

Supply Standings
El Nino development
Floods and Drought: Upcoming 1-day Conference

Well, here it is; June 1st. There is an interesting set of numbers to be looked at. Not all of the numbers are final for May, and some require a bit of context. But here we go.

Third year of below normal flows: Runoff this water year through April was 58% of average. Preliminary data shows May (only) flows in major Sierra rivers have been close to 115% of average. On June 4th, the snow surveys section will post the water year to date runoff, which will be below average in spite of nice late season spring storms. Total 2008-09 water year runoff is forecast to be about 70 percent of average by end of September, and will be available June 8. Both the Sacramento and San Joaquin river regions are forecast to end in the 'Dry' classification. 'Critical' is the lowest of five categories, 'Dry' being second lowest. Two seasons ago, the Sacramento River Region ended 'Dry,' with the San Joaquin 'Critical'. Last year, both ended 'Critical'. The third year of our last big drought, 1988-89 also saw a slight boost in runoff, but was followed by three more dry years.

That begs the question, 'what will it be like next season?' That's always a tough question, and no guess at this juncture could be taken without a whole shaker, not just a grain of salt. But there are some indications, climatologically, pointing toward dry conditions continuing. Before we get to that, though (queue the teaser news music), let's look at some other figures as a sort of scorecard, or 'standing' assessment.

Precipitation this year was not that bad in the high country. It was a pretty productive spring. A look at the top 10 storm periods of this past season shows two of the biggest wet periods were early (October 31 - Nov 4), and late (May 2-5). The Northern Sierra (calculated using Mt. Shasta City, Shasta Dam, Mineral, Brush Creek, Quincy, Sierraville, Pacific House, and Blue Canyon) has received 95% of its average precipitation so far this season; 45.3". The Southern Sierra (Calaveras Big Trees, Huntington, Hetch Hetchy, North Fork Ranger Station, and Yosemite) stands at 91% of average; 37.0". Considering a few days of high country thunderstorms are still likely, and the monsoon has not yet shut down, the numbers will probably end the year pretty close to normal.

Runoff is lower than the precipitation figures alone would suggest. That's because statewide precipitation (we also need lower elevation, and central and southern precip to contribute to the whole statewide WY runoff) is running about 80% of average. Three years in a row, now, total statewide precipitation has been below average. It's the cumulative deficit that also impacts soil conditions. Low snowpack (85% of average on April 1, which is normally considered the peak of the season) also causes lower runoff.

The timing of the rule curves for capturing melting snow still rely on early-last-century hydrology. With the earlier snowmelt that is taking place all across the west-coast, reservoirs are going to have to be operated differently/ Climate change models even suggest reservoirs reaching dead-pool, a level so low water cannot be released, every 6-7

years by the end of the century. But those issues are for another newsletter. The point today is that our peak snowpack was in March this year, not at the time of year that most reservoir operators can switch completely out of flood control prevention mode.

Snow this winter was not so good. This has an explanation, and an impact. First, the dry spell of the winter took place when what would be falling from the sky would be more snow; January. The 8th driest January for the state and the 11th driest for the Northern Sierra means the 'hole' that was left in the snowpack was difficult to fill. Late season storms meant a lot of good rain. Many reservoirs that are small in relation to the size of the watershed they capture from, were able to rebound or fill. Some reservoirs that in very good shape include Folsom, Hetch Hetchy, and Millerton/Friant. But they are much smaller than Shasta and Oroville. For comparative size and storage, please go to:

<http://cdec.water.ca.gov/cgi-progs/products/rescond.pdf>

The two largest reservoirs were able to recover from the near-record low storage they were looking at in early February, but Oroville is still only 75% of average, and Shasta has 79% of average storage. Statewide end-of-May storage will probably be around 85% of average (available June 8). Good, but maybe not good enough. One of the criteria looked at to determine easing of the last drought (early 90's) was statewide reservoir storage riding around the 90% of average mark. And even if we were there now, which we are not, there are more restrictions to pumping water that make it impossible to say that all water supply conditions are fine statewide. And levels will be dropping over the summer.

From the latest monthly drought update put out by DWR on May 29:

http://www.water.ca.gov/drought/docs/052909drought_update.pdf

Estimates are that between 31,200 and 35,300 jobs will be lost in the San Joaquin Valley in 2009, with income loss to crop production and related business estimated between \$848 and \$959 million (including direct on-farm and indirect off-farm impacts). It is estimated that Groundwater pumping costs will increase between \$139 and \$147 million this year.

In the north state, Mendocino County initiated a request for a USDA Secretarial disaster declaration due to drought, with a letter on May 22 to the Governor's Office. They cite low rainfall, pasture, rangeland, and herd feeding impacts in their request.

Due to federal court restrictions on flow to protect fish species, about 200,000 acre feet of water were not able to be exported through the Delta since mid-February to state contractors.

36 local water agencies across the state have instituted some type of mandatory conservation or restrictions, with 60 requesting voluntary usage reduction. See this link:

<http://www.acwa.com/issues/cadrought/>

Click on Actions by Local Water Agencies

On the up side, many northern California communities are seeing a rosier water supply picture, due to those spring storms. Allocations by federal water officials to users north of the Delta are up. And state allocations were raised to 40% a couple of weeks ago. That's certainly still low, with only three years previously having lower allocations. But it was a modest improvement.

Let's now get back to what's going on with the climate. This winter it was cool over the Eastern Pacific Ocean. Not cool enough for long enough to be considered a full-fledged La Nina episode, as it turns out. But several months of cool, La-Nina like conditions may have contributed to some of the dryness we had mid-winter. At this time, things are warming up pretty rapidly over that part of the tropics. The Climate Prediction Center says ENSO neutral conditions are in place, but predicts El Nino conditions by June 2009, lasting through Northern Hemisphere Winter 2009-10.

Link:

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf

See page 28.

Our State Climatologist, Dr. Michael Anderson has taken a look at previous droughts in the state. By virtue of the 8 station index, four out of the six times we've left a La Nina condition, and moved into an El Nino, we've had another dry year take place. The strength of the El Nino will be the biggest factor in determining its impact to California's precipitation. A weak El Nino is usually drier than normal for us, with a strong El Nino bringing more frequent warm, moist storms, and above-normal winter precipitation.

Let's watch what transpires this winter. For now, we prepare for both drought and flood. It's not a stretch to predict California will have both in the years ahead. Complex water issues aren't becoming any less challenging.

Still time to register! The annual California Extreme Precipitation Symposium takes place Wednesday, June 24. This year it is being held at University of California- Davis. Here is the link to the American River Watershed Institute page with registration and agenda. This year's theme is Droughts and Floods - Past and Future. It looks to be a great line up for low cost. Lunch is included!

<http://www.arwi.us/precip/>

Be back in a few weeks. Have a great summer, everyone!

(EL)

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