Weather or Not

National Weather Service, Los Angeles/Oxnard

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The Enhanced-Fujita Scale

by Intern Stefanie Sullivan

The Fujita Scale was created in 1971 to estimate tornado intensity by evaluating wind damage. The Fujita Scale ranged anywhere from F0 "light damage," which included chimney damage and small branches snapping, up to F5 "incredible damage," which included houses being lifted from the foundations and damage to reinforced concrete buildings. Unfortunately, the Fujita Scale had its limitations. Winds for F3 and greater intensities were over-estimated, it did not take into account the structural quality of a building, there were not enough damage indicators to make a proper identification, and there was no definite correlation between the wind speed and damage.

The Enhanced-Fujita Scale was developed by a group of meteorologists, engineers, and architects. This new scale was also based on wind damage, but took into account many different structure types (damage indicators) as well as the degree of damage of each of those structures. Currently, there are 28 different damage indicators, ranging from small barns and trees, to various types of power lines, to commercial buildings. Each of these damage indicators has a corresponding set of damage descriptions ranging from first signs of visible damage to complete destruction. Based on the destruction, a group of engineers and architects estimated the wind speeds necessary to produce such damage. By examining the damage to many different types of structures we are able to get more accurate wind speed estimations. These wind speed estimations can then be used to assign an EF-Scale rating to the storm. Comparisons between the two scales were done to make sure there would be no discrepancies as far as climatology is concerned.

The Enhanced Fujita Scale took effect this Spring, and will be used for determining tornado intensity of all future outbreaks.

A tree in Valley Village uprooted during a storm on 3/27/07. EF-scale damage would be EF0-EF1, depending on additional damage indicators

Fujita Scale		Enhanced-Fujita Scale	
F-Scale	Wind gust estimate (mph)	EF-Scale	Wind gust estimate (mph)
F0	45-78	EF0	65-85
F1	79-117	EF1	86-110
F2	118-161	EF2	110-135
F3	162 209	EF3	136 165
F4	210-261	EF4	166-200
F5	262 317	EF5	>200

Office Comings and Goings

by Intern Jamie Meier

Since the last newsletter, Los Angeles/Oxnard NWS office has had a bit of turnover.

In September 2006, Lead Forecaster Ben Moyer transferred to Des Moines, Iowa to take a similar position. While his expertise will be missed, we wish him the best of luck with severe weather in the Midwest!

Stepping in to fill Ben's shoes as a new Lead Forecaster is Todd Hall. Todd, a Southern California native with a degree from UCLA, previously worked as an student intern at the San Diego office. Upon graduation, he worked in El Paso as a Meteorologist Intern for three years. He was then was promoted to Journeyman Forecaster in the Salt Lake City Office, where he remained for another three years. We look forward to showing Todd what a summer here in Oxnard is all about!

Record Driest Water Year Across the Southland

By Lead Forecaster Dave Bruno

The 2006-2007 water year is officially the driest ever at Downtown Los Angeles since records began 130 years ago in 1877. Only 3.21" of rain fell during the season, nearly one foot, or 11.93", below the normal for the season, which is 15.14". Rainfall totaled only 21% of normal at the Downtown L.A. site, which resides on the campus of USC. The total rain for the 2006-2007 season was 1.21" lower than the previous driest season, a difference of a whopping 27%. The rainfall total for the season was lower than the average yearly rainfall for Phoenix (8.29"), Palm Springs (5.23"), and even Las Vegas (4.49")!

During this past season, the greatest rain on any calendar day was just 0.50", on April 20th. This was the only day during the season on which one half inch of rain or greater was recorded, the fewest number of days in any season. The previous record was 2 days during the 2001-2002 season. Measurable rain fell on 21 of the past 365 days in Downtown L.A., one of the fewest on record. It was the 4th lowest total, behind the 16 days during the 1960-1961 season, the 17 days during the 1958-1959 season, and the 19 days during the 1971-1972 season. On average, rain falls on 35 days at Downtown L.A. Rainfall was below normal in every month of this past season, with not a single month receiving rainfall totaling one inch or greater. It is the first season since records began in 1877 for this to happen. The "wettest" month was February, when 0.92" of rain was recorded.

A review of the seasonal rainfall at stations across southwestern California for the water year indicates how pervasive and widespread the dry weather was last season. Most stations in Ventura and Los Angeles counties ended the season with less than 25% of normal rainfall, while locations in Santa Barbara and San Luis Obispo counties ended the season with between 30% and 45%. In fact, all record sites in our warning area experienced the 1st, 2nd, or 3rd driest season on record!

Location	Seasonal Rainfall	% of Normal	Previous Record	Rank
Downtown L.A.	3.21"	21%	4.42" 2001-2002	#1
L.A.X.	2.63"	20%	4.16" 2001-2002	#1
Long Beach	2.10"	16%	2.21" 2001-2002	#1
Burbank	2.83"	16%	5.12" 2001-2002	#1
Palmdale	0.65"	9%	1.90" 1960-1961	#1
Lancaster	1.40"	19%	1.89" 1989-1990	#1
Sandberg	5.03"	40%	2.60" 2001-2002	#3
Camarillo	3.43"	22%	4.63" 1989-1990	#1
Santa Barbara Airport	7.15"	42%	5.76" 1989-1990	#3
Santa Maria	5.11"	36%	4.25" 1971-1972	#2
Paso Robles	3.93"	30%	4.26" 1975-1976	#1

Did You Know?

For our purposes, the water year runs from July 1st to June 30th. It is common to measure rainfall this way to properly measure the rainy season, which crosses New Year's.

For a full summary of the widespread dry conditions, see: www.wrh.noaa.gov/lox/Assets/pns_07_01_07.pdf

Latest Spotter News

by Spotter Coordinator Curt Kaplan

Well, it has been nearly a year since the last spotter newsletter went out. In looking back over the past year, over 130 new spotters were added to an already healthy list. Last year it was important to bring in new spotters where our network did not have many, from San Luis Obispo County down to portions of L.A. County, and especially across our mountain communities. Special thanks to Dave Hovde of KSBY, Jim Byrne of KCOY, and Rick Dickert of KTTV for advertising these events to the public. We hope the great turn-outs will continue at future spotter talks! Locations and dates will be posted on our website once they are finalized.

Hundreds of spotter reports poured in over the last year, most of them due to wind damage. But there were also key reports of rain and snow when it actually did precipitate. Our office really appreciates the reports you call in or send via e-Spotter. Please continue to do so! Hopefully it will be a little more active for the next rain season. Just a reminder that some of you who are registered to use e-Spotter may have to reset your password if it has been more than 90 days since you used it. It should be very easy to do this. If you have a problem with e-Spotter or anything else, don't hesitate to contact me through email at ***curt.kaplan@noaa.gov .*** Have a wonderful summer!

Storm-Based Warnings Start in October

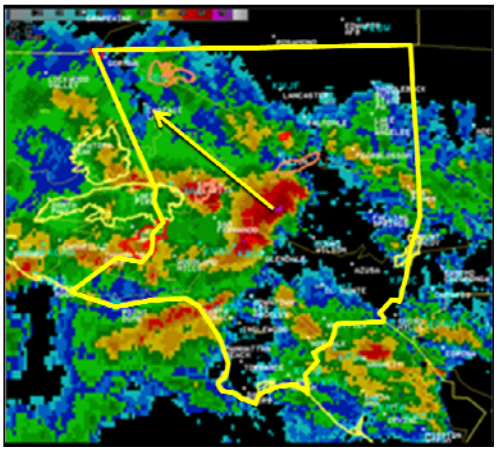
By WCM Eric Boldt

In October 2007, the National Weather Service will introduce Storm-Based Warnings for all short-fused Special Marine, Severe Thunderstorm, Flash Flood, and Tornado Warnings. Currently these warnings are based on geopolitical boundaries such as an individual county. This change will more accurately show where the threat of severe weather is located, particularly in large counties which cover much of the western United States. It will result in finely-tuned warnings just for people in harm's way, rather than needlessly warning people outside of a storm's path.

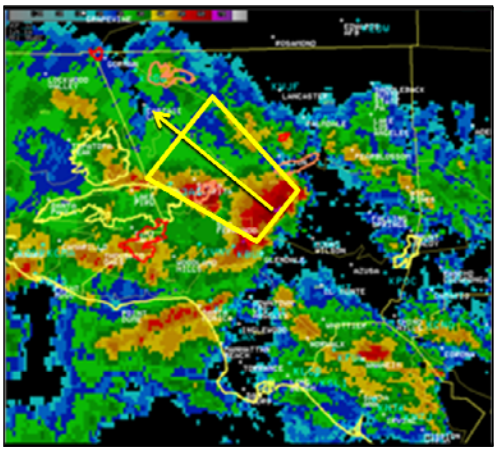
Weather doesn't follow geopolitical boundaries. Storm-based warnings provide the public with more specific information about the location of severe weather and its direction of movement. Seconds count during tornadoes and flash floods. Storm-Based Warnings will provide the public with the most accurate description of what's happening in their neighborhood. All warnings will contain commonly known landmarks such as highways, rivers, cities, and towns. In addition, Storm-Based Warnings will promote improved graphical warning displays, and in partnership with the private sector, support a wider warning distribution through cell phone alerts, pagers, web-enabled Personal Data Assistants (PDA), etc.

The difference this makes can be seen in the two maps to the right. The two maps are of the same thunderstorm north of Glendale, California, denoted by dark cell at the base of the arrow and the expected storm track denoted by the arrow itself. On the top is a County-Based Warning for Los Angeles County, with the bold outlined area showing the whole county under a Severe Thunderstorm Warning due to this one storm. On the bottom is a Storm-Based Warning showing just the west-central portion of Los Angeles County under the Severe Thunderstorm Warning. Storm-Based Warnings will delineate just the area under the threat without regard to political boundaries. In the examples shown, as many as 15 million people are unnecessarily warned in the County-Based Warning (top image) compared to several hundred thousand in the smaller Storm-Based Warning (bottom image).

For more information, feel free to contact us here at the office!



County-Based Warning (above) vs. Storm-Based Warning (below)



Turn Around, Don't Drown!

By Intern Jamie Meier

Each year, more deaths occur due to flooding than from any other severe weather related hazard. Over half of all flood-related drownings occur when a vehicle is driven into hazardous flood water. The next highest percentage of flood-related deaths is due to walking into or near flood waters.

Why is this? People underestimate the force and power of water. A mere six inches of fast-moving flood water can knock over an adult. It takes only two feet of rushing water to carry away most vehicles, including pickups and SUVs. What can you do to avoid getting into this situation?

Follow these very important safety rules:

- Monitor NOAA Weather Radio, or your favorite news source for weather related information.
- If flooding occurs, get to higher ground. Get out of areas subject to flooding. This includes dips, low spots, canyons, washes etc.
- Avoid areas already flooded, especially if the water is flowing fast. Do not attempt to cross flowing streams.
- Road beds may be washed out under flood waters. NEVER drive through flooded roads.
- Do not camp or park your vehicle along streams and washes, particularly during threatening weather.
- Be especially cautious at night when it is harder to recognize flood dangers.

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Thank you for your continued support in our spotter program!
We couldn't do it without folks like you!

What to Report?

Remember to please keep calls short with the information given below, as well as specific times and locations of reports, and a reference to the nearest city/town (if possible). There are many spotters who call at the same time. This helps all calls get through in a timely manner.

Flooding/Debris Flows:
- Rainfall Intensity: How much is falling over a specific period?
- Flooding or Debris Flows that are threatening life/property, or are disrupting traffic.
- Describe the flooding:
  - water depth
  - time it began and ended

Winter Weather:
- Amount, rate and time of new snow accumulations.
- Elevation of snow level
- Icing of roads or road closures
- Very low temperatures:
  - Coast: 35 degrees or lower
  - Valleys: 30 degrees or lower
  - Deserts: 20 degrees or lower
- Significant wind chill

Fog:
- Report visibilities less than or equal to 1/4 mile

Surf:
- Report when surf is 6 feet or greater
- Any flooding or damage caused by high tides and/or high surf

Wind:
- Report winds of 30 mph or more
- Speed of winds (sustained or gusts)

Extreme Heat:
- Report for these temperature thresholds:
  - Coast: 95 degrees or higher
  - Valleys: 105 degrees or higher
  - Deserts: 115 degrees or higher

Thunderstorms:
- Estimated location, duration, speed and direction of movement
- Any hail (size, accumulation, etc)
  - 1/4" = pea size
  - 1/2" = marble size
  - 3/4" = penny size
  - 1" = quarter size
  - 1 3/4" = golf ball size
- Wind speeds and gusts
- Rainfall rate and amount
- If lightning strikes any object

Tornadoes:
- Funnel clouds, waterspouts or any rotating clouds
- Estimated location, duration, speed and direction or movement

Damage or Injuries:
- Please report any confirmed weather-related damage, injuries, or deaths.

Call Toll-Free
24-hours a day:
1-800-524-6120