

The Great Basin: Spotter Newsletter

Winter 2006 Edition

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On the Cover: Local Club Hams It Up!

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Online newsletter: <http://www.wrh.noaa.gov/lkn/newsletter.php>

Local Ham radio operators set up shop at the Elko NWS Office December 2nd and make contacts with hundreds of other radio enthusiasts across the world during Skywarn Recognition Day.



Skywarn Recognition Day Observed in Elko

Skywarn Recognition Day, co-sponsored by the American Radio Relay League and the National Weather Service (NWS), paid tribute to amateur radio operators for the vital public service they perform. During the 24-hour event (held this year on December 2nd), amateur radio operators visited their local NWS office and worked as a team to contact other hams across the world. Last year during the event, over 15,000 contacts were made. This was the 8th year for the event. Locally, this was the 5th straight year the Elko Amateur Radio Club has participated in Skywarn Recognition Day along with the National Weather Service Forecast office in Elko.

The Elko Amateur Radio Club members (shown on the cover) donated their equipment and time to set up a transmitting site at the facilities of the Elko NWS Forecast Office (the antenna is pictured below).

In typical warning operations it is the direct communication between mobile spotters and the local NWS office which provides vital ground truth information. Spotter reports of hail size, wind damage and surface-based rotation in real time greatly assists the radar warning operator, since that information can be correlated with Doppler radar displays. The results can range anywhere from a more strongly worded statement to convey a greater sense of urgency, or the issuance of a tornado warning a few minutes earlier than would otherwise have been possible.



Winter Weather Safety

By Jeff Savadel (Warning Coordination Meteorologist)

With the winter season upon us, it is imperative that everyone take some time to ensure that they take the proper safety precautions. First, be sure to stay updated on the latest winter weather forecasts and warnings. Listen to NOAA All-Hazards Radio or check the Internet at <http://www.weather.gov> for the latest information. Remember, a Watch means winter storm conditions are possible within 36-48 hours; a Warning means life-threatening severe winter conditions have begun or will begin within 24 hours; and an Advisory means winter weather conditions are expected to cause significant inconveniences, but should not be life threatening.

Prepare for severe winter weather ahead of time by keeping the following items at home:

- Flashlight and extra batteries
- Battery powered NOAA Weather Radio
- Extra food and water
- Extra medicine and baby items
- First-aid supplies
- Heating fuel
- Emergency heat source
- Fire extinguisher, smoke alarm and carbon monoxide detector

Keep winter survival kits in your vehicles with the following:

- Cell phone
- Blankets and/or sleeping bags
- Flashlight with batteries
- First-aid kit
- Knife
- High calorie food
- Large empty can
- Small can and matches
- Sand or kitty litter
- Shovel
- Windshield scraper and brush
- Tool kit
- Battery booster cables
- Water container

When traveling, be sure to let others know of your plans, avoid traveling alone, and keep your gas tank near full.

Don't forget to keep care of any outdoor pets or farm animals. Have plenty of food, water and shelter available for the animals.

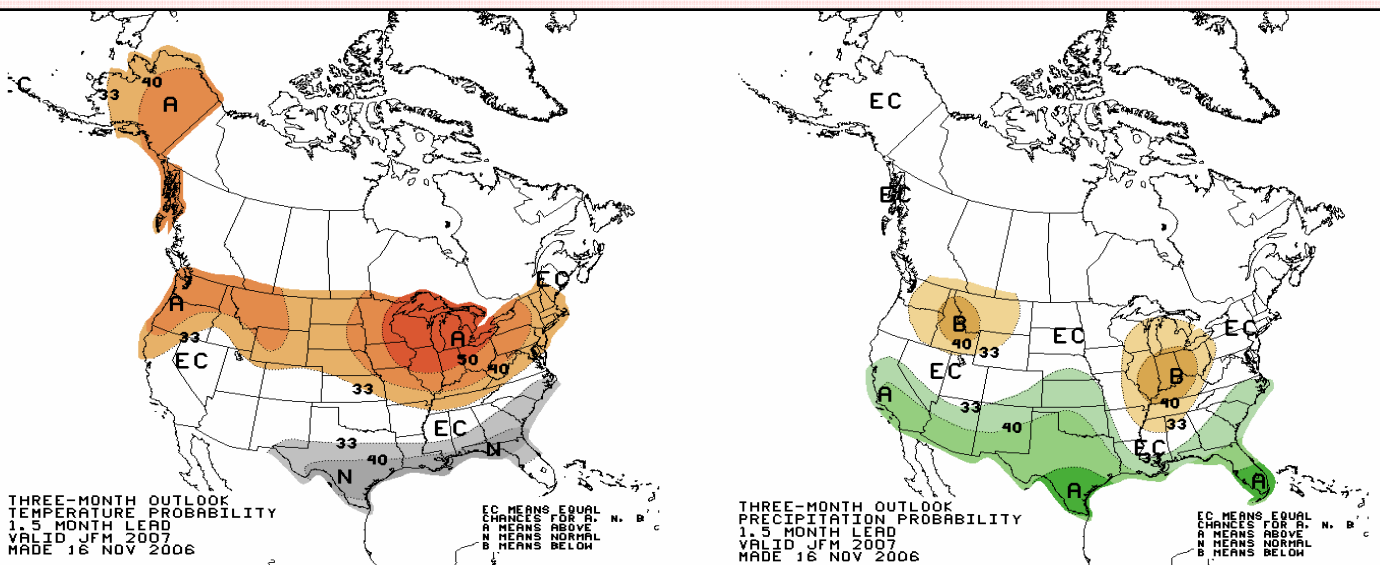
For additional information, please see: <http://www.weather.gov/os/winter/index.shtml>

EL NINO MAKES A COMEBACK

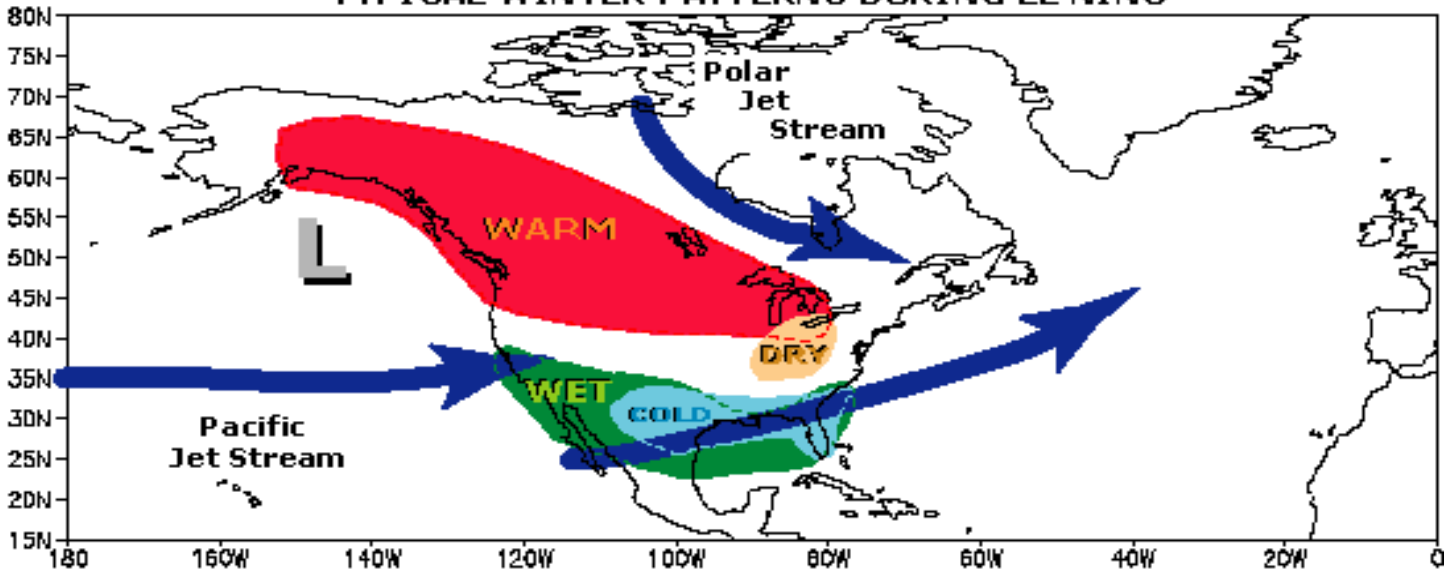
By Clifford Collins (Lead Forecaster)

The weather phenomenon known as El Nino has returned to the equatorial Pacific Ocean. Warmer than normal sea surface temperatures have been observed in this region since July. El Nino impacts on the United States typically brings wetter and cooler conditions to the southern states and warmer than normal temperatures to the northern portion of the country along with drier than normal conditions to the Pacific Northwest. The impact on Northern and central Nevada from an El Nino pattern typically is not well defined. This is reflected in the Climate Prediction Center's official winter outlook this year. Northern and central Nevada are both under the EC (equal chance) category for temperatures and precipitation. This means we have an equal chance of having below normal, near normal, or above normal temperatures and precipitation. This is because there are no clear climate signals for the forecasters to base a prediction on.

Three-Month Climate Outlooks Jan-Feb-Mar 2007



TYPICAL WINTER PATTERNS DURING EL NINO



Frequently Asked Question about El Niño

What is climate variability?

A prominent aspect of our weather and climate is its variability. This variability ranges over many time and space scales such as localized thunderstorms and tornadoes, to larger-scale storms, to droughts, to multi-year, multi-decade and even multi-century time scales.

Some examples of this longer time-scale variability might include a series of abnormally mild or exceptionally severe winters, and even a mild winter followed by a severe winter. Such year-to-year variations in the weather patterns are often associated with changes in the wind, air pressure, storm tracks, and jet streams that encompass areas far larger than that of your particular region. At times, the year-to-year changes in weather patterns are linked to specific weather, temperature and rainfall patterns occurring throughout the world due to the naturally occurring phenomena known as El Niño and La Niña.

What is El Niño?

The term El Niño refers to the large-scale ocean-atmosphere climate phenomenon linked to a periodic warming in sea-surface temperatures across the central and east-central equatorial Pacific (between approximately the date line and 120°W). El Niño represents the warm phase of the [El Niño/Southern Oscillation](#) (ENSO) cycle. El Niño originally referred to an annual warming of sea-surface temperatures along the west coast of tropical South America.

NOAA's Climate Prediction Center, which is part of the National Weather Service, declares the onset of an El Niño episode when the 3-month average sea-surface temperature departure exceeds 0.5°C in the east-central equatorial Pacific [between 5°N-5°S and 170°W-120°W].

What Happens During El Niño or La Niña?

During an El Niño or La Niña, the changes in Pacific Ocean temperatures affect the patterns of tropical rainfall from Indonesia to the west coast of South America, a distance covering approximately one-half way around the world. These changes in tropical rainfall affect weather patterns throughout the world.

Why do El Niño and La Niña occur?

El Niño and La Niña are naturally occurring phenomena that result from interactions between the ocean surface and the atmosphere over the tropical Pacific. Changes in the ocean surface temperatures affect tropical rainfall patterns and atmospheric winds over the Pacific ocean, which in turn impact the ocean temperatures and currents. The El Niño and La Niña related patterns of tropical rainfall cause changes in the weather patterns around the globe.

How long do El Niño and La Niña typically last?

El Niño typically lasts 9-12 months, and La Niña typically lasts 1-3 years. They both tend to develop during March-June, reach peak intensity during December-April, and then weaken during May-July. However, prolonged El Niño episodes have lasted 2 years and even as long as 3-4 years.

World Day for Water

By Larry Whitworth (Lead Forecaster)

The United Nations (UN) General Assembly has adopted resolution [A/RES/47/193](#) declaring March 22nd of each year as World Day for Water. On this day, states are encouraged to engage in promotion of public awareness about the importance of the freshwater environment as well as the cyclic processes that periodically result from a deficit or overabundance of precipitation. Data for northern and central Nevada reveals the recent end of a drought cycle and a return to above-normal precipitation.

Water is needed in all aspects of life. Adequate supplies of water of good quality need to be maintained, while preserving the hydrological, biological and chemical functions of ecosystems. This is one of the primary aims of the UN resolution. Freshwater resources are an essential component of the Earth's hydrosphere and an indispensable part of all terrestrial ecosystems. The freshwater environment is characterized by the hydrological cycle, including floods and droughts, which in some regions have become more extreme and dramatic in their consequences. One principle objective of the UN resolution is to plan for the sustainable and rational utilization, protection, conservation and management of water resources based on community needs and priorities within the framework of national economic development policy.

Like many areas of the country or the world, northern and central Nevada cycles through periods of drought and periods of normal to above-normal precipitation. In Nevada, the water year (WY) is the 12-month period that begins on October 1st and ends on September 30th, with the year designation determined by the end date. WY 2007 began on October 1st, 2006. Winnemucca (WMC), Elko (EKO) and ELY (ELY) are three main reporting stations that are used to assess water supply in Nevada. Northern Nevada concluded a 4- year drought cycle in WY 2004 and from the tables below, one can see the improvement during the two subsequent water years. However, excessive winter precipitation for mountainous areas can lead to flooding. Spring flooding can be harsh as evidenced across northern Nevada in 2005. The abundant mountain snowpack that produced the flooding that year is also an essential part of the cyclical process of supplying freshwater to citizens of the Silver State.

Precipitation Summaries for Water Years 2004-5-6 At Winnemucca (WMC), Elko (EKO), and Ely.

By Larry Whitworth (Lead Forecaster)

Water Year 2004

(10/1/03 - 09/30/04)

<u>Station</u>	<u>Precip.Total*</u>	<u>Normal thru Sep.*</u>	<u>Departure from Normal*</u>	<u>% of Normal</u>
WMC	5.99	8.33	-2.34	71.9 %
EKO	9.93	9.59	0.34	103.6 %
ELY	7.22	9.97	-2.75	72.4 %

* Water-equivalent or melted precipitation (measured in inches).

Water Year 2005

(10/1/04 - 09/30/05)

<u>Station</u>	<u>Precip.Total*</u>	<u>Normal thru Sep.*</u>	<u>Departure from Normal*</u>	<u>% of Normal</u>
WMC	9.78	8.33	1.45	117%
EKO	13.71	9.59	4.12	143%
ELY	14.53	9.97	4.56	146%

*Water-equivalent or melted precipitation (measured in inches).

Water Year 2006

(10/1/05 - 09/30/06)

<u>Station</u>	<u>Precip.Total*</u>	<u>Normal thru Sep.*</u>	<u>Departure from Normal*</u>	<u>% of Normal</u>
WMC	11.21	8.33	2.88	135%
EKO	14.59	9.59	5.00	152%
ELY	9.87	9.97	-0.10	99%

*Water-equivalent or melted precipitation (measured in inches).

In the afternoon hours of August 23, 2006 fire fighters from across the region swarmed into Elko and worked with local agencies through the late-night hours to keep the Mudd fire from overtaking hundreds of homes and businesses (including the NWS office pictured here) along the northern perimeter of Elko. Later that evening a close neighborhood (behind the office in the photo) was evacuated as was the Weather Service office. Staff at the Reno NWS office backed up the Elko office, putting out all of our regular forecast products to provide uninterrupted service to the public (which included timely information used by crews to safely fight the Mudd fire). Thanks once again to everyone that took part keeping the flames out of Elko.



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