NATIONAL WEATHER SERVICE

DECISION SUPPORT NEWSLETTER, SUMMER 2012

SPRINGFIELD, MO **www.weather.gov/springfield**

The National Weather Service (NWS) provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy.

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SUMMERTIME DECISION SUPPORT

It's that time of year again, temperatures have warmed up nicely, school has ended, and the number of outdoor activities and events has sky rocketed. Summer brings with it a whole host of challenges weather-wise across eastern Kansas and the Missouri Ozarks. Whether it's a baseball coach needing heat index information, boaters on Table Rock lake concerned with lightning, or an Emergency Manager planning an event, accurate and timely weather information is invaluable. This newsletter will highlight some of the tools, services, and products available from the National Weather Service in Springfield to help your decision making.



MISSOURI SUMMER WEATHER SAFETY WEEK JUNE 24-30, 2012

Join us in promoting **Summer Weather Awareness week June 24-30, 2012** Weather hazards from extreme heat to thunderstorms and lightning can affect those in Summer outdoor activities. Please help spread the word about Lightning, Excessive Heat, Thunderstorms, Fire Weather and Flash Flooding so we can have a safe and wonderful Summer 2012.

Just some quick facts, did you know?

- In Missouri, there have been 97 deaths attributed to lightning from 1959 - 2011, an average of 2 deaths per year. This is right behind the average of 4 deaths per year caused by tornadoes.
- Since 1980 there have been 996 fatalities related to excessive heat in Missouri.

The following pages will present information on how to prepare your community for the many challenges summer weather poses.





FOR MORE INFORMATION VISIT:

http://www.crh.noaa.gov/sgf/?n=summer_safety

EXCESSIVE HEAT

As were all aware, the summer months across the Midwest are notorious for being excessively hot and humid, with our neck of the woods being no exception. With average highs in July and August above 90 degrees, and records well above 100 degrees, summertime heat is not only uncomfortable, but at times, dangerous. The best measure of how dangerous a day's heat will be is the expected heat index, a calculation that takes into effect the cumulative effects of both temperature and moisture at the surface.

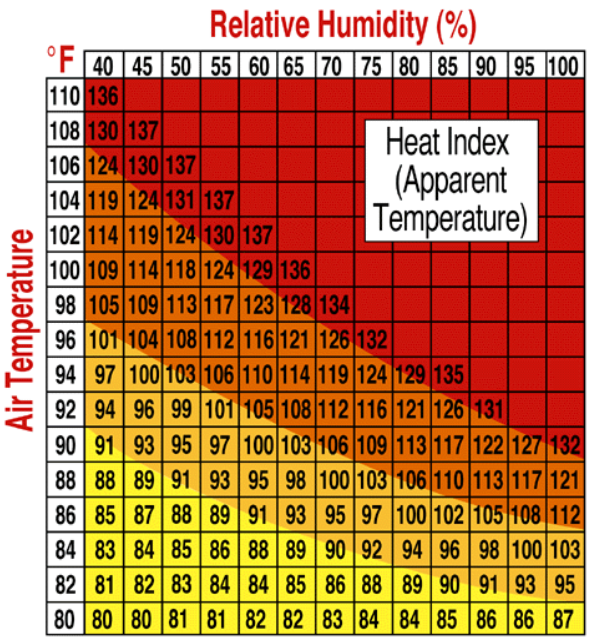
As the temperature and dewpoint rise this summer, the National Weather Service in Springfield will begin to highlight excessive heat in the Hazardous Weather Outlook as heat indices near the 100 degree mark. If heat indices are expected to reach 105 degrees or higher, then Heat Advisories and Excessive Heat Warnings will be issued.

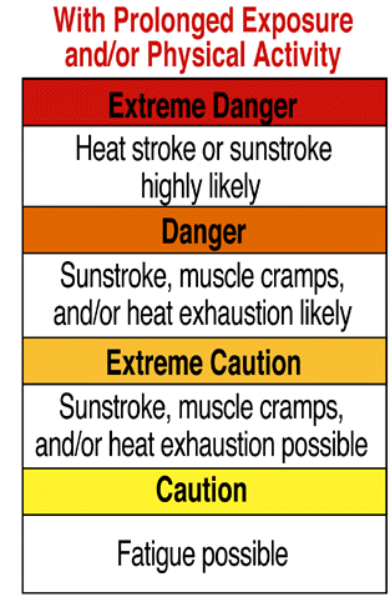
Heat Advisory

- Heat Index of 105-109 degrees

Excessive Heat Warning

- Heat index of 110°+, or 105°+ for 4 or more days





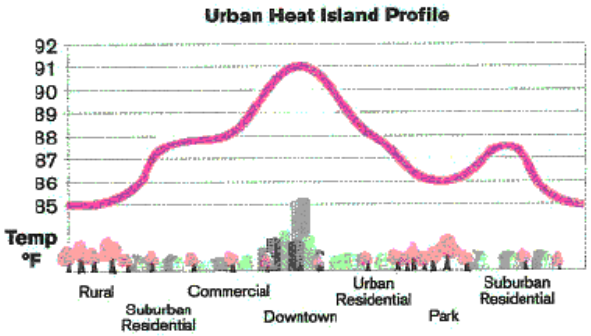
HEAT PREPAREDNESS AND RESPONSE



Many people do not realize how deadly a heat wave can be. In contrast to the visible, destructive, and violent nature of floods, hurricanes, and tornadoes, a heat wave is a "silent killer". The Centers for Disease Control and Prevention (CDC) reported that from 1979-2003, excessive heat exposure caused 8,015 deaths in the U.S. That means that more people in our country died from extreme heat than from hurricanes, tornadoes, floods, lightning, and earthquakes combined. For Tips on how to educate people in your community visit: **http://www.bt.cdc.gov/disasters/extremeheat/index.asp** for FAQs and other Hot Weather Tips.

URBAN HEAT ISLANDS

Although the majority of the Ozarks is made up of small towns and rural areas, the heat retaining properties of concrete and bricks in city centers can have an adverse effect on temperatures. On average, most heat-related deaths occur in cities. Brick and mortar buildings, asphalt streets, and tar roofs absorb daytime heat and slowly release it at night. Consequently, temperatures in urban areas can be warmer than rural areas by several degrees both day and night.



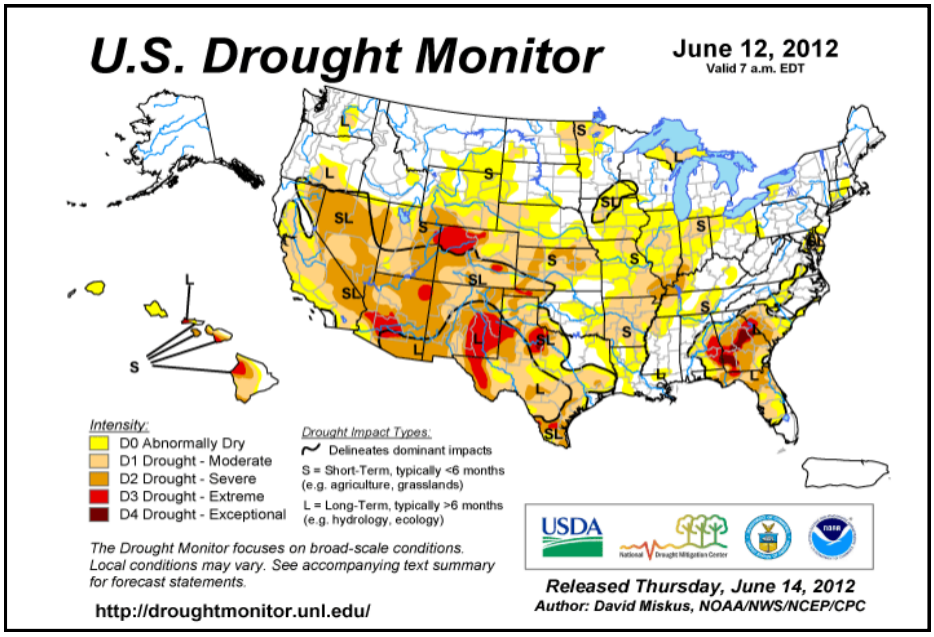
DROUGHT INFORMATION

With Extreme Heat, usually comes increased drought conditions across Southeastern Kansas and Southwestern Missouri. Persistent south/ southwesterly winds bring hot dry air into the region. Drought conditions have huge impacts on the operations of area Farmers and Ranchers. Luckily we have the Drought Mitigation Center, a partnership of numerous federal agencies including the National Weather Service. They provide Drought Forecast and information for the United States.

For more information and a link to the Drought Monitor go to:

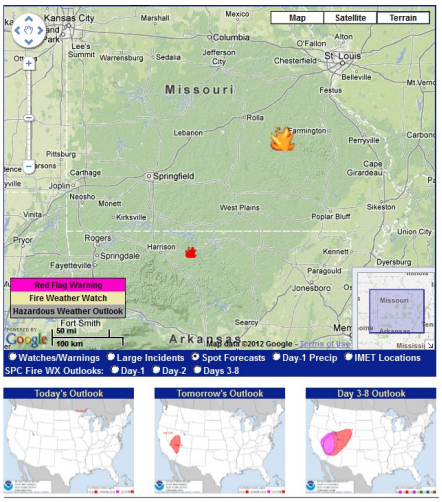
droughtmonitor.unl.edu

Example of drought monitor →



FIRE WEATHER CONCERNS

In association with summer temperatures and dry conditions, our fire weather concerns become heightened. Fire Weather is a primary concern for many across Southeastern Kansas and Southwestern Missouri. We are lucky in that we live in such a diverse and beautiful geographic area, however, this poses many challenges when fire weather conditions increase. Many of our partners rely on accurate and up to date forecasts, whether it be for controlled burns in the Mark Twain National Forest, or a grassland fire on the plains of Kansas that needs to be brought under control. As a refresher, here are some useful tools provided to you to help in your decision making process, and as always you can call us anytime for up to the minute communication and information dissemination.

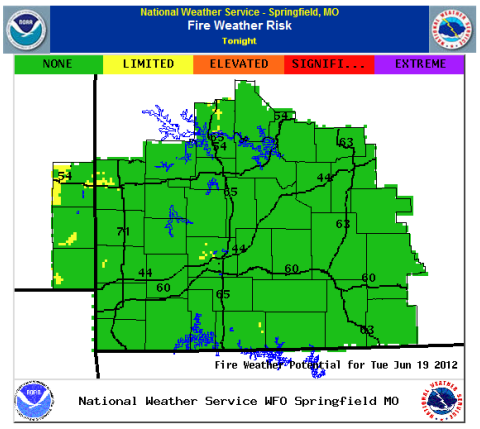


For all your fire weather needs, head over to: crh.noaa.gov/sgf/?n=fire_weather. Here you will be able to request a Spot Forecast and find links to the Experimental Nationwide NWS Fire Weather Web Page (**http://radar.srh.noaa.gov/fire/**).

We also issue a routine fire weather forecast every afternoon which can also be found from the fire weather web page or from the direct link: **www.crh.noaa.gov/product.php?site=SGF&issuedby=SGF&product=FWF&format=txt&version=1**

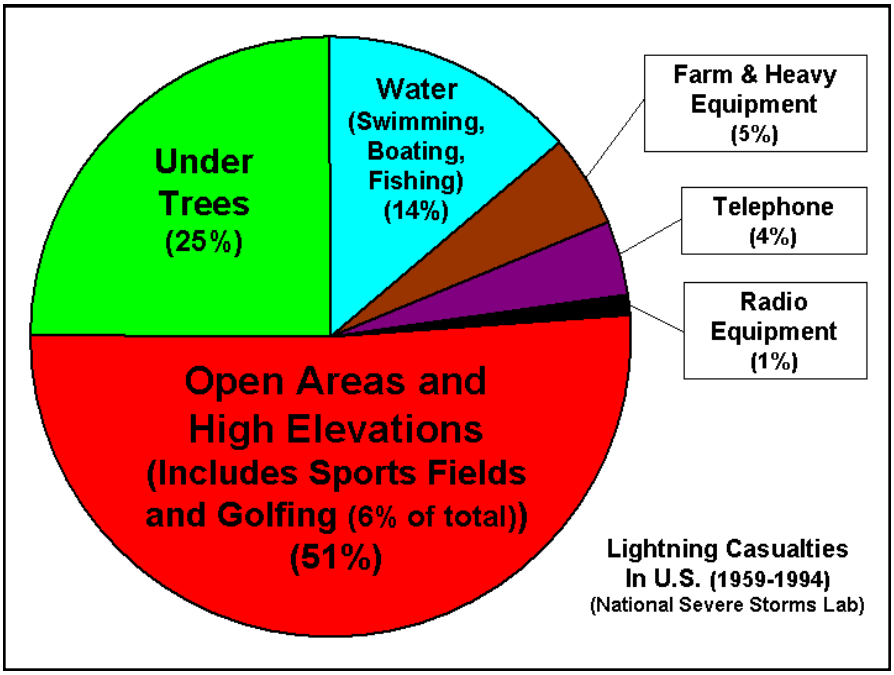
For quick situational awareness, don't forget to check out our Enhanced Hazardous Weather Outlook (EHWO). Here you can not only assess severe weather threats but also fire weather concerns. (**www.crh.noaa.gov/sgf/?n=hwo**).

Example Fire Weather EHWO Graphic →



LIGHTINING AWARENESS

At any given moment, there are 1,800 thunderstorms in progress somewhere on Earth. This amounts to 16 million storms a year! In the United States, there are an estimated 25 million cloud-to-ground lightning flashes each year. While lightning can be fascinating to watch, it is also extremely dangerous. In the state of Missouri Summer Weather Awareness Week coincides with National Lightning Safety Awareness Week. Remember, when Thunder Roars, Go Indoors!



As mentioned on the front page, there have been **97 deaths** attributed to lightning **from 1959 - 2011** in Missouri, an average of 2 deaths per year. This is right behind the average of 4 deaths per year caused by tornadoes. For Kansas there have been 65 deaths from 1959-2011 an average of ~1 death a year.

73% of all lightning fatalities occur in the summer months (Jun: 21%, Jul: 30%, Aug: 22%). Another startling fact is that **84% of all victims are Male**, leaving 16% female.

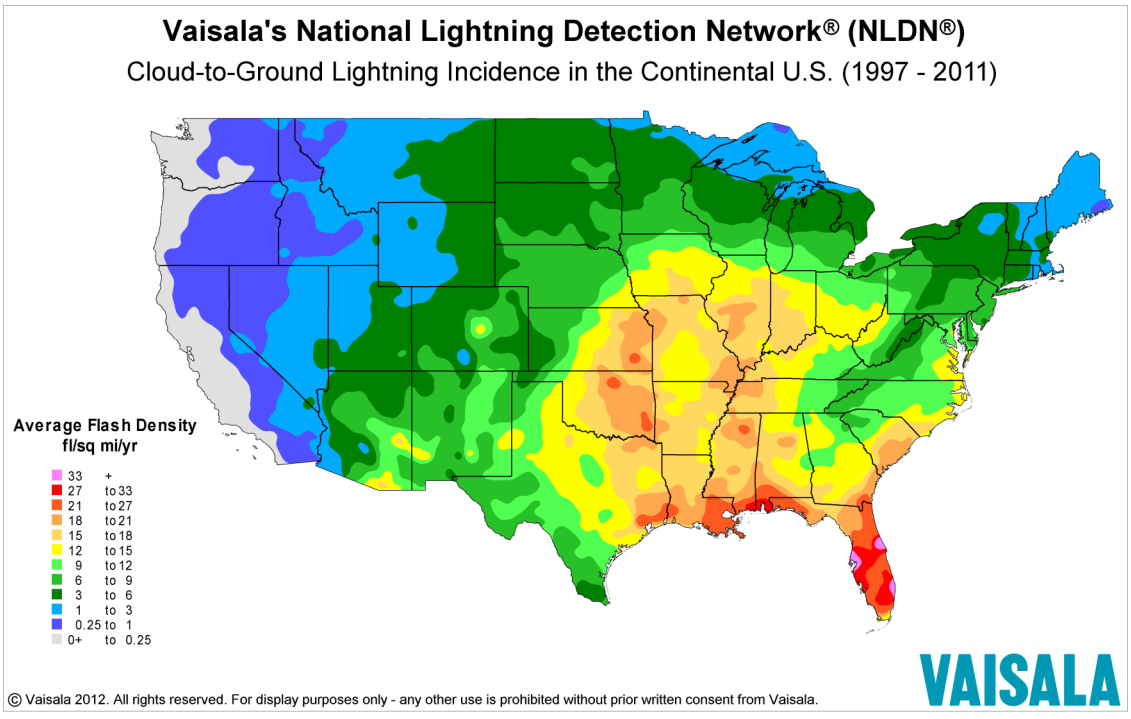
To spread the word of the dangers of lightning to your communities, go to **lightningsafety.noaa.gov**. Here you will find abundant and valuable information on lightning safety tips and ideas, as well as many more statistics.

FLASH DENSITY MAP

The Ozarks and Southern Plains are a hot spot for lightning activity every year.

From the graphic to the left: there were nearly 12 to 18 strikes per square mile per year between 1997 and 2011 along the Ozark Plat-





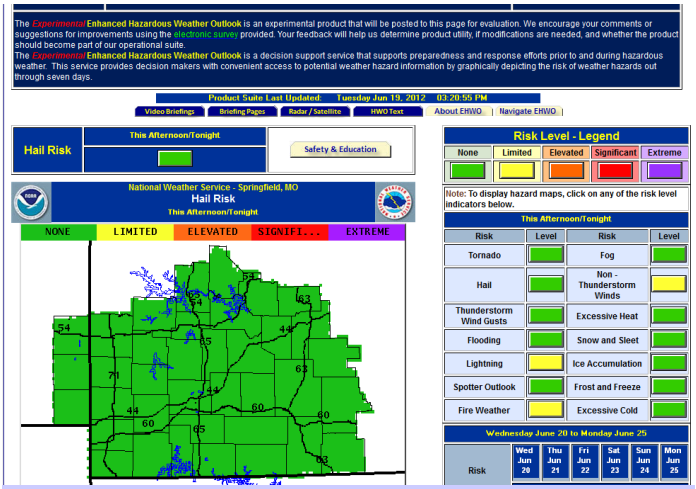
THUNDERSTORM HAZARDS

NWS WARNING AND ADVISORY PRODUCTS AND HAZARD MONITORING

Thunderstorms are common during the summer months, bringing a variety of weather hazards including lightning, flooding rains, hail, and damaging winds. Because of summer time outdoor and recreational activities, more people are vulnerable to thunderstorm hazards. The abundance of recreational opportunity on area lakes and rivers heightens this risk.

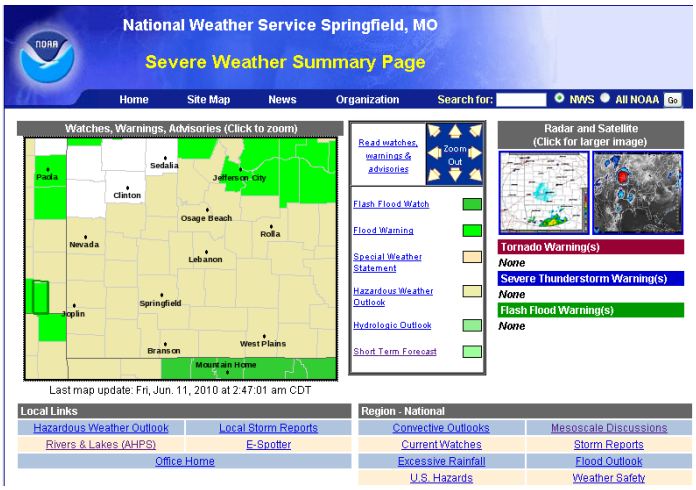
Below are several resources available to monitor hazardous weather, as well as information on several short-term products issued by the National Weather Service in Springfield to highlight hazardous thunderstorms.

Enhanced Hazardous Weather Outlook



http://www.crh.noaa.gov/sgf/?n=hwo

Severe Weather Summary Page



http://forecast.weather.gov/hazards/sgf

Text Products

Short Term Forecast

Issued on a 1-2 hour basis to relay the location, intensity, and movement of thunderstorms.

http://www.crh.noaa.gov/product.php?site=sgf&product=NOW&issuedby=sgf

Significant Weather Alerts

Issued for strong thunderstorms approaching severe limits with winds up to 50 mph and hail up to the size of nickels.

http://www.crh.noaa.gov/product.php?site=sgf&product=SPS&issuedby=sgf

Severe Thunderstorm Warnings

Issued for thunderstorms producing

- Damaging winds of 58 mph (50 kts) or greater And / or
- Large hail of 1" in diameter or larger

http://www.crh.noaa.gov/product.php?site=sgf&product=SVR&issuedby=sgf

Tornado Warnings

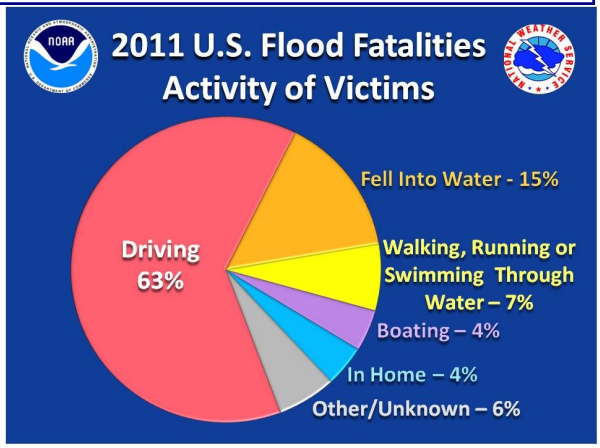
Issued When

- A thunderstorm is Capable and Radar indicates a tornado has formed.
- A confirmed tornado has developed.

http://www.crh.noaa.gov/product.php?site=sgf&product=TOR&issuedby=sgf

FLASH FLOODING

Even though Summer time revolves more around excessive heat and pulse thunderstorms, flash flooding remains a constant threat for our region. Flash Flooding year after year remains one of the single deadliest weather hazards in the Ozarks. The combination of our geographic position for heavy rain events, complex and steep terrain, rocky soil, and hundreds of low water crossings makes for several deadly flood and flash flood events per year on average. Drivers should always remember to "**Turn Around, Don't Drown**" if they encounter a flooded roadway—don't become a statistic! Along with the risk to drivers from flooded low water crossings, rapidly rising water in dry creek and stream beds can be deadly for anyone camping nearby. If a flood or flash flood warning is issued for the area, anyone camping near a creek or stream should move to higher ground immediately!



FLASH FLOOD AND FLOOD WARNINGS

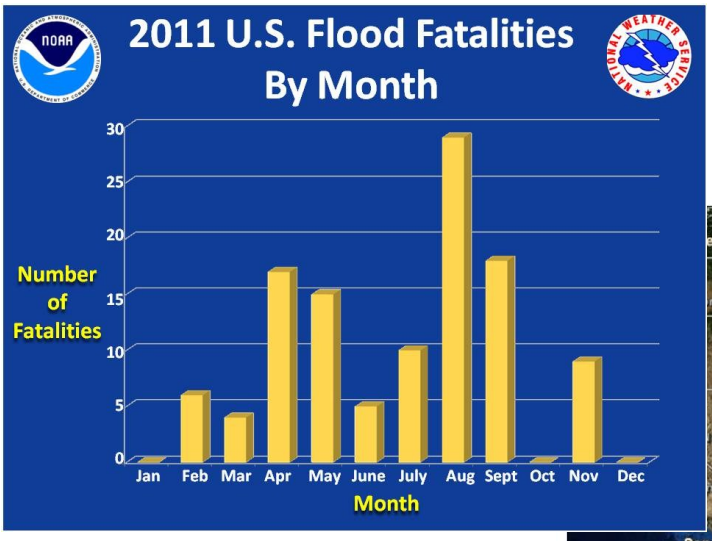
Flash Flood Warning

Issued when flooding is imminent or occurring, and a rapid rise of water is expected. This is usually within 1-3 hours of when it started raining. If a flash flood warning is issued for your area, be alert for rapidly rising waters. If you are driving, be aware of low water crossings that may become rapidly inundated with water.

Areal Flood Warning

Issued for instances where flooding is expected or occurring, but the rise of water is relatively slow, generally 3-6 hours after it has started raining. Areal Flood Warnings may also be issued when flooding is continuing after a Flash Flood Warning expires.

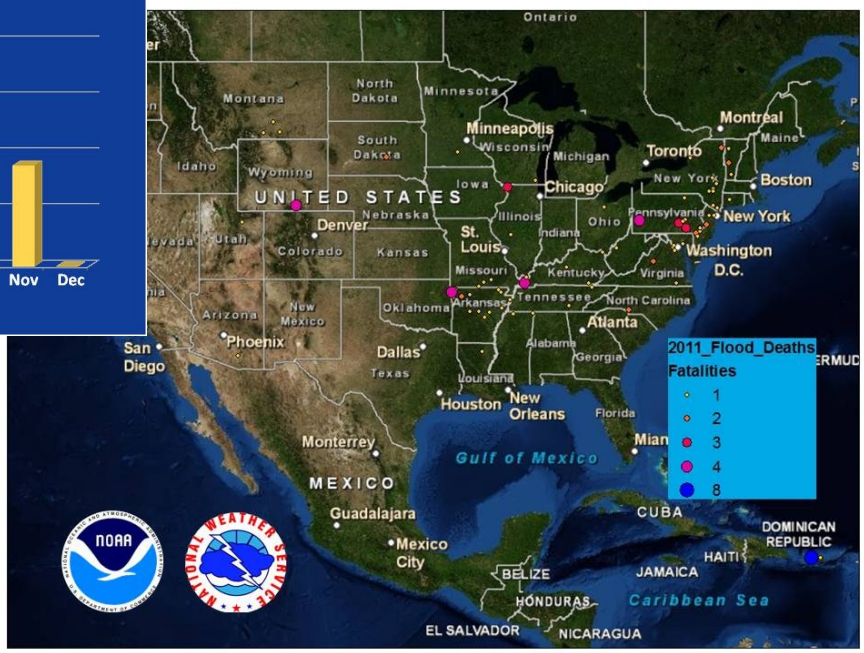
FLOODING INFOGRAPHICS





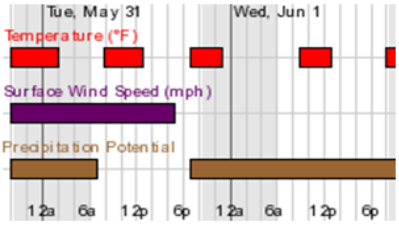
Flood Fatalities Across the U.S. in 2011

Notice there were quite a few flood related deaths across the Ozarks region in 2011. Many of these deaths can be attributed to people driving vehicles into flooded roadways and low water crossings. (113 deaths overall across the US in 2011)



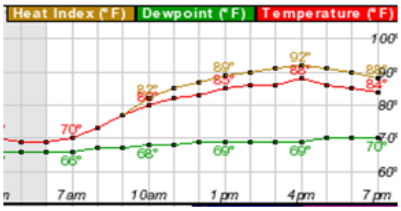
FORECAST TOOLS

WEATHER PLANNER AND HOURLY WEATHER GRAPH



Weather Planner

This interactive forecast display allows users to produce forecasts for general planning purposes based on user defined parameters. This tool can be very helpful to anyone who needs to plan activities within certain weather thresholds, such as a football coach who needs to schedule practice when heat indices are less than a certain value. Forecasts can be created for any location, and can be accessed through the following link: **http://forecast.weather.gov/wxplanner.php?site=sgf**



Interactive Forecast Map & Graphs

Hourly Weather Graphs and tables are available using the interactive forecast map. Graphs are available for any location, and will display all available forecast elements in the NWS forecast database on an hour by hour basis. This tool can be extremely beneficial to just about any user group, especially those than need weather information on an hour-by-hour basis. These forecasts can be accessed by visiting the following link:

http://forecast.weather.gov/gridpoint.php?site=sgf

MISSOURI STORM AWARE



Did you know that the state of Missouri has put together a web page dedicated to making Missouri Storm Aware? Launched in late spring, this web page provides extremely useful information on how to make your communities more "Storm Aware." It provides information on how to prepare yourself for severe weather and includes facts and history of severe weather in the state of Missouri. We suggest giving it a look at **stormaware.mo.gov** .

Did you know Missouri accounts for 6 of the 25 most deadly tornadoes in U.S. History? Joplin (5/22/2011), St. Louis (9/29/1927), Poplar Bluff (5/9/1927), The Tri-State Tornado (MO, IL, IN) (3/18/1925), St. Louis (5/27/1896), and Marshfield (4/18/1880).

WIRELESS EMERGENCY ALERTS ON YOUR MOBILE DEVICE



The wireless industry, the FCC, and FEMA will roll-out the WEAs (Wireless Emergency Alerts) system nationwide this year. By the end of this month (June 2012), the NWS will start utilizing this by pushing extreme weather warnings over the system. Tornado warnings, Severe Thunderstorm Warnings, Flash Flood warnings and several other high-end warnings will go direct to wireless users in an affected county automatically if their device is compatible.

WEA messages will be sent by authorized government alerting authorities through your mobile carrier. Government partners include local and state public safety agencies, FEMA, the FCC, the Department of Homeland Security, and the National Weather Service. The Alerts will go to all people with a compatible device within the threat area. Those folks who enter an area already under a threat will automatically receive the alert as well. The WEA text alerts will not cost the user as the service is offered free by wireless carriers. For more information and a list of participating wireless carriers go to: **www.ctia.org/wea**.

NOTE: People should not rely solely on WEAs for receiving warning information as cell networks are not always reliable. People are encouraged to continue using NOAA All Hazards Weather Radio and following their Local Media Outlets for Watches and Warnings.

COMMUNICATION TOOLS

NATIONAL WEATHER SERVICE CHAT

NWSChat continues to be a success in communication. As a reminder, partners in the emergency management, law enforcement, and media communities are encouraged to actively participate in NWSChat. NWSChat allows real-time communication between forecasters and our partners. Along with the opportunity to ask forecasters for additional information, clarification, or to pass on storm reports. Each chat room is automatically populated with the latest watches, warnings, and advisories, and updates to important products like the Hazardous Weather Outlook and Area Forecast Discussion. This feature provides users with an excellent monitoring and situational awareness tool during potentially hazardous weather events.

NWSChat is open to those in the media, emergency management, amateur radio net controllers and law enforcement communities, as well as other local, state, and Federal government partners. NWSChat can be utilized on Windows, Linux, and Macintosh operating systems. Several applications for mobile devices have also been recently developed. In addition, a web-based version of chat, called "NWSChat Live" is now available!

Additional information on NWSChat, including a link to NWSChat Live, is available at **https://nwschat.weather.gov/**

NWS SPRINGFIELD NOW ON TWITTER!

National Weather Service Forecast Offices, including the office in Springfield, now have individual office Twitter Accounts! These accounts will be used to post general weather information, call attention to noteworthy weather events across eastern Kansas and southwestern Missouri, as well as around the country, and provide another avenue for the public to interact with the National Weather Service.

Please note, as with our involvement on Facebook, Twitter is an experimental communications tool. Therefore, it is not designed for the dissemination of critical weather information, such as forecasts or warning information; NOAA Weather Radio, local media, and weather.gov/sgf should be your primary sources to get information during severe weather events. However, friends of the NWS are encouraged to follow us and pass on any reports of severe weather, be sure to use the following hash tags: #MOWX, #KSWX, and #WXreport or tag us using @NWSSpringfield.

To visit the NWS Springfield Twitter page, visit the following webpage:

https://twitter.com/#!/nwsspringfield



ABOUT THE NATIONAL WEATHER SERVICE

SPRINGFIELD, MO FORECAST OFFICE

The mission of the National Weather Service, part of the National Oceanic and Atmospheric Administration and Department of Commerce, is to issue weather, water, and climate forecasts and warnings for the protection of life and property and enhancement of the National economy. This mission is carried out by the dedicated men and women at 122 Weather Forecast Offices around the United States.

The Springfield National Weather Service Forecast Office has 24 hours a day, 7 days a week forecast and severe weather warning responsibility for 37 counties in southern and southwestern Missouri and extreme eastern Kansas. In addition, specialized forecasts are issued for aviation interests at the Springfield, Branson, and Joplin airports. The office is also one of 92 stations with responsibility for twice a day weather balloon observations.

More information on the Springfield, MO Forecast Office, as well as local forecast information, can be found on our website, **www.weather.gov/springfield.** Information on other Forecast Offices around the country, as well as forecasts across the United States, can be found at **www.weather.gov**.

ABOUT THIS PUBLICATION

This publication has been designed to enhance readiness and decision response by the emergency management community, media, DOT, and other critical partners. Decision Support Newsletters will generally be published several times a year, usually at the start of a new season, and oftentimes the start of a new set of weather hazards across eastern Kansas and the Missouri Ozarks.

Featured topics each season will include information on NWS watch, warning, and advisory products, as well as decision support tools such as GIS resources, web-based forecast services, and communication tools.

If you have a suggestion about information that you'd like to see in this publication, or feedback on National Weather Service products and services, please don't hesitate to contact us.

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