Sevilleta Meteorology – 2004
Oh What a Difference A Year Makes

Doug Moore
University of New Mexico
Sevilleta Climate

- The Climate Network
- The Rebound
- What’s Coming?
Sevilleta Climate

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- The Rebound
- What’s Coming?
Precipitation

Sevilleta Mean Monthly Precipitation 2004
Compared to 1989—2003 Mean

Precipitation mm

1  2  3  4  5  6  7  8  9  10  11  12
Month

1989—2003  2004
Precipitation

Sevilleta Mean Monthly Precipitation 2004
Compared to 1989—2003 Mean

Sevilleta Mean Monthly Precipitation 2003
Compared to 1989—2002 Mean
Cumulative Precipitation for 2003–2004 Water-Year

1989–2003 Average Denoted by Solid Line
Precipitation

Deep Well Precipitation 1989–2004
Non–Monsoon (Oct–May)
Precipitation

Deep Well Precipitation 1989—2004
Monsoon (Jun—Sep)
Precipitation

Deep Well Precipitation 1989–2004
Using Water-Year (Oct. 1 – Sept. 30)

Precip. mm

Year

Season Oct–May Jun–Sep

Precipitation chart showing precipitation data for each year from 1989 to 2004, with two seasons: Oct–May and Jun–Sep.
Soil Moisture

Soil Moisture Content – Five Points
In top 30 cm

% Soil Water

0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00

0 100 200 300 400
Day of the Year

Monsoon

Year 2003 2004
Temperatures
Annual Air Temperature — Deep Well

Average Max. Min. and Mean

Air Temp. C

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<th>Year</th>
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Annual Air Temperature — Deep Well & Five Points

Average Max, Min, and Mean

Air Temp. C

25
20
15
10
5
0

1 1 1 1 1 1 1 1 1 1 2 2 2 2 2
9 9 9 9 9 9 9 9 9 9 0 0 0 0 0
8 9 9 9 9 9 9 9 9 9 0 0 0 0 0
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
Sevilleta Climate

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Palmer Drought Severity Index

New Mexico - Division 05: 1895-2003 (Monthly Averages)
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, December 30, 2004
Author: Rich Tinker, CPC/NCEP/NWS/NOAA
U.S. Seasonal Drought Outlook
Through March 2005
Released December 16, 2004

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

Depicts general, large-scale trends based on subjectively derived probabilities guided by numerous indicators, including 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, so use caution if using this outlook for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are schematically approximated from the Drought Monitor (D1 to D4). For weekly drought updates, see the latest Drought Monitor map and text. 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.
Figure 6. New Mexico reservoir levels for November 2004 as a percent of capacity, the map also depicts the average level and last year's storage for each reservoir, while the table also lists current and maximum storage levels.

Legend:
- 100%: Reservoir Average
- 50%: Last Year's Level
- 0%: Current Level

<table>
<thead>
<tr>
<th>Reservoir Name</th>
<th>Capacity Level</th>
<th>Current Storage*</th>
<th>Max Storage*</th>
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<tbody>
<tr>
<td>1. Navajo</td>
<td>57%</td>
<td>970.2</td>
<td>1,696.0</td>
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<tr>
<td>2. Heron</td>
<td>28%</td>
<td>110.9</td>
<td>400.0</td>
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<tr>
<td>3. El Vado</td>
<td>19%</td>
<td>36.0</td>
<td>186.3</td>
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<tr>
<td>4. Abiquiu</td>
<td>21%</td>
<td>114.1</td>
<td>554.5</td>
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<tr>
<td>5. Cochiti</td>
<td>10%</td>
<td>49.1</td>
<td>502.3</td>
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<tr>
<td>6. Elephant Butte</td>
<td>6%</td>
<td>128.0</td>
<td>2,065.0</td>
</tr>
<tr>
<td>7. Caballo</td>
<td>6%</td>
<td>30.3</td>
<td>331.5</td>
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<tr>
<td>8. Brantley</td>
<td>21%</td>
<td>0.8</td>
<td>147.5</td>
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<tr>
<td>9. Lake Avalon</td>
<td>13%</td>
<td>19.4</td>
<td>6.0</td>
</tr>
<tr>
<td>10. Sumner</td>
<td>19%</td>
<td>30.1</td>
<td>447.0</td>
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<tr>
<td>11. Santa Rosa</td>
<td>7%</td>
<td>3.3</td>
<td>16.0</td>
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<tr>
<td>12. Costilla</td>
<td>21%</td>
<td>63.2</td>
<td>254.0</td>
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<tr>
<td>13. Conchas</td>
<td>25%</td>
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* thousands of acre-feet
Rio Grande Flow at Otowi Bridge
Blue Line is Long-term Mean

Mean CFS

Year

NORTH COSTILLA SNOTEL for Water Year 2005

*** Provisional Data, Subject to Change ***

**Graph Description:**
- **Y-axis:** Inches
- **X-axis:** Date (mm/dd)
- **Legend:**
  - Red: Precip WY2005
  - Blue: SWE WY2005
  - Orange: Precip Avg 71-00
  - Purple: SWE Avg 71-00

**Graph Analysis:**
- The graph shows the accumulation of precipitation and snow water equivalent (SWE) over the water year 2005.
- The orange line indicates the precipitation average for the period 1971-2000.
- The purple line represents the SWE average for the same period.
- The red line depicts the precipitation for the water year 2005, showing a significant increase in the latter part of the year.
- The blue line indicates the SWE for the water year 2005, showing a substantial increase over the year.

**Conclusion:**
- The provisional data is subject to change, indicating that the figures may be updated as more information becomes available.
- The graph highlights the importance of accurate data collection and monitoring for water resource management.
Sea Surface Temperature Anomalies

Data updated through 29 DEC 2004
Pacific Decadal Oscillation

monthly values for the PDO index: January 1900–August 2004
Temperature

Figure 8a. Long-lead national temperature forecast for January–March 2005.

Figure 8b. Long-lead national temperature forecast for February–April 2005.

Figure 8c. Long-lead national temperature forecast for March–May 2005.

Figure 8d. Long-lead national temperature forecast for April–June 2005.

Legend:
- EC = Equal chances. No forecasted anomalies.
- A = Above
- B = Below
- Colors indicate temperature ranges:
  - 60.0–69.9%
  - 50.0–59.9%
  - 40.0–49.9%
  - 33.3–39.9%
  - 33.3–39.9%
  - 40.0–49.9%