



La Crosse,  
Wisconsin

National Weather Service, La Crosse, WI

<http://weather.gov/lacrosse>



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## NWS La Crosse Leadership Team

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Meteorologist in Charge (MIC)
- Todd Shea  
Warning Coordination  
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Officer (SOO)
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Data Acquisition Program  
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## Your Investment in the National Weather Service

Welcome to the first edition of the National Weather Service (NWS) La Crosse Shareholders' Report. You are a shareholder in the NWS! As a taxpaying citizen of the United States, your tax dollars have invested in the NWS, which is funded by the Federal Budget.

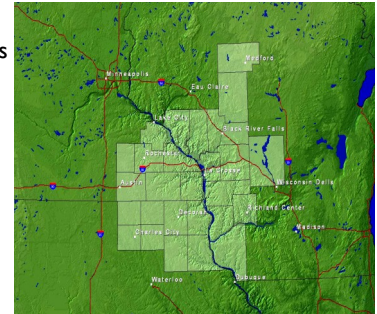
In 2007, the NWS was appropriated approximately \$881 million. That equates to an investment of about \$2.90 per person across the country. For that tax cost, you receive continuously updated forecast and warning services throughout the year. We are confident that these services have benefited you on a day to day basis, and likely provided important safety information on a number of critical weather days as well.

The NWS does a lot more than provide forecast and warning services for the annual \$2.90 tax basis each year. We are a technologically-oriented agency. Because of that, there are considerable expenses required to maintain all the equipment we use in the forecast and warning process. This includes the Dop-

pler radars, automated observing systems, telecommunications equipment and the high-power computers that handle vast amounts of data every day.

We also have put a lot of effort toward providing a wealth of timely real-time and historical information on our web site. We are proud of the information provided there, and invite you to let us know if there is other information that would be helpful to you.

The most significant event we have had in the NWS La Crosse service area in the last 12 years occurred this past summer. Between 8 and 17 inches of rainfall fell over a large area of southeast Minnesota and southwest Wisconsin on August 18-19, 2007, resulting in devastating and deadly flash flooding, landslides and damage to roads and railways. The NWS La Crosse worked closely with emergency personnel before, during and after the event, providing critical information for the safety of residents and emergency workers.



The NWS La Crosse forecast, warning and service area includes counties in southeast Minnesota, northeast Iowa and southwest Wisconsin

This report details some of the activities of the NWS La Crosse office during 2007. I hope you find our work demonstrates the sort of stewardship you expect from your public servants. I welcome your comments regarding how we can provide an even better investment for you.

Glenn R. Lussky  
Meteorologist in Charge (MIC)

## Climate Services Outreach and Improvements

The NWS has greatly enhanced our web-based climate forecast and data provided to the public in recent years. Along with that, we have strived to ensure those who are impacted by climate issues are aware of the new information available.

At a recent meeting with Agricultural Extension Agents in our service area, meteorologist Jeff

Boyne and MIC Glenn Lussky provided information on NWS Agricultural Weather Services history and where we would like to go in the future as we forge a data and information partnership with them. We reviewed various web sites which would be useful to the agricultural community, showed them how to properly interpret a seasonal forecast, discussed

climate change issues, and reviewed the impact of La Niña on the winter and spring forecasts.

Feedback from our agricultural partners indicated the web-based information would be useful to many individuals in the agricultural community. We plan to continue our outreach efforts with this group.

(continued on page 3)

## Outreach and Public Education

While the NWS is known more for our daily forecast and warning services, weather and safety education is another important role of our agency. The La Crosse office of the NWS continued to be very active in outreach and educational opportunities in 2007, hosting booths and presenting over 80 talks.

Some of the events where you may have seen us include:

- the La Crosse Boat, Sports, and Travel Show in February, where we visited with nearly 900 people at our educational booth
- La Crosse's Deke Slayton Airfest in May
- a La Crosse Loggers baseball game in July, where we conducted a special lightning safety program
- the Iowa State Fair in Des Moines, where we assisted with the NWS booth
- spotter training sessions in communities across the region
- many schools and service clubs, providing

- severe weather safety talks at our office, where we hosted numerous school groups and educational tours

Other education and outreach activities this past year included talks at UW–Platteville, UW–La Crosse, the Mayo Clinic in Rochester, MN, the Houston County Farm Bureau's spring banquet, Health Traditions Insurance, Upward Bound, Dairyland Power, and various aviation groups. Live radio shows through NOAA Weather Radio enhanced our public education program, along with seminars for county Emergency Management personnel, aviation partners, and cooperative extension agents.



WFO La Crosse Warning Coordination Meteorologist (WCM) Todd Shea speaks at a presentation

If your group could benefit from an NWS weather, water, climate or safety presentation, please contact WCM Todd Shea at: [todd.shea@noaa.gov](mailto:todd.shea@noaa.gov).

## Wanted: Precipitation Observers!

From the image on the back page of this report, it is clear that precipitation amounts can vary greatly over a very small area. Accurate and detailed precipitation information can be critical in many scientific applications, including flood forecasting, agricultural applications (including drought assessment), water resource management, and so on.



The rain gauge used by CoCoRaHS observers is a plastic tube that is easily mounted.

Though we can estimate precipitation across the area based on radar returns, the NWS has limited resources to physically measure precipitation and, in fact, relies on actual precipitation measurements to calibrate the radar rainfall estimates.

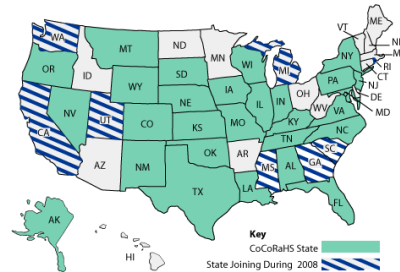
CoCoRaHS (the Community Collaborative Rain, Hail and Snow Network) is a unique, non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation. By using low-

cost measurement tools, providing training and education, and utilizing an interactive web site, the goal of the CoCoRaHS program is to provide the highest quality data for natural resource, education, research and operational applications.

Rain and snow reports from CoCoRaHS observers are submitted via the web on a daily basis and fed directly into the NWS computers for immediate use. This information is very helpful in our daily and monthly flood and drought assessments, respectively.

CoCoRaHS is currently operational in 27 states, extending from coast to coast. Iowa and Wisconsin joined in 2007. (At this time, Minnesota is not a part of the CoCoRaHS network).

**“The NWS relies on actual precipitation measurements to calibrate radar rainfall estimates.”**



NWS La Crosse has joined in the effort to actively recruit new weather watchers in our area. At this time, we have 18 CoCoRaHS observers in our Wisconsin counties and 7 in our Iowa counties. We encourage many more volunteers to join the CoCoRaHS family and fill in the holes throughout the area.

If you are interested in the possibility of becoming a CoCoRaHS volunteer in Wisconsin or Iowa, you can learn more about the program, take training and sign up at <http://cocorahs.org>. For more information, contact the NWS La Crosse Climate Program Leader, Jeff Boyne, at [jeff.boyne@noaa.gov](mailto:jeff.boyne@noaa.gov).

### StormReady Saves Lives

Each year, Americans cope with an average of 10,000 thunderstorms, 5,000 floods, 1,000 tornadoes, and 6 hurricanes. Add to that winter storms, intense summer heat, high winds and other deadly weather impacts, and you get the most severe weather-prone country on earth. You can make sure your community is ready for the weather with the National Weather Service's **StormReady**® program.

Over 90% of all presidentially declared disasters are weather

related, leading to around 500 deaths per year and nearly \$14 billion in damage. StormReady, a program started in 1999, helps arm America's communities with the communication and safety skills needed to save lives and property – before and during the event. StormReady helps community leaders and emergency managers improve local safety programs.

No community is storm proof, but StormReady can help communities save lives. Does StormReady make a difference?



Check out the following web site to see its impact: <http://www.weather.gov/stormready/vanwert.htm>.

Current StormReady communities in our area include: Dover, MN; Eyota, MN; Edgewood, IA; and Viroqua, WI. For information on how *your* community can improve its storm-readiness and become StormReady, click on the StormReady link on the left hand side of our web site: <http://weather.gov/lacrosse>.

### Web Information: Growing Stronger Every Day

NWS presence on the internet continues to grow and expand, quickly becoming a major dissemination vehicle for weather information. The NWS La Crosse web site (<http://weather.gov/lacrosse>) not only provides the most up-to-date forecasts available, but potentially life-saving information as well - in the form of watches, warnings, and advisories - as they are issued by the NWS!

During 2007, we established a strong focus on ensuring critical weather information was updated frequently on the web. Through this updated information, you can learn what is happening *now* and what can be

expected over the next few hours. Information such as radar imagery and short-term forecasts have been available on the web for a while, but newer additions such as “Top News of the Day” and the “Weather Story” graphic bring even more information to your fingertips.

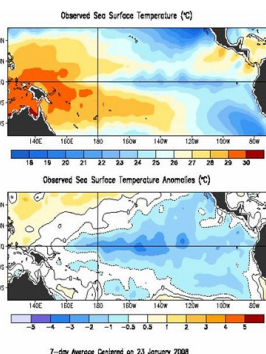
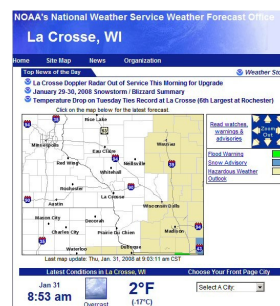
**“Newer additions to the web bring even more information to your fingertips.”**

The “Top News of the Day” contains a list of the very latest weather stories. Some relate

to historical or climatic events, but many focus on inclement weather that is or will be impacting the area. Updates on changing winter conditions or severe weather, the latest rainfall or snowfall reports, and summaries of the more significant weather events in the area are all included in this section.

The “Weather Story” is a graphical representation of the most impactful weather the region can expect over the next week. At a glance, you can see what the weather concerns are, where they will be, and how they may affect you.

These sections, located at the top of the NWS La Crosse’s internet site, along with our popular “point and click” forecast and hazards map, are a great way to stay abreast of the latest weather information, especially during periods of hazardous weather.



### Climate Services (continued from page 1)

El Niño and La Niña events provide opportunities for the NWS to increase confidence in seasonal forecasting in the U.S. These events, defined by sea surface temperatures over the tropical Pacific Ocean, can impact temperature, precipitation and severe weather.

The NWS La Crosse has been active with local El Niño/La Niña research (see the research story on page 5), and can be a resource for the public and our media partners.

We occasionally provide web news stories on the impact of

the latest El Niño/La Niña situation on the local forecast. Individuals can also monitor the latest national El Niño/La Niña-based forecast information at the NWS Climate Prediction Center web site: <http://www.cpc.noaa.gov/products/precip/CWlink/MJO/enso.shtml>



## Working with the Aviation Community



Lead Forecaster Steve Thompson leads a weather discussion with students. Steve has worked closely with area aviation interests to improve services and enhance weather-related knowledge of aviation issues.

NWS La Crosse Lead Forecaster Steve Thompson really enjoys aviation. As the office Aviation Focal Point, he has consistently worked to improve the NWS staff knowledge of forecasting in support of aviation interests within our service area. Local forecasters recognize his impact - in part because he understands the science associated with aviation forecasting, and in part because Steve is an aviator himself.

Steve has put his unique aviation knowledge and skills to good use, both through internal

training and external outreach. Over the past two years, he has worked with local ground schools to train new students on meteorological issues. He has also worked closely with local aviation services and national airlines to improve forecasting information and strategies. And he has been an active presence at regional air shows, providing weather information for hundreds at the annual Oshkosh EAA AirVenture and La Crosse Deke Slayton Airfest.

For those interested in aviation



weather, the NWS has a nice informational magazine specially designed for aviators. You can check out "The Front" at:

<http://aviationweather.gov/general/pubs/front/>

Area aviation interests who have any specific needs relating to aviation-related weather information and training are invited to contact Steve at: [steven.thompson@noaa.gov](mailto:steven.thompson@noaa.gov).

## NOAA Weather Radio in Schools

In 2006, the Federal government's Department of Education, Department of Commerce and Department of Homeland Security joined together to provide NOAA Weather Radios (NWRs) to all public schools across the nation. The NWS La Crosse office helped coordinate this process for schools in our service area, providing information to the schools and assistance in setting them up for use in their areas.

The Federal government will be following up this program with another, which is expected to provide NWRs to all School District offices and private and parochial schools in 2008. Our office has coordinated with our counties in an effort to ensure all private schools in our area

are included in this program. We will also work with the schools to assist them as needed.

By the end of 2008, *all schools* should have the ability to receive warnings via NWR. Any school in our service area with any NWR questions should contact Todd Shea at [todd.shea@noaa.gov](mailto:todd.shea@noaa.gov).

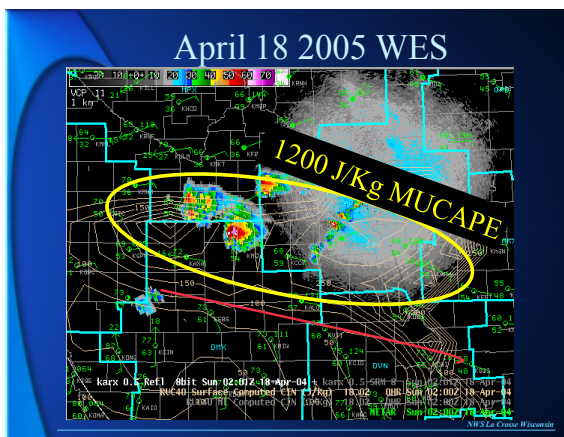
For information on this special school program, see <http://public-alert-radio.nws.noaa.gov>. General NWR information is available at <http://www.weather.gov/nwr>. NWS La Crosse also has NWR brochures available upon request.

**MARK TRAIL CHAMPIONS  
NOAA WEATHER RADIO-**  
THE VOICE OF THE NATIONAL WEATHER SERVICE



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## Continuing Education and Training



Believe it or not, meteorology is still a very young science. It wasn't until around 1820 that pressure systems were closely scrutinized as weather-producers. Real progress on tornadoes didn't happen until the 1950s. Satellites weren't integrated into day-to-day NWS operations until the 1980s. We continue to learn and apply new science in our operations every year.

Our evolving science requires NWS La Crosse forecasters to not only maintain their knowledge and skills, but to learn and apply new discoveries as well. As a

result, we conduct regular drills and training to enhance our scientific skills.

During 2007, the NWS La Crosse office provided training on 15 new and remedial forecasting areas for its operational staff. This ongoing effort, in concert with our local goal of continuous improvement, helps ensure *your* forecasters remain among the best-trained operational meteorologists in the country.

## New Research

NWS La Crosse forecasters regularly perform unique and interesting research that helps other forecasters improve their skills. Much of this research also helps improve the services we are able to provide our customers.

During 2006 and 2007, 14 local research projects were completed by NWS La Crosse staff. The following 5 studies were presented at regional and national conferences:

### AMS Severe Storms Conference, St Louis, MO Oct 2006

- The De-Evolution From a Quasi-Linear Convective System to a Discrete Tornadoic Supercell During the Historic Wisconsin Tornado Outbreak of 18 August 2005: A Radar Perspective. (S Binau)
- Preliminary Evaluation of a Parameter to Forecast Environments Conducive to Non-Supercell Tornadogenesis (D Baumgardt)

### NWA Severe Storms Conference, Des Moines, IA 2007

- Warning Decision Making in High CIN Environments (T Shea)

### Northern Plains Winter Storm Conference, St. Cloud, MN 2007

- Evaluation and Lessons Learned from a Precipitation Type Outlier Event: An OK Experience (D Baumgardt)
- Instability and Frontogenesis During the Historic Winter Storm of 23-26 February 2007 Over the Upper Mississippi Valley (S Binau)

There is a wealth of information available on our local research web page (<http://www.crh.noaa.gov/arx/research.php>). This site contains studies that have been completed by many NWS La Crosse forecasters over the years.

Questions regarding these local scientific studies may be directed to NWS La Crosse Science and Operations Officer Dan Baumgardt at: [dan.baumgardt@noaa.gov](mailto:dan.baumgardt@noaa.gov).

## Awards, Recognition and Personnel Changes

The NWS La Crosse office may have one of the most highly respected staffs across the country. Competing against 39 other forecast offices as well as regional office personnel, the high level of innovation and accomplishment by NWS La Crosse personnel was recognized for the 5th year in a row in 2007 by having one of its employees selected as an NWS Central Region Cline Award winner. This year, congratulations to Science and Operations Officer, Dan Baumgardt, for his Regional Cline Award in the area of Leadership.

The NWS La Crosse was also recipient of a Department of Commerce Bronze medal for providing timely and accurate life-saving severe storm warning services during the historic Iowa Winter Storm of February 23-25 and crippling Blizzard of March 1-2, 2007. This award recognized the impact of critical information provided by the NWS relating to emergency services, transportation, and citizen preparedness for the

two major back-to-back events, which resulted in a Presidential Disaster Declaration for 46 counties.

Finally, forecasters Todd Rieck and Jeff Boyne received the prestigious Regional Excellence Award during 2007 for their work with web development and climate services, respectively. Both Todd and Jeff have been leaders in these respective areas over the years, and this recognition is well deserved!

*“The NWS La Crosse was recognized for the 5th year in a row by having one of its employees selected as an NWS Central Region Cline Award winner.”*

Our office lost two employees during 2007. Lynn Zintz, Administrative Assistant since 1995, decided to retire in April after 30 years of public service. We all miss Lynn’s high level of

work and her welcoming presence to all who visited the office. We were fortunate to have had a new, energetic Administrative Assistant join us shortly after Lynn’s departure. Verna Ingwell transferred to the NWS in June after about 30 years working with the VA. Verna has kept up the bright, welcoming tradition of NWS La Crosse Admin Assistants.

The other La Crosse employee who moved on this past year was Electronic Technician, Ed Harbeck. Ed arrived here in 2002, and returned to North Carolina this past year. We are pleased to welcome new Electronic Technician Matt Gasperich, who comes to us from the NWS office in Aberdeen, SD. Matt obviously loves what he does and has stepped in to provide seamless support to the La Crosse area systems and facility.

If you see or talk to Verna or Matt, be sure to give them a special welcome from you as well!



Verna Ingwell started working as the new NWS La Crosse Administrative Assistant in June 2007.



Matt Gasperich is our new Electronic Technician. He transferred to La Crosse from Aberdeen, SD in November 2007.

National Weather Service  
La Crosse, WI

Visit our web site!  
<http://weather.gov/lacrosse>

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## Our Mission Statement

### National Weather Service Mission

“Provide weather, hydrologic and climate forecasts and warnings... for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by others in the global community.”

### NWS La Crosse Mission Statement

“Dedicated to continuous improvement in the provision of high quality weather-related warning, forecast and educational information for the safety and overall benefit of the citizens we serve.”

## The August 18-19, 2007 Flash Flood Event

Rainfall and flooding of historic proportions struck parts of the Upper Mississippi River Valley on August 18<sup>th</sup> and 19<sup>th</sup> of 2007. Rainfall of 7 to 12 inches was common, although unofficial amounts as high as 17 inches were reported. The heavy rain axis was centered from near Rochester, MN through the La Crosse, WI area to Richland Center, WI.

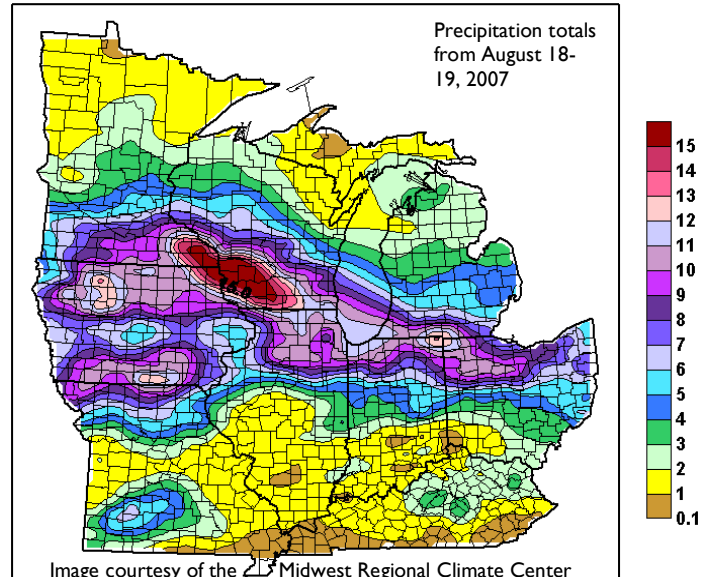
A new official 24-hour precipitation record was set for the state of Minnesota when 15.10" fell near Hokah. August 2007 also set records for the wettest month at twenty reporting stations, including Rochester, MN and La Crosse, WI.

Southeast Minnesota, southwest Wisconsin and a small portion of northeast Iowa were hard hit with tremendous flash flooding, followed by river flooding that lingered for two weeks. Three counties in southeast Minnesota (Winona, Houston, and Fillmore) and four counties in southwest Wisconsin (La Crosse, Vernon, Crawford, and Richland) were declared Federal Disaster areas.

NWS La Crosse provided flash flood watches over 23 hours before the flooding started. Warnings were issued, on average, over 87 minutes before flooding was reported. Even so, the incredible rainfall created conditions which were exceptionally dangerous for anyone travelling in the area, resulting in eight fatalities directly related to the flash flooding, seven of which were in automobiles.

**“Estimated property damage topped \$150 million.”**

Numerous communities were severely impacted by both flash flooding and the high river levels that followed. Some had water



Location	County	Amount
Witoka, MN	Winona	17.00"
Hokah, MN	Houston	15.10"
Utica, MN	Winona	14.00"
Nodine, MN	Winona	13.40"
Stoddard, WI	Vernon	12.41"
La Crosse, WI	La Crosse	12.20"
La Crescent, MN	Houston	11.58"
Whitewater State Park	Olmsted	11.53"
Rochester, MN	Olmsted	11.10"

in 75-100% of the community. Nearly 2000 homes were affected and estimated property damage topped \$150 million. Infrastructure was also hit hard, with hundreds of roads washed out, significant mud slides, and railway outages.

New flood of record values were set on the Root River at Houston, MN and on the Whitewater River at Whitewater State Park. Crests that were second highest in history occurred along portions of the Kickapoo River in Wisconsin.

Our office worked closely before, during and after this event with emergency management officials in counties that were hardest hit by flooding. This included numerous briefings

and, in some cases, hourly support regarding future rainfall and forecast river levels.

Media coverage of this event was extensive on a local, regional, and national level. Several national news agencies covered flooding in Stockton and Rushford, MN and along the Kickapoo River. ABC led their news with this flood event *before* discussing the landfall of Hurricane Dean (a category 5 hurricane).

This significant event reminds us all of the importance to be prepared for the variety of hazardous weather that can impact this part of the country. The NWS La Crosse office is available to assist you in your preparations.