## WEATHER STORM SPOTTERS

The National Weather Service maintains a Skywarn severe weather spotter network across the country with over 200,000 volunteer members. NWS Seattle has over 1000 weather spotters in western Washington alone. Weather spotters report event-driven significant weather, either from home or while mobile. The spotter network is an important source of live real-time local weather data, used in an ongoing weather warning event as a key element in the overall warning system and as verification in our warning program. Spotter reports are used not only in the NWS warning program, but also by the media and the emergency management community, all in the effort to help avoid loss of life and property. Weather spotter training is provided periodically throughout each year. For more information about the program, visit www.wrh.noaa.gov/sew/spotter.php.

There are certain elements that can help us determine a storm's severity. These may include items like wind speed, hail size, snowfall amounts, damage from winds, heavy rains and flooding. A list of suggested items is listed below:

| SUGGESTED WEATHER ELEMENTS | | |
|---|---|---|
| Tornadoes (location & movement) | Damaging Winds | Low Visibility (blowing snow) |
| Dense Fog (less than ¼ mile visibility) | Weather Related Damage | Extreme Road Hazards from Weather |
| Frequent Cloud to Ground Lightning | Heavy Snow (1" or more per hour or storm total accumulations) | Freezing Rain |
| Rainfall Amounts (over 1" in an hour) | Flooding (location & type) | Hail |
| Heavy surf or unusually high tide that are causing beach erosions | | Volcanic activity or earthquakes |

If you would like more information on how you can take part in protecting lives and property in your community, or know of individuals in any location who would like to assist us, provide the requested information on the Spotter Sign-up form on page 28 and FAX to the NWS at 206-526-6094.

## DAMAGE ASSESSMENTS

The NWS collects data related to weather that has caused damage to property, injuries or deaths, or hazardous conditions that affect the community. This information is tabulated from every NWS office and placed in a monthly publication called "*Storm Data and Unusual Weather Phenomena.*" Storm data can be accessed through the National Climatic Data Center or by using their homepage in PDF format at:

*http://www5.ncdc.noaa.gov/pubs/publications.html#SD*

Seattle WFO relies on various sources for inclusion into this document. Sources include: state, county and local emergency managers, television meteorologists, television/radio journalists, newspapers, county sheriffs, Department of Public Safety, Washington

Department of Transportation, spotter reports, amateur radio groups, power utilities, the insurance industry and the general public just to name a few.

We conduct formal Storm Damage Surveys on specific weather events and determine what weather phenomena may have caused the damage and/or injuries/deaths. Certain weather elements we look at include wind, hail, tornadoes and floods in order to assess the strength of the weather event (e.g. wind speeds) and give tornado ratings (Enhanced Fujita Scale F0 through F5).

## NWS EQUIPMENT

The NWS operates and uses many varied types of instruments to measure weather elements like moisture, wind, clouds, pressure, and temperature. A partial list of these instruments appears below:

| EQUPMENT | USES |
|---|---|
| ACARS | Commercial Airplanes measure temperature, moisture, winds |
| Advanced Weather Interactive Processing System (AWIPS) | Display system for hydro-meteorological operations |
| Automated Surface Observation System (ASOS) | Wind, temperature, moisture, cloud bases, weather & obscurations, pressure |
| Co-Operative Observation Networks | Temperatures & precipitation |
| Doppler Weather Radar | Precipitation intensity and amounts, winds, severe weather patterns |
| Hydrologic Observing Systems | Temperature, precipitation, river stage/flow |
| Marine Buoys | Wave heights, wind, pressure |
| Mesonets | Temperatures, winds, precipitation |
| Mobile Weather Units | Taken on-sight at HAZMAT concerns or large fires to provide weather observations and forecasts |
| National Lightning Data Network | Lightning strikes, intensities and trends |
| NOAA Weather Radio | Official warning and forecast voice of the NWS |
| Personal Computers | Localized forecast models & text generation |
| River Gages | River stage |

| | |
|---|---|
| Satellite | Clouds – tops, temperatures, moisture content, large scale winds, sea surface temperatures |
| Ship Observing Networks | Temperatures, moisture, wind, pressure |
| Special Communications | National Warning Alert System, amateur radio |
| Spotter Networks | Weather reports and observations |
| Super Computers | Global & regional forecast models |
| Tsunami Warning Center | Issues Tsunami warnings for undersea earthquakes |
| Upper Air Balloon Soundings | Winds, temperatures, moisture |
| Wind Profilers | Wind patterns |