

Iowa Weather and Its Impact

Has Iowa's weather had an impact on how Iowans live?

Weather and climate both deal with the same conditions but in a different way. Weather measures what happens over a short period of time — a day or up to a week. How warm will it be, will it rain or snow, will it be windy? These are conditions that the daily weather report tries to predict. Climate is the average of weather conditions over decades or even centuries. Climate addresses average temperatures in the spring or the rainfall that one might expect in August based on past records.

Iowa and Its Seasons

The climate in Iowa has four seasons — winter, spring, summer and fall. Within each season, however, temperatures and precipitation (rain, snowfall, hail or sleet) can vary significantly from day to day. Because Iowa's history is so closely tied to agriculture, weather is a significant concern. Corn, soybeans and garden vegetables rely on rainfall and sunshine to mature. Cattle and sheep depend on the growth of grass and other pasture crops. Even Iowans not engaged in farming listen to the weather report to know how to dress for the day or to plan outdoor activities. If you listen to Iowans greeting each other, the weather is often one of the first topics they discuss.

While there are rarely extreme differences in weather patterns across the state, there are frequently some variations. Northern Iowa, especially the northwest, tends to be colder in the winter than southern Iowa. Southeast Iowa receives on average more rainfall each year than the northwest. In the spring, flowers may bloom two or three weeks earlier in southern communities than along Iowa's border with Minnesota. Leaves turn color earlier in the north.

Extreme Weather

Iowa experiences its share of extreme weather conditions. Tornadoes are rapidly whirling columns of air that may or may not touch ground. When they do, they can cause devastation and even fatalities. Tornadoes are most likely in Iowa in the spring and early summer, but they can develop through fall months as well. A cyclone also brings very strong winds but over a larger area and without the whirling columns of a tornado.

A blizzard is marked by heavy snowfall and driving winds. The word "blizzard" is the creation of a newspaper editor in Estherville, O.C. Bates, who made it up to describe a late snow storm in 1871. Heavy rainfalls over a short period may cause Iowa's rivers to flood their banks. In recent years, 1993 and 2008 recorded devastating floods.

Because of the importance of weather, the government has created the National Weather Bureau in 1890 to track weather conditions across country. A professional who studies weather conditions is called a meteorologist. Scientists are now claiming that temperatures all over the earth are warming up slightly but significantly because humans are burning gasoline, coal and other fuels that give off gasses that trap heat within the atmosphere. This process is called global warming. We may not notice differences in day-to-day weather but if warming continues, what we know of Iowa's climate today may not be the same a hundred years from now.

Supporting Questions

What are some of the notable weather events that have impacted Iowa and its citizens?

- ["Tornado Rips Oelwein" Newspaper Article, May 16, 1968 \(Document\)](#)
- ["Outstanding Iowa Storms" Essay from *The Annals of Iowa*, 1970 \(Document\)](#)
- ["Iowa Under Siege" Newspaper Articles, June 10, 2008 \(Document\)](#)
- ["Yep, This Year's Drier than '88" Newspaper Article, August 1, 2012 \(Document\)](#)

How has Iowa's weather affected Iowans?

- [Cabinet Card of Relics from Cherokee-Pomeroy Tornado near Aurelia, Iowa, 1893 \(Image\)](#)
- [Portrait of 6-Month-Old Baby Carried by Cherokee-Pomeroy Tornado, 1893 \(Image\)](#)
- [Iowa Public Television's "The Dust Bowl," 1979 \(Video\)](#)
- [Iowa Public Television's "Midwest Farm Fields Devastated by Floods," 2008 \(Video\)](#)

What have Iowans done in response to Iowa's extreme weather?

- [Men Placing Sandbags to Reinforce Dikes during a Flood in Council Bluffs, Iowa, 1952 \(Image\)](#)
- [Iowa Public Television's "Iowa After the 2008 Parkersburg Tornado," 2008 \(Video\)](#)
- ["Cedar Rapids Flood Buyout is History" Newspaper Article, September 14, 2014 \(Document\)](#)
- [NPR's "MAP: FEMA Is Buying Out Flood-Prone Homes, But Not Where You Might Expect," October 20, 2014 \(Image\)](#)

[*Printable Image and Document Guide](#)

Additional Resources

["City in Iowa Rebuilds From Flooding but Remains Vulnerable" Newspaper Article:](#) This *New York Times* newspaper article by John Eligon focuses on the recovery of eastern Iowa five years after horrific and destructive flooding.

[Peoples' Weather Map](#)

The Peoples' Weather Map (PWM) is a web-based map of severe weather stories in Iowa (U.S.). On the map, users can explore historical and recent severe weather events, through words and images, in individual counties. PWM's emphasis is, in fact, stories rather than data, but the map also provides users links to weather hazard and climate data to explore. Through videotaped interviews, PWM introduces some of Iowa's climate scientists.

["Snowstorms and Iowa's High School State Basketball Tournaments" Facts:](#) This factsheet created by the National Weather Service focuses on the snowfall and extreme weather that typically happens the last two weeks of March, which is typically when the Iowa high school basketball state tournament occurs.

["The Top Five Iowa Floods":](#) This National Weather Service report looks at the first worst floods to ever occur in Iowa. They were selected as follows: 1) 1993 (Statewide), 2) 2008 (Eastern Iowa), 3) 1851 (Des Moines River Basin), 4) July 4, 1876 (Rockdale), 5) 1965 (Mississippi River), 6) 1952 (Missouri River).

“Tornado Rips Oelwein” Newspaper Article, May 16, 1968



Courtesy of The Oelwein Daily Register, Mahoney, Mike, “Tornado Rips Oelwein,” *The Oelwein Daily Register*, Vol. 61, No. 164, 16 May 1968

Description

This is a newspaper article published in *The Oelwein Daily Register* on May 16, 1968, that details the story of a destructive F-5 tornado that ravaged Oelwein, Charles City and Maynard, Iowa. The tornado killed four people in Oelwein and caused an estimated \$10 to \$30 million dollars of damage.

[Full Transcript of “Tornado Rips Oelwein”](#)

[Transcribed Excerpts from “Tornado Rips Oelwin”](#)

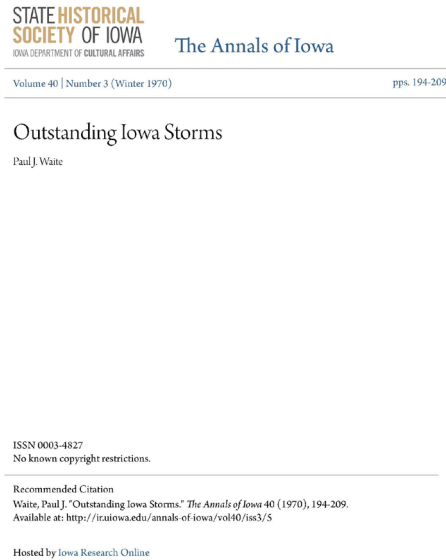
Text-Dependent Questions

- In what ways did this tornado impact the infrastructure of the city of Oelwein? What textual evidence can you use to describe the extent of the damage?
- What was the governor’s reaction to the situation? Did any of his comments surprise you? Why or why not?
- Using the text, as well as the photos and the captions, how devastating was this tornado to the city of Oelwein? Do you think that this tornado dramatically impacted its citizens? If so, how?

Citation Information

Mahoney, Mike, “Tornado Rips Oelwein,” *The Oelwein Daily Register*, Vol. 61, No. 164, 16 May 1968. Courtesy of The Oelwein Daily Register

“Outstanding Iowa Storms” Essay from *The Annals of Iowa*, 1970



Courtesy of University of Iowa Libraries and Archives, Waite, Paul J, “Outstanding Iowa Storms,” *The Annals of Iowa*, Vol. 40, No. 3, pp. 194-209, 1970

Description

This essay from *The Annals of Iowa*, written by meteorologist Paul Waite, is about noteworthy, weather-related storms in Iowa. Published in 1970, Waite details some of the most significant weather storms (including winter storms, blizzards and tornadoes) that date back to the mid-1800s.

[Full Transcript of “Outstanding Iowa Storms” Essay from *The Annals of Iowa*](#)

[Transcribed Excerpt from “Outstanding Iowa Storms” Essay from *The Annals of Iowa*](#)

Text-Dependent Questions

- What are some of the common characteristics of each noteworthy winter storm/blizzard that Paul Waite mentions?
- What were some of the most significant impacts from the storms as a whole? Do you think this impact would be the same today? Why or why not?
- How do winter storms compare in severity to the other weather events you have read about so far? What similarities exist between winter storms and other weather events?

Citation Information

Waite, Paul J, “Outstanding Iowa Storms,” *The Annals of Iowa*, Vol. 40, No. 3, pp. 194-209, 1970. [Courtesy of University of Iowa Libraries and Archives](#)

“Iowa Under Siege” Newspaper Articles, June 10, 2008



Courtesy of The Cedar Rapids Gazette, Hennigan, Gregg, “Dire Warning Issued for I.C.,” *The Cedar Rapids Gazette*, pp. 1, 6A, 10 June 2008

Description

These 2008 *Cedar Rapids Gazette* articles describe the current and potential flooding in Iowa City and other eastern Iowa communities, as well as how it could impact the University of Iowa campus.

[Full Transcript of “Iowa Under Siege” Newspaper Articles](#)

[Transcribed Excerpts from “Iowa Under Siege” Newspaper Articles](#)

[Printable Excerpt of “Iowa Under Siege” Newspaper Articles](#)

Text-Dependent Questions

- How rare is this level of flooding in Iowa City?
- What factors contributed to the potential of increased flood levels? Could any of these factors have been prevented?
- Using the photo and information from the article, do you think city officials should have just removed the cofferdam to help the water flow faster and alleviate the increased flooding? Do you think your answer would change if you were a resident of Iowa City impacted by the flood? Why or why not?

Citation Information

Heldt, Diane, “Flood-prone UI Adjusting as Classes Start Today,” *The Cedar Rapids Gazette*, pp. 6A, 10 June 2008. Courtesy of The Cedar Rapids Gazette

Hennigan, Gregg, “Dire Warning Issued for I.C.,” *The Cedar Rapids Gazette*, pp. 1, 6A, 10 June 2008. Courtesy of The Cedar Rapids Gazette

Love, Orian, “What Tornado Spared, Water Got,” *The Cedar Rapids Gazette*, pp. 1, 7A, 10 June 2008. Courtesy of The Cedar Rapids Gazette

Smith, Rick, “C.R. Applied Lessons Learned in ‘93 to Handle Record Flooding,” *The Cedar Rapids Gazette*, pp. 1, 7A, 10 June 2008. Courtesy of The Cedar Rapids Gazette

“Yep, This Year’s Drier than ‘88” Newspaper Article, August 1, 2012



Courtesy of The Cedar Rapids Gazette, Love, Orlan, “Yep, This Year’s Drier than ‘88,” *The Cedar Rapids Gazette*, pp. 1, 9A, 1 August 2012

Description

This newspaper article from the August 1, 2012, was published by *The Cedar Rapids Gazette*. It describes the drought of 2012 and compares it to the 1988 drought that significantly impacted farming in Iowa. The article details why the drought occurs, as well as the potential impact to farming compared to 1988.

[Full Transcript of “Yep, This Year’s Drier than ‘88” Newspaper Article](#)

[Transcribed Excerpts from “Yep, This Year’s Drier than ‘88” Newspaper Article](#)

[Printable Excerpt of “Yep, This Year’s Drier than ‘88” Newspaper Article](#)

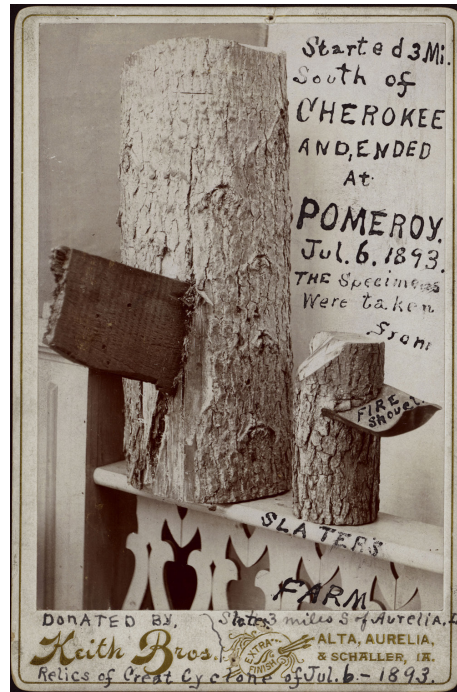
Text-Dependent Questions

- What was the severity of the drought of 2012? How does it compare to the droughts of 1988 and of 1936?
- How did the droughts impact crops? Is this a fair comparison when you look at crop yields during different droughts from different eras? Why or why not?
- How do the droughts of 1988 and 2012 compare in terms of temperatures and precipitation? How do these statistics seem to contradict the information from the article?

Citation Information

Love, Orlan, “Yep, This Year’s Drier than ‘88,” *The Cedar Rapids Gazette*, pp. 1, 9A, 1 August 2012. Courtesy of The Cedar Rapids Gazette

Cabinet Card of Relics from Cherokee-Pomeroy Tornado near Aurelia, Iowa, 1893



Courtesy of State Historical Society of Iowa, Brothers, Keith, "Slater's Farm 3," 1893

Description

This cabinet card photograph shows relics of the 1893 Cherokee-Pomeroy tornado collected from "Slater's Farm," which was located 3 miles south of Aurelia, Iowa.

[Transcript of Cabinet Card Photograph of Relics from Cherokee-Pomeroy Tornado](#)

Text-Dependent Questions

- Describe what you see in this photograph. What does it tell you about the power of a tornado?
- How does this picture show the potential dangers of a tornado?
- What emotions do you feel when you look at this photo? How does evidence of a tornado, like this image, impact your thoughts about tornadoes?

Portrait of 6-Month-Old Baby Carried by Cherokee-Pomeroy Tornado, 1893



Courtesy of State Historical Society of Iowa, Collins, J.H., 1893

Description

This cabinet card photograph shows a 6-month-old child who was allegedly carried three-quarters of a mile by the Cherokee-Pomeroy tornado of July 6, 1893.

[Transcript from Portrait of 6-Month-Old Baby Carried by Cherokee-Pomeroy Tornado](#)

Text-Dependent Questions

- Does this child look as if it was carried by a tornado. What do you see in the photo to justify your answer?
- Compare this photo to the [cabinet card photo showing relics of the Cherokee-Pomeroy tornado](#). Which do you think shows a larger impact on Iowans? Justify your answer.

Iowa Public Television's "The Dust Bowl," 1979



Courtesy of Iowa Public Television, "The Dust Bowl," Iowa Heritage Hard Times - Iowa Public Television, 1979

Description

This 1979 video was produced by Iowa Public Television. It focused on the impact of the Dust Bowl on Iowa farms and farmers.

Text-Dependent Questions

- What do you see in the video that would help you to understand why this weather event was called the Dust Bowl?
- Describe the scenes you see during the video. What do these images tell you about the impact of the Dust Bowl on Iowans?
- What do Rose Stoops and Jane Ferris share that would explain what Iowans faced during the Dust Bowl?

Citation Information

"The Dust Bowl," Iowa Heritage *Hard Times* - Iowa Public Television, 1979. [Courtesy of Iowa Public Television](#)

Iowa Public Television's "Midwest Farm Fields Devastated by Floods," 2008



Courtesy of Iowa Public Television, "Midwest Farm Fields Devastated by Floods," Iowa Public Television - Market to Market, 2008

Description

This Iowa Public Television video was produced in 2008 and focused on how Midwestern farm fields were destroyed by severe 2008 flooding. The video also covered how farmers were dealing with the crisis.

Text-Dependent Questions

- What were some of the problems faced by farmers when the 2008 floods impacted their farms?
- What did the state of Iowa request as a result of the 2008 flooding, and how would it assist farmers?
- How were all Iowans impacted by the farm flooding that took place during the summer of 2008?

Citation Information

"Midwest Farm Fields Devastated by Floods," Iowa Public Television - *Market to Market*, 2008. [Courtesy of Iowa Public Television](#)

Men Placing Sandbags to Reinforce Dikes during a Flood in Council Bluffs, Iowa, 1952



Courtesy of State Historical Society of Iowa, 1952

Description

This photograph shows workers filling and placing sandbags to reinforce dikes during Missouri River flooding in Council Bluffs, Iowa. The severe flooding occurred in April 1952.

Text-Dependent Questions

- Why do you think these men are volunteering to do such hard work?
- What are other methods of flood mitigation do Iowans use during a flooding emergency? Is sandbagging still used today? Why or why not?
- Describe what these workers might have thought or felt as they continued to fill and place sandbags along the river?

Iowa Public Television's "Iowa After the 2008 Parkersburg Tornado," 2008



"Iowa After the 2008 Parkersburg Tornado," Iowa Public Television - *The Iowa Journal*, 2008

Description

This video was produced by Iowa Public Television, and it details the devastation of the F-5 tornado that ripped through Parkersburg, Iowa, in 2008. The video details the damage, as well as the recovery effort, of those affected by the tornado.

Text-Dependent Questions

- What were the long- and short-term impacts of this F-5 tornado on the town of Parkersburg?
- What are some of the ways the people of Parkersburg are moving on in the aftermath of this devastating tornado?
- According to the video, how does talking about the tornado, as well as starting the rebuilding process, help Parkersburg residents recover from such a traumatic experience?

Citation Information

"Iowa After the 2008 Parkersburg Tornado," Iowa Public Television - *The Iowa Journal*, 2008. [Courtesy of Iowa Public Television](#)

“Cedar Rapids Flood Buyout is History” Newspaper Article, September 14, 2014

Cedar Rapids flood buyout is history

Five years, 1,356 property purchases later



The 16th Avenue, 12th Avenue CRANDIC rail bridge and 8th Avenue bridges cross the Cedar River, as seen from the top of Mount Trashmore on Tuesday, May 14, 2014. (Liz Martin/The Gazette-KCRG)

By Rick Smith, The Gazette

Sep 14, 2014 at 12:01 am | [Print View](#)

CEDAR RAPIDS — Almost before the water receded here in the June 2008 flood disaster, the word “buyout” had surfaced among owners of flood-damaged homes and businesses.

Not so for Jim Macek, whose family-owned machine shop in the hard-hit Time Check neighborhood quickly worked to get itself with its 25 to 30 employees back up and running despite a \$1.5 million loss in inventory and equipment.

In the end, though, Macek and his son, Brian, decided to add their business, Reliable Machine and Manufacturing Co. Inc., 415 H Ave. NW, to the end of the city of Cedar Rapids’s flood-recovery buyout list.

Courtesy of The Cedar Rapids Gazette, Smith, Rick, “Cedar Rapids Flood Buyout is History,” The Cedar Rapids Gazette, 14 September 2014

Description

This newspaper article from the *The Cedar Rapids Gazette* in September 2014 details the historic flood buyout that took place after the devastating 2008 flooding. Funds totaling millions of dollars were spent to purchase residential and commercial land owned in the flood zone.

[Full Transcript of “Cedar Rapids Flood Buyout is History”](#)

[Transcribed Excerpts from “Cedar Rapids Flood Buyout is History”](#)

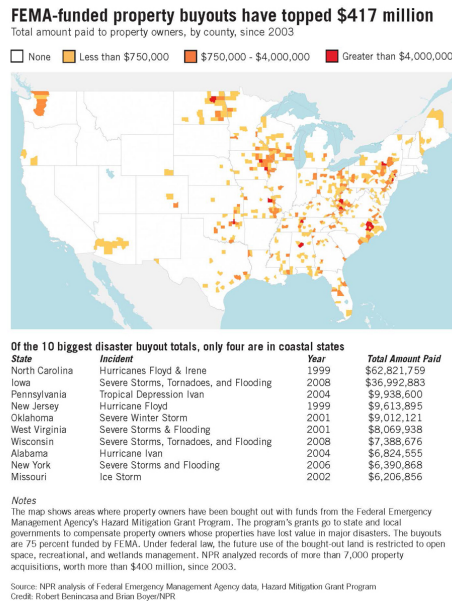
Text-Dependent Questions

- Why would a city like Cedar Rapids want to buy out that much land from residents and businesses in this flood zone? How did the city pay for the flood buyout?
- What were some of the obstacles to purchasing the land from residents and businesses? How did the city of Cedar Rapids handle these obstacles?
- After reading this article, and using your knowledge from the other sources, how would this type of historic buyout help everyone recover from the 2008 floods, while at the same time, prevent future problems for both residents and the local, state and federal governments?

Citation Information

Smith, Rick, “Cedar Rapids Flood Buyout is History,” *The Cedar Rapids Gazette*, 14 September 2014. Courtesy of The Cedar Rapids Gazette

NPR’s “MAP: FEMA Is Buying Out Flood-Prone Homes, But Not Where You Might Expect,” October 20, 2014



Courtesy of National Public Radio, Benincasa, Robert & Boyer, Brian, “MAP: FEMA Is Buying Out Flood-Prone Homes, But Not Where You Might Expect,” National Public Radio, 20 October 2014

Description

From National Public Radio’s analysis of Federal Emergency Management Agency (FEMA) data, this map shows the total amount paid to property owners (by county), since 2003, and a chart of the 10 biggest disaster buyout totals.

[Transcript of “MAP: FEMA Is Buying Out Flood-Prone Homes, But Not Where You Might Expect”](#)

Text-Dependent Questions

- Looking at the map, what do you notice about the state of Iowa compared to other regions or states within the United States? Does this surprise you? Why or why not?
- Looking at the chart, as well as recalling some of the other sources you have seen, why do you think Iowa is number two on this list? What led to this large of a FEMA buyout?
- Why would FEMA and the federal government want to spend so much money for this land? How does it benefit both Iowans and the federal government?

Citation Information

Benincasa, Robert & Boyer, Brian, “MAP: FEMA Is Buying Out Flood-Prone Homes, But Not Where You Might Expect,” *National Public Radio*, 20 October 2014. [Courtesy of National Public Radio](#)