STATE OF WISCONSIN

DEPARTMENT OF MILITARY AFFAIRS

DIVISION OF EMERGENCY MANAGEMENT

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Are You Ready for Winter?

"Get an emergency kit in your car. It could save your life"

(MADISON) – Governor Scott Walker has declared November 4-8, 2013 as Winter Awareness Week in Wisconsin. The annual campaign, sponsored by Wisconsin Emergency Management (WEM), its ReadyWisconsin preparedness program and NOAA's National Weather Service (NWS), is to remind people to be prepared for winter conditions that could threaten their safety.

"The number one thing to do: make sure you have an emergency supply kit in your car – it could save your life," says Brian Satula, Wisconsin Emergency Management Administrator

ReadyWisconsin will air Television and Radio Public Service Announcements in November, urging viewers and listeners to keep an emergency kit in their vehicles. Starting November 1st, Wisconsin residents can sign up for a chance to win a winter survival kit on the ReadyWisconsin website: readywisconsin.wi.gov.

Winter storms are considered deceptive killers because most deaths are indirectly related to the storm. For example, in the last five years Wisconsin has averaged 50,000 motor vehicle crashes during winter months. An average of 45 people are killed and more than 5,000 injured on icy or snow-covered roads.

Carbon monoxide poisoning is also a danger. According to the Centers for Disease Control, carbon monoxide is the leading cause of accidental poisoning deaths in the United States, with more than 20,000 people visiting the emergency room and nearly 500 killed each year from overexposure to the gas.

Now is the time to winterize your car and home, gather items for an emergency kit in your car, and make sure you have a NOAA Weather Radio with fresh batteries. Additional winter weather tips and how to put together a winter emergency kit are available at the ReadyWisconsin website (readywisconsin.wi.gov). In addition, there are numerous winter storm maps and a history of Wisconsin's winter weather produced by the National Weather Service.

2400 Wright St. PO Box 7865 Madison, WI 53707-7865 24 Hour Emergency Hotline 1-800-943-0003

Wisconsin Winter Facts

Groundhog Day Blizzard

It is important for all of us to prepare for the power of winter storms. Few of us will forget the Groundhog Day Blizzard of 2011.

Between January 31 and February 2, parts of the state had snowfall totals between 12 and 33 inches with wind gusts between 40 and 65 miles an hour. Schools and businesses closed and thousands heeded the warning to stay home in the near-paralyzing event.

- The coldest temperature in the winter of 2012-13 was -30 at Upson (Iron County) on February 4, 2013.
- Upson also had the most snow with 186.4 inches in the 2012-13 winter season, while Timmerman Field in Milwaukee had the least with only 25.6 inches. Most of the central and southern counties had 50 to 70 inches which was well above normal.
- Wisconsin's all-time, lowest temperature is -55˚F on February 2 & 4, 1996, near Couderay (Sawyer Co.). Readings of -30˚F or colder have been recorded in every month from November through April. Of course, brief readings in the 50's, 60's and 70's are possible during winter as well!
- Average annual snowfall ranges from 32 to 40 inches near the Illinois border to 135 to 168 inches in the Iron County snow-belt from Gurney to Hurley. The extremes are 31.9 inches in Beloit, Rock County to 167.5 inches in Hurley, Iron County, for the period of 1981-2010.
- Greatest daily total – Pell Lake, 26 inches on Feb 2, 2011 and Neillsville, 26 inches on December 27, 1904
- Greatest single storm total - Superior, 31.0 inches over Oct. 31-Nov. 2, 1991.
- Greatest monthly total - Hurley, 103.5 inches in Jan. 1997.
- Greatest seasonal total - Hurley, 301.8 inches in winter of 1996-97.
- Deepest snow on ground (excluding drifts) - Hurley, 60.0 inches on Jan. 30, 1996.

Winter Driving In Wisconsin

Plan your travels and check the latest weather reports to avoid a winter storm. You can find out the latest road conditions by visiting the Wisconsin Department of Transportation travel information website at www.511wi.gov or by calling 511.

It is also important to check and winterize your vehicles before the winter season begins. Keep your gas tank at least half full to avoid ice in the tank and fuel lines. Make sure your car's battery is in good shape – cold temperatures can reduce the effectiveness of a battery by 50 percent.

If expecting adverse weather during your trip, tell someone at both ends of your journey where you are going and the route you intend to take. Report your safe arrival. Make certain that both parties have your cell phone number and license plate number before you start your trip.

Here are some driving tips. Be gentle with both the accelerator and brake. Don't use cruise control in wintery conditions. Don't be overconfident in your four-wheel drive vehicle. You may get going quicker than others but you can't stop faster. Four-wheel drive vehicles can lose traction as quickly as two wheel drive.

Carry a winter storm survival kit in the back seat of your vehicle (in case your trunk jams or is frozen shut) that includes:

- Blankets or sleeping bags
- Extra hats, socks and mittens
- Flashlight with extra batteries
- First-aid kit
- Shovel, booster cables and windshield scraper
- Water and high-calorie non-perishable food (raisins, candy bars, energy/protein bars)
- Sand or cat litter to use for traction
- Cell phone adapter

- In the last five years, Wisconsin has averaged 50,000 motor vehicle crashes during the winter months when roads are covered with ice, snow or slush.
- On average, 45 people are killed and more than 5,000 injured in Wisconsin each winter season in accidents when roads are covered in ice, snow and slush.
- Many crashes are caused by "driving too fast for current conditions." Also, when the first blast of winter arrives, motorists often need to "re-learn" how to drive in slippery conditions.

Safety First - Stay Informed

The National Weather Service (NWS) issues winter storm warnings and watches. Here's what they mean and what you should do.

Winter Storm Watch – Winter storm conditions (heavy snow, sleet and freezing rain) are possible within the next 36-48 hours. Continue monitoring the weather forecast.

Winter Storm or Ice Storm Warning – A significant winter storm is occurring or will begin in the next 24 hours. The combination of snow, sleet, freezing rain and moderate winds will impact travel and outdoor activities. An Ice Storm Warning is issued when mostly freezing rain is expected with ice accumulations of ¼ inch or more within a 12-hour period. Take necessary precautions – consider canceling travel plans.

Blizzard Warning – A dangerous storm with winds that are 35 mph or greater in combination with falling and/or blowing snow that reduces visibility to 1/4 mile or less for a duration of at least 3 hours.

Wind Chill Advisory – Issued for bitter cold wind chills.

Wind Chill Warning – Issued when frostbite is possible when outside for 10 minutes or less.

Wind Chill Calculator - http://www.nws.noaa.gov/os/windchill/index.shtml

NWS Windchill Chart

Wind (mph)	Temperature (°F)																	
Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes, 10 minutes, 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01

Keep Warm and Safe

Frostbite is damage to body tissue caused by extreme cold. Frostbite causes a loss of feeling and a white or pale appearance in extremities such as fingers, toes, ear tips or the tip of the nose. If symptoms are detected, seek medical care immediately!

Hypothermia is a condition that develops when the body temperature drops below 95˚F. It is very deadly. Warning signs include uncontrollable shivering, disorientation, slurred speech and drowsiness. Seek medical care immediately!

Overexertion is dangerous. Cold weather puts an added strain on the heart. Unaccustomed exercise such as shoveling snow or pushing a car can bring on a heart attack or make an existing medical condition worse.

Pets also need extra care when the temperatures fall. They should be brought inside when the temperature reaches 30˚F with wind chill. Dogs and cats can get frost-bitten ears, nose and feet if left outside during bitter cold weather. Chemicals used to melt snow and ice can also irritate pets' paws – be sure to keep anti-freeze, salt and other poisons away from pets.

Be Prepared At Home

Some of the dangers associated with winter storms include loss of heat, power and telephone service and a shortage of supplies. To help protect your family, now is the time to put together a disaster supply kit. Here are some items to include:

- Flashlights and extra batteries
- Battery-powered NOAA Weather Radio and a commercial radio
- Bottled water and non-perishable food that requires no cooking
- First-aid supplies
- Fire extinguisher, smoke detector and carbon monoxide detector
- If appropriate, extra medications and baby items
- If you have an emergency heating source such as a fireplace or space heater, make sure you have proper ventilation
- Make sure pets have shelter and plenty of food and water

For additional information, contact your county or tribal emergency management office, the National Weather Service or ReadyWisconsin.wi.gov.

Check Carbon Monoxide Detectors

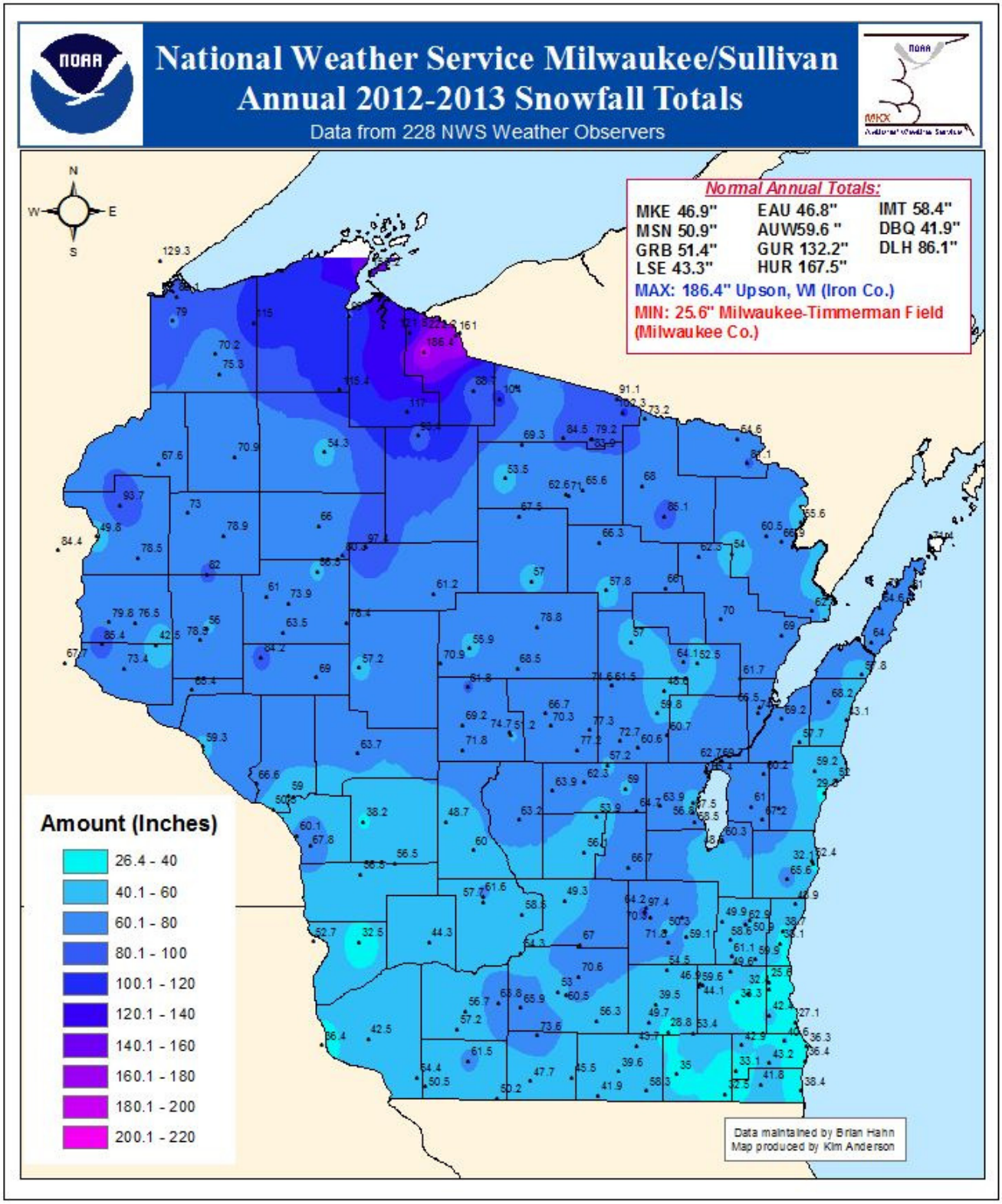
Carbon monoxide is the leading cause of accidental poisoning deaths in the United States, according to the Centers for Disease Control. More than 20,000 people visit the emergency room and nearly 500 are killed each year from carbon monoxide poisoning.

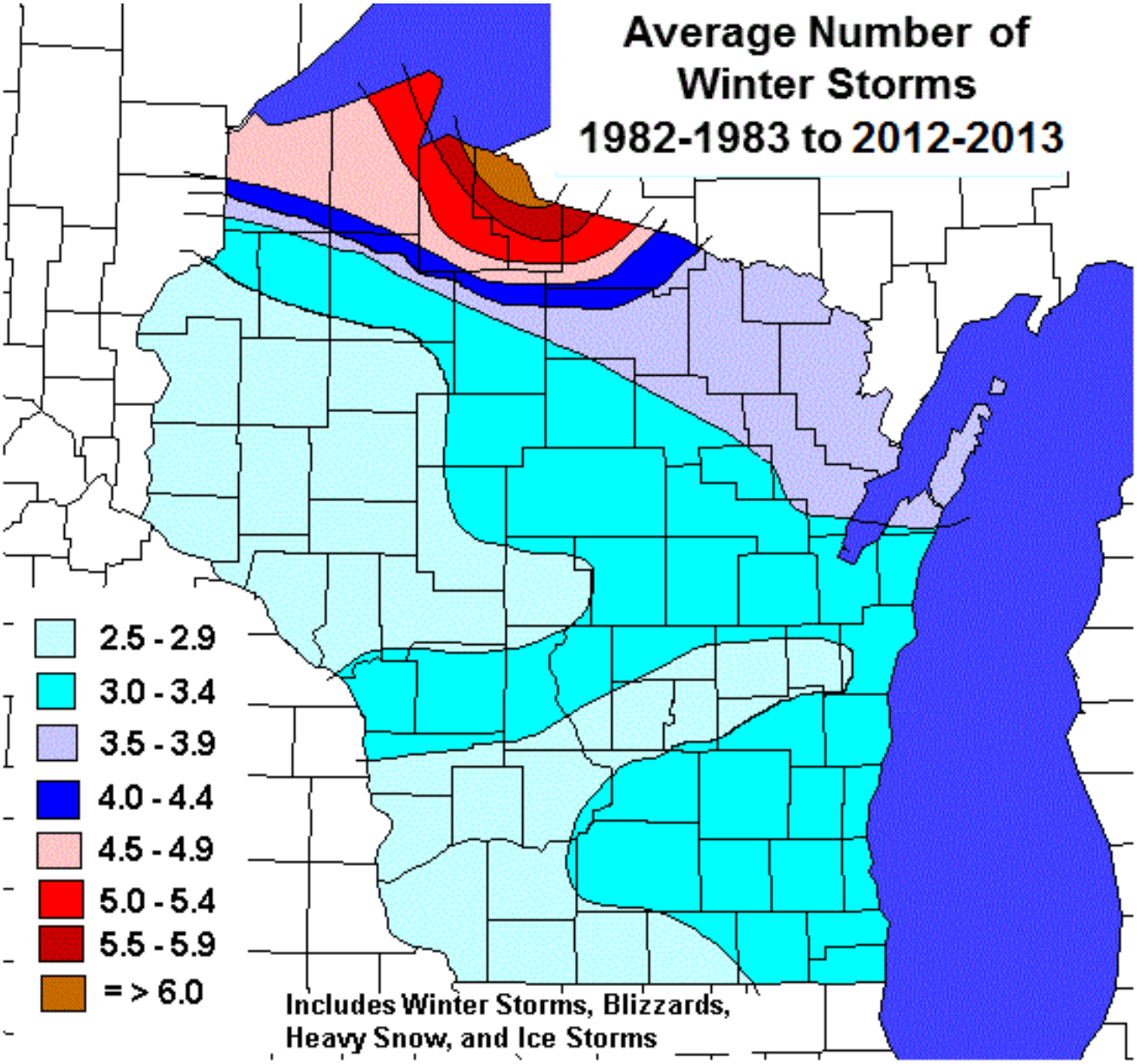
To protect your family from carbon monoxide, follow these simple safety tips:

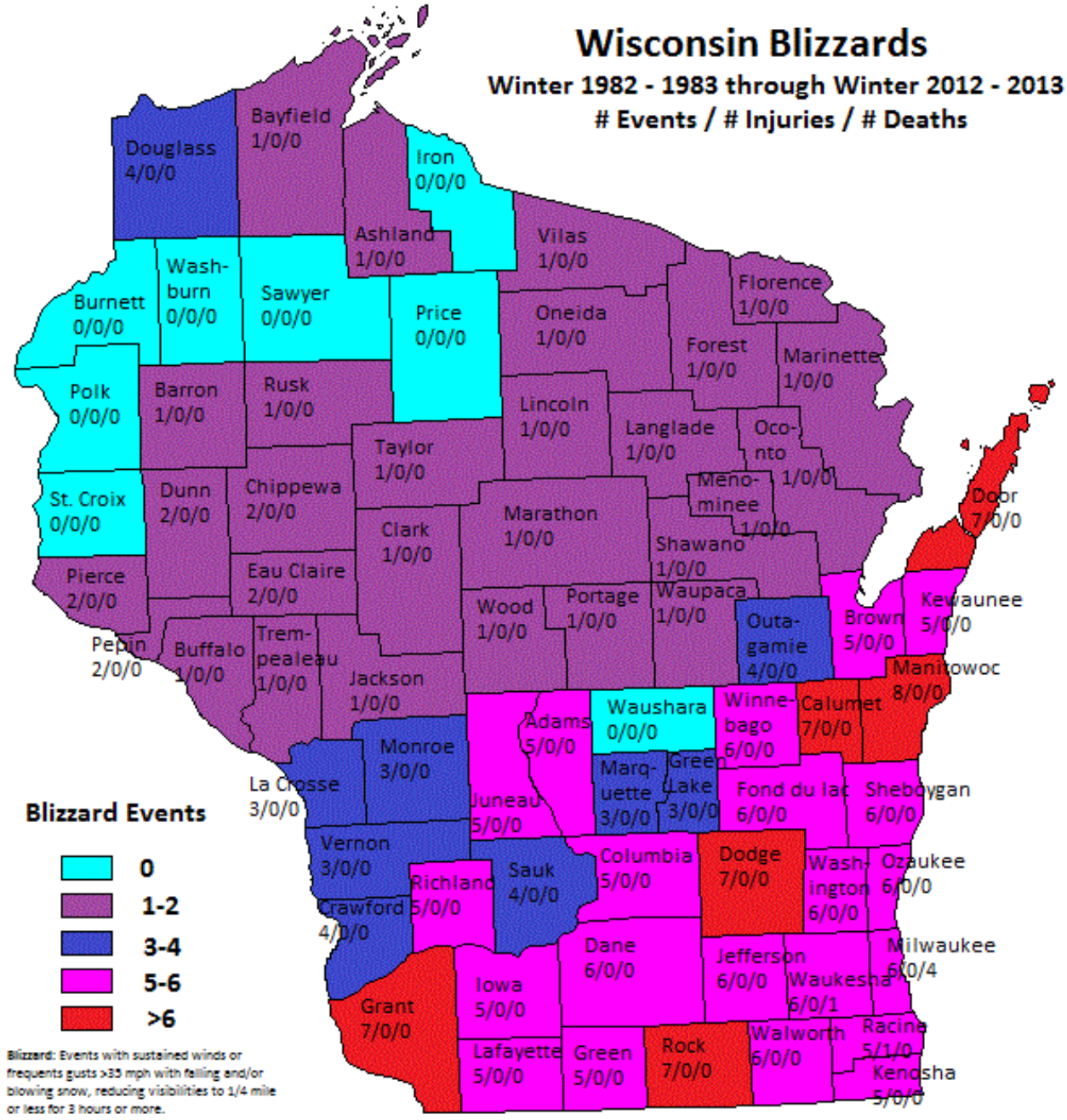
- **Make sure you have working CO detectors.** All homes and duplexes in Wisconsin are required to have CO detectors on every level including the basement, but not the attic or storage areas.
- **Have your furnace or wood-burning stove inspected annually** to make sure it is structurally and functionally sound and vents properly to the outside of your home.
- **Never run a gasoline or propane heater or a grill (gas or charcoal) inside your home or an unventilated garage.** Any heating system that burns fuel will produce carbon monoxide. Use a battery-powered detector where you have fuel burning devices but no electric outlets, such as in tents, cabins, RVs, and boats with enclosed cabins.
- **Never run a car in an enclosed space.** If a vehicle is running, you must have a door open to the outside.
- **Generators should be run a safe distance from the home.** Never run a generator in the home or garage, or right next to windows or doors.

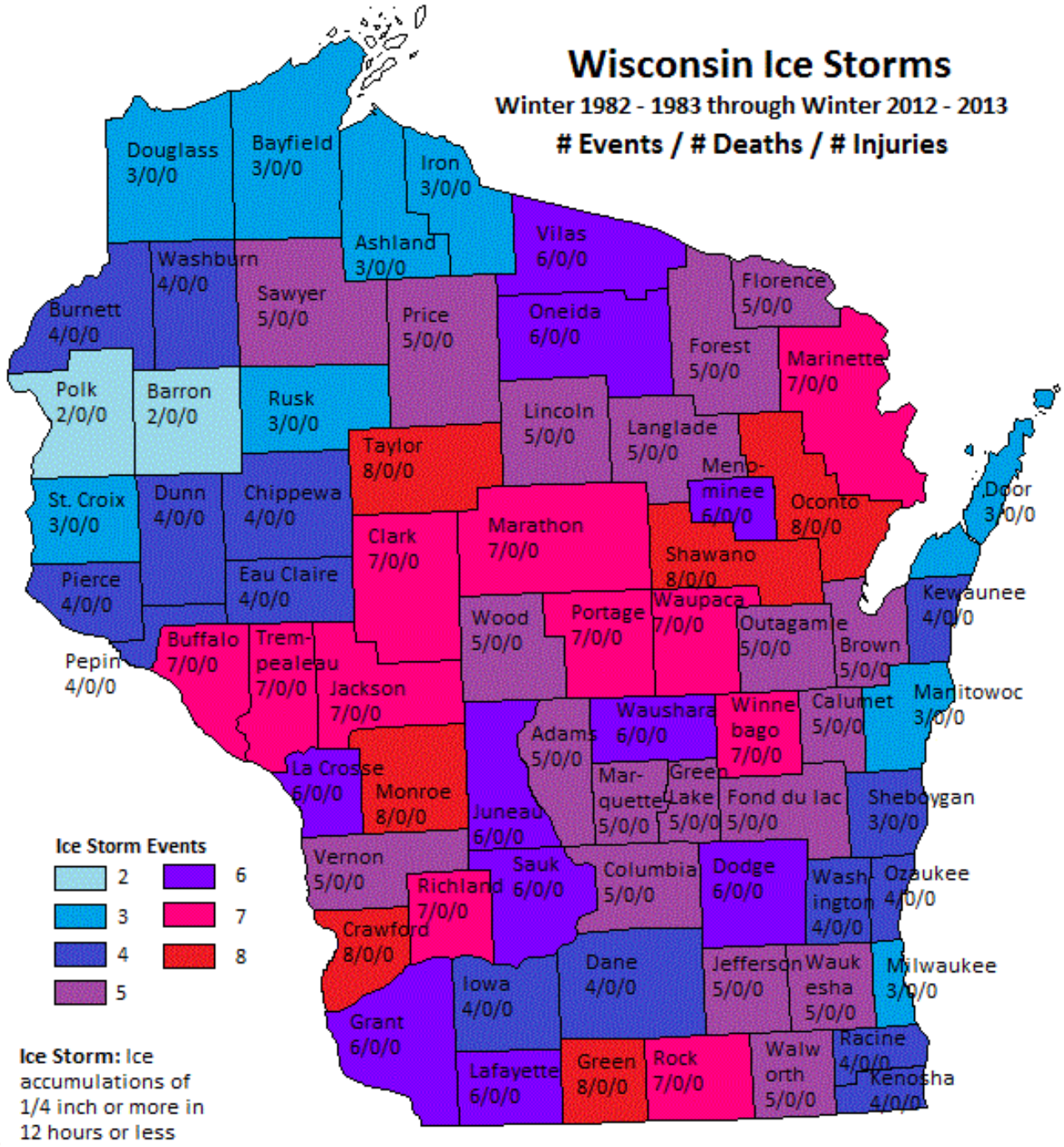
Breathing carbon monoxide displaces the oxygen in the blood and can cause death within minutes at high levels. Symptoms of overexposure to carbon monoxide are often mistaken for the flu and include headaches, fatigue, dizziness, shortness of breath/chest pain, nausea/vomiting, and confusion. If you experience any of these symptoms, or your carbon monoxide detector sounds an alarm, head outside immediately for fresh air and call 911.

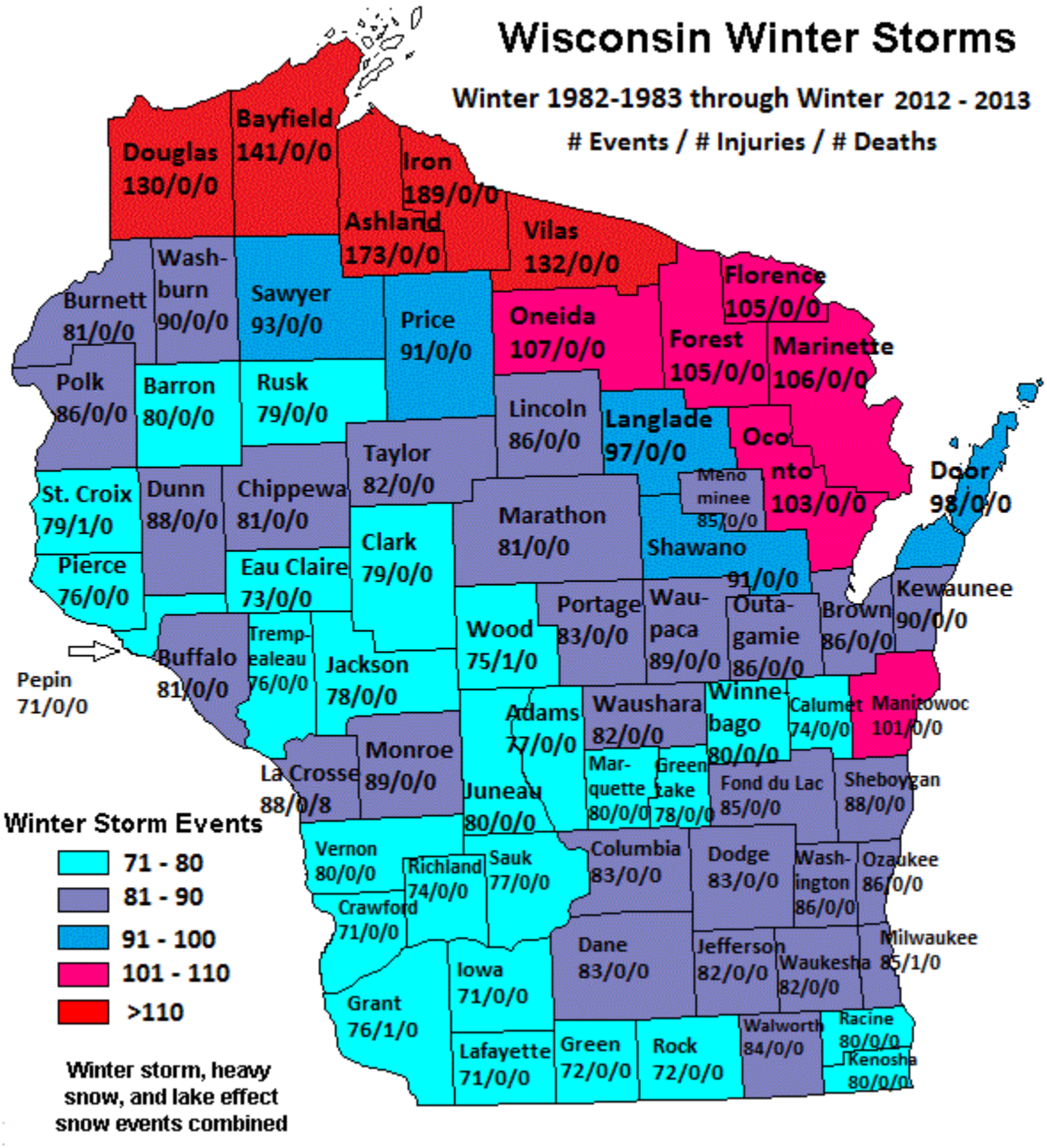
For more information on carbon monoxide poisoning, visit: http://dhs.wisconsin.gov/eh/Air/fs/CO.htm.

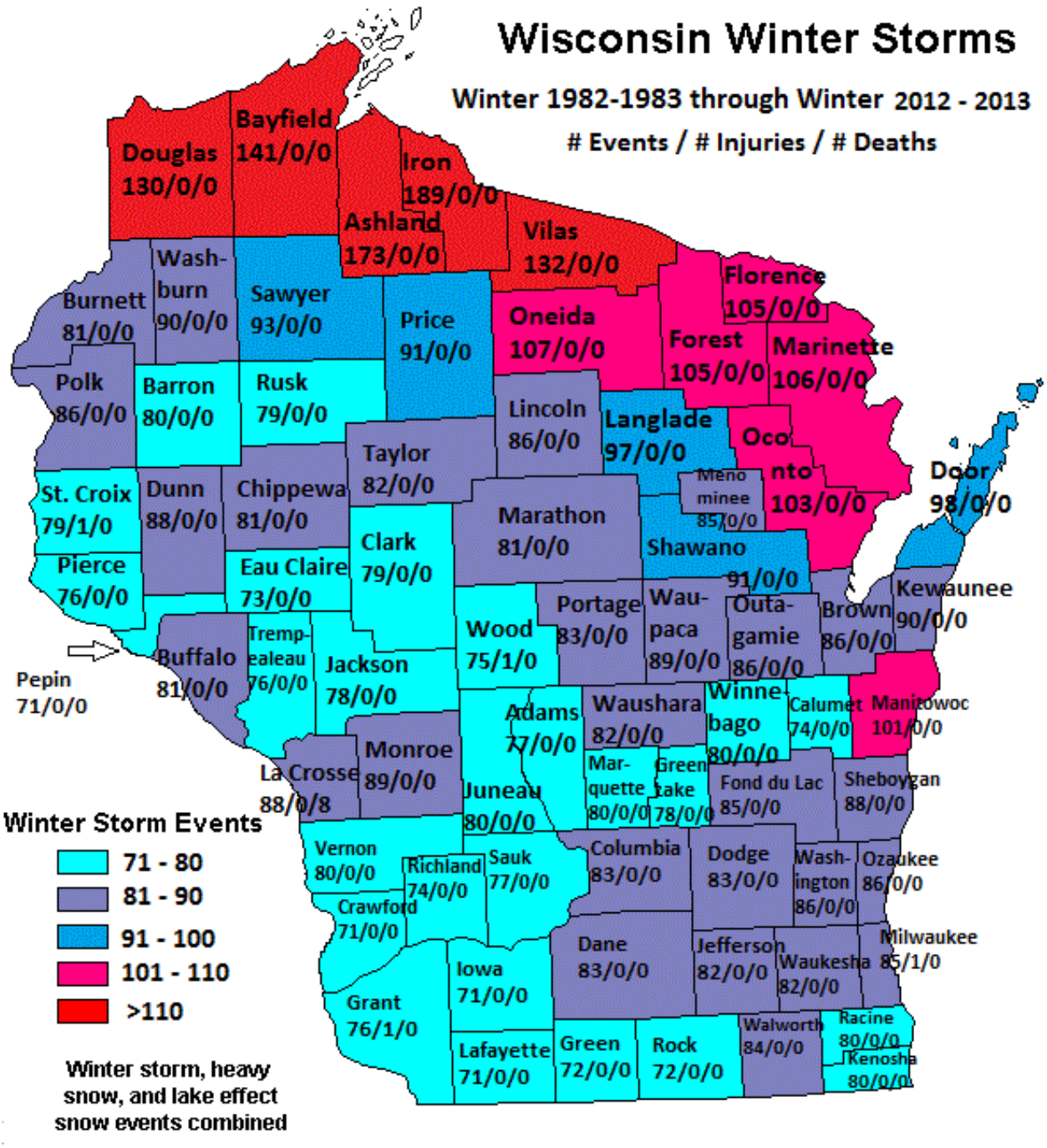

National Weather Service Milwaukee/Sullivan
Annual 2012-2013 Snowfall Totals
Data from 228 NWS Weather Observers
Normal Annual Totals:
MKE 46.9"
MSN 50.9"
GRB 51.4"
LSE 43.3"
EAU 46.8"
AUW59.6 "
GUR 132.2"
HUR 167.5"
IMT 58.4"
DBQ 41.9"
DLH 86.1"
MAX: 186.4" Upson, WI (Iron Co.)
MIN: 25.6" Milwaukee-Timmerman Field (Milwaukee Co.)
Amount (Inches)
26.4 - 40
40.1 - 60
60.1 - 80
80.1 - 100
100.1 - 120
120.1 - 140
140.1 - 160
160.1 - 180
180.1 - 200
200.1 - 220
Data maintained by Brian Hahn
Map produced by Kim Anderson

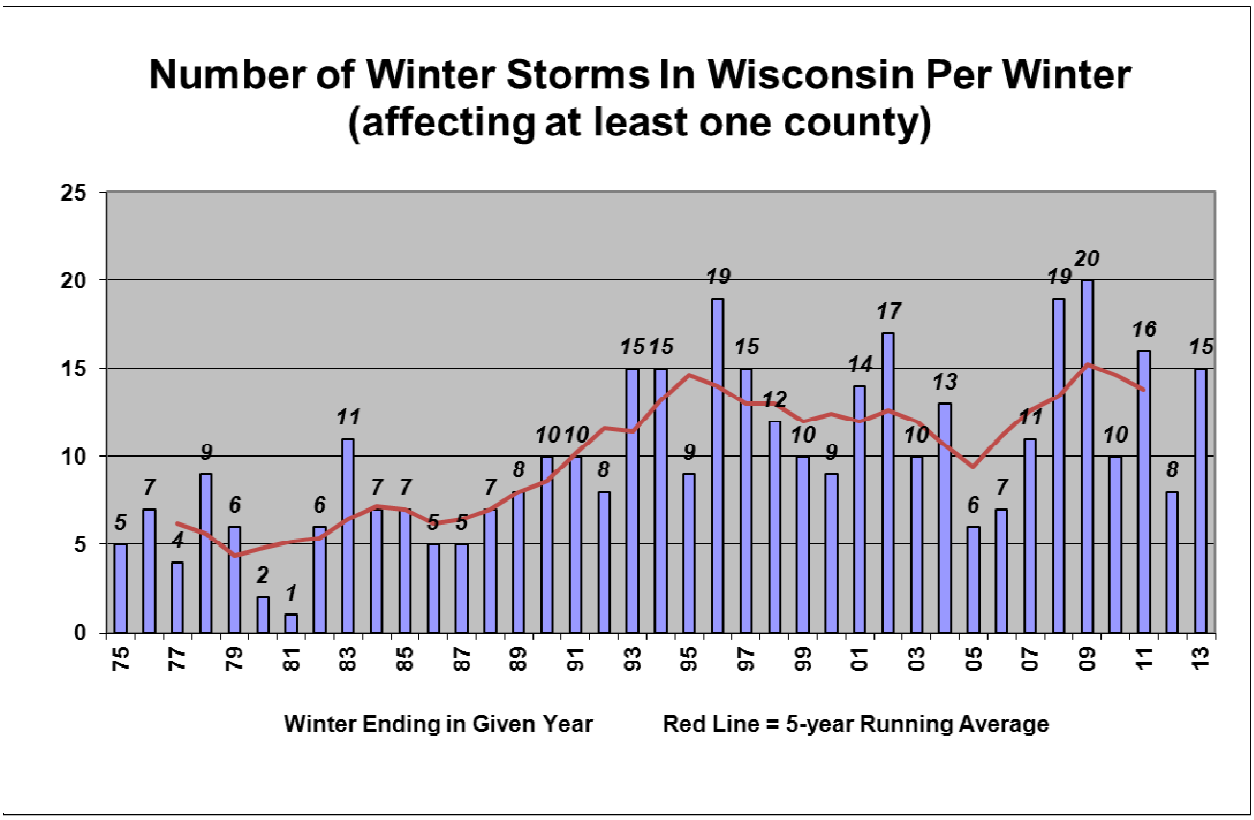

Average Number of
Winter Storms
1982-1983 to 2012-2013
2.5 - 2.9
3.0 - 3.4
3.5 - 3.9
4.0 - 4.4
4.5 - 4.9
5.0 - 5.4
5.5 - 5.9
= > 6.0
Includes Winter Storms, Blizzards,
Heavy Snow, and Ice Storms


Wisconsin Blizzards
Winter 1982 - 1983 through Winter 2012 - 2013
Events / # Injuries / # Deaths
Douglass 4/0/0
Bayfield 1/0/0
Iron 0/0/0
Ashland 1/0/0
Vilas 1/0/0
Florence 1/0/0
Burnett 0/0/0
Wash-burn 0/0/0
Sawyer 0/0/0
Price 0/0/0
Oneida 1/0/0
Forest 1/0/0
Marinette 1/0/0
Polk 0/0/0
Barron 1/0/0
Rusk 1/0/0
Lincoln 1/0/0
Langlade 1/0/0
Oco-nto 1/0/0
Taylor 1/0/0
St. Croix 0/0/0
Dunn 2/0/0
Chippewa 2/0/0
Meno-minee 1/0/0
Door 7/0/0
Clark 1/0/0
Marathon 1/0/0
Shawano 1/0/0
Pierce 2/0/0
Eau Claire 2/0/0
Wood 1/0/0
Portage 1/0/0
Waupaca 1/0/0
Brown 5/0/0
Kewaunee 5/0/0
Pepin 2/0/0
Buffalo 1/0/0
Trem-pealeau 1/0/0
Jackson 1/0/0
Outa-gamie 4/0/0
Manitowoc 8/0/0
Waushara 0/0/0
Winne-bago 6/0/0
Calumet 7/0/0
Adams 5/0/0
Monroe 3/0/0
Marq-uette 3/0/0
Green Lake 3/0/0
Fond du lac 6/0/0
Sheboygan 6/0/0
La Crosse 3/0/0
Juneau 5/0/0
Vernon 3/0/0
Columbia 5/0/0
Dodge 7/0/0
Wash-ington 6/0/0
Ozaukee 6/0/0
Richland 5/0/0
Sauk 4/0/0
Crawford 4/0/0
Dane 6/0/0
Jefferson 6/0/0
Milwaukee 6/0/4
Waukesha 6/0/1
Iowa 5/0/0
Grant 7/0/0
Walworth 6/0/0
Racine 5/1/0
Lafayette 5/0/0
Green 5/0/0
Rock 7/0/0
Kenosha 5/0/0
Blizzard Events
0
1-2
3-4
5-6
>6
Blizzard: Events with sustained winds or frequents gusts >35 mph with falling and/or blowing snow, reducing visibilities to 1/4 mile or less for 3 hours or more.


Wisconsin Ice Storms
Winter 1982 - 1983 through Winter 2012 - 2013
Events / # Deaths / # Injuries
Douglass 3/0/0
Bayfield 3/0/0
Iron 3/0/0
Ashland 3/0/0
Vilas 6/0/0
Washburn 4/0/0
Sawyer 5/0/0
Price 5/0/0
Oneida 6/0/0
Florence 5/0/0
Burnett 4/0/0
Forest 5/0/0
Marinette 7/0/0
Polk 2/0/0
Barron 2/0/0
Rusk 3/0/0
Lincoln 5/0/0
Langlade 5/0/0
Taylor 8/0/0
Menominee 6/0/0
Oconto 8/0/0
Door 3/0/0
St. Croix 3/0/0
Dunn 4/0/0
Chippewa 4/0/0
Clark 7/0/0
Marathon 7/0/0
Shawano 8/0/0
Pierce 4/0/0
Eau Claire 4/0/0
Kewaunee 4/0/0
Wood 5/0/0
Portage 7/0/0
Waupaca 7/0/0
Outagamie 5/0/0
Brown 5/0/0
Pepin 4/0/0
Buffalo 7/0/0
Trempealeau 7/0/0
Jackson 7/0/0
Manitowoc 3/0/0
Waushara 6/0/0
Winnebago 7/0/0
Calumet 5/0/0
Adams 5/0/0
La Crosse 6/0/0
Monroe 8/0/0
Marquette 5/0/0
Green Lake 5/0/0
Fond du lac 5/0/0
Sheboygan 3/0/0
Juneau 6/0/0
Vernon 5/0/0
Richland 7/0/0
Sauk 6/0/0
Columbia 5/0/0
Dodge 6/0/0
Washington 4/0/0
Ozaukee 4/0/0
Crawford 8/0/0
Dane 4/0/0
Jefferson 5/0/0
Waukesha 5/0/0
Milwaukee 3/0/0
Iowa 4/0/0
Grant 6/0/0
Lafayette 6/0/0
Green 8/0/0
Rock 7/0/0
Walworth 5/0/0
Racine 4/0/0
Kenosha 4/0/0
Ice Storm Events
2
3
4
5
6
7
8
Ice Storm: Ice accumulations of 1/4 inch or more in 12 hours or less


Wisconsin Winter Storms
Winter 1982-1983 through Winter 2012 - 2013
Events / # Injuries / # Deaths
Douglas 130/0/0
Bayfield 141/0/0
Iron 189/0/0
Ashland 173/0/0
Vilas 132/0/0
Florence 105/0/0
Burnett 81/0/0
Wash-burn 90/0/0
Sawyer 93/0/0
Price 91/0/0
Oneida 107/0/0
Forest 105/0/0
Marinette 106/0/0
Polk 86/0/0
Barron 80/0/0
Rusk 79/0/0
Lincoln 86/0/0
Langlade 97/0/0
Oco nto 103/0/0
Door 98/0/0
Taylor 82/0/0
St. Croix 79/1/0
Dunn 88/0/0
Chippewa 81/0/0
Meno minee 85/0/0
Marathon 81/0/0
Clark 79/0/0
Pierce 76/0/0
Eau Claire 73/0/0
Shawano 91/0/0
Kewaunee 90/0/0
Portage 83/0/0
Wau-paca 89/0/0
Outa-gamie 86/0/0
Brown 86/0/0
Wood 75/1/0
Pepin 71/0/0
Buffalo 81/0/0
Tremp-ealeau 76/0/0
Jackson 78/0/0
Adams 77/0/0
Waushara 82/0/0
Winne-bago 80/0/0
Calumet 74/0/0
Manitowoc 101/0/0
Monroe 89/0/0
La Crosse 88/0/8
Juneau 80/0/0
Mar-quette 80/0/0
Green Lake 78/0/0
Fond du Lac 85/0/0
Sheboygan 88/0/0
Winter Storm Events
71 - 80
81 - 90
91 - 100
101 - 110
>110
Vernon 80/0/0
Richland 74/0/0
Sauk 77/0/0
Columbia 83/0/0
Dodge 83/0/0
Wash-ington 86/0/0
Ozaukee 86/0/0
Crawford 71/0/0
Dane 83/0/0
Jefferson 82/0/0
Waukesha 82/0/0
Milwaukee 85/1/0
Iowa 71/0/0
Grant 76/1/0
Lafayette 71/0/0
Green 72/0/0
Rock 72/0/0
Walworth 84/0/0
Racine 80/0/0
Kenosha 80/0/0
Winter storm, heavy snow, and lake effect snow events combined


Wisconsin Winter Storms
Winter 1982-1983 through Winter 2012 - 2013
Events / # Injuries / # Deaths
Douglas 130/0/0
Bayfield 141/0/0
Iron 189/0/0
Ashland 173/0/0
Vilas 132/0/0
Florence 105/0/0
Burnett 81/0/0
Wash-burn 90/0/0
Sawyer 93/0/0
Price 91/0/0
Oneida 107/0/0
Forest 105/0/0
Marinette 106/0/0
Polk 86/0/0
Barron 80/0/0
Rusk 79/0/0
Lincoln 86/0/0
Langlade 97/0/0
Oco nto 103/0/0
Door 98/0/0
Taylor 82/0/0
St. Croix 79/1/0
Dunn 88/0/0
Chippewa 81/0/0
Meno minee 85/0/0
Marathon 81/0/0
Clark 79/0/0
Shawano 91/0/0
Pierce 76/0/0
Eau Claire 73/0/0
Kewaunee 90/0/0
Portage 83/0/0
Wau-paca 89/0/0
Outa-gamie 86/0/0
Brown 86/0/0
Wood 75/1/0
Pepin 71/0/0
Buffalo 81/0/0
Tremp-ealeau 76/0/0
Jackson 78/0/0
Adams 77/0/0
Waushara 82/0/0
Winne-bago 80/0/0
Calumet 74/0/0
Manitowoc 101/0/0
Monroe 89/0/0
La Crosse 88/0/8
Juneau 80/0/0
Mar-quette 80/0/0
Green Lake 78/0/0
Fond du Lac 85/0/0
Sheboygan 88/0/0
Winter Storm Events
71 - 80
81 - 90
91 - 100
101 - 110
>110
Vernon 80/0/0
Richland 74/0/0
Sauk 77/0/0
Columbia 83/0/0
Dodge 83/0/0
Wash-ington 86/0/0
Ozaukee 86/0/0
Crawford 71/0/0
Dane 83/0/0
Jefferson 82/0/0
Waukesha 82/0/0
Milwaukee 85/1/0
Iowa 71/0/0
Grant 76/1/0
Lafayette 71/0/0
Green 72/0/0
Rock 72/0/0
Walworth 84/0/0
Racine 80/0/0
Kenosha 80/0/0
Winter storm, heavy snow, and lake effect snow events combined


Number of Winter Storms In Wisconsin Per Winter
(affecting at least one county)
25
20
15
10
5
0
5 7 4 9 6 2 1 6 11 7 7 5 5 7 8 10 10 8 15 15 9 19 15 12 10 9 14 17 10 13 6 7 11 19 20 10 16 8 15
75 77 79 81 83 85 87 89 91 93 95 97 99 01 03 05 07 09 11 13
Winter Ending in Given Year
Red Line = 5-year Running Average