THE
ATMOSPHERICRESERVOIR
Examining the Atmosphere and Atmospheric Resource Management

"Winter Weather Review"

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Last winter, unseasonably cold temperatures and blowing snow created hazardous weather conditions across our state. In fact, eastern North Dakota tied 1996-97 for the most blizzards in a season. Thomas Grafenauer, a lead forecaster with the Grand Forks National Weather Service (NWS) Forecast Office stated that, "The ten blizzards that occurred in our county warning area last winter didn't contain the record snowfalls that we witnessed during the 1996-97 season; however, they still had considerable impacts on our roadways and utilities due to the cold temperatures and winds."

Western and central North Dakota received the lion's share of strong to severe winds during the month of January. In fact, Bismarck and Garrison both had 16 days during the month when 40 mile per hour or greater wind gusts were recorded. Minot recorded 15 days of 40 mile per hour or greater winds and Hettinger, Jamestown, and Williston all recorded 14 days. On January 16, a 75 mile per hour wind gust roared through Garrison!

The NWS issues blizzard warnings for "winter storms with sustained or frequent winds of 35 miles per hour or higher with considerable falling and/or blowing snow that frequently reduces visibility to one-quarter of a mile or less. These conditions are expected to prevail for a minimum of three hours." This means that new snow doesn't have to be falling during a blizzard when existing snowfall being blown by strong winds reduces visibilities below one-quarter mile. It's important to note that blizzard conditions may also occur outside of blizzard warnings either because of their short durations or because they're occurring in areas that don't have weather recording instruments.

Winter on the Missouri River.

According to the American Meteorological Society Glossary of Meteorology, earlier definitions of a blizzard included a condition of low temperatures. If air temperatures were 20 degrees Fahrenheit or lower, then that used to qualify under blizzard criteria. When the temperatures dropped to 10 degrees Fahrenheit or lower, then "severe blizzard" criteria were reached. The current definition of a blizzard doesn't include temperature as a criterion though.

Lets review the definitions of other winter weather products from the NWS:

Winter Storm Watch – This product is issued by the NWS when there is a potential for heavy snow or significant ice accumulations, usually at least 24 to 36 hours in advance. The criteria for this watch can vary from place to place.

Winter Storm Warning – Issued by the NWS when a winter storm is producing or is forecast to produce heavy snow or significant ice accumulations. The criteria for this warning can vary from place to place.

Winter Weather Advisory – Issued by the NWS when a low-pressure system produces a combination of winter weather (snow, freezing rain, sleet, etc.) that presents a hazard, but does not meet warning criteria. The NWS now uses winter weather advisories in place of snow advisories.

Now you know some of the differences between the common watch, advisory and warning products that the NWS issues during the winter season. It's the mission of the NWS to provide warnings and advisories in the interest of public safety and the nation's economy. These products have definitely helped protect the livelihood of North Dakotans, especially during our eventful winter seasons.

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