National Weather Service
Emergency Manager Guidebook

National Weather Service Sioux Falls SD, 26 Weather Lane, Sioux Falls, SD 57104, 605-330-4247

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Last Updated 11/4/21

National Weather Service
Emergency Manager Guidebook

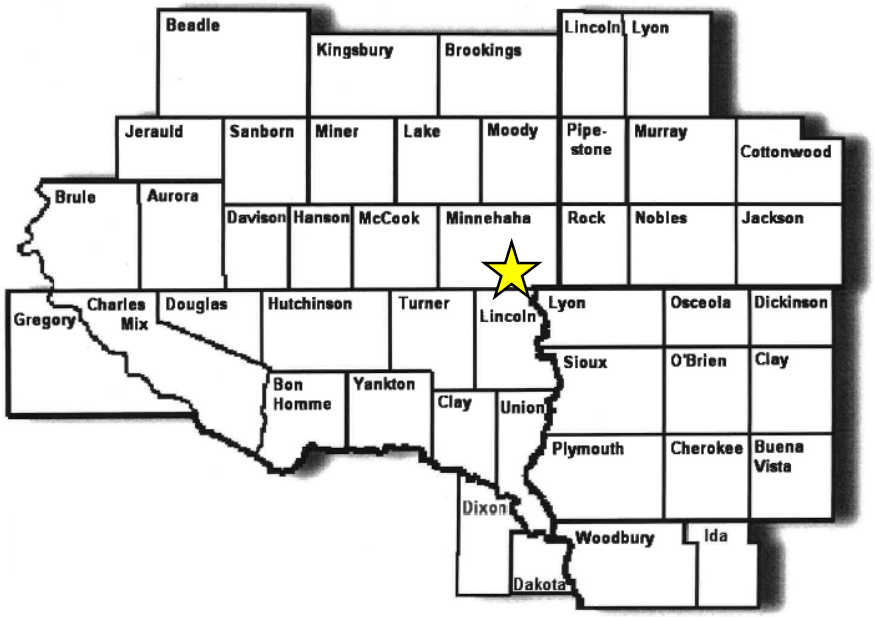
The National Weather Service (NWS) considers emergency managers “core partners.” Among all the people and organizations we serve on a daily basis, meeting your needs is our top priority. You provide a critical link between us and your local communities. You will likely interact with the NWS during active hazardous weather events as well as more tranquil times.

This guidebook is designed to help you better understand the products and services offered by the NWS in Sioux Falls, SD. All questions can be directed to Peter Rogers, Warning Coordination Meteorologist, at 605-330-4247 or peter.rogers@noaa.gov.

About the National Weather Service

The NWS is a federal agency under the Department of Commerce (DOC) and the National Oceanic and Atmospheric Administration (NOAA). Our mission is the protection of life and property and the enhancement of the national economy.

There are 122 local forecast offices across the nation. The office located in Sioux Falls issues forecasts, watches, warnings, and advisories for 45 counties across southeast South Dakota, southwest Minnesota, northwest Iowa, and extreme northeast Nebraska. We have 24 staff members and are open 24/7/365.



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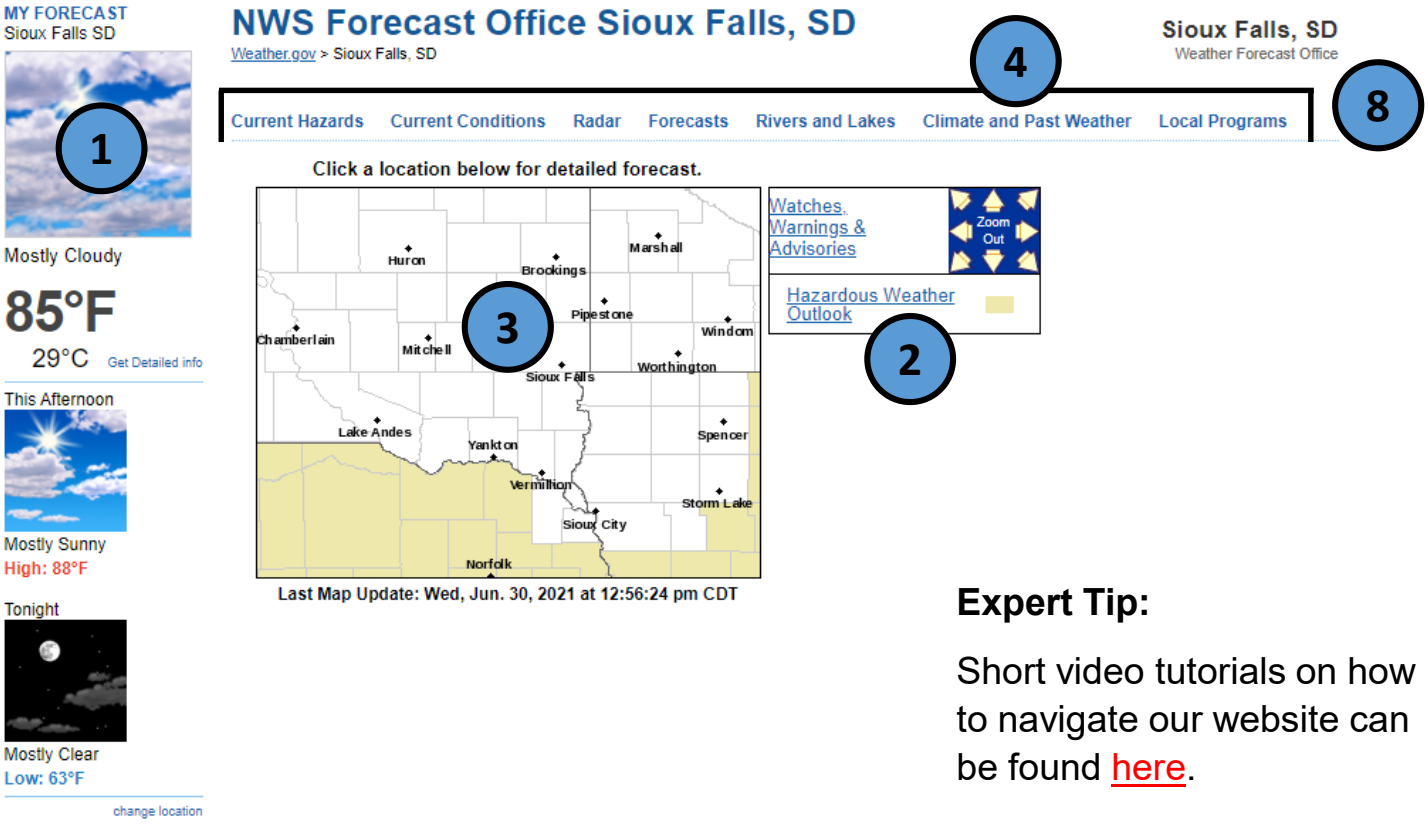
National Weather Service Website

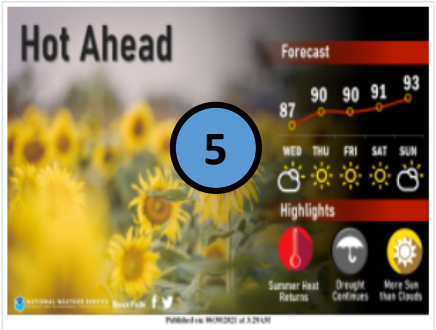
www.weather.gov/siouxfalls

All forecast, watch, warning, and advisory information is available on our website. Numerous sub-menus also provide current conditions, radar, satellite, river and flood information, climate summaries, and storm reports just to name a few. If you are unfamiliar with our website, we encourage you to take some time to check it out!

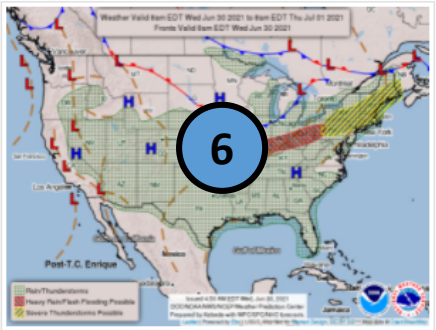


Expert Tip:

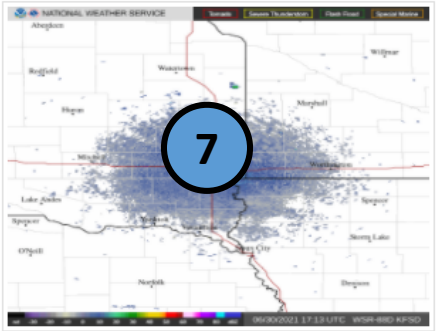
Short video tutorials on how to navigate our website can be found here.



Weather Story



Weather Map



Local Radar

1. Current conditions and forecast
2. Watches, warnings, and advisories
3. Point and Click Forecast Map
4. Product Links
5. Weather Story
6. Weather Map
7. Radar
8. Decision Support Packet (see pg. 9)

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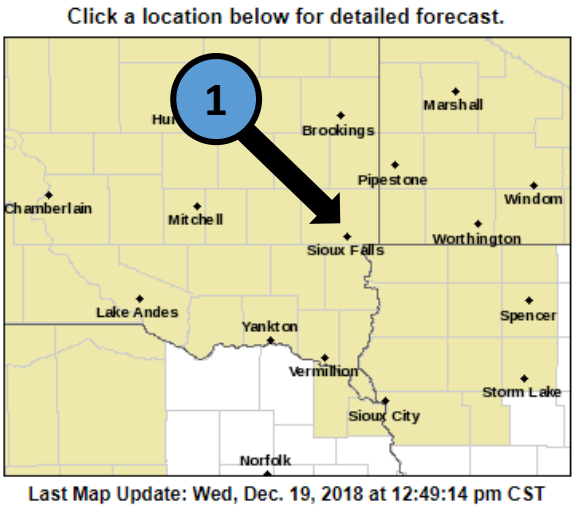
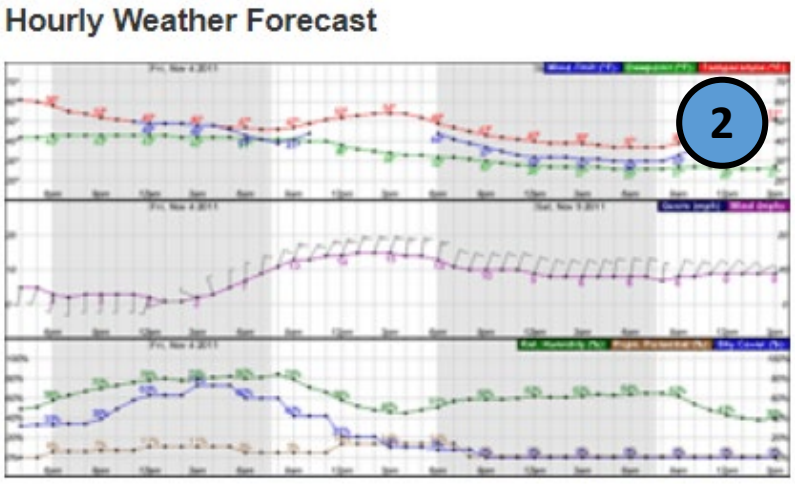
Hourly Weather Forecast

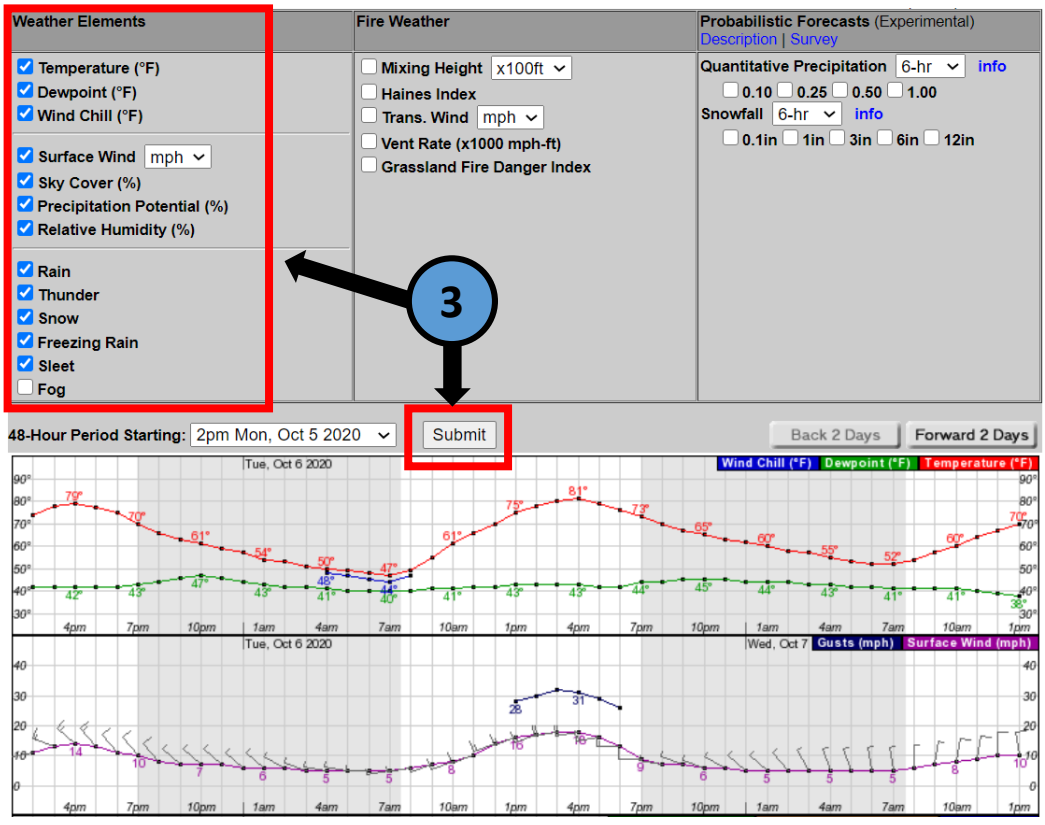
The Hourly Weather Forecast (graph) provides you an hour-by-hour breakdown of critical weather parameters (i.e. temperature, wind, precipitation potential) for a user defined location. These graphs are updated every time the forecast is adjusted and may prove useful in your decision-making-process.



Step 1: Go to the NWS Sioux Falls website and click near your location on the forecast map.



Step 2: Scroll down the page and click on the Hourly Weather Forecast graphic on the right-hand side under **Additional Resources**.



Step 3: Customize your graph by picking the **Weather Elements** you wish to view and click **Submit**. You can also add fire weather parameters or probabilistic forecast information.

Click anywhere on the graph to view a tabular version of the data.

Bookmark this page for future access.

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Forecast Points Website

www.weather.gov/forecastpoints

The NWS also offers point-specific hourly forecast information at a new Forecast Points website. Information on this website is provided in an easy-to-read tabular or graphical format and can be customized.

Enter your location or latitude/longitude in the search bar at the top of the page.

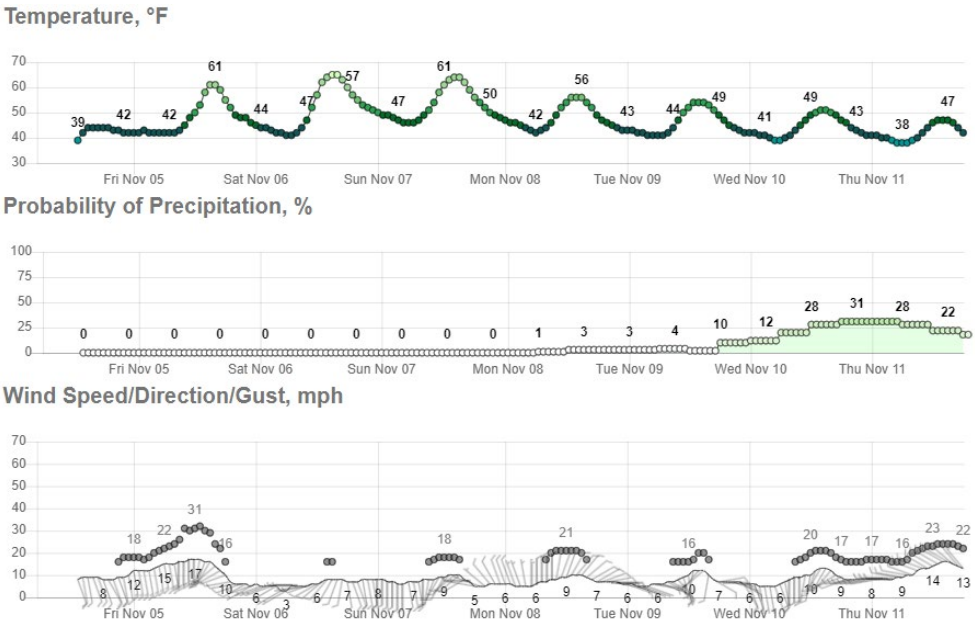
Weekly Summary

	Thu Nov 4	Fri Nov 5	Sat Nov 6	Sun Nov 7	Mon Nov 8	Tue Nov 9	Wed Nov 10
Max Temp, °F	44	61	66	66	58	55	52
Min Temp, °F	34	41	39	45	41	39	37
Min Wind Chill, °F	33	34	38	42	38	37	35
Max Wind, mph	10	17	8	10	10	12	13
Min Wind, mph	7	5	3	5	5	5	5
Max Wind Gust, mph	18	32	16	18	21	20	21
Max Cloud Cover, %	83	81	31	50	62	64	70
Min Cloud Cover, %	38	2	4	26	41	45	46
Max Prob. of Precip., %	0	0	0	0	3	10	31
Max Prob. of Thunder, %	0	0	0	0	1	2	2
Max RH, %	93	89	86	83	76	86	89
Min RH, %	68	53	45	52	43	52	61
Max Dew Point, °F	40	44	43	46	39	38	39
Min Dew Point, °F	34	39	36	41	32	32	35

Hourly Table

Day of week:	Thursday 11/4												Friday 11/5				
Time:	12PM	1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM	10PM	11PM	12AM	1AM	2AM	3AM	4A
Temperature (°F):	34	39	42	44	44	44	44	44	43	43	42	42	42	42	43	42	4
Wind Chill, °F:	33	37	41	44	45	44	42	41	38	38	36	36	36	36	37	36	3
Wind Speed (mph):	7	8	9	9	9	9	8	8	8	9	9	10	12	12	12	12	1
Wind Gust (mph):	7	8	14	14	15	15	15	14	15	16	18	18	18	18	17	18	2
Wind Direction (°):	140	160	170	170	160	160	160	150	160	160	170	170	170	170	170	170	17
Prob. of Precip. (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prob. of Thunder (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Precip. Amount (in.):	0.00			0.00							0.00					0.00	
Snow (in.):	0.0			0.0							0.0					0.0	
Ice (in.):	0.00			0.00							0.00					0.00	
Dew Point (°F):	34	37	38	38	39	39	39	39	39	39	39	40	40	39	39	39	3
RH (%):	90	81	73	68	68	71	76	79	86	86	89	93	93	89	86	89	8
Sky Cover (%):	50	83	63	56	50	63	55	42	38	39	46	50	51	56	55	50	5

Seven-day forecast information is provided in a tabular format. The **Weekly Summary** provides a breakdown of maximum and minimum values over a 24-hour period and the **Hourly Table** provides a breakdown of hourly forecast values. You can also see if your location is highlighted in a Severe Thunderstorm or Excessive Rainfall risk (not shown).



Scroll to the bottom of the page to view the hourly forecast in a graphical format. Click on the **Configure Plot Order** or **Configure Plot Look** buttons to customize the graphs (not shown). By hovering your mouse over an individual graph, you can see specific numerical forecast and timing information.

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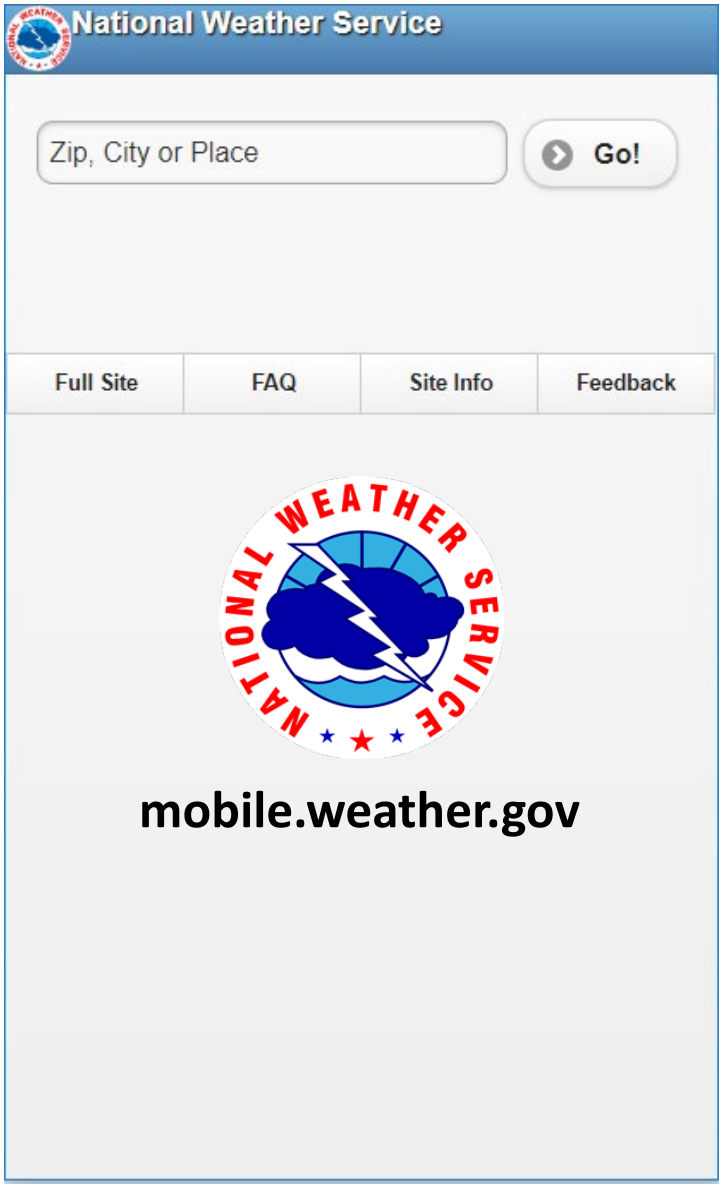
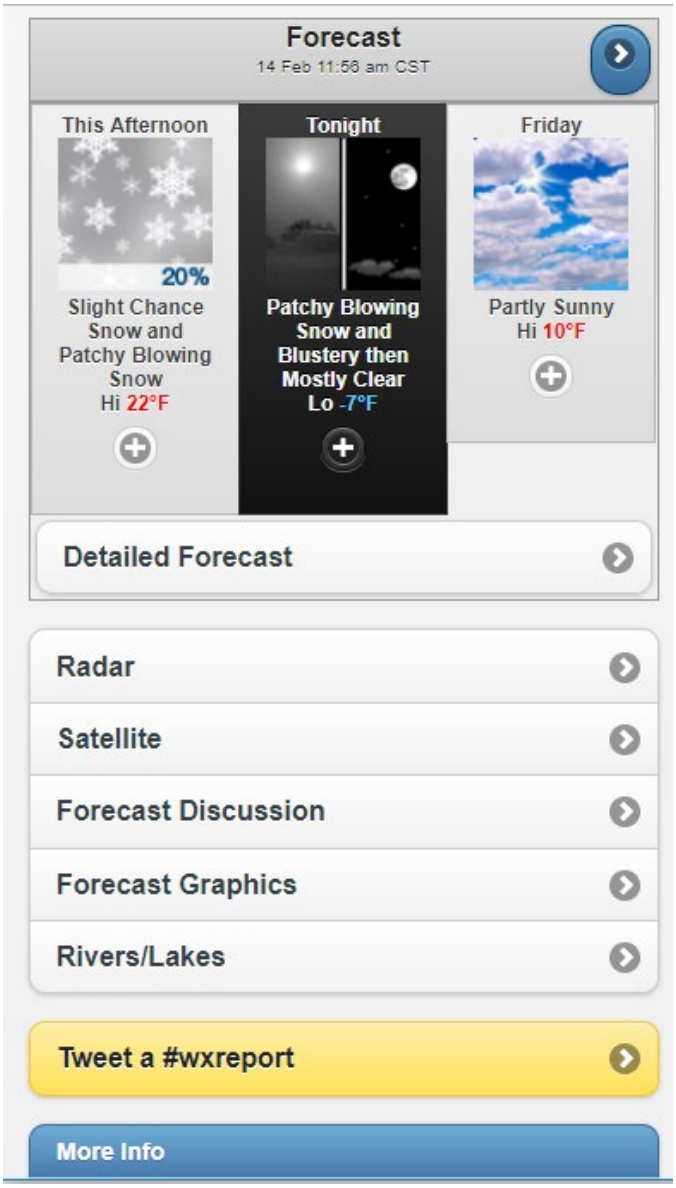
National Weather Service Mobile

www.mobile.weather.gov

The NWS does not operate a mobile app. Numerous third-party weather apps are available on various mobile platforms. We encourage you to find one that works for you. Otherwise, you can point your mobile browser (e.g. Chrome, Safari) to mobile.weather.gov for a mobile friendly version of the main NWS website.





Enter your zip, city, or place and click **Go!** for current conditions, forecast, and warning information. Then, place an icon (bookmark) on your home screen for easy future access.

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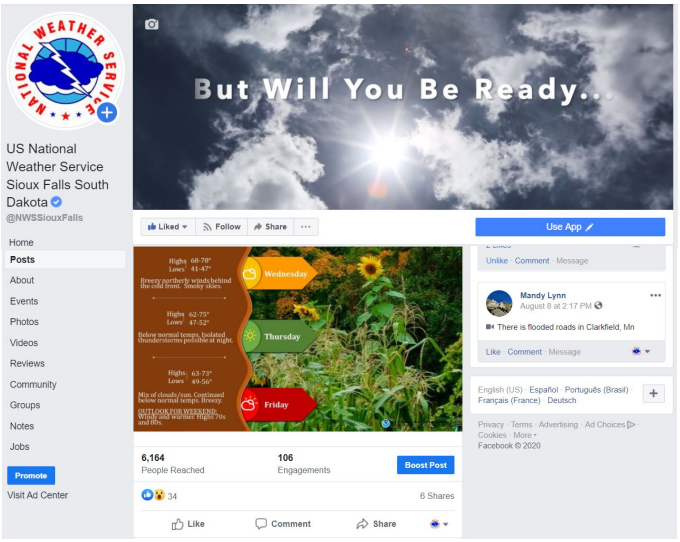
Social Media

The NWS is very active on social media, specifically Facebook, Twitter, and YouTube. Every shift, we have one forecaster dedicated to posting to and monitoring our accounts.

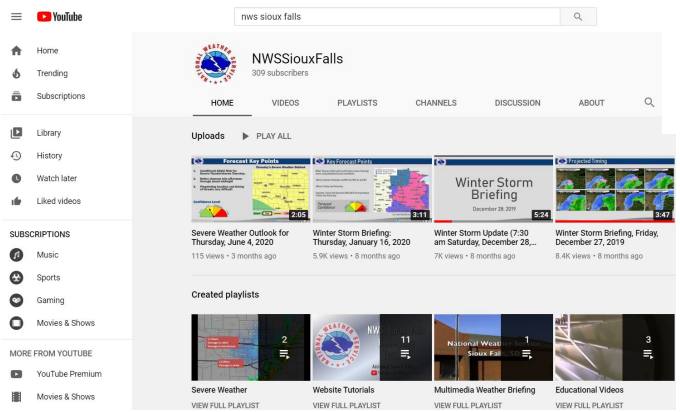


Search for NWS Sioux Falls and "Like"

Weather stories, forecast graphics, and preparedness information are most often shared on Facebook. The platform also provides a great way for partners and the general public to share real time severe weather reports and pictures.

Search for @NWSSiouxFalls and "Follow"

Quick-changing real-time information is most often shared on Twitter. As with Facebook, the platform provides a way for partners and the general public to interact with forecast staff.



Search for NWS Sioux Falls and "Subscribe"

Recordings of weather briefings and education-based videos are posted to YouTube.

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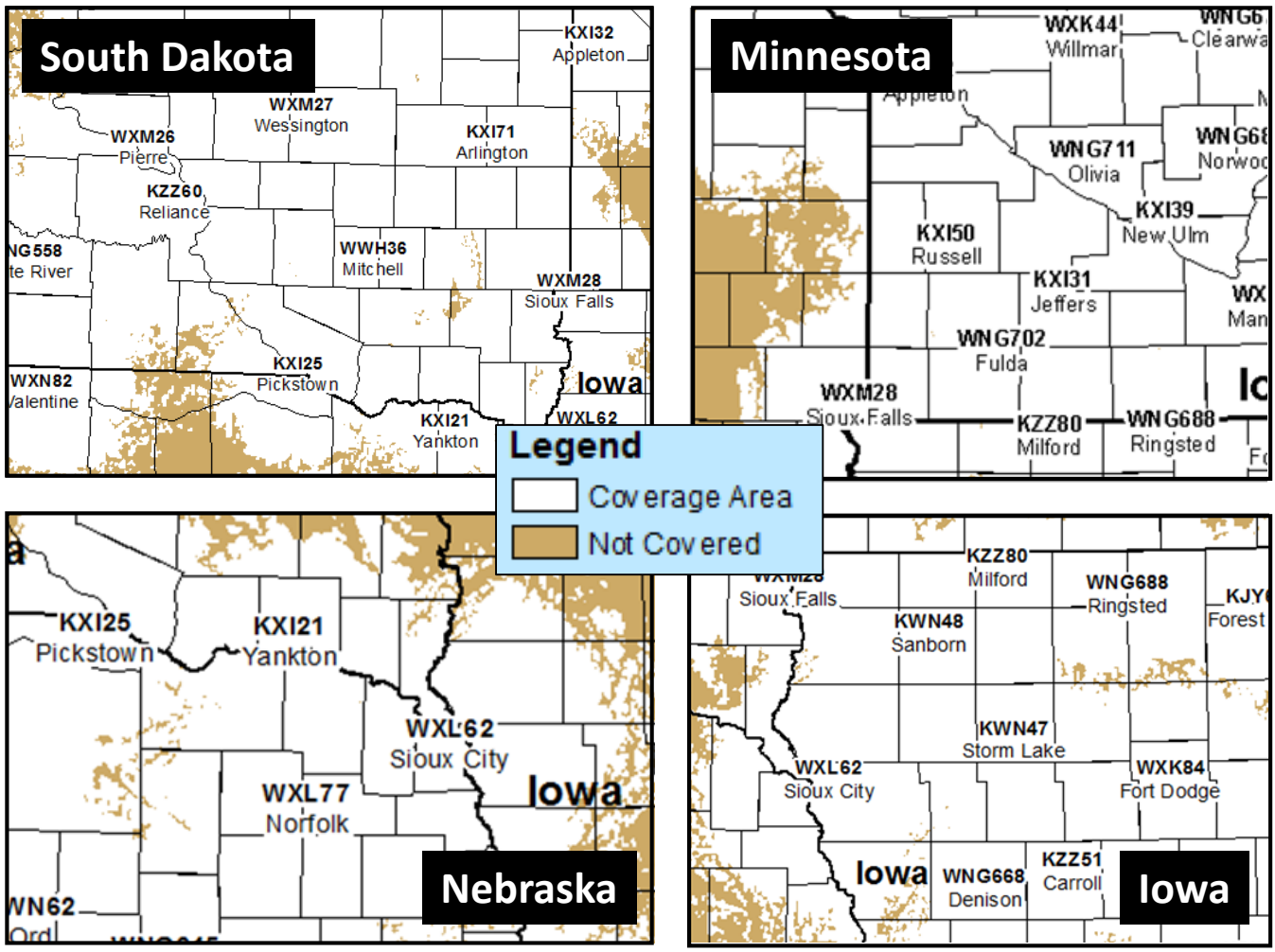
NOAA All Hazards Weather Radio

www.weather.gov/nwr

The NWS in Sioux Falls maintains 13 radio transmitters, providing continuous live broadcasts of current conditions, forecasts, watches, warnings, and advisories.

Specially-built radios can be tuned to one of seven frequencies (listed below) to monitor the broadcast. In addition, radios enabled with Specific Area Message Encoding (SAME) technology can be programed to automatically alert for warning, watch, or other non-weather emergencies for user-defined counties.



162.400	162.425	162.450	162.475	162.500	162.525	162.550

To learn more about radio receivers, click here.
Click here to view coverage maps.
To look-up county frequencies and SAME codes, click here.

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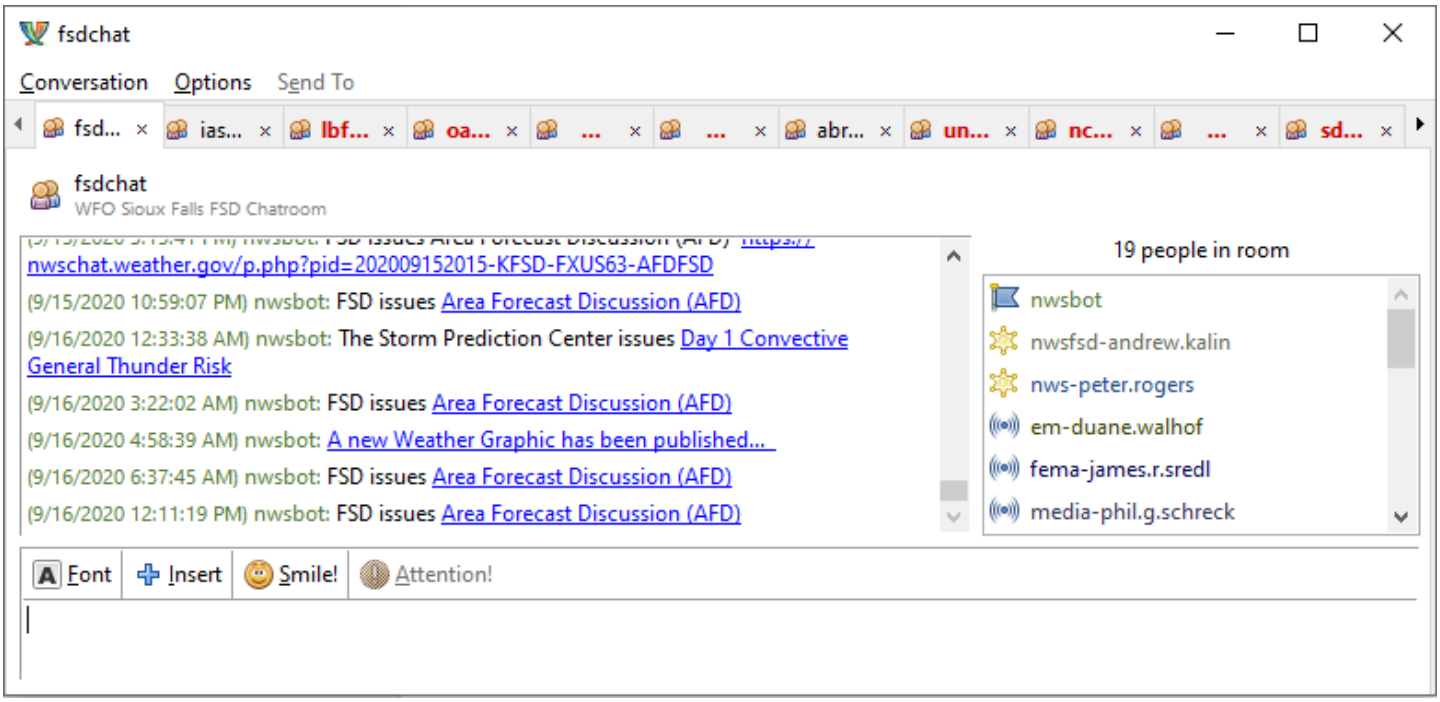
NWSChat

nwschat.weather.gov

NWSChat is a desktop-based Instant Messaging program utilized by NWS forecasters to share critical warning decision expertise and other types of significant weather information. It also provides a forum for partner questions and direct interaction with forecasters. NWSChat is available to emergency managers, government partners, and the media. It is NOT open to the general public.



To request a NWSChat account, click here.
For information on supported chat clients, installation, and configuration, click here.
NWSChat can be accessed here without the installation of a chat client.

Interactive NWS (iNWS)

inws.ncep.noaa.gov

Interactive NWS (iNWS) is a mobile alerting system that allows you to receive customized text messages and/or email alerts for NWS products important to you. As with NWSChat, iNWS is only available to emergency managers, government partners, and the media. To register for iNWS, click the **Register** button in the upper right-hand-corner of this site.

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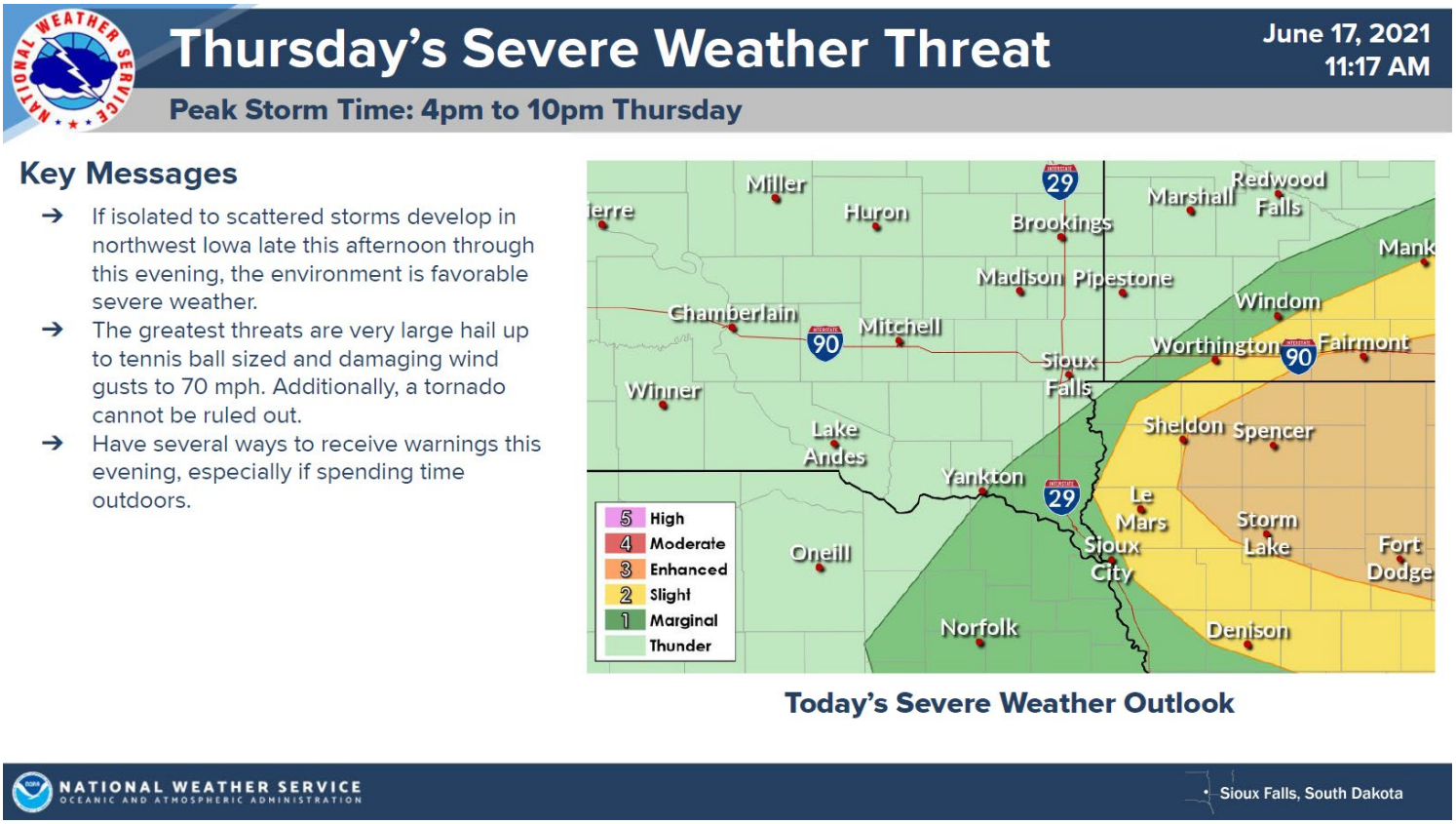
Decision Support Packets

Prior to and during high-impact weather events, the NWS will issue twice-a-day (approximately 2-5 AM and 2-5 PM) Decision Support Packets in the form of a shareable PDF. You will automatically receive these reports in your email inbox. They are also sent to school superintendents and state-level transportation officials, but you are encouraged to set up automatic forward filters to notify other local officials or interested organizations. When in effect, the Decision Support Packet can also be accessed from our website, highlighted by the bright yellow box in the upper right-hand-corner or at this direct link.



To fill the 12-hour information gap between Decision Support Packets, we will oftentimes send brief Status Update emails to highlight any changes to the current conditions or forecast. You can also monitor our website or social media for the latest information.

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Wireless Emergency Alerts (WEA)

The NWS partners with the Federal Communications Commission (FCC) and the Federal Emergency Management Agency (FEMA) to send life-saving messages to mobile devices using Wireless Emergency Alerts (WEA). WEA is a public safety system that allows customers who own compatible mobile devices to receive geographically targeted, text-like messages alerting them of imminent threats to safety in their area.

Weather alerts transmitted via WEA:

Tornado Warnings (TOR)
Severe Thunderstorm Warnings* (SVR)
Flash Flood Warnings** (FFW)
Snow Squall Warnings (SQW)

*Only SVRs with 2.75” hail or larger and/or 80 mph or greater wind will transmit over WEA.

**Only FFWs with CONSIDERABLE or CATASTROPHIC damage tags will transmit over WEA.

WEA reception is dependent on the mobile device and the service provider. WEA 2.0 allows for 360 character messages and Spanish language capabilities. WEA 3.0 adds carrier geotargeting within 0.1 miles of the warning polygon.

Non-Weather Emergency Messages

Non-weather emergency messages (NWEMs) include (but are not limited to) Civil Emergency Messages, 911 Telephone Outage Emergency Messages, and Evacuation Messages. In the event you do not have the capacity to send NWEMs to FEMA’s Integrated Public Alert Warning System (IPAWS), the NWS can transmit the message on your behalf. Contact the NWS office in Sioux Falls for more information.

NOTE: The NWS is not authorized to transmit NWEMs to IPAWS and IPAWS is the sole conduit to WEA. Therefore, NWEMs will not activate WEA and will only be transmitted across the NOAA All Hazards Weather Radio and the Emergency Alert System (EAS).

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Special Event Support

The NWS can provide Impact-Based Decision Support for planned special events, such as outdoor concerts, county fairs, and regional sporting events. Support will differ from event to event, but can include onsite deployments to emergency operations centers or remote assistance in the form of phone calls, online webinars, and email briefings. An Active Weather Watch will be conducted for ALL supported events, meaning our office will give you a heads-up call if a hazard meeting pre-determined thresholds is expected to impact your event.

A formal request is REQUIRED to receive this level of support. The request must be made by you or some other public safety official that will be within close proximity to the event. In general, support will NOT be provided to private event organizers or other non-safety personnel. To request support, fill out this Google Form.

Weather Support Request for Events - NWS Sioux Falls

** FOR OFFICIAL GOVERNMENT SUPPORT ONLY **

-- Please refrain from using Microsoft Internet Explorer and use other browsers such as Google Chrome, Mozilla Firefox, etc. --

Use this form to request NWS weather support for a vulnerable outdoor event. If immediate weather support is needed, please contact the National Weather Service directly.

NWS weather support is designed for those events that as an EM you feel are particularly vulnerable to weather due to location, size or nature of the event. The NWS is committed to providing decision support services on behalf of the EM community in order to help support public safety. After submitting a request for weather support, you will be contacted by your NWS office to clarify specifics of the event and services to be provided.

NWS weather support services for an event includes:
* The NWS will contact the event POC as requested with a weather briefing.
* The NWS will maintain a constant weather watch for the event in support of public safety.
* If hazardous weather will impact the event, the NWS will contact the POC as requested.
* The POC is also encouraged to contact NWS at any time for updated weather information.
* All event information will be available to NWS forecasters for analysis and awareness.

Requests can be made at any time, but the more advanced notice, the better, especially if onsite deployments are necessary. Once we receive your request and the event is approved, one of our forecasters will reach out to you to verify details of the event and the level of support needed.

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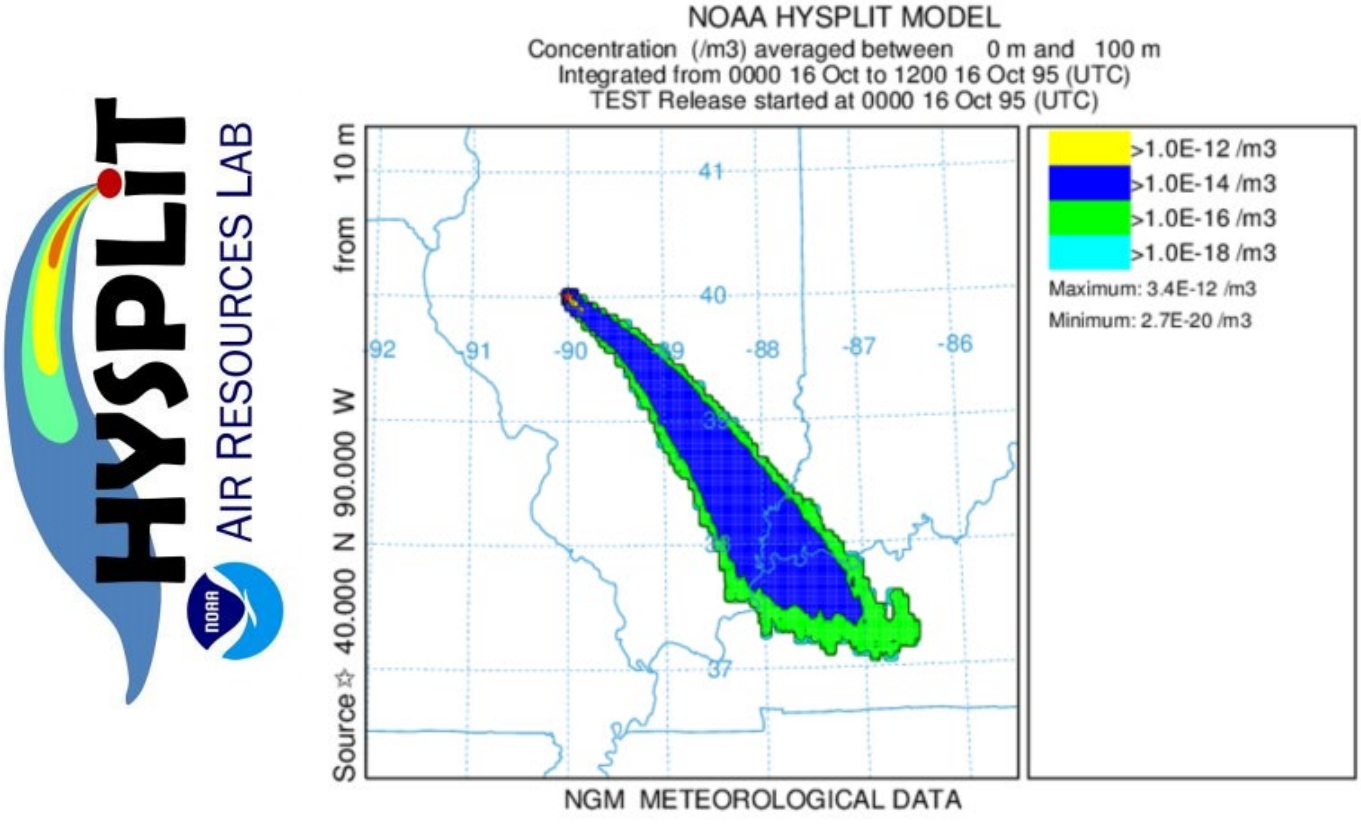
Unplanned Decision Support

The NWS stands ready to provide Impact-Based Decision Support for unplanned emergencies. Examples include train derailments, hazardous chemical spills, and aircraft accidents.

Most support will be provided remotely in these situations, although an onsite deployment may be necessary for long-term emergencies. In cases that result in large-scale chemical or smoke plumes, the NWS can run a specialized model called HYSPLIT. Integrating high-resolution weather model data, HYSPLIT output can show you where the plume is most likely to travel over time. Output graphics are emailed directly to you and can support emergency services and potential evacuation decisions.

Model output is available in GIF, PDF, KMZ, or GIS shape file formats. To provide the best information possible, a forecaster will ask you for the specific location, size and/or height of the release, start/end times of the release, and type of contaminant if known.



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Damage Surveys

Damage surveys may be needed to determine the extent and severity of damage incurred by a severe weather event. Surveys provide detailed ground truth to complement spotter reports and radar data. While most often conducted for tornadoes, damage surveys may also be done for extreme wind (i.e. derecho) and widespread large hail events.

NWS Damage Survey

You can request a damage survey at any time. Otherwise, surveys will generally be conducted when one or more of the following occur:

- There are reports of fatalities or injuries and damage is suspected to be from a tornado.
- EF2 or greater damage is suspected.
- EF1 damage is suspected AND results in property loss (i.e. more than crops or trees).
- Widespread 100+ mph straight line wind is suspected.
- The event results in significant property damage.
- The event results in significant media coverage.
- There is uncertainty about the cause of damage.

There may be occasions where time, resources, or other extraneous circumstances do not allow for a damage survey. In these instances, we may reach out to you for information or ask if you can survey the damage and send pictures to the office.

NOTE: Aerial photography/videography can prove very useful in damage surveys. The NWS does not own or operate drones, but if you have access to such resources, please let us know if they can be used in this capacity.

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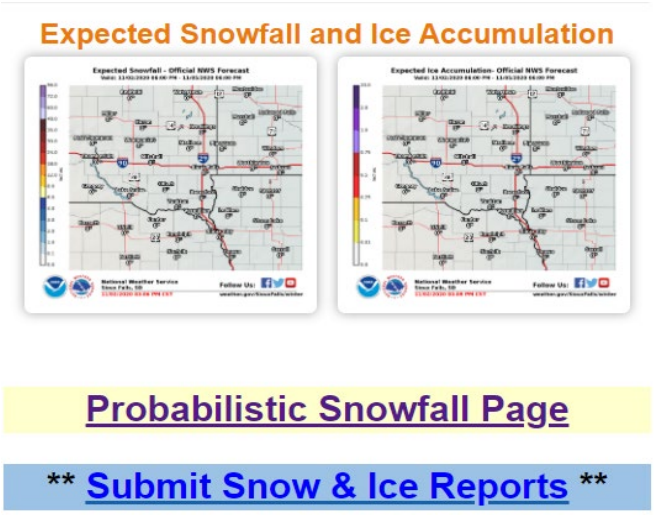
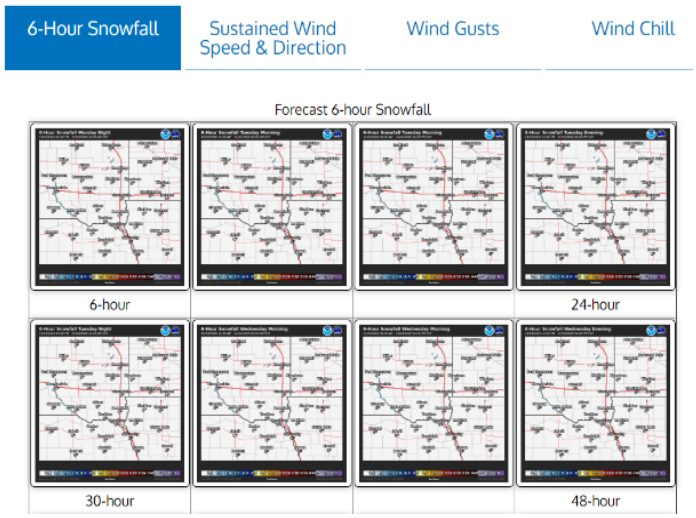
Winter Weather Page

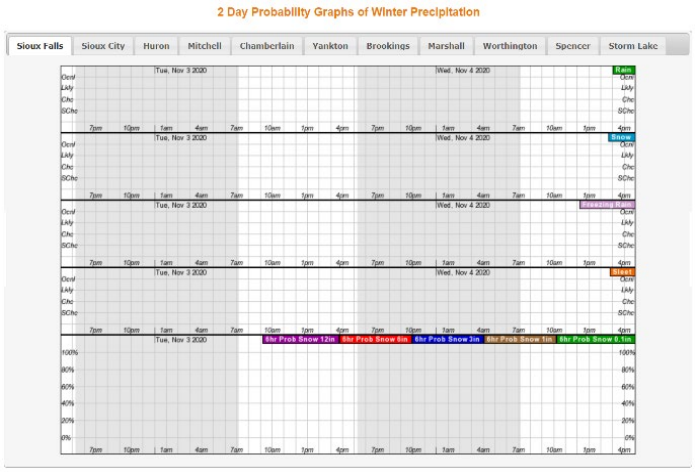
The NWS in Sioux Falls maintains a Winter Weather Page featuring several commonly used winter weather forecast resources.



The official snow and ice forecast can be found at the top of this webpage. The NWS currently produces snow and ice forecasts out to 72 hours. Additional probabilistic information can be found by clicking the Probabilistic Snowfall Page link (more information on pgs. 14 & 15. Reports are also appreciated and can be submitted by clicking the Submit Snow & Ice Reports link.



Various forecast elements (snow, wind, and wind chill) over a larger spatial area are displayed in 6 hour time increments for the first 72 hours of the forecast period. This can help provide timing information of when the heaviest snow or strongest winds are expected. This also gives an areal perspective of how the forecast for a certain location compares to nearby locations.



Similar to the hourly graphs discussed on pg. 3, this webpage also has precipitation type probabilities which are shown for several predefined locations across our region.

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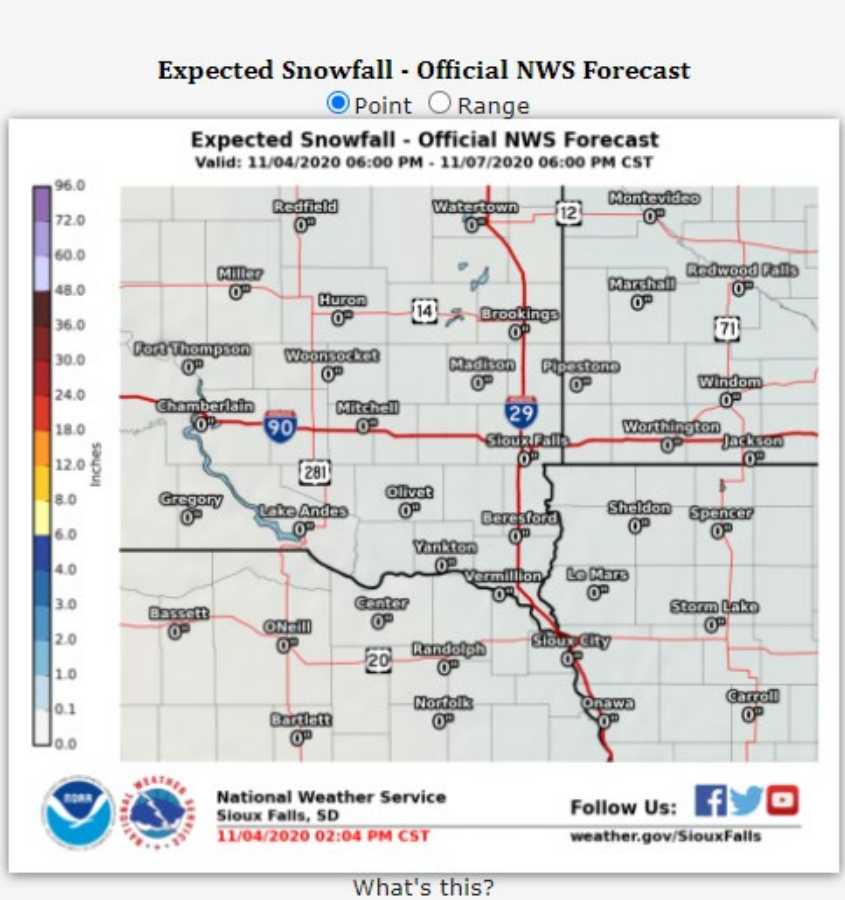
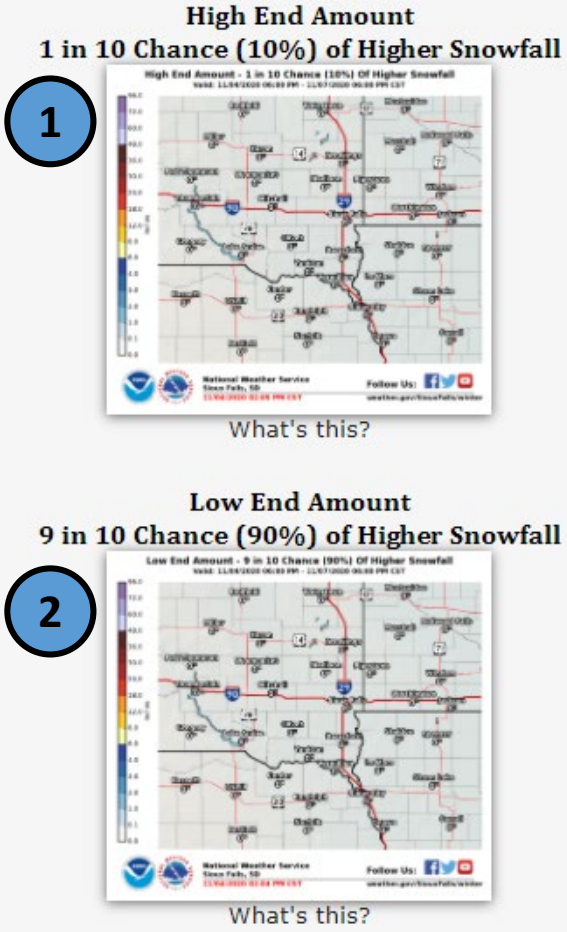
Probabilistic Snowfall Page

A relatively new product produced by the NWS includes probabilistic forecasts for snow and ice. This information may be helpful for contingency planning and to help you understand the “range of possibilities” rather than simply the “most likely” official deterministic forecast.





1 The **High End Amount** can generally be thought of as a reasonable upper-end amount for potential snowfall totals. Based on all of the forecast data, there is only a 10% chance that snowfall totals will exceed the displayed values. In other words, there is a 90% chance snowfall totals will be less than the numbers displayed.

2 The **Low End Amount** can generally be thought of as a reasonable lower-end amount for potential snowfall totals. Based on all of the forecast data, there is only a 10% chance that snowfall totals will be below the displayed values. In other words, there is a 90% chance snowfall totals will be greater than the numbers displayed.

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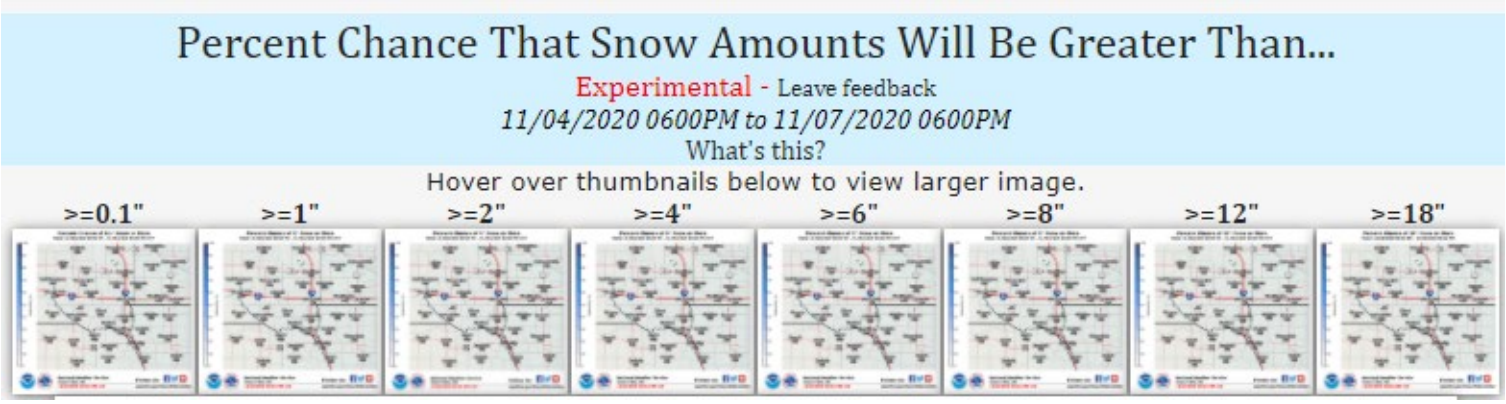
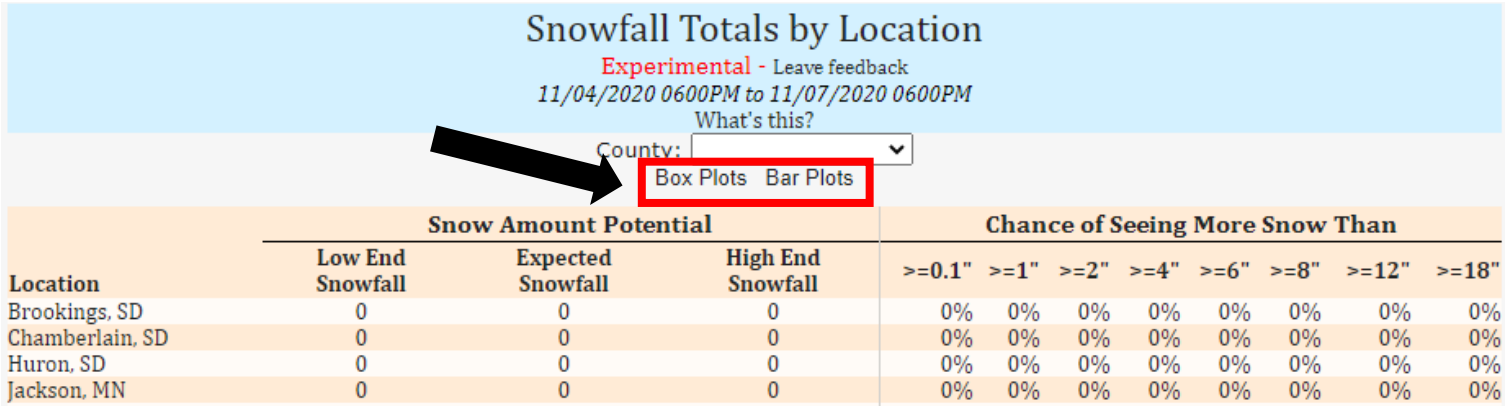
Probabilistic Snowfall Page (Cont.)

There are other ways of looking at probabilities also shown further down on the Probabilistic Snowfall webpage.



The middle section of the webpage shows the percent chance of receiving snowfall totals greater than several pre-defined threshold amounts (0.1, 1, 2, 4, 6, 8, 12, 18 inches). This information may be useful if certain forecast snow amount thresholds trigger a different response in your operations or preparation.



Location	Snow Amount Potential			Chance of Seeing More Snow Than							
	Low End Snowfall	Expected Snowfall	High End Snowfall	>=0.1"	>=1"	>=2"	>=4"	>=6"	>=8"	>=12"	>=18"
Brookings, SD	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%
Chamberlain, SD	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%
Huron, SD	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%
Jackson, MN	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%

Near the bottom of a webpage, a tan-colored chart shows the percent chance that a given city will see greater than a certain threshold of snow. You will also notice a “Box Plots” and “Bar Plots” link just below the county dropdown box. These provide additional ways to visualize probabilistic forecast data for individual cities.

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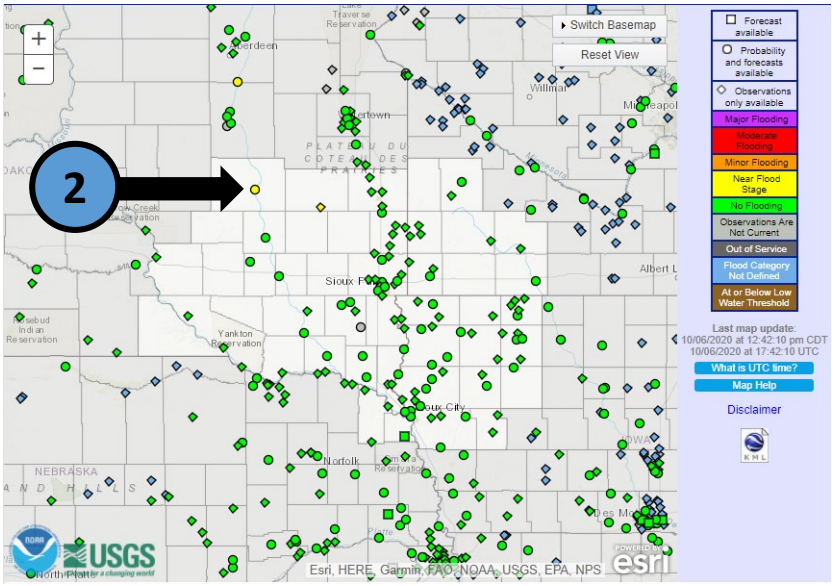
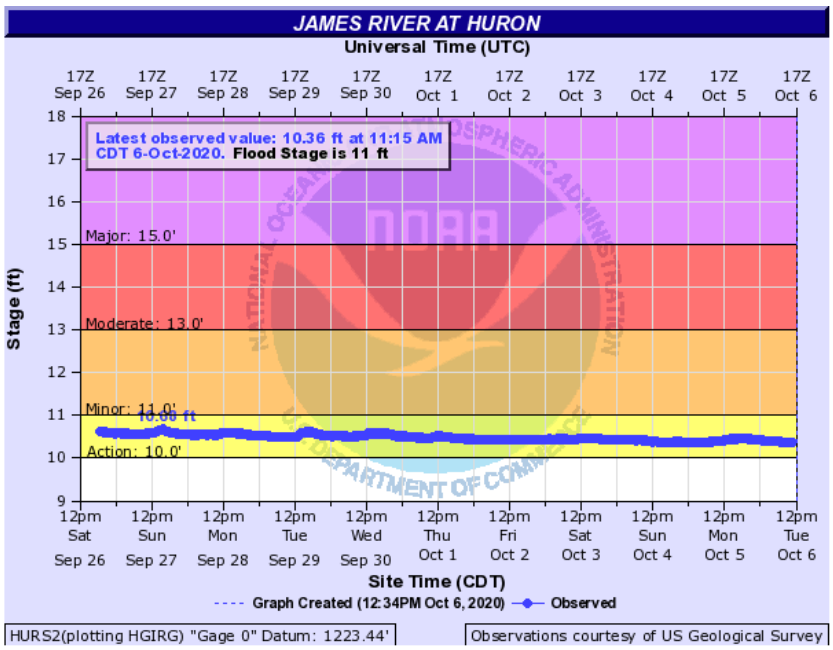
Advanced Hydrologic Prediction Service (AHPS)

The NWS in Sioux Falls works closely with the U.S. Geological Survey and state governments to operate and monitor dozens of river gauges across the region. Water level forecasts are made for many of these locations during active flooding. Follow the steps below to find the river gauges nearest to you.



Step 1: Go to the NWS Sioux Falls website and click “Rivers and Lakes” near the top of the page.

Step 2: Click on the river gauge closest to your location. Circle icons include observations, forecasts, and probabilities, square icons include observations and forecasts, and diamond icons only include observations.



A hydrograph will be displayed showing the latest stage observations in blue and forecast information in maroon (not shown). The color bars represent the different flood categories - orange (minor), red (moderate), and purple (major).

Scrolling farther down the page will reveal gauge metadata, crest information, and impact levels.

For a more in-depth tutorial on this page, please watch this short video.

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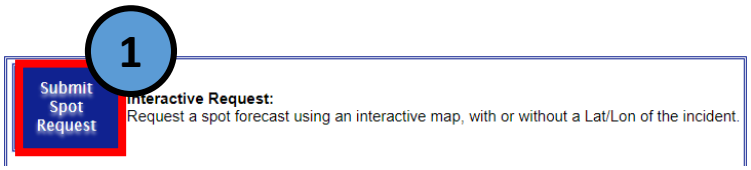
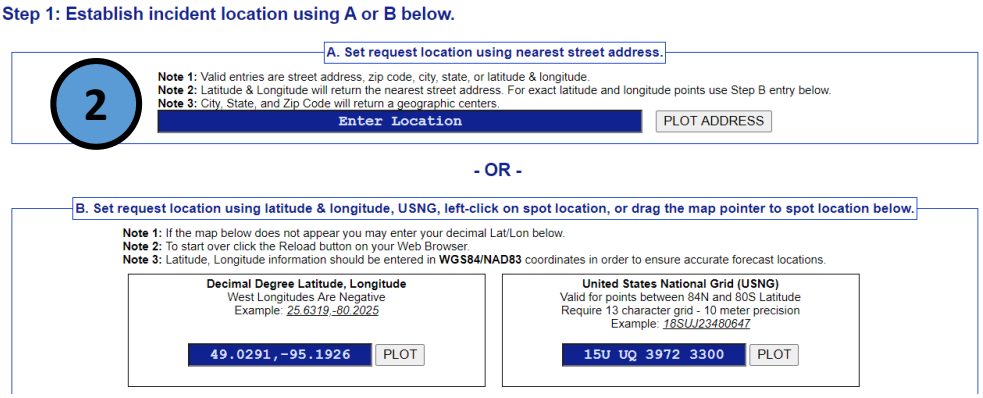
Fire Weather

The NWS in Sioux Falls works closely with state and federal partners to provide products and services aimed at reducing property loss and injury or death related to wildland fires. The peak seasons for wildland fires in the Sioux Falls service area are April through May (between snowmelt and green-up) and late August through November (between cured fuels and new snowfall). During these times, the NWS issues twice-a-day Fire Weather Forecasts, highlighting important parameters, such as the mixing height, transport winds, smoke dispersal, and Grassland Fire Danger Index. During critical fire weather conditions (i.e. gusty winds, low humidity, and dry fuels), a Red Flag Warning may be issued. More information on these products may be found here.

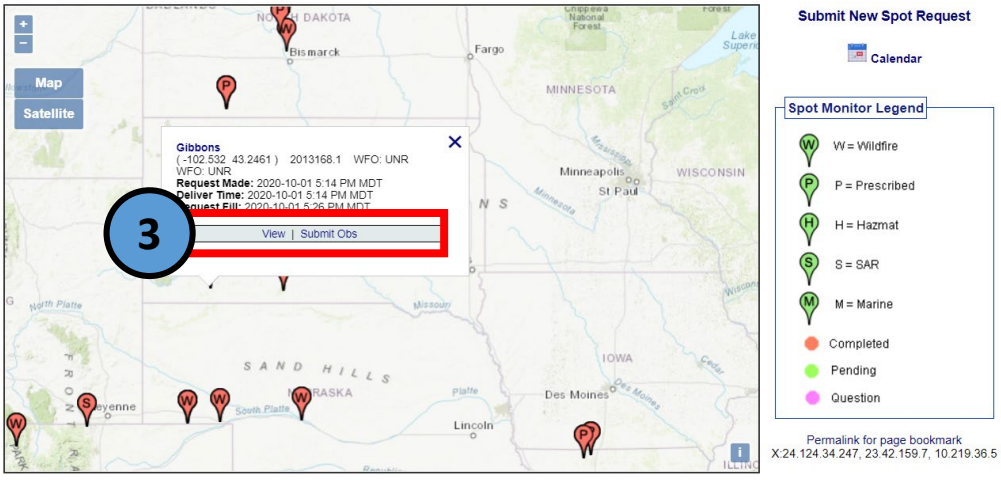
Prior to a planned prescribed burn or during an unplanned wildland fire, state and federal officials may request a Spot Forecast. Follow the steps below to submit an official request.



Step 1: Go to the Spot Forecast Request website and click “Submit Spot Request.”



Step 2: Fill out the required information, scroll to the bottom of the page, and click “Generate A Spot Request.”



Step 3: After roughly 30 minutes, go to the Spot Forecast Monitor website, and click on your spot location. Click “View” in the pop-up bubble to retrieve your forecast. You may also submit observations through this interface.

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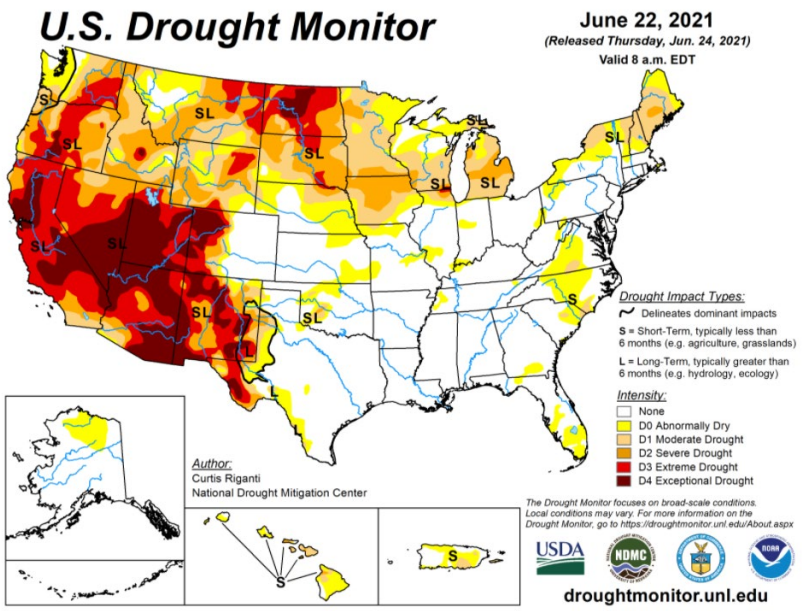
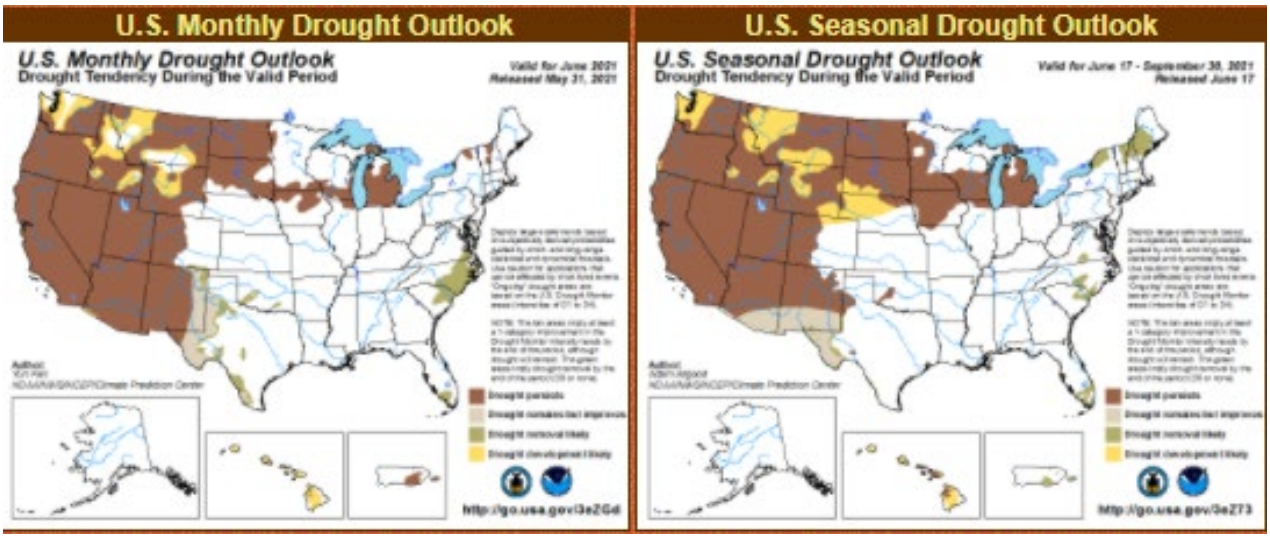
Drought

The United States Drought Monitor is jointly produced by the Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln, the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Department of Agriculture (USDA). It is updated weekly on Thursday, showing what parts of the United States are in drought. There are five classifications: abnormally dry (D0), moderate (D1), severe (D2), extreme (D3), and exceptional (D4). Additional information can be found here.



Category	Description	Possible Impacts	Ranges				
			Palmer Drought Severity Index (PDSI)	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Drought Indicator Blends (Percentiles)
D0	Abnormally Dry	Going into drought: • short-term dryness slowing planting, growth of crops or pastures Coming out of drought: • some lingering water deficits • pastures or crops not fully recovered	-1.0 to -1.9	21 to 30	21 to 30	-0.5 to -0.7	21 to 30
D1	Moderate Drought	• Some damage to crops, pastures • Streams, reservoirs, or wells low, some water shortages developing or imminent • Voluntary water-use restrictions requested	-2.0 to -2.9	11 to 20	11 to 20	-0.8 to -1.2	11 to 20
D2	Severe Drought	• Crop or pasture losses likely • Water shortages common • Water restrictions imposed	-3.0 to -3.9	6 to 10	6 to 10	-1.3 to -1.5	6 to 10
D3	Extreme Drought	• Major crop/pasture losses • Widespread water shortages or restrictions	-4.0 to -4.9	3 to 5	3 to 5	-1.6 to -1.9	3 to 5
D4	Exceptional Drought	• Exceptional and widespread crop/pasture losses • Shortages of water in reservoirs, streams, and wells creating water emergencies	-5.0 or less	0 to 2	0 to 2	-2.0 or less	0 to 2

The Climate Prediction Center issues monthly and seasonal drought outlooks. They are updated once per month and can be viewed here. These products provide users with information on whether drought conditions are expected to persist, remain, but improve, dissipate, or develop. Click on the individual graphic to access the text-based outlook.



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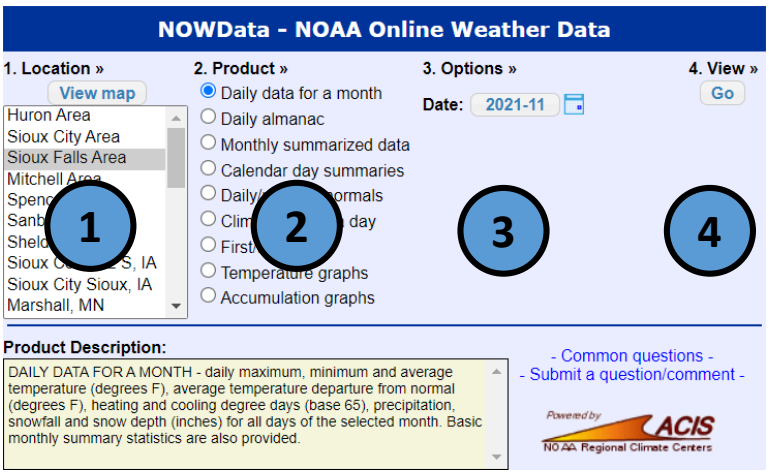
Climate

The NWS in Sioux Falls issues daily climate reports (including records) for Sioux Falls, Sioux City, Mitchell, and Huron. Observed data for a selection of other cities across the region can be viewed at this website. Some of this information may be delayed.



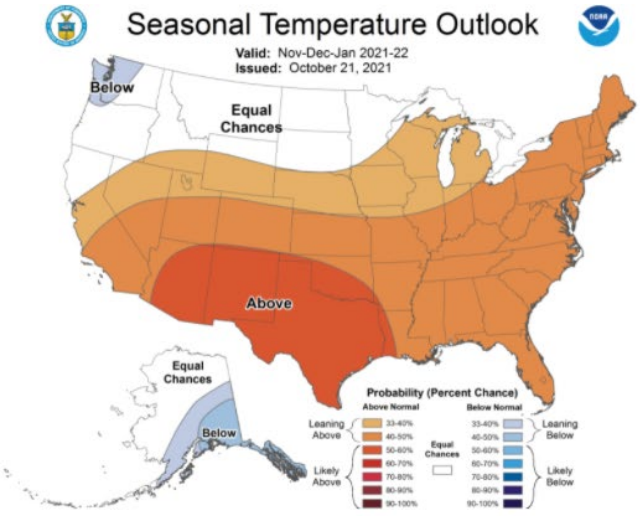
Step 1: Use the scroll bar to select your location.

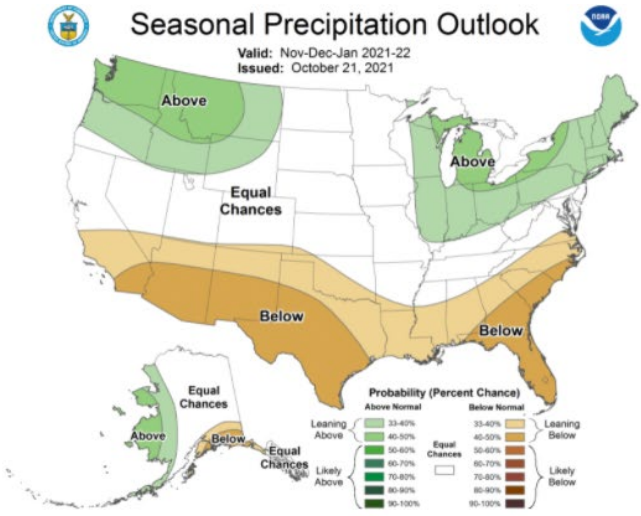
Step 2: Select the product. Descriptions of these products are provided in the yellow box at the bottom of the page.

Step 3: Select the desired options for each product as applicable.

Step 4: Click View.

Seasonal and sub-seasonal climate outlooks are provided by the Climate Prediction Center (CPC) in College Park, MD. These outlooks focus on temperature and precipitation signals over a number of different time scales, including 6-10 day, 8-14 day, Week 3-4, One Month, and Three Month.





NWS climate databases are dependent on volunteer observations. These observations are collected through the NWS Cooperative Observers Program or the Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS). Please contact the NWS Sioux Falls Observation Program Leader, Jeff Chapman, at jeffrey.chapman@noaa.gov or by calling 605-330-4247 for more information.

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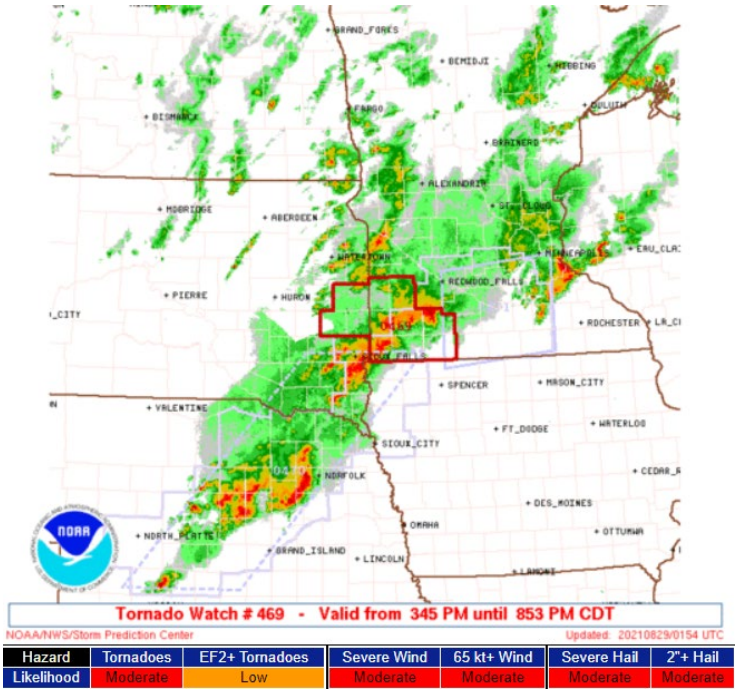
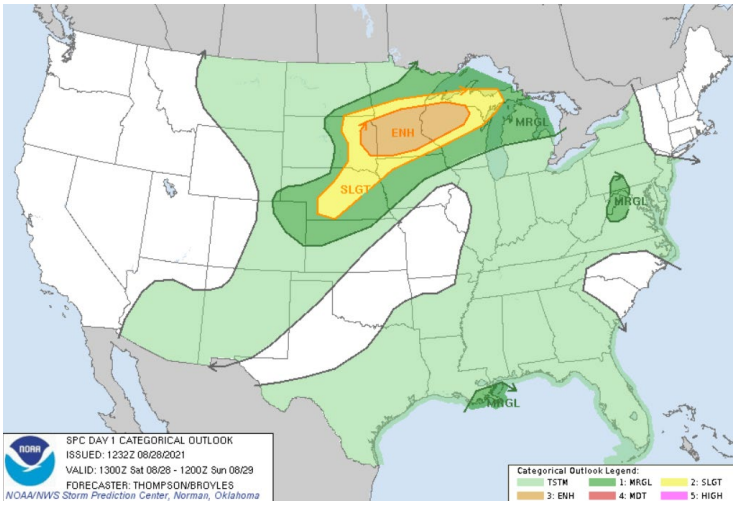
NWS National Centers

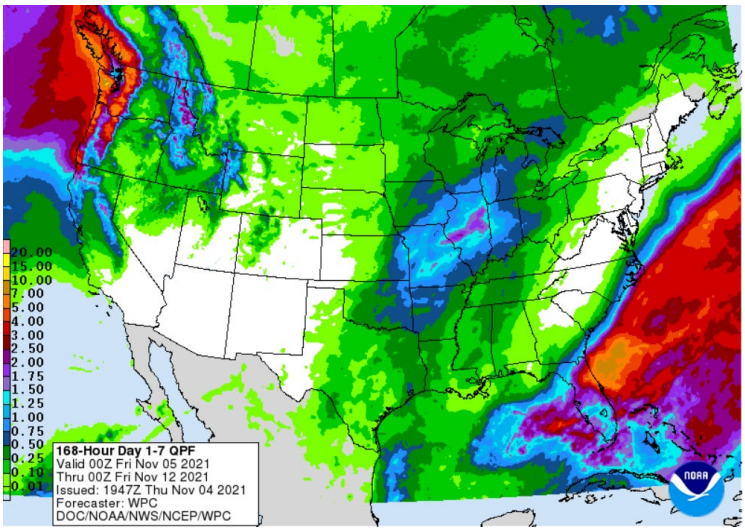
The NWS in Sioux Falls works closely with multiple National Centers across the country. The Storm Prediction Center (SPC) in Norman, OK is responsible for issuing convective watches (e.g. tornado, severe thunderstorm) and outlooks. The Weather Prediction Center (WPC) in College Park, MD is responsible for issuing quantitative precipitation forecasts (e.g. rain/ snow) and Excessive Rainfall Outlooks.

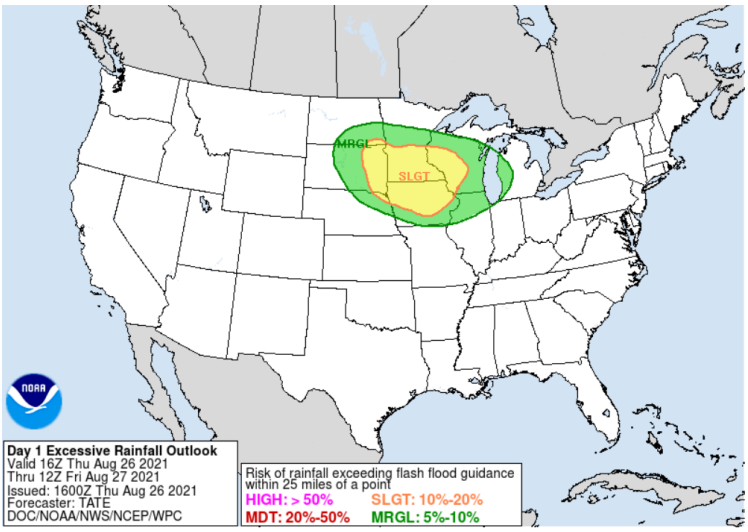
Sample SPC Products





Sample WPC Products





Feel free to visit the websites for both National Centers as there is a treasure-trove of additional forecast and outlook information that can aid in your decision-making process.

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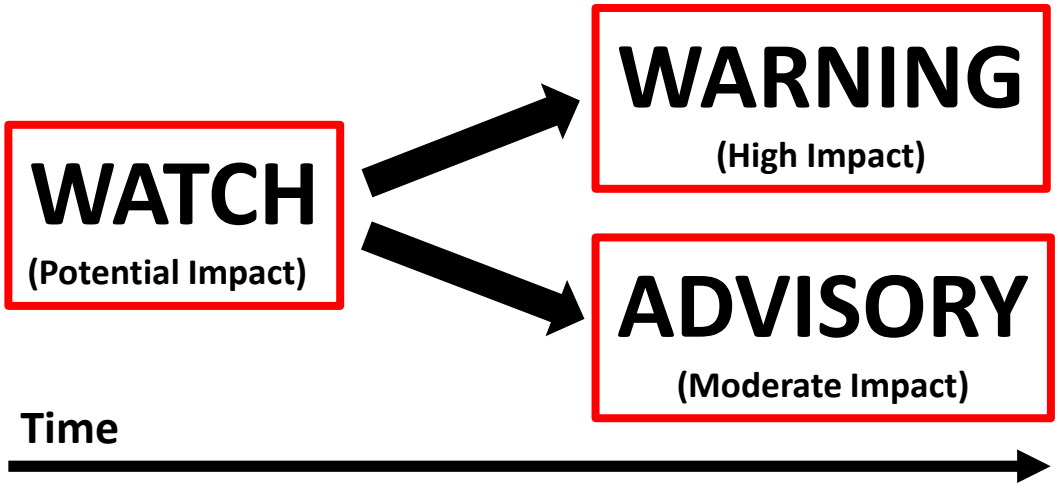
NWS Summer Headline Definitions

The NWS issues dozens of headlines to alert users of active watches, warnings, and advisories. Each headline has specific criteria that must be met prior to issuance. Listed below are common headlines and their respective criteria during the summer months.

Headline	Criteria
Severe Thundersorm Watch	Environment is favorable for severe thunderstorms, but occurence, location, and timing are uncertain
Severe Thunderstorm Warning	Hail 1 inch diameter or greater OR Wind 58 mph or greater
Tornado Watch	Environment is favorable for tornadoes, but occurence, location, and timing are uncertain
Tornado Warning	Radar indicated OR observed tornado
Flash Flood Watch	Environment is favorable for flash floods, but occurence, location, and timing are uncertain
Flash Flood Warning	Extreme radar rainfall estimates OR observed flash flood
Flood Watch	Environment is favorable for floods, but occurence, location, and timing are uncertain
Flood Warning (Areal)	Flooding away from rivers and not directly attributed to a flash flood
Flood Warning (River)	Water levels reach or exceed minor flood stage at pre-determined locations
Excessive Heat Watch	Environment is favorable for excessive heat, but occurence, location, and timing are uncertain
Heat Advisory	Maximum heat index is 100 degrees or higher
Excessive Heat Warning	Maximum heat index is 105 degrees or higher AND Minimum heat index is 75 degrees or higher AND Conditions are met for at least 48 hours



IMPORTANT:

Not all warnings and advisories are preceded by a watch.

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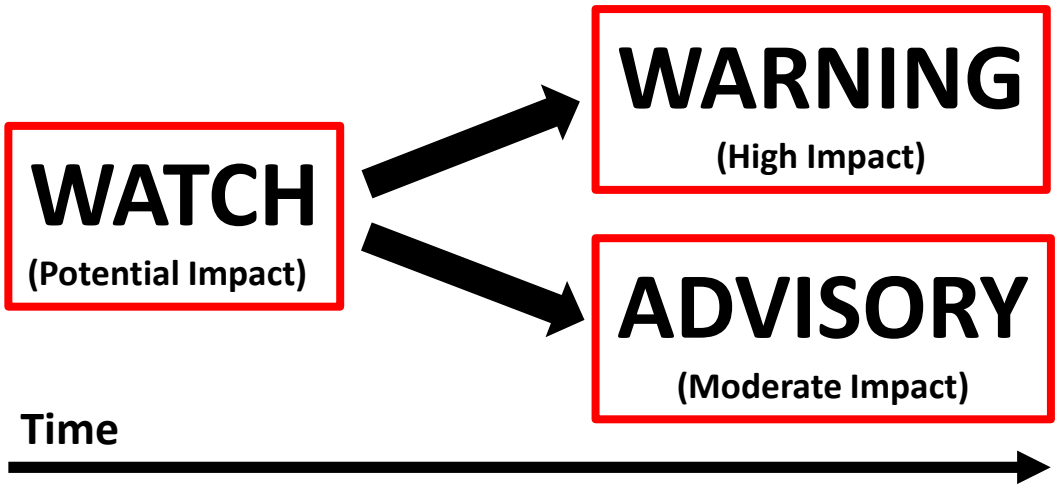
NWS Winter Headline Definitions

The NWS issues dozens of headlines to alert users of active watches, warnings, and advisories. Each headline has specific criteria that must be met prior to issuance. Listed below are common headlines and their respective criteria during the winter months.

Headline	Criteria
Winter Storm Watch	50% or greater chance that winter storm conditions may occur within the next 24 to 72 hours
Winter Weather Advisory	3-5 inches of snow in 12 hours OR Ice accumulation less than 1/4 inch OR Visibility 1/2 mile or less due to blowing/drifting snow OR Combination of snow, sleet, and freezing rain below warning thresholds
Winter Storm Warning	6 or more inches of snow in 12 hours OR 8 or more inches of snow in 24 hours
Blizzard Warning	Frequent sustained wind/gusts 35 mph or greater AND Visbility 1/4 mile or less due to blowing/drifting snow AND Conditions persist for three hours or longer
Ice Storm Warning	Ice accumulation 1/4 inch or greater
Snow Squall Warning	Visibility 1/4 mile or less in snow (1 hour or less) with sub-freezing road temperatures Plunging temperatures behind Arctic front sufficient to produce flash freezes
Wind Chill Advisory	Wind chills 25 to 34 below zero
Wind Chill Warning	Wind chills 35 below zero or colder



IMPORTANT:

Not all warnings and advisories are preceded by a watch.

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NWS Other Headline Definitions

The NWS issues dozens of headlines to alert users of active watches, warnings, and advisories. Each headline has specific criteria that must be met prior to issuance. Listed below are common headlines and their respective criteria that are either independent of season (i.e. Dense Fog Advisory) or generally issued in the Spring or Fall (i.e. Freeze Warning or Red Flag Warning).

Headline	Criteria
Dense Fog Advisory	Visibility 1/4 mile or less due to fog over a widespread area
Wind Advisory	Sustained wind 30 mph or greater (1 hour or more) OR Wind gusts 45 mph or greater
Blowing Dust Advisory	Visibility 1/4 mile or less due to blowing dust over a widespread area
High Wind Warning	Sustained wind 40 mph or greater (1 hour or more) OR Wind gusts 58 mph or greater
Fire Weather Watch	High potential for the development of a Red Flag Warning event within 24 to 48 hours
Red Flag Warning	20-ft sustained wind 20 mph or greater OR 20-ft wind gusts 30 mph or greater AND Relative humidity 25 percent or less (20 percent for south-central SD) Grassland Fire Danger Index (GFDI) should be "Very High" or "Extreme" AND Conditions persist for at least 2-3 hours
Freeze Watch	Environment is favorable for a widespread freeze, but occurence, location, and timing are uncertain
Frost Advisory	Widespread minimum temperatures in the mid 30s during the growing season AND Sufficient low level moisture, clear skies, and light wind to favor frost development
Freeze Warning	Widespread minimum temperatures below 32 degrees during the growing season

For the definitions of other commonly used words or phrases that you may encounter when viewing NWS products and services, please visit the NWS Glossary.

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Severe Weather Awareness Training

Every Spring from about mid-March through April, the NWS conducts in-person severe weather awareness training for emergency services personnel and the general public. Topics covered include:

- NWS products and services
- Watches, warnings, and convective outlooks
- Severe weather hazards and safety
- Scientific conceptual models
- Spotter basics (i.e. what to look for) and reporting procedures
- Other related topics

It is our goal to reach every county (or neighboring county) once every two to three years. We encourage you to work with other counties to increase the number of times we can visit your area. Virtual classes are also offered for those that cannot attend an in-person class.

Classes are scheduled on a first-come-first serve basis and are normally held in the evenings Monday through Thursday at 7:00 PM. The class is two hours long with a 10-15 minute break. You will receive an email each January soliciting your interest in hosting a class. As classes are scheduled, they will be made publically available on this website.

Non-routine classes can also be scheduled as requested. Please reach out to NWS Sioux Falls Warning Coordination Meteorologist Peter Rogers for more information.

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StormReady

www.weather.gov/StormReady

StormReady is a program administered by the NWS to help arm communities with the communication and safety skills needed to save lives and property – before, during, and after a hazardous weather event.

StormReady communities include counties, cities, Indian nations, universities, military bases, government sites, and other commercial enterprises.

Communities wishing to become StormReady must work closely with their local NWS office and submit an official application that is valid for 6 years. Requirements include:

- Establish a 24-hour warning point and emergency operations center.
- Have more than one way to receive severe weather warnings and to alert the public.
- Create a system that monitors weather conditions locally.
- Promote the importance of public readiness through community seminars.
- Develop a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises.

Weather Ready Nation Ambassadors

www.weather.gov/wrn/ambassadors

The Weather Ready Nation (WRN) Ambassador initiative is NOAA's effort to formally recognize partners who are improving the nation's readiness, responsiveness, and overall resilience against extreme weather, water, and climate events. Any organization wishing to participate can submit an official application. Working closely with their local NWS office, WRN Ambassadors must commit to:

- Promoting WRN messages and themes to their stakeholders.
- Engaging with NOAA personnel on potential collaboration opportunities.
- Sharing their success stories of preparedness and resiliency
- Serving as an example by educating employees on workplace preparedness.

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Tri-State Emergency Management Association

The Tri-State Emergency Management Association is an affiliation of NWS Sioux Falls officials and local emergency managers across southeast South Dakota, southwest Minnesota, and northwest Iowa. The group meets quarterly to network, share best practices, and discuss issues related to hazardous weather and emergency management.

There is a $20 annual membership fee that goes toward lunch at the November meeting, normally held at Grand Falls Casino near Larchwood, IA.

For more information about the association or to inquire about membership, please contact any one of the following individuals:

Tri-State Emergency Management Association President
Paul Johnson – Cottonwood County, MN Emergency Manager
507-832-8255 or paul.johnson@co.cottonwood.mn.us

Tri-State Emergency Management Association Secretary/Treasurer
Tawn Hall – Nobles County, MN Emergency Manager
507-295-5212 or thall@co.nobles.mn.us

Tri-State Emergency Management Member at Large
Peter Rogers – NWS Sioux Falls, SD Warning Coordination Meteorologist
605-330-4247 or peter.rogers@noaa.gov

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Important Contacts and Websites

24/7/365 Operations Line: 605-330-4247

Meteorologist in Charge – management/personnel inquires:
Todd Heitkamp, 605-330-4247 x642 or todd.heitkamp@noaa.gov

Warning Coordination Meteorologist – service/outreach/warning inquires:
Peter Rogers, 605-330-4247 x726 or peter.rogers@noaa.gov

Science Operations Officer – science/training inquires:
Phil Schumacher, 605-330-4247 x766 or phil.schumacher@noaa.gov

Service Hydrologist – hydrology/flooding inquires:
Mike Gillispie, 605-330-4247 x493 or michael.gillispie@noaa.gov

Electronic Systems Analyst – radar/ASOS/weather radio inquires:
Barry Loy, 605-330-4247 or barry.loy@noaa.gov

NWS Main Website – http://www.weather.gov
National forecast/warning information – click on region of the map to access local page.

NWS Sioux Falls Website – http://www.weather.gov/siouxfalls
Local forecast/warning information – click on map to access site-specific forecast.

Weather Prediction Center (WPC) – http://www.wpc.ncep.noaa.gov
National weather maps, precipitation forecasts, and winter weather products.

Storm Prediction Center (SPC) – http://www.spc.noaa.gov
National convective outlooks, watches, mesoscale discussions, and storm reports.

Climate Prediction Center (CPC) – http://www.cpc.ncep.noaa.gov
National climate outlooks and drought/hazards information.

Advanced Hydrologic Prediction Service (AHPS) – https://www.water.weather.gov/precip/
National hydrologic and flood information.

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