



The Desert Sun

SKYWARN Spotter
Newsletter

Spotter News

Fall 2011

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Happy Holidays to everyone and hopefully you had a good 2011. Hope everyone has a happy and prosperous 2012. During the year I was able to add a lot of new information in the SKYWARN section on the NWS Las Vegas page (<http://www.wrh.noaa.gov/vef/skywarn.php>).

There are brief refreshers on various weather phenomenon such as snow, flash flooding, wind, etc. We have also added links to two national SKWARN refresher training courses under the 2012 spotter training schedule section. During the next two to three months, I will be putting together a training schedule with dates and locations of upcoming classes. These should be on the website by the middle part of February. I will also send out an email with the training schedule. We can also use spotters, but we are desperate for spotters in rural areas of San Bernardino, Inyo, and Esmeralda counties. Have a great rest of the year.

- **If you are in a SAFE location and have a chance to shoot video/pictures, please share it with us for inclusion in future presentations/newsletters.**
- **Also, please DO NOT assume that we know what is happening at your location. If you think its important please relay the information to us. We enjoy hearing from everyone, especially during severe weather.**

This newsletter serves the following counties:

Nevada: Clark, Lincoln, Nye, Esmeralda

Arizona: Mohave

California: Inyo, San Bernardino

Contacts:

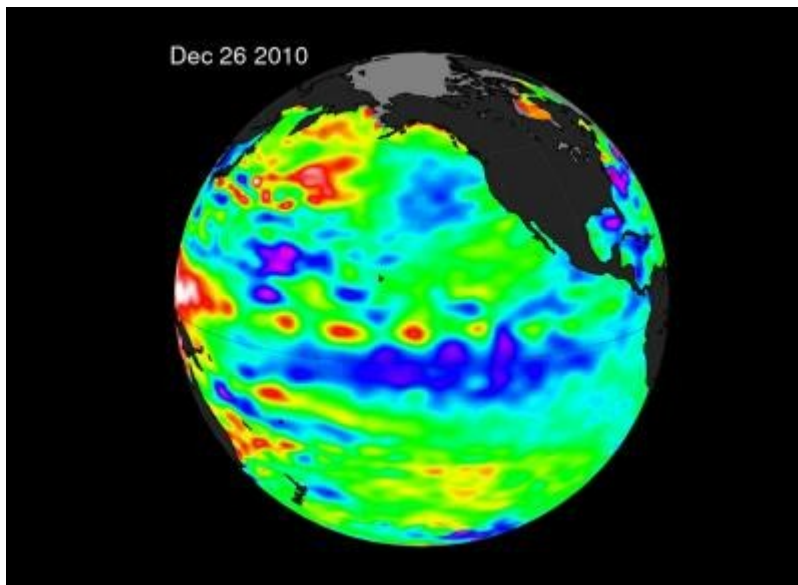
NWS Las Vegas Admin Line (702) 263-9744

Web Address: www.wrh.noaa.gov/vef

Forecast Line: (702) 736-3854

How is snow formed?

Snow is commonly formed when water vapor undergoes deposition, which is when water vapor changes directly to ice without first becoming a liquid, high in the atmosphere at a temperature of less than 32°F and then falls to the ground.



An image showing sea surface temperatures in the Pacific from December 26, 2010. Cooler than normal waters are noted in blue and purple. This was when a La Niña was present. Image credit: NASA.


La Niña Again This Winter?

Chris Stachelski
Forecaster

For the second winter in a row, it appears that La Niña will be present. La Niña is a large scale ocean-atmospheric phenomenon linked to a pattern of cooler than normal waters of the central and eastern Pacific. This phenomenon typically affects the overall weather pattern on a global scale for a multi-month period. In the western United States, this is most often associated with a shift in the jet stream and thus the associated storm track in tending to keep it further north where it is more often situated over the Pacific Northwest. While this has historically correlated to drier than normal winters in the Mojave Desert and southern Great Basin, this is not always the case.

The latest observations show that while water temperatures in the equatorial eastern Pacific are cooler than normal, they are not as cold as they were last fall when La Niña was also present. Indications are this winter that while La Niña should continue to strengthen, it should not be as potent as last year. Based on a system used to classify the strength of a La Niña that uses sea surface temperature anomalies in a region of the equatorial eastern Pacific (known scientifically as the Niño 3.4 region), the La Niña of 2010-2011 was a moderate strength episode. Models suggest that this cool season's La Niña episode will peak somewhere in the weak strength to possibly lower end of the moderate strength category.

So what does this mean for our area? One, it does not guarantee really anything. Based on the outcomes of past cool seasons when La Niña was present, we can notice some trends with the weather across our area. However, no two La Niñas are alike and even within a La Niña event, one extreme event can easily skew the values for an entire season.



Precipitation: Looking at the records for Las Vegas specifically, only three of the twenty cool seasons since 1949-1950 that have been classified as a La Niña had above normal precipitation in the November through April period. Two have had near normal precipitation for this same period. While most La Niñas are drier than normal, 16 of the 20 episodes have had at least one month where precipitation was above normal. The 2010-2011 La Niña is an excellent example of this. The total November through April precipitation at McCarran International Airport was 2.03 inches, however 1.77 inches of this was measured in December 2010. Thus while a La Niña may be “dry” overall, there usually are a few periods where wet conditions will occur at some point. Most of the time this tends to be in the November through January time frame, however the La Niñas of 1964-1965 and 1974-1975 both saw their wettest time period in March and April.

Temperature: Unlike precipitation, temperature trends during a La Niña are not as clear-cut across our area. Using the average high temperature for Las Vegas (which avoids factoring minimum temperatures that have biases with them due to increased urbanization), for the period of December through February shows that only 8 of the 20 La Niñas – or 40 percent – had below normal average maximum temperatures. Six had near normal and another six were above normal.

Low Elevation Snow: Although it is difficult to gauge a temperature trend during a La Niña in our area, a look at the weather records does show a higher than normal occurrence of snow, especially measurable snow, in the lower Mojave Desert elevations during a La Niña. Sixteen of the twenty La Niña episodes in Las Vegas – or 80 percent – have produced at least a trace of snow at the official climate station at McCarran International Airport. Eight of the 20 episodes – or 40 percent – have produced measurable snow at McCarran. While the jet stream typically favors a path over the Northwest during a La Niña, there tends to be a trend favoring a set up where it digs into the Southwestern United States and allows the rare combination of cold air and moist air to be in place in lower elevations to allow for snow. The best example of a La Niña that produced significant snow was in 1973-1974 when two separate significant snow events took place in early January 1974 on New Year’s Day and then again from the 3rd into the 4th. At McCarran International Airport, a total of 13.4 inches of snow fell from these two storms.

Wind: Moisture starved storm systems tend to produce more wind than precipitation in the lower elevations of the Mojave Desert and southern Great Basin, which are more likely to occur during a La Niña in our area. In Las Vegas, the period from November through April tends to see near normal to windier than normal conditions based on average wind speed during a La Niña. The highest average wind speed for Las Vegas for December (1988) and April (1957) were both recorded during a La Niña. Roughly 38 percent of the wind gusts of 58 mph or greater (which is the criteria used to issue High Wind Warnings in Las Vegas) recorded at McCarran Airport in the November through April time period took place during a La Niña. In February, however, there was a notable spike with 60 percent (or 6 of the 11) wind gusts of 58 mph or greater at McCarran Airport occurring during a La Niña episode.



Two snowstorms brought measurable snow to all of the Las Vegas Valley in January 1974 in a span of four days, which was a La Niña winter. Here a woman is shown cleaning snow off her car in North Las Vegas. Photo credit: UNLV Special Collections



Although La Niñas are known for being dry, wet periods can occur, sometimes exceptionally wet ones. The above photo shows roadway flooding in northeast Clark County in December 2010. Photo Credit: David Syzdek



Snow Measuring Made Simple

Chris Stachelski
Forecaster

Despite advances in technology, reports of how much snow fell remain one of the most valuable pieces of information spotters can provide to the National Weather Service. Here are some simple tips to follow for measuring snow:

Snow should be measured on a snowboard which is a piece of plywood or flat plastic board painted white. One alternative that can be used as a snowboard is a white, plastic cutting board. If you don't have a snowboard, use a level surface of dirt or grass. However, air pockets lurking in the grass can cause an inaccurate measurement of snow. Do not measure snow on paved surfaces, sidewalks or gravel surfaces. These are sources of heat and will cause snow to be under measured.

Snowboards should be cleaned off after each observation of snowfall is taken and set level on top of the existing snow surface. A small flag may be needed to locate the snow board if more than a foot of snow is expected.

A metal ruler or yardstick is best since it can be pushed into the snow easier. If you live in an area that gets snowfall totals over a foot frequently, a yardstick is a better way to go.

It is important to remember to measure only the amount of **new** snow that has fallen on the ground. This can be at a set time once a day, or since the start time of the snow event. Snow does settle or compact and melt with time, so at best take a measurement once every six hours. Snow should be measured in an area as far away, at least 20 feet, from obstructions such as buildings, trees and fences.

We GREATLY appreciate your snowfall reports, so when you call us please provide the following information... How much snow did you get so far from this storm? What time did the snowfall start? When did the snowfall stop? And what is your elevation (if you know it)?

Storm Spotter Photo Page

I would like to thank all the Spotters who sent in pictures over the past few months. Please make sure to include permission for us to use them. Thanks again for all your efforts and we enjoy receiving your photos.



Ron Michalski — Henderson, NV



John Robinson — Henderson, NV



Josh Holmberg - Las Vegas, NV



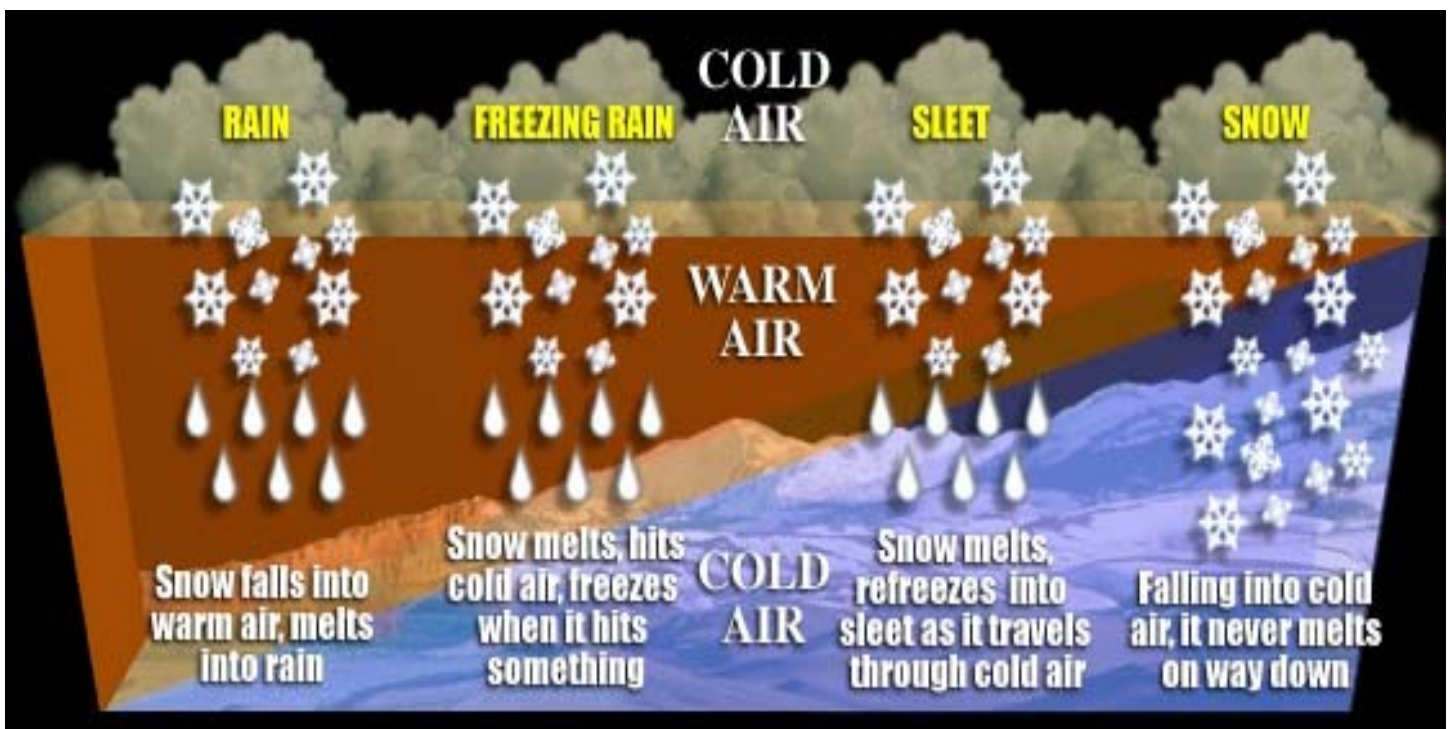
NWS Las Vegas - Henderson, NV

Keep Track Of The Weather With CoCoRaHS

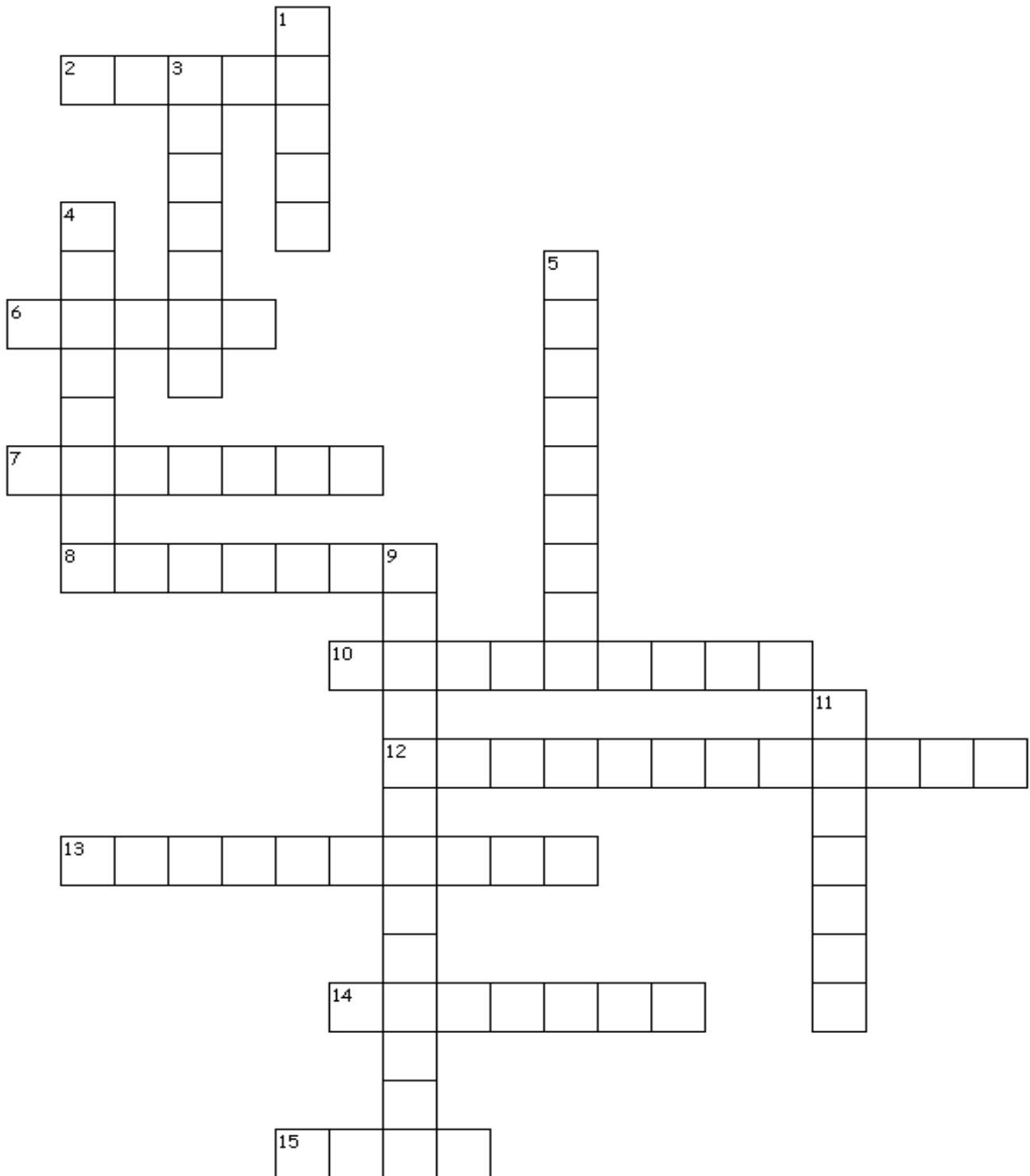
Are you curious as to how much rain or snow fell each time a storm moves through the area? Do you have a rain gauge you frequently check for rain? If so, the National Weather Service in Las Vegas would like to encourage you to join CoCoRaHS, known as the Community Collaborative Rain, Hail and Snow Network. This network allows you to report online how much rain or snow you may have received or even if you saw any hail. Additional comments on the weather in your area that day such as strong winds or storm reports such as flooding can also be submitted. Not only is this information useful to forecasters for verifying forecasts and warnings, but CoCoRaHS also keeps an online record of your reports. This data can then be sorted to compile totals for a given site or see how frequently you received rain or snow in a given time frame. All you have to do to join is visit <http://www.cocorahs.org/> and click on "Join CoCoRaHS" on the left sidebar menu and fill out a short form. While we welcome new observers in all of our communities, our office is especially interested in observers in Mt. Charleston, the Laughlin-Bullhead City area, Searchlight, Beatty, anywhere in Esmeralda County, Lincoln County, the Kingman/central Mohave County area and the Owens Valley. Please contact Faith.Borden@noaa.gov or Andy.Gorelow@noaa.gov with any questions.



How we get Rain, Freezing Rain, Sleet or Snow



Weather Safety Crossword Puzzle





Across

2. Turn Around Don't _____
6. The National Weather Service issues a _____ when conditions are favorable for dangerous weather to develop.
7. Seek shelter in a basement or small interior room in the center of a building when a _____ warning is issued.
8. _____ of swift moving water can sweep away a car! Half of all flash flood deaths occur in automobiles.
10. A _____ occurs when strong winds pick up particles of dust and sand, not associated with a thunderstorm.
12. _____ also known as the WSR-88D.
13. _____ these severe thunderstorm winds can exceed 100 mph and can cause significant damage.
14. In the desert southwest, thunderstorms occur more frequently during the summer _____ from July into September.
15. A _____ is a normally dry streambed or flood channel. During a flash flood they can fill with water in under a minute! Never play or swim in fast moving water!

Down

1. Flat upper portion of a thunderstorm is called this _____
3. Hail is considered severe when it reaches this size _____
4. The _____ scale helps you determine the wind speed if you do not have an anemometer.
5. It only takes _____ of fast moving water to knock an adult off of their feet.
9. _____ can produce flash floods, lightning, high winds, large hail, and tornadoes.
11. The National Weather Service issues a _____ when dangerous weather is imminent or occurring.

WANTED!

SPOTTER REPORTS

What to Report:

- ☑ **TORNADO** - Circulation in contact with the ground.
- ☑ **FUNNEL CLOUD** - Circulation NOT in contact with the ground.
- ☑ **WIND** - Causing damage (such as broken tree limbs or power lines) or greater than 40 MPH.
- ☑ **HAIL** - Any size. Remember to specify the largest stone.
- ☑ **THUNDERSTORMS** - With high winds and frequent cloud to ground lightning.
- ☑ **RAINFALL** - 1/4 of an inch or more per 1/2 hour, or any cumulative total over 1/2 inch.
- ☑ **FLOODING** - of ANY kind! Is the water rising or falling? Flowing or standing?
- ☑ **VISIBILITY** - Under 1/2 mile, caused by anything.
- ☑ **SNOWFALL** - Accumulating one inch or more per hour, or any depth on desert floors. What is your elevation?
- ☑ **ICING** - on road surfaces caused by anything.

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ALWEATHERSERVICE.LASVEGAS.GOV](http://www.facebook.com/us.nation.alweatherservice.lasvegas.gov)**

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REWARD

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