

New Mexico Drought Status: December 2007

National Weather Service: Albuquerque, NM

...Moderate Drought Persists in a portion of Torrance County...

Discussion: Precipitation during October was well below normal statewide, with little or no measurable rainfall reported in far southeast New Mexico.

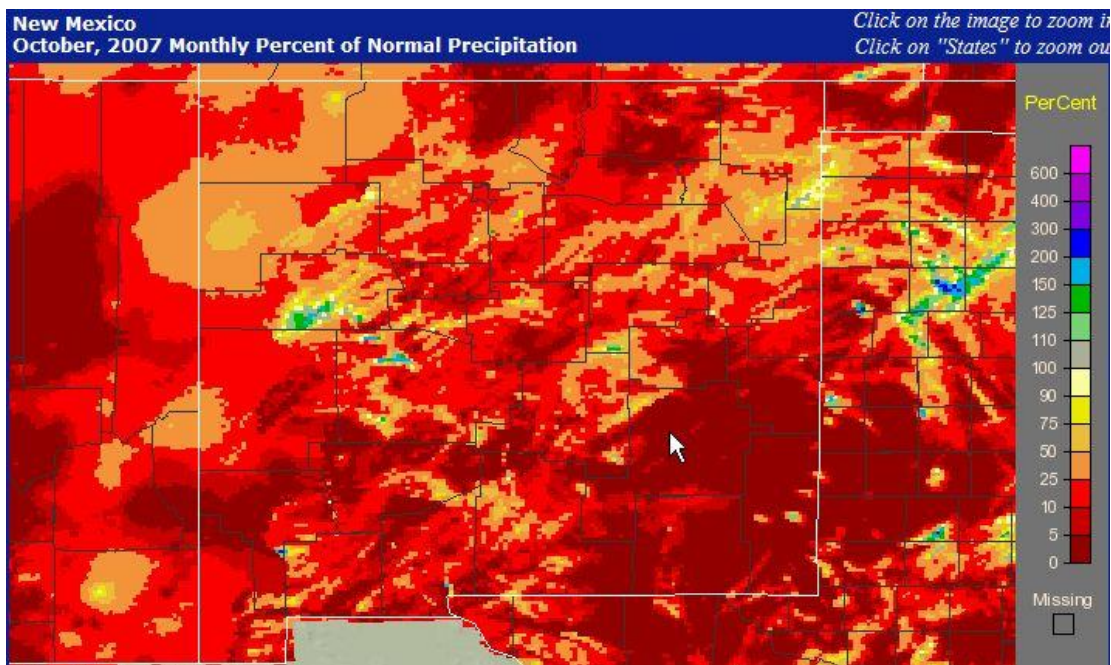


Figure 1: October Percent of Normal Precipitation (NWS)

November featured the first significant snow storm for the northern mountains during the 23rd and 24th while a storm system with significant subtropical moisture invaded the state from the south and southwest from November 30th through the first of December.

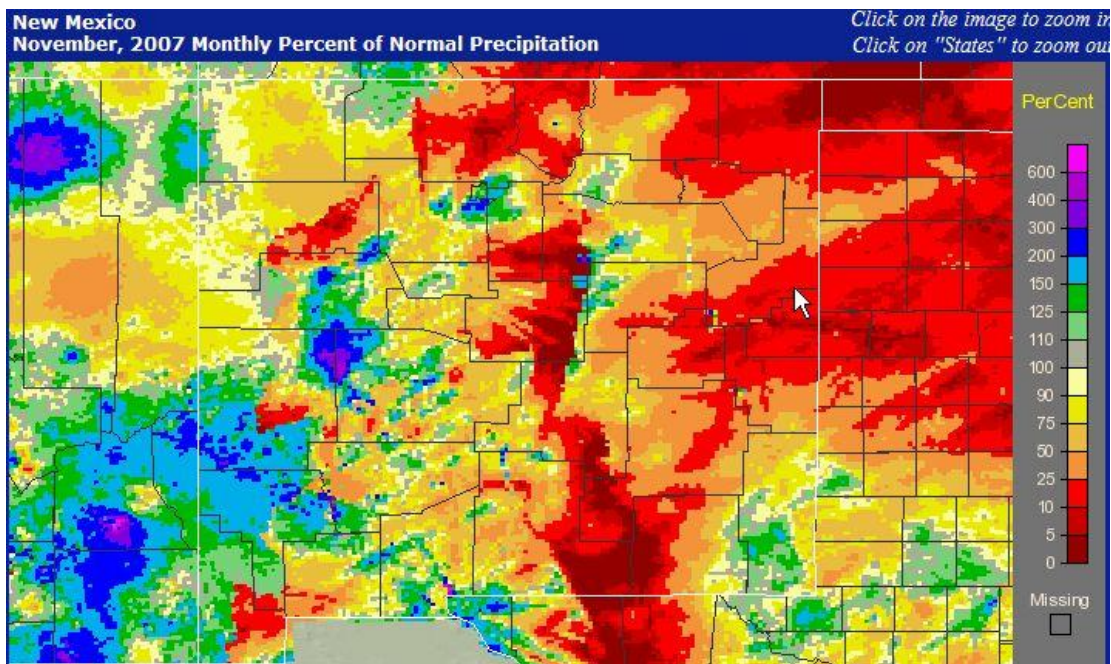


Figure 2: November Percent of Normal Precipitation (NWS)

The nearly two months long stretch of generally dry weather across New Mexico was broken by the end of November storm system that pulled subtropical moisture northward into the southwest U.S. Some of the more notable precipitation totals from the November 30th – December 1st storm included:

Jemez Springs 5W	2.45 inches	Dulce	1.03 inches
Glenwood	2.16	Mountainair 5W	0.78
Espanola 1SSW	1.55	Chama	0.75
Ruidoso	1.10	Gallup Airport	0.67

High elevation precipitation reports for the same storm from NRCS SNOTEL sites were very impressive; about 5 inches at Sierra Blanca (10,000 feet msl) northwest of Ruidoso and at Silver Creek Divide (9,000 feet msl) east of Glenwood, about 4 inches at Signal Peak (8350 feet msl) north of Silver City, and almost 3 inches at the Santa Fe SNOTEL (11,450 feet msl) just northeast of Santa Fe, and at Wesner Springs (11,120 feet msl) 20 miles northwest of Las Vegas.

Another storm system of longer duration but also with abundant moisture invaded the southwest U.S. beginning December 6th with lower snow levels than the previous storm system. However this second storm was also less effective in generating significant precipitation across much of the east central and northeastern plains of New Mexico. Precipitation reports from SNOTEL sites for the period December 6th through 11th were once again very impressive, including 4 inches at Chamita (near Chama), 3.5 inches at Quemazon (near Los Alamos), nearly 3 inches at Silver Creek Divide (east of Glenwood), and 2.5 inches at Wesner Springs and at the Santa Fe SNOTEL.

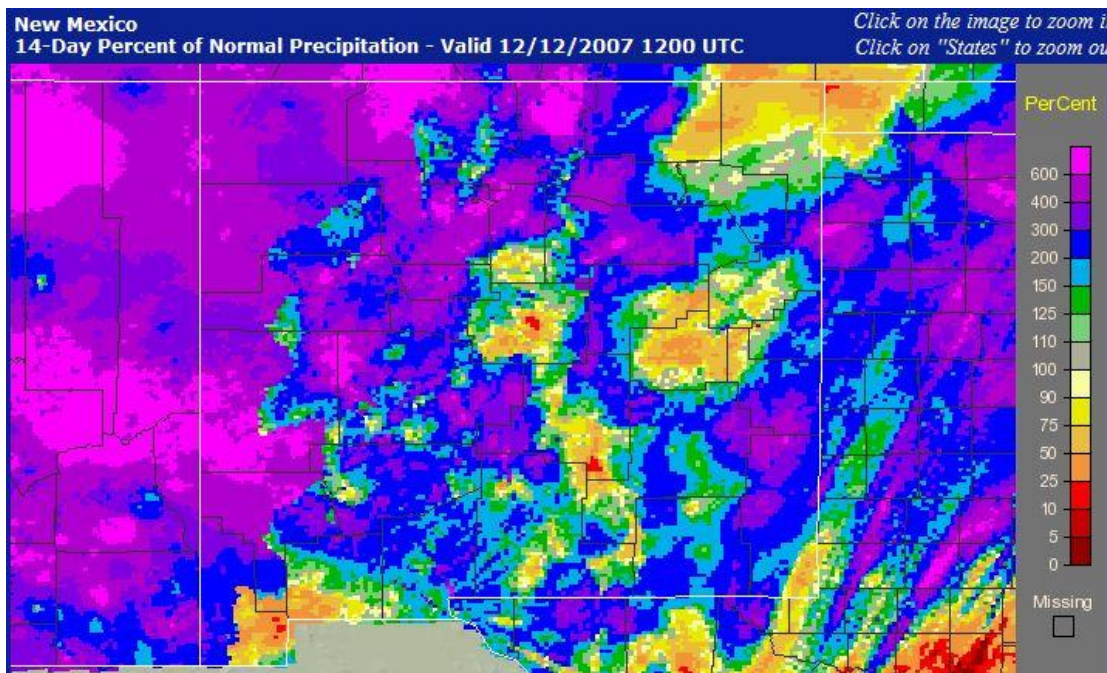


Figure 3: Nov 29 – Dec 12, 2007 Percent of Normal Precipitation (NWS)

The December Drought Status Map (see attached final page) reflects the abundant December precipitation in the reduction of drought area and drought intensity depicted in the Four Corners region, and in the elimination of advisory level drought from Los Alamos County and northern Santa Fe County. The lack of October and November precipitation from Torrance County east to the Texas border (and in far northeast New Mexico) outweighed the early December precipitation, such that the drought area there was little changed from that depicted in mid October.

The area of moderate drought in Torrance County increased slightly. Precipitation from June through November at the Mountainair Ranger Station in west central Torrance County was 2.76 inches, which is 29 percent of the six month normal. Precipitation at Estancia 4N in northwest Torrance County was 61 percent of the six month normal and at Progresso in south central Torrance County precipitation was 72 percent of the six month normal.

Through November, 2007 climate division precipitation ranged from 86 percent of normal in climate division 3, Northeastern Plains (down from 94 percent of normal at the end of September) to 114 percent of normal in climate division 6, Central Valley (down from 130 percent of normal at the end of September).

The Southeastern Plains climate division 2007 precipitation through November was 116 percent of normal. However individual reporting stations within the climate division continue to show significant variability. Fort Sumner and Santa Rosa in the northern part of climate division 7 have only received 68 and 74 percent of normal precipitation respectively in 2007 through November, while Tatum and Carlsbad in the southern part of the climate division received about 150 percent of normal precipitation. (See Table 3).

The Central Highlands climate division 2007 precipitation through November was 101 percent of average, yet the extremes within the division ranged from 48 percent of normal in Mountainair to 122 percent of normal at Cloudcroft and 116 percent of normal at Capitan (See Table 3).

To determine the state of drought, it is necessary to examine individual station data as well as climate division data. The attached New Mexico Drought Status Map makes use of individual station data as well as climate division data, and is more heavily weighted toward shorter term (3 to 12 month) conditions.

Another way to assess short and long term drought on a climate division level is to look at precipitation percentiles. Percentiles greater than 50 indicate that the area has been wetter than average. Percentiles less than 11 can be associated with an “Emergency” drought designation in New Mexico. Percentiles from 11 to 20 are consistent with a “Warning” drought designation. The 21 to 30 percentiles are usually associated with an “Alert” designation, while the 31 to 40 percentile range would suggest an “Advisory” drought.

As of November 1, the lowest short term percentiles were from August through October 2007 for climate divisions 1, 6 and 7, from July through October for climate divisions 2 and 3, and from June through October for climate divisions 4, 5 and 8. Lowest long term percentiles were for the 72 month period ending October 2007 for all divisions except for division 3, where the lowest long term percentiles were for the 24 month period ending October 2007, and for divisions 4 and 7 where the lowest long term percentiles were for the 30 month period ending October 2007.

Climate Division	Lowest 3 – 6 month Precipitation Percentile (and Departure from Normal) ending Oct 31, 2007.	Lowest 18 – 72 month Precipitation Percentile (and Departure from normal) ending October 31, 2007.
Northwest Plateau (1)	15 th percentile (-1.33 inches)	50 th percentile (-0.36 inches)
Northern Mountains (2)	59 th percentile (+0.28 inches)	37 th percentile (-3.08 inches)
Northeast Highlands (3)	7 th percentile (-3.52 inches)	38 th percentile (-2.14 inches)
Southwest Mountains (4)	29 th percentile (-1.20 inches)	51 st percentile (-0.11 inches)
Central Valleys (5)	28 th percentile (-1.09 inches)	85 th percentile (+8.23 inches)
Central Highlands (6)	8 th percentile (-2.70 inches)	49 th percentile (-0.70 inches)
Southeast Plains (7)	32 nd percentile (-1.40 inches)	67 th percentile (+2.68 inches)
Southern Desert (8)	44 th percentile (-0.49 inches)	68 th percentile (+3.84 inches)

Table 1

As of December 1, the lowest short term percentiles were generally from August through November or June through November. Lowest long term percentiles were for the 72 month period ending November 2007 for all divisions except for divisions 3, 4 and 7 where the lowest long term percentiles were for the 30 month period ending November 2007

Climate Division	Lowest 3 – 6 month Precipitation Percentile (and Departure from Normal) ending November 30.	Lowest 18 – 72 month Precipitation Percentile (and Departure from normal) ending November 30, 2007.
Northwest Plateau (1)	31 st percentile (-0.76 inches)	56 th percentile (+0.94 inches)
Northern Mountains (2)	48 th percentile (-0.24 inches)	35 th percentile (-3.61 inches)
Northeast Highlands (3)	4 th percentile (-4.16 inches)	32 nd percentile (-3.29 inches)
Southwest Mountains (4)	44 th percentile (-0.46 inches)	57 th percentile (+0.59 inches)
Central Valleys (5)	20 th percentile (-1.54 inches)	83 rd percentile (+7.51 inches)
Central Highlands (6)	14 th percentile (-2.31 inches)	47 th percentile (-1.04 inches)

Southeast Plains (7)	36 th percentile (-1.21 inches)	65 th percentile (+2.30 inches)
Southern Desert (8)	47 th percentile (-0.33 inches)	70 th percentile (+4.14 inches)

Table 2

Climate division 4 and 6 showed very slight improvement in short term percentile and precipitation departure from normal since the end of September, while all other climate divisions suffered further drying. The 4th percentile for division 3 and the 14th percentile for division 6 seem to be in error and too heavily weighted to dry conditions in Torrance County of climate division 6, and to Quay, Curry, and Roosevelt Counties in climate division 3.

From Table 2, climate divisions 2 and 3 show the most significant long term drought with precipitation percentiles ranging from 32 to 35 and a precipitation deficit of 3.3 to 3.6 inches.

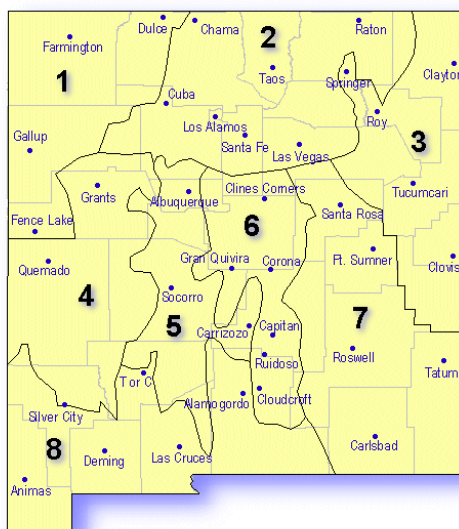


Figure 4: Climate Divisions in New Mexico

Long-range outlook: The December 2007 ENSO (El Niño Southern Oscillation) discussion by NOAA’s Climate Prediction Center indicates that a moderate La Niña is occurring in the central equatorial Pacific, and that La Niña will continue into early next year.

In general, winter storm systems favor the Pacific Northwest during a La Niña episode, with fewer storms affecting southern California, Arizona and New Mexico.

An ongoing study at the NWS in Albuquerque has found that winter precipitation (December through February) averages a little better than 80 percent of normal statewide during a La Niña episode. Only in the Northern Mountains climate division does winter precipitation approach 90 percent of normal when La Niña conditions are present. The southern part of the state averages slightly better than 75 percent of normal winter precipitation.

Use the following link to see the effects of La Niña on winter precipitation across New Mexico:
<http://www.srh.noaa.gov/abq/features/LaNinaWinter/LaNina&NMprecip.php>

Since 1950, early spring snowpack (March 1st) was below normal statewide 15 of 21 years following a La Niña winter, and 9 of those 21 winters resulted in a snowpack less than 50 percent of normal.

If the La Niña episode persists through the spring (March through May), prospects for drier than normal conditions increase. Spring precipitation, when a La Niña episode is ongoing, averages about 75 percent of normal across New Mexico. Spring precipitation by Climate division ranges from 67 percent of normal in the Southwestern Mountains (climate division 4) to 83 percent of normal in the Northeastern Plains (climate division 3).

Average winter temperatures across the southwest U.S. are likely to be warmer than normal due to the current La Niña. See the following link for winter temperature probability outlook from the Climate Prediction Center. http://www.cpc.ncep.noaa.gov/products/predictions/long_range/lead03/off03_temp.gif

Calendar Year 2007 and Water Year 2007 Precipitation for New Mexico
National Weather Service Albuquerque, NM

<u>Location</u>	2007 (January - November)			Water Year 2008 (Oct '07 - Nov '07)			
	<u>Obs</u>	<u>Normal</u>	<u>%Normal</u>	<u>Obs</u>	<u>Normal</u>	<u>%Normal</u>	<u>SID</u>
<i>Northwest Plateau</i>							
AZTEC RUINS N/M	8.47	9.09	93%	0.59	1.80	33%	AZT
FENCE LAKE	12.68	13.28	95%	1.03	2.28	45%	FCK
FARMINGTON AG CTR	7.43	8.21	90%	0.32	1.76	18%	FAR
GALLUP FAA APRT	8.46	10.85	78%	1.30	2.04	64%	GUP
LINDRITH 2SE	16.44	13.49	122%	1.69	2.34	72%	LDR
NAVAJO DAM	9.38	12.24	77%	0.60	2.43	25%	BLN
<i>Northern Mountains</i>							
ALCALDE	9.81	9.64	102%	0.48	1.71	28%	ALC
CANJILON R/S	15.70	14.53	108%	0.94	2.27	41%	CJL
CERRO	10.80	12.22	88%	0.86	1.83	47%	CRR
CHAMA	23.19	19.20	121%	2.11	3.04	69%	CHM
CIMARRON 4SW	11.86	15.76	75%	0.25	1.75	14%	CPS
GHOST RANCH	13.33	11.02	121%	0.47	1.63	29%	AIQ
JEMEZ SPRINGS	15.89	16.36	97%	0.83	2.53	33%	JEM
JOHNSON RANCH	10.72	10.70	100%	0.28	1.77	16%	CUB
LAS VEGAS FAA APRT	15.35	16.15	95%	0.63	1.79	35%	LVS
LOS ALAMOS	17.57	17.46	101%	1.93	2.37	81%	LOA
RATON FILTER PLT	12.32	17.11	72%	0.38	1.84	21%	RRT
RED RIVER	25.90	19.39	134%	1.34	2.69	50%	RED
SANTA FE 2	10.82	13.05	83%	0.85	2.09	41%	STF
WOLF CANYON	22.68	21.39	106%	1.34	3.43	39%	CUA
<i>Northeastern Plains</i>							
CLAYTON APRT	12.04	15.13	80%	0.18	1.59	11%	CAO
CLOVIS	15.69	17.28	91%	0.30	2.29	13%	CLV
CONCHAS DAM	8.83	13.62	65%	0.67	1.56	43%	CNC
MOSQUERO 1NE	15.18	16.08	94%	0.46	1.70	27%	MSQ
PORTALES	17.18	16.13	107%	0.23	1.93	12%	POR
TUCUMCARI 4NE	11.90	15.39	77%	0.97	1.92	51%	TUC
<i>Southwestern Mountains</i>							
FORT BAYARD WINSTON (CHLORIDE)	14.45	14.65	99%	0.83	2.01	41%	FTB
GRANTS APRT	11.33	12.26	92%	0.74	1.58	47%	WNS
QUEMADO	8.01	9.95	81%	0.42	1.71	25%	GNT
RESERVE R/S	11.09	10.29	108%	0.96	1.30	74%	QMD
RESERVE R/S	12.89	14.44	89%	0.76	2.79	27%	RES
<i>Central Valley</i>							
ABQ WSFO APRT	9.07	8.22	110%	0.42	1.36	31%	ABQ
BOSQUE DEL APACHE	10.87	8.14	134%	0.99	1.36	73%	SAA
LOS LUNAS 3SSW	8.16	8.50	96%	0.24	1.55	15%	LLU
SOCORRO	10.41	9.01	116%	0.31	1.42	22%	SCR

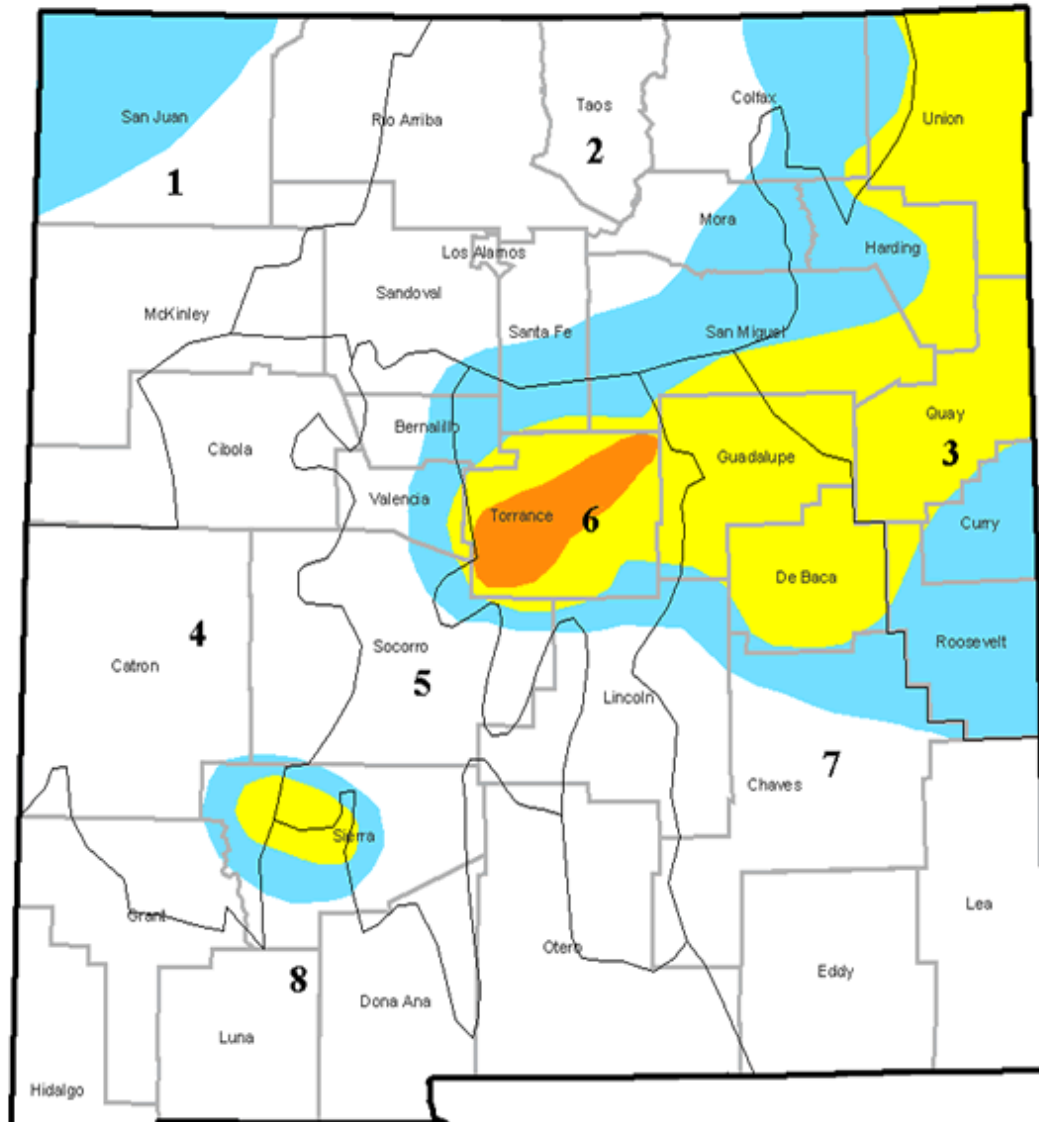
<i>Central Highlands</i>							
CAPITAN	17.90	15.42	116%	0.40	1.51	26%	CAP
CLOUDCROFT	28.57	23.40	122%	1.79	2.69	67%	CLD
ESTANCIA 4N	10.45	11.87	88%	0.44	1.68	26%	EST
MOUNTAINAIR R/S	6.39	13.33	48%	0.48	1.81	27%	MTN
RUIDOSO 2NNE	21.42	20.22	106%	0.96	2.39	40%	RUP
<i>Southeastern Plains</i>							
ARTESIA 6S	14.43	11.29	128%	0.67	1.61	42%	ART
CARLSBAD	18.07	11.94	151%	0.41	1.83	22%	CWP
FORT SUMNER	9.46	13.87	68%	0.23	1.96	12%	FSM
ROSWELL CLIMAT	16.19	12.38	131%	0.83	1.74	48%	ROW
SANTA ROSA	10.00	13.59	74%	0.48	1.70	28%	SNR
TATUM	23.01	15.44	149%	0.53	2.04	26%	TAT
<i>Southern Desert</i>							
ANIMAS	9.54	10.01	95%	0.42	1.55	27%	ANM
DEMING	6.62	8.51	78%	0.30	1.23	24%	DEM
FAYWOOD	13.45	10.95	123%	0.58	1.81	32%	FAY
STATE U LAS							
CRUCES	9.59	8.59	112%	0.34	1.34	25%	STC
TRUTH OR CONSEQ	8.11	10.83	75%	0.09	2.07	4%	TRC
TULAROSA	10.29	9.13	113%	1.17	1.39	84%	TLR

Table 3

<u>Climate Division</u>	<u>2007 (January – November)</u> <u>% Nrml</u>	<u>Water Year 2008</u> <u>% Nrml</u>
Northwest Plateau	94%	44%
Northern Mountains	101%	41%
Northeastern Plains	86%	26%
Southwestern Mountains	94%	40%
Central Valley	114%	34%
Central Highlands	101%	40%
Southeastern Plains	116%	29%
Southern Desert	99%	31%
All Divisions	100%	37%

Table 4

Meteorological Drought Status Map December 2007



Source: NM State Drought Monitoring Committee

Drought Status	
	No Drought
	Advisory
	Alert - Mild
	Warning - Moderate
	Emergency - Severe

Climate Divisions	
1	Northwestern Plateau
2	Northern Mountains
3	Northeastern Plains
4	Southwest Mountains
5	Central Valley
6	Central Highlands
7	Southeastern Plains
8	Southern Desert