

Weather Glossary

ACID RAIN	Cloud or rain droplets containing pollutants or oxides of sulfur and nitrogen to make them acidic.
ACTION STAGE	The level of a river or stream that may cause minor flooding, and at which concerned interests should take action. Also called the Warning Stage.
ADVECTION	The horizontal transport of air or atmospheric properties. Commonly used with temperatures and moisture (e.g., “warm air advection” or “moisture advection”).
ADVISORY	Issued for weather situations that cause significant inconveniences but do not meet warning criteria and, if caution is not exercised, could lead to situations that may threaten life and/or property.
AHPS	Advanced Hydrologic Prediction Service. A web-based suite of graphical forecast products. They display the magnitude and uncertainty of the occurrence of floods or droughts, from hours to days and months, in advance.
AIR MASS	A large body of air having similar horizontal temperature and moisture characteristics.
AIR STAGNATION	A meteorological situation in which there is a major buildup of air pollution in the atmosphere. This usually occurs when an air mass is parked over the same area for several days. During this time, the light winds cannot “cleanse” the buildup of smoke, dust, gases, and other industrial air pollution.
ALBERTA CLIPPER	A low-pressure system that moves out of southwest Canada and mainly affects the Plains, Midwest, and Great Lakes region. Usually accompanied by light snow, strong winds, and colder temperatures. Another variation of the same system is called a “Saskatchewan Screamer”.
ALTOCUMULUS	Mid-altitude clouds with a cumuliform shape.
ALTOSTRATUS	Mid-altitude clouds with a flat, sheet-like appearance.
ANEMOMETER	An instrument that measures wind speed.
ANTICYCLONE	A large area of high pressure around which the wind blows clockwise in the Northern Hemisphere.
ANVIL	A flat, elongated cloud formation at the top of a thunderstorm.
ASOS	Automated Surface Observing System. Observes sky condition, present weather, visibility, temperature and dew point, wind direction and speed, barometric pressure, and at some locations lightning activity. In the Paducah coverage area, ASOS takes observations at Cape Girardeau, Carbondale, Evansville, Paducah, and Poplar Bluff.
ATMOSPHERE	The gaseous envelope surrounding the earth, composed primarily of nitrogen and oxygen.
AWIPS	Advanced Weather Interactive Processing System. State-of-the-art NWS computer system integrating weather observations, satellite imagery, radar data, numerical model forecasts, and forecast applications.
BAROMETER	An instrument for measuring atmospheric pressure.
BLACK ICE	A glaze which forms on pavement or a blacktop surface and is nearly invisible to motorists. Because the ice is clear, it appears black on top of asphalt.
BLIZZARD	Snow or blowing snow with winds or frequent gusts to at least 35 mph, and reducing visibility to ¼ mile or less for at least 3 hours.
BLOWING DUST	Wind-driven dust that significantly reduces surface visibility to less than 7 miles. Caused by winds blowing across dry ground with little or no foliage.
BLOWING SNOW	Wind-driven snow significantly reducing surface visibility to less than 7 miles.

BOW ECHO	An accelerated portion of a squall line, taking on a bow configuration, created by strong downburst winds with the strongest winds near the apex of the bow.
BROKEN CLOUDS	Clouds which cover 5/8 to 7/8 of the sky.
CEILING	The height of the lowest layer of clouds when the sky is broken or overcast.
CHANCE	A 30, 40, or 50 percent probability of occurrence of measurable precipitation.
CIRROCUMULUS	Cirrus clouds with vertical development.
CIRROSTRATUS	Cirrus clouds with a flat, sheet-like appearance. Cirrostratus clouds often produce a halo around the sun or moon.
CIRRUS	High, wispy clouds, usually above 18,000 feet AGL, composed of ice crystals.
CLEAR	Sky condition of absolutely no cloudiness.
CLEAR ICE	See BLACK ICE.
CLIMATE	The historical record of average daily, monthly, and seasonal weather events.
COLD FRONT	The boundary between an advancing cold air mass and a relatively warmer air mass.
CONDENSATION	The process of gas changing to liquid.
CONVECTION	The vertical transport of air usually caused by rising air currents due to surface heating.
CORIOLIS FORCE	An apparent force caused by the rotation of the Earth. This apparent force explains why wind in the Northern Hemisphere is deflected to the right, and to the left in the Southern Hemisphere.
CUMULONIMBUS	A vertically developed cumulus cloud often capped by an anvil-shaped top. Also called a thunderstorm cloud, it is frequently accompanied by heavy rain showers, lightning, thunder, and sometimes hail or gusty wind.
CUMULUS CLOUD	A cloud in the shape of individual detached domes with a flat base and a billowy upper portion resembling cauliflower.
CUT-OFF LOW	A slow-moving area of low pressure detached from the jet stream.
CWA	County Warning Area. An area for which a National Weather Service office has warning responsibility. The Paducah CWA, CWFA, and FA are identical.
CWFA	County Warning & Forecast Area. An area for which a NWS office has warning and forecast responsibility. The Paducah CWFA covers 58 counties in southwest Indiana, southern Illinois, southeast Missouri, and western Kentucky. The Paducah CWA, CWFA, and FA are identical.
CYCLONE	An area of low pressure, with a closed circulation, around which the wind blows counterclockwise in the Northern Hemisphere. Also the term used for a hurricane in the Indian Ocean and the Western Pacific Ocean.
DEGREE-DAY (HEATING/COOLING)	Gages the amount of heating or cooling needed for a building using 65°F as a baseline. To compute heating/cooling degree-days, the average temperature is referenced to a baseline of 65°F. An average temperature of 50°F yields 15 heating degree-days, while an average of 75°F yields 10 cooling degree-days. Energy producers among others in the industry use heating and cooling degree information to calculate their needs.
DEGREE-DAY (GROWING)	To compute growing degree-days, one would use various baseline references: 40° for canning purposes; 45° for potatoes; and 50° for sweet corn, snap beans, lima beans, tomatoes, grapes, and field corn. Every degree that the average temperature is above the baseline value is considered a growing degree-day. Agricultural-related interests use growing degree-days to determine planting times.
DEW	Water droplets that condense on objects on or near the ground, where the temperature has fallen to the dew-point temperature.
DEW POINT	The temperature to which air must be cooled, at constant pressure and moisture content, in order for saturation to occur (for water vapor to condense). Higher dew points indicate a greater amount of water vapor in the atmosphere.

DOC	Department of Commerce. The Executive department that oversees such organizations as NOAA, which heads the National Weather Service.
DOPPLER WEATHER RADAR	The Weather Surveillance Radar (WSR-88D) system implemented in 1988. About 120 systems have been installed at Weather Forecast Offices with 22 additional systems at Department of Defense sites. Doppler radar is a type of weather radar that determines whether atmospheric motion is toward or away from the radar and is useful in detecting rotation within a storm. It uses the Doppler effect to measure the velocity of particles suspended in the atmosphere. Surrounding the Paducah, KY Doppler radar are neighboring Doppler radars located near Evansville, IN; Fort Campbell, KY; Louisville, KY; Indianapolis, IN; Lincoln, IL; St. Louis, MO; Springfield, MO; Little Rock, AR; Memphis, TN; and Nashville, TN.
DOWNBURST	A severe, localized downdraft from a thunderstorm that includes an outburst of damaging winds on or near the ground. Downbursts may last anywhere from a few minutes in small-scale microbursts up to 20 minutes in larger, longer-lived macrobursts. A downburst can reach speeds of 110 to 150 mph.
DRIZZLE	Small, slowly falling water droplets with diameters between .2 and .5 millimeters. Drizzle usually falls from stratus clouds and is accompanied by low visibility and fog.
DRY LINE	A line that separates very warm, moist air originating from the Gulf of Mexico to the east, from hot, dry air originating from the southwestern United States to the west. Severe weather can be associated with the dry line. It is also known as a "dew-point front" or "dry front".
DUST DEVIL	A small, rapidly rotating wind that is made visible by the dust, dirt, or debris it picks up. Also called a whirlwind, it develops best on clear, dry, hot afternoons. Dust devils rarely cause damage and are usually found in desert areas.
ECMWF	European Center for Medium-Range Weather Forecasts. Also the name of a European numerical model generated every 12 hours.
EL NIÑO	A major warming of the equatorial waters in the Eastern Pacific Ocean. El Niño events usually occur every 3 to 7 years and are characterized by shifts in "normal" weather patterns. Prolonged periods of drought or floods may result in an active El Niño year.
ENHANCED FUJITA SCALE	A modified version of the Fujita Scale that was implemented in early 2007. The Enhanced Fujita Scale still rates tornado intensity based on damage indicators, but the expected wind speed is generally lower for all but the weakest tornadoes. Scale ranges in intensity from EF-0 to EF-5.
EVAPORATION	The process of a liquid changing to a gas.
EXCESSIVE HEAT	Daytime heat indices near or in excess of 110°F for 2 consecutive days, with values at or above 75°F at night.
FA	Forecast Area. An area for which a National Weather Service office has forecast responsibility. The Paducah CWA, CWFA, and FA are identical.
FEW CLOUDS	Sky condition when 1/8 to 2/8 of the sky is covered.
FLASH FLOOD	A flood that occurs within a few hours (usually less than six) due to heavy or excessive rainfall, a dam or levee failure, or after an ice jam breaks up. A flash flood may result in a rapid flow of water and is a threat to both life and property.
FLOOD	High flow, overflow, or inundation of a normally dry area which causes or threatens damage. Used to describe both areal and river flooding in longer-term flooding events, generally lasting six hours or more.
FLOOD STAGE	The level of a river or stream at which considerable inundation of surrounding areas will occur.
FLURRIES	Light snowfall of an intermittent nature that generally does not produce measurable accumulation.

FOG	The visible aggregate of minute water droplets suspended in the atmosphere near the earth's surface. Essentially a stratus cloud on the ground, limiting visibility to less than 7 miles. Dense fog limits visibility to 5/8 mile or below.
FREEZING DRIZZLE	Drizzle which falls as liquid and then freezes upon impact with an object at or below 32°F, resulting in a coating of ice on exposed objects.
FREEZING LEVEL	The altitude in the atmosphere where the temperature equals 32°F.
FREEZING RAIN	Rain which falls as liquid and then freezes upon impact with an object at or below 32°F, resulting in a coating of ice on exposed objects.
FRONT	A boundary between two distinct air masses. The basic frontal types are cold, warm, stationary, and occluded.
FROST	A covering composed of small ice crystals that form on exposed surfaces, where the temperature falls to the dew-point temperature and below freezing.
FUNNEL CLOUD	A rotating, cone-shaped column of air extending downward from the base of a thunderstorm but not in contact with the ground. When it comes in contact with the ground, or if flying debris is observed, it is then classified a tornado.
GEOSTATIONARY SATELLITE	A satellite that rotates at the same rate as the earth, remaining over the same spot above the equator.
GFE	Graphical Forecast Editor. AWIPS software utilized by WFO forecasters to generate graphical and text products for routine forecasts and long-fuse weather hazards, including winter weather and non-precipitation weather.
GFS	Global Forecast System model. Short- and medium-range model generated every 6 hours by NCEP.
GREENHOUSE EFFECT	The warming of the atmosphere by the trapping of longwave radiation as it is radiated to space. The gases most responsible for this effect are water vapor and carbon dioxide.
GROUND FOG	Fog produced over land by the cooling of the lower atmosphere to the dew-point temperature. Also known as radiation fog.
GUST	A sudden, brief increase in wind speed. Generally the duration is less than 20 seconds and the fluctuation between peaks and lulls greater than 10 mph.
GUST FRONT	The leading edge of a thunderstorm downdraft marked by a sudden wind shift, sharply falling temperatures, and possibly heavy downpours of rain and/or hail.
GUSTNADO	A small tornado, usually weak and short-lived, that occurs along the gust front of a thunderstorm. Often it is visible only as a debris cloud or dust whirl near the ground. It is not associated with the storm-scale rotation found in severe thunderstorms. Although infrequent, gustnadoes may cause minor, localized damage and are extremely difficult to warn for.
HAIL	Convective precipitation in the form of balls or irregular lumps of ice. Hail 1 inch or larger in diameter constitutes a severe thunderstorm. To estimate hail size, refer to the table in Appendix C.
HALO	A ring or arc that seems to encircle the sun or moon. It is caused by the refraction of light through the ice crystals in cirrus clouds.
HAZE	Fine particles of dust, smoke, salt, or water droplets suspended in the air that reduce visibility to less than 7 miles.
HEADLINE	Text placed at the beginning of a NWS weather product to highlight any watches, warnings, advisories, or other significant weather expected.
HEAT INDEX	An index that combines air temperature and humidity to give an apparent temperature (i.e., how hot it "feels"). See Appendix D for a heat index chart.
HEAVY SNOW	For the four-state region: 4" or more in 12 hours, or 6" or more in 24 hours.
HIGH	The center of an area of high pressure usually accompanied by anticyclonic and outward wind flow. Also known as an anticyclone.
HSA	Hydrologic Service Area. A composition of river basins for which a NWS office is responsible. The larger river basins in the Paducah HSA are the Ohio, Mississippi, Wabash, Little Wabash, and Green. Smaller river basins include the Patoka, Skillet Fork, Big Muddy, Black, Current, and St. Francis.

HUMIDITY	The actual amount of water vapor in the atmosphere. (See relative humidity).
HURRICANE	A dangerous tropical cyclone with maximum sustained wind speeds of at least 64 knots (74 mph) or higher. Called a typhoon in the Western Pacific.
HYDROLOGY	The study of the transport of water and its interaction with the earth and atmosphere.
ICE PELLETS	See SLEET.
ICE STORM	A freezing rain event that produces damaging ice accumulation of ¼ inch or greater.
INDIAN SUMMER	An unseasonably warm period near the middle of autumn, usually following a substantial period of cool weather with a heavy frost or freeze.
INSTABILITY (UNSTABLE AIR)	A state of the atmosphere in which the vertical distribution of temperature allows rising warm air to continue to rise and accelerate. This kind of motion is conducive to thunderstorm development.
INVERSION	An increase in temperature with height, as opposed to the normal cooling with height in the troposphere. An inversion is often caused by radiational cooling, subsidence, or a combination of both.
ISOBAR	A line of equal barometric pressure on a weather map.
ISOTHERM	A line of constant temperature on a weather map.
JET STREAK	A concentrated region within the jet stream where the wind speeds are the strongest. The jet streak sets up unique wind currents in its vicinity that either enhance or diminish the likelihood of clouds and precipitation. The jet streak propagates downstream along the jet stream axis.
JET STREAM	Strong winds concentrated within a narrow band in the atmosphere. The jet stream often “steers” surface features such as fronts and low-pressure systems. It is usually found at 30,000 to 40,000 feet above the earth’s surface. Wind speeds can reach 200 mph or higher in narrow bands called “jet streaks”. The jet stream owes its existence to the large temperature contrast between the polar and equatorial regions.
KNOT	One nautical mile per hour. A unit of speed used in aviation and marine activities. (1 knot = 1.15 mph).
LAKE/LAND BREEZE	A lake breeze occurs when the prevailing wind blows off the water, while a land breeze indicates wind blowing from land to water. Both are caused by the difference in the surface temperature (differential heating) of the land and water. As a result, a lake breeze occurs during the day while a land breeze occurs at night.
LAKE-EFFECT SNOW (SQUALL)	A local, intense, narrow band of moderate to heavy snow that can extend long distances inland, persist for many hours, and may be accompanied by strong, gusty surface winds and possibly lightning. In the Great Lakes region, accumulations can be 6 inches or more in 12 hours or less. Although rare this far south, lake-effect snow has been observed downwind of Barkley and Kentucky Lakes.
LAPSE RATE	The amount of temperature change with altitude in the atmosphere.
LIGHTNING	An electrical discharge from a thunderstorm which results in a sudden vivid flash of energy and light.
LONG-FUSE WARNING	A warning that is of relatively long duration (e.g., Winter Storm, Excessive Heat, or Flood Warning).
LOW	The center of an area of low pressure usually accompanied by cyclonic and inward wind flow. Also known as a cyclone.
MACROBURST	A large downburst of damaging winds from a thunderstorm lasting 5 to 20 minutes over a diameter of at least 2.5 miles. A macroburst may cause tornado-force damage.
MAV	Short-range model output forecast statistics derived from the Global Forecast System model (GFS).

MEASURABLE	Precipitation of 0.01” or more.
MESOCYCLONE	The rotating updraft in a supercell thunderstorm.
MET	Short-range model output forecast statistics derived from the North American Mesoscale model (NAM).
METEOROLOGY	The study of the atmosphere and its associated phenomena.
MEX	Medium-range model output forecast statistics derived from the Global Forecast System model (GFS).
MICROBURST	A strong, localized downdraft of winds from a thunderstorm lasting less than 5 minutes over a diameter less than 2.5 miles. An intense microburst may cause damage comparable to that of a weak tornado.
MILLIBAR (mb)	A unit of atmospheric pressure. Normal surface pressure is 1013.25 mb or 29.92 inches of mercury (in Hg).
MOS	Model Output Statistics derived from such forecast models as the GFS and NAM. Provides a tabular numerical forecast for a variety of forecast points.
NAM-WRF	North American Mesoscale Weather Research and Forecasting model. Short-range forecast system generated every 6 hours by NCEP. Several finer scale versions are also available online.
NAUTICAL MILE	A unit of distance used in aviation and marine activities, equal to 1.15 miles.
NCEI	National Centers for Environmental Information, formerly National Climatic Data Center. Headquartered in Asheville, NC, the NOAA/NESDIS agency that archives climatic and forecast data for the U.S. (Phone: 828-271-4800)
NCEP	National Centers for Environmental Prediction. Located in Silver Spring, MD, a collective of centers responsible for disseminating national and global weather, water, climate, and space weather analyses, guidance, and forecasts. Houses such entities as the Weather Prediction Center and Climate Prediction Center.
NDFD	National Digital Forecast Database. Seamless mosaic of digital forecasts from NWS field offices in collaboration with NOAA National Centers for Environmental Prediction (NCEP). The database is available to all users and partners—both public and private—and allows those users and partners to create a wide range of text, graphic, and image products of their own.
NHC	National Hurricane Center. Located in Miami, FL, the branch of NCEP responsible for tracking and forecasting tropical cyclones.
NOAA	National Oceanic and Atmospheric Administration. A branch of the U.S. Department of Commerce, NOAA is the parent organization of the National Weather Service.
NOAA WEATHER RADIO (NWR)	Continuous, 24-hour-a-day broadcasts of weather observations and forecasts directly from National Weather Service offices. A special tone activates an alarm on certain receivers when watches or warnings are issued. See Appendix E for details on NWR coverage within the Paducah coverage area.
NOAA WEATHER WIRE (NWWS)	System for mass dissemination of National Weather Service products to the media and public via satellite.
NOR'EASTER	A strong low-pressure system that affects the Middle Atlantic and New England States. It can form over land or over the coastal waters. It usually produces heavy snows, flooding rains, strong northeast winds, coastal flooding, and beach erosion.
OCCLUDED FRONT	A complex frontal system that occurs when a cold front overtakes a warm front, or vice versa. Also known as an occlusion, cold occlusion, or warm occlusion.
OROGRAPHIC UPLIFT	The vertical forcing of air by terrain features such as hills or mountains. If the air rises and cools sufficiently, orographic clouds and/or precipitation can result.
OUTFLOW	Air that flows outward from a thunderstorm.
OVERCAST	Sky condition when 8/8 of the sky is covered with clouds.

OVERSHOOTING TOP	A cloud dome forced above the anvil of a thunderstorm by a vigorous updraft within the storm.
OZONE	A nearly colorless (but faintly blue), gaseous form of oxygen containing three molecules of oxygen (O ₃), found primarily in the stratosphere and responsible for filtering out much of the sun's harmful ultraviolet radiation. In the stratosphere, ozone is beneficial; however, photochemical processes involving industrial/vehicle emissions can produce ozone near the ground where it can be harmful to people, especially those with respiratory or heart problems.
POLAR JET	The branch of the jet stream that is found in the middle and high latitudes.
POLAR-ORBITING SATELLITE	A satellite with an orbit that nearly parallels the earth's lines of longitude and thus crosses the polar regions twice each day.
PRECIPITATION	Liquid or solid water molecules that fall from the atmosphere and reach the ground.
PRESSURE	The force exerted by the interaction of the atmosphere and gravity. Also known as atmospheric pressure.
RADAR	An instrument used to detect precipitation by measuring the strength of the electromagnetic signal reflected back from targets. RADAR stands for Radio Detection And Ranging.
RADIAL VELOCITY	The component of atmospheric motion directed parallel to (toward or away from) the Doppler radar's beam. Useful in locating atmospheric circulation.
RADIATION FOG	See GROUND FOG.
RADIATIONAL COOLING	The cooling of the earth's surface. At night, the earth suffers a net heat loss to space due to terrestrial cooling.
RADIOSONDE	An instrument attached to a weather balloon that transmits pressure, humidity, temperature, and wind data used to initialize forecast model runs.
RAIN	Liquid water droplets that fall from the atmosphere, having diameters larger than drizzle. Indicates a nearly steady and uniform fall of liquid precipitation over an area for several hours, as opposed to the term <i>showers</i> , which implies scattered and intermittent precipitation of a more convective nature.
RAINBOW	Optical phenomena formed opposite the sun when sunlight is refracted and reflected by water droplets in the atmosphere into concentric arcs of color.
RAP	Rapid Refresh model generated hourly by NCEP. The RAP replaced the RUC in 2012.
REFLECTIVITY	The amount of energy returned to the radar by atmospheric targets. In general, higher reflectivity corresponds to heavier precipitation.
RELATIVE HUMIDITY	Expressed as a percentage, the ratio of the amount of water vapor in the air to the amount the air could hold at the same temperature and pressure if it were completely saturated.
RFC	River Forecast Center. The river forecasts for the Paducah HSA come from three RFC's located in Wilmington, OH; Chanhassen, MN; and Slidell, LA.
RIDGE	An elongated area of high pressure at the surface or aloft. In the Northern Hemisphere, a ridge generally resembles the convex portion of a sinusoidal wave pattern.
ROLL CLOUD	A long, tubular cloud formation that resembles a roller. It is sometimes found along the leading edge of a thunderstorm complex in association with the gust front. A roll cloud is formed by horizontal vorticity (or spin) in the wind-shear region between cool downdrafts and warm updrafts.
SATELLITE	A tool used to determine the character of cloud cover and moisture in the atmosphere. Meteorologists use Water Vapor (WV), Infrared (IR), and Visible (VIS) satellite images.
SCATTERED CLOUDS	Clouds that cover 3/8 to 4/8 of the sky.

SEVERE THUNDERSTORM	A thunderstorm with wind gusts of 58 mph (50 knots) or greater, 1" diameter hail or larger, and/or a tornado. Severe thunderstorms can result in the loss of life and property. Refer to the tables in Appendix C to estimate hail size or wind speed.
SHELF CLOUD	Long, wedge-shaped cloud associated with a thunderstorm gust front. Shelf clouds mark the leading edge of a thunderstorm downdraft or outflow.
SHORT-FUSE WARNING	A warning that is of relatively short duration (e.g., Tornado, Severe Thunderstorm, or Flash Flood Warning).
SHOWER	Precipitation that is intermittent, in space, time, and/or intensity.
SKYWARN	A dedicated group of official NWS-trained storm spotters who aid the NWS mission of saving lives and mitigating property loss. Essential to the warning process, these observers work in conjunction with local emergency officials to relay timely reports of severe weather and tornadoes to local forecast offices.
SLEET	A type of frozen precipitation consisting of small transparent ice pellets. Sleet forms by the freezing of raindrops or the refreezing of largely melted snowflakes as they encounter a deep layer of subfreezing air near the surface.
SNOW	Frozen precipitation composed of ice crystals in complex hexagonal patterns.
SNOW FLURRIES	See FLURRIES.
SNOWPACK	The combined layers of snow and ice on the ground at any one time. Also called the "snow cover" or "snow depth".
SNOW SHOWERS	Snow that starts and stops suddenly and is characterized by rapid changes in both intensity and visibility. Minor accumulation usually results.
SOUNDING	A graph showing the vertical profile of temperature, moisture, and wind at a particular site.
SOUTHERN OSCILLATION	A periodic, large-scale atmospheric oscillation of the overall distribution of sea-level pressure, along with air and water temperature, that originates over the Southern Hemisphere. Consequently, there is an associated change in the surface wind and resultant storm intensity. This oscillation is on the scale of a year or two and has global implications such as widespread drought or flooding. Oceanic fishing is also disrupted.
SPC	Storm Prediction Center. A branch of NCEP situated in Norman, OK, this office is responsible for monitoring and forecasting severe convective weather, as well as winter weather, in the continental United States. This includes the issuance of Tornado and Severe Thunderstorm Watches.
SQUALL LINE	A broken or solid line of thunderstorms that may extend across several hundred miles along or ahead of an advancing front.
STABILITY (STABLE AIR)	The state of the atmosphere in which the vertical distribution of temperature prohibits the vertical movement of air. This type of atmosphere is not conducive to the formation of clouds or precipitation.
STATIONARY FRONT	A transition zone between air masses, with neither advancing upon the other.
STRAIGHT-LINE WINDS	Thunderstorm winds most often found with the gust front. They originate from downdrafts and can cause damage that occurs in a "straight line", as opposed to tornadic wind damage which has circular characteristics.
STRATOSPHERE	The layer of the atmosphere above the troposphere, where temperature increases with height.
STRATUS	Flat, gray, low-level clouds that usually cover most of the sky.
SUBSIDENCE	Sinking air associated with compressional warming and little cloud formation.
SUBTROPICAL JET	The branch of the jet stream that is found in the lower and sometimes middle latitudes.
SUPERCCELL	A highly organized thunderstorm with a rotating updraft, known as a mesocyclone. A supercell poses an inordinately high threat to life and property, and it often produces large hail, strong winds, and tornadoes.

SUSTAINED WIND	The wind speed obtained by averaging the observed values over a one-minute period.
THERMAL	A small-scale rising current or bubble of air formed by surface heating. Thermals are a common source of low-level turbulence for aircraft.
THUNDER	The sound caused by a lightning stroke as it heats the air and causes it to rapidly expand and then contract.
THUNDERSTORM	A storm with lightning and thunder associated with a cumulonimbus cloud, usually producing heavy rain, gusty wind, and sometimes hail.
TORNADO	A violently rotating column of air in contact with the ground, usually extending from the base of a cumulonimbus cloud. A condensation funnel cloud need not be present, but flying debris near the ground should mark the tornado's lower circulation. Tornadoes are classified into three main groups: <i>weak</i> —wind up to 110 mph; <i>strong</i> —wind 110 to 165 mph; <i>violent</i> —wind 165+ mph.
TRACE	Precipitation amount less than 0.01". Considered non-measurable precipitation (e.g., flurries, drizzle, sprinkles).
TRADE WINDS	Persistent tropical winds that blow from the subtropical high-pressure centers towards the equatorial low.
TROPICAL CYCLONE	General term used for a cyclone originating over tropical or subtropical waters with organized convection and a definite cyclonic surface wind circulation.
TROPICAL DEPRESSION	An organized tropical mass of thunderstorms with a cyclonic wind circulation and maximum sustained winds between 20 and 33 knots (23 and 38 mph).
TROPICAL DISTURBANCE	An area of organized convection that originates in the tropics or subtropics and maintains its identity for 24 hours or more. It has a slight cyclonic circulation and winds less than 20 knots (23 mph). In successive stages of intensification, it may be subsequently classified as a tropical depression, tropical storm, or hurricane.
TROPICAL STORM	An organized tropical cyclone with maximum sustained winds between 34 and 63 knots (39 and 73 mph).
TROPICAL WAVE	A trough or cyclonic curvature maximum in the trade wind easterlies. It is not classified as a tropical cyclone.
TROPOSPHERE	The lowest layer of the atmosphere where the temperature decreases with height. Most of earth's weather occurs in this layer.
TROUGH	An elongated area of low pressure at the surface or aloft. In the Northern Hemisphere, a trough generally resembles the concave portion of a sinusoidal wave pattern.
TURBULENCE	Disrupted flow in the atmosphere that produces gusts and eddies.
UKMET	"United Kingdom" forecast model produced every 12 hours.
UNSTABLE	See INSTABILITY.
UPDRAFT	A rising current of warm, moist, unstable air into a thunderstorm.
UPPER-LEVEL DISTURBANCE	A disturbance in the flow pattern of the upper atmosphere, which is usually associated with clouds and precipitation. Distinct cyclonic flow, a pocket of cold air, and sometimes a jet streak characterize this disturbance. These features make the air aloft more unstable and conducive to cloud and precipitation development.
URBAN & SMALL STREAM FLOOD	Flooding that occurs after heavy rains of relatively short duration and is generally not life threatening. Causes ponding of water in urban areas, especially in low places, and results in minor flooding of small streams and creeks.
VIRGA	Streaks of precipitation falling from the base of a cloud but evaporating before reaching the ground.
VISIBILITY	The horizontal distance an observer can see and identify a prominent object.
VORTICITY	A measure of the amount of "spin" (or rotation) at a particular location in the atmosphere.

WALL CLOUD	An isolated cloud lowering that is usually 1 to 4 miles in diameter and attached to the rain-free base of a cumulonimbus (thunderstorm) cloud. With respect to storm motion, the wall cloud is usually situated in the right-rear quadrant of the thunderstorm, below an intense updraft associated with a strong or severe thunderstorm. Rotating wall clouds often precede tornado development.
WARM FRONT	A boundary between a warm air mass that is replacing a cooler air mass.
WARNGEN	Warning Generator. AWIPS software utilized by WFO forecasters to generate warnings and statements for short-fuse weather hazards, such as severe thunderstorms and tornadoes.
WARNING	Forecast issued when a particular weather hazard is "imminent" or already occurring (e.g., Tornado Warning, Flash Flood Warning).
WARNING STAGE	See ACTION STAGE.
WATCH	Forecast issued in advance to alert the public of the possibility of a particular weather hazard (e.g., Tornado Watch, Flood Watch, Winter Storm Watch). A watch is intended to give people time to prepare for the potential weather hazard.
WATERSPOUT	A column of violently rotating air, usually extending from a cumulus or cumulonimbus cloud, in contact with a body of water (i.e., a tornado over the water). A tornado that forms in the same manner over land is called a landspout.
WAVE	An identifiable, periodic disturbance or motion in a medium that shows displacement. The most commonly referred medium is water, followed by the atmosphere, both which are "fluids".
WEATHER-READY NATION	A NOAA initiative to build community resilience in the face of extreme weather and water events. Building a Weather-Ready Nation involves not only internal initiatives, but also collaboration with our partners in other government agencies, emergency managers, first responders, researchers, broadcast media, the private sector, and others. The ultimate goal is to reduce the impact of extreme events through improved readiness.
WET-BULB TEMPERATURE	The temperature an air parcel would have if cooled to saturation at a constant pressure by evaporation of water into the parcel.
WFO	Weather Forecast Office. Designation of NWS operational offices after acquisition of full-forecast responsibility and commissioning of AWIPS.
WIND-CHILL FACTOR	An apparent temperature that describes the combined effect of wind and low air temperature on exposed skin (i.e., the amount of evaporational cooling one "feels"). Refer to Appendix D for a wind-chill chart.
WIND SHEAR	The change of wind speed or direction with distance or height.
WIND VANE	An instrument that determines the direction from which the wind is blowing.
WPC	Weather Prediction Center (formerly the Hydrometeorological Prediction Center). Situated in Silver Spring, Maryland, the branch of NCEP responsible for issuing weather analysis and forecast guidance on a national basis out through 14 days.
WRF	Weather Research and Forecasting model. Short-range model generated every 12 hours by NCEP. Several finer scale versions are also available online.
WSR-88D	Weather Surveillance Doppler Radar implemented in 1988. See DOPPLER WEATHER RADAR.