

# In the eye of the storm

**With historical perspective, Extension climatologist Mark Seeley analyzes Minnesota's crazy weather patterns and tells us what we need—and don't need—to worry about next**

The lesson Extension professor Seeley teaches today is Amplified Climate Variation. Remembering the term is less important than the change it represents. As the days of easy, all-day rains disappear in Minnesota, big downpours of excessive rainfall in one area are on the rise. The result is more winners and losers in the rainfall game—or sometimes just losers and losers.

Seeley has gathered statistics on Amplified Climate Variation for years, but the summer of 2007 provided a real-time model. “I wrote the book on Minnesota’s weather history and I know we’ve never had a month like August 2007,” he said.

That month, the federal government declared 24 Minnesota counties drought-disaster areas after cities like Pipestone reported their third-driest July in history. On the flip side of the rainfall equation, the federal government also declared seven southeastern Minnesota counties flood-disaster areas after record rainfalls, including 15 inches in Hokah in 24 hours.

The researcher in Seeley quickly pulls out maps showing that the impact of Amplified Climate Variation is felt beyond U.S. borders. He points to droughts in Australia, China and Spain, along with

**E**verybody talks about the weather, but few get as excited about it as Mark Seeley, a University of Minnesota climatologist for the past 30 years. He becomes animated when talk turns to the historic August 2007 weather extremes, microclimates, disaster response, and the 2008 weather predictions which he disputes. So passionate is Seeley that he has at the ready his Extension display board to explain how he uses climate and real-time observation forecasts to provide Minnesotans with critical information for planning and decision-making.

floods in Germany and England. Seeley then quickly drops the maps and starts talking impact. “Our vulnerability to severe weather is higher today than ever before,” he says. “Our economy is based on just-in-time delivery. Shutting down a road for a day has immediate impact on businesses.”

Helping Minnesotans prepare for tornadoes, straight-line winds, severe thunderstorms, blizzards and the like are key components of Seeley’s Extension effort. In this role, he helps schools and businesses develop strategies and communication protocols to protect students and employees. He is

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also a key member of the Extension Disaster Education Network, which helps prepare for and respond to disasters in Minnesota.

The dramatic nature of storms makes it easy to assume Extension's climatology program is disaster-focused. However, drive down a state highway in the dead of winter to see another visible legacy of Seeley's Extension work: living snow fences. Research conducted by Seeley, Minnesota Department of Transportation, USDA and other University scientists showed that using standing corn or a mix of trees and bushes to make a living snow fence was an investment that paid back \$15 to \$20 for every dollar invested. Highway engineers seized on the savings opportunity and have been deploying snow fences along Highway 14, Highway 71 and Interstate 94, among other places since 1996.

Seeley is also known as the reassuring voice of factual information that makes for better decision-making and reduces weather fretting. "Farmers have their worry box full with volatile markets and high prices of fuel and fertilizer," Seeley says. "I give them the facts, talk about the probabilities and tell them not to get too excited about some of the extreme predictions they may have heard."

When it comes to interest in the weather, farmers aren't alone. "Minnesotans love to talk about the weather," says Cathy Wurzer, host of Minnesota Public Radio's Morning Edition. Her Friday morning chats with Seeley have become legendary. "Mark has an uncanny ability of being able to explain complicated climatological concepts to a general audience, without talking down to them," Wurzer says.

*For more information on Extension's climate and weather education programs, visit [www.extension.umn.edu/Climate](http://www.extension.umn.edu/Climate)*



Dan Schmitz of Christensen Farms relied on Mark Seeley for weather wisdom as he designed a wastewater recycling system for the company.

## The nuts and bolts of climate impact

Dan Schmitz does more than watch the weather. He thinks about the weather's impact on the thousands of gallons of pig manure that is applied every spring to fields.

Too much rain and a cool spring can cause denitrification, and plants won't get the nitrogen they need for proper growth.

In his role as environmental resource manager for Christensen Farms in Sleepy Eye, Minn., Schmitz recently helped design a wetland-treatment system to recycle wastewater. The project involved developing a water-balance spreadsheet. He turned to Extension climatologist Mark Seeley for help in finding historic precipitation and evaporation data.

"Like everyone else in agriculture, we look to the skies and use general weather data from commercial services," Schmitz says. "But Mark is a great resource who points us to where we need to go to fill the gaps in weather information."

## How can we tap into Mark Seeley's weather wisdom?

Mpls.St.Paul Magazine recently cited Extension climatologist Mark Seeley's "mediagenic" personality and presented him with a lifetime achievement award. Seeley uses numerous tools, including the mass media, to provide research-based climate information to Minnesotans.

Here are a few ways you can tap into Seeley's weather wisdom:

- Subscribe to his "WeatherTalk" newsletter at [www.extension.umn.edu/Climate](http://www.extension.umn.edu/Climate)
- Download the weekly Jet Streaming podcast, featuring Seeley and others from Minnesota Public Radio, at [www.extension.umn.edu/Climate](http://www.extension.umn.edu/Climate), click on "Jet Streaming"
- Listen to Seeley's weather chat Fridays at 6:50 a.m. on Minnesota Public Radio
- Read his latest book, *Minnesota Weather Almanac*, a look at weather history, science and more
- Meet him at one of the many speaking events around the state, including the Minnesota State Fair



Extension climatologist Mark Seeley and MPR's Cathy Wurzer take research-based weather talk to the airwaves every Friday morning.