## How is a Major Winter Storm Monitored and Forecast?

How can the National Weather Service tell a major winter storm is brewing and will impact the area in the coming days or hours?

How can meteorologists tell if a storm is intensifying and where it will bring the most snow? It's a highly sophisticated process.

It all starts with observing the current situation. The National Weather Service operates a widespread network of observing systems such as geostationary satellites.

Doppler radars, and automated surface observing systems that constantly monitor the current state-of-the-art numerical computer models to provide a glimpse of what will happen next—ranging from hours to days.

The models are then analyzed by NWS meteorologists who use their experience and expertise to write and disseminate forecasts.

## Winter Weather Watches, Warnings and Advisories: What do they all Mean?

The National Weather Service uses specific winter weather terms to ensure that people know what to expect.

• *A Winter Storm Watch* means that severe winter conditions, such as heavy snow and/or ice, may affect the area, but its occurrence, location and timing are still uncertain.

A winter storm watch is issued to provide 12 to 36 hours notice of the possibility of severe winter weather. A winter storm watch is intended to provide enough lead time so those who need to set plans in motion can do so. A watch is upgraded to a Winter Storm Warning when four or more inches of snow or sleet is expected in the next 12 hours, or six or more inches in 24 hours, or 1/4 inch or more of ice accretion is expected.

Winter Weather Advisories inform people that winter weather conditions are expected to cause significant inconveniences that may be hazardous. If caution is exercised, advisory situations should not become life-threatening.

• *A Blizzard Warning* means that snow and strong winds will combine to produce a blinding snow (near zero visibility), deep drifts, and life-threatening wind chill. Be sure to listen carefully to the radio, television, and NOAA Weather Radio for the latest winter storm watches, warnings, and advisories. For additional information on this story, visit the Winter Weather Awareness web page at: http://www.weather.gov/om/winter

**Why is Predicting the Exact Amount of Snowfall So**

**Challenging?**

Snow forecasts continue to improve, but they remain a challenging task for meteorologists. Heavy snow often falls in small bands that are hard to discern on larger resolution computer models. In addition, extremely small temperature differences define the boundary line between rain and snow.

**Will the Approaching Storm bring heavy snowfall**

**to the area?**

Each winter, meteorologists at the Storm Prediction Center in Norman, Okla., monitor weather

data from across the nation for developing bands of heavy snow and freezing precipitation, as well as lightning, within weather systems. Their ability to provide additional information about developing situations enhances winter storm warnings and helps National Weather Service field offices, private industry and local governments improve preparedness. For instance, a prediction of eight inches of snow carries much greater consequences for a city's rush hour than four inches.

**Are You Prepared for**

**Winter Weather?**

Winter weather too often catches people unprepared. Researchers say that 70 percent of the fatalities related to ice and snow occur in automobiles, and about 25 percent of all winter related fatalities are people that are caught off guard, out in the storm. What winter weather preparations are being made in your area, and what are the appropriate steps to take that will ensure your winter weather safety? Help your readers, viewers and listeners make sure their homes and cars are ready for the worst winter has to offer.

**Getting the Latest Winter Weather Information**

There is no better way to keep ahead of a winter storm than with NOAA Weather Radio (NWR), a small receiver device that can be purchased at many electronic stores. As the "Voice of the National Weather Service," it provides continuous broadcasts of the latest weather information from local National Weather Service offices.

The NWR network has more than 425 stations, covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and U.S. Pacific Territories. Weather radios come in many sizes, with a variety of functions and costs. The NWR network has been further advanced by the implementation of Specific Area Message Encoding (SAME) technology.

The SAME allows the user to receive warnings only for their specific location. SAME receivers are a live-saving tool, providing audible alert tones for any weather warnings. A NOAA Weather

Radio is a useful and potentially life-saving gift idea this holiday season.

**What is Wind Chill?**

One of the gravest dangers of winter weather is wind chill. The wind chill is based on the rate of heat loss from exposed skin by combined effects of wind and cold. As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature.

Animals are also effected by wind chill. Check out the wind chill chart on the Internet at http://www.weather.gov/er/iln/tables.htm#wind

**NOAA's Snow and Ice Center**

The National Snow and Ice Data Center (NSIDC) serves as the national information center that supports research in glaciers and freezing weather phenomenon. The NSIDC archives snow and ice data, and maintains information about everything from avalanches to icebergs. The NSIDC web site contains a fascinating list of Questions and Answers about snow that are sure to be of interest to anyone experiencing winter weather.

**Hard At Work When the Storm Hits**

While most people stay home from work or school during severe winter weather, National Weather Service meteorologists are hard at work. Twenty-four hours a day, 365 days a year, NWS meteorologists staff local offices across the country to make sure the latest forecasts, watches and warnings get out to emergency managers, the media, and the public.

What's it like at a forecast office? Don't wait for a major winter storm; contact your local office and ask to spend the day with them, and observe the exciting, day-to-day process of forecasting the snow before it hits.