

Packerland Weather News



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The Long Winter of 2007-2008

By Roy Eckberg, Forecaster, and
Linda Skowronski, Administrative Support Assistant
NWS Green Bay

The winter of 2007-2008 will be one that Wisconsinites will remember for a long time. While recent years posted average or below average snowfall amounts, this past winter season brought record-setting amounts of snow to many areas of the state.

The season started out like any early winter. Little or no snow occurred across the area during October. In November, snowfall totals over northern Wisconsin generally ranged from 2 to 5 inches, with the exception of Vilas County, where lake effect snow showers brought totals of 14.5 inches at Lac Vieux Desert and 12.3 inches at Phelps. Little if any snowfall was recorded south of Highway 29.

The weather pattern, however, abruptly changed during December as the climate phenomenon known as La Niña strengthened. La Niña refers to the periodic cooling of ocean surface temperatures between Peru and the International Dateline every three to five years. Changes in water temperatures across the Pacific can have significant impacts on Wisconsin's winter temperatures and precipitation. December snowfall totals across northeast and central Wisconsin for the month ranged from about 10 to 25 inches, with the lowest amounts over the far northeast. Marshfield recorded its third snowiest December on record with a monthly total of 28.2 inches. It was the seventh snowiest December on record at both Green Bay and Appleton, with totals of 24.1 inches and 21.9 inches, respectively. This was just the start of what would be a long winter.

Snow continued to accumulate in January as well. In fact, snowfall totals from just Dec-



Deep snow in Green Bay. Credit: Peg Zenko.

ember 1 to January 31 included 53.6 inches at Green Bay, 46.8 inches at Appleton, 43.5 inches at Sturgeon Bay, and 42.2 inches at Stevens Point. These two month totals were close to the normal snowfall for an entire winter!

During February, the affects of La Niña were still being felt across Wisconsin with continued below normal temperatures and above normal precipitation. Appleton set

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Comments or Suggestions?

If you have suggestions for articles, have comments about the newsletter, or would like to be removed from the mailing list, please contact us at:

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Rare January Severe Thunderstorms Strike Wisconsin

By Phil Kurimski, Forecaster
NWS Green Bay

An unusually warm and unstable airmass worked its way into Wisconsin during the afternoon of January 7, 2008. While temperatures climbed to around 40 F across east central Wisconsin, temperatures soared into the lower 60s across the southeast part of the state, shattering old record highs. A stationary front which extended from southwest to east-central Wisconsin triggered thunderstorms that produced damaging winds, hail, and tornadoes across the southern portion of the state.

Hail the size of nickels was reported in Kaukauna in Outagamie County, and pea-size hail fell in Calumet County. Penny size hail was reported across several counties in the south. In fact, the worst severe weather occurred across far southeast Wisconsin. Large and destructive tornadoes occurred in Walworth and Kenosha Counties during the late afternoon. The first tornado, with a top rating of EF-3, tore a swath from extreme eastern Walworth County to the town of Wheatland in western Kenosha County. The tornado caused at least minor damage to over 75 homes (25 were destroyed), injured 15 people, and resulted in nearly \$14 million in damage. About 20 minutes later, a second tornado touched down near the city of Kenosha and



Tornado damage near Wheatland. Photo courtesy NWS Milwaukee-Sullivan.

damaged over a dozen homes. That tornado was rated an EF-1.

While severe weather during January is a rare event for Wisconsin, tornadoes are even rarer. Since 1950, the only other year the state had experienced a January tornado was in 1967. This year's severe weather event was part of a larger outbreak that affected much of the Midwest, including Illinois, Iowa, and Missouri. A total of 48 tornadoes touched down this day.

While these events are rare, being prepared during all seasons is the best way to stay safe when these unusual events occur. Tornadoes have occurred in every month of the year except February in the state of Wisconsin.

The Winter of 2007-2008

an all-time snowfall record for February with 26.6 inches, breaking the old record of 26.1 inches set in 1962. Clintonville recorded the second snowiest February on record with a total of 27.9 inches. Between December 1 and February 29, Green Bay received 77.1 inches of snow which smashed the old record of 53.2 inches set in December-February 1961-62.

March brought some relief from the heavy snow. Snowfall totals were near or below normal across much of the area during the month.

For the entire season (October to April), both Marshfield and Appleton experienced

the second snowiest winter on record with totals of 84.8 inches and 82.3 inches, respectively. Green Bay recorded one of its snowiest ever, with a total of 87.4 inches.

The heavy snow did not come without cost. Millions of dollars were spent on snow removal and road salt. Insurance companies saw a spike in vehicle claims due to slippery roads. However, the heavy precipitation was a welcome relief for local waterways and reservoirs that were still low from last year's drought. Water levels on Lake Superior and Lake Michigan also rose this past winter helping to secure a better future for us all.

From page 1

Berschback Accepts Position at NWS Green Bay

By Linda S. Skowronski

Administrative Support Assistant, NWS Green Bay

Scott Berschback joined the staff of the Green Bay Weather Forecast Office as a Meteorologist Intern on March 31. He accepted the position vacated by Steven Fleegel who transferred to the NWS Marquette office where his wife Kari is a meteorologist.

Prior to joining the National Weather Service, Berschback worked as an Operational Meteorologist with The Weather Network in Oakville, Ontario, a suburb of Toronto. In his new position, Berschback takes, records, and disseminates various meteorological observations as well as analyzes and conducts quality control of hydrometeorological data vital to the overall forecast. His ongoing training will prepare him to develop forecast proficiency for a variety of products issued.

Berschback is a native of Grosse Pointe, Michigan, a suburb of Detroit. He graduated from Central Michigan University with



Meteorologist Intern Scott Berschback.

a Bachelor of Science Degree in Meteorology. He is engaged to be married to Emily in June of 2008.

We extend our best wishes for a rewarding career with the National Weather Service.

Severe Weather Season is Upon Us

Even though spring has been relatively cool and quiet, this is the time of year when the severe weather season starts in earnest. It's never too late to prepare for severe summer storms.

Each year across the U.S., many people are killed or seriously injured by tornadoes and severe thunderstorms despite advance warning. Some do not hear the warning, while others receive the warning but do not believe it will happen to them. Preparing before the storms strike could save your life.

Here's what you can do before severe weather hits:

- Develop a plan for you and your family at home, work, school, and outdoors.
- Identify a safe place to take shelter.
- Have frequent drills.
- Know the county name in which you live or visit.

- Keep a highway map nearby to follow storm movement from weather bulletins.

- Have a NOAA Weather Radio with a warning alarm and battery back-up.

- Check the weather forecast before leaving for extended periods outdoors.

- When going outdoors, bring along a portable weather radio. Watch for signs of approaching storms.

When conditions are favorable for severe weather to develop, the National Weather Service issues a severe thunderstorm or tornado WATCH. When a watch is issued, keep an eye to the sky and stay tuned to weather radio or local media for weather updates. When severe weather begins to develop, WARNINGS are issued to alert the public and emergency officials. When a warning is issued for your area, put your emergency weather plan into action.



On the Web

www.crh.noaa.gov/grb/prep.html

The NWS Fire Weather Program

By Tim Kieckbusch, Senior Forecaster

NWS Green Bay

Fire danger typically peaks in Wisconsin during spring, with the most significant fire activity occurring from mid-April to early May, prior to green-up. During this same period, it is common for large, dry air masses from the northern Pacific or Hudson Bay regions to reside over the western Great Lakes for several days, resulting in low humidity and very dry fuels. In addition, the northward migration of the jet stream often leads to the development of strong low pressure systems, which subsequently track through the northern United States, bringing warm, windy and dry conditions. This unique set of circumstances often combines to produce dangerous wildland fire conditions over Wisconsin during the spring. A secondary peak in fire danger can occur in early fall, after a killing frost.

The most severe fire danger typically occurs in sandy soil regions, such as those located in far northwest, central, and far northeast Wisconsin. These regions are vegetated by large stands of Jack Pine or other coniferous trees, and often experience warmer and drier conditions than surrounding areas. Although the majority of large wildfires in Wisconsin occur in the sandy soil pine plantations, a number of significant fires also occur in hardwoods, grasslands, and marshes.

Although the spring of 2008 has been cool and wet with less than normal fire activity, the same cannot be said for recent years. On May 5, 2005, Wisconsin's worst wildfire in 25 years roared through Adams County in central Wisconsin. The Cottonville Fire scorched over 3,400 acres, and destroyed 30 homes and 60 outbuildings. This fire proved that, despite extensive fire prevention measures taken by the Wisconsin Department of Natural Resources and the U.S. Forest Service, large, devastating wildfires still pose a real threat in Wisconsin.

As part of our effort to protect lives and property, the National Weather Service in Green Bay supplies fire weather forecasts to all of the fire control agencies in central



The Cottonville (Adams County) fire in May 2005. Photos courtesy Wisconsin Department of Natural Resources.

and northeast Wisconsin. Fire weather planning forecasts, which are issued twice daily during the fire season, are used to determine staffing and resource levels for the upcoming week. National Fire Danger Rating System forecasts are issued daily to help provide an estimate of the general fire danger for the next day. Fire Weather Watches and Red Flag Warnings are issued during periods of extreme fire danger, when weather and fuel conditions are favorable for catastrophic fires. In addition, spot forecasts are issued for site-specific areas to aid in the completion of prescribed burns, or to assist in firefighting efforts on a wildfire.

NWS Green Bay to Host Open House

The National Weather Service in Green Bay is hosting a first-ever public open house in September. The Saturday event, which is scheduled for September 27 from 10 a.m. to 3 p.m., is the public's chance to see how weather forecasts are made, learn about weather safety, and meet the staff.

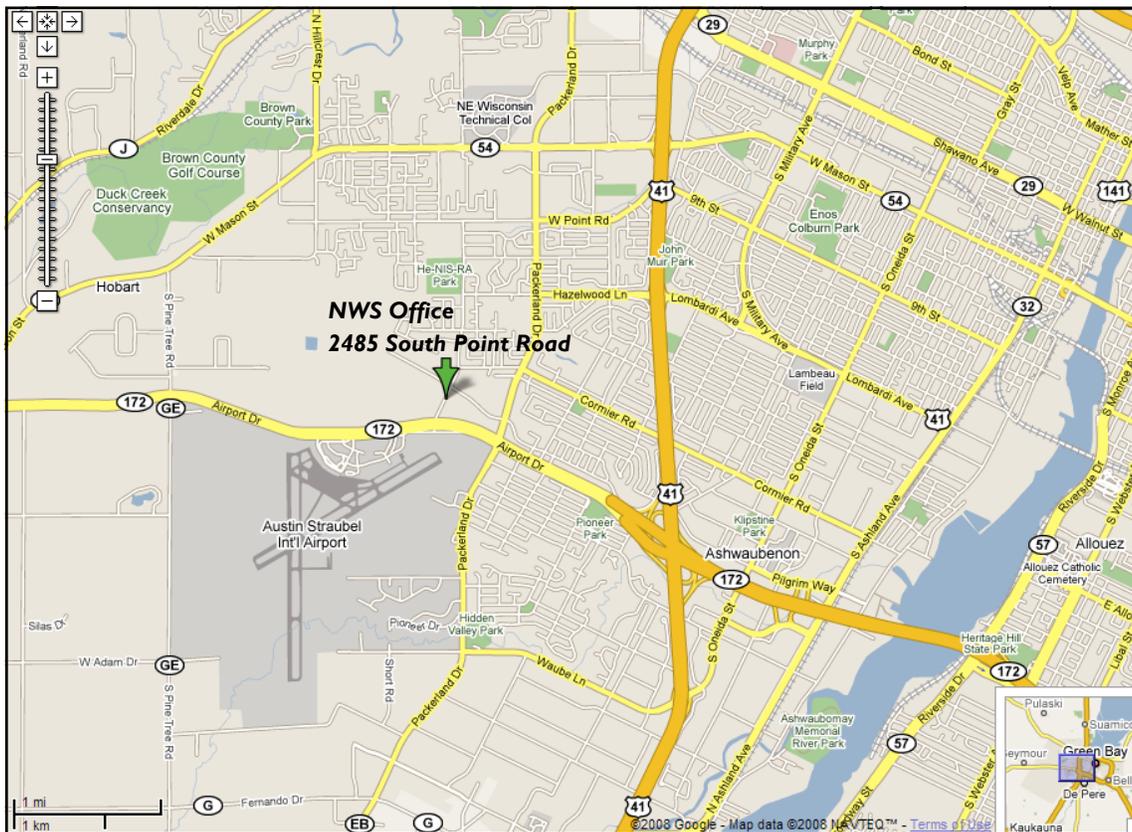
In addition to a tour of the facility, visitors will have an opportunity to watch a weather balloon launch, held each hour. An award ceremony will also be held to recognize several long-time volunteer weather observers.

Two tents will be filled with static displays, highlighting the many programs in which the office is involved. Weather safety brochures, cloud charts, and other items will be available, free-of-charge. Several hands-on activities will be available for children, as well.



The NWS Weather Forecast Office in Green Bay. The staff are responsible for forecasts and warnings for 22 counties in northeast and north-central Wisconsin.

Additional information on the open house will be posted on our website in August:
www.weather.gov/grb



The Spring 2008 Snowmelt

By Tom Helman, Senior Forecaster
NWS Green Bay

The 2007-08 winter produced above normal snowfall for the southeast half of Wisconsin, including much of east-central and central Wisconsin. The season snowfall ranged from 20 to 30 inches above normal. Historically, above normal snowfall of this magnitude produces spring flooding, causing concern for many residents in northeast Wisconsin.

In addition to the above normal snowfall, the snowmelt process over northern Wisconsin started later. A later season snowmelt can increase the flooding potential due to the risk of the snow melting quickly as the average high temperatures increase in late March and early April.

While sump pumps were busy and minor flooding did occur along a few rivers, moderate to major flooding did not occur. Why? Thankfully, several factors contributed to a diminished flooding event for the spring of 2008.

The temperatures during the early spring period were rather cool causing the snowmelt to be gradual. Timely rainfall, as well as a lack of significant rain, also helped lessen the risk of flooding. Two moderate rain events occurred in early and late March. With much of the region experiencing drought conditions in 2006 and 2007,



Flooding on the Wolf River near Shiocton.

rivers and streams ended 2007 at record or near record lows. In addition, many swamps and lowlands were considerably drier than normal. Finally, lack of significant frost helped to prevent excessive runoff. Normal maximum frost depths usually range from two to three feet over central Wisconsin and three to five feet over northern Wisconsin. Due to the abundant snow cover, frost depths were generally half that amount.

The potential for flooding was certainly there. However, thanks to the weather experienced this spring, and two years of drought conditions, northeast Wisconsin escaped significant flooding during the 2008 snowmelt season.

New Marine Observation at Chambers Island

By Glenn Wareham, Electronics Technician
NWS Green Bay

Technicians at the National Weather Service Green Bay office are readying for the install of a new marine sensor in the waters of Green Bay. The sensor will be installed on Chambers Island, a 2,834-acre (4.428 sq. mi.) island about seven miles off the coast of the Door Peninsula. The installation is planned for mid-June.

The Coleman Young RM2000 system will provide wind speed and direction, barometric pressure and temperature data to the

NWS. The data will be used to improve the marine forecast and warning capabilities of the office and provide valuable information to the boating public.

After installation and testing, the data will be available on the Internet and NOAA Weather Radio.



Wind equipment that will be installed on Chambers Island.

The Cooperative Observer Corner

By Pat Hein, Observations Program Leader,
NWS Green Bay

WxCoder III, the official web-based entry system for the National Weather Service Cooperative Observer Program (COOP) came into existence just a few short months ago and has proven to be a very worthwhile and reliable program. I hope all of you feel comfortable with the program.

There are a few items I'd like to address that may benefit all of our COOP observers. First, I realize it may be difficult to enter your time of precipitation when it occurred on the previous day. Right now, the only way to enter this data is to go back to the previous day and enter it as a correction. A software fix is being made to the program that will take care of this problem. The fix has to be tested before being released or put into effect. You will know when this is complete, as your observation page will change to add this new feature.

The WxCoder III program incorporates a few quality control parameters. The quality control check will result in "failure conditions" and a correction will be required. These types of errors are known as "hard" errors. If you receive one of these errors, recheck and correct your data and resend it. If the error message continues to prevent you from sending your observation, call our office and we will enter your observation for you.

Quality control thresholds are also built into WxCoder III. These "soft" errors will ask you to confirm a specific weather element in your observation. These weather elements are based on your station's weather records since the station began. Typically, each station will have 36 thresh-



olds, one for each month of the year related to maximum and minimum temperatures and precipitation. If you are experiencing a record event by exceeding one of these thresholds, the pro-

gram will ask you to confirm your new record. I will also receive an e-mail of your new record.

There is a User's Guide that can be downloaded in pdf format on the "Sign In" page of WxCoder III, just below your welcome name. Although it is not necessary to read this document, it may answer a few of your questions.

Many of our observers enter their data into a phone system (IV-ROCS) quite successfully every day. The data they enter into the phone is also relayed into WxCoder III in a matter of minutes. If your computer or internet provider is down, go ahead and enter your observation into IV-ROCS. This phone system is an excellent backup for WxCoder III and is also a means for our observers who do not have reliable internet access to enter their observation. If you don't have the IV-ROCS phone number or data sheet, let me know and I will send you one.

Finally, I hope you all have a very enjoyable summer. The National Weather Service appreciates the time and effort you put into your observations. Keep up the good work and thank you. If you have any questions, please call or e-mail me at pat.hein@noaa.gov.

Did You Know?

The hottest air temperature ever measured in Wisconsin was 114 F, recorded in Wisconsin Dells on July 13, 1936.

Two rainfall records were set just last year. A 24-hour rainfall of 11.75 inches fell on August 18-19, 2007, near Stoddard

(Vernon County), which is a new unofficial record. The greatest monthly rainfall total was also set in 2007. Viroqua (Vernon County), measured 21.74 inches for the month of August. This record was certified as "official."

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Packerland Weather News



Lightning Kills, Play it Safe

Summer is the peak season for one of the nation's deadliest weather phenomena—lightning. If you are outdoors and a storm approaches, move to a sturdy building or metal vehicle immediately. Remember, if you can hear thunder, you are close enough to that storm to be struck by lightning.

In the U.S., an average of 62 people are killed each year by lightning and hundreds of others are injured. People who survive a lightning strike often suffer from a variety of long-term, debilitating symptoms.

Coaches, sports officials, and others responsible for outdoor groups should have access to the latest weather information. When a storm approaches, those in charge should move everyone to an enclosed structure. Picnic shelters and sheds are not good alternatives. If no enclosed structure is available, an enclosed metal vehicle is the second safest location.



The more you're prepared, the faster you can act when storms approach. Don't get caught in a storm without a plan to get to safety.



On the Web

www.lightningsafety.noaa.gov