivers. Any flash flood risk can be highly localized.
- Drought conditions are expected to continue through the spring.
- Ice jams are not expected to bring a significant flooding concern.
- A near to below normal risk of flooding does not necessarily mean that flooding will not occur.
- Future weather—including amount and timing of precipitation as well as rate of snowmelt—can be big factors in any spring flood threat.

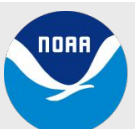
Next Scheduled Update

- This briefing is the only one planned for the season unless conditions significantly change.



Flood risk from mid February through mid May

[Click here for the latest map](#)



National Oceanic and
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February 15, 2024
10:26 AM

Spring flood element checklist, 2/15/2024

Below is the spring flood element checklist. The individual elements appear on the following slides. Future weather—including amount and timing of precipitation as well as rate of snowmelt—can be big factors in any spring flood threat. Heavy precipitation, rain on snow and a rapid snowmelt will increase the risk. Little precipitation or a slow snow melt will lessen the risk. Flooding from ice jams is a minimal risk this year, but there may be some localized issues.

Element	Impact on Potential Spring Flooding	Link to Latest Information
River levels	Neutral	USGS WaterWatch
Soil moisture	Decreased risk	CPC Soil Moisture
Snowpack/snow water equivalent	Decreased risk	NWS National Snow Analysis NCRFC Ranked Snow Water Equivalent MBRFC Ranked Snow Water Equivalent
Frost depth	Decreased risk	NWS Frost Depth Map Iowa Environmental Mesonet Soil Temps
Monthly temperature outlook	Neutral	CPC Outlooks
Monthly precipitation outlook	Neutral to decreased risk	CPC Outlooks

For your reference, here are links to the current [Drought Monitor](#) as well as the [NWS/CPC Seasonal Drought Outlook](#).





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February 15, 2024
10:26 AM

Flood risk by river, 2/15/2024

Below is the spring flood risk for the rivers in and bordering Iowa.

River	Spring Flood Risk
Mississippi River–down to Davenport	Below normal
Mississippi River–downstream of Davenport	Below normal
Big Sioux River (far northwest Iowa)	Below normal
Missouri River–down to Platte River	Below normal
Missouri River–downstream of Platte River	Below normal
Tributaries to Mississippi River in Eastern Iowa	Near to below normal
Tributaries to Mississippi River in Central Iowa	Near to below normal
Tributaries to Big Sioux River	Below normal
Tributaries to Missouri River in Iowa	Near to below normal



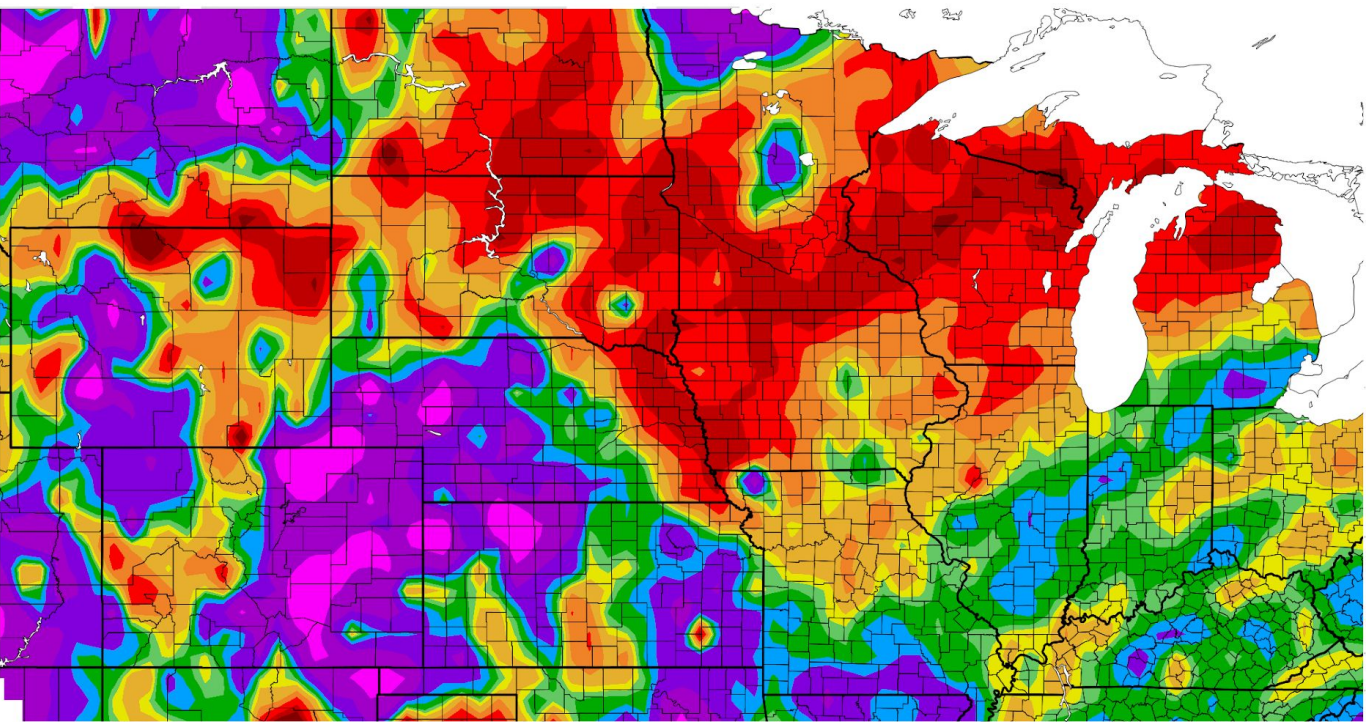


Spring 2024 Flood Outlook for Iowa

February 15, 2024
10:26 AM

Percent of normal precipitation and departure from normal temperature, last 30 days

Percent of Normal Precipitation (%)
1/16/2024 – 2/14/2024

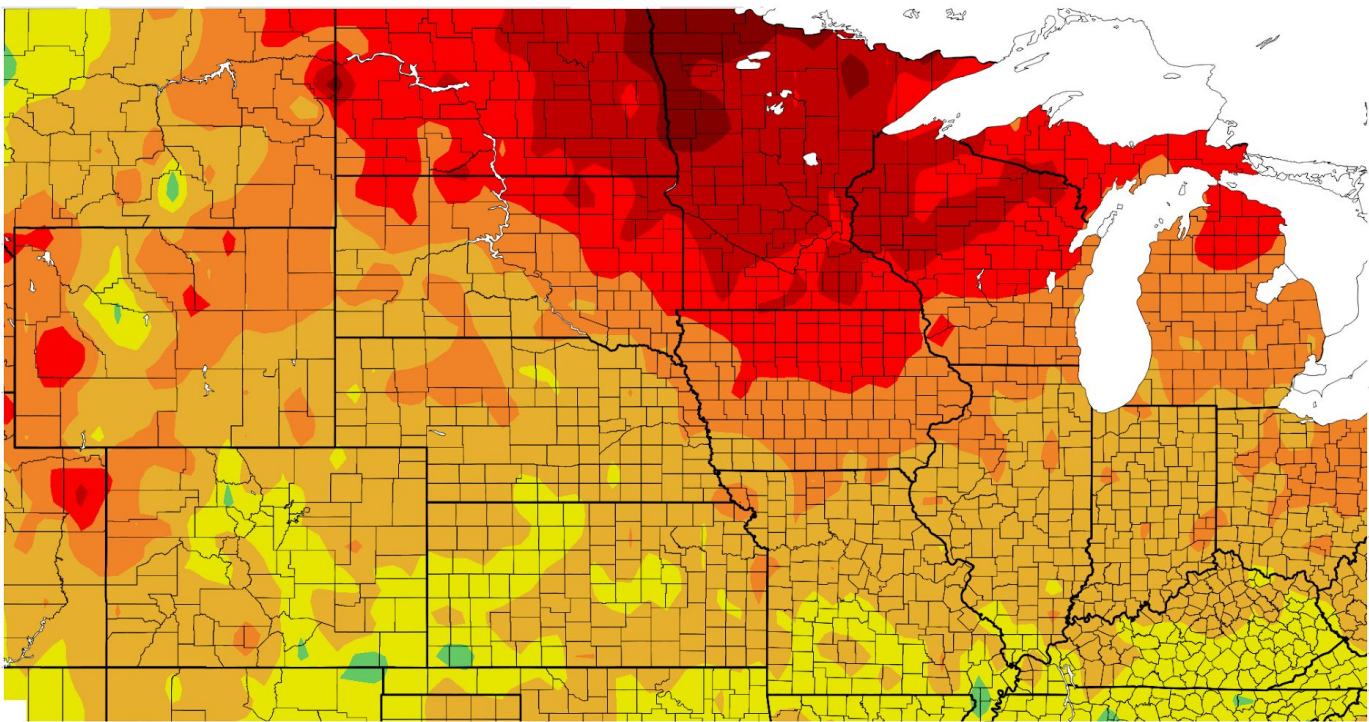


Generated 2/15/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Mainly above normal across Iowa

Departure from Normal Temperature (F)
1/16/2024 – 2/14/2024



Generated 2/15/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Mainly above normal across Iowa, except for far southwest and portions of western Iowa



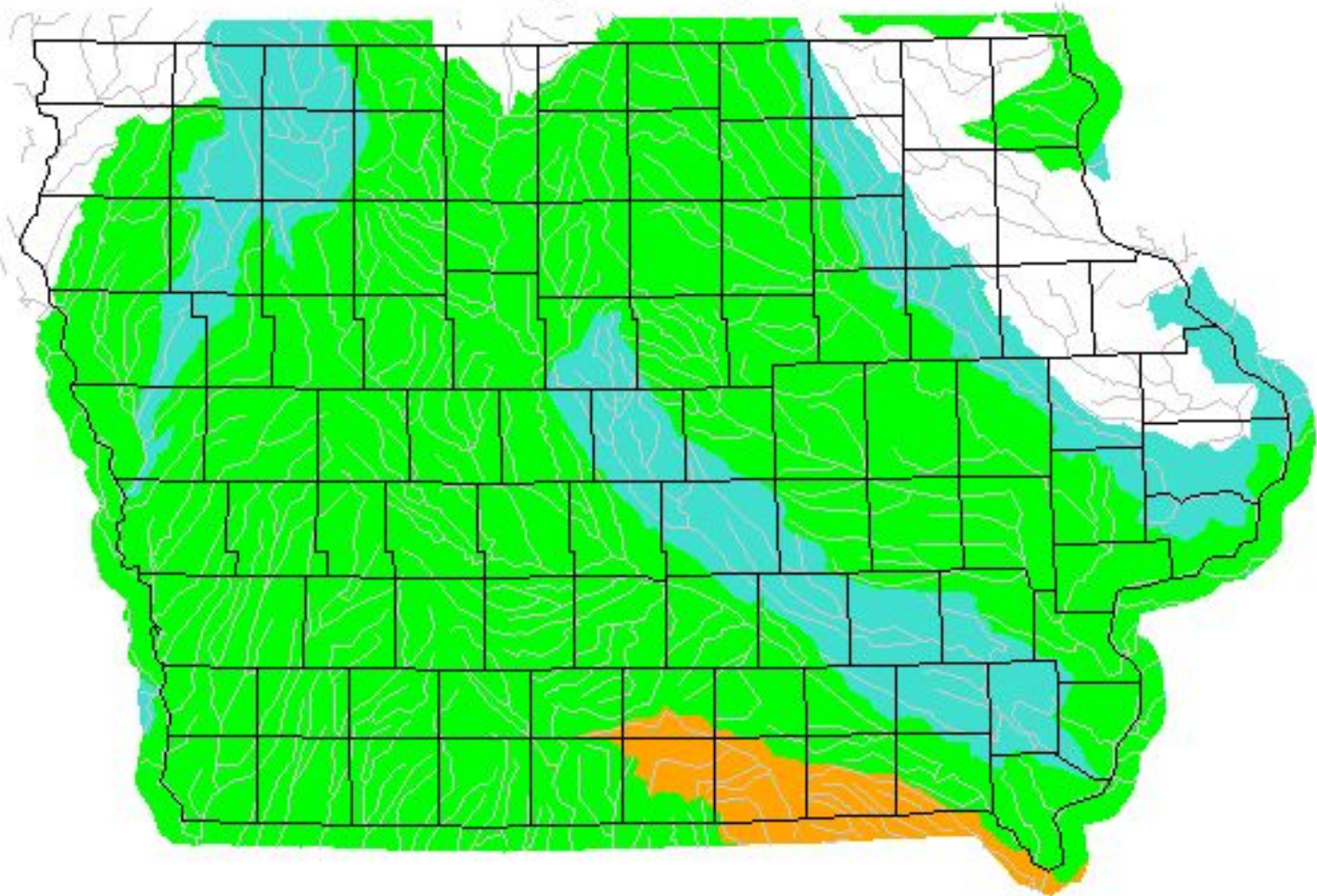


Spring 2024 Flood Outlook for Iowa

February 15, 2024
10:26 AM

River level percentiles

Wednesday, February 14, 2024



Varied stream flows across Iowa



Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		



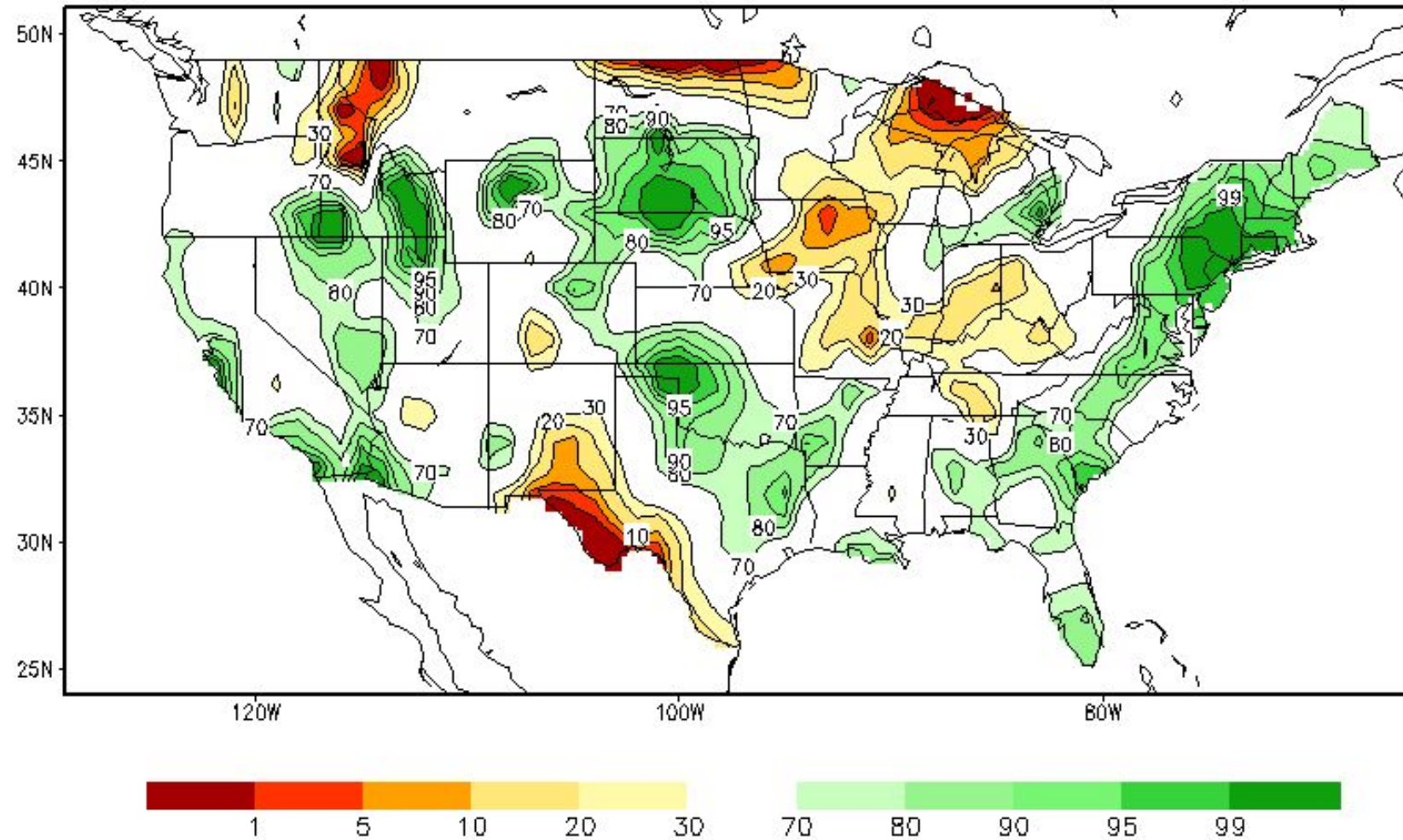


Spring 2024 Flood Outlook for Iowa

February 15, 2024
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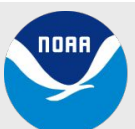
Soil moisture percentiles

Calculated Soil Moisture Ranking Percentile
FEB 14, 2024



30th to 70th percentile is near normal (white)
>70th percentile is above normal (green)
<30th percentile is below normal (brown/red)

Below normal across much of Iowa except for portions of northwest Iowa where conditions are near normal



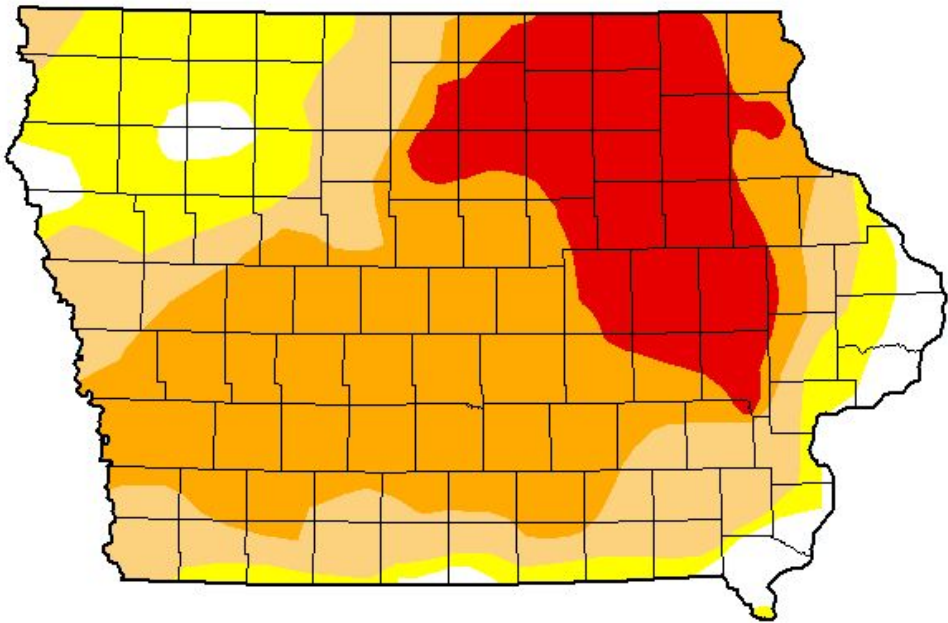


Spring 2024 Flood Outlook for Iowa

February 15, 2024
10:26 AM

Drought Monitor and Drought Monitor class change, 1 year

U.S. Drought Monitor Iowa



February 13, 2024
(Released Thursday, Feb. 15, 2024)
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	5.24	94.76	78.22	56.37	18.58	0.00
Last Week 02-06-2024	5.24	94.76	78.22	56.37	18.58	0.00
3 Months Ago 11-14-2023	1.79	98.21	82.71	58.07	27.47	0.00
Start of Calendar Year 01-02-2024	2.77	97.23	83.41	65.09	35.18	0.00
Start of Water Year 09-26-2023	0.01	99.99	95.65	67.41	25.00	1.17
One Year Ago 02-14-2023	19.85	80.15	53.34	27.98	8.61	0.57

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

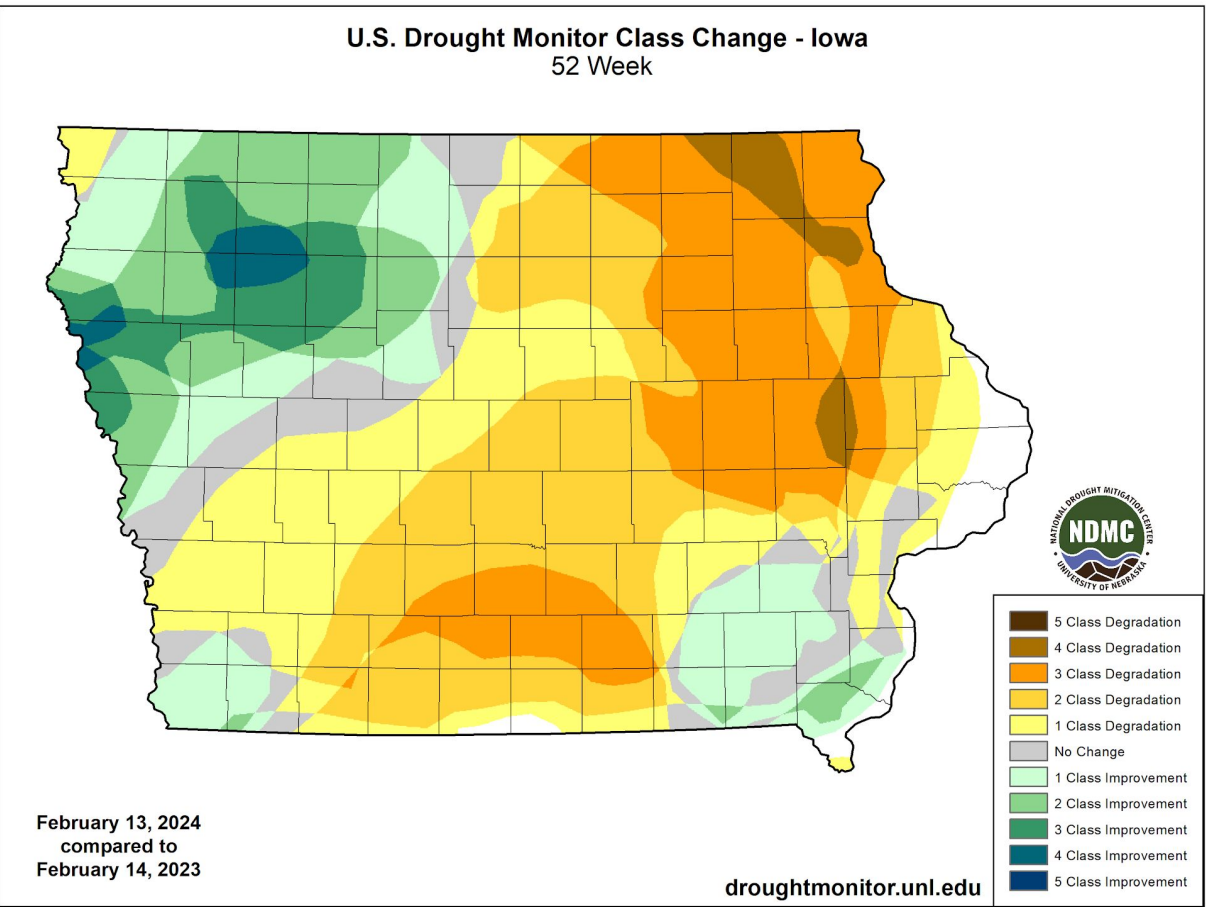
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:
Deborah Bathke
National Drought Mitigation Center



droughtmonitor.unl.edu

U.S. Drought Monitor Class Change - Iowa 52 Week



February 13, 2024
compared to
February 14, 2023

droughtmonitor.unl.edu

Drought Monitor improvement across NW and SE Iowa, but worsening across the south, central, and northeast.



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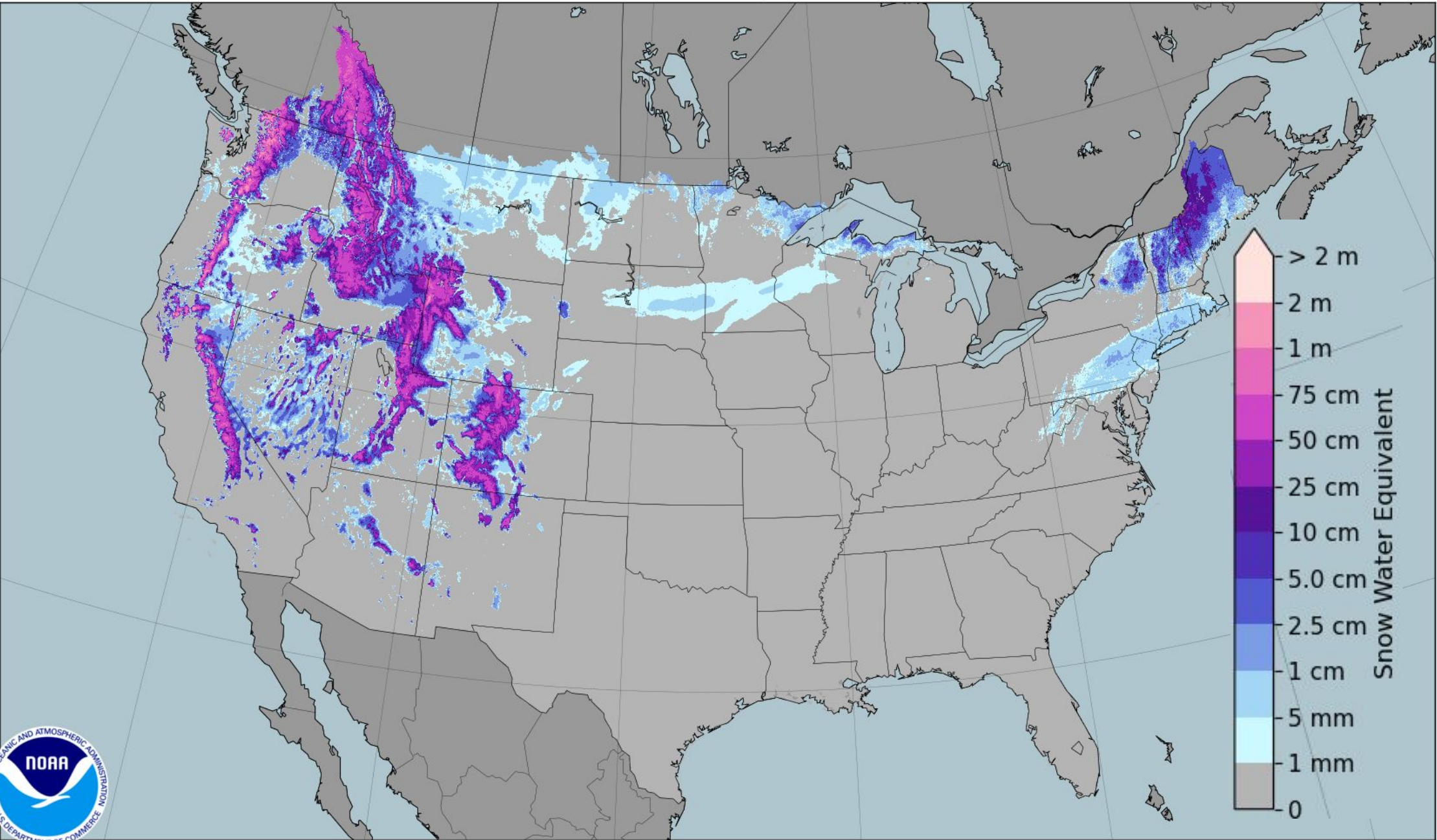


Spring 2024 Flood Outlook for Iowa

February 15, 2024
10:26 AM

Snow water equivalent, 2/15/2024

SNODAS SWE, Snow Water Equivalent, 20240215



To convert centimeters (cm) to inches: approximately 2.5 cm equals one inch

Lack of snow cover across Iowa and the upper Mississippi River basin



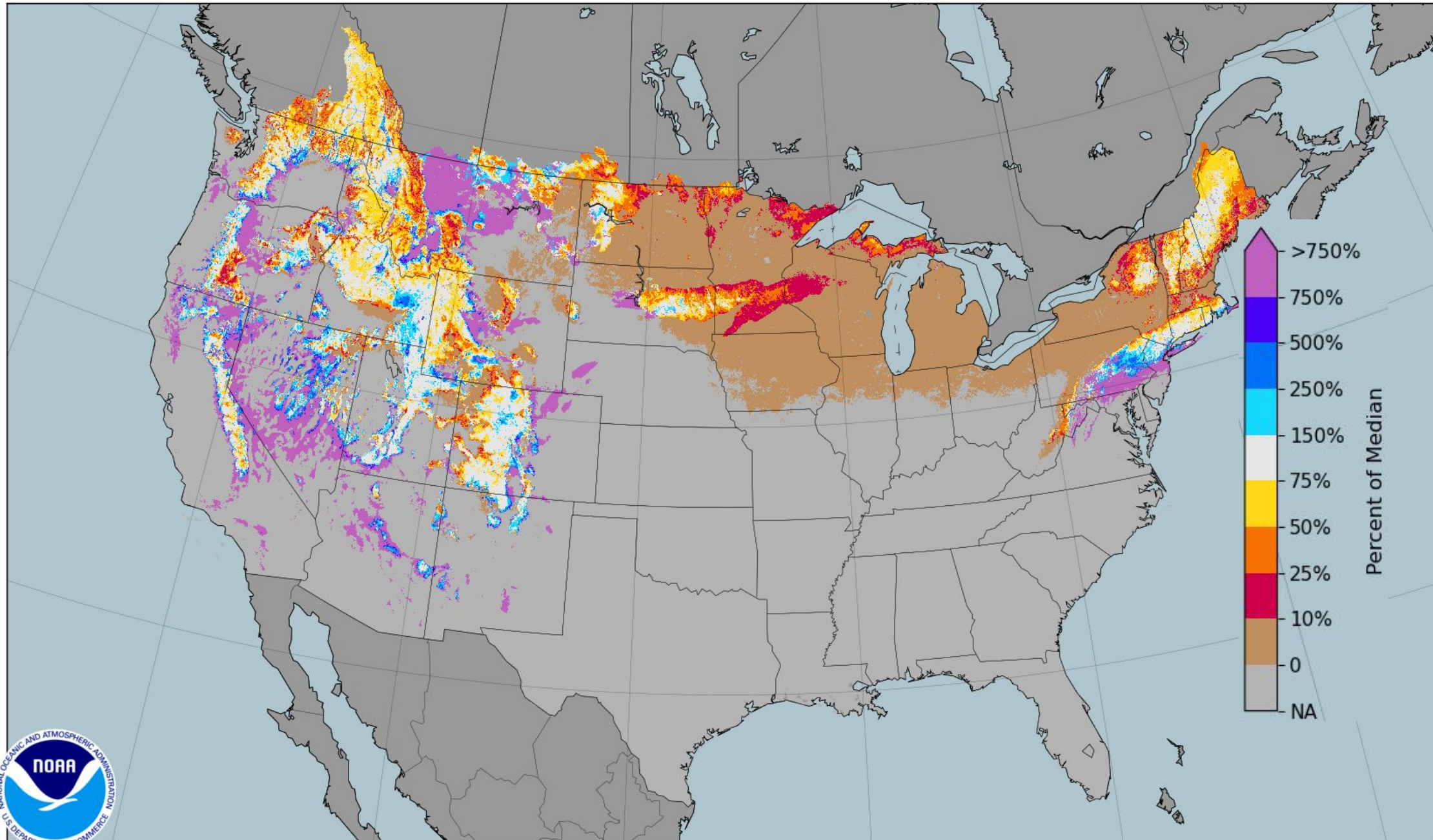


Spring 2024 Flood Outlook for Iowa

February 15, 2024
10:26 AM

Snow water equivalent percent of normal, 2/15/2024

SNODAS SWE, Percent of 19 Year Median, 2005 - 2023 Feb 15



Lack of snow cover across Iowa and the upper Mississippi River basin



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Spring 2024 Flood Outlook for Iowa

February 15, 2024
10:26 AM

Frost depth, 2/15/2024



Where ground frost existed, depths were generally one inch or less





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February 15, 2024
10:26 AM

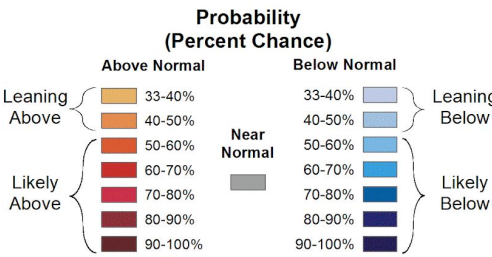
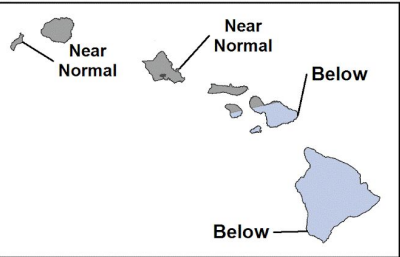
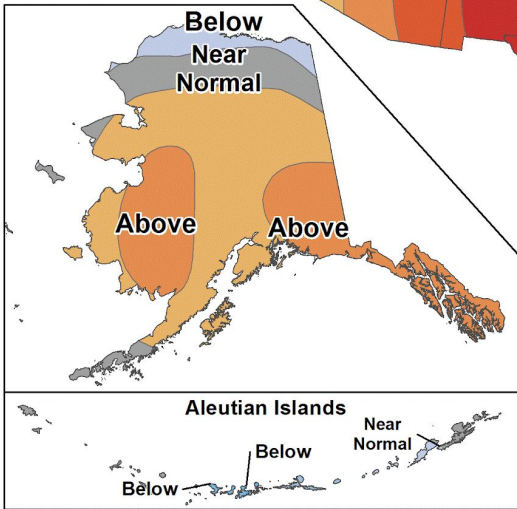
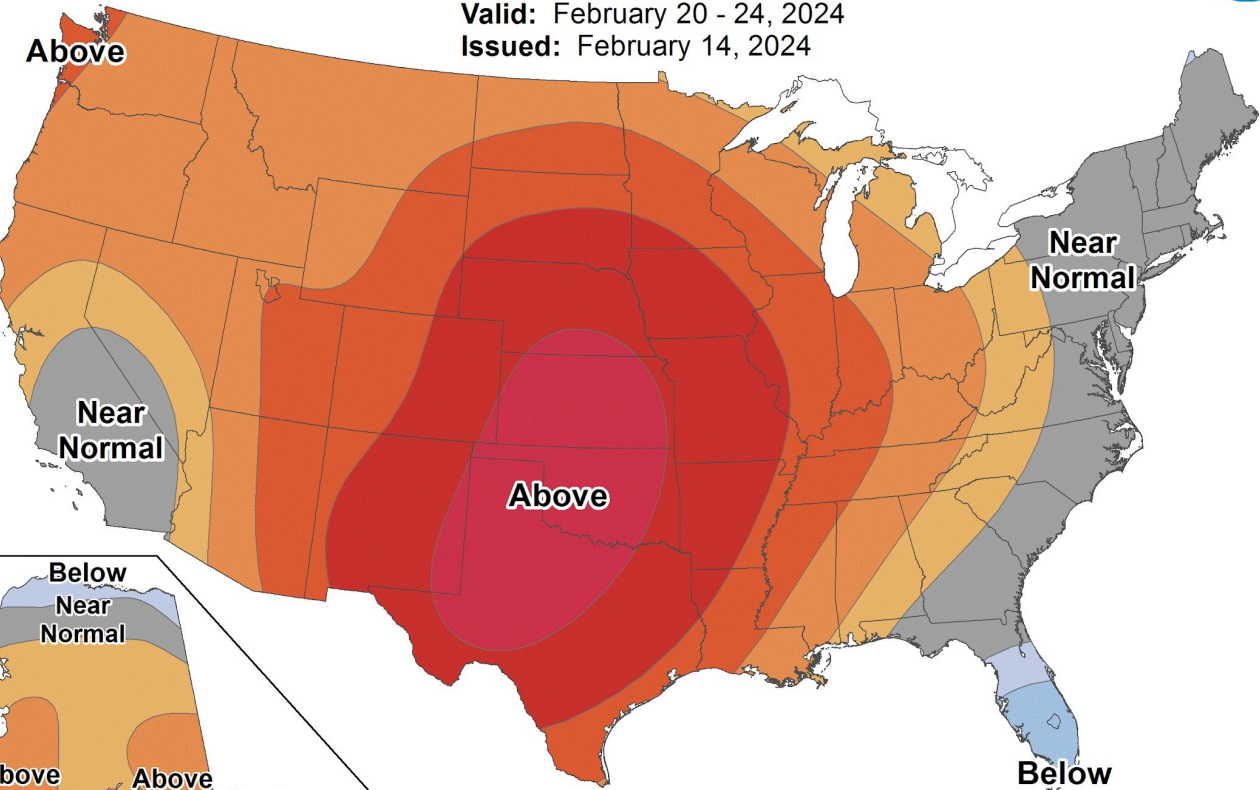
6-10 day temperature and precipitation outlooks



6-10 Day Temperature Outlook



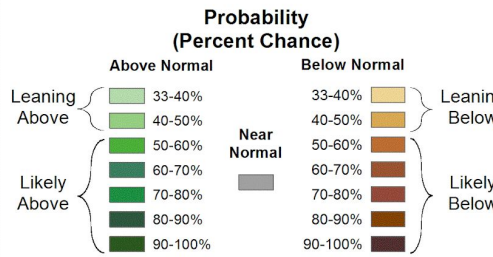
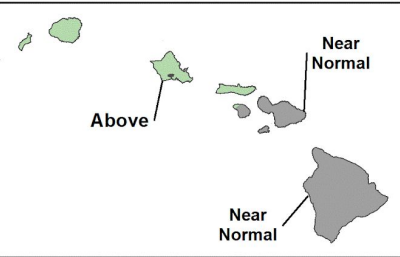
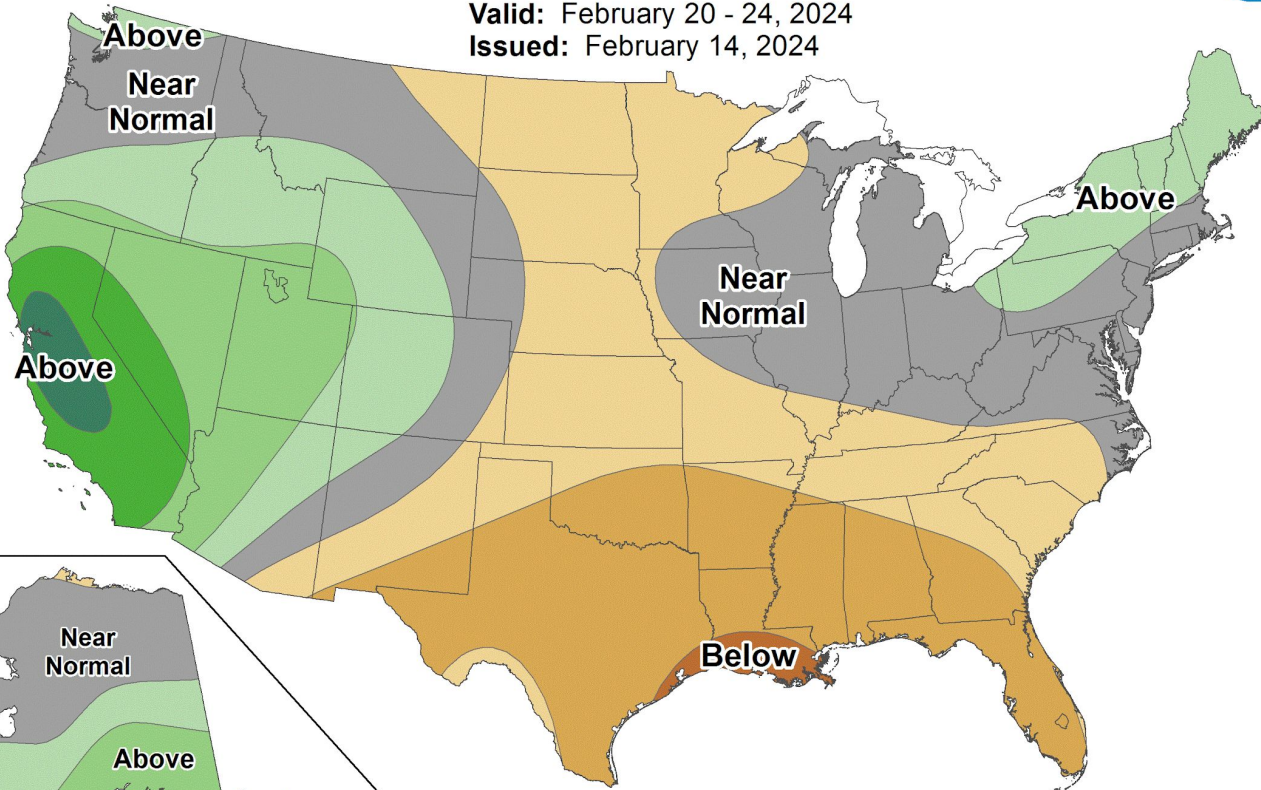
Valid: February 20 - 24, 2024
Issued: February 14, 2024



6-10 Day Precipitation Outlook



Valid: February 20 - 24, 2024
Issued: February 14, 2024





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February 15, 2024
10:26 AM

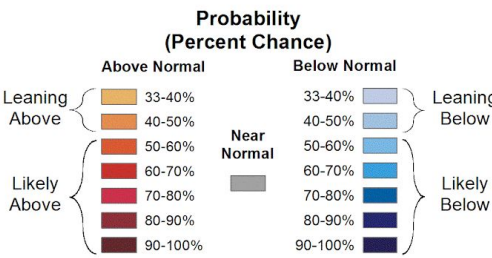
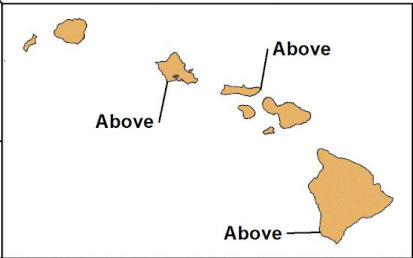
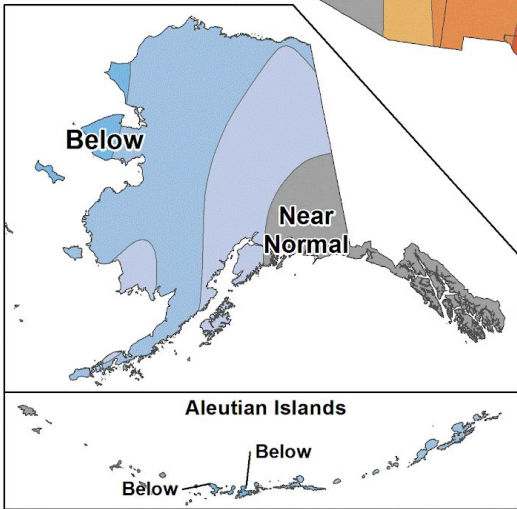
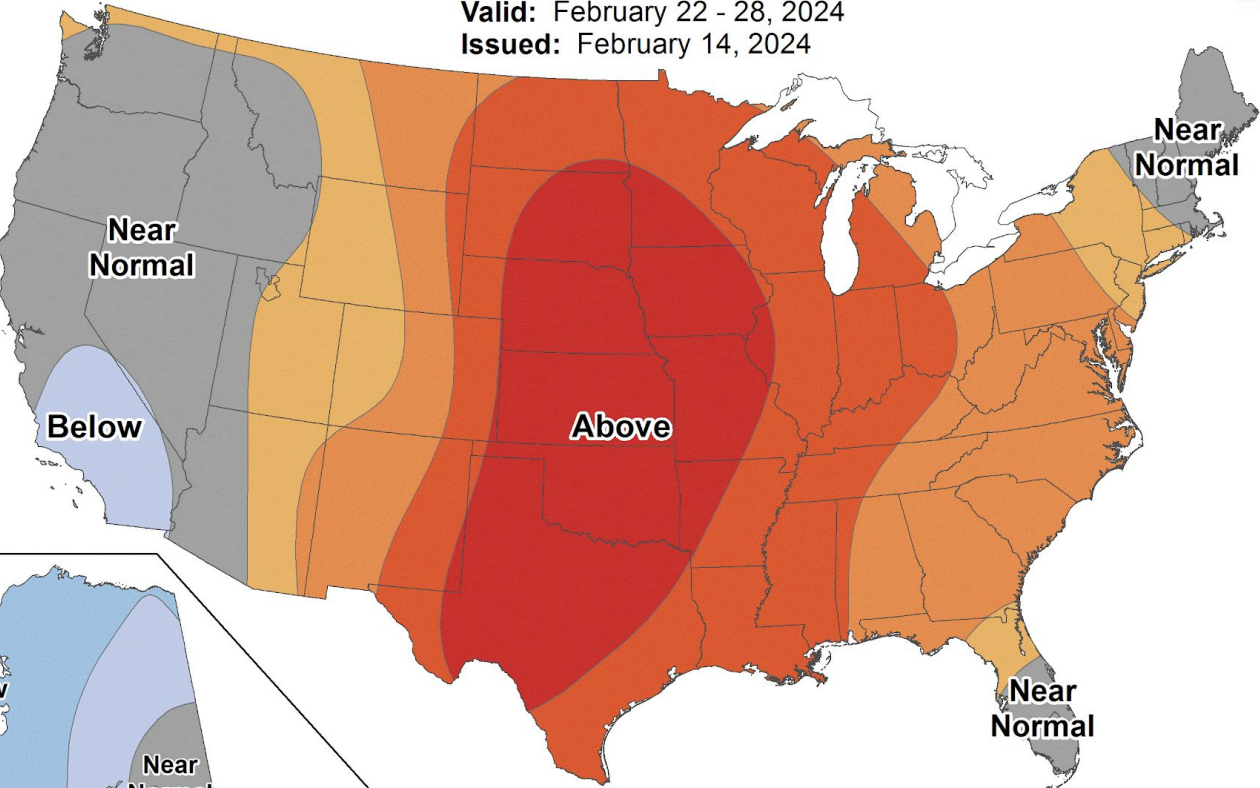
8-14 day temperature and precipitation outlooks



8-14 Day Temperature Outlook



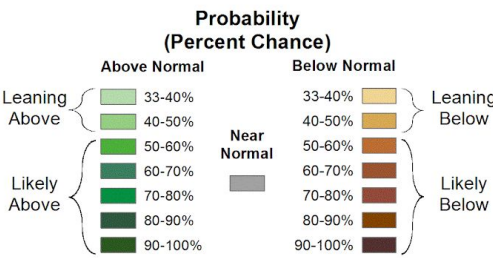
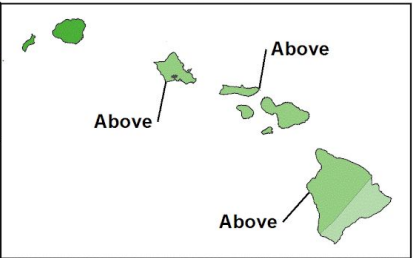
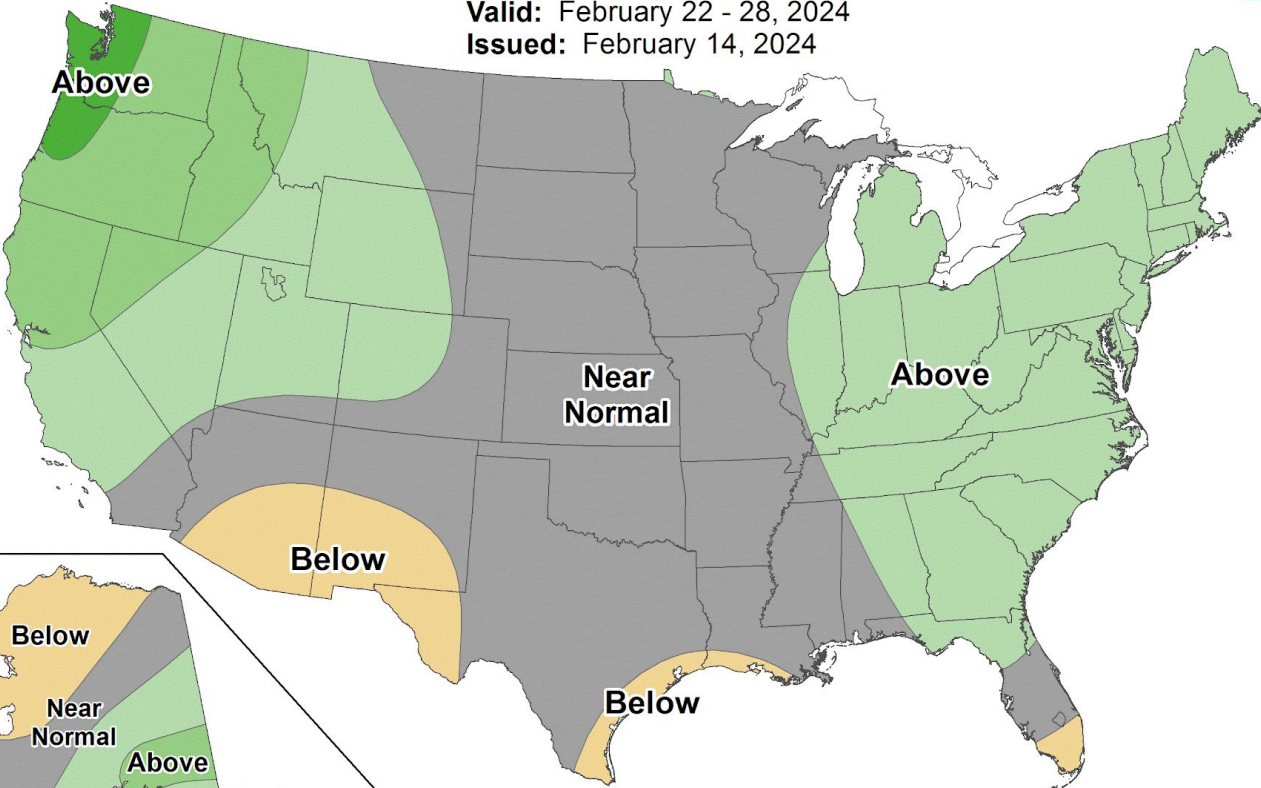
Valid: February 22 - 28, 2024
Issued: February 14, 2024



8-14 Day Precipitation Outlook



Valid: February 22 - 28, 2024
Issued: February 14, 2024





Spring 2024 Flood Outlook for Iowa

February 15, 2024
10:26 AM

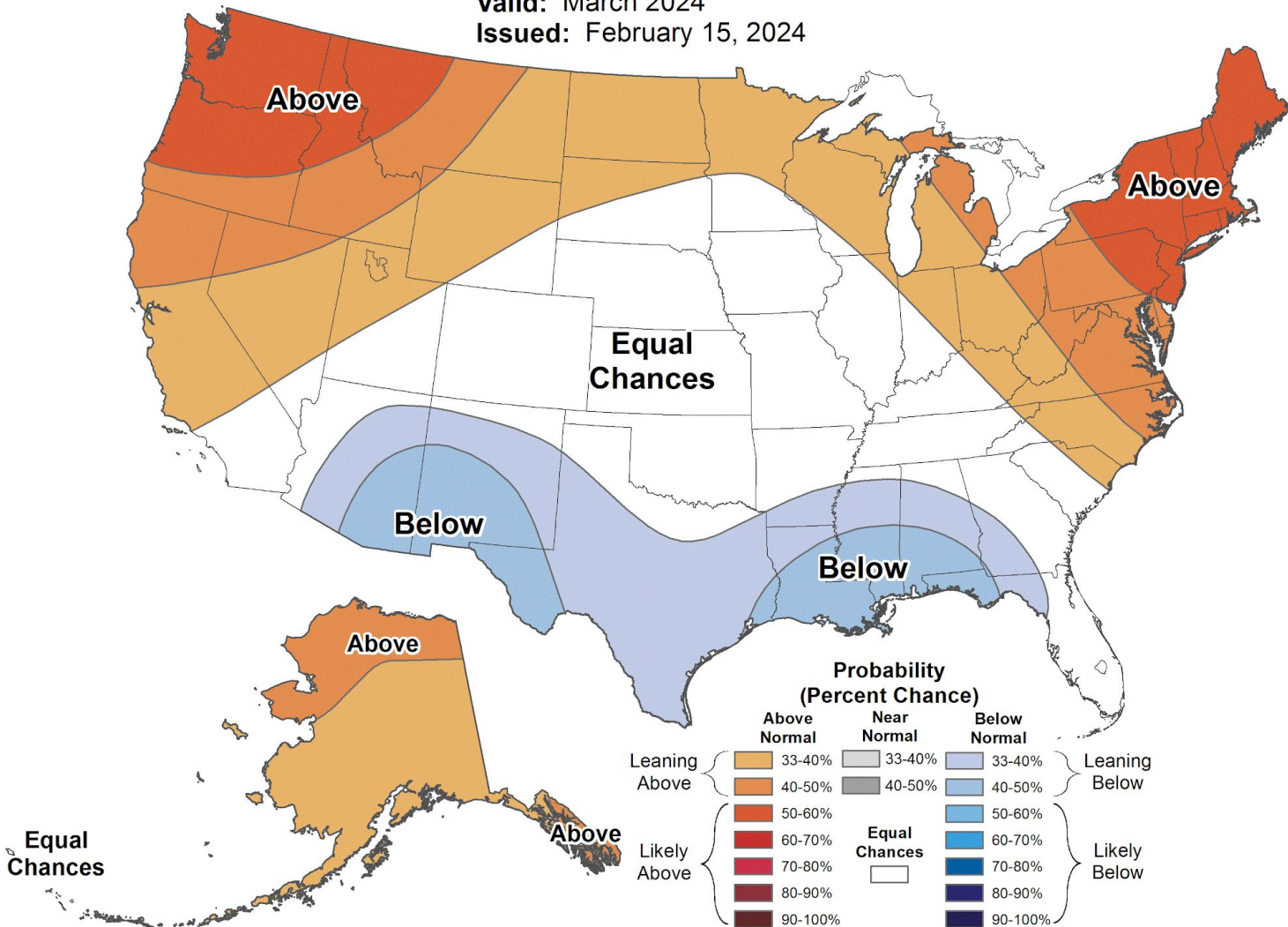
Monthly temperature and precipitation outlooks



Monthly Temperature Outlook



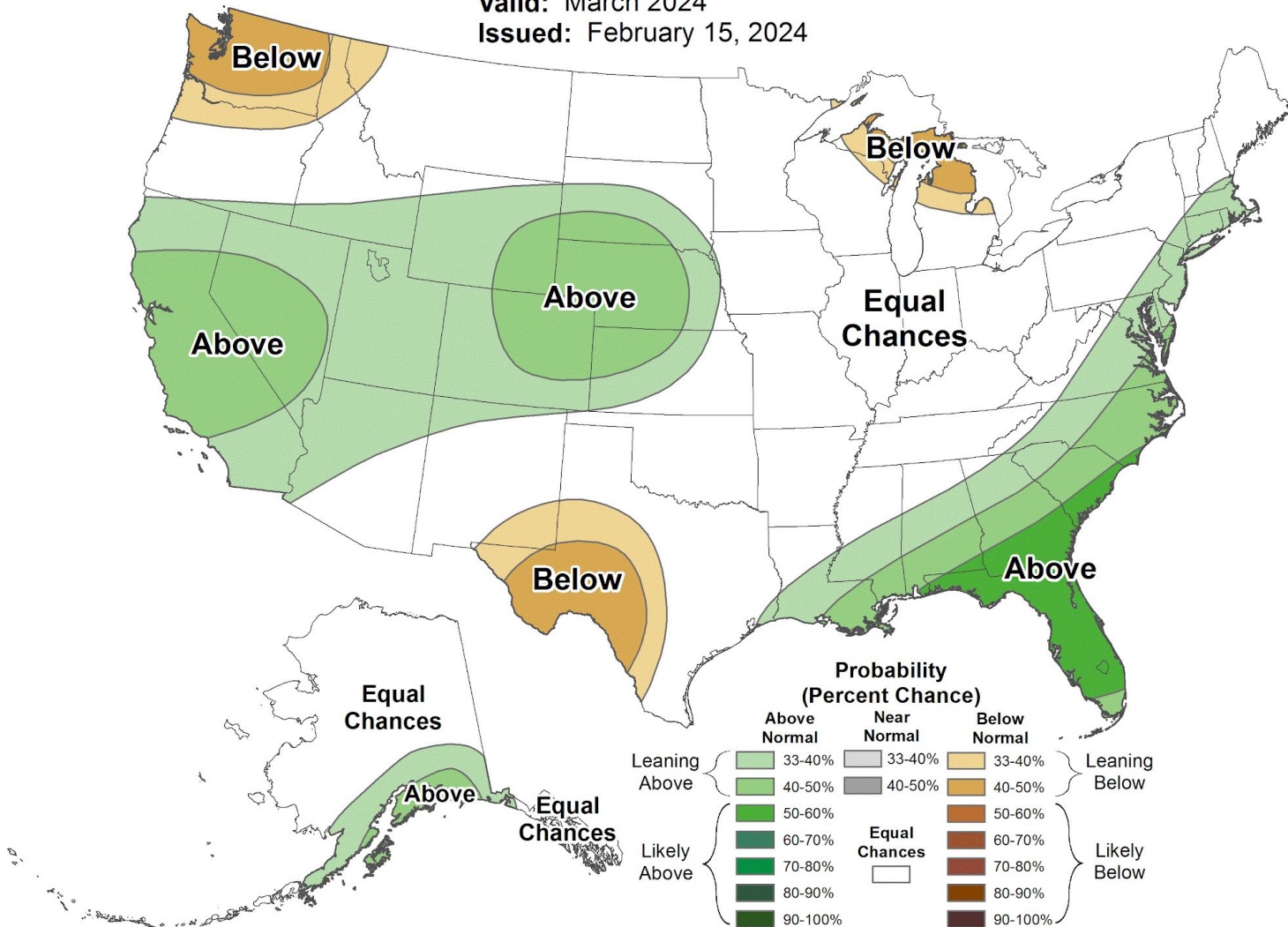
Valid: March 2024
Issued: February 15, 2024



Monthly Precipitation Outlook



Valid: March 2024
Issued: February 15, 2024





Spring 2024 Flood Outlook for Iowa

February 15, 2024
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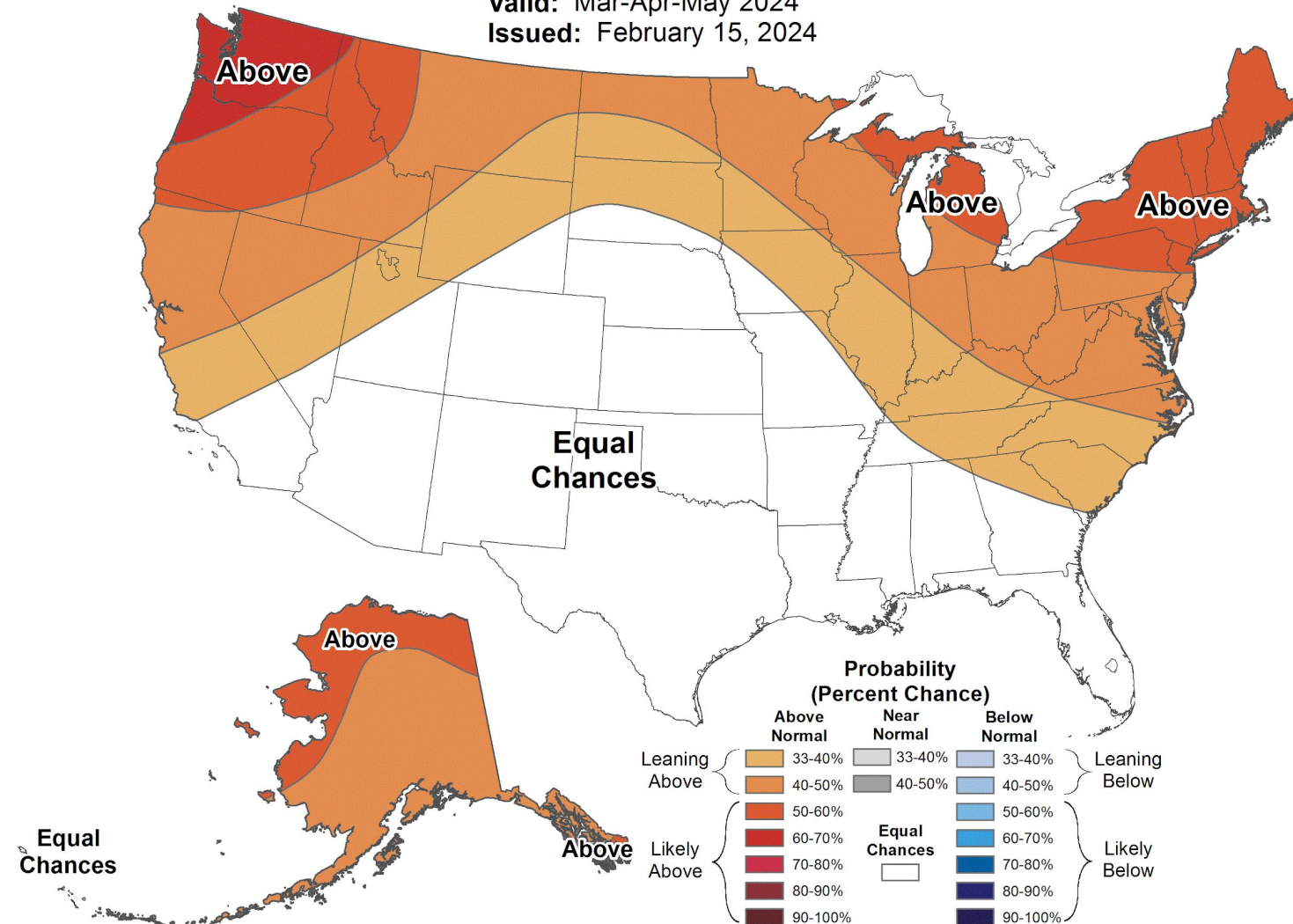
Seasonal temperature and precipitation outlooks



Seasonal Temperature Outlook



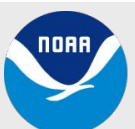
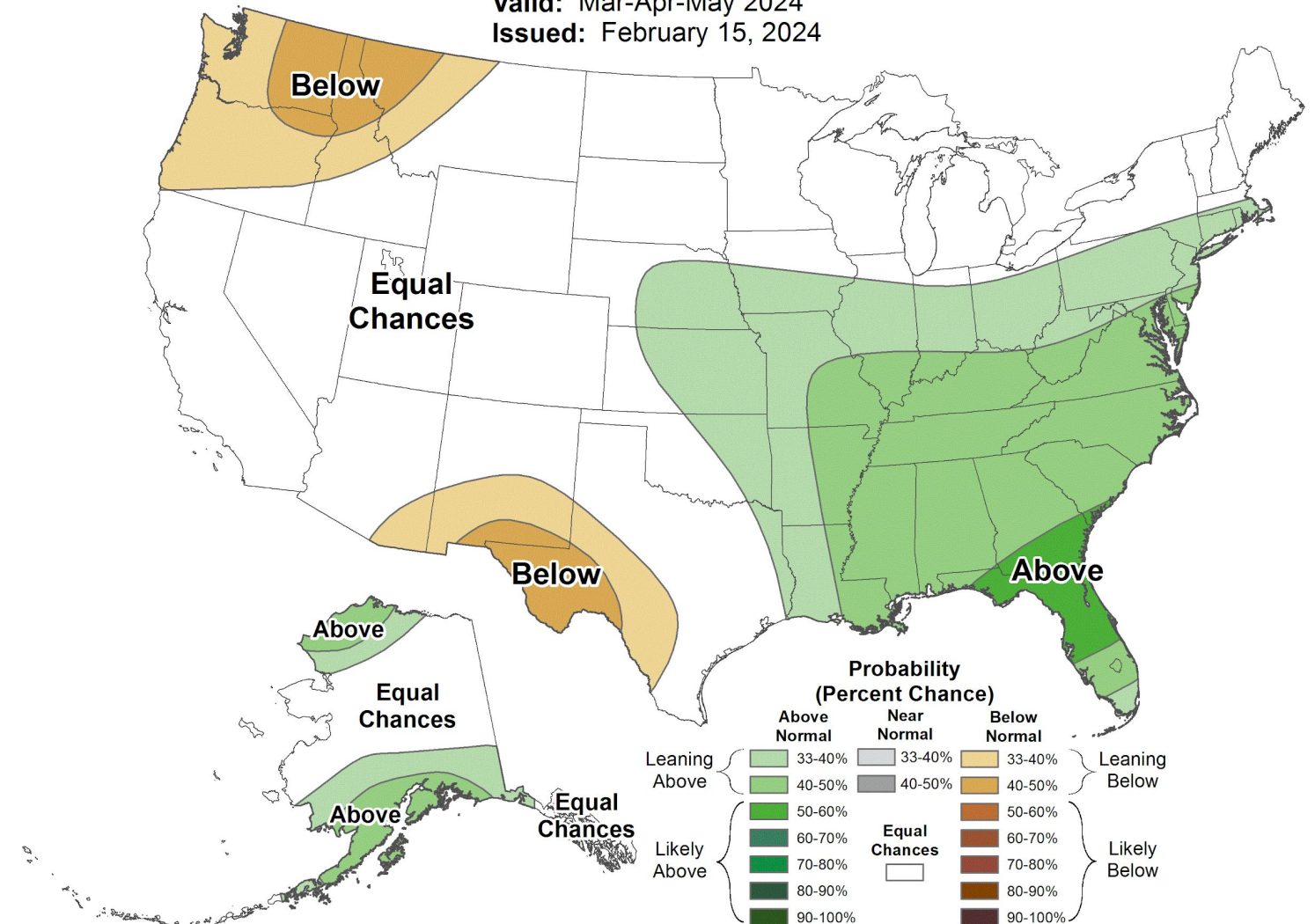
Valid: Mar-Apr-May 2024
Issued: February 15, 2024



Seasonal Precipitation Outlook



Valid: Mar-Apr-May 2024
Issued: February 15, 2024





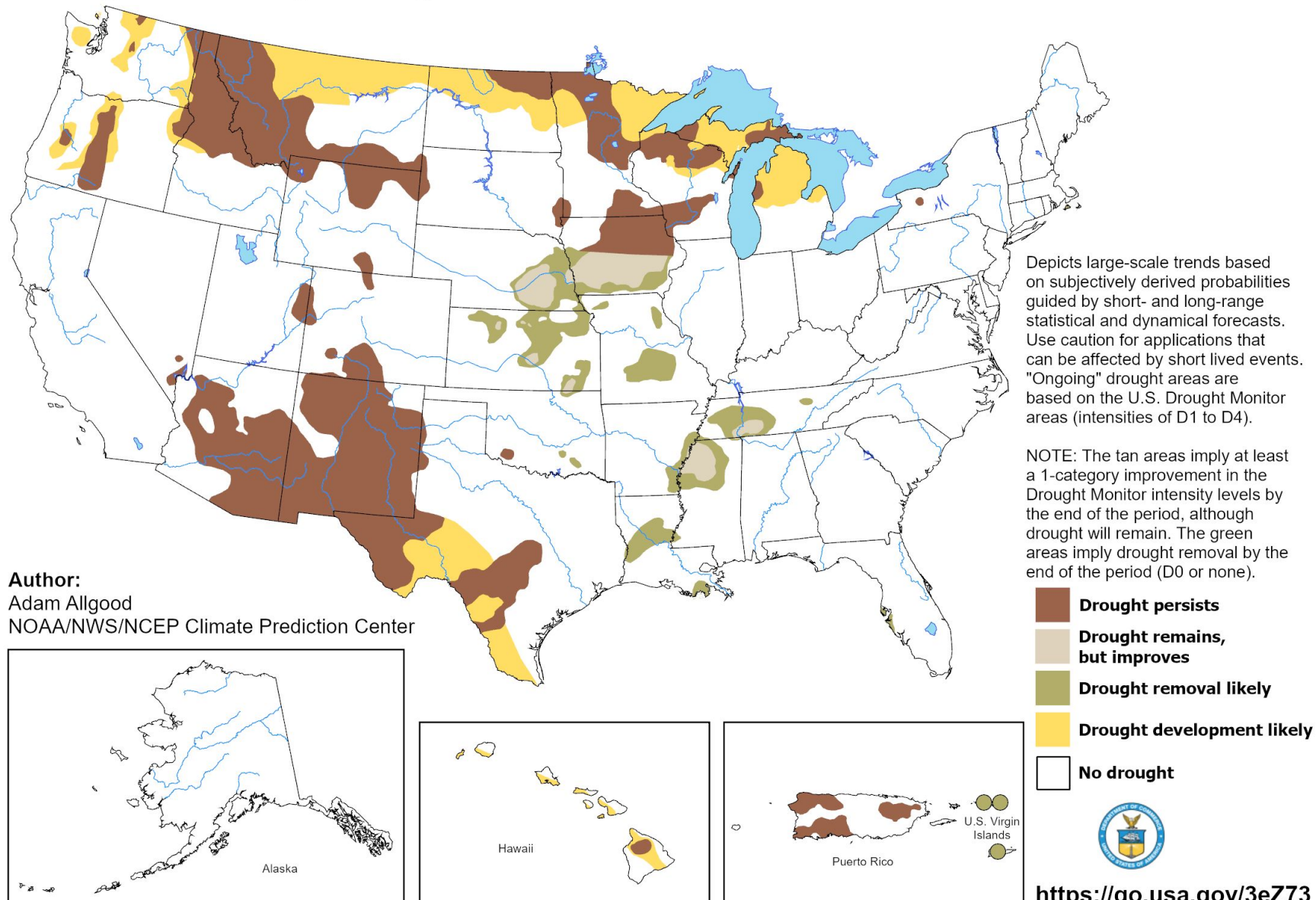
Spring 2024 Flood Outlook for Iowa

February 15, 2024
10:26 AM

Seasonal drought outlook

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

Valid for February 15 - May 31, 2024
Released February 15, 2024



Author:
Adam Allgood
NOAA/NWS/NCEP Climate Prediction Center

Drought conditions expected to persist across Iowa

<https://go.usa.gov/3eZ73>



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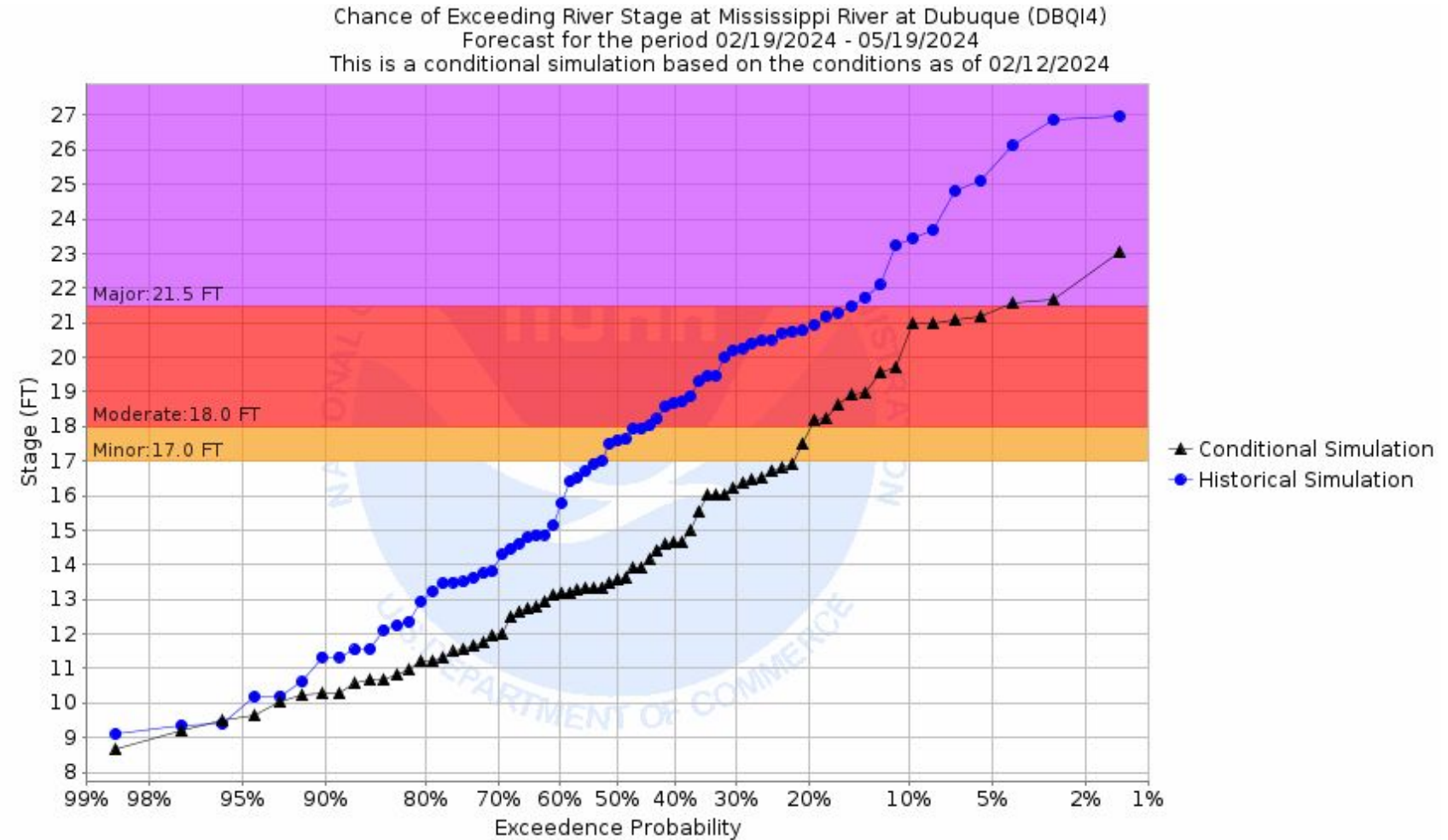
Spring 2024 Flood Outlook for Iowa

February 15, 2024
10:26 AM

Long-range probabilistic information–90-day period

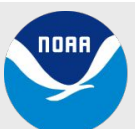
Long-Range Flood Risk (90-day period)

- Available on AHPS > Long-Range Flood Risk > Chance of Exceeding Levels during Entire Period.
- The graph to the right represents the exceedance probabilities during the 90-day period.
- Blue line is considered the normal chance (i.e., climatology)–the historical simulation.
- Black line is based on current conditions (e.g., river levels, snowpack, etc.)–the conditional simulation.
- When the black line is left of the blue line, chances for higher river levels and flooding are higher than normal.
- Conversely, when the black line is to the right of the blue line, chances for higher river levels and flooding are lower than normal.
- A near to below normal risk of flooding does not necessarily mean that flooding will not occur.



Example–Mississippi River at Dubuque

- Black line is right of the blue line (lower than normal chances).
- ~25% chance of exceeding minor flood stage (normal is ~45%).
- ~7% chance of exceeding major flood stage (normal is ~12%).





Spring 2024 Flood Outlook for Iowa

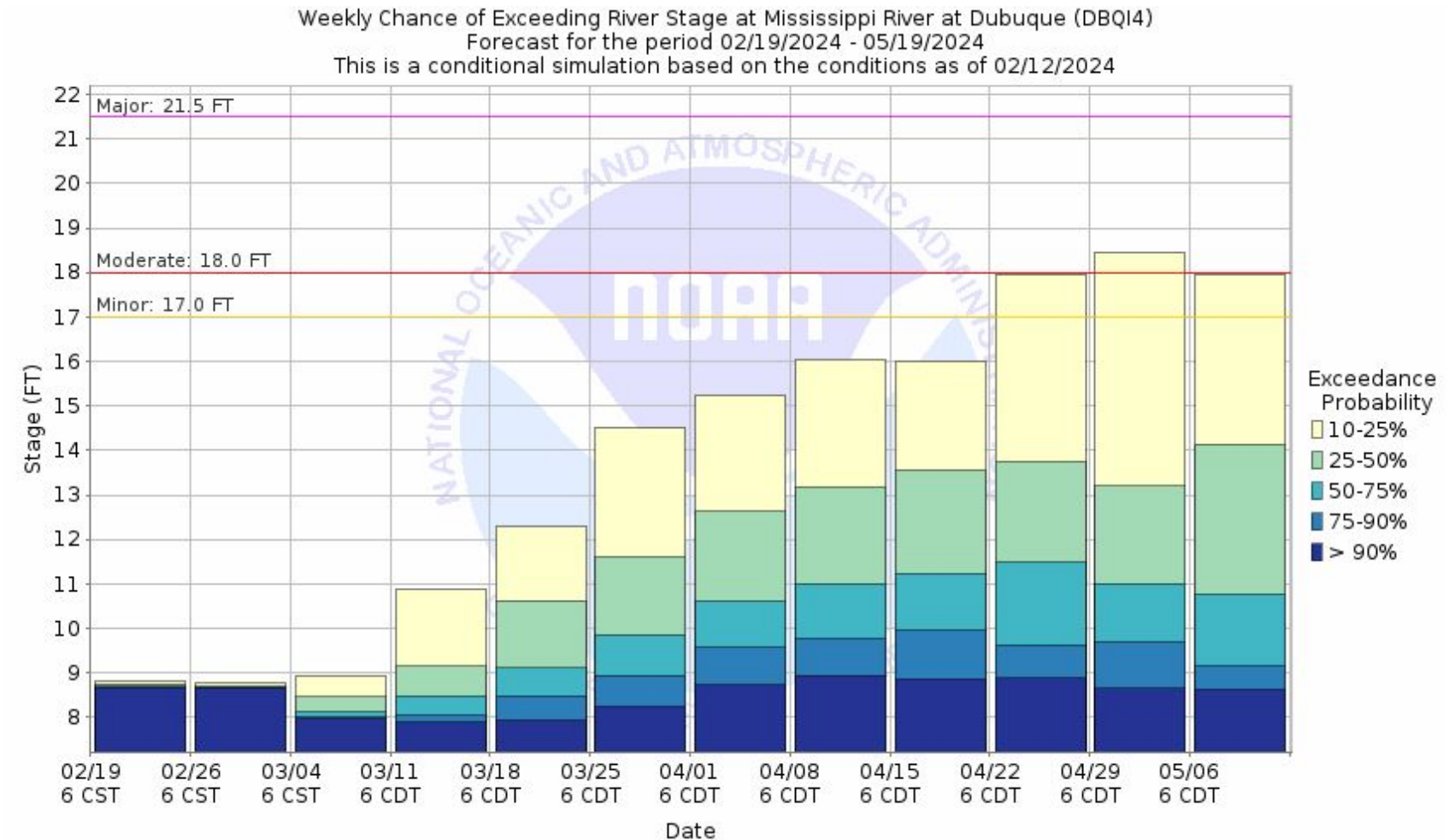
February 15, 2024

10:26 AM

Long-range probabilistic information—weekly chances during 90-day period

Long-Range Flood Risk (weekly chances during 90-day period)

- Available on AHPS > Long-Range Flood Risk > Weekly Chance of Exceeding Levels.
- The graph to the right represents the exceedance probabilities each week during the 90-day period.
- Yellow color of the bar graph represents the 10-25% exceedance probability. Essentially, there is a 10-25% chance that the river will reach that particular level during that particular week.
- The exceedance probabilities increase as colors become more blue—25-50% (light green), 50-75% (teal), 75-90% (light blue) and >90% (dark blue).



Example—Mississippi River at Dubuque

- Higher chances of flooding begin in mid April.





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February 15, 2024
10:26 AM

What could increase the chances or decrease the chances for significant flooding?

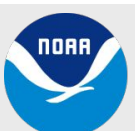
Future weather—especially the weather conditions leading up to, during and immediately after the snowmelt period—is the biggest factor for significant spring flooding.

Factors leading to increased chances

- Slower than normal warm-up leading up to the snowmelt period—keeps the snowpack longer
- Fast warm-up during the snowmelt period—leads to rapid snowmelt
- Above normal precipitation leading up to the snowmelt period—adds more water to the system
- Moderate to heavy precipitation (rainfall) during the snowmelt period—including rain on snow—adds more water to the system
- Above normal precipitation immediately after the snowmelt period—prolongs the higher river stages and may result in secondary crests

Factors leading to decreased chances

- Normal warm-up leading up to the snowmelt period
- Slow and steady snowmelt—introduces water to the system more slowly
- Little to no additional precipitation during the snowmelt period—adds little if any additional water to the system
- Normal to below normal precipitation immediately after the snowmelt period—allows the river levels to fall back to normal levels






Spring 2024 Flood Outlook for Iowa

February 15, 2024
10:26 AM

How to access probabilistic information on our Website

www.weather.gov/desmoines




NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

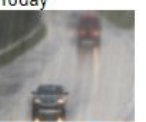
HOMEFORECASTPAST WEATHERSAFETYINFORMATIONEDUCATIONNEWSSEARCHABOUT

Local forecast by "City, St" or ZIP code
Enter location ...
Go
[Location Help](#)

MY FORECAST
2 Miles NNE Des Moines IA




34°F
1°C
Get Detailed Info

Today


80% → 50%
Rain then Chance Rain
High: 39°F

News Headlines

- Winter Storm Watch Portions of Northern Iowa Thursday Afternoon and Night
- The March Edition of the Weather Whisper Newsletter is Now Published!
- NEW - 2023 Spotter Training Schedule Released
- NWS Des Moines Spring Flood Outlook Schedule

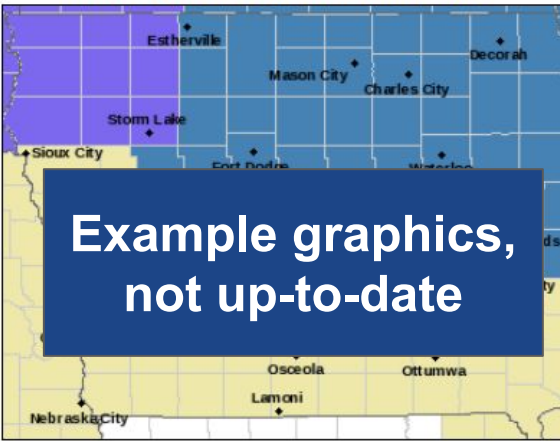


WINTER STORM THURSDAY INTO THURSDAY NIGHT
Click to view briefing.

NWS Forecast Office Des Moines, IA
[Weather.gov > Des Moines, IA](#)

Current HazardsCurrent ConditionsRadarForecast**Rivers and Lakes**Climate and Past WeatherLocal Programs

Click a location below for detailed forecast.



Example graphics, not up-to-date

Watches, Warnings & Advisories

Winter Weather Advisory

Winter Storm Watch

Hazardous Weather Outlook

Zoom In

Zoom Out

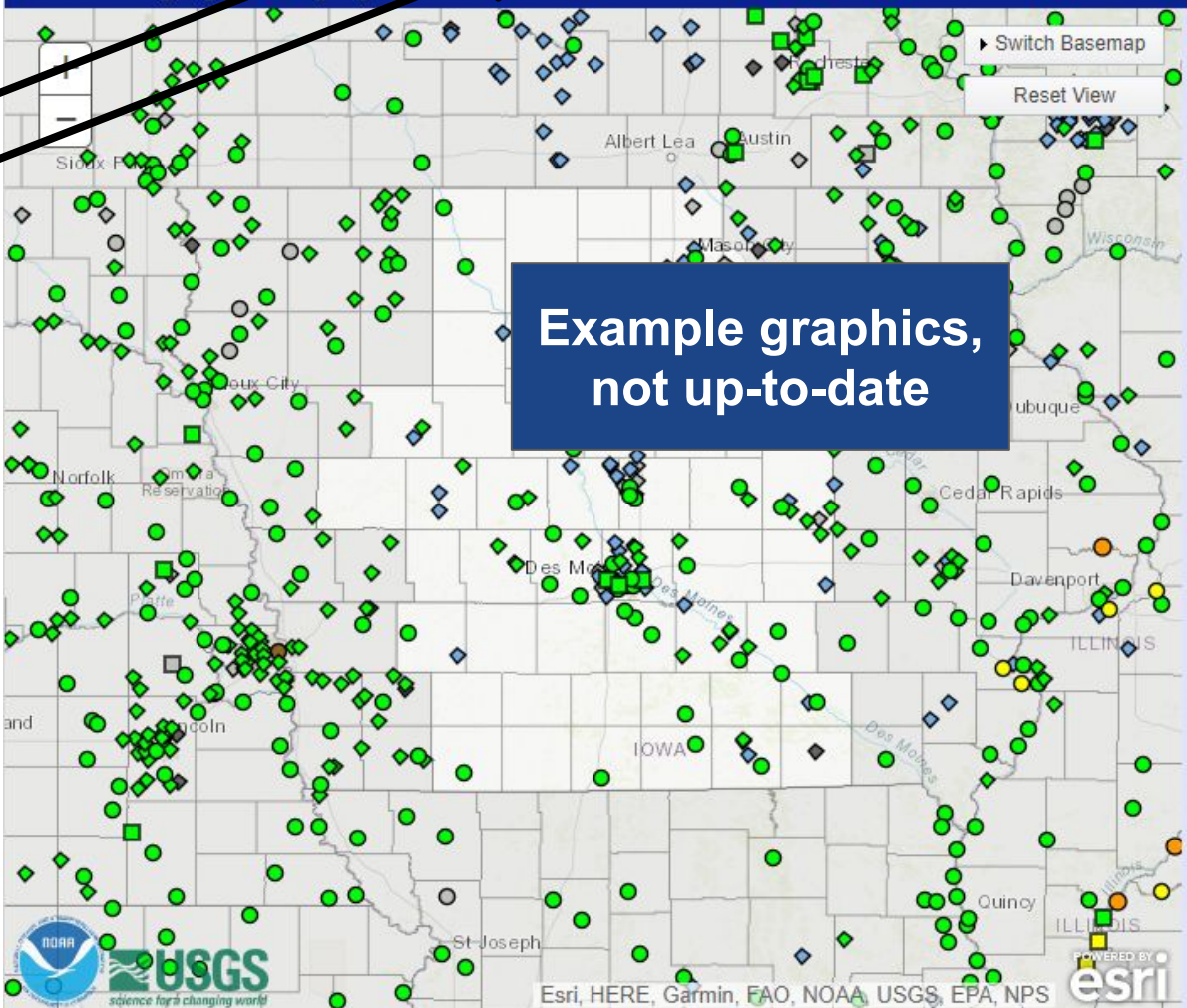
Last Map Update: Wed, Mar. 8, 2023 at 8:58:18 am CST

Weather Forecast Office Des Moines, IA

Missouri Basin River Forecast Center
North Central River Forecast Center

River ObservationsRiver Forecasts**Long-Range Flood Risk**PrecipitationDownloadOther Information

Auto Refresh: OFF
656 total gauges 3 gauges in flood



Example graphics, not up-to-date

Switch Basemap
Reset View

☐ Forecast available
☐ Probability and forecasts available
☐ Observations only available

Major Flooding

Moderate Flooding

Minor Flooding

Near Flood Stage

No Flooding

Observations Are Not Current

Out of Service

Flood Category Not Defined

At or Below Low Water Threshold

Last map update:
03/08/2023 at 09:06:53 am CST
03/08/2023 at 15:06:53 UTC
[What is UTC time?](#)
[Map Help](#)
[Disclaimer](#)

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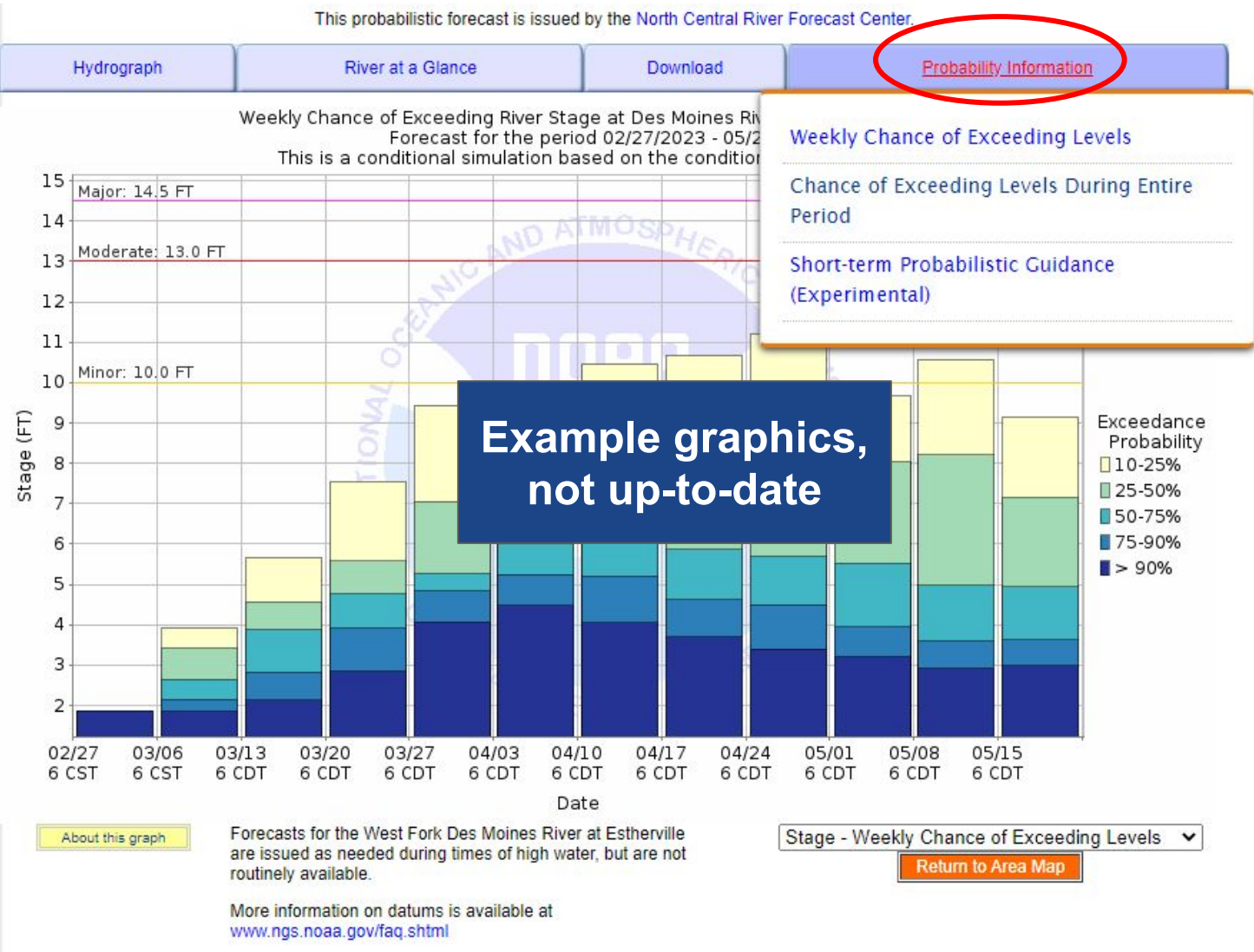
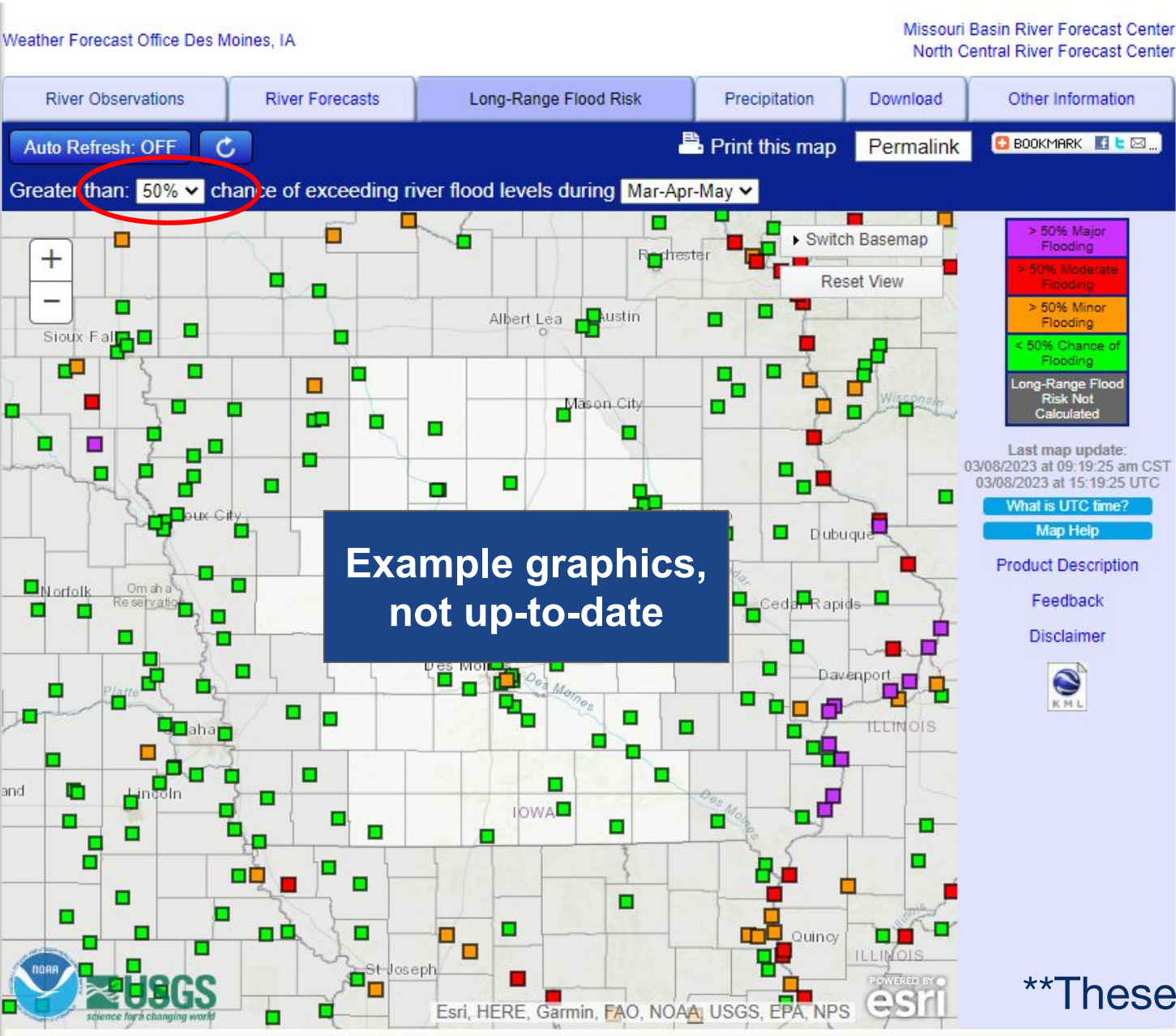
National Weather Service
Iowa



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February 15, 2024
10:26 AM

How to access probabilistic information on our Website



****These graphics normally updated near the end of each month****





Spring 2024 Flood Outlook for Iowa

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10:26 AM

Where to find more details

Each NWS office serving Iowa provides its own spring flood outlook information for its own service area. Below are the websites for the NWS offices serving Iowa.

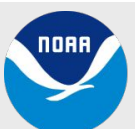
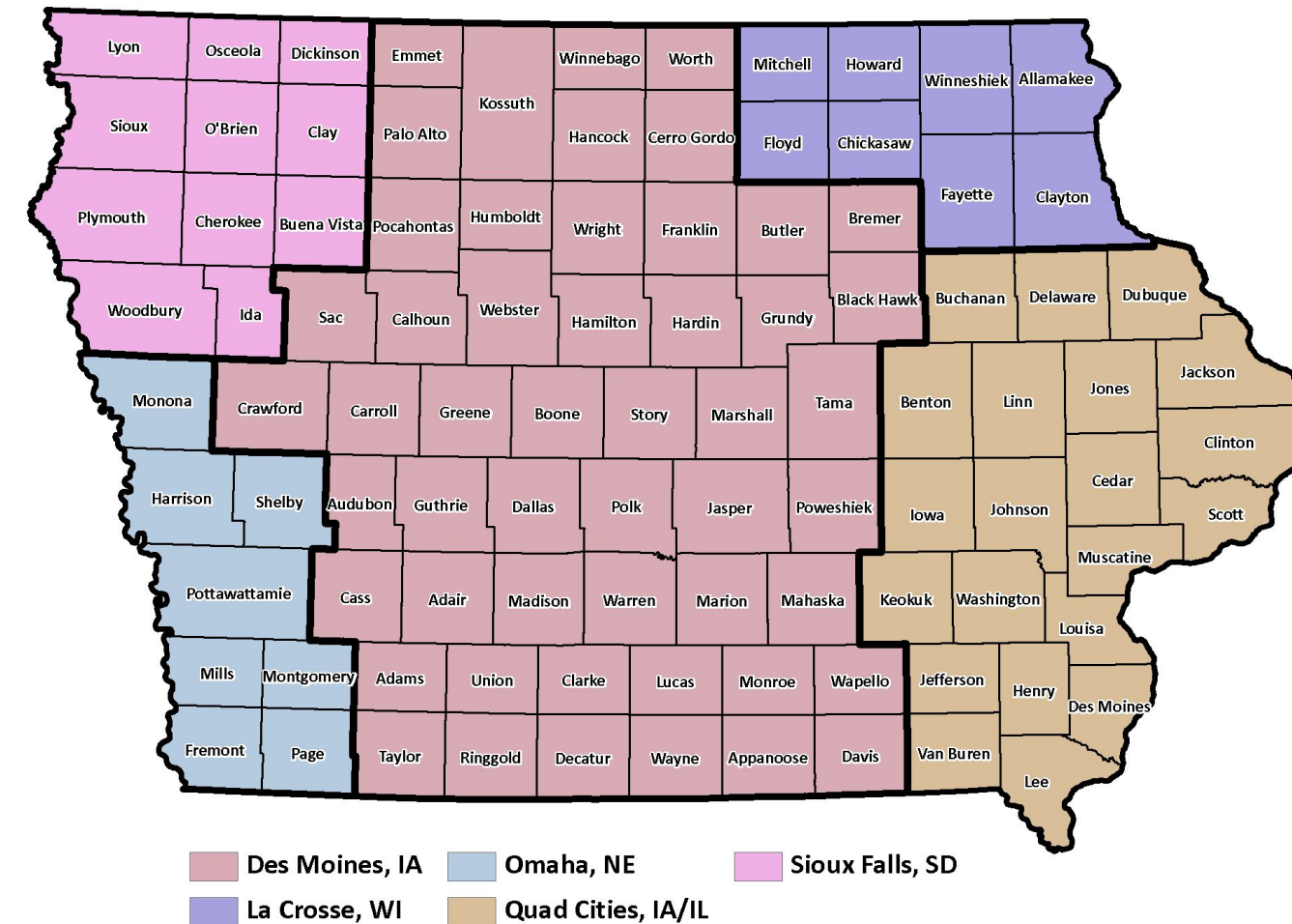
- NWS Des Moines: weather.gov/desmoines
- NWS Quad Cities, IA/IL: weather.gov/quadcities
- NWS Sioux Falls, SD: weather.gov/siouxfalls
- NWS Omaha, NE: weather.gov/omaha
- NWS La Crosse, WI: weather.gov/lacrosse

A series of **three spring flood outlooks** will be provided by each NWS office serving Iowa. Each outlook will be a text product, with possibly additional information. Below is the schedule for the outlooks. Refer to each office's website for further details.

- Thursday, February 15, 2024 - Outlook #1
- Thursday, February 29, 2024 - Outlook #2
- Thursday, March 14, 2024 - Outlook #3

For the latest river stage and forecast information, along with quantitative river flood outlook information, refer to the [NWS Advanced Hydrologic Prediction Service \(AHPS\) Website](#).

NWS office service areas





NWPS to Replace AHPS

February 15, 2024

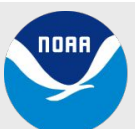
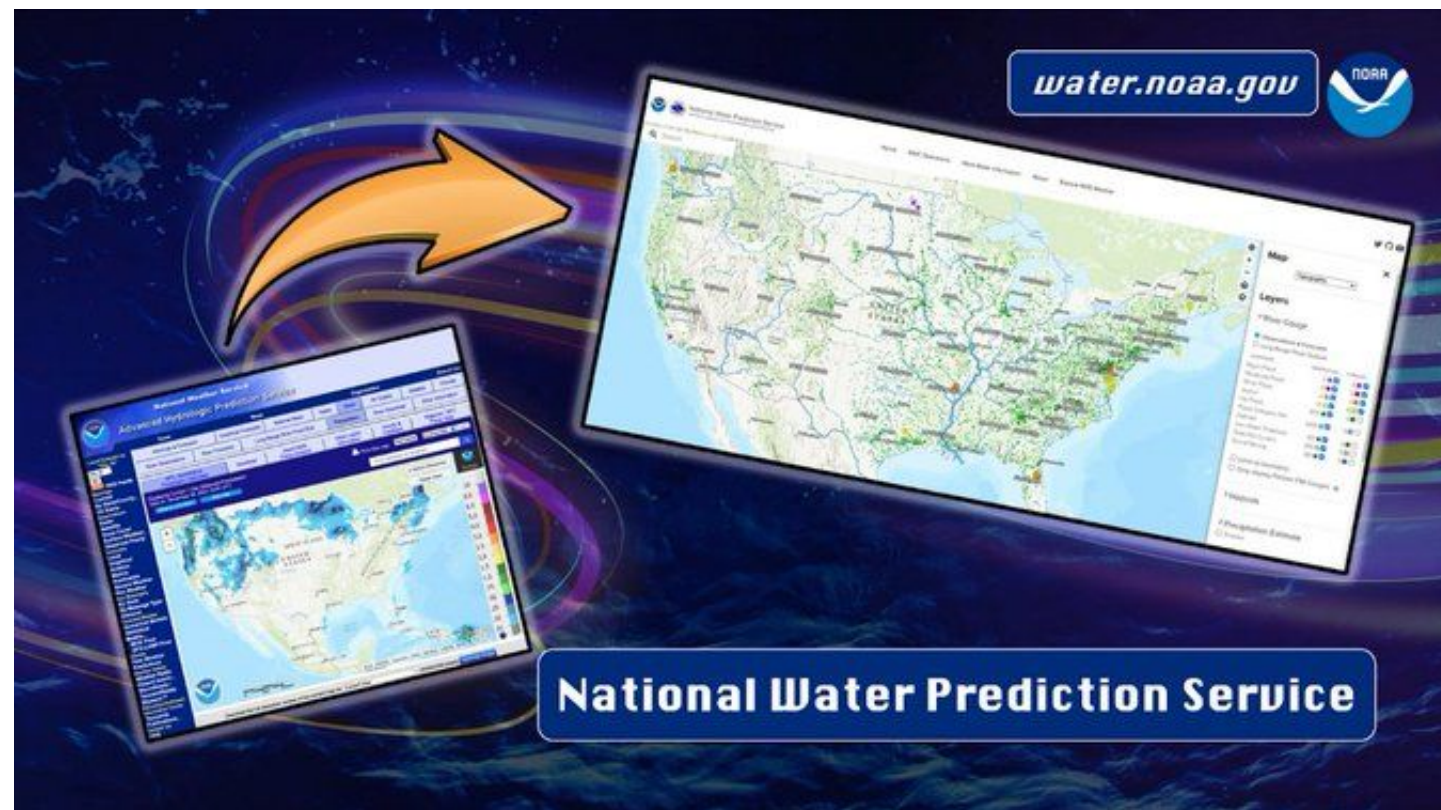
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National Water Prediction Service

Changes are coming to our river observations, forecasts and flood warnings information on March 27th! Our Advanced Hydrologic Prediction Service (AHPS) Web site will be replaced by the National Water Prediction Service (NWPS) Web site.

Check out this modern, efficient way to find hydrological info, including observed water levels, NWS forecasts and more at <https://preview.water.noaa.gov>. The link for information zoomed into Iowa is <https://preview.water.noaa.gov/state/ia>. This new site – National Water Prediction Service (NWPS) – will replace the AHPS Web site <https://water.weather.gov>. Once NWPS replaces AHPS, the Web site will become <https://water.noaa.gov/>.

You can find more information here: https://www.weather.gov/dmx/NWPS_Announcement.



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