

Coyote Crier



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WINTER 2004/2005

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Important Information about Reporting Rainfall

By: Pamela Elslager

Happy Holidays to all our SKYWARN Spotters. We hope that the 2004 year was a wonderful one for you, and we wish you the best in 2005.

As we begin our new year, we would like to bring to your attention important information regarding rainfall reports. As stated in the SKYWARN reporting procedures we would like you to **only** report **heavy rainfall**. Heavy rainfall is classified as:

A half inch or more if it fell in an hour or less.

Rainfall that does not meet this criterion does not need to be called or emailed into our office. We appreciate your dedicated service, but due to the busy nature of our office when significant weather is occurring, we ask that you do not report rainfall that does not meet this criterion.

Please continue to report all other significant weather as listed in the **“What to report”** box on the bottom of this page.

If you are a member of the RainNet, please heed the instructions in the letter included with your information letter for your rainfall reporting procedures. Please note that even RainNet members are asked not to call in rainfall that does not meet the above mentioned criterion.

Your reports of significant weather are very valuable and important to us. By following the above we are able to dedicate more time to significant weather reports. Thank you for your understanding in this matter if you have questions or concerns about this please don't hesitate to contact me directly.

pamela.elslager@noaa.gov or

!!ATTENTION!!

Please keep your information up to date with us. If you have had a change in address, phone number or email address please let us know as soon as possible so that your new information can be added to our database. Not updating your information could result in you being cut off our spotter list. If you are not sure what information we have email or call me and I will be happy to double check all your information. Having your correct personal information is imperative to the operation of the spotter network. Thank you for your attention to this matter.

pamela.elslager@noaa.gov
(520)670-5156

What you should report:

- Tornado:** Either on the ground or aloft (a funnel cloud)
- Heavy Rain:** **A half an inch or more**, if it fell in less than an hour
- Hail:** **Pea size** (1/4 inch) or larger
- High Wind:** Estimated or measured **50 mph or greater**
- Flooding:** **Any** kind of flooding
- Snow:** **One inch** or more (2 inches or more if above 5000 ft.)
- Visibility:** **Less than one mile** for any reason (fog, dust, snow)
- Death/Injury:** **Any** weather-related reason
- Damage:** **Any** weather-related reason (most often from wind)
- Earthquake:** **Any** tremor

(520) 670-5162 or 1-800-238-3747

El Niño Did It!

By: Glen Sampson, Meteorologist in Charge



For more information on **El Niño** please visit the following website:

<http://www.elnino.noaa.gov/>

"Climate is what you expect, weather is what you get"

- Robert A. Heinlein

Over the past 10 years El Niño is cited in many national news stories and weather events. The El Niño storm caused flooding in Texas; global warming is affecting El Niño; El Niño is affecting global warming and on and on. These frequent news stories could lead a person to believe El Niño is the major player in our weather. In other words, when weather happens El Niño did it! However this conclusion is not correct.

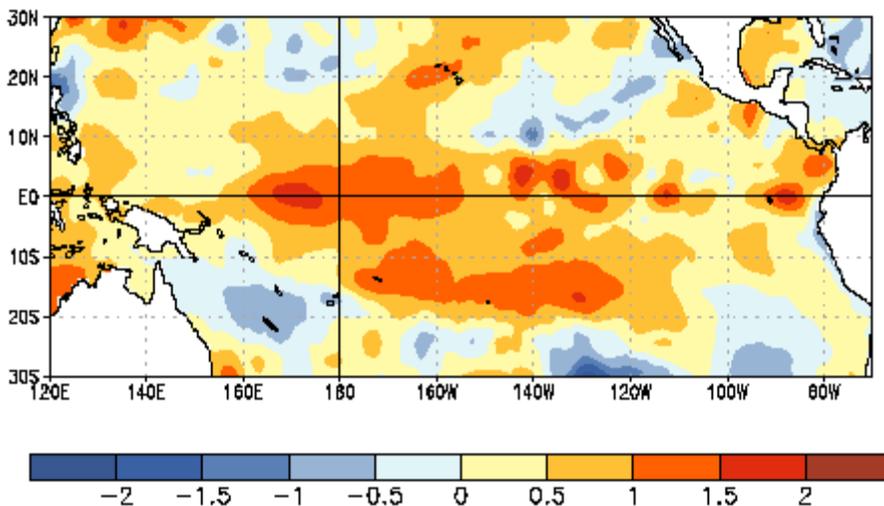
El Niño is defined as an above normal warm body of water in the Pacific. Many techniques are available to measure the strength of an El Niño. Common characteristics of this warm water include location in the Pacific, horizontal extent, magnitude of the warm anomaly and vertical depth. These characteristics lead scientists to classify an El Niño as either weak, moderate or strong. Currently a weak El Niño is occurring in the Pacific Ocean. This El Niño, from 160E to 160W, can be seen in the sea surface temperature anomaly chart given below.

During a strong El Niño the storm track

over North America is pulled further south. This movement results in a higher frequency of storms in the southern U.S. The individual storms are not stronger nor do they contain more precipitation, instead the quantity of storms affecting the desert Southwest are increased. Thus a strong El Niño is favorable for an above average winter precipitation forecast. A weak El Niño, like currently exists, has little or no affect on the winter season weather storm track. The effects of any El Niño on the summer season are negligible.

Another side effect of warm water in the Pacific Ocean is an increase in thunderstorms in those areas. More thunderstorms in the tropics translate to a possible moisture source which can feed storms affecting Arizona. The precipitation event which occurred the weekend of December 4, 2004 was based largely on tropical moisture from a thunderstorm outbreak at lower latitudes. However these storm outbreaks in the tropics do not always reach Arizona. Sometimes they affect Northern California and other times they move through Mexico.

SST Anomalies (°C)
01 DEC 2004



Overall the winter forecast this year calls for normal precipitation. Tracking the warm water in the Pacific Ocean and its affect on our weather can assist us with the daily forecasts, but they are not a guarantee a storm will produce rain. Likewise knowledge about an El Niño is useful for a winter season forecast, but a dry winter can occur at the same time an El Niño is in progress.

Burned Watersheds: the 2004 Monsoon Season

By: Mike Schaffner, Service Hydrologist



Southern Arizona has been impacted by several large wildfires. These include the Oracle Hill Fire (2002), Bullock Fire (2002), and Aspen Fire (2003) on the Santa Catalina Mountains and the Nuttall Fire (2004) on the Pinaleno Mountains. Wildfires reduced vegetative cover and can make soil water repellent in spots. This results in significantly increased runoff. Rainfall amounts and intensities that would normally have not have caused much if any flooding now have the potential to produce dangerous flash flooding.

The Nuttall Fire produced flash flood peaks which were considerable higher than those in the Santa Catalina Mountains. The Pinaleno Mountains have average channel gradients that are 2 to 3 times steeper than the Santa Catalina Mountains. As a result, channel gradient seems to play a role in the generation of peak flows over other watersheds with more gentle slopes.

Noon Creek at Highway 366 near Safford overtopped twice during the 2004 monsoon. Wet Canyon at Highway 366 overtopped once.

Significant debris was left on the highway after each event. Rainfall amounts of about 0.75 inch within 30 minutes produced the resultant flash floods.

Deadman Canyon near Safford produced a flash flood with a minimum of 5,000 cubic feet per second from a basin average rainfall of about 1.25 inches within 30 minutes on August 17, 2004. This flash flood destroyed the stream gauge in Deadman Canyon installed to provide warning for folks downstream and monitor inflow into Graveyard Wash Dam.

Spotters living near burn areas provide an invaluable source of information. You are encouraged to phone in rainfall reports of 0.50 inch or greater within 60 minutes or less as well as observations of flooding or significant flows from burn area watersheds. This might include water flowing across a road, closed roads, mudslides, significant debris left behind from a flash flood, or water out of its banks or flooding homes.

National Weather Service Mission: "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. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community."



Discontinued USGS stream gauge on Deadman Canyon being reactivated as an ALERT gauge on June 26, 2004. Image by JE Fuller Hydrology



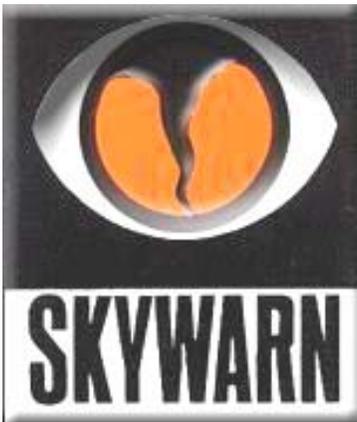
Deadman Canyon after August 17, 2004 flash flood event. Image by JE Fuller Hydrology



NATIONAL WEATHER SERVICE

520 N. Park Ave. Suite 304
Tucson, Arizona 87519

Phone: 1-800-238-3747
Phone: 520-670-5162
Fax: 520-670-5167



Importance of Spotter Training

Trained, informed spotters are imperative to the mission of the National Weather Service. Trained spotters act as ground truth to the weather that forecasters suspect is occurring. Knowing what, when, how, and why to call in information makes you a trained and informed spotter.

- **How do you become a trained spotter?**
 - Attend one of our spotter training classes, held at least once a year in several locations throughout Southeast Arizona.
- **How do you remain an informed spotter?**
 - By attending a spotter training class at least once every other year, or give us a call if you are unable to attend to learn what might be new each year.
- **Why should each spotter be in touch with the National Weather Service at least once each year?**
 - There is always changing and new information that we would like to share with you. Also, any personal information changes that you have can be updated in our database in order to insure that you are receiving our spotter information letters with the latest information.

Here is a great opportunity for you to become a trained spotter or to get a refresher of imperative spotter information. The National Weather Service Tucson office will be holding several “Weather 101” classes in early 2005. Below is a list of these Weather 101 classes that you are welcome to attend. If you are unable to attend any of these classes, no worries we will be holding more spotter training classes sometime before the onset of the monsoon season. There is no need to R.S.V.P. for these training classes just feel free to show up and bring anyone that is interested. Also, if you would like to host a spotter training session in your area, just let us know. (See below for the list of “Weather 101” classes).

Visit us on the web:

<http://weather.gov/tucson>

Weather 101 Class Schedule

	<u>Date</u>	<u>Time</u>	<u>Location</u>
Tucson	January 13th	6:30 p.m.	U of A Campus, ENRB Room 253 520 N. Park Avenue (Tucson)
Safford	February 1st	6:30 p.m.	Safford General Service Building 921 Thatcher Blvd. (Safford)
Sierra Vista	January 26th	6:00 p.m.	Oscar Yrun Community Center 3020 E. Tacoma St. (Sierra Vista)