



Cover Photo Credit:

IA HSEMD

Picture taken 4/4/2019 along I-29 between Hwy 34 and Hamburg.

The Weather Whisper

Iowa Historic 2019 Flooding

Chad Hahn, Warning Coordination Meteorologist

March and April 2019 will be remembered by many Iowans for historical flooding along the Missouri and Mississippi Rivers. In fact, as of April 30th, the Mississippi River was threatening 1993 levels at a few locations near the Quad Cities. In mid-March, Missouri River levees were breached causing flood waters to devastate communities along the Interstate 29 corridor south of Omaha. The Quad Cities area saw their own impacts as temporary barriers failed flooding downtown Davenport on April 30th.

A number of factors led to the conditions that were ripe for overland and river flooding across the state of Iowa in Spring 2019. The first and most significant contributing factor was the **record-breaking snow that fell during February** (Image 1). During that 28-day stretch portion of northern Iowa received 30 to 40 inches, with over 50 inches falling in places across northern Wisconsin.

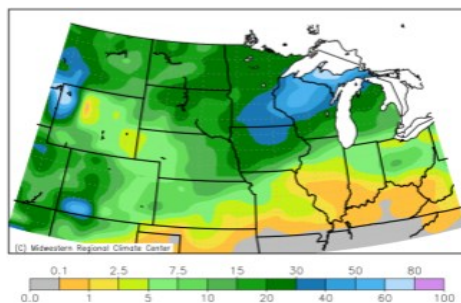


Image 1: Snowfall (inches) for February 2019.

**click to view larger*

The second contributing factor was the colder than normal conditions observed February into the first half of March across the high plains and upper Midwest (Image 2). In addition to delaying onset of snowmelt by a few weeks, the deep frost depth left the ground impenetrable to rainfall.

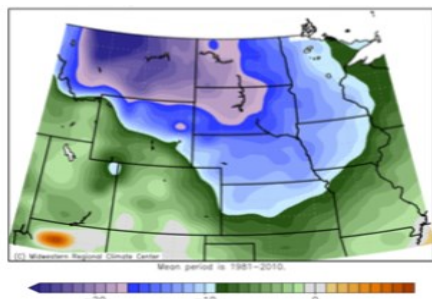


Image 2: Average Temperature (F) - Departure from Mean for Feb 1, 2019—March 13, 2019.

**click to view larger*



Image 3: 24-hour Snow Water Equivalent Change (snowmelt) ending March 14th. **click to view larger*

The flooding trigger for the Missouri River was a historically strong storm system that impacted much of the mid-west. This very strong storm system developed across Colorado on March 13th, lifting northeast through the plains and Iowa on the 14th and 15th. Within two days, virtually all of the snowpack that existed across eastern Nebraska and Iowa had melted (Image 3) and added to the widespread 1-3 inches of rain that fell across this same area on March 12-14th (Image 4).



Image 4: Total accumulated precipitation (in) ending March 13, 2019.

**click to view larger*

These conditions set the stage for widespread springtime flooding. The strong storm system and rain that fell on top of the deep snowpack triggered the widespread flooding that occurred across Iowa during the second half of March and continued through all of April. The deep snowpack across the upper Midwest continues to produce major flooding along the Mississippi River in eastern Iowa as of April 24th. Additional crests are anticipated through the first week of May.

Severe Weather Awareness Week 2019

Brooke Hagenhoff, Meteorologist

Iowa Governor Kim Reynolds, Iowa Homeland Security and Emergency Management, and the National Weather Service designated March 25 through March 29 as Severe Weather Awareness Week. Each day during Severe Weather Awareness Week, the National Weather Service in Des Moines covered severe weather topics.

Daily topics through the

week focused on severe thunderstorms, receiving warning information, tornadoes, family preparedness, and flooding.

Wednesday's subject of Tornadoes included a statewide tornado drill, with the issuance of a test watch an warning. Many counties and local jurisdictions took this opportunity to test outdoor warning sirens and their tornado safety plans.

As we enter storm season across Iowa, brush off your preparedness plans. Do you have multiple ways to receive warnings - *including while you're asleep?* Do you know where the best shelter is at work, school, home, or when outdoors? Taking steps to prepare yourself now will help reduce stress and shorten your response time should severe weather strike.

Spotter Training Wrap Up

Brooke Hagenhoff, Meteorologist

Since late February, NWS Des Moines staff have crisscrossed central Iowa presenting training sessions focused on understanding thunderstorm characteristics and identifying storm features. Spotters play an important role in the warning process by supplying ground truth information in addition to the environmental and radar data that NWS staff use in making warning decisions. Radar data can become limited as distance from the radar increases, with the beam widening and the beam height increasing, mak-

ing it difficult to see details in the lower levels of storms. Real-time spotter reports help to fill the gap and provide ground truth information about storms. Sometimes this information can make the difference between a warning or no warning.

While training is wrapping up for this season, spotters can still access training materials available on our website (<https://www.weather.gov/dmx/stormspotting>).

Storm spotters can make reports to the NWS Des Moines office in a num-

ber of ways:

- **Phone** at 800-SKYWARN (759-9276)
- **Online** at <https://inws.ncep.noaa.gov/report/>
- Via **Facebook** ([US National Weather Service Des Moines IA](#))
- Via **Twitter** ([@NWSDesMoines](#))
- **Email** at dmx.spotterreport@noaa.gov
- Via a **smartphone app** ([mPING](#))
- **Text message** (SMS) at (515) 240-5515

BEFORE THE BIG STORM

CREATE A FAMILY DISASTER PLAN

Who to call
Where to meet
What to pack

WHO TO CALL

- Immediate Family Members
- Grandparents
- Neighbors
- Other relatives and friends (out of town)

WHERE TO MEET

- Local Landmark

WHAT TO PACK

- Water
- Non-perishable Food
- Medical Supplies

WWW.READY.GOV
WEATHER.GOV/SAFETY
Building a Weather-Ready Nation

TORNADO AWARENESS

What's the difference?

WATCH VS WARNING

NWS Des Moines

TORNADO WATCH	TORNADO WARNING
Environment Suitable for Tornadoes	Tornado is Occurring or Imminent
Know Where to Take Shelter	Seek Shelter Immediately!
Stay Weather Ready	Monitor Latest Warning Updates
Covers Large Area	Covers a Small Area
Hours Long	Minutes Long

NWS Des Moines



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