

FORECASTING TORNADOES



NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION • UNITED STATES DEPARTMENT OF COMMERCE

Through a tremendous investment in research, observing systems and forecasting technology, NOAA's National Weather Service issues more than 1,000 watches and nearly 30,000 warnings for severe storms and tornadoes each year. The average lead time for warnings has increased from six to 13 minutes in 2006. This means individuals and communities have more time to prepare for tornadoes by seeking shelter and securing property, thereby reducing loss of life and limiting the economic costs of property damage. Several organizations within NOAA are dedicated to research efforts to further improve forecasts and daily forecast operations to protect life and property.

NOAA's Storm Prediction Center in Norman, Okla., is responsible for hazardous weather forecasting across the contiguous United States and supports National Weather Service forecast offices by providing short- to medium-range guidance and watch products. SPC forecasters constantly evaluate the potential for dangerous and economically-disruptive weather events, ranging from winter major storms and blizzards, to fire weather, large hail, and tornadoes.

Every tornado and severe thunderstorm watch issued in the United States originates at the SPC. Watches issued by SPC are disseminated through local National Weather Service forecast offices when short-term conditions appear supportive of widespread thunderstorms capable of producing large hail, high winds, and/or dangerous tornadoes. The SPC makes maximum use of observations, numerical forecast models, Doppler radar, geostationary satellite data, and the latest science and technology in generating their forecasts. In addition to working with forecast offices and other national centers within the National Weather Service, the SPC collaborates with local, national and international communities, as

well as various NOAA agencies and academia. This collaboration increases the understanding of hazardous weather environments across the United States and the world, and promotes the infusion of new science and technology into SPC forecast operations.

National Weather Service forecast offices play a vital role in issuing severe weather forecasts and warnings. One-hundred twenty-two forecast offices across the country issue tornado warnings and watches to ensure emergency managers and the general public receive the most accurate and timely information to get out of harm's way. The National Weather Service records about 26,000 severe weather reports each year. Current weather watches and warnings from local forecast offices are available on the Internet at <http://weather.gov>.

The National Severe Storms Laboratory leads the way in investigations of all aspects of severe and hazardous weather. Established in 1964, NSSL is the only federally supported laboratory focused on severe weather. The Lab's scientists and staff explore new ways to improve understanding of the causes of severe weather and ways to use weather information to assist National Weather Service forecasters, as well as federal, university and private sector partners.

The NOAA Hazardous Weather Testbed in Norman, Okla., emerged from the mutual interests of forecasters from the SPC and researchers from NSSL, and was inspired by the culture of collaboration that already existed between the two organizations as well as the National Weather Service forecast office for Norman. The Testbed provides a platform to accelerate the precision of severe storm forecasts and warnings to protect the public by identifying and targeting issues of mutual interest. ☺