SEVERE WEATHER AWARENESS WEEK

NATIONAL WEATHER SERVICE
JACKSON* LOUISVILLE
PADUCAH * WILMINGTON
CHARLESTON

MARCH 2-8, 2008

Governor Steve Beshear has proclaimed March , 2008 as Severe Weather Preparedness Month in Kentucky. The National Weather Service, in conjunction with the Kentucky Division of Emergency Management, the broadcast media across Kentucky, and Amateur Radio Operators will conduct a statewide Tornado Drill on ***Tuesday, March 4 at 10:07 a.m. EDT/ 9:07 a.m. CDT.***

The goal of Severe Weather Awareness Week is to heighten everyone's knowledge of the dangers of severe thunderstorms and tornadoes, and to provide information to help everyone get prepared for severe weather before it occurs.

This document contains information about severe weather terms, safety rules, and some tornado events that affected Kentucky. Daily statements will be issued on newswires and NOAA All Hazards Radio during the week. Your local National Weather Service office will be available throughout Awarenness Week for interviews or questions.

SPRING 2008

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OTHER DATES TO NOTE

* **National Flood Safety Awareness Week** March 17-21, 2008
  www.nws.noaa.gov/floodsafety
* **National Sky Awareness Week**
  April 20-26, 2008
  www.weatherworks.com/skyawareness.week.html
* **National Safe Boating Week**
  May 17-23, 2008
  www.safeboatingcouncil.org
* **Lightning Safety Week**
  June 22-28, 2008
  www.lightningsafety.noaa.gov

Awareness Week Daily Focus

Sunday, March 2: **Kick-off:** Weather Terminology and definitions

Monday, March 3: **Lightning:** EVERY thunderstorm contains lightning, so every one of them is dangerous

Tuesday, March 4: **Tornadoes:** Do you know the safest place to seek shelter at home, school and work?

Wednesday, March 5: **Severe Thunderstorms:** Some can be as powerful and damaging as a tornado!

Thursday, March 6: **Flash Floods:** Kentucky's deadliest weather threat

Friday, March 7: **Situational Awareness:** Increasing yours will help keep you safe during severe weather

Saturday, March 8: **Information Exchange:** Find out how you can help the NWS by sending us your weather reports

NEW!

Graphical Weather Stories are now available on every NWS homepage in Kentucky. Read more about this new tool on **page 10**!

SEVERE WEATHER PREPAREDNESS WEEK

SEVERE WEATHER TERMS AND DEFINITONS

Warning - a particular weather hazard is either imminent or has been reported. A warning indicates the need to **take immediate** action to protect life and property. The type of hazard is reflected in the type of warning (e.g. tornado warning, blizzard warning).

Watch - a particular hazard is possible , or when conditions support its occurrence. A watch is a recommendation for **planning, preparation, and increased awareness** (i.e., to be alert for changing weather, listen for further information, and think about what to do if the danger materializes).

Tornado - A violently rotating column of air in contact with the ground and extending from the base of a thunderstorm.

Severe Thunderstorm - A thunderstorm that produces tornadoes, hail 0.75 inches or more in diameter, or winds of 50 knots (58 mph) or more.

Straight-line Winds - Generally, any wind that is not associated with rotation, used mainly to differentiate them from tornadic winds.

Flood - The condition that occurs when water overflows the natural or artificial confines of a stream or other body of water, or accumulates by drainage over low-lying areas.

Flash Flood - A flood that rises and falls quite rapidly, usually as the result of intense rainfall over a relatively small area. Usually it occurs within 6 hours of a rain event.

Slight Risk (of severe thunderstorms) - Severe thunderstorms are expected to affect between 2 and 5 percent of the area. A slight risk generally implies that severe weather events are expected to be isolated.

Moderate Risk (of severe thunderstorms) - Severe thunderstorms are expected to affect between 5 and 10 percent of the area. A moderate risk indicates the possibility of a significant severe weather episode.

High Risk (of severe thunderstorms) - Severe weather is expected to affect more than 10 percent of the area. A **high risk is rare**, and implies an unusually dangerous situation and usually the possibility of a major severe weather outbreak.

Supercell - A thunderstorm with a persistent rotating updraft. Supercells are rare, but are responsible for a remarkably high percentage of severe weather events - especially tornadoes, extremely large hail and damaging straight-line winds.

Squall Line - A solid or nearly solid line or band of active thunderstorms.

Downburst - A strong downdraft resulting in an outward burst of damaging winds on or near the ground. Downburst winds can produce damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can occur with showers too weak to produce thunder.

Funnel Cloud - A condensation funnel extending from the base of a towering cumulus or cumulonimbus cloud, associated with a rotating column of air that is ***not*** in contact with the ground (and hence different from a tornado). A condensation funnel is a tornado, *not* a funnel cloud, if either a) it is in contact with the ground or b) a debris cloud or dust whirl is visible beneath it.

Cold-air Funnel - A funnel cloud that can develop from a small shower or thunderstorm when the air aloft is unusually cold (hence the name). On rare occasions, small, relatively weak tornadoes can occur. These weak tornadoes last only a few minutes and are generally much less violent than other types of tornadoes.

SEVERE WEATHER PREPAREDNESS WEEK

Lightning Safety!

LIGHTNING SAFETY WEEK JUNE 22-28, 2008

www.lightningsafety.noaa.gov

All thunderstorms produce lightning and are dangerous. Lightning kills more people each year than tornadoes.

Lightning often strikes as far as 10 miles away from any rainfall. Many deaths from lightning occur ahead of the storm because people try and wait to the last minute before seeking shelter. **You are in danger from lightning if you can hear thunder.** If you can hear thunder, lightning is close enough that it could strike your location at any moment. Get inside!!

Lightning injuries can lead to permanent disabilities or death. On average, 10% of strike victims die; 70% of survivors suffer serious long term effects.

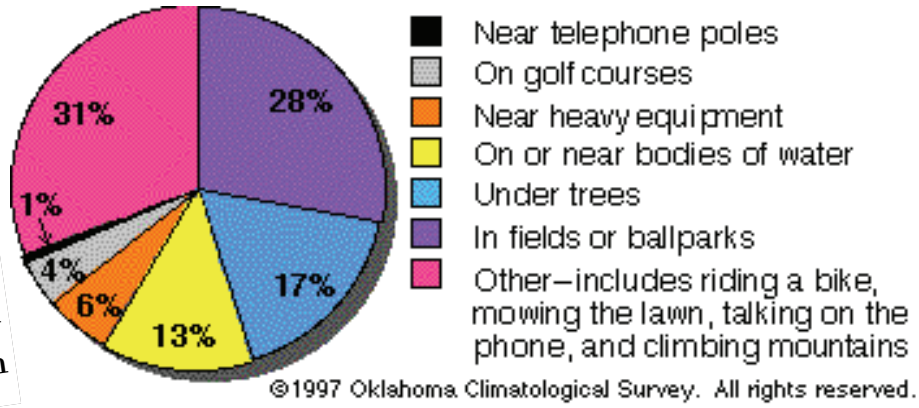
Blue Skies and Lightning. Lightning can travel sideways for up to 10 miles. Even when the sky looks blue and clear, be cautious. If you hear thunder, take cover. At least 10% of lightning occurs without visible clouds overhead in the sky.

- **Be the lowest point. Lightning hits the tallest object. Crouch down if you are in an exposed area.**
- **If you can't get to a shelter, stay away from trees. If there is no shelter, crouch in the open, keeping twice as far away from a tree as it is tall.**
- **Avoid leaning against vehicles. Get off bicycles and motorcycles. Avoid metal! Don't hold on to metal items such golf clubs, fishing rods, tennis rackets or tools.**
- **Get out of the water. It's a great conductor of electricity. Don't stand in puddles of water, even if wearing rubber boots.**
- **Move away from a group of people. Stay several yards away from other people. Don't share a bleacher bench or huddle in a group.**

25 million cloud-to-ground lightning strikes occur in the United States each year

Lightning can heat its path **five times hotter** than the surface of the sun

Lightning deaths



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SEVERE WEATHER PREPAREDNESS WEEK

TORNADOES

- **A tornado is a violently rotating column of air extending from a thunderstorm to the ground.**
- **The average forward speed is 30 mph but may vary from nearly stationary to 70 mph.**
- **Tornadoes can occur at any time of the year.**

TORNADO SAFETY

IN HOMES OR SMALL BUILDINGS:
Go to the basement (if available) or to an interior room on the lowest floor, such as a closet or bathroom. Wrap yourself in overcoats or blankets to protect yourself from flying debris.

IN SCHOOLS, HOSPITALS, FACTORIES, OR SHOPPING CENTERS:
Go to interior rooms and halls on the lowest floor. Stay away from glass enclosed places or areas with wide-span roofs such as auditoriums and warehouses. Crouch down and cover your head.

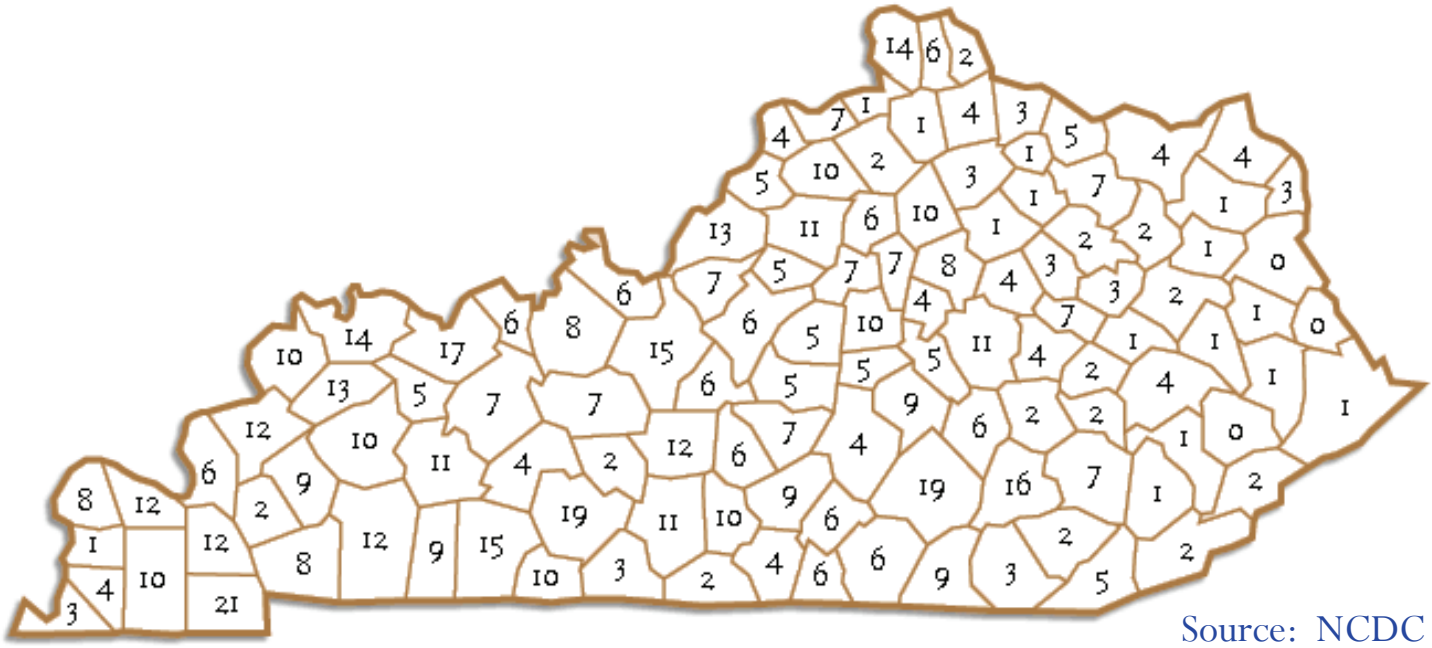
IN HIGH-RISE BUILDINGS:
Go to interior small rooms or halls. Stay away from exterior walls or glassy areas.

IN CARS OR MOBILE HOMES:
ABANDON THEM IMMEDIATELY!! Most deaths occur in cars and mobile homes. If you are in either of those locations, leave them and go to a substantial structure or designated tornado shelter.

IF NO SUITABLE STRUCTURE IS NEARBY:
Lie flat in the nearest ditch or depression and use your hands to cover your head.

SEVERE WEATHER PREPAREDNESS WEEK

The map below shows the number of tornadoes reported in each county from 1950 through October 2007.



Source: NCDC

Kentucky Tornado Facts

Strongest: The tornado that devastated Brandenburg on April 3, 1974 was the only twister to produce F5 damage in Kentucky.

Longest path: An F4 tornado traveled for 42 miles from near Elizabethtown to near Fairfield on April 3, 1974.

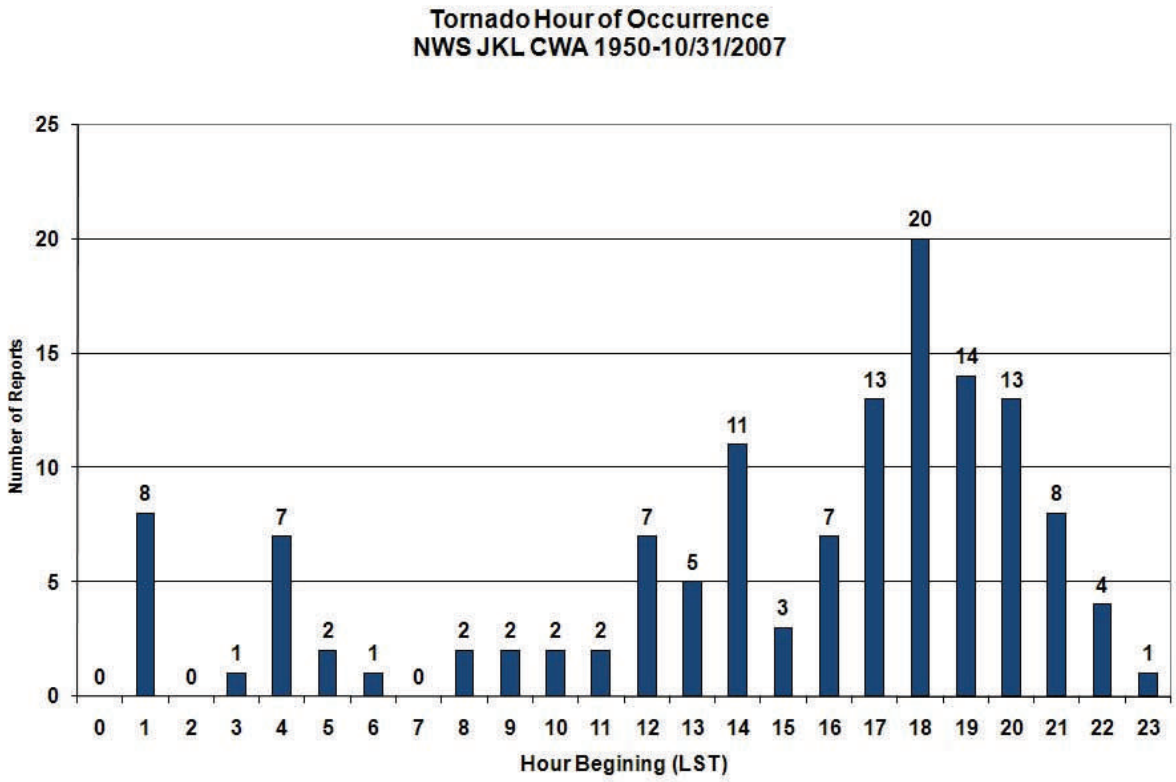
Deadliest: On March 27, 1890 an F4 tornado killed 76 people in Louisville.

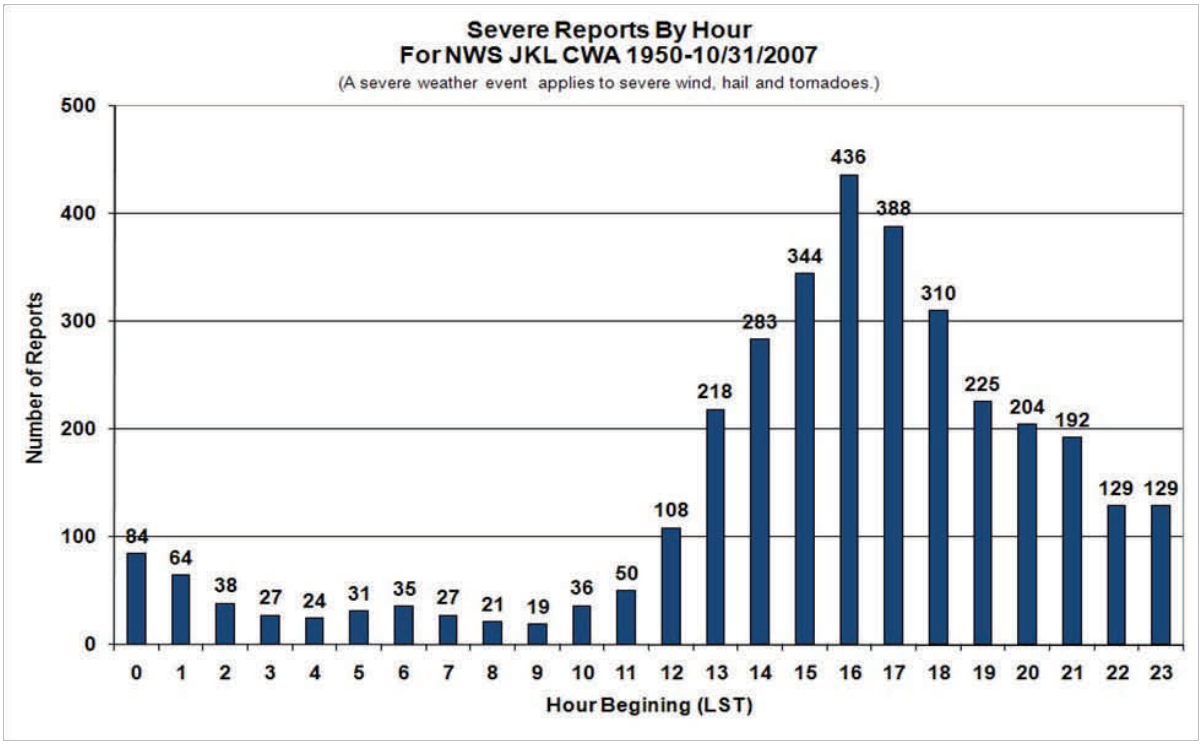
Widest: Two Kentucky tornadoes have been two-thirds of a mile wide: an F4 tornado on March 27, 1890 that traveled from Ohio County to Hardin County, and an F4 tornado on March 18, 1925 that swept from Harrison County, Indiana into Jefferson County, Kentucky.

Costliest: On May 28, 1996 a tornado tore from Jefferson County to Spencer County, doing $100,000,000 damage.

SEVERE WEATHER PREPAREDNESS WEEK

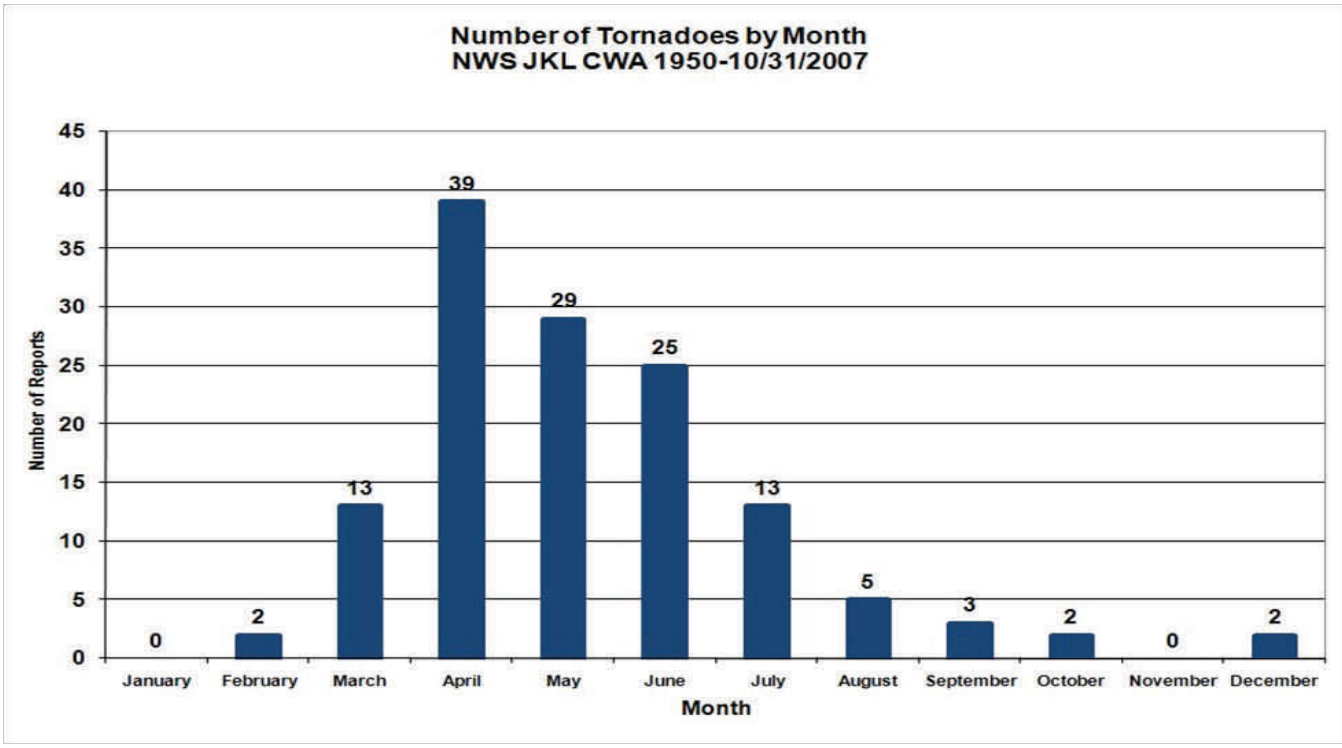
The chart below shows the peak time of occurrence for tornadoes and severe thunderstorms for eastern Kentucky. Note that tornadoes peak later in the evening and there is also a secondary maximum in the early morning hours.

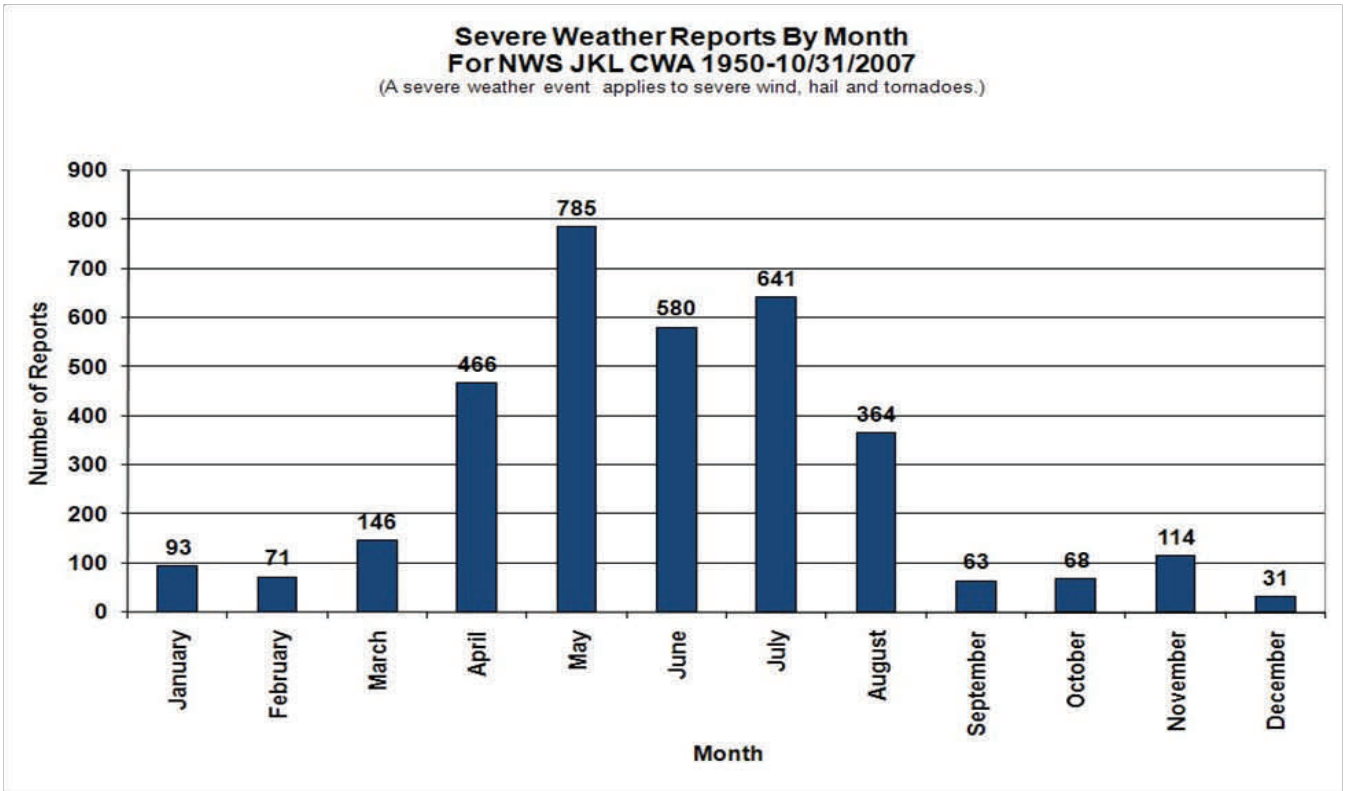




SEVERE WEATHER PREPAREDNESS WEEK

The chart below shows the distribution for tornadoes and severe thunderstorms by month for eastern Kentucky. Note that tornadoes peak in April and severe thunderstorms peak in May.

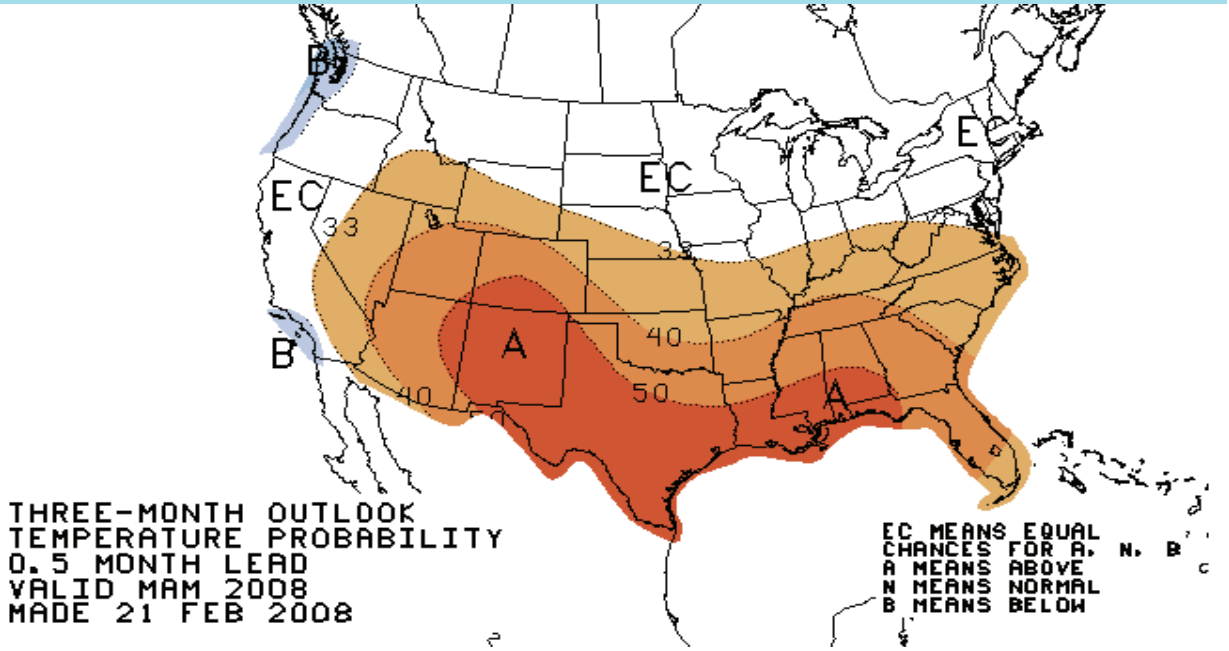




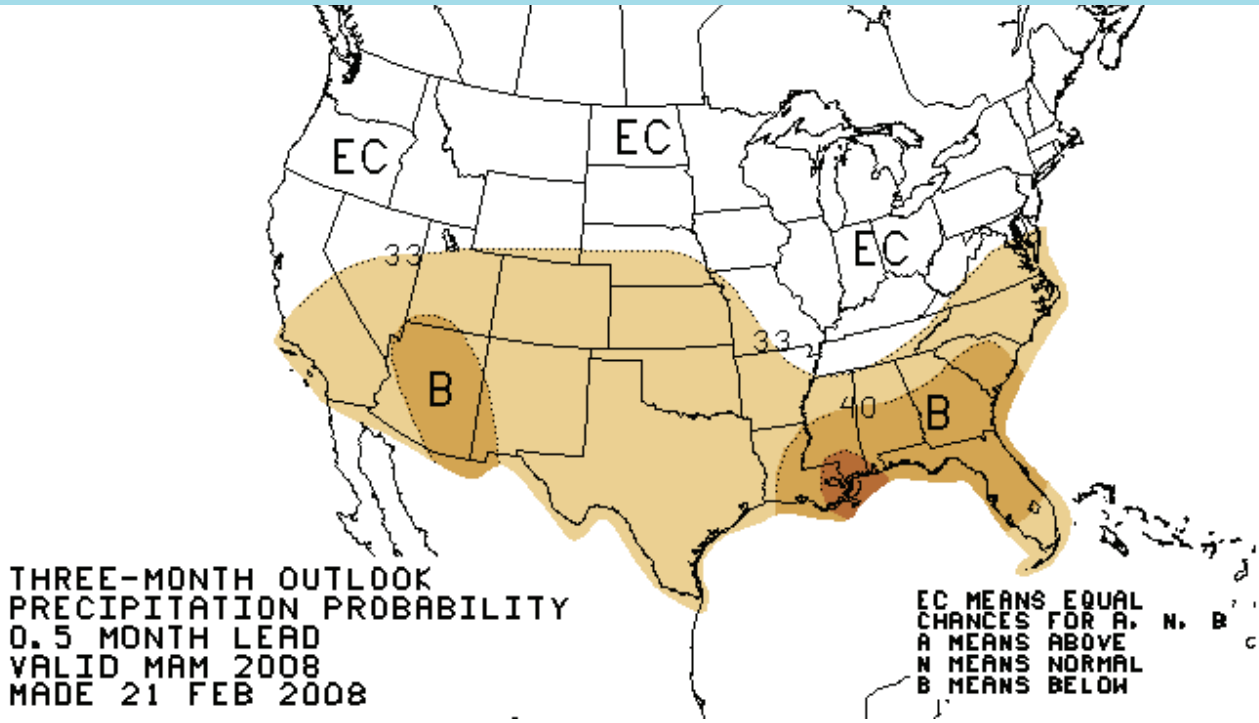
SEVERE WEATHER PREPAREDNESS WEEK

3 Month Seasonal Outlook for March, April & May of 2008

This is a temperature outlook for March, April and May of 2008. An interpretation is that there is a 37% chance that the temperatures for eastern Kentucky will be above normal, and a 33% chance that the temperatures will be normal, and a 30% chance that the temperatures will be below normal.



Below is the precipitation outlook for March, April and May of 2008. There are equal chances for the precipitation to be above normal, normal, or below normal for eastern Kentucky when compared to 30 year normals compiled in the year 2000. This means that the climate models are not picking up any signals that would offer any skill in making a prediction for this spring.

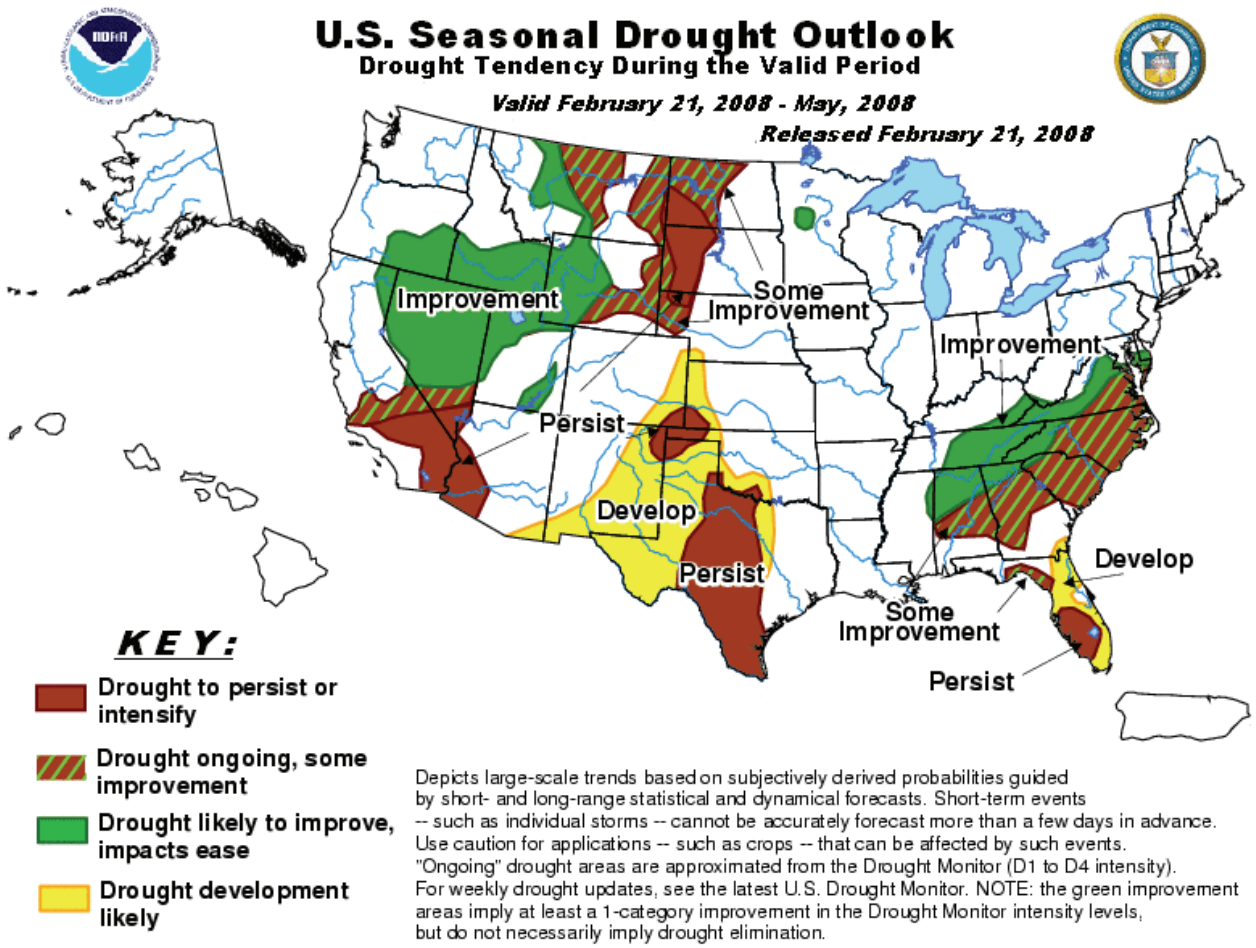


SEVERE WEATHER PREPAREDNESS WEEK

LA NINA RULES

We are currently in a La Nina pattern and should continue that way through the spring season. Research shows that there is an increased chance for tornadoes and severe thunderstorms over the Ohio Valley when we are undergoing a La Nina pattern. La Nina is defined as cooler than normal sea-surface temperatures in the central and eastern tropical Pacific ocean that impact global weather patterns. La Niña conditions recur every few years and can persist for as long as two years. The increased chance for severe weather tends to diminish after April. For a complete discussion see the article at: http://www.coaps.fsu.edu/papers/impacts_enso_tornadic_activity/ So statistically, there is an increased chance for an active spring severe weather season…especially in March and April.

DROUGHT OUTLOOK

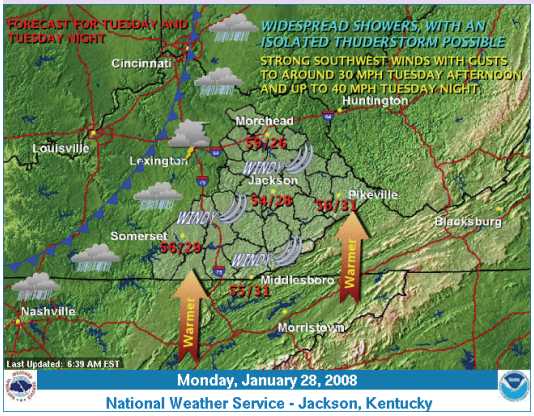


The winter rains and the expected spring rains have greatly improved the drought conditions over eastern Kentucky. This will significantly decrease the wild fire potential for the fire season that normally lasts until the spring growing season starts.

SEVERE WEATHER PREPAREDNESS WEEK

Winds of Change...

Graphical Weather Forecasts and Outlooks are here, NOW!



The graphical forecasts and outlooks are currently available from the National Weather Service websites. Now, instead of just reading about expected hazards, you can see a picture of what we are forecasting! Eventually, all seven days of the Hazardous Weather Outlook will be depicted graphically.

These can be found by visiting any of the Kentucky National Weather Service offices. Look for the Weather Story at the top of the page.

Heat Wave

How can I be prepared and stay safe?

- Wear light clothes, sunglasses and a hat to protect yourself from the sun.
- Drink plenty of water at all times, even if you do not feel thirsty.
- Do not overexert yourself.
- Eat light meals.
- Stay out of the sun when possible.

Relative Humidity (%)

°F	40	45	50	55	60	65	70	75	80	85	90	95	100
110	136												
108	130	137											
106	124	130	137										
104	119	124	131	137									
102	114	119	124	130	137								
100	109	114	118	124	129	136							
98	105	109	113	117	123	126	134						
96	101	104	108	112	116	121	126	132					
94	97	100	103	106	110	114	119	124	129	135			
92	94	96	99	101	105	108	112	116	121	126	131		
90	91	93	95	97	100	103	106	109	113	117	122	127	132
88	88	89	91	93	95	98	100	103	106	110	113	117	121
86	85	87	88	89	91	93	95	97	100	102	105	108	112
84	83	84	85	86	88	89	90	92	94	96	98	100	103
82	81	82	83	84	84	85	86	88	89	90	91	93	95
80	80	80	81	81	82	82	83	84	84	85	86	86	87

Heat Index (Apparent Temperature)

With Prolonged Exposure and/or Physical Activity
Extreme Danger
Heat stroke or sun stroke highly likely
Danger
Sunstroke, muscle cramps and/or heat exhaustion likely
Extreme Caution
Sunstroke, muscle cramps and/or heat exhaustion likely
Caution
Fatigue possible

Did you know?

In 2006, according to NWS statistics, **253 fatalities** were attributed to heat!

There were **1513 injuries**.

www.nws.noaa.gov/om/hazstats/sum06.pdf

SEVERE WEATHER PREPAREDNESS WEEK

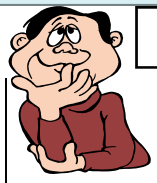
Floods and Flash Floods

CHECK OUT THE ADVANCED HYDROLOGIC PREDICTION SERVICE (AHPS)

AHPS is a great tool to check out the latest in river flood information. Information on flood stage, flood impacts and any current flood warnings or statements is available for each station on the map. If you live or work near a river or stream, this page will be of great help to you! **www.crh.noaa.gov/ahps**

FLOOD AND FLASH FLOOD SAFETY TIPS

- Monitor NOAA All Hazards Radio or your favorite news source for vital weather information.
- If flooding occurs, get to higher ground, away from areas subject to flooding.
- Avoid areas already flooded and do not attempt to cross flowing streams.
- Do not drive around barriers that warn you the road is flooded. **Some cities and counties will issue a fine to motorists who ignore barriers!**
- Never drive through flooded roadways as road beds may be washed out under flood waters.
- If your vehicle is suddenly caught in rising water, leave it immediately and seek higher ground.
- Do not camp or park your vehicle along streams and washes, if there is a threat of flooding. Be especially cautious at night when it is harder to recognize flood dangers.



FLOOD FACTS

According to FEMA:

The average annual U.S. flood losses from 1996-2005 was more than $2.4 billion.

Hurricanes, winter storms and snow melt are common (but often overlooked) causes of flooding.

On May 25, 2007, nine counties in eastern Kentucky received a FEMA Disaster Declaration for severe storms and flooding.

March 17-21, 2008 **Flood Safety Week** **www.nws.noaa.gov/floodsafety**

CRITICAL NWS FLOOD PRODUCTS

Hydrologic Outlook: This product alerts the public when flood producing rainfall is expected in 36 to 72 hours. During the months of February and March, this product also contains information on the potential for flooding from the spring snow melt.

Flood Watch: A flood or flash flood watch is issued when conditions are favorable for flooding or flash flooding to develop.

Flash Flood Warning: A warning is issued when rapid flooding is imminent. Flash floods quickly develop within six hours of a heavy rainfall event.

Urban/Small Stream Flood Advisory (issued as a Flood Statement): These statements are issued when minor flooding problems are expected, mostly in flood prone urban areas or near small streams that may rise quickly out of their banks. Even minor flooding can cause huge problems if proper precautions are not taken.

Flood Warning: These warnings are issued for river floods. River flooding mostly occurs with longer periods of rain which result in slower rises in flood waters and a prolonged flood event.

EMERGENCY MANAGERS BRIEFING PAGE: INSTANT SITUATIONAL AWARENESS

If you haven't seen it yet, you don't know what you are missing. This is great tool for anyone trying to see what the weather threats are for the day in eastern Kentucky. Go to: http://www.crh.noaa.gov/jkl/?n=embriefing and click on the area you are interested in. You will find almost everything you want to know right at your finger tips.

SEVERE WEATHER PREPAREDNESS WEEK

Weather Enthusiasts Wanted!

Volunteers are wanted to join the **CoCoRaHS** network in Kentucky! Anyone can participate; old, young, and anywhere in between. The only requirement is a desire to learn more about how the weather impacts our daily lives.

The project website is located at http://www.cocorahs.org

The **CoCoRaHS** network is a unique, non-profit community based network of volunteer observers who measure and record daily amounts of precipitation (rain, hail, and snow). The high quality data collected by our volunteers will help weather forecasters and resource managers better understand the highly variable patterns that make up Kentucky's weather.

CoCoRaHS in Kentucky is a collaborative effort between the National Weather Service, the University of Kentucky, and the Kentucky State Climate Office at Western Kentucky University.

Cooperative Observers are currently needed in the following locations:

- Owingsville (Bath County) Frenchburg (Menifee county) Campton (Wolfe County) Irvine (Estill County)
- McKee (Jackson County) London (Laurel county) Manchester (Clay County)
- Hindman or Alice Lloyd College (Knott County)
- If you are interested in becoming a cooperative weather observer, please contact **David Stamper** at 606-666-8000
- For volunteer job requirements go to: http://www.crh.noaa.gov/crnews/display_story.php?wfo=jkl&storyid=7549&source=0

Weather forecasts and warnings are available 24 hours a day on NOAA All-Hazards Weather Radio. The Jackson National Weather Service Office operates 20 transmitters:

Hazard:	162.476 MHZ	Pineville:	162.525 MHZ	Frenchburg:	162.475 MHZ
Jackson:	162.425 MHZ	Harlan:	162.450 MHZ	W. Liberty:	162.450 MHZ
Pikeville:	162.400 MHZ	Phelps:	162.500 MHZ	Somerset:	162.550 MHZ
Paintsville:	162.525 MHZ	Beattyville:	162.500 MHZ	Mt. Vernon:	162.425 MHZ
McKee:	162.450 MHZ	Morehead:	162.425 MHZ	London:	162.475 MHZ
Manchester:	162.400 MHZ	Stanton:	162.550 MHZ	Williamsburg:	162.500 MHZ
		Irvine:	162.475 MHZ	Monticello:	162.425 MHZ

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UNITED STATES DEPARTMENT OF COMMERCE