

**Midwest Editorial Board/Opinion Page Briefer:**

**OUR CHANGING CLIMATE: SCIENTISTS TO WARN OF  
STARK IMPACTS FOR AGRICULTURE AND HEALTH  
THE LONGER WE DELAY CURBING CARBON POLLUTION**

*Prepared by the Natural Resources Defense Council  
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Unseasonable warming and then cold snaps in 2012 led to the worst year in recorded history for Michigan's cherry crop. That same year, a string of historic, humid 100-degree days in Chicago led to 10 heat-related deaths.

Major flooding hit Iowa a few years ago, and then the state was wracked by seasons of drought that shriveled corn and soybean crops, causing losses of nearly \$2 billion in 2012 alone. Severe storms this spring swirled across Missouri and the Midwest. And globally, the 15 hottest years on record have occurred since 1998.

What's happening?

In short, this is what climate change looks like.

Similar to the effect of steroids on athletes' performance, the effect of global warming on our climate has set the stage to supercharge storms, and is already fueling more intense heat, dry conditions and extreme weather.

As Iowa farmer Matt Russell has aptly put it: it's causing the wrong weather at the wrong time.

And there are signs things will get much worse if we don't address climate change now.

More evidence is expected in the next couple weeks with release of the National Climate Assessment from the U.S. Global Change Research Program. Congressionally mandated and with participation from 13 federal agencies, more than 240 scientists contributed to this definitive source for climate information in the United States.

The National Climate Assessment is expected to conclude that climate change, once considered a far-off issue for the future, is here now. People throughout the Midwest, and across our country, are seeing and feeling its effects already. And the impacts will get much worse if we don't take action now to substantially curb the carbon pollution driving climate change, the report is expected to say.

The climate assessment, based on preliminary findings in the January 2013 public review draft, is expected to show climate change isn't just about warming temperatures. Carbon pollution ringing our Earth is expected to lead to climate disruptions that will affect our health, agriculture and food systems.

This alarming news comes on the heels of warnings from other scientific panels making the case for action now.

**The American Association for the Advancement of Science recently said:** “The evidence is overwhelming: Levels of greenhouse gases in the atmosphere are rising. Temperatures are going up. Springs are arriving earlier. Ice sheets are melting. Sea level is rising. The patterns of rainfall and drought are changing. Heat waves are getting worse, as is extreme precipitation. The oceans are acidifying.”

**The World Health Organization says air pollution is already killing millions now:** In 2012 about 7 million people died—one-eighth of the total global deaths—from exposure to air pollution—more than double previous estimates, according to the World Health Organization estimates. Reducing carbon pollution leads to lower levels of other associated air pollutants, in addition to reducing the risks of climate change and its threats to health.

**And a recent report from the Intergovernmental Panel on Climate Change forecast global climate disruption ahead:** “Throughout the 21st century, climate-change impacts are projected to slow down economic growth, make poverty reduction more difficult, further erode food security, and prolong existing and create new poverty traps, the latter particularly in urban areas and emerging hotspots of hunger.”

The National Climate Assessment will help provide additional critical information that can help you communicate with your readers and viewers about climate change, the gravest environmental challenge of our time.

Here are some key NCA draft report findings from January 2013 for the Midwest—including Iowa, Illinois, Michigan, Missouri and Ohio—that will be finalized in the upcoming final report. See more here: <http://ncadac.globalchange.gov/>

### **Heat and Drought**

- The Midwest growing season is two weeks longer than it was in 1950, and some crops yields will grow during longer growing seasons, but costs from extreme weather -- including extreme heat events --, are expected to outweigh any benefits.
- Heat waves are happening more often in the Midwest and getting more severe. By the end of the century, thousands more people could die from heat stress every year in Chicago.
- The Great Lakes are getting warmer, increasing the risk of toxic algae blooms that pose a health hazard to humans and fish.
- The combination of heat and more rain-free days will increase the risk of drought in the region.

### **Storms and Floods**

- Since 1958, the amount of very heavy rain and snow has increased about 45 percent.
- Many Midwest cities have drainage systems that combine storm water and sewage, which overflow during heavy storms and threaten public health. By the end of the century, sewer overflows into Lake Michigan could increase 120 percent because of heavy rain.
- Flooding has increased in many parts of the Midwest. In the last 20 years, there have been two floods considered at least “1-in-300-year” events.

**And here are some [state-specific impacts](#) about changes in our climate:**

## **Iowa**

- Between 2010 and 2012, hazardous weather caused losses totaling \$4.34 billion, mainly due to crop damage. Over the past 10 years, the state has endured billion-dollar weather disasters 15 times.
- There were more than 2,000 hospital admissions for asthma in 2011, with an average charge of over \$12,100 for each stay. Climate change affects ground-level ozone smog in ways that can further threaten health for asthmatics.
- Average annual state-wide precipitation increased by 8% from 1873 to 2008. As rain and temperatures patterns change, so can the spread of mosquitoes that transmit diseases such as the West Nile Virus.

## **Illinois**

- In winter 2011, Chicago suffered over \$1.8 billion in losses and 36 deaths when a blizzard dumped two feet of snow on the city.
- In 2012, Illinois had the second highest mortality (32 deaths) due to heat nationwide.
- In 2011, there were more than 19,000 hospital admissions for asthma, with an average charge of over \$20,100 for each stay. Climate change affects ground-level ozone smog in ways that can further threaten health for asthmatics.
- Between 2010 and 2012, 124 people died, 256 were injured, and there were \$1.923 billion in damages due to hazardous weather events, mainly to crops.

## **Michigan**

- In 2012, hazardous weather caused 9 deaths, 119 injuries and cost \$153 and \$42 million in property and crop damage respectively.
- In 2012, rapid plant growth as a result of unusually high temperatures and warm, nighttime early spring temperatures resulted in tree fruit development that was at least four weeks ahead of normal by late March. A return to a normal spring weather pattern resulted in a series of freezes that destroyed the cherry crop and at least 90% of the apple, peach, and juice grape crops. An event of that severity had not occurred since 1945.
- There were more than 14,300 hospital admissions for asthma in 2011, with an average charge of over \$15,000 for each stay. Climate change affects ground-level ozone smog in ways that can further threaten health for asthmatics.

## **Missouri**

- Over the past 10 years, 15 disasters have caused more than \$1 billion in damages.
- In 2011, hazardous weather killed 180 people and injured 1,897. The total cost due to property and crop damage is estimated at \$3.26 billion.
- There were more than 7,700 hospital admissions for asthma in 2011, with an average charge of over \$14,300 for each stay.

## **Ohio**

- As of 2013, about 269,369 kids and 870,021 adults are sick with asthma. Climate change, driven by rising carbon pollution, leads to higher concentrations of ground-level ozone (smog) and smog is a pollutant that exacerbates asthma, according to the American Lung Association.

- The long drought of 2007 caused a 50-60% reduced corn crop and a 20-70% decline in first harvest hay yields.
- In the winter of 2002, Lake Erie did not freeze throughout the winter due to temperature increases, causing many businesses to shut down for what is usually their busiest season. At least \$1 million in damages were reported at Put-in-Bay Island, just one of Ohio's islands relying on tourism for its economic growth.

The good news is that most Americans know we're in trouble – and that there's something we can do about it. We recognize this is the most urgent and dangerous environmental crisis of our time. In fact, seven in 10 Americans favor the U.S. Environmental Protection Agency putting limits on carbon pollution from power plants, a new [Greenberg Quinlan Rosner Research poll](#) shows.

That's exactly what President Obama directed the EPA to do in the National Climate Action Plan he announced last June. EPA Administrator Gina McCarthy has promised standards that will give states maximum flexibility to reduce carbon pollution in the most cost-effective way.

Using its authority Congress approved under the Clean Air Act, the EPA has already proposed carbon pollution limits for future power plants. **And this June, EPA is expected to follow with proposed limits on the roughly 1,000 power plants in the U.S. that emit carbon pollution, a key milestone in our country's efforts to reduce the threat of climate change.**

NRDC has plenty of resources to help with your ongoing coverage. For starters, see:

Our Web site dedicated to global warming and climate change:

<http://www.nrdc.org/globalwarming/>

NRDC President Frances Beinecke's recent blog on climate change in America and beyond:

[http://switchboard.nrdc.org/blogs/fbeinecke/climate\\_change\\_hits\\_home\\_with.html](http://switchboard.nrdc.org/blogs/fbeinecke/climate_change_hits_home_with.html)

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