VOLUME XV, ISSUE 1

THE OZARK OBSERVER

NATIONAL WEATHER SERVICE
SPRINGFIELD MO

INSIDE THIS ISSUE:

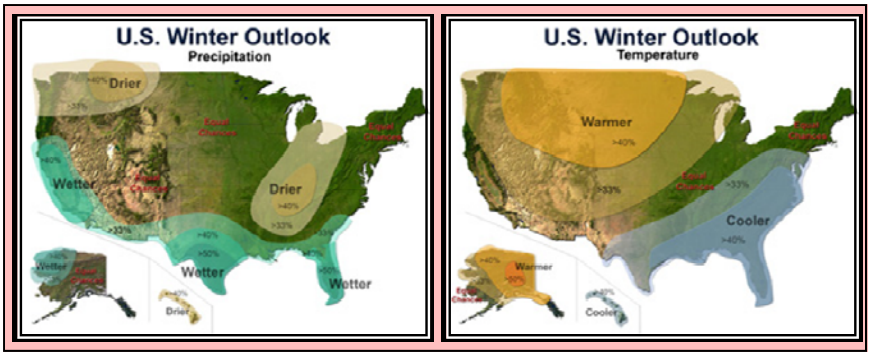
WINTER WEATHER OUTLOOK—EL NIÑO

By Gene Hatch

Some of the most frequently asked questions of meteorologists as winter approaches include, "So, how much snow can we expect this winter?", "Is this going to be a cold winter?" or "What's the forecast for the winter season?". Long range outlooks and forecasts provide the National Weather Service (NWS) meteorologist with a general trend of expected weather conditions. What actually occurs from one location to the next may vary greatly.

Long range forecasts for periods of weeks, months, or even years in the future are heavily based on climatology and past trends. Even computer models that are designed to make predictions as much as a year into the future use the same information as a basis for their predictions.

Knowing this, the forecast from the Climate Prediction Center (CPC) is indicating that much of the central United States has an equal chance of seeing above, below or near normal temperatures for the November through January (NDJ) and December through February (DJF) periods. The precipitation forecasts for the same NDJ and DJF periods indicate the same equal chances forecast through the winter season. Another factor that will potentially steer the winter season is the ongoing El Niño which is forecast to remain through the winter. While El Niño has limited impacts on the Ozarks, other locations across the Midwest may see some of its effects this winter.



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WINTER WEATHER AWARENESS DAY

By Andy Foster

The National Weather Service (NWS), along with the Missouri State Emergency Management Agency (SEMA), the State Department of Elementary and Secondary Education, the Missouri Highway Patrol, and the Department of Health and Senior Services has designated November 18th as Missouri Winter Weather Awareness Day.

Are you prepared for winter storms? As we have seen over the Ozarks region the last few winters, winter storms can be devastating. Weather conditions can change dramatically across the Ozarks and southeast Kansas in winter, going from mild temperatures and thunderstorms to bitter cold and snow within hours. To make matters worse, the rugged terrain makes winter travel conditions even more treacherous.

A heavy accumulation of ice can weigh down telephone poles and lines, trees, electrical wires, and communication towers. Power and communications may be disrupted for days. Heavy snow can immobilize the region and paralyze communities, stranding commuters, preventing the flow of supplies, and disrupting emergency and medical services. In rural areas, homes and farms may be isolated for days, and unprotected livestock may be lost.

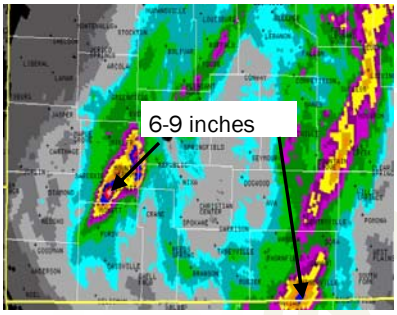
See Page 5 for guides, checklists and other information on how to stay safe this winter.

FLASH FLOODING HITS THE REGION

By Megan Terry

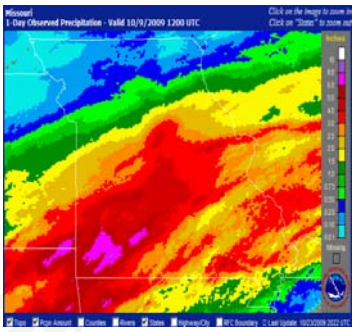
SLOW MOVING STORMS BRING FLASH FLOODING

On the afternoon of September 19th, a unique westward moving meso-scale low pressure system tracked westward from south central Missouri across southwest Missouri, and interacted with an extremely moist air mass to produce localized rainfall amounts in excess of six inches in a three to five hour period across Ozark, Barry and Lawrence counties. Kelly Creek flooded in the town of Monett, inundating over 30 homes and businesses and leading to evacuations of a mobile home park. Possum Walk Creek and Lick Creek south of Gainesville flooded state routes T and J. Water rescues were required in Barry and Lawrence counties, where isolated rainfall amounts approached nine inches. Below left is an image of the Doppler Radar estimated rainfall totals for this storm.

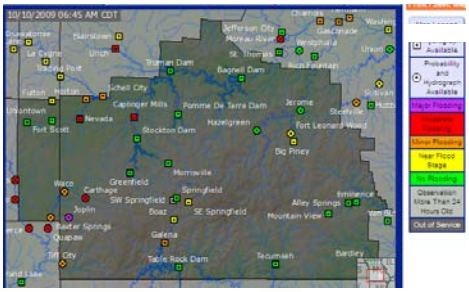


Another round of more widespread heavy rainfall occurred on the 8th and 9th of October, as abundant moisture was pulled northward from the Gulf of Mexico by a strong winter-type storm system. Rainfall began on the evening of the 8th across central Missouri, with several rounds of widespread heavy rain developing over the region through the evening of the 9th. Rain amounts (see above right) generally ranged from 3 to 6 inches across the area, with heavier amounts around 8 inches across Barry, Newton, Lawrence, Stone, Christian, and Greene counties where unofficial totals approached 10 to 11 inches.

FLASH FLOODS CAN OCCUR YEAR-ROUND IN THE OZARKS



The widespread heavy rainfall led to flash flooding of numerous low water crossings and river flooding (below) in the Spring, Shoal and Osage basins.



Click here to go to the river forecast page.

TECHNOLOGY CORNER: DUAL-POLARIMETRIC RADAR

By Christina Crowe

Over the next few years, the NWS will be converting the nationwide network of radars to a new technology called dual-polarimetric radar (dual-pol short). The office in Springfield is scheduled to get this upgrade in 2011 and in the meantime the staff is training and preparing to be able to use the new data when it arrives. But what is this new tool going to do for us?

Standard Doppler radar sends a signal that only scans in the horizontal, telling us about the size of a raindrop, hail stone or snowflake. But, dual-pol radar also sends a signal that scans in the vertical, telling us more about the shape of a droplet (see figure to right). For example, in strong storms it is difficult to tell the difference between large rain drops and hail with a standard Doppler radar. Since large rain drops flatten and look like hamburger buns as they fall, their shape is very different from a spherical hail stone. Dual-pol radar can see this difference and give a forecaster more information about the strength of the storm.

Dual-pol radar will also be helpful to forecasters during winter storms. By combining many pieces of information provided by the two different radar signals, forecasters will be able identify more accurately where rain, freezing rain, dry or wet snow is occurring (see figure below). Improved short term forecasts of snow depth can then be created. This is possible due to the variety of shapes of each type of precipitation and each type affects how the radar signal returns to the radar differently.

Stay tuned for more examples of coming dual-pol features!

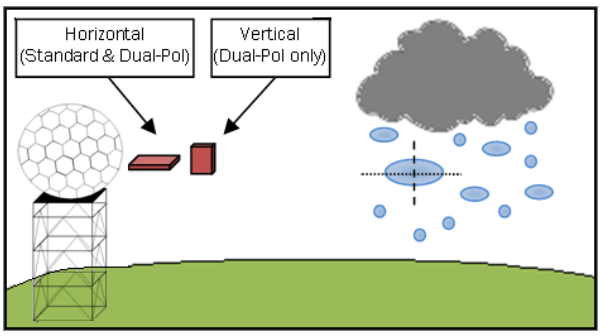
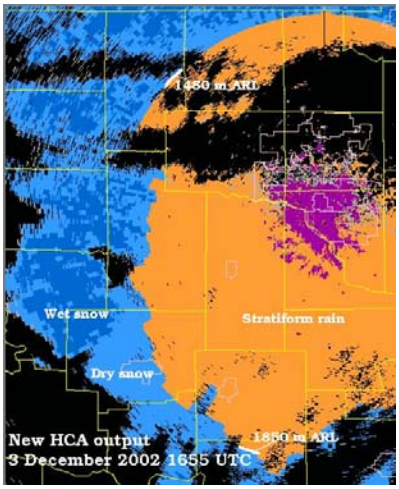


Figure to the right courtesy of Kevin Scharfenberg and CIMMS/OU.



COOP OBSERVERS RECEIVE 15 YEAR AWARD

The NWS Cooperative Observer program provides an invaluable network of data to meteorologists. More than 11,000 volunteer observers nationwide provide daily information in support of forecasts, warnings, and other NWS programs. By relaying their observations of min and max temperatures, snowfall, and 24-hour precipitation totals in addition to storm reports these observers provide information for climate studies and on impacts of significant weather across the region.

Recently in the Springfield area, three of our dedicated volunteers were recognized for their 15 years of exceptional service in the COOP program. Service Hydrologist Megan Terry and OPL Larry Dooley presented certificates of service to the following:

Donald Johnson—Cooperative Weather Observer at Spring City, MO

Dwayne Beaver—Cooperative Weather Observer at Carthage, MO

Louise Slack-Hendrix - Cooperative Weather Observer at Washburn, MO

Special thanks to Donald, Dwayne, Louise, and all our fantastic COOP Observers!

NEW STAFF MEMBERS JOIN NWS SPRINGFIELD

In September, two new Meteorologist Interns joined the NWS Springfield Team:

Christina Crowe, a graduate of the University of Missouri in Columbia, transferred to the office from NWS Huntsville where she completed her Masters Degree at the University of Alabama in Huntsville. Christina has enjoyed studying all kinds of weather including tornadoes, thunder snow, and hurricanes but originally got into weather in the 4th grade when she read the book 'The Night of the Twisters.' She is excited to be back in her home state and forecasting for the Ozark region.

Jay Colucci, is a graduate of the State University of New York, Bronx, New York and the Naval Postgraduate School in Monterey California. Jay recently retired from the United States Navy after a 24 year career and is excited to begin working with the National Weather Service here in Springfield, gaining experience with the ever changing and often severe weather conditions that occur locally. He looks forward to a second career of working with the NWS and serving the myriad of different customers here in the local Springfield area.

JUNIOR OBSERVER PAGE

Winter Word Find!

Search for these weather words:

- Freeze
- Blizzard
- Cold
- Sleet
- Winter
- Flurry
- Snow
- Ice

W I N T E W O N S Q L B O A I C E
R I D C N T L A L Z I P O P N G Q
J U R G E F R E E Z E S T U M R Y
C M A P A L I S T O C R J O A K R
U L Z N R U M K L G A V Y C T O E
E J Z C M R E O E E N A Z W M G T
D O I K A R O S P W E C O L D A N
B P L N L Y M A N K O T Z V A G I
A M B G V I O Q U I N O A R O U W
R U L T O N C E P A W I P S B G D

Grow your own frost!

What you will need:

- 1 cold wind-sheltered location—such as an outdoor shed
- 1 hot plate—adult supervision required
- 1 open pan filled with water
- 1 stick or branch
- 2 cold days when the outside temperature is below freezing

Steps:

1. Fill a pan with water and place on a hot plate
2. Set hot plate on low so that it is only warming the water and pan.
3. Hang a stick or branch near the pot so that crystals have a place to form.
4. Hoar frost will form on the elevated branch or stick as the warmed water cools, condenses and crystallizes.
5. Enjoy looking at your frost!

Did You Know???

The coldest air temperature ever recorded was -128.6 degrees Fahrenheit at Russian Vostok Station in Antarctica on July 21, 1983 (southern hemisphere winter).

Mt. Shasta, California once received 189 inches of snow from a single storm!

The greatest 24 hour snowfall in the world was 75.8 inches at Silver Lake, CO on April 14-15, 1921.

93.5 feet of snow fell in one winter at the Rainier Paradise Ranger Station in Washington.

WINTER WEATHER SAFETY

Everyone should have a winter weather preparedness kit in their car and home. Some useful items to keep in this kit include blankets, a mobile phone, extra batteries, a flashlight, first aid kit, non-perishable food, waterproof matches and candles, a can for melting snow for water, extra clothing, a shovel, and a tow rope. Also make sure to keep the gas tank near full, inform someone of your intended route, and stay on main roads when traveling during the winter months.

If caught in a storm while traveling, stay calm and remain in your vehicle. Run the motor about 10 minutes every hour for heat, but make sure the exhaust pipe is not blocked by snow, and crack a window for fresh air. Use bright colored cloth or a sign to indicate that you are in need of help. Also try to exercise frequently to keep blood circulating, and keep you warm.

In most cases, the worst thing a stranded motorist can do is abandon their car in the middle of a snow storm. It is simply too easy to become disoriented and lost.

If caught outside in a winter storm, try to stay dry and cover all exposed areas of your body. Build a shelter to protect yourself from the wind and hold in some body heat. Build a fire if at all possible. Eating snow lowers your body temperature, bringing you closer to hypothermia. So if at all possible, try to melt snow for water.

The safest thing one can do is to be prepared. Have your preparedness kit ready, and monitor NWS forecasts for the possibility of severe winter weather.

For the latest road conditions check out these sites: *Missouri* *Arkansas* *Kansas*

For more information on preparing disaster preparedness kits: American Red Cross Ready.gov

NWS SPRINGFIELD WINTER WEATHER PRODUCTS

Winter Storm Warning: A combination of any of the winter weather types which meet the criteria listed below, or a combination of several types of severe winter weather..
* 6 or more inches of snowfall in a 24 hour period
* 1/2 inch or more of sleet

Ice Storm Warning: Ice accumulates to a thickness of 1/4 inch or greater.

Blizzard Warning: Visibility below 1/4 mile due to falling or blowing snow, with wind speeds in excess of 35 mph.

Winter Weather Advisory: A combination of any of the winter weather types which meet at least 2 of the criteria listed below.
* 3 to 5 inches of snowfall
* 25-34 mph winds blowing snow with less than 1/4 mile visibility
* Sleet accumulating less than 1/2 inch deep

Freezing Rain Advisory: Ice accumulations of less than 1/4 inch.

Wind Chill Warning: Wind chill values of –25 F or colder.

WINTER TRAVEL CHECKLIST

CHECK BEFORE YOU TRAVEL

___ BATTERY
___ ANTIFREEZE
___ HEATER
___ DEFROSTER
___ WINDSHEILD (SCRAPER)
___ LIGHTS
___ BRAKES
___ OIL
___ TIRES
___ AIR FILTER
___ FLUIDS
___ FUEL (AT LEAST 1/2 TANK)
___ BOOSTER CABLES

TRAVEL SUPPLIES

___ BLANKETS
___ MOBILE PHONE
___ BATTERY POWERED RADIO
___ FLASHLIGHT / BATTERIES
___ FIRST AID KIT / KNIFE
___ MEDICATION
___ DRY SNACKS / WATER
___ MATCHES
___ CANDLES AND METAL CAN
___ SHOVEL / BROOM
___ TOW ROPE
___ SAND OR ROCK SALT
___ EXTRA CLOTHES
___ DISTRESS FLAG / FLARES

VISIT WWW.WEATHER.GOV/SGF FOR ALL OF OUR WINTER WEATHER PRODUCTS

Keep this page for your Winter Weather Reference!