Another below-average year: Mono expected to continue dropping

by Greg Reis

On March first the Department of Water and Power (DWP) predicted 73% of average runoff for the April–September period in the Mono Basin. The Gem Pass snow pillow in the Rush Creek watershed was reporting 74% of April 1 snow water content as of March 19. This will likely generate the lowest runoff since 1994—the year of the Water Board decision, when only 62% of average runoff occurred in the Mono Basin.

This will continue our string of drier than average years. In runoff year (RY) 1999, with 92% of average runoff, Mono Lake dropped 0.3 feet, and in RY2000, with runoff about 94% of average, the lake dropped about 0.4 feet. Despite the likely drop of at least half a foot, DWP at this time has no plans to install a new lake level gauge—the present one has been out of the water since September. The Mono Lake Committee is urging DWP to install a new gauge as soon as possible.

A year ago, DWP predicted that Mono Lake would now be half a foot higher than it is now. Last fall's Lakewatch article discussed last summer's "missing lake rise," and suggested that increased evaporation and decreased precipitation was the cause. A search of weather records indicates that this is probably the case.

For both 1999 and 2000, Lee Vining's mean temperature was approximately 1° F higher than average, and last year's mean of 49.86°F was the highest since records began in 1988. More specifically, spring 2000 was 3°F warmer than average, and prior to March 2000, each month as far back as September 1999 was above average, with two of the six months over 5°F above average and three of the six over 2°F above average.

Precipitation east of the Sierra Nevada was also down. Bodie precipitation has been below average every month since May 1999 with the exception of two months: June and August 2000.

With higher temperatures and less precipitation over the lake, it is not surprising that evaporation is higher. And with an estimated 42 inches of average annual evaporation, a 10% increase, for example, would cause the lake to drop an additional ⅓-foot.

In summary, hydrologist Peter Vorster often likes to remind Committee staff that the future *will be different* than what the hydrological models predict because most models that are used by decision-makers today assume that the climate in the future will be the same as it has been in the recent past—an assumption that is safe, but we can say with certainty, is wrong.

With that in mind, DWP's runoff forecasting uses pretty good models. Last year's actual March–July runoff was only 500 acre-feet less than the 92,260 forecasted. This was 2,400 acre-feet more than coursed down the streams during the same period in 1999, however in 1999 the lake rose 0.1 foot and in 2000, despite the greater runoff, it fell 0.1 foot, partly because it took an additional 2,500 acre-feet to fill Grant Lake Reservoir, and partly due to the abnormally warm and dry spring.

This year, as of March 18, Grant Lake Reservoir has 1,700 acre-feet more water stored than at this time last year. But it is dropping about 100 acre-feet per day due to the Rush Creek required minimum flows and the allowed 16,000 acre-feet/year water export to Los Angeles. When you combine that with the low snowpack, this year's stream restoration flows on Rush Creek will be lower—along with Mono Lake.

Greg Reis is the Committee's Information Specialist. He's researching the possibility of going solar in his Lee Vining house.

The lakelevel gauge with the lake at the 0 marker. **Photo by Arya Degenhardt**