



NATIONAL WEATHER SERVICE, LAS VEGAS NEVADA

The Desert Sun

SKYWARN Spotter Newsletter

Winter 2009 - 2010

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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

Spotter News

Andy Gorelow, Storm Spotter Coordinator

I would first like to wish everyone a Happy New Year and I hope everyone has dried out from these series of storms we had in January. I would like to thank every spotter who called in with their timely reports about the flooding that was occurring, especially in Mohave and San Bernardino Counties. This was a significant weather event, and one that occurs every few years. I am currently in the process of putting together a training schedule that will bring me to a few places that we have not been to for a couple of years and will most likely occur between April and early June. I will be sending an email out as soon as we finalize our locations. If you are part of a larger group that would like training (CERT, HAMS, Emergency Management, etc.), let me know and I will try to honor your request. Lately, several spotters have been emailing storm total precipitation or even reports as they are happening. The only problem with this is that the person you are emailing them to (Donald Maker) is not always in the office. So, instead please call in your rainfall reports (just as you do with spotter reports) to the spotter hotline... **1-800-240-4932**. One other thing that we do enjoy receiving by email are your pictures. We love pictures, especially those showing damage or localized flooding. If you do send us pictures, please indicate if we can use them in our spotter newsletters, or in the spotter training classes. Pictures always add credibility to our warnings, and having that visual is extremely helpful during training. Even the funny pictures (weather related) are nice to get. Also, if you know of certain areas that are prone to flooding, such as intersections or low water crossings, please send me an email. We are trying to put together a database of all these areas which will help us in the future, especially during thunderstorm season. If you have any questions please email me at andy.gorelow@noaa.gov, or call the office at 1-702-263-9744. Thank you for your time and effort, and I look forward to seeing you at local training sessions.

Want to join CoCoRaHS? - www.cocorahs.org

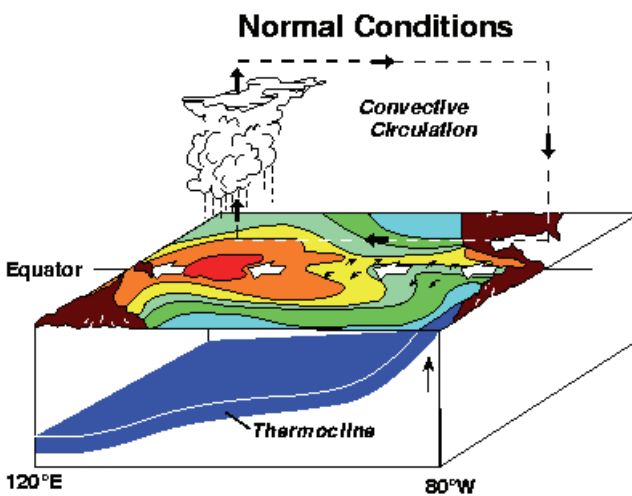
CoCoRaHS is an acronym for the Community Collaborative Rain, Hail and Snow Network. It is a unique, non-profit, community based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow). The aim of CoCoRaHS is to provide the highest quality data for natural resource, education and research applications. It is also an excellent tool for National Weather Service meteorologists to verify rain, snow, and hail amounts in areas that have limited data coverage. CoCoRaHS currently operates across the Nation. If you are interested in becoming one of these specialized spotters (for central and southern Clark, Nye, and Esmeralda counties) please contact me, Andrew Gorelow at 702-263-9744, andy.gorelow@noaa.gov or Bob Neilson at bob@mesquiteweather.com (for Lincoln and northeast Clark counties).

El Niño 2009-2010 Update

Chris Stachelski, Forecaster

The dry weather experienced across the Mojave Desert and southern Great Basin during 2009 has made many people hopeful that nature makes a New Year's resolution to bring more precipitation to the area this year. As is this case with the climate of any area, some years (or seasons) will have more precipitation than others. One thing 2010 will have in its favor supporting a more favorable chance of precipitation occurring in the early months of the year is El Niño.

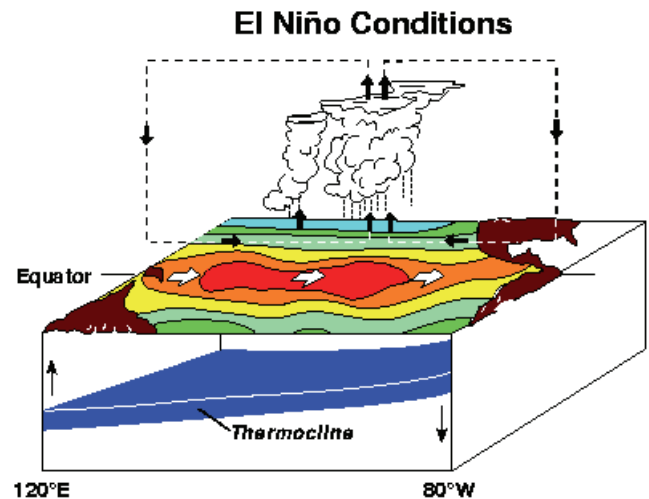
Simply stated, El Niño is a large scale ocean-atmospheric phenomenon linked to a pattern of warming in the waters of the central and eastern Pacific Ocean near the equator. The current El Niño began last spring and has continued to strengthen since then. The strength of an El Niño is based on how warm the waters get in the quasi-equatorial regions of the central and eastern Pacific (between 5 degrees North and 5 degrees South of the equator). The strength of an El Niño is important, because it can often give clues as to what the possible impacts on the global weather patterns may be. This current El Niño is considered "moderate". Computer models used to forecast the strength of El Niño continue to differ on just how much stronger the current El Niño will get, or when it will begin to weaken.



Some people may often think an El Niño is characterized by frequent storms, and that it will be continually wet. While it's true when looking at an average of seasons with an El Niño (especially ones considered moderate or strong), the result is typically a wetter than normal winter in most parts of the Mojave Desert. This wetness often occurs in several periods throughout the winter with dry periods mixed in between. As is typically the case in our area, when the jet stream (or storm track) shifts south and sets up in a favorable position, a series of storms will often move through in quick successions. One role El Niño plays in this is allowing the jet stream to shift further south than normal, thereby potentially spreading abundant moisture into the eastern Pacific that can be drawn northward by the wind flow in the middle & upper atmosphere. This allows for a better chance of precipitation across our region from the migrating storms.

While October and November 2009 were largely dry across most of the area (October was exceptionally wet in the Owens Valley and eastern Sierra Nevada Range), December did feature a wetter than normal month across most of the area, largely due to a series of systems that moved through between the 7th and 13th. A look at the precipitation totals for Las Vegas in past El Niños indicates wet periods tend to be randomly scattered throughout the cold season months. However, the trend typically points towards an increase by February, and especially in March. Also, given that our area receives so little precipitation each year, one or two big precipitation events can largely skew the overall seasonal totals.

One more important thing to remember is that no two El Niños are alike. The 1982-1983 El Niño event was one of the strongest on record, yet produced near normal precipitation during the winter months in portions of the area. However, the 2004-2005 cold season was one of the wettest ever on record and occurred during a weak El Niño. Significant flooding took place along the Muddy River in January 2005. The 1968-1969 El Niño was also characterized a weak event, but during that winter Bishop received nearly two feet of snow from a storm in January 1969, in February parts of U.S. Highway 95 was washed out in southern Nevada, and Beatty was inundated by 3 feet of floodwater.



The National Weather Service's Wind Chill Chart

Donald Maker, Observing Program Leader

If you Google "Wind Chill Chart" a nearly endless amount of different colorful charts appear page after page after... Several years ago the National Weather Service's criteria for determining the wind chill index was changed.

For example:

The current index uses wind speed calculated at the average height of the human body's face (five feet), instead of 33 feet (the standard anemometer height).

Incorporates modern heat transfer theory (the body loses heat to its surrounding during cold and windy days).

Lowers the calm wind threshold from 4 mph to 3 mph.

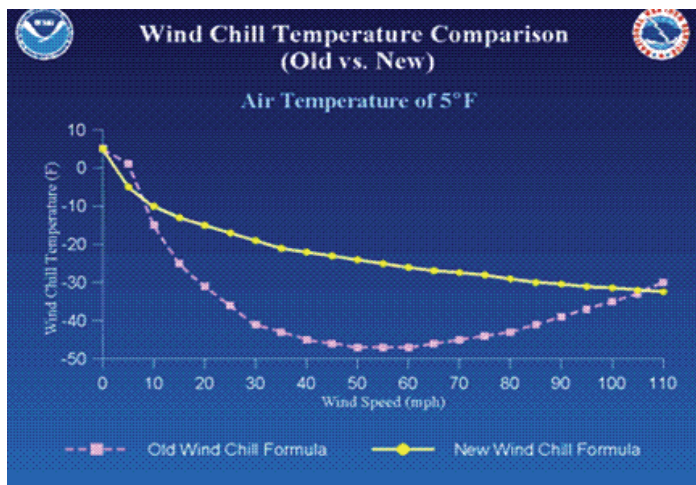
Uses a consistent standard for skin tissue resistance.

Assumes no impact from the sun (clear night sky).

The wind chill temperature is how cold people and animals feel when outside. Wind chill is based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperatures and eventually the internal body temperature. Therefore, the wind makes it **feel** much colder.

Here are some tips on how to dress during cold weather:

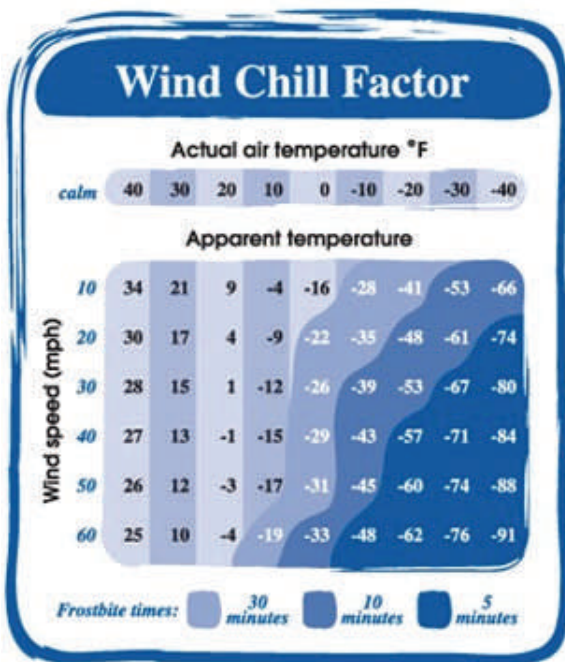
- Wear layers of loose-fitting, lightweight, warm clothing. Trapped air between the layers will insulate the body.
- Outer garments should be tightly woven, water repellent and hooded.
- Wear a hat since 40 percent of your body heat can be lost from your head.
- Cover your mouth to protect your lungs from extreme cold.
- Mittens, snug at the wrist, are better than gloves.
- Try to stay dry and out of the wind.



Exposure to cold can cause frostbite or hypothermia and become life-threatening. Infants and the elderly people are the most susceptible. Avoid overexertion, such as pushing a car or walking in snow or on icy surfaces for an extending period of time. The strain from the cold and hard labor may cause a heart attack. Cardiopulmonary Rescue (CPR) and Automated External Defibrillator (AED) training through the Red Cross is recommended so

you can respond quickly to an emergency. Sweating could lead to a chill and hypothermia. Remove layers to avoid perspiration and subsequent chill.

Before a winter storm strikes you should "Be Prepared." If at home or work, have available flashlights and extra batteries, portable NOAA weather radio, extra food and water, extra medicine and baby items, first-aid supplies, an emergency heat source, fire extinguisher and smoke alarm, and make sure your pets have plenty of water, food and shelter. For your vehicles they should have been winterized before the season began, carry a winter storm survival kit (items such as mobile phone, flashlight & batteries, blankets or sleeping bags, non-perishable food, shovel, compass and road maps, etc) and keep the gas tank near full. If you happen to get caught in a winter storm the preparation prior to departure could be life-saving. Avoid traveling alone and let someone know your intended routes and timetable. If you become stuck stay in the vehicle, run the motor about 10 minutes each hour, open the window a bit for fresh air to avoid carbon monoxide poisoning, make sure the exhaust pipe is not blocked, exercise from time to time to keep blood circulating and to keep warm, and be visible to rescuers by turning on the dome light when the engine is running, tie a colored cloth (preferably red) to the antenna or door, and after the snow stops falling raise the hood to indicate you need help.



Things That Make You Say "Hmmm"

Below are a "play" on words. See if you can figure them out.

e
t
a
d

me right

RIGHT RIGHT

BIRD

ICE³

j o h n s

Chimadena

\$0 all all all all

____it

calm storm

ban ana

1 knows

B
BOW
W

to rn

way or weigh

XQQQME

BIG BIG
ignore ignore

welieight

go it it it it

hi way
pass

Find the answers on page 6



Top Weather Events of 2009

Chris Stachelski, Forecaster

From blazing summer heat to wild winds, 2009 had a variety of interesting weather in the Mojave Desert and southern Great Basin. Here is a quick look back at the top events from 2009 in chronological order:

- 1. February Winter Storm Parade.** An active storm pattern with six separate storm systems affected the area from February 6th through the 18th. Mount Charleston received a February record of 71.0" of snow and had a maximum of 51" of snow on the ground at one point on the morning of the 18th. The biggest impacts were from the 9th through the 10th when a winter storm dropped 25" of snow on Hualapai Peak, AZ at 7600 feet and up to 4" fell in Kingman. The Arizona Department of Public Safety labeled this the "worst storm they ever had to deal with".
- 2. Tax Day Low, April 14th-15th.** A cold upper level low brought heavy late season snows to the higher elevations of southern Nevada with 12" at Mount Wilson in Lincoln County, NV. Snow flurries even fell on the west side of the Las Vegas Valley on the morning of the 15th and Red Rock Canyon recorded 2" of snow. Strong winds also knocked over boats on Lake Mead and damaged docks.
- 3. The Year of the Damaging Dust Devil.** Dozens of dust devils occur each year in the area but few cause damage. 2009 brought 3 such damaging dust devils – two separate ones in July 2009 that caused damage in the Las Vegas Valley, mainly to homes. Another on May 11th caused damage to a mobile home park in Boulder City.
- 4. Persistent Heat in Death Valley, July.** Five consecutive days reached a high temperature of 125 degrees or better in Death Valley during July from the 16th through the 20th. A total of 8 days had highs of 125 degrees or better for the month, the second greatest number of such days on record for any month – only edged out by July 1913 (when Death Valley reached 134 degrees)! The hottest temperature of the month and year was a sweltering 128 degrees on the 18th.
- 5. September 4th Severe Thunderstorms.** The final push of monsoonal moisture was among the most active of the season. Hardest hit was Mohave County where late on the 4th a thunderstorm hit Ft. Mohave with winds estimated at 80 mph. The storm heavily damaged 14 RVs and caused minor to moderate damage to 12 other RVs and trailers. Eight people were injured. Golf ball size (1 3/4") hail also fell in Golden Valley damaging windows and produced wind gusts clocked at 67 mph.
- 6. Wild Winds, October 3rd-4th.** A strong area of low pressure generated powerful winds across Southern Nevada and the eastern Sierra Nevada. Red Rock Canyon, NV recorded a 77 mph wind gust. The strong southwest winds downed dozens of trees across the Las Vegas Valley, and an all-time October low sea level pressure of 29.34" was measured at McCarran International Airport.
- 7. Pacific Storm, October 13th-14th.** A powerful, early winter storm crossed northern California bringing 2 to 4 inches of snow to the higher elevations of the Sierra Nevada Range, and over an inch of rain across the Owens Valley in less than 24 hours. Bishop recorded a storm total of 1.77" of rain. The 1.58" that fell on the 13th set an all-time precipitation record for the month of October.
- 8. December 7th-8th Winter Storm.** For some areas this was the wettest day since the summer of 2009, due in part to the dry fall weather pattern. The 0.28" of rain that fell at McCarran International Airport made it the second wettest day of the year in Las Vegas. This was a cold storm that also lowered snow levels down to 2700 feet in southern Nevada and dropped 1" of snow in Pahrump, NV. Snow also fell as low as 3200 feet in the Morongo Basin with up to 1" reported near Yucca Valley, CA.
- 9. Bitter Cold in the Southern Great Basin, December 10th.** Extremely chilly air invaded the southern Great Basin pushing low temperatures to the lowest levels seen in years. Spring Valley State Park, NV dropped to a frigid -27 degrees and a Mesonet site at Garden Wash in Lincoln County, NV recorded a low of -17. The low at the Desert Rock, NV Airport was 12 degrees. This was the coldest low recorded at the Desert Rock Airport since the major Arctic outbreak of December 1990.
- 10. Dry Year.** It's tough to imagine less than 2 inches of precipitation falling in a year, but even by desert standards that's dry. 2009 marked the 10th time Las Vegas failed to crack the 2" precipitation mark since record keeping began in 1937. Barstow-Daggett recorded their 5th driest year on record.

CONVERTING TRADITIONAL HAIL SIZE DESCRIPTIONS

**Traditional object-to-size conversion for assessment and translation of severe hail reports.
The National Weather Service encourage *measurement*, not estimation, of hail size.**

HAIL SIZE (in.)	OBJECT ANALOG REPORTED
.50	Marble, moth ball
.75	Penny
.88	Nickel
1.00	Quarter
1.25	Half dollar
1.50	Walnut, ping pong
1.75	Golf ball
2.00	Hen egg
2.50	Tennis ball
2.75	Baseball
3.00	Tea cup
4.00	Grapefruit
4.50	Softball

Skywarn Spotter List Updated Andy Gorelow, Storm Spotter Coordinator

In accordance with National Weather Service directives, I have reviewed the Spotter Refresher Training Log for spotters that haven't attended any training sessions since 2005. As a result I have had to remove nearly 200 Spotters from the database. If you received this newsletter, you have not been removed. In the next issue of the Desert Sun I will provide date, times & locations for upcoming training sessions. Online training will also be available during various times of the year. Can you be re-instated? Most definitely. With the same Spotter ID number? Probably not. Practically every year there updates to our procedures, and it is at the refreshers that we convey these changes to you. I can be reached at andy.gorelow@noaa.gov if you have any questions.

Answers to Things That Make you Say "Hmmm"

Update	Right beside me	Equal rights	Big Bird
Ice Cube	Long Johns	Made in China	Free For All
Blanket	Calm before the Storm	Split Banana	Won by a Nose
Cross Bow	Torn in Half	One Way or the Other	Excuse Me
Too big to Ignore	Lie in Wait	Go For It	Highway Overpass