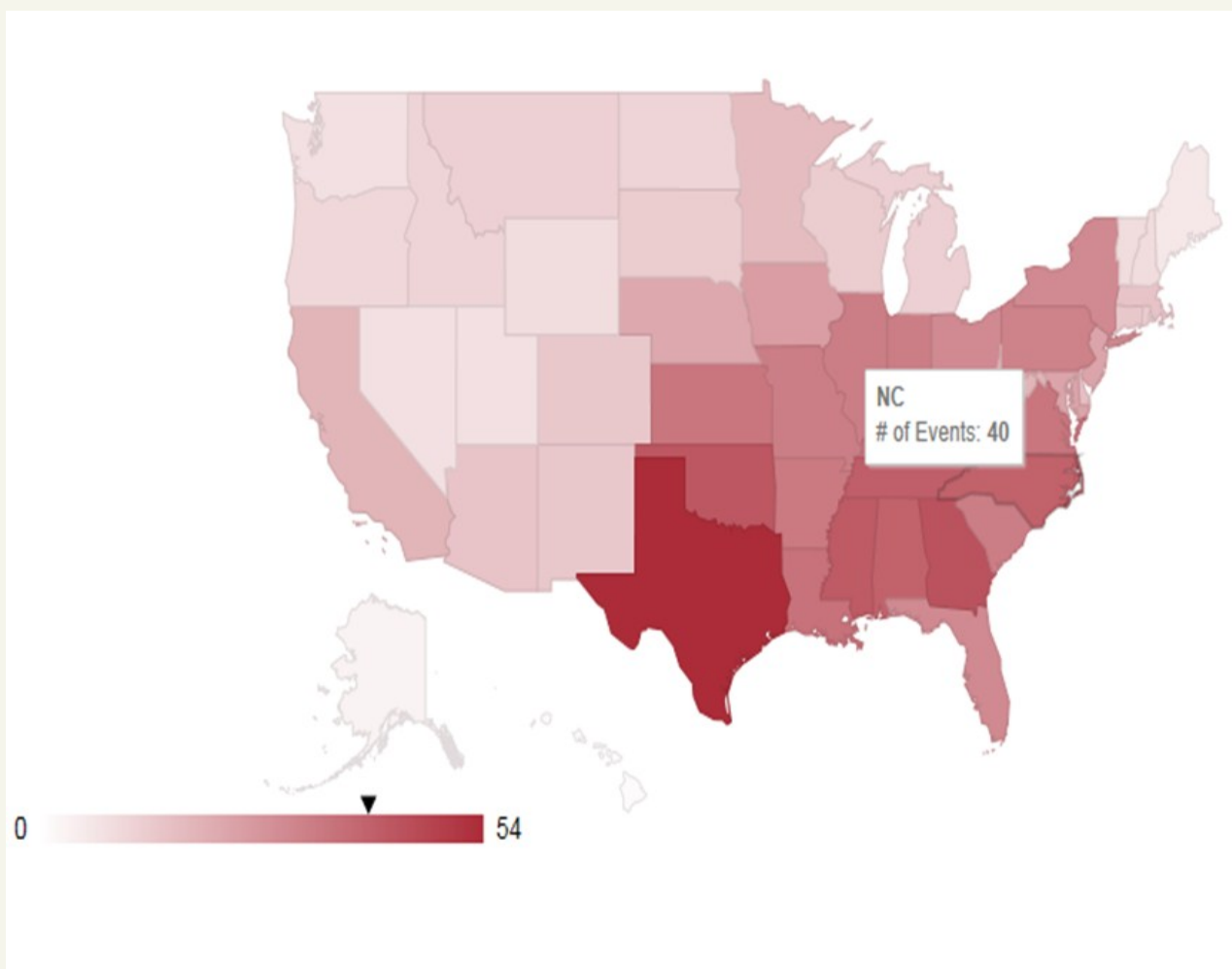




## NOAA/ NWS StormReady and Billion Dollar Weather Disasters

*By John Cole, Warning Coordination Meteorologist*

We live in the most severe weather-prone country on Earth. Each year, Americans cope with an average of 100,000 thunderstorms, 10,000 of which are severe; 5,000 floods; 1,000 tornadoes; and an average of 2 landfalling deadly hurricanes. And this on top of winter storms, intense summer heat, high winds, wild fires and other deadly weather impacts. We can make sure our communities are ready for the weather with the National Weather Service's **StormReady®** program. Some 90% of all presidentially declared disasters are weather related, leading to around 500 deaths per year and nearly \$14 billion in damage. The image below shows the billion dollar climate and weather disasters compiled by NOAA National Data Climate Center, NCDC, for the U.S from the period 1980 through 2012. NC ranks 6th in the nation. For more information on billion dollar climate and weather disasters visit the NCDC website at: <http://www.ncdc.noaa.gov/billions/> .

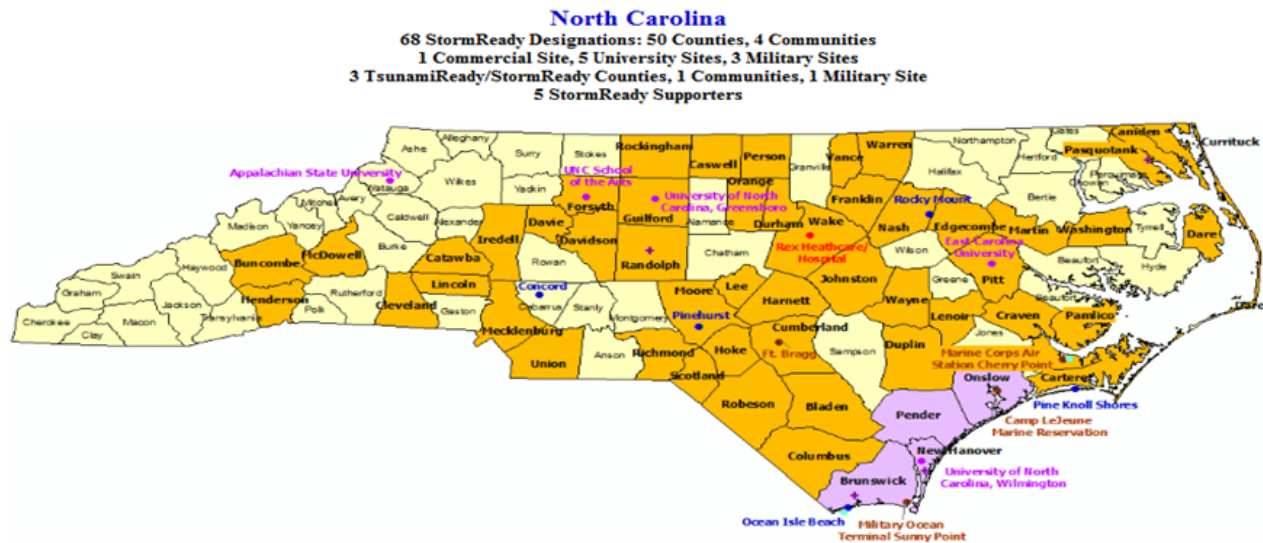


The U.S. Billion-dollar Weather/Climate Disaster report from NOAA NCDC provides readers with an aggregated loss perspective for major weather and climate events from 1980 to present. This report provides information such as economic loss, deaths and other impacts for numerous weather and climate disasters including: tropical cyclones, floods, droughts / heat waves, severe local storms (e.g., tornado, hail, straight-line wind damage), wildfires, crop freeze events and winter storms.

## StormReady and Billion Dollar Weather Disasters (Continued)

StormReady, a program started in 1999 in Tulsa, OK, 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 strengthen local safety programs. StormReady communities are better prepared to save lives from the onslaught of severe weather through advanced planning, education and awareness. No community is storm proof, but StormReady can help communities save lives. Below are the StormReady and TsunamiReady locations across NC. For more information on StormReady refer to the national web site at:

<http://www.stormready.noaa.gov/>



Gold Shading: StormReady County Purple Shading: TsunamiReady County			Blue Dot: StormReady/TsunamiReady Community
<ul style="list-style-type: none"> <li>Bladen</li> <li>Brunswick</li> <li>Buncombe</li> <li>Camden</li> <li>Carteret</li> <li>Caswell</li> <li>Catawba</li> <li>Cleveland</li> <li>Columbus</li> <li>Craven</li> <li>Cumberland</li> <li>Currick</li> <li>Dare</li> <li>Davidson</li> <li>Davie</li> <li>Duplin</li> <li>Durham</li> <li>Edgecombe</li> <li>Forsyth</li> </ul>	<ul style="list-style-type: none"> <li>Franklin</li> <li>Guilford</li> <li>Harnett</li> <li>Henderson</li> <li>Hoke</li> <li>Iredell</li> <li>Johnston</li> <li>Lee</li> <li>Lenoir</li> <li>Lincoln</li> <li>Martin</li> <li>McDowell</li> <li>Mecklenburg</li> <li>Moore</li> <li>Nash</li> <li>New Hanover</li> <li>Onslow County</li> </ul>	<ul style="list-style-type: none"> <li>Orange</li> <li>Pamlico</li> <li>Pasquotank</li> <li>Pender</li> <li>Person</li> <li>Pitt</li> <li>Randolph</li> <li>Richmond</li> <li>Robeson</li> <li>Rockingham</li> <li>Scotland</li> <li>Union</li> <li>Vance</li> <li>Wake</li> <li>Warren</li> <li>Washington</li> <li>Wayne</li> </ul>	<ul style="list-style-type: none"> <li>Concord</li> <li>Ocean Isle Beach</li> <li>Pine Knolls Shores</li> <li>Pinehurst</li> <li>Rocky Mount</li> </ul>
			<p style="text-align: center;"><b>Red Dot: StormReady Commercial Site</b></p> <ul style="list-style-type: none"> <li>Rex Healthcare/Hospital</li> </ul>
			<p style="text-align: center;"><b>Purple Dot: StormReady University</b></p> <ul style="list-style-type: none"> <li>Appalachian State University</li> <li>East Carolina University</li> <li>UNC Greensboro</li> <li>UNC School of the Arts</li> <li>UNC Wilmington</li> </ul>
			<p style="text-align: center;"><b>TsunamiReady/StormReady Military Sites</b></p> <ul style="list-style-type: none"> <li>Camp Lejeune Military Reservation</li> <li>Fort Bragg</li> <li>Marine Corps Air Station Cherry Point</li> <li>Military Ocean Terminal Sunny Point</li> </ul>
<b>Purple Plus: StormReady Supporter</b>			

Currently, 10 of 15 counties in the NWS Newport/Morehead City forecast area are Storm-Ready. There are two military reservations , one University, and one community. Camp Lejeune and Onslow county are TsunamiReady. Red Stars indicate StormReady designations within our county warning area.

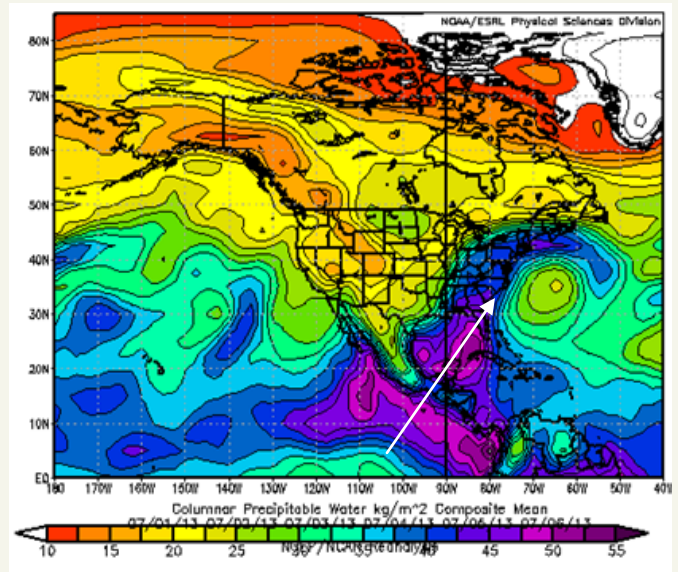
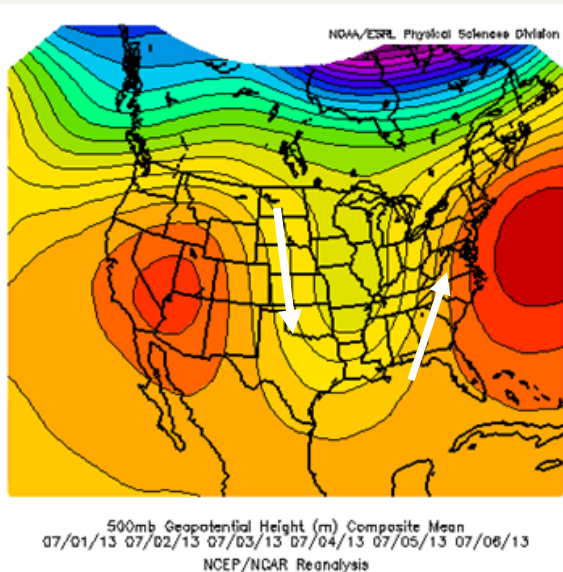


## The Madden-Julian Oscillation (MJO)

By Belkys Melendez, Meteorologist

North Carolina has been under the influence of either El Niño or La Niña, since 2009. Finally, global patterns have become neutral or in a normal state; without the influence of either El Niño or La Niña. This means we do not have cool temperatures with above normal rainfall, which is a result of El Niño, nor do we have above normal temperatures with a lack of rain, a direct result of La Niña. So why did we have so much rain this summer? Good Question. Just because there is no El Niño or La Niña this year does not mean that other types of climate variability cannot influence the weather pattern. This year, North Carolina has been influenced by the Madden Julian Oscillation; for short it's called MJO.

So, what is the Madden-Julian Oscillation (MJO)? *“The Madden-Julian Oscillation (MJO) is a tropical disturbance that propagates eastward around the global tropics with a cycle on the order of 30-60 days. The MJO has wide ranging impacts on the patterns of tropical and extra-tropical precipitation, atmospheric circulation, and surface temperature around the global tropics and subtropics.”* (NOAA / NWS / NCEP Climate Prediction Center. “Madden Julian Oscillation Impacts”) Overall, the MJO tends to be most active during the absence of El Niño and La Niña, and is often absent during moderate-to-strong El Niño and La Niña events. The MJO has influenced both precipitation and surface temperature patterns across the United States. During the beginning of July 2013, North Carolina had a trough located to the west with High Pressure off the coast. This allowed moisture to stream from Central America and up the East Coast of the US, bringing above normal precipitation to the Carolinas and flooding along the East Coast. Not only can the MJO affect the weather patterns of the US, but it also can influence or increase tropical cyclone activity across both the Pacific and Atlantic basins during summer. For additional information about the MJO, go to <http://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/mjo.shtml>.



The figure on the left depicts the upper level trough digging down into the Gulf of Mexico transporting the enormous amount of moisture from Gulf of Mexico/Central America to the East Coast. The figure on the right shows the deep moisture moving across the southeastern United States into the Mid-Atlantic Region.

## June 2013 is the Fifth Warmest Worldwide

By Chris Collins, Meteorologist

According to NOAA scientists, the globally averaged temperature for June 2013 tied with 2006 as the fifth warmest June since record keeping began in 1880. The average temperature for the contiguous U.S. during June was 70.4°F, 2.0°F above the 20th century average. The Lower 48 had its 15th warmest and 13th wettest June on record. The western United States and the East Coast were warmer than average, while much of the central and southeastern United States had near-average temperatures.

Nationally, June averaged a precipitation total of 3.43 inches, which was 0.54 inch above the 20th century average. Drought continued to impact the West and parts of the Central and Southern Plains, and wildfires charred over 1.2 million acres nationwide.

Over eastern North Carolina, no counties were designated at any level of drought as rainfall was generally well distributed and frequent. Temperatures in the month of June were generally 1 to 3 degrees above normal. The warmest temperatures recorded during the month was 98 degrees at New Bern on June 13th. During a brief cool spell during the middle of June, low temperatures fell into the lower to middle 50s with a chilly 52 degrees observed at Newport on June 15.

### Temperatures

New Bern



Cape Hatteras



Beaufort



Newport (Unofficial)



Mean Temp: 78.4°  
1.2° Above Normal  
Highest: 98°/13<sup>th</sup>  
Lowest: 59°/15<sup>th</sup>

Mean Temp: 78.1°  
2.9° Above Normal  
Highest: 87°/21<sup>st</sup>  
Lowest: 58°/15<sup>th</sup>

Mean Temp: 77.2°  
1.6° Above Normal  
Highest: 86°/13<sup>th</sup>  
Lowest: 58°/15<sup>th</sup>

Mean Temp: 75.8°  
0.3° Below Normal  
Highest: 87°/21<sup>st</sup>  
Lowest: 52°/15<sup>th</sup>

### June 2013 Rainfall Totals

New Bern

Cape Hatteras

Beaufort

Newport (Unofficial)

Actual: 8.21"  
Normal: 4.59"

Actual: 6.36"  
Normal: 4.03"

Actual: 4.22"  
Normal: 4.64"

Actual: 5.78"  
Normal: 4.87"

# NWS Webpages to get a new look

By Chris Collins, Meteorologist

The National Weather Service (NWS) will gradually begin to transfer to a new website in the upcoming months. This change is necessary to help NWS websites run more reliably and allow staff to quickly update content. Sites will be mirrored on servers located in other regions. If one server goes down, the others can take over and keep sites running. You will notice significant differences in the front page of the website, but every effort is being made to keep the content the same. The same products that are found in the side menu of the old webpage will be found in the drop-down menu along the middle of the new page. There will also be a sitemap at the bottom of the page containing all links from the new webpage. Here are examples of the old and new website front pages:

**National Weather Service Forecast Office**  
**Newport/Morehead City, NC**

Home      News      Organization

Local forecast by "City, St" or zip code  
 City, St   

Find us on **Facebook**  
 Follow us on **Twitter**

**Weather Hazards**  
 Graphical Hazardous Weather Outlook  
 Rip Currents  
 National Hazards Center  
 National Hurricane Center  
 Storm Prediction Center  
 Storm Reports  
 Submit Local Storm Reports

**Current Conditions**  
 NC Observations  
 Mesonet  
 Buoy Observations  
 Other Marine Reports  
 Satellite Images  
 Rivers & Lakes  
 AHPS  
 Hydrology  
 nowCOAST  
 UV Index  
 Air Quality

**Radar Imagery**  
 Local  
 Nationwide

**Forecasts**  
 Tropical Weather  
 Activity Planner  
 Gridded Images  
 Text Forecasts  
 Area Forecast Matrices  
 Point Forecast

**Top News of the Day**     

**August 31 marks the 20th Anniversary of Hurricane Emily. Click here for more details!**

**Point and Click Forecast Map(Description)**

**Quick Glimpse at the Weather**      **Newport/Morehead City, NC**

Click on the map below for the latest forecast.

**Read watches, warnings & advisories**      **Zoom Out**

**Small Craft Advisory**     

**Hazardous Weather Outlook**     

Last map update: Sat, Aug. 17, 2013 at 8:08:21 pm EDT

**Synopsis for Eastern North Carolina**  
 Low pressure will move northeast along a stalled front along the coast tonight. The front will remain over the area into the beginning of the week. High pressure will build in by Tuesday and remain through the week. ...See Full Discussion

**Text Products**      **Activity Planner**      **Quick Forecast**      **Graphical Forecast Map**

**Hourly Weather Graph**

--- Select a Text Product ---           

The old NWS website front page.



## NWS Webpages to get a new look (Continued)

The screenshot shows the NWS website interface. At the top, there are logos for NOAA and the National Weather Service, along with the text "NATIONAL WEATHER SERVICE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION". Below this is a navigation menu with links for HOME, FORECAST, PAST WEATHER, WEATHER SAFETY, INFORMATION CENTER, NEWS, SEARCH, and ABOUT. A local forecast section prompts the user to enter a city, state, or ZIP code, with a "Go" button and a "Location Help" link. A "News Headlines" section lists several articles, including one about the Summer 2013 newsletter and another about tropical systems. The main content area is titled "NWS Forecast Office Newport/Morehead City, NC" and includes a sub-header "Newport/Morehead, NC Weather Forecast Office". Below this are links for "Current Hazards", "Current Conditions", "Radar", "Forecasts", "Rivers and Lakes", "Climate and Past Weather", and "Local Programs". A large map is displayed with the instruction "Click on the map below to zoom in." The map shows the coastal region of North Carolina, with various locations labeled. To the right of the map are several panels for "Watches, Warnings & Advisories", "Small Craft Advisory", and "Hazardous Weather Outlook". A "Customize Your Weather.gov" sidebar is visible on the left, with a "Get Weather" button. At the bottom of the page, there are five thumbnail images representing different weather data: "National Weather Map", "Graphical Forecasts", "Satellite", "Radar", and "Day One Severe Outlook". Social media links for Twitter and Facebook are also present.

The new NWS website front page.

The link to the original webpage continues to be <http://www.erh.noaa.gov/mhx> and it should remain active for at least a few more months. The new webpage can be found at <http://weather.gov/newport> and is now being frequently updated, as we gradually phase out the old webpage. If you have any questions regarding the website changes in the National Weather Service, please contact our office.

## Weather Folklore

By Chris Collins, Meteorologist

Weather has fascinated people for ages and because of that interest, folklore was developed to help understand and forecast weather. Until the twentieth century, everyone took these bits of weather wisdom in all seriousness, for life depended on the folklore's predictions. There are many weather sayings and weather folklore that still survive today. Probably the most famous bit of weather folklore includes the groundhog and the yearly Groundhog Day on February 2. According to folklore, if it is cloudy when a groundhog emerges from its burrow on this day, then spring will come early; if it is sunny, the groundhog will supposedly see its shadow and retreat back into its burrow, and the winter weather will continue for six more weeks. Another popular animal forecaster is the Woolly Bear Caterpillar (commonly known as the Woolly Worm). According to legend, the wider the middle brown section is (i.e., the more brown segments there are), the milder the coming winter will be. In addition to groundhogs and woolly worms, squirrels provide weather folklore. If squirrels are more active than usual, it's considered an indication that a severe winter is on its way. During the autumn and winter season, a squirrel's main task is gathering nuts and seeds for its storehouse, so if its efforts have noticeably increased, it could only mean he's preparing for the worst. The old saying goes *"Squirrels gathering nuts in a flurry, will cause snow to gather in a hurry."*

The sky itself can also provide clues to what the atmosphere has in store and has been used in weather folklore for generations. One of the most famous quotes is *"Red sky at night, sailor's delight., Red sky at morning, sailor take warning"*. The rhyme is a rule of thumb for weather forecasting, dating back over 2,000 years, based on the reddish glow of the morning or evening sky, caused by haze or clouds related to storms in the region. Due to the rotation of the Earth, storm systems travel from west to east in the mid-latitudes. A reddish sunrise, caused by particles suspended in the air, often fore-shadows an approaching storm, which will be arriving from the West, within the day. Conversely, a reddish sunset often indicates that a storm system is on the west side (same side as the sunset), traveling away from the viewer. Another common bit of folklore goes like this *"Halo around the sun or moon, Rain or snow soon."* Halos are caused by sunlight and moonlight refracting off of ice crystals in cirrus clouds (the cloud type that precedes an approaching warm front). Seeing high level moisture is a good sign that moisture will soon also be moving in at increasingly lower levels. There are literally thousands of weather sayings and folklore that have been passed down through the generations.

While weather folklore is fun to study, for a more scientific approach to the long-term forecast, go to the Climate Prediction Center's website at <http://www.cpc.ncep.noaa.gov>.



The woolly bear caterpillar and the groundhog are a big part of modern weather folklore.





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## National Weather Service

530 Roberts Road  
Newport, NC 28570

Phone: 252-223-5122  
Fax: 252-223-3673  
Website: <http://weather.gov/Newport>

follow us on  
**twitter**



## Wind Chill Chart

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

To report adverse weather conditions 24/7, please call us at: 1-800-889-6889