



Weather Brew

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Second Warmest Winter in Modern Times

By Mark Gehring

The 2011/12 meteorological winter began on December 1st with high temperatures in the 40s, and it ended with high temperatures in the 40s and 50s on February 29th.

Temperatures were not much different in between those dates with a remarkably mild 2011/12 winter.

Table 1 (below) lists the rankings of average temperature for the months of winter, including the ranking for the winter season. These rankings are for the climate period from the late 19th century to the present day.

For each winter month, Madison and Milwaukee ranked within the top 17 warmest, which resulted in a top 5 warmest winter (Table 1 & Table 2).

Table 2 revealed that the 2011/12 winter had been the 2nd warmest in modern times, since some of the warmest winters had been in the late 19th century and early 20th century. The Madison area only experienced 12 days of average temperatures below normal with Milwaukee at 17 days of below normal temperatures. Snowfall for the winter was approximately 11-14 inches below normal, but this was not very unusual when compared to the entire climate period.

With La Nina occurring, the winter forecast that was issued in Autumn 2011 called for slightly higher probabilities of below nor-



mal temperatures and higher probabilities of above normal precipitation. This forecast was consistent with average conditions that occur during La Nina. However, a neutral to positive phase of a jet stream pattern, called the North Atlantic Oscillation (NAO), most likely brought us the mild winter. The NAO is a jet stream pattern that dominates the weather over the North Atlantic Ocean including the adjacent land masses of Europe, Canada, and the United States. The negative phase of the NAO results in a strong northwesterly jet stream pattern that

Continued on next page.

Table 1: Average temperature rankings for Milwaukee and Madison.

	December	January	February	Winter 2011/2012
Madison	12th Warmest	13th Warmest	14th Warmest	4th Warmest
Milwaukee	11th Warmest	14th Warmest	17th Warmest	5th Warmest

Second Warmest... (Continued)

Madison			Milwaukee		
Rank	Temperature (°F)	Season	Rank	Temperature (°F)	Season
1	32.1	1877 - 1878	1	32.6	1931 - 1932
2	29.8	1881 - 1882	2	31.8	2001 - 2002
3	29.7	2001 - 2002	3	31.7	1877 - 1878
4	28.7	2011 - 2012	4	31.6	1881 - 1882
	28.7	1931 - 1932	5	31.0	2011 - 2012

polar trough set up along the west coast of the U.S. with the corresponding strong upper ridge over the eastern U.S. This resulted in a steady southerly flow of warm, moist air from the Gulf Coast to Canada. The Great Lakes region experienced the largest departures from normal, with the Madison average temperature

Table 2:
The Top 5 warmest winters for Madison and Milwaukee.

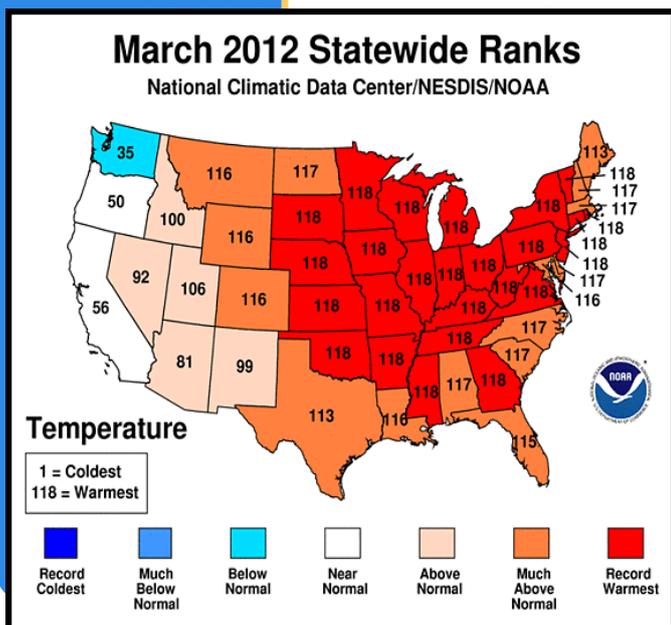
March 2012 statewide rankings, wherein Wisconsin exceeded their warmest monthly temperature on record.

would bring polar and arctic air masses into the eastern half of the United States, including Wisconsin. However, the positive phase of the NAO would give a weaker northwesterly flow or more of a west to east flow, resulting in mild temperatures, which is what occurred. More specific-

ly, the jet stream pattern had been split with a northern jet stream over the northern United States or Canada and a southern jet stream over the Southern United States. The northern jet stream kept the polar and arctic air masses in Canada for the majority of the winter. Unfortunately, phases of the NAO cannot be correctly forecasted beyond a couple weeks and the NAO does contribute to the weather patterns over Wisconsin throughout the year. Thus, seasonal and long range forecasts are very challenging.

finishing the month of March 16.1 degrees Fahrenheit above normal and Milwaukee at 13.8 degrees. March 2012 ranked as the warmest March in recorded history for not only southern Wisconsin but for the entire country, and also helped propel southern Wisconsin and the country to the warmest year thus far for January through March. This anomalous weather pattern was five times the magnitude of the typical variability that is experienced. Climate scientists will no doubt research this historic anomaly and attempt to understand the mechanisms that led to this heat wave.

For as remarkably warm as the winter was, the month of March was simply unbelievable as a heat wave gripped the eastern two-thirds of the country. For nearly two weeks, a strong



Rusty's Roundup

By Rusty Kapela

550 U.S. Tornado Fatalities in 2011 Who Can We Blame?

It doesn't take a rocket scientist to know that we live in a society in which someone or something has to be blamed for bad incidents. After considerable thought – I blame the 550 fatalities on EVERYONE in our country!

Seriously, one can debate this subject until they are blue in the face. So, let's not go down that road.

Instead, to cut our losses, let's use some of the 'findings' pointed out in the NWS' Service Assessment Reports.

EF5 Joplin Tornado

- Responding to warnings and seeking a sturdy shelter is not a simple act of stimulus-response, rather it is a non-linear, multi-step, complex process.
- The vast majority of Joplin residents did not immediately take protective action upon receiving a first indication of an approaching hazard/risk (usually via the local siren system), regardless of the source of the warning.



- Most chose to further clarify and assess their risk by waiting for, actively seeking, and filtering additional information. This took valuable time that could have been used to seek the most-sturdy shelter.
- The perceived frequency of siren activation in Joplin led the majority of survey participants to become desensitized or complacent to this method of warning.
- Here is one extreme response sequence by an individual: 1) Aware that thunderstorms were probably going to happen, 2) Noticed the weather changing outside, 3) Heard the first siren while driving to restaurant (approx. 30-minute lead time), 4) Restaurant shut doors and disallowed entry, 5) Drove to a 2nd restaurant where business was carrying on as usual, 6) Noticed the weather changing, 7) Reports came from TV and radio, 8) Another patron indicated tornado in Joplin, 9) Restaurant management instructed protective action to a shelter.
- Additional reasons why many people didn't seek shelter immediately include: a lack of previous experiences with tornadoes, apathy, unfamiliarity with seasonal weather patterns in southwest Missouri, optimism bias (it's going to kill a person or destroy a home somewhere else, but not where I am), and perceived excess frequency of siren activation in Joplin.
- Some people will not seek a sturdy shelter until they literally see the tornado - it is right in front of their face. (Don't forget some tornadoes are rain-wrapped and very difficult to identify even close up)

Joplin tornado storm track and intensities.
Credit: NWS Central Region Service Assessment

Joplin EF5 Tornado May 22, 2011

Survey Results:

- Ranked in the top 10 among the deadliest tornadoes in U.S. History
- Estimated max wind speed in excess of 200 mph
- Over 150 fatalities
- 1000+ injured
- Approx. 22.1 mile path length

Continued on next page.

Rusty's Roundup (Continued)



Storm relative velocity data from the 0.5 degree scan showing the circulation location.
Credit: NWS Birmingham, AL

Tuscaloosa-Birmingham EF4 Tornado April 27, 2011 Survey Results:

- Estimated max wind speed of 190 mph
- 65 fatalities
- 1500+ injured
- Approx. 80.7 mile path length

- Many of the Joplin fatalities occurred to people who were over 70 or handicapped.

- A number of the fatalities could have been avoided if that person had used their still-intact crawl space below their first floor.

EF4 Tuscaloosa Tornado

- People relied on a variety of sources to receive warning information. Power outages and infrastructure damage affected availability of television, Internet, commercial radio, cell phones, and NWR.

- Peer warnings helped motivate some people to take protective action. Nearby family and friends supplemented the warning system through personal contact.

- There was a notable difference in NOAA Weather Radio (NWR) ownership between rural to urban survivors. Several rural respondents noted they simply could not afford to purchase an NWR despite wanting to own one.

- Despite successful receipt of information, responses varied based on the how well an individual understood a message's intent. As noted in the Mother's Day Weekend Tornado in Oklahoma and Missouri, May 10, 2008, and the Super Tuesday Tornado Outbreak of February 5-6, 2008, some residents acted immediately after hearing a warning by preparing or taking shelter as recommended. For others, receipt of a message led to personal assessment of the potential risk for a tornado and protective options.

- Not everyone was aware that forecasts for this event were made with a considerably higher level of confidence when compared to forecasts of previous tornado events, and included the likelihood of larger, and more destructive, tornadoes.

- Many people expected

to hear sirens for a potential tornado even in areas where no sirens existed. In some areas, sirens exist for threats other than severe weather, but people expected them to be sounded for tornadoes. Siren activation policy varied from county to county.

- This country has seen an increase in the Spanish-only speaking population over the past two decades. During the assessment, the team interviewed a non-English speaking person who found it difficult to understand the warning message.

- Many individuals' past severe weather experiences did not prepare them to respond to the threat of multiple tornadoes. The storm assessment team found cases where people were unaware that multiple tornadoes were possible.

- Weather myths - Some people had preconceived notions based on local, often erroneous, information regarding weather threats, and as a result, they downplayed warning messages.

- For some people there was a lack of availability of

Continued on next page.

Rusty's Roundup (Continued)



sturdy shelters and safe rooms.

- For some people there was a lack of awareness of public shelter options.

Summary

We have a long way to go in this country to get everyone on the same page. Hurdles to overcome involve weather myths, social/cultural issues, economic issues, educational issues, structural issues,

language issues, previous experience issues, communication issues, availability issues, warning reception issues, and issues pertaining to the actual wording needed in warnings that will make people respond quickly.

Overcoming all of the issues will be a daunting task that will take time and money. Everyone in this country is 'wired' differently and thus responds differently. The NWS has 'Weather Ready Nation' and **StormReady**®

programs and many states have related "Ready" programs that reach out to the public. However, until each and every person becomes 'Ready' (educated to understand weather hazards and know how to obtain warning information and prepare and respond accordingly) we'll continue to have more tornado fatalities and injuries. There is no magic 'silver bullet.'

Aerial view of damage path.
Credit: NWS Birmingham, AL

Dual-Pol Radar Has Arrived!

By Morgan Brooks

Our radar here at NWS Milwaukee/Sullivan around sunset.



The much anticipated dual-polarization (dual-pol) radar upgrade has arrived at NWS Milwaukee/Sullivan. The upgrade required a retrofit to the previous system and took a total of approx. one

week for installation and testing. The radar at NWS Milwaukee/Sullivan was the 50th out of 160 radars to receive the upgrade.

Now, instead of just sending out and receiving a horizontal pulse, the radar will send out and receive a vertical pulse as well. The

combination of the returns from the horizontal and vertical pulse will allow forecasters to better discern the shape and size of the target being sampled.

Knowing the horizontal and vertical dimensions of the target will help because different hydrometeors and biological scatterers have different dimensions.

For example, large rain drops tend to flatten out as they fall and are actually shaped like a hamburger. On the other hand, small rain drops stay more spherical as they fall. Hail stones are also more spherical in shape, but

even if they aren't perfectly round, they tend to tumble as they fall. This tumbling motion essentially provides the radar with equal horizontal and vertical dimensions.

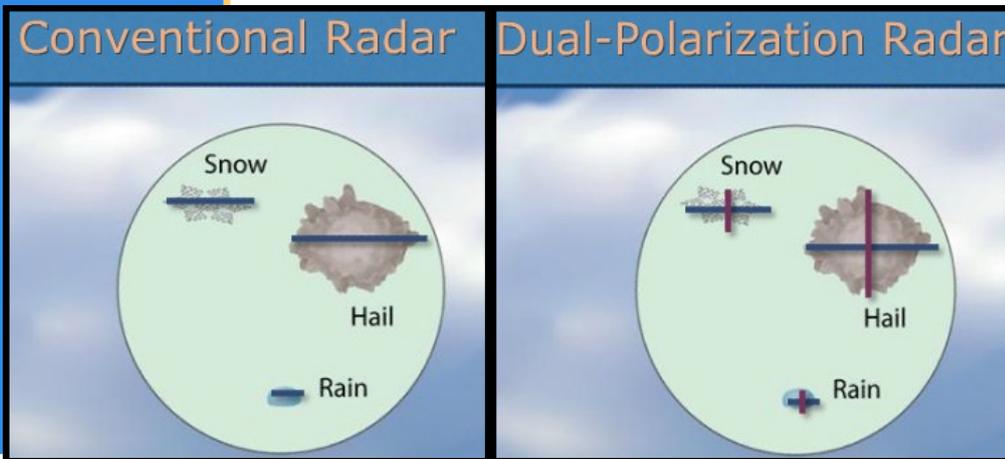
This new radar capability will benefit both the forecasters and the public tremendously.

During the severe weather season, forecasters will be more confident in determining what the radar is sampling, whether it is hailstones, heavy rainfall, or a mixture. This is an important distinction and will help improve quantitative precipitation estimations (QPE) in strong storms.

Previously, the radar would include returns from both hail and rainfall in the QPE, it could not effectively tell the difference between the two. When hail was present in the storm, the estimated precipitation amount would be too high.

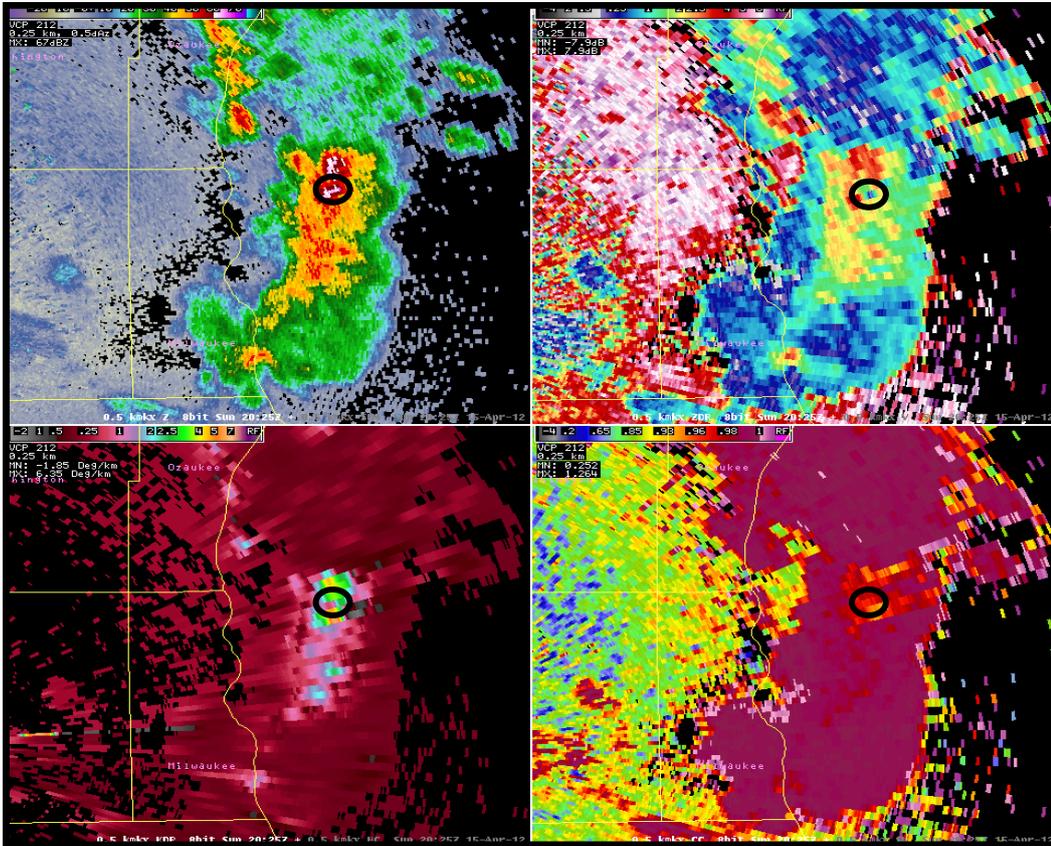
Now that the radar has the ability to identify hail, it can

While conventional radar only sends out a horizontal pulse, dual-pol radar sends out a horizontal and a vertical pulse. This allows forecasters to better determine the shape and size of the target being sampled.



Continued on next page.

Dual-Pol... (Continued)



The image on the left shows dual-pol radar data from April 15th, just off shore of Milwaukee County. Prior to the dual-pol upgrade, only the image in the top left was available.

The area that is circled on all four images depicts where hail mixed with rain was likely falling. Without the dual-pol images, there would have been more uncertainty in the forecasted precipitation type.

remove the hail returns from the QPE product and provide a more accurate precipitation estimation.

In addition, dual-pol radar data will help forecasters distinguish the size of the rain drops or hailstones being sampled and will even give forecasters a better idea of the strength of the updraft in a particular storm.

Moreover, while this upgrade will not improve lead time for tornado warnings, it will help con-

firm the presence of a damaging tornado.

During the winter weather season, forecasters will be able to more accurately pinpoint where snow, rain, or a mix of precipitation types is falling. The radar will more clearly define the melting layer, which will let forecasters know the height at which precipitation is melting. The radar can even help determine the location of dry snow versus wet snow.

Dual-pol radar also provides

improved detection and mitigation of non-weather related radar echoes, such as birds, insects, and smoke.

As dual-pol radar is used more and more in the field, other relevant uses and benefits of the technology will likely be identified. We at NWS Milwaukee/Sullivan look forward to using this new technology to help improve forecast and warning operations here in southern Wisconsin.

Friends of the Mitchell Gallery of Flight

By Ed Townsend



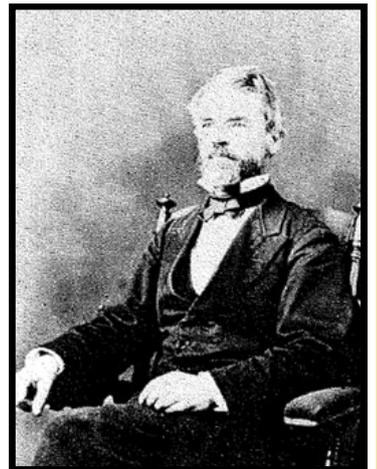
For more information on both the Friends of the Mitchell Gallery aviation organization and the museum, please visit: www.mitchellgallery.org/.

NWS in Milwaukee/Sullivan recently attended and presented at a meeting of the Friends of the Mitchell Gallery on March 7, 2012. The presentation centered mostly on two items: 1) a short historical overview on the presence of observations/weather operations in Milwaukee and Increase A. Lapham; and 2) NWS products and services provided to the general public and, more so, the aviation community specifically. The purpose of the Friends of the Mitchell Gallery of Flight is to engage in activities that foster and promote the non-profit aviation museum at the General Mitchell International Airport in Milwaukee, Wisconsin.

A part of the historical overview dealt with Increase A. Lapham, who is credited as both a pioneer and catalyst for the current observation network employed by NOAA and the NWS. Lapham started making observations out of his home in Milwaukee on Jan 1, 1837 and later started taking observations for the Smithsonian in 1849. Beginning with Lapham's efforts, observations in Milwaukee have been continuous since Feb. 1854 – providing a continuum of over 150 years of data.

Lapham is also remembered for how he promoted the need for a widespread observation network and a warning service. He brought a great amount of attention to this topic by sending frequent letters enclosed with newspaper clippings of maritime wrecks to government officials. Lapham's motivation was heightened after a series of devastating storms in 1868 and 1869 on the

Great Lakes that damaged more than 3,000 ships and took over 500 lives. Ultimately, with the support of Lapham and others, President Grant signed a resolution on Feb. 9, 1870 to establish a system that would provide advanced notice of approaching storms in the Great Lakes and the seacoast and the first synchronous observation network in the United States. This network, initially within the Department of War's U.S. Army Signal Service, would evolve into the U.S. Weather Bureau and then once more into its current form.



Increase A. Lapham is considered by many as a catalyst for the current observation network employed by NOAA and the NWS.

Navigating the NWS Milwaukee/Sullivan Website

By Jake Wimberley

Our office's website has a wealth of information. In fact, we have so much information on the site that many folks find it daunting to try to find a particular item. In this article we will present an overview of the structure of the site, as well as specific instructions on locating a few of the more popular products we offer.

Accessing the Website: Normally accessible at the easy-to-remember address <http://weather.gov/milwaukee>. Both addresses point to the same site. You know you are on our office's website when you see the text *Milwaukee/Sullivan, WI* across the top.

7-Day Forecast: Down the left side of the page is a blue sidebar containing, first and foremost, an entry box where you can retrieve a 7-day forecast and other data for a specific location. Click in the box, then enter either a city

and state (for example, "Sullivan, WI") or a zip code (for example, 53178). Click "Go" and another page will appear with a customized forecast for that location. You can enter any location in the country, not just sites in the NWS Milwaukee/Sullivan service area. For example, enter "New Orleans, LA" or "20500" (the zip code for the White House). This is a convenient and reliable way to get a forecast in record time!

Local Data: Still looking at the blue sidebar, below the entry box, you'll find a list of links to different types of weather data and related information. We encourage you to take a close look at the different links in this bar as most local data are accessible from them. The links, in white text, are grouped under yellow headings. For example, under the heading *Current Conditions*, click *Ob-*

servations to go to a page where you can see observed weather reports from sites around southern Wisconsin and the region. Here's a helpful tip: Any time you are on a page with *Milwaukee/Sullivan, WI* in the blue area

Continued on next page.

[Weather.gov/
Milwaukee
homepage](http://Weather.gov/Milwaukeehomepage)

Navigating... (Continued)

NWS Milwaukee, WI
 Point Forecast: Milwaukee WI
 43.04°N 87.98°W (Elev. 672 ft)

Mobile Weather Information | En Español
 Last Update: 3:36 pm CST Jan 4, 2012
 Forecast Valid: 4pm CST Jan 4, 2012-6pm CST Jan 11, 2012

Forecast at a Glance

Tonight	Thursday	Thursday Night	Friday	Friday Night	Saturday	Saturday Night	Sunday	Sunday Night
								
Partly Cloudy Lo 25 °F	Mostly Sunny Hi 42 °F	Partly Cloudy Lo 33 °F	Partly Sunny Hi 45 °F	Partly Cloudy Lo 28 °F	Mostly Sunny Hi 38 °F	Partly Cloudy Lo 26 °F	Partly Sunny Hi 34 °F	Mostly Cloudy Lo 26 °F

Detailed 7-day Forecast | **Current Conditions** [Move Down]
 Hazardous weather condition(s): [view Yesterday's Weather](#)

[Hazardous Weather Outlook](#) | **Milwaukee, General Mitchell International Airport**
 Lat: 43.06 Lon: -87.9 Elev: 672

lined in the map will be color-coded if certain types of forecast products are in effect for an area, especially watches, warnings, and advisories. You can get more information on the products in effect for a color-coded area by clicking within the area, and then on the resulting forecast page, clicking the red text under the heading *Detailed 7-Day Forecast*.

Observations, Measurements, and the Weather Story: Below the clickable map, we have a quick glance at the latest automated observation from Mitchell Field in Milwaukee. Just below this observation, there are links to the latest radar and satellite images covering southern Wisconsin. A link to a standard surface weather map, plotted with highs, lows, and fronts, is also there. Our *Weather Story* graphic, updated at least twice daily, is linked from this location also. The *Weather Story* summarizes the major concerns and impacts of the weather over the next couple of

Continued on next page.

Top of a Forecast Page

We usually have a handful of links under the "Top News of the Day" heading, directing you to news stories about weather events in our area, office happenings, or information about service outages...

at the top of the page, click that text to go back to the office homepage. This may be more convenient than using your browser's "Back" button.

Top News of the Day: Just below the blue area where *Milwaukee/Sullivan, WI* appears. We usually have a handful of links under this heading, directing you to news stories about weather events in our area, office happenings, or information about service outages (such as maintenance on NOAA Weather Radio or on our radar system). These types of stories are written by staff in our office as needed. Occasionally, links to stories on other National Weather

Service sites will be posted as well, if we find them of particular interest to our area. You can also find links to past Top News items by clicking *Top News Archives* in the blue bar at left, under the heading *Additional Info*.

Southern Wisconsin Clickable Map: Under the Top News section, you will find a *clickable map* of southern Wisconsin. Clicking anywhere in this map will take you to a page just like the one you would obtain by entering a city or zip code in the entry box in the sidebar, but the map actually gives you even more precision since you can specify an exact point outside of a city. The counties and zones out-

Navigating... (Continued)

days in an easily understandable, graphical fashion. Click this if you want a little more insight into what will “make headlines” in our local weather today, tonight, or tomorrow.

Specialized Data and

Popular Products: Scroll down to the blue table near the bottom. We have a lot of links here to more specialized data. You will find links to pages with data of particular use in analyzing and forecasting winter weather (snow, extreme cold, etc.) as well as severe weather. You can use the drop-down list under the title *Large List of Most Popular Products* to find various text data and forecast products. Take a look at some of the computer models that we use to produce forecasts. Daily climate summaries and almanac data are available under *Daily Summaries*. Be sure to browse the many links in the blue table to find data that interest you. If you are unable to locate what you need after ex-

The screenshot shows the National Weather Service website interface. On the left is a blue sidebar with navigation links: National, Drought, More..., Weather Safety, Preparedness, Weather Radio, StormReady, SkyWarn, Additional Info, Other Useful Links, Education Resources, Coop Observer, and Top News Archives. The main content area is titled 'Latest Conditions in Milwaukee, WI' and 'Choose Your Front Page City'. It displays the date 'Jan 4', time '2:52 pm', a weather icon of a cloudy sky, temperature '33°F (1°C)', and 'Mostly Cloudy'. Below this are four image thumbnails: 'Weather Story' (showing a temperature forecast), 'Radar' (showing a radar map), 'Satellite' (showing satellite imagery), and 'Weather Map' (showing a surface weather map). A 'Select A City:' dropdown menu is visible on the right.

ploring the website, feel free to send us an email at the address or phone number listed at the bottom of the homepage. We are usually able to respond to emails within a day.

Here are specific locations of some products that are frequently requested by customers, but not already described above.

Status of Current Watches and Warnings: To quickly see a summary of any watches, warnings or advisories in effect for southern Wisconsin, on the office homepage, click *Watches/Warnings*. You will be taken to a different page showing the summary.

High and Low Temperatures, Precipitation, and Snowfall for Yesterday at Milwaukee or Madison: On

the homepage, scroll down to the blue table, and under the heading *Daily Summaries*, select *Milwaukee* or *Madison*. After about 3:40pm Central Time, you may see a product valid today instead. Click the “Previous Version” link above the summary, until you see a product valid for yesterday or any other recent day.

Current River Stages: On the homepage, in the blue sidebar, under *Hydrology*, select *Rivers and Lakes*. In the map on the resulting page, click the icon for the site you want.

Snowfall Amounts Around the Area for a Particular Day: Available back to the beginning of the previous month. On the homepage, in the blue sidebar, under *Climate*, click *Local*. Click the light blue *NOWData* tab at the

Office homepage showing the current weather story, radar imagery, satellite imagery, and surface weather map.

You can use the drop-down list under the title “Large List of Most Popular Products” to find various text data and forecast products.

Continued on next page.

Navigating... (Continued)

Weather radio coverage across southern Wisconsin.

upper right. From left to right under the heading *NOWData – NOAA Online Weather Data*, select 'Daily data for a month', the location of interest, and either 'Current month' or 'Last month.' Click the yellow 'Go' button. A new window will open with the data

listing. The amount of new snowfall is under the 'Snow' column. Note that the report for a given day is from about 7:00am Central Time on that day, and the total should include any snow that fell during the 24 hours beginning around 7:00am on the previous day. Values are in inches. 'T' means a trace, or less than 0.05", was reported. *For sites or dates not available via this method, call or email us.*

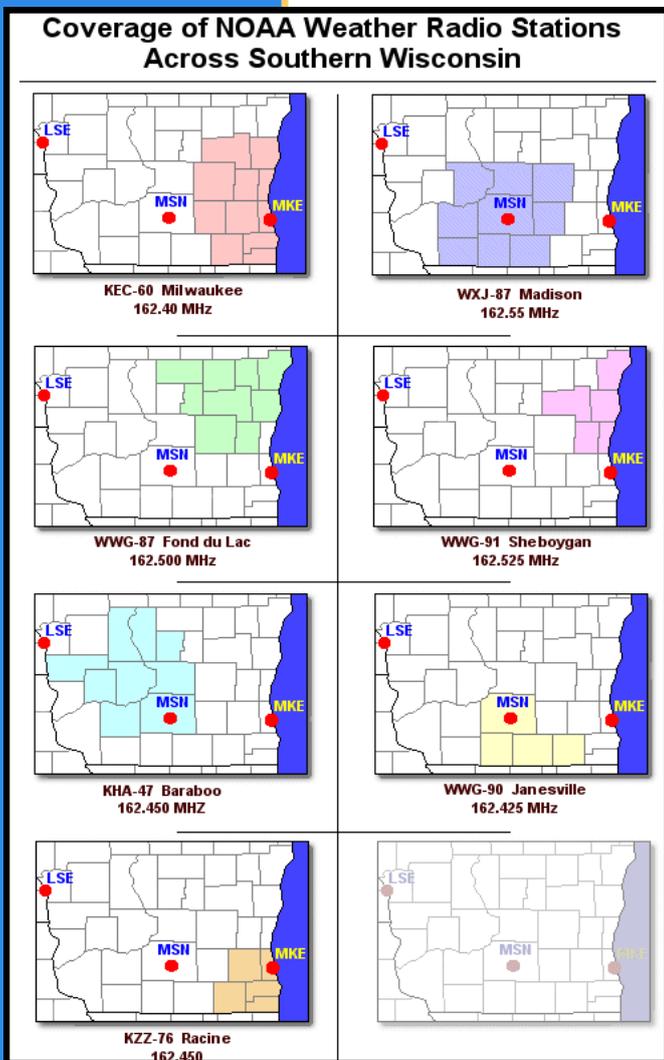
Local Storm Reports: These are reports of significant weather observations or severe weather sightings or damage. We initially issue the reports in text form, but we also have a system that automatically produces a graphic from the text products. Both are accessible from the blue table at the bottom of the homepage. For the text version, under *Large List of Most Popular Products*, select 'Local Storm Report' from the drop-down box, then click the *Pick then Click* button. Use the links on the resulting page to navigate to reports from different times. The graphic is availa-

ble under *Quick Links*, elsewhere in the blue table. You will choose a type of event and then the date. The graphic for that day will load. You can hover over the reports plotted in the map with your mouse, to see details of the event.

Seasonal Outlooks: In the blue table at the bottom of the homepage, under *Forecast Weather*, click *90 Day Outlook*. This will take you to a page hosted by the NWS Climate Prediction Center (CPC). Click the outlook for the months in which you are interested; on the resulting page you can see probabilities of above/below normal temperature and precipitation.

NOAA Weather Radio frequencies and SAME county codes: In the blue sidebar on the homepage, under *Weather Safety*, click *Weather Radio*. Maps of the service area of each transmitter are shown on that page, as are listings of the frequencies. Midway down the page you will see a link, "FIP Codes for Wisconsin". Click this link to be taken to a table of coun-

Continued on next page.



Navigating... (Continued)

ties, with the SAME code for each county, as well as transmitter frequencies for use in that county.

HOWEVER...

Did you know that www.weather.gov will be getting re-launched and refreshed in the near future? You can access the [main preview page here](#). Users are encouraged to submit any and all feedback to the developers.

Please note that this is a **prototype version** of the NWS website which is still undergoing final testing be-

fore its official release.

The website, its software and all content found on it are provided on an "as is" and "as available" basis. For official products and services, continue to use weather.gov/mkx.

There is also a *mobile version of the experimental webpage*. Mobile version is available at: preview.weather.gov/mobile.

The new weather.gov experimental homepage that is available at: preview.weather.gov

A sample forecast page from the new experimental mobile website that is available at: preview.weather.gov/mobile

National Weather Service and the 2012 Wisconsin State Fair

By Marc Kavinsky



NWS meteorologist Denny VanCleve discusses the upper air balloon program with fans at the 2011 Wisconsin State Fair.

The 2012 Wisconsin State Fair runs from Thursday, August 2nd through Sunday, August 12th.

The National Weather Service serving south central and southeast Wisconsin will once again staff an exhibition booth at this year's Wisconsin State Fair. With cooperation from the Wisconsin Department of Natural Resources, the NWS will continue to share space in the south pavilion of the DNR Park at the state fairgrounds. The DNR Park is located just west of the Wisconsin Exposition Center.

The 2012 Wisconsin State Fair runs from Thursday, August 2nd through Sunday, August 12th. The DNR Park and pavilions will be open from 9 am to 9 pm daily. An estimated 10, 000 visi-

tors stopped by our exhibit in 2011.

While you're at the Wisconsin State Fair, come on down to the Wisconsin DNR Park and meet members of the National Weather Service. We love to hear your weather stories. This is a chance for you to give feedback on our forecasts, products and services.

You will be able to get a peek at the latest radar imagery and request the latest forecast. For the second year, we will have

an authentic weather balloon on hand, along with the equipment it carries into the atmosphere.

Ask us to demonstrate how to navigate our website and make use of its many features, including generating an hour by hour forecast of weather conditions. You'll be able to view a simulated tornado in our tornado chamber and examine our All Hazards NOAA Weather Radio display.

We hope to see you there.



NWS meteorologists Steve Davis and Ashlie Sears at the 2011 Wisconsin State Fair.



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Weather Brew Vol. 4 Issue 1
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Who We Are

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- Rusty Kapela
- Jeffrey Craven
- Brian Hahn
- Jerry Wiedenfeld
- Curt Backlund
- Rudy Schaar
- Steve Hentz
- Steve Davis
- Marc Kavinsky
- Bob McMahon
- Mark Gehring
- Marcia Cronce
- Paul Collar
- James Wood
- Denny VanCleve
- Jake Wimberley
- Morgan Brooks
- Ed Townsend
- Travis Unkel
- Tim Enright

- Meteorologist-In-Charge*
- Administrative Support Assistant*
- Warning Coordination Meteorologist*
- Science Operations Officer*
- Service Hydrologist*
- Information Technology Officer*
- Electronic System Analyst*
- Data Acquisition Program Manager*
- Senior Forecaster*
- General Forecaster*
- General Forecaster*
- General Forecaster*
- General Forecaster*
- Meteorologist Intern*
- Meteorologist Intern*
- Meteorologist Intern*
- Electronic Technician*
- Electronic Technician*

Comments and suggestions are always welcome. Your feedback is important to us.

Training Forecasters For Severe Weather: DLOC 2012

By Morgan Brooks

Each year, the Warning Decision Training Branch hosts a group of NWS forecasters in Norman, Oklahoma for a once in a life time training experience. This week long training workshop in Norman concludes an extensive training program called the Distance Learning Operations Course (DLOC).

The objective of the course is to train NWS forecasters how to use radar in the forecast and warning decision making process.

The course requires the forecasters to complete over 100 hours of online training. The training material covers everything from how the radar works, to what to look for in the ra-

dar products, to the many meteorological concepts relevant to severe weather.

Once the forecasters have completed the online training, they head off to Norman to put their knowledge to the test. While in Norman, the forecasters get valuable face to face training time with DLOC instructors. The forecasters go through a series of training lectures, as well as a series of training simulations. During the simulations, the forecasters have a chance to practice analyzing the environment and issuing warnings in real time. Forecasters also have the benefit of having DLOC instructors provide guidance and constructive criticism.



Upon completion of the course, the forecasters have the knowledge and skill to issue warning products in real life situations. The MKX office enrolled two Meteorologist Interns in the course this year. This spring and summer they will be able to put their new skills into action when severe weather affects southern Wisconsin.