

# New Mexico Drought Monitoring Work Group

February 21, 2006

Report on Drought Conditions through February 2006



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## Summary of Drought Conditions

**Drought** – Extreme drought conditions have developed in southeast Arizona and southwest New Mexico.

- Drought conditions are expected to persist throughout the Southwest, due to winter forecasts of above-average temperatures and below-average precipitation.
- The extreme lack of snowpack in most of the basins in Arizona and southern New Mexico has led to a streamflow forecast of well below average for 2006.
- Drought conditions improved from last year, but the large Colorado River reservoirs, Elephant Butte, and other reservoirs in New Mexico remain below average.

**Fire Danger** – The abundant grass crop produced last winter has cured into fine dry fuel in the Southwest, raising the prospect of an early start to a very active fire season.

**Temperature** – Since the start of the water year on October 1, temperatures over most of the Southwest have been above average.

**Precipitation** – Almost the entire Southwest has been drier than average since the start of the water year, especially during the last three months.

**Climate Forecasts** – Experts predict increased chances of warmer-than-average temperatures through August 2006, and below-average precipitation through May 2006.



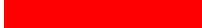



**El Niño** – Weak La Niña conditions are expected over the next three to six months.
























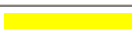









**The Bottom Line** – Drought is likely to persist over most of the Southwest.

### NEW MEXICO Reservoir Storage Graph

FOR THE END OF JANUARY 2006

*(Data are provisional and subject to change)*

Reservoir	Current as Percent of Capacity/Average/Last Year	
ABIQUIU	% of Capacity	 26%
	% of Average	 134%
	% of Last Year	 130%
BRANTLEY	% of Capacity	 10%
	% of Average	 63%
	% of Last Year	 35%

<b>CABALLO</b>	% of Capacity	 5%
	% of Average	 18%
	% of Last Year	 64%
<b>COCHITI</b>	% of Capacity	 10%
	% of Average	 86%
	% of Last Year	 100%
<b>CONCHAS</b>	% of Capacity	 39%
	% of Average	 53%
	% of Last Year	 153%
<b>COSTILLA</b>	% of Capacity	 62%
	% of Average	 180%
	% of Last Year	 236%
<b>EL VADO</b>	% of Capacity	 59%
	% of Average	 113%
	% of Last Year	 428%
<b>ELEPHANT BUTTE</b>	% of Capacity	 23%
	% of Average	 36%
	% of Last Year	 195%
<b>HERON</b>	% of Capacity	 45%
	% of Average	 65%
	% of Last Year	 164%
<b>LAKE AVALON</b>	% of Capacity	 37%
	% of Average	 79%
	% of Last Year	 96%
<b>NAVAJO</b>	% of Capacity	 90%
	% of Average	 122%
	% of Last Year	 148%
<b>SANTA ROSA</b>	% of Capacity	 19%
	% of Average	 129%
	% of Last Year	 265%
<b>SUMNER</b>	% of Capacity	 24%
	% of Average	 58%
	% of Last Year	 89%

[< Go Back to the Main Reservoir Storage Graphics Page](#)

## Drought Status for February 2006

*National Weather Service, Albuquerque, NM*

...Drought conditions continue to worsen over New Mexico...

**Discussion:** Exceptionally dry weather has prevailed over nearly all of New Mexico since the middle of October. January precipitation averaged generally 50 to 75 percent of normal along the Colorado border west of Raton to mostly less than 25 percent over the remainder of the state. Much of southeastern New Mexico measured less than 10 percent of the normal January precipitation. The average precipitation for the state in January was 28 percent of normal (table 6). Overall, January was the 13<sup>th</sup> warmest and the 17<sup>th</sup> driest of the past 112 years.

According to the National Climatic Data Center, the November 2005-January 2006 three month period was the 2<sup>nd</sup> driest such period of the past 112 years. Precipitation for the 3 month period (November through January) has averaged roughly 40-50 percent of normal along the Colorado border west of Raton to less than 20 percent of normal over the remainder of the state. The water year precipitation (since October 1, 2005) has averaged 49 percent of normal, but a good percentage of that moisture fell in the first half of October. Much of southern New Mexico has received less than 10 percent the normal November-January precipitation, and it's likely that parts of southern New Mexico have not experienced a drier winter in recorded history. The combination of short-term and long-term dry conditions has complicated the drought assessment over the latter part of 2005 and early 2006. Some areas of New Mexico have experienced very dry conditions over the past 3-7 months, but have received close to normal precipitation over the past 12-60 months. Other areas have been dry for at least the last 60 months or longer. The Village of Ruidoso has not experienced a wetter than normal year since 1997.

The following table shows some of the three-month (November 2005 through January 2006) and seven-month (July 2005 – January 2006) precipitation for some locations in New Mexico, compared to normal, and the percent of normal. For the 3-month period, percentages of normal 50 or below are shown in **bold font**. For the 7-month period, percentages of normal 70 or below are shown in **bold font**.

Location	Nov2005- Jan 2006 (3 mon)	Normal Nov-Jan	% of Norm.	Jul 2005- Jan 2006 (7 mon)	Normal Jul-Jan	% of Norm.
Alamogordo	0.00	2.11	<b>00</b>	5.86	8.89	<b>66</b>
Albuquerque Airport	0.14	1.30	<b>11</b>	5.62	5.97	94
Albuquerque Valley	0.26	1.52	<b>17</b>	5.21	6.50	80
Albuquerque Foothills	0.39	2.47	<b>16</b>	6.44	10.12	<b>64</b>
Animas	0.23	2.12	<b>11</b>	5.81	8.98	<b>65</b>
Capulin/Des Moines	0.70	1.57	<b>45</b>	8.36	10.74	78
Carlsbad	0.00	1.39	<b>00</b>	4.26	8.29	<b>51</b>
Chama	1.59	5.02	<b>32</b>	12.44	13.70	91
Clayton	0.23	1.13	<b>20</b>	6.75	8.87	76
Cloudcroft	0.50	4.18	<b>12</b>	14.84	18.54	80
Deming	0.40	1.59	<b>25</b>	4.82	7.38	<b>65</b>
Farmington	0.55	1.79	<b>31</b>	4.47	5.88	80
Fence Lake	0.75	2.89	<b>26</b>	7.14	10.46	<b>68</b>
Ft. Sumner	0.03	1.61	<b>02</b>	8.04	9.67	83
Gallup	0.57	2.63	<b>22</b>	5.22	8.28	<b>63</b>

Gila Hot Springs	0.47	3.39	<b>14</b>	5.72	12.96	<b>44</b>
Grants	0.32	1.73	<b>18</b>	4.33	8.02	<b>54</b>
Jemez Spr.	0.37	2.84	<b>13</b>	7.60	11.92	<b>64</b>
Las Vegas	0.03	1.86	<b>02</b>	9.11	13.00	<b>70</b>
Los Alamos	0.23	2.57	<b>09</b>	12.25	12.79	96
Raton	0.21	1.69	<b>12</b>	9.44	10.59	89
Red River	1.98	3.39	58	12.96	12.69	102
Roswell	0.00	1.53	<b>00</b>	6.87	8.61	80
Ruidoso	0.47	3.66	<b>13</b>	12.53	15.92	79
Santa Fe	0.31	2.18	<b>14</b>	6.71	9.22	73
Socorro	0.02	1.40	<b>01</b>	4.68	7.07	<b>66</b>
Tatum	0.02	1.42	<b>01</b>	5.83	10.23	<b>57</b>
T or C	0.06	2.54	<b>02</b>	5.63	9.73	<b>58</b>
Tucumcari	0.09	1.59	<b>06</b>	12.37	9.73	127
Zuni	0.43	2.54	<b>17</b>	3.25	9.08	<b>36</b>

Table 1

Table 2 shows the 60 month precipitation totals compared to normal for the same locations in New Mexico. Percentages of 85 or below are shown in **bold font**.

Location	Feb 2001 – Jan 2006 Precipitation	Normal 60 Month Precipitation	Percent of Normal
Alamogordo	48.57	50.80	96
Albuquerque Airport	42.32	43.20	98
Albuquerque Valley	42.74	48.20	89
Albuquerque Foothills	66.11	75.90	87
Animas	45.05	54.95	<b>82</b>
Capulin/Des Moines	76.45	87.40	87
Carlsbad	57.98	63.20	92
Chama	99.74	106.00	94
Clayton	75.62	77.50	98
Cloudcroft	128.17	124.80	103
Deming	38.50	42.55	90
Farmington	39.48	43.75	90
Fence Lake	63.92	71.25	90
Ft. Sumner	69.43	74.20	94
Gallup	48.87	57.70	<b>85</b>
Gila Hot Springs	66.60	81.70	<b>82</b>
Grants	41.79	52.40	<b>80</b>
Jemez Spr.	60.65	86.45	<b>70</b>
Las Vegas	76.97	95.90	<b>80</b>
Los Alamos	73.94	91.65	<b>81</b>
Raton	76.27	87.65	87
Red River	107.48	102.75	105
Roswell	56.19	64.65	87
Ruidoso	93.14	109.25	<b>85</b>
Santa Fe	52.59	68.65	<b>77</b>
Socorro	44.19	45.65	97
Tatum	81.55	79.70	102
T or C	35.65	49.50	<b>72</b>
Tucumcari	86.07	80.00	108
Zuni	45.87	61.90	<b>74</b>

Table 2

Finally, table 3 lists the same locations with the percentages of normal for the three times scale of 3 months, 7 months, and 60 months.

<b>Location</b>	<b>3 month Percent of Normal</b>	<b>7 month Percent of Normal</b>	<b>60 month Percent of Normal</b>
Alamogordo	<b>00</b>	<b>66</b>	96
Albuquerque Airport	<b>11</b>	94	98
Albuquerque Valley	<b>17</b>	80	89
Albuquerque Foothills	<b>16</b>	<b>64</b>	87
Animas	<b>11</b>	<b>65</b>	<b>82</b>
Capulin/Des Moines	<b>45</b>	78	87
Carlsbad	<b>00</b>	<b>51</b>	92
Chama	<b>32</b>	91	94
Clayton	<b>20</b>	76	98
Cloudcroft	<b>12</b>	80	103
Deming	<b>25</b>	<b>65</b>	90
Farmington	<b>31</b>	80	90
Fence Lake	<b>26</b>	<b>68</b>	90
Ft. Sumner	<b>02</b>	83	94
Gallup	<b>22</b>	<b>63</b>	<b>85</b>
Gila Hot Springs	<b>14</b>	<b>44</b>	<b>82</b>
Grants	<b>18</b>	<b>54</b>	<b>80</b>
Jemez Spr.	<b>13</b>	<b>64</b>	<b>70</b>
Las Vegas	<b>02</b>	<b>70</b>	<b>80</b>
Los Alamos	<b>09</b>	96	<b>81</b>
Raton	<b>12</b>	89	87
Red River	58	102	105
Roswell	<b>00</b>	80	87
Ruidoso	<b>13</b>	79	<b>85</b>
Santa Fe	<b>14</b>	73	<b>77</b>
Socorro	<b>01</b>	<b>66</b>	97
Tatum	<b>01</b>	<b>57</b>	102
T or C	<b>02</b>	<b>58</b>	<b>72</b>
Tucumcari	<b>06</b>	127	108
Zuni	<b>17</b>	<b>36</b>	<b>74</b>

Table 3

It's apparent from table 3 that short-term drought exists over the entire state. Red River is the only location that has measured over 50 percent of the normal 3-month precipitation. The second column in table 3 shows the current dry spell has affected much of New Mexico for at least 7 months, but not the entire state. An extreme example of this exists at Tucumcari, where only 6 percent of normal precipitation fell during the 3-month period, but 127 percent of normal precipitation fell during the 7 month period. Some of the most extreme dryness over the 7 month period is apparent at locations such as Zuni (36 percent), and Grants (44 percent). The third column shows areas where the long-term drought is obvious. Some of the more extreme notable locations include Jemez Springs (70 percent of normal over the 5-year period), T or C (72 percent), Zuni (74 percent), and Santa Fe (77 percent). The 5 year measured precipitation deficit (from normal) at these locations ranges from 25.80 inches at Jemez Springs to 13.85 inches at T or C.

Another way to assess the long-term drought is to look at the percentiles for longer times scale. In general, percentiles provide a good measure of how rare conditions are. Percentiles greater than 50 indicate the area has been wetter than average. Drought is associated with the lower percentiles. Percentiles less than the 11<sup>th</sup> are usually associated with "Emergency" designations in New Mexico. Percentiles from 11<sup>th</sup> to 20<sup>th</sup> are consistent with drought "warning" designations. The 21<sup>st</sup> to 30<sup>th</sup> percentiles are associated with drought "alerts," and the 31<sup>st</sup> to 40<sup>th</sup> percentiles are consistent with "heads up" advisories. Table 4 shows the 3

month period and 60 month percentile averages for the eight climate divisions in New Mexico. Values at or below the 20<sup>th</sup> percentile are shown in **bold figures**.

Climate Division	Short-Term Precipitation Departure and Percentile (3 month period)	Long-Term Precipitation Departure and Percentile (60 month period)
Northwest Plateau (1)	-1.5" <b>5<sup>th</sup></b>	-4.1" 30 <sup>th</sup>
Northern Mountains (2)	-1.3" <b>8<sup>th</sup></b>	-10.6" <b>9<sup>th</sup></b>
Northeast Highlands (3)	-1.1" <b>3<sup>rd</sup></b>	0.0" 50 <sup>th</sup>
Southwest Mountains (4)	-1.5" <b>2<sup>nd</sup></b>	-1.2" 44 <sup>th</sup>
Central Valleys (5)	-1.2" <b>2<sup>nd</sup></b>	0.0 50 <sup>th</sup>
Central Highlands (6)	-2.6" <b>1<sup>st</sup></b>	-9.1" <b>16<sup>th</sup></b>
Southeast Plains (7)	-1.3" <b>1<sup>st</sup></b>	0.0 50 <sup>th</sup>
Southern Desert (8)	-1.9" <b>1<sup>st</sup></b>	-5.2" 26 <sup>th</sup>

Table 4



**Climate Divisions in New Mexico**

Table 5 shows the state of the high level snow pack during the second week of February, 2006, for the main river basins in New Mexico and southern Colorado that impact New Mexico. These data are from the SNOTEL instrument platforms operated by the Natural Resource Conservation Service (NRCS).

River Basin	Snow Water Equivalent Feb 2006	Average for early Feb	Percent of Normal
Rio Chama	3.8	9.2	41
Upper Rio Grande	5.7	13.2	43
San Juan	6.6	16.3	40
Animas	8.9	13.8	64
Cimarron	1.6	5.0	32
Sangre de Cristo	1.7	7.2	24
Zuni/Bluewater	1.1	4.5	24
Jemez	1.2	7.7	17
Pecos	1.1	10.0	11
Gila	0.3	5.1	06
San Francisco	0.4	4.4	09
Mimbres	0.2	4.2	05
Rio Hondo	0.0	9.2	0

Table 5

**Rangeland/Pasture conditions:** Current rangeland and pasture conditions will be available from USDA again in the spring. During the assessment in early November, 27 percent of the range and pasture land

was considered to be in poor or very poor condition. This shows some deterioration since May, when 16 percent of the range/pasture land was judged to be poor or very poor. Also, in early November, 28 percent of the range/pasture land was determined to be in good or excellent condition, which is down from 60 percent in early May.

**Fire Danger Impacts:** Fire danger is high in New Mexico, especially for this time of year. The combination of short-term drought, long-term drought, and fuel growth during the wet period of 2004 and early 2005 will create the likelihood of a severe, extended fire season in 2006. The greatest threat is over the grasslands in February and March, spreading into increasingly-higher terrain from April into early summer.

**Hydrologic Impacts:** Because of the wet period in 2004 and early 2005, New Mexico reservoir storage is substantially better than last year at this time over most of the state. As of early February, storage in most of the systems near the Colorado border was above normal. This includes Abiquiu, El Vado, Costilla and Navajo. In the east, storage in Santa Rosa Reservoir was still above normal. All other major storage systems in the central and southern portions of New Mexico were below normal. Storage in Elephant Butte was roughly twice the volume of early 2005, but still only about 35 percent of normal.

The snow pack in early February was well-below normal over nearly all of New Mexico. Depending on the location, the 2006 snow pack rivals earlier years such as 1967, 1971, 1981, 1996, and 2000 for “worst case scenarios.” The prospect for a satisfactory spring snow melt looks very dismal at this time. The February water supply forecast jointly issued by NRCS and NWS is for below to well below runoff volume this spring. Consequently, in general, reservoir storage is likely to exhibit a downward trend in 2006.

**Long-range outlook:**

A La Niña event is currently in progress. These events typically are associated with dry weather in New Mexico, especially during the winter and spring. It is likely New Mexico will continue to experience below normal precipitation and above normal temperatures through the spring season and into early summer.

**Calendar Year 2006 and Water Year 2006 (Oct thru Jan) Precipitation for New Mexico**

National Weather Service Albuquerque, NM

<u>Location</u>	<u>2006 (Jan - Jan)</u>			<u>Water Year 2006 (Oct 05 through Jan 06)</u>			<u>SID</u>
	<u>Obs</u>	<u>Normal</u>	<u>%Normal</u>	<u>Obs</u>	<u>Normal</u>	<u>% Normal</u>	
<b><i>Northwest Plateau</i></b>							
AZTEC RUINS N/M	0.45	0.79	57%	3.06	3.40	90%	AZT
FENCE LAKE	0.20	0.96	21%	1.11	4.21	26%	FCK
FARMINGTON AG CTR	0.39	0.50	78%	1.47	2.72	54%	FAR
GALLUP FAA APRT	0.26	0.90	29%	0.70	3.68	19%	GUP
LINDRITH 2SE	0.34	1.08	31%	2.81	4.29	66%	LDR
NAVAJO DAM	0.42	1.06	40%	3.77	4.66	81%	BLN
<b><i>Northern Mountains</i></b>							
ALCALDE	0.08	0.38	21%	1.06	2.48	43%	ALC
CANJILON R/S	0.40	1.16	34%	2.95	4.33	68%	CJL
CERRO	0.25	0.57	44%	3.10	3.05	102%	CRR
CHAMA	1.11	1.89	59%	4.48	6.73	67%	CHM
CIMARRON 4SW	0.08	0.38	21%	1.18	2.54	46%	CPS
GHOST RANCH	0.07	0.67	10%	1.81	2.84	64%	AIQ
JEMEZ SPRINGS	0.14	0.96	15%	1.00	4.42	23%	JEM
JOHNSON RANCH	0.06	0.72	8%	0.72	3.12	23%	CUB
LAS VEGAS FAA APRT	0.03	0.34	9%	0.85	2.66	32%	LVS
LOS ALAMOS	0.15	0.84	18%	1.34	4.08	33%	LOA

RATON FILTER PLT	0.46	0.44	105%	2.00	2.83	71%	RRT
RED RIVER	0.92	1.06	87%	4.73	4.89	97%	RED
SANTA FE 2	0.00	0.64	0%	1.63	3.38	48%	STF
WOLF CANYON	0.87	1.83	48%	2.63	6.80	39%	CUA
<b>Northeastern Plains</b>							
CLAYTON APRT	0.04	0.27	15%	0.61	2.23	27%	CAO
CLOVIS	0.03	0.44	7%	1.62	3.34	49%	CLV
CONCHAS DAM	0.17	0.36	47%	0.54	2.40	23%	CNC
MOSQUERO 1NE	0.03	0.39	8%	0.71	2.54	28%	MSQ
PORTALES	0.00	0.40	0%	1.39	2.94	47%	POR
TUCUMCARI 4NE	0.09	0.36	25%	0.65	2.84	23%	TUC
<b>Southwestern Mountains</b>							
FORT BAYARD	0.25	0.88	28%	2.36	3.97	59%	FTB
GILA HOT SPRINGS	0.41	0.99	41%	2.57	4.96	52%	GHS
GRANTS APRT	0.18	0.51	35%	0.77	2.87	27%	GNT
QUEMADO ESTATES	0.25	0.83	30%	1.38	3.48	40%	QME
RESERVE R/S	0.45	1.07	42%	1.51	5.19	29%	RES
<b>Central Valley</b>							
ABQ WSFO APRT	0.04	0.37	11%	1.17	2.20	53%	ABQ
BOSQUE DEL APACHE	0.00	0.37	0%	1.50	2.27	66%	SAA
LOS LUNAS 3SSW	0.03	0.36	8%	1.25	2.43	51%	LLU
SOCORRO	0.02	0.40	5%	1.06	2.41	44%	SCR
<b>Central Highlands</b>							
CAPITAN	0.06	0.65	9%	2.19	2.88	76%	CAP
CLOUDCROFT	0.03	1.55	2%	2.23	5.80	38%	CLD
ESTANCIA 4N	0.00	0.54	0%	1.50	2.96	51%	EST
MOUNTAINAIR R/S	0.00	0.71	0%	1.35	3.46	39%	MTN
RUIDOSO 2NNE	0.21	1.19	18%	3.37	5.21	65%	RUP
<b>Southeastern Plains</b>							
ARTESIA 6S	0.00	0.39	0%	0.83	2.49	33%	ART
CARLSBAD	0.00	0.38	0%	1.03	2.73	38%	CWP
FORT SUMNER	0.03	0.41	7%	0.87	2.96	29%	FSM
ROSWELL CLIMAT	0.00	0.43	0%	1.29	2.72	47%	ROW
SANTA ROSA	0.16	0.36	44%	0.68	2.64	26%	SNR
TATUM	0.00	0.38	0%	1.62	2.92	55%	TAT
<b>Southern Desert</b>							
ANIMAS	0.20	0.63	32%	2.13	3.09	69%	ANM
DEMING	0.35	0.44	80%	1.44	2.36	61%	DEM
FAYWOOD	0.11	0.72	15%	1.56	3.47	45%	FAY
STATE U LAS CRUCES	0.02	0.51	4%	1.59	2.60	61%	STC
TRUTH OR CONSEQ	0.06	0.54	11%	1.38	3.86	36%	TRC
TULAROSA	0.02	0.49	4%	1.25	2.56	49%	TLR

<b>Climate Division</b>	<b>Water Year 2006 (Oct 05 through Jan 06)</b>	
	<b>2006 (Jan - Jan)</b>	<b>% NrmI</b>
Northwest Plateau	39%	56%
Northern Mountains	39%	54%
Northeastern Plains	16%	34%
Southwestern Mountains	36%	42%
Central Valley	6%	53%

Central Highlands	6%	52%
Southeastern Plains	8%	38%
Southern Desert	23%	52%
<b>All Divisions</b>	<b>28%</b>	<b>49%</b>

Table 6

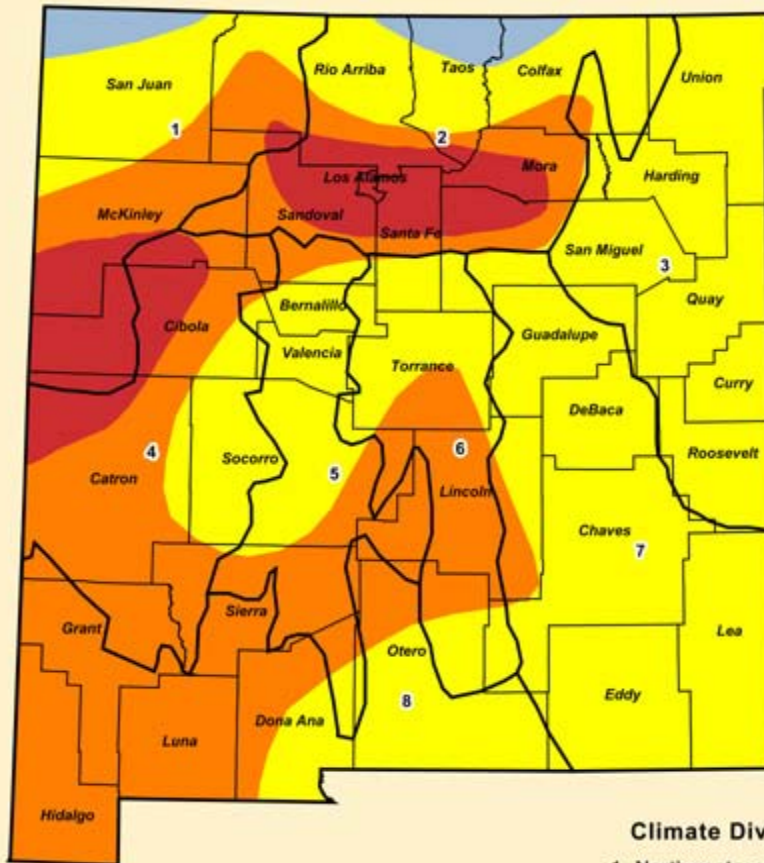
***Drought Maps***

- The New Mexico Meteorological Drought Status Map indicates dry conditions across the state. Lack of moisture in the state has brought some areas back into drought conditions. See the next two pages for current New Mexico drought maps.

# Meteorological Drought Status Map

FEBRUARY 17, 2006

NEW MEXICO



## 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

## Legend

- Normal
- Advisory
- Alert - Mild
- Warning - Moderate
- Emergency - Severe



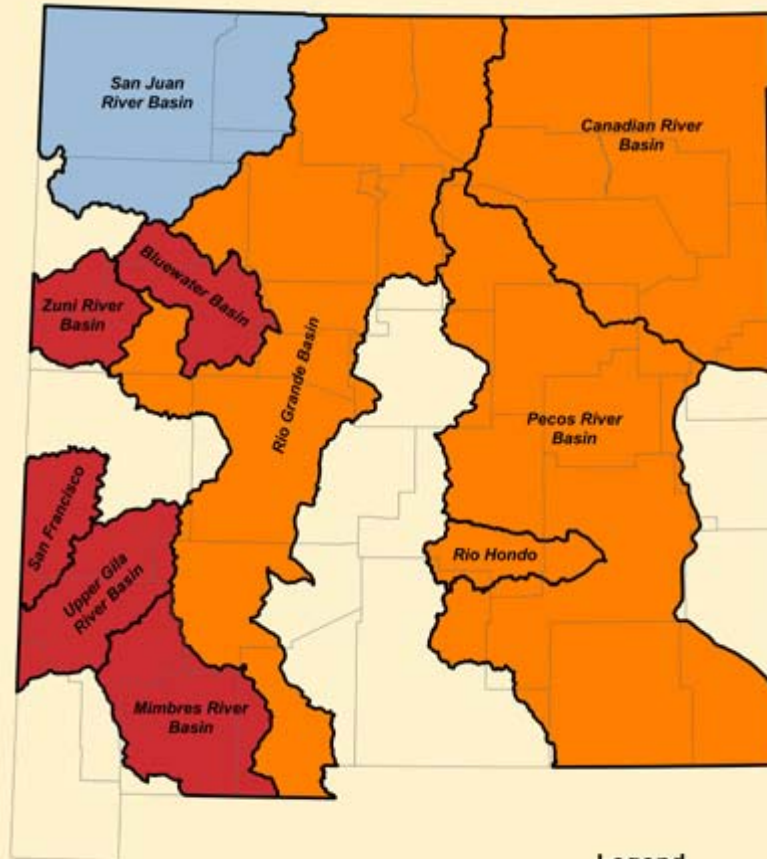
Source: NM State Drought Monitoring Committee



# Hydrologic Drought Status Map

FEBRUARY 17, 2006

NEW MEXICO



## Legend

- Normal
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Source: NM State Drought Monitoring Committee

