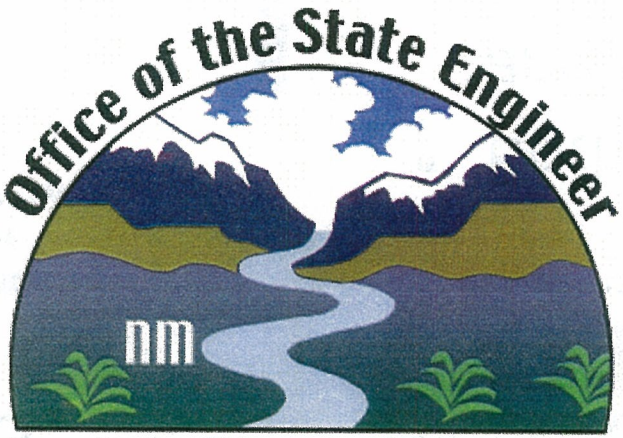
Status Report
Office of the State Engineer & Interstate Stream Commission



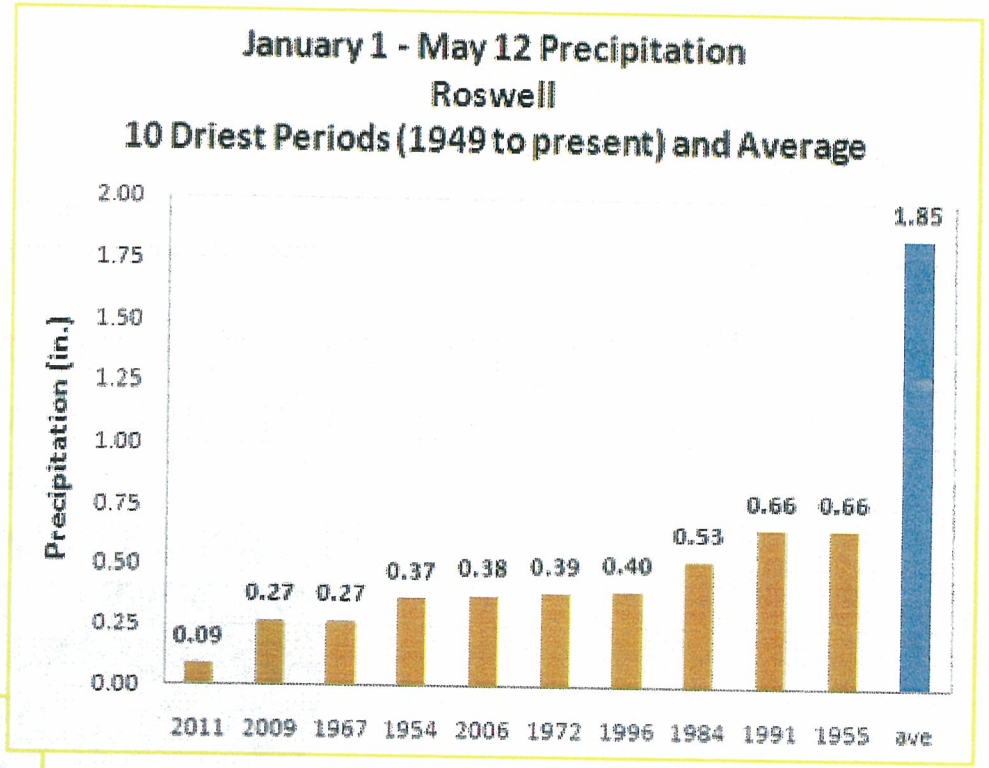
Interstate Stream Commission

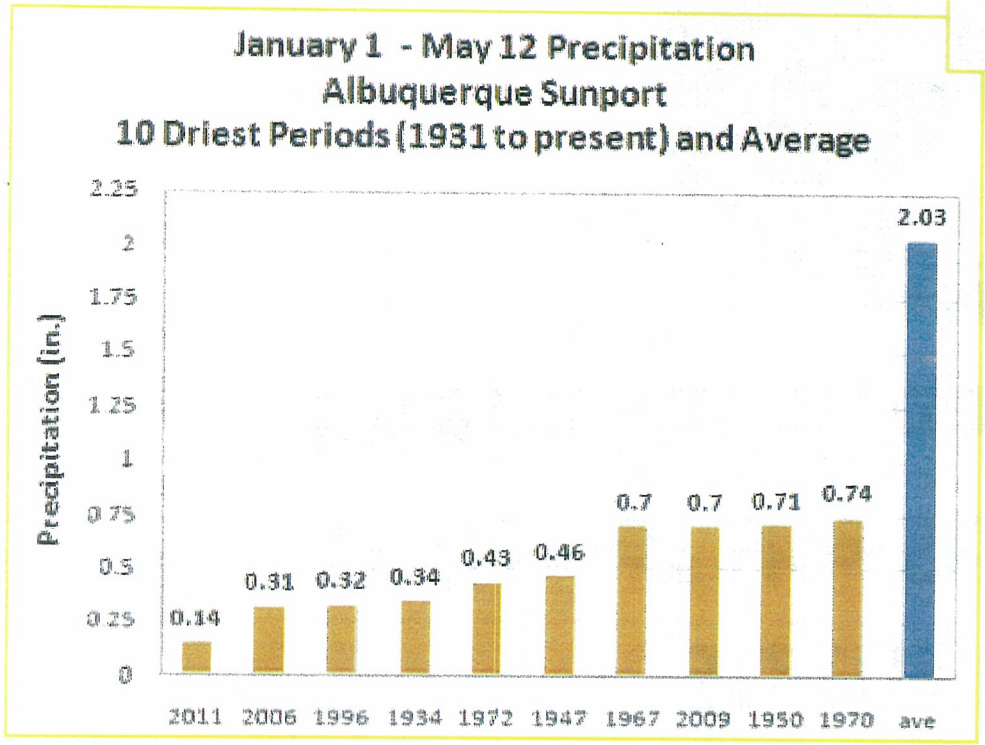
presented by

State Engineer John D'Antonio Jr., P.E.
Interstate Stream Commission Director Estevan Lopez, P.E.

Water and Natural Resource Committee
June 1, 2011

2011... Driest Start to any Year on Record.





- Both the Albuquerque and Roswell Airports have recorded their driest start to any calendar year on record through May 12.

NM Drought Status

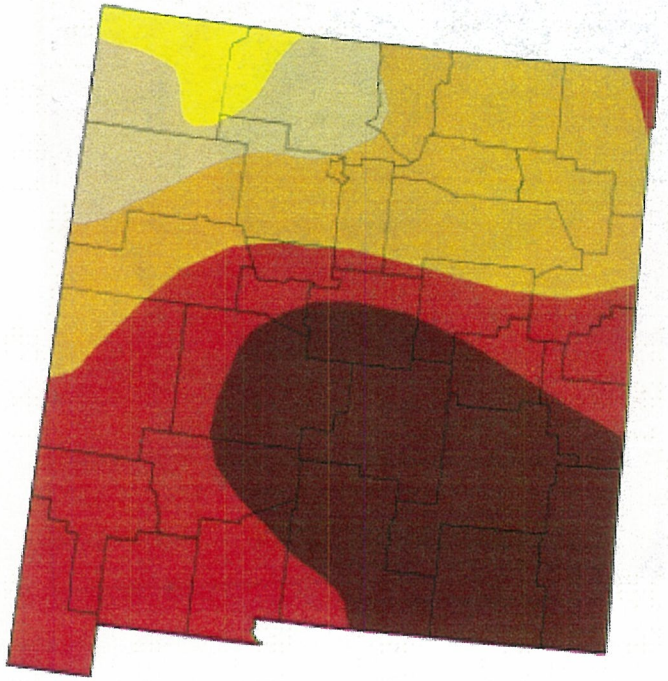
U.S. Drought Monitor

New Mexico

May 10, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	96.59	87.36	61.02	30.14
Last Week (05/03/2011 map)	0.00	100.00	96.54	87.36	61.02	13.63
3 Months Ago (02/08/2011 map)	8.22	91.78	52.89	22.86	0.00	0.00
Start of Calendar Year (12/28/2010 map)	6.16	93.84	40.40	0.00	0.00	0.00
Start of Water Year (09/28/2010 map)	76.66	23.34	0.00	0.00	0.00	0.00
One Year Ago (05/04/2010 map)	79.21	20.79	0.02	0.00	0.00	0.00



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

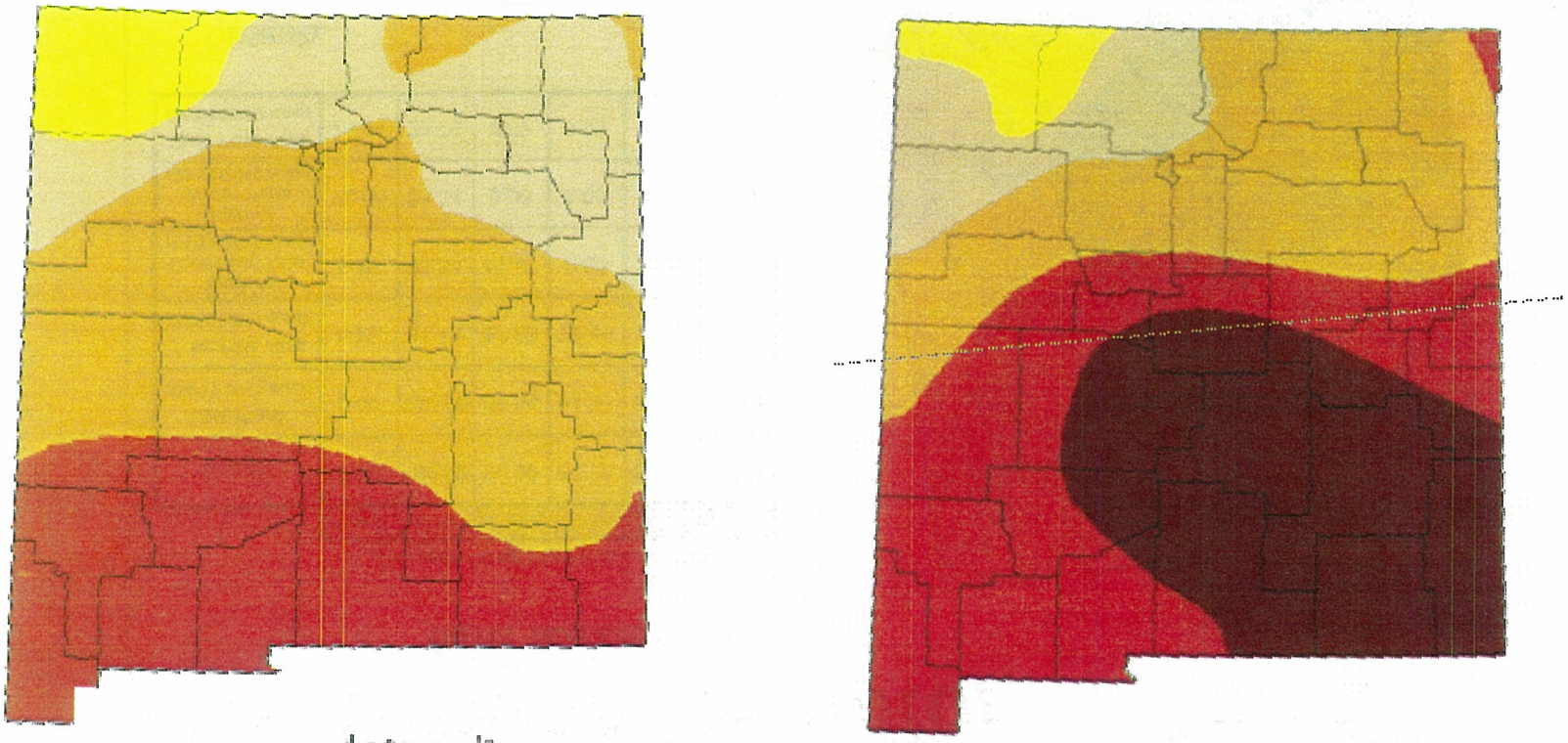
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://drought.unl.edu/dm

Released Thursday, May 12, 2011
Rich Tinker, NOAA/NWS/NCEP/CPC

U.S. Drought Monitor

April 5, 2011 vs May 10, 2011



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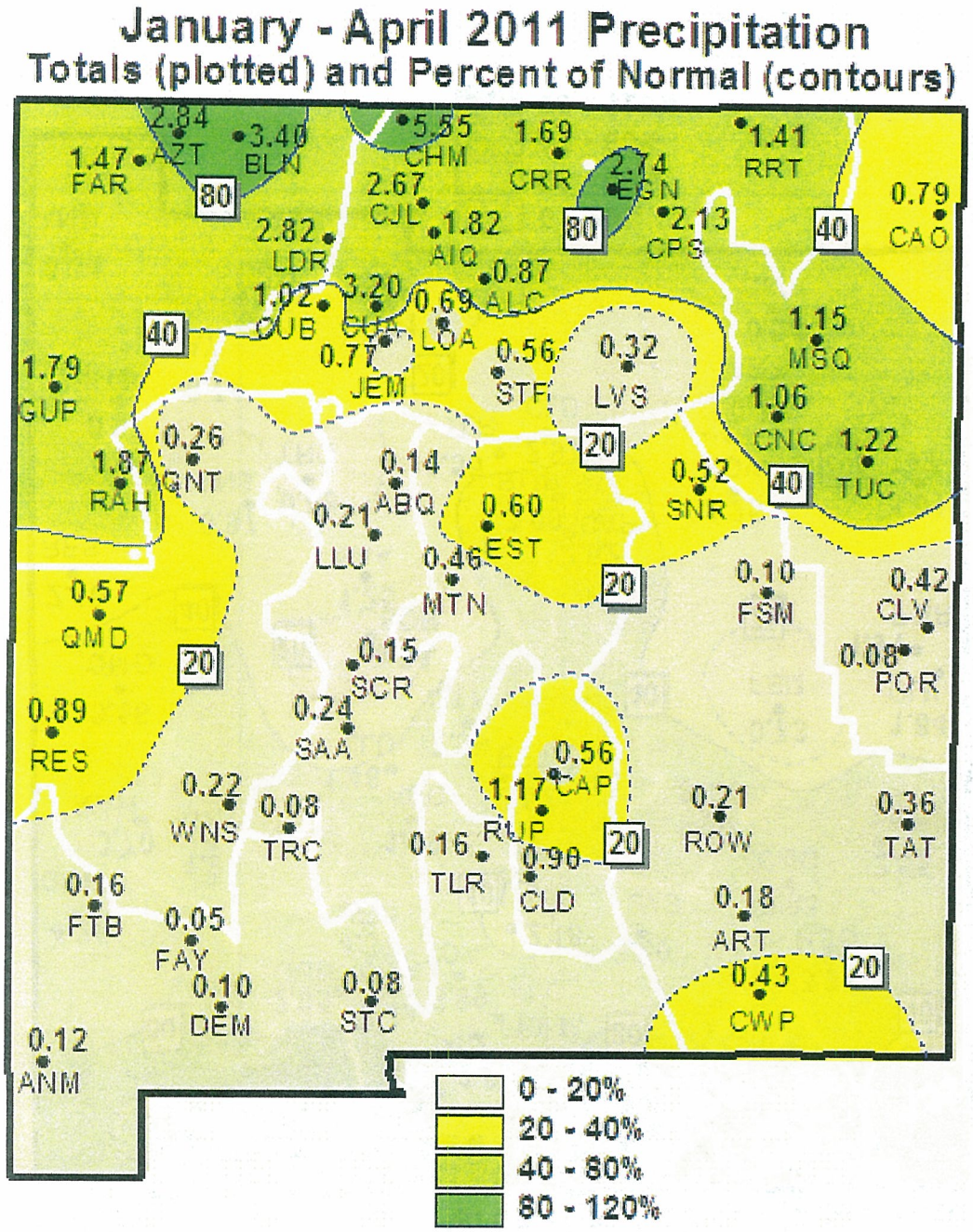


2011 Calendar Year
(Jan – April) Precipitation

Statewide Avg:
37% of normal

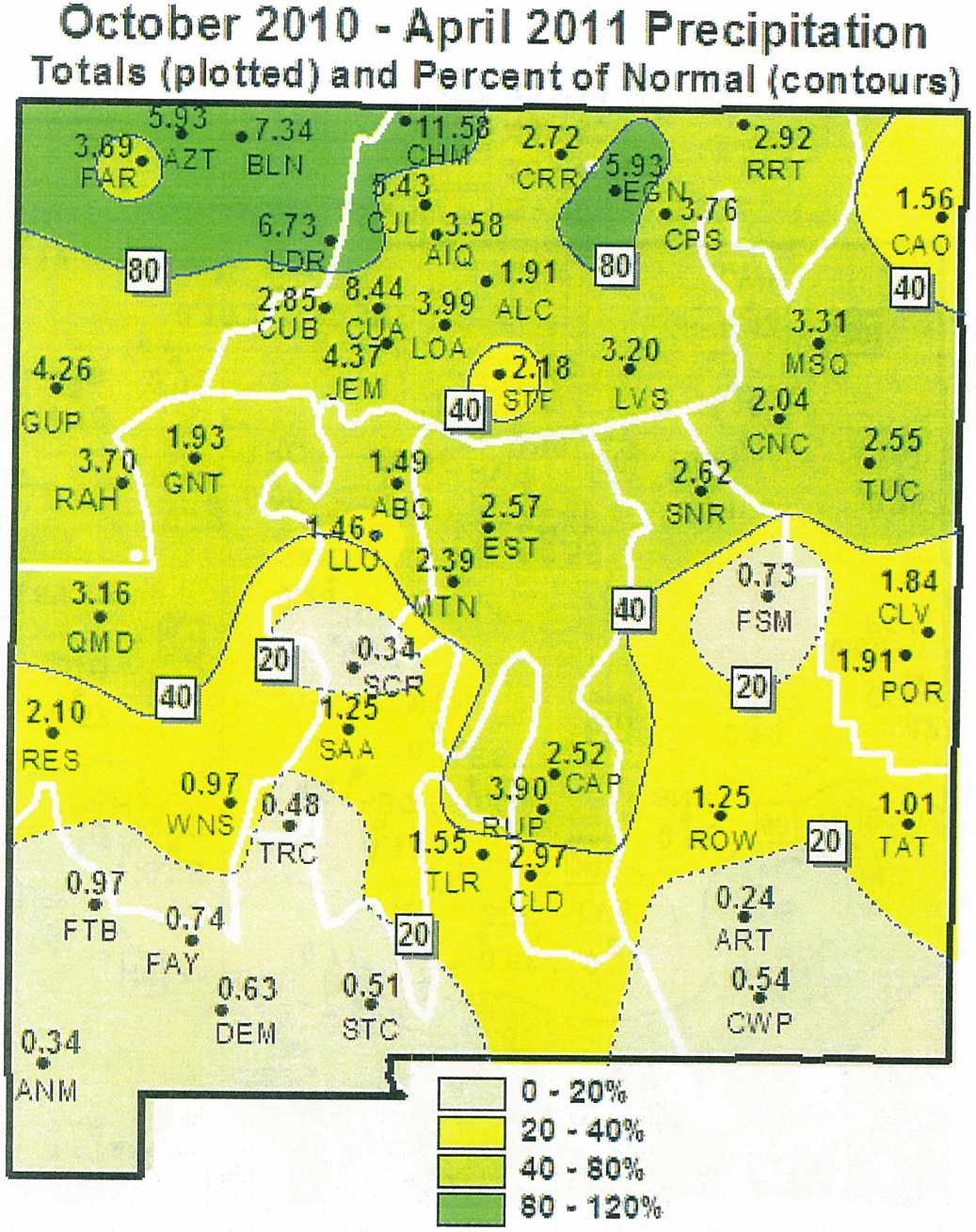
Northwest Plateau:
69% of normal

Northern Mountains:
52% of normal

Central Valley:
11% of normal

Southern Desert:
6% of normal

Source: National Weather Service ABQ



Source: National Weather Service ABQ

2011 Water Year Precipitation
(October through April 2011)
Statewide Avg:
52% of normal

Northwest Plateau:
84% of normal

Northern Mountains:
70% of normal

Central Valley:
32% of normal

Southern Desert:
18% of normal

New Mexico Precipitation Rankings:

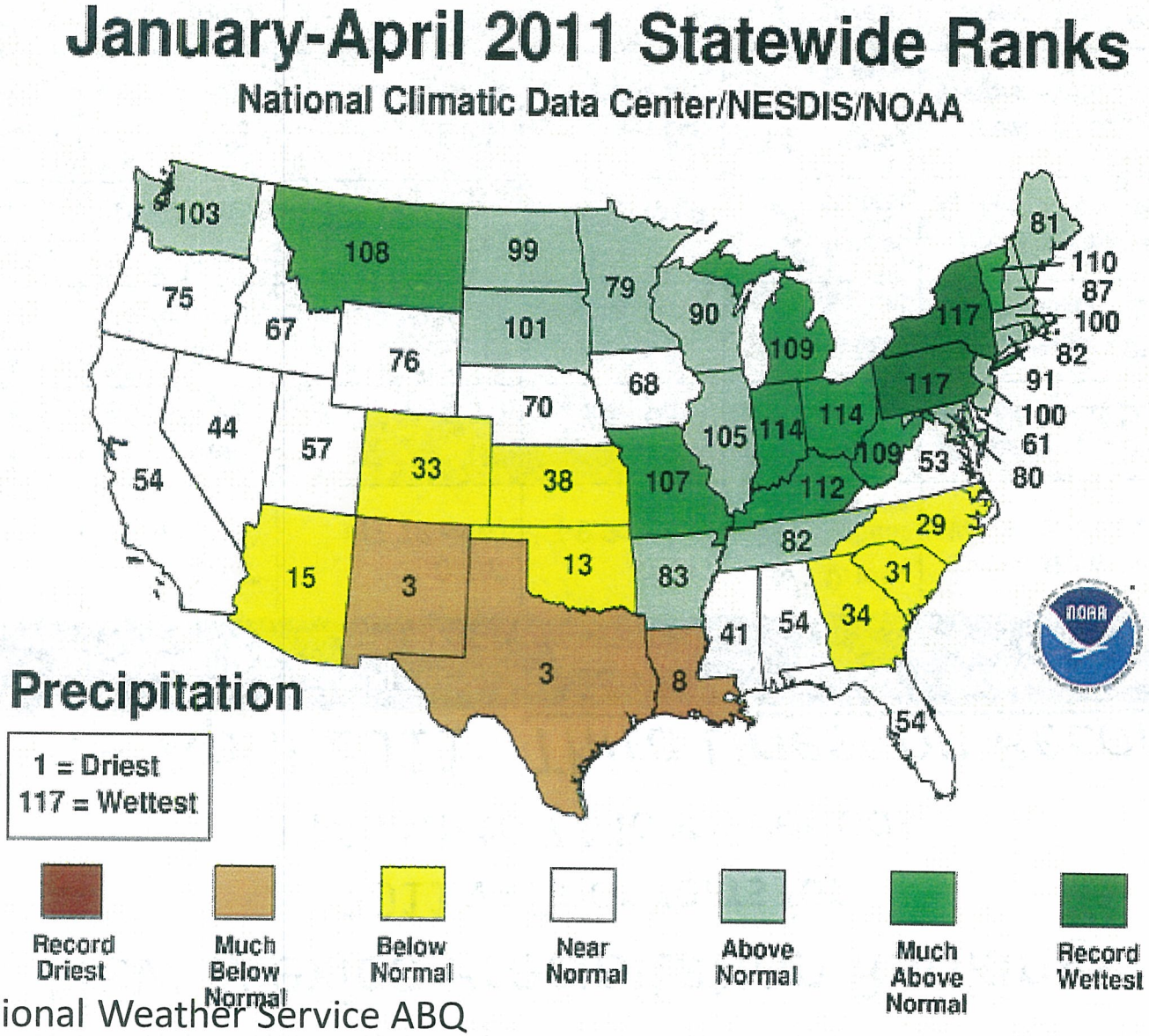
2011 vs Prior Years for
1 Month to 7 Month Periods

Jan – April 2011: *Third Driest on Record*

Period	Amount	Long Term Average	Departure	Rank	Wettest/Driest Since	Record Year
Apr 2011 1-month period	0.31" (7.87 mm)	0.70" (17.78 mm)	-0.39" (-9.91 mm)	26th Driest 91st Wettest Ties: 2006	Driest since: 2008 Wettest since: 2010	Driest: 1972 Wettest: 2004
Mar - Apr 2011 2-month period	0.43" (10.92 mm)	1.37" (34.80 mm)	-0.94" (-23.88 mm)	11st Driest 107th Wettest	Driest since: 2008 Wettest since: 2010	Driest: 1972 Wettest: 1905
Feb - Apr 2011 3-month period	0.74" (18.80 mm)	1.94" (49.28 mm)	-1.20" (-30.48 mm)	7th Driest 111st Wettest	Driest since: 1972 Wettest since: 2010	Driest: 1972 Wettest: 1905
Jan - Apr 2011 4-month period	0.79" (20.07 mm)	2.54" (64.52 mm)	-1.75" (-44.45 mm)	3rd Driest 115th Wettest	Driest since: 1972 Wettest since: 2010	Driest: 1972 Wettest: 1905
Dec 2010 - Apr 2011 5-month period	1.58" (40.13 mm)	3.23" (82.04 mm)	-1.65" (-41.91 mm)	9th Driest 107th Wettest Ties: 1950	Driest since: 2006 Wettest since: 2010	Driest: 1904 Wettest: 1905
Nov 2010 - Apr 2011 6-month period	1.67" (42.42 mm)	3.83" (97.28 mm)	-2.16" (-54.86 mm)	6th Driest 111st Wettest	Driest since: 2006 Wettest since: 2010	Driest: 1904 Wettest: 1941
Oct 2010 - Apr 2011 7-month period	2.47" (62.74 mm)	5.00" (127.00 mm)	-2.53" (-64.26 mm)	6th Driest 111st Wettest	Driest since: 1996 Wettest since: 2010	Driest: 1904 Wettest: 1915

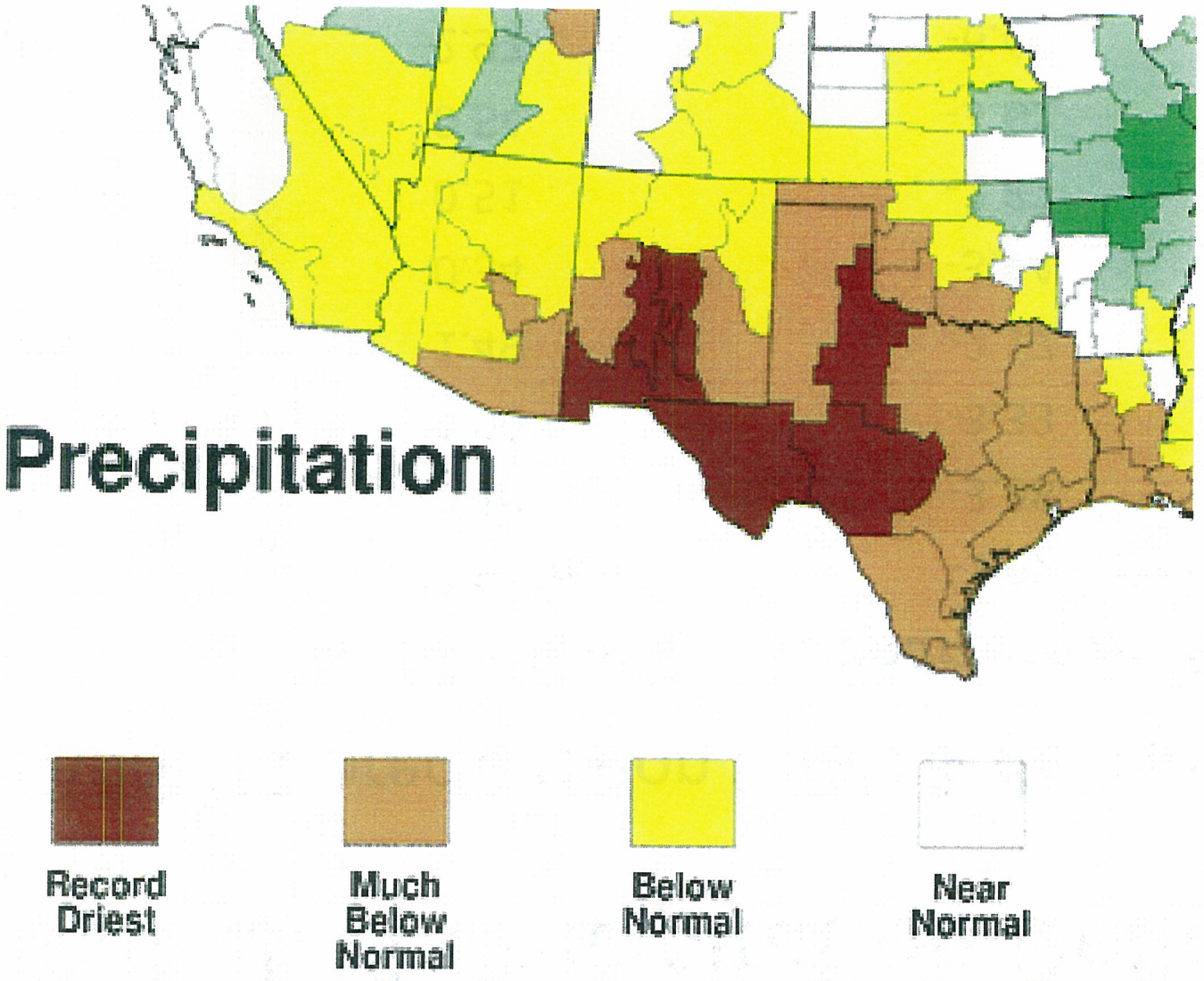
Source: National Weather Service ABQ

State Precipitation Rankings



Source: National Weather Service ABQ

Jan – April '11 Climate Division Precip



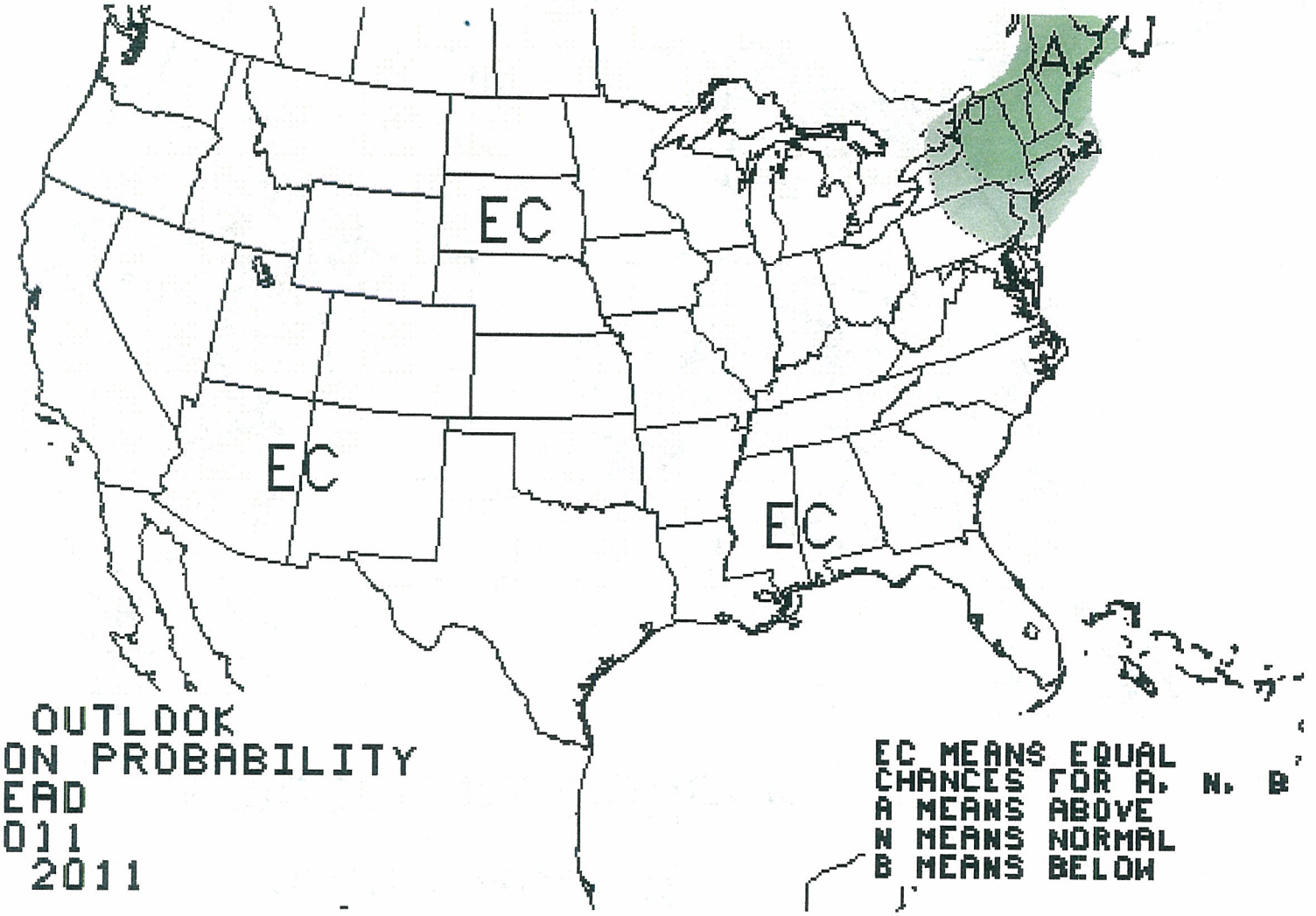
Source: National Weather Service ABQ

Water Year 2011 Precipitation Deficits

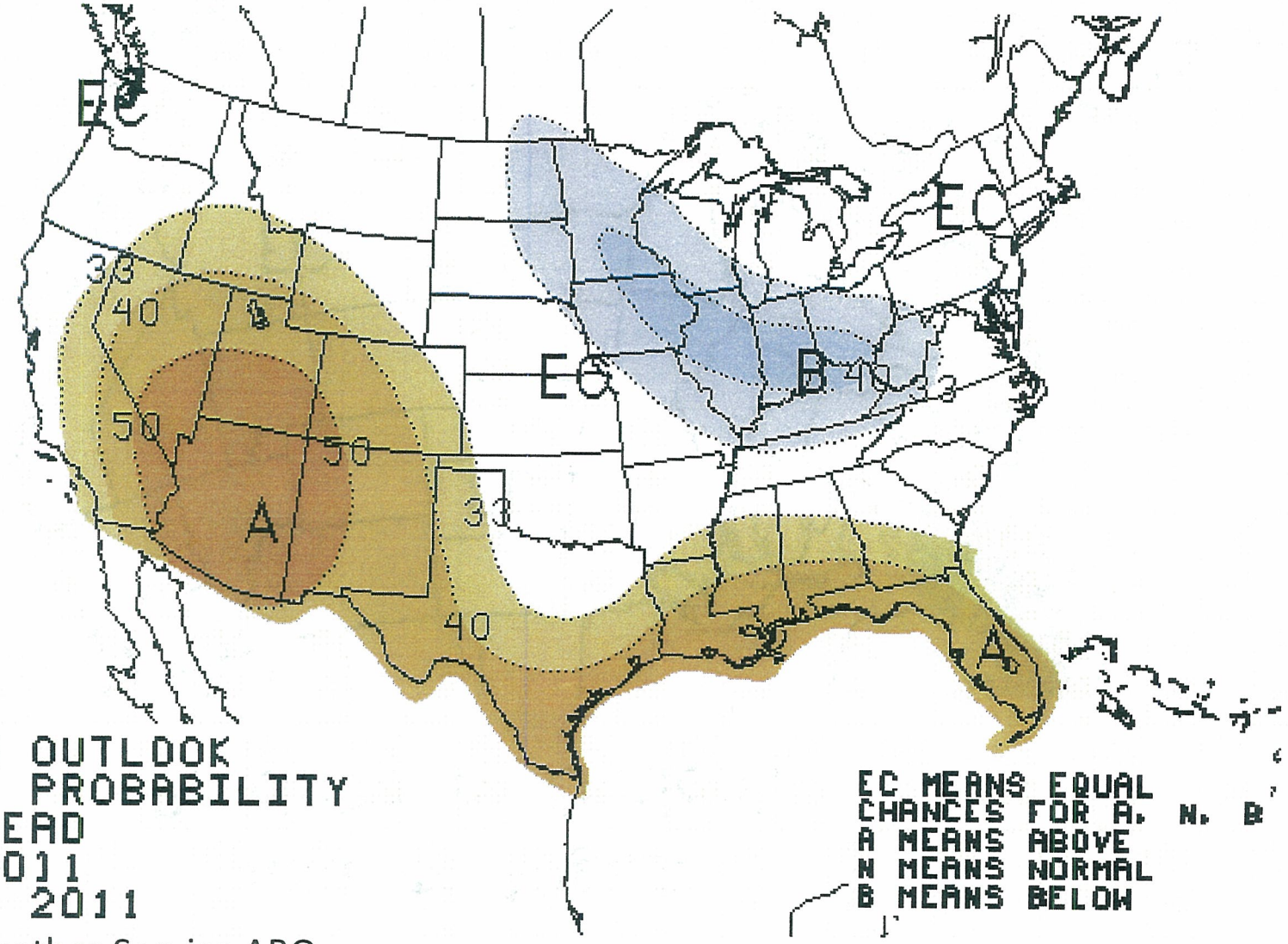
Oct '10 – April '11 precipitation totals & deficits:

	Oct '10 – Apr '11	***Departure fm Nrml***
• Alcalde	1.91 inches	-1.92 inches
• Santa Fe 2	2.18	-3.38
• Los Alamos (Nov – Apr)	1.90	-3.33
• Albuquerque	1.49	-2.17
• Socorro	0.34	-3.44
• NMSU Las Cruces	0.51	-2.87
• Carlsbad	0.54	-3.61
• Cloudcroft	2.97	-6.45
• Ruidoso (Nov – Apr)	1.98	-4.72
• Glenwood	1.31	-6.63

June to August
Precipitation Outlook

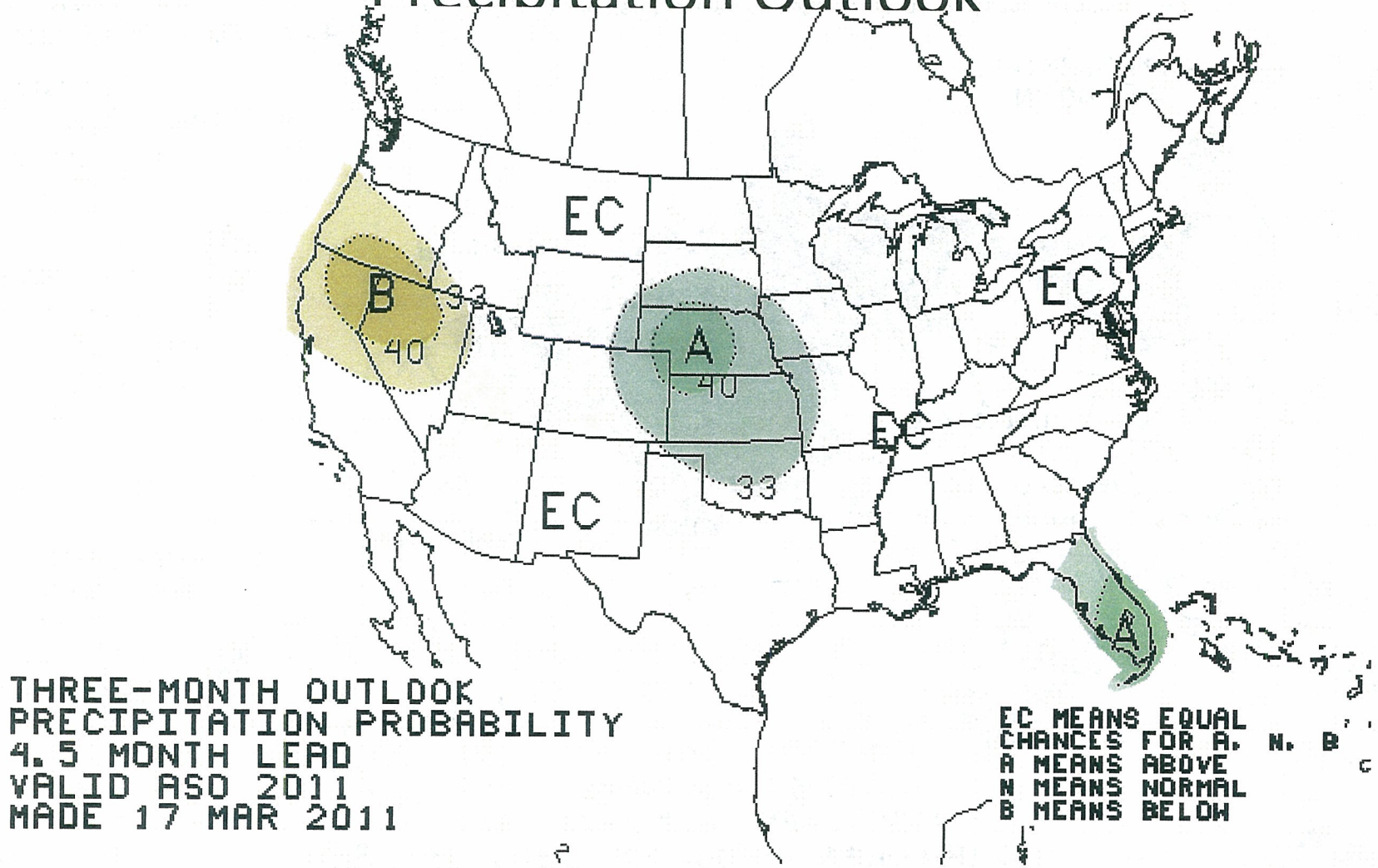


June – August
Temperature Outlook



Source: National Weather Service ABQ

August – October
Precipitation Outlook



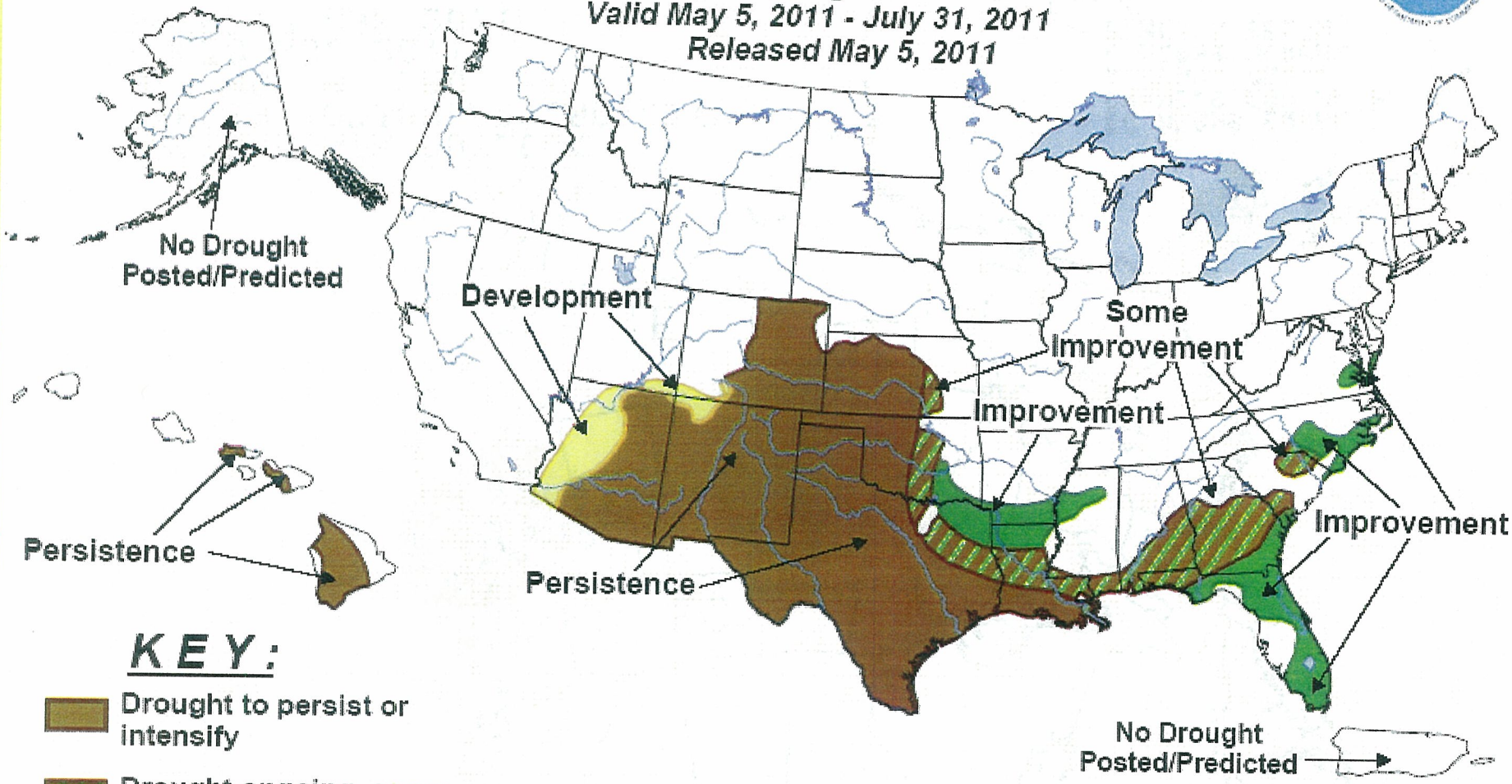
Source: National Weather Service ABQ

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid May 5, 2011 - July 31, 2011

Released May 5, 2011

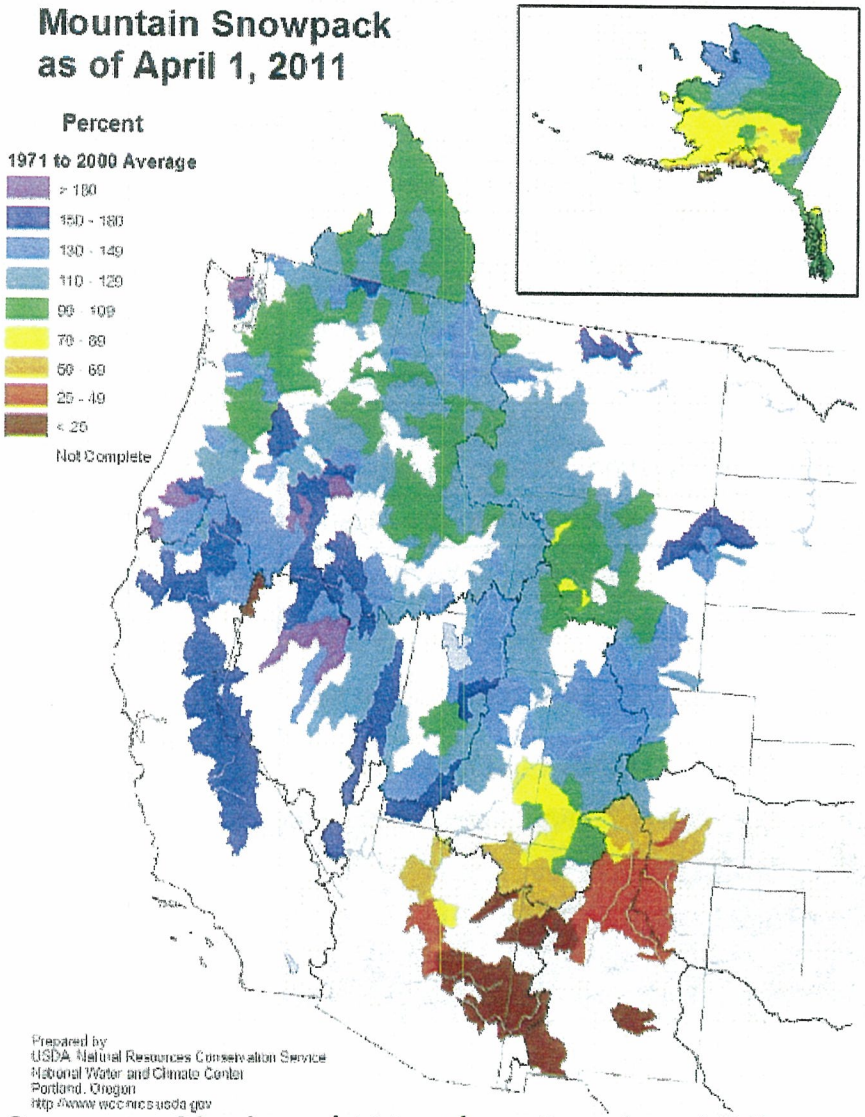


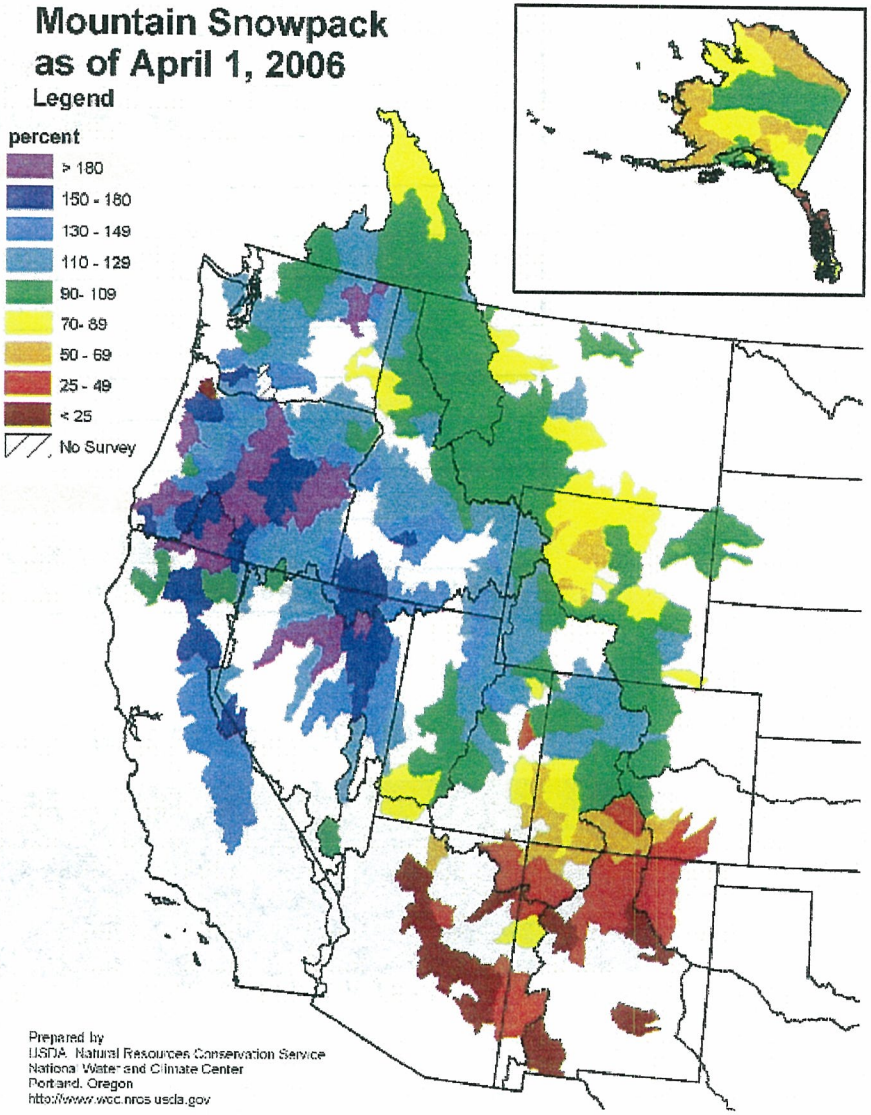
KEY:

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

April 1 Basin Snowpack
2011 vs 2006





Source: National Weather Service ABQ

NRCS SNOTEL – NM Basins "SWE"

United States Department of Agriculture
NRCS Natural Resources Conservation Service

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NEW MEXICO SNOTEL Snow Water Equivalent Update Graph

As of MONDAY: MAY 16 , 2011

Basin	Snow Water Equivalent Percent of Average
RIO CHAMA RIVER BASIN	112%
UPPER RIO GRANDE BASIN	96%
SANGRE DE CRISTO MOUNTAIN RANGE BASINS	13%
JEMEZ RIVER BASIN	*
SAN FRANCISCO RIVER BASIN	0*%
GILA RIVER BASIN	14*%
MIMBRES RIVER BASIN	*
PECOS RIVER BASIN	1%
SAN JUAN RIVER HEADWATERS	95%
ANIMAS RIVER BASIN	118%
CIMARRON RIVER BASIN	50*%
ZUNI/BLUEWATER RIVER BASIN	*
RIO HONDO BASIN	*

Legend:	<70%	70-90%	91-110%	111-130%	>130%

* = Data are not available or data may not provide a valid measure of conditions for over half of the sites within the basin.

Source: http://www.wcc.nrcs.usda.gov/cgibin/snowup-graph.pl?state=NM

NM Summer Precip after Poor Snowpack

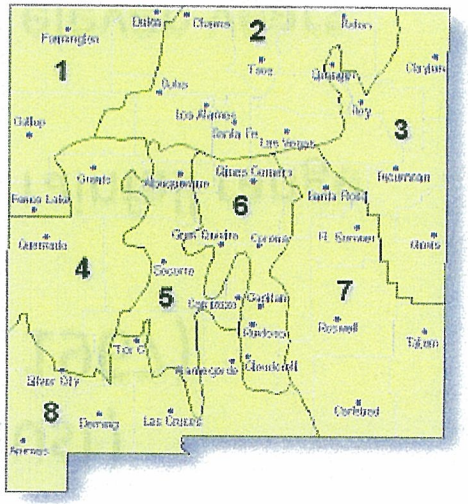
June through August precipitation in New Mexico

Years in the which the snowpack was very low at March 1 and summer precipitation by climate division

Year	CD1	CD2	CD3	CD4	CD5	CD6	CD7	CD8	*STATE*	% normal
1967	5.76	10.76	10.44	7.57	6.42	10.54	6.50	6.01	8.00	135%
1970	3.45	7.10	5.92	5.42	3.38	7.23	4.63	4.02	5.14	87%
1971	3.67	7.08	8.03	5.53	3.38	7.25	7.42	3.69	5.76	97%
1977	4.26	7.76	7.11	7.19	4.23	7.53	5.65	5.66	6.17	104%
1981	4.04	9.55	11.87	6.94	4.10	9.02	8.87	6.09	7.44	126%
1990	4.22	7.18	6.93	6.52	4.65	8.44	5.85	6.12	6.24	105%
1996	3.95	8.77	11.40	7.98	5.95	11.42	9.59	6.27	8.17	138%
1999	6.80	9.38	7.31	9.10	6.75	9.02	6.73	8.57	7.96	134%
2000	2.77	5.39	6.35	5.29	3.92	8.63	6.07	7.00	5.68	96%
2002	2.62	4.50	5.48	5.41	3.27	4.47	5.42	3.82	4.37	74%
2006	6.96	8.94	10.19	10.38	9.09	12.97	8.36	9.42	9.54	161%
Average	4.41	7.76	8.28	7.03	5.01	8.77	6.83	6.06	6.77	
Normal	3.87	6.95	7.64	6.10	4.18	7.68	6.03	4.93	5.92	
%Normal	**114%**	**112%**	**108%**	**115%**	**120%**	**114%**	**113%**	**123%**	**114%**	
Std Dev.	1.48	1.79	2.29	1.66	1.83	2.30	1.56	1.83	1.56	
Max	6.96	10.76	11.87	10.38	9.09	12.97	9.59	9.42	9.54	
Year	2006	1967	1981	2006	2006	2006	1996	2006	2006	
Years wet	3	5	4	6	4	5	4	7	5	
Normal	6	4	4	4	6	5	6	1	4	
Years dry	2	2	3	1	1	1	1	3	2	

Low snowpack years have generally been favored with near normal to above normal summer precipitation.

Summer precipitation in New Mexico during all La Nina episodes has averaged 96 percent of normal. In the above chart, 1971 and 1999 were La Nina Summers, while 2000 had a weak La Nina influence. Statewide, 1971 saw 97 percent of normal precipitation, while 1999 saw 134 percent of normal precipitation. The La Nina influence on New Mexico summer precipitation has not been as negative compared to winter and spring.



Source: National Weather Service ABQ

NM Summer Precip (June – August) after poor spring snowpack (since 1967)

- Nine of eleven summers saw statewide summer rainfall range from near normal to well above normal.
- Average statewide summer precipitation for the eleven years in the study was 114% of normal.
- ***Four of eleven summers averaged <u>134%</u> of normal or higher for June – August statewide precipitation.***
- Only 2002 (74% of normal) and 1970 (87% of normal) saw significantly below normal summer rainfall.
- The wettest June – August summer was 2006 with 161% of normal statewide rainfall.
- ***<u>Odds favor</u>, but don't guarantee, a normal to wetter-than-normal 2011 "Monsoon" season.***