Agenda Item 13
Related Statewide Water Issues

1. Drought Update
2. FloodSAFE Update
California’s Drought
Precipitation
Percent of Average
36-Month Total
Updated 5-7-09


Generated 5/08/2009 at WRCC using provisional data.
NOAA Regional Climate Centers
2009 Snow Sensor Data
April - July Forecast
Unimpaired Snowmelt Runoff

DWR Bulletin 120
DWR Division of Flood Management,
Snow Survey Section

DEPARTMENT OF WATER RESOURCES
CALIFORNIA COOPERATIVE SNOW SURVEYS
FORECAST OF APRIL – JULY
UNIMPAIRED SNOWMELT RUNOFF
April 1, 2009

Legend
100% Runoff forecast in percent of normal

SOLOTT 63%
TRINITY 70%
YUBA 83%
AMERICAN 81%
COYUMINES 68%
MOKELEUMNE 87%
STANISLAUS 88%
TUOLUMNE 89%
MERCED 82%
SAN JOAQUIN 77%
KINGS 78%
KAYEBAH 70%
TULE 41%
KERN 59%
MONO 91%

* FORECAST BY DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES
# Current Reservoir Conditions

As of 5-11-09

<table>
<thead>
<tr>
<th></th>
<th>% Avg</th>
<th>% Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shasta</td>
<td>80</td>
<td>70</td>
</tr>
<tr>
<td>Oroville</td>
<td>75</td>
<td>64</td>
</tr>
<tr>
<td>San Luis</td>
<td>50</td>
<td>54</td>
</tr>
</tbody>
</table>

- Oroville 2008 - lowest carryover storage since 1977, lowest Jan 1 storage level ever
- San Luis 2009 – lowest high point
Reservoir Conditions - Lake Oroville

Lake Oroville Levels: Various Past Water Years and Current Water Year, Ending At Midnight May 12, 2009

Total Reservoir Capacity: 3,330,500 AF

- 1982-83
- 2,266,025.3 AF

- 1976-77

- 2007-08

- 2008-09

- Historical Average
- Total Reservoir Capacity
- 1976-1977 (Driest)
- 1982-1983 (Wettest)
- 2007-2009
- Current: 2008-2009

Lake Oroville Conditions
(as of Midnight - May 12, 2009)

Current Level: 2,256,025.3 AF

64% (Total Capacity) 75% (Historical Avg.)
**Surface Water Allocations**

<table>
<thead>
<tr>
<th>Year</th>
<th>Type</th>
<th>CVP Allocation</th>
<th>SWP Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>Wet</td>
<td>100% Ag / 100% M&amp;I</td>
<td>100%</td>
</tr>
<tr>
<td>2007</td>
<td>Dry</td>
<td>50% Ag / 75% M&amp;I</td>
<td>60%</td>
</tr>
<tr>
<td>2008</td>
<td>Critical</td>
<td>40% Ag / 75% M&amp;I</td>
<td>35%</td>
</tr>
<tr>
<td>2009</td>
<td>Dry</td>
<td>10% Ag / 60% M&amp;I (south of Delta)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>15% Ag / 65% M&amp;I (north of Delta)</td>
<td>30%</td>
</tr>
</tbody>
</table>

Note: 2009 Allocations as of 4-21-09

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Lake Oroville, Bidwell Bar  
March 12, 2009

Lake Shasta, Bay Bridge  
March 12, 2009
2009 Sac Valley CVP Cutback Areas

TCCA: 15% Allocation
Statewide Groundwater Conditions


Legend
(Also see Map Explanation, below)
- Water levels in selected wells are ABOVE drought period water levels
- Water levels in selected wells are ABOUT THE SAME as drought period water levels
- Water levels in selected wells are BELOW drought period water levels
Sac Valley GW Conditions

Spring 2006 – Spring 2009
Change
Wells: 0 – 200 ft

Annual Change in Spring Groundwater Levels
- 0 to 7 feet higher
- 0 to 7 feet lower
- 8 to 14 feet lower
- 15 to 21 feet lower
- 22 to 28 feet lower
- 29 to 35 feet lower

Monitoring Well Type
- Domestic Monitoring Well
- Irrigation Monitoring Well
- Dedicated Observation Well
- Other Monitoring Well
Sac Valley GW Conditions

Spring 2006 – Spring 2009 Change
Wells: 200 – 600 ft

Tehama Co.

Butte & Glenn Co.

Colusa Co.

Annual Change in Spring Groundwater Levels
- 0 to 7 feet higher
- 0 to 7 feet lower
- 8 to 14 feet lower
- 15 to 21 feet lower
- 22 to 28 feet lower
- 29 to 35 feet lower
Spring 2006 – Spring 2009 Change
Wells: > 600 ft

Annual Change in Spring Groundwater Levels
- 0 to 7 feet higher
- 0 to 7 feet lower
- 8 to 14 feet lower
- 15 to 21 feet lower
- 22 to 28 feet lower
- 29 to 35 feet lower

Monitoring Well Type
- Domestic Monitoring Well
- Irrigation Monitoring Well
- Dedicated Observation Well
- Other Monitoring Well

Groundwater Levels, 22N01E28J003M
Sacramento Valley (Butte Co.)
Source: Department of Water Resources

Elevation of water surface (mVSD)
- G.S. Elevation = 170.29

Calendar Year
- Questionable Measurement

Depth to water below land surface, feet
Drought 1991 vs. 2009

- 10 million new residents
- Shift from row crops to permanent crops
- Fish species at risk
- Restrictions reduce flexibility of water operations
- Climate change
Drought Impacts – Fire
2007 – 2008 Seasons

- More than 16,000 fires
- More than 1.6M acres burned
- 13 lost lives
- State firefighting cost nearly $1B
- More than 4000 structures destroyed
- Rainfall puts fire damaged areas at high risk
2009 Projected Economic Impacts

- 2009 job loss: 16,200 - 23,700
- 2009 income loss: $440 - 644 million
- Farm revenue loss: $325 - 477 million

Excludes: livestock, dairies, dryland range & pasture.
Drought Impacts - Agriculture

2008 Agricultural losses – more than $370M

- Rangeland $108M, Cotton $126M
- The San Joaquin Valley sustained the highest losses at $280.9 million
- More than 107,000 acres unplanted or abandoned for lack of water
- All California counties (except San Francisco) were granted USDA Secretarial disaster declarations for drought
2009 Drought Emergency Proclamation

- Expedites drought water bank/other transfers
- Calls for immediate conservation and statewide campaign
- Requires state agency water use reduction
- Mobilizing CAL-EMA drought response actions
- Trigger emergency exemptions in CEQA for priority drought relief projects
- Calls for permit streamlining for drought projects
Other Drought Response

- $240M in regional water grants (IRWM)
- Establish Drought Operations Center and hotline
- New easy-to-use drought website: [www.water.ca.gov/drought](http://www.water.ca.gov/drought)
- Regional drought workshops [www.saveourH2O.org](http://www.saveourH2O.org)
- Request federal assistance and identify federal funds for drought relief projects
Drought Portal
http://www.water.ca.gov/drought
Drought Portal
http://www.water.ca.gov/drought/conditions/

California’s DROUGHT Year 3

Current Conditions

Droughts differ from typical emergency events such as floods or forest fires, in that they occur slowly over a multiyear period. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline. Find out more about the worsening hydrologic conditions across the State.

- Monthly Drought Updates
- Daily Current Conditions
- State Water Conditions
- Drought Links

Current Conditions

Statewide precipitation remains below normal for a third year.
- Executive Summary
- Northern Sierra Precipitation
- Southern Sierra Precipitation
- Runoff Forecasts
- Other California Precipitation Data
- California Weather
- Drought Monitor

RESOURCES
- Drought Home
- Local Impacts
- Recent Drought News
- Drought Background
- Monthly Drought Updates
- Historical Drought Archive
- Videos
- Still Photographs
- Governor’s Declarations
- State Water Project
- Drought Links
- Drought Information Contacts
Drought Portal

California’s Drought Update
April 30, 2009

Introduction
This Drought Bulletin provides a monthly update to California’s water conditions. Statewide reservoir storage, precipitation, and water supply conditions have improved during April; however, allocation estimates to state and federal water contractors are expected to be near record lows for 2009, and reliance on local groundwater use will continue to be above average. Runoff for this water year is expected to be much lower than average for the third year in a row, and drought conditions remain serious across the state.

For this report, DWR provides up-to-date hydrologic conditions including changes that have occurred in April 2009, local impacts of the drought, and progress on the Governor’s statewide water conservation outreach campaign.

Hydrologic and Water Supply Conditions

Precipitation
Water year 2009 followed two consecutive dry years. After an average October precipitation during November and December, 31% of average in the north part of the state raises the threat of a third dry year. Concern increased markedly in January 2009 as an unusually strong high-pressure system limited precipitation to only one-third of the statewide average for the month. February and March saw above-average precipitation during a wet weather pattern, but April has been below average. Figure 1 shows precipitation as a percent of average for each of the state’s hydrologic regions, through March 31.

Snowpack
State snowpack represents one-third of California’s water supply. The state’s snowpack benefited from storms in February and March 2009. April 1 is historically considered the peak of the snowpack development and the beginning of the snowmelt period. On April 1, 2009, statewide snowpack was 80 percent of average. As of April 28, 2009, statewide snowpack stands at 68 percent of average.

Reservoir Storage
Over the last three months, reservoir storage has improved from conditions in early February. However, the state’s largest reservoirs, Shasta and Oroville, remain well below their average storage for this time of year at 76 percent
Questions?

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