



STAFF REPORT

TO: Board of Directors
THRU: John Erwin, Director of Natural Resources
FROM: Bill Hauck, Sr. Hydrologist
DATE: March 06, 2014
SUBJECT: Water Supply Update

Background - The 2011 water year was a very wet one with an above average snowpack and runoff season. But since then the Truckee River basin has been in various stages of drought according to the USDA Drought Monitor (see Figure 1). In fact, the 2012 and 2013 water years were some of the driest in recorded history. An exceptionally dry first quarter (October, November and December of 2013) and January 2014 had us preparing for the worse case scenario of losing Truckee River flows sometime early this summer. Snowpack values were a meager 14% of average in the Truckee River basin by the end of January. But a series of powerful winter storms the weekend of February 9th brought some much needed relief to the region and provided some breathing room. Although still a very long way from ending the snowpack building season with anywhere close to normal conditions, some smaller storms in recent weeks have continued to improve the water supply outlook for this summer (Figure 2). Floriston Rates which were unable to be met after the middle of December are projected to be made for the foreseeable future.

The elevation of Lake Tahoe (the primary reservoir on the Truckee River system) is now 6224.18 feet (Figure 3). This is a storage volume of 145,700 acre-feet (AF) or 20% of maximum storage capacity. The elevation of Lake Tahoe has risen almost $\frac{3}{4}$ of a foot (0.72') since the end of January due to a couple of significant winter storms the weekend of February 9th and some smaller precipitation events since then (Figure 4). The elevation of Lake Tahoe increases in good snowpack years due to above average runoff, and declines during poor snowpack years with below average runoff as water is released from the lake to help maintain river flows (see Figure 5).

Snowpack conditions have definitely improved since the end of January where Truckee Basin snowpack was down to just 14% of average and 25% of average in the Lake Tahoe Basin, respectively. As of this writing Truckee Basin snowpack is 34% of normal and 48% of normal in

the Lake Tahoe Basin (see Figure 6). It is still almost certain that the region will end the official snowpack season below-average, marking the third straight dry year in a row (Figure 7).

Outlook - A major winter storm the weekend of February 9th put a good sized dent into, but by no means erased the exceptionally dry start to the 2014 water year. Unfortunately, with snowpack at only about 1/3 of average to start the month of March, the mold has already been cast for the region’s third consecutive dry year (Figure 8). The final snowpack numbers won’t be available until April 1st but it is already safe to say that we are going to end up with our third straight below average runoff year. The latest projection however, shows Floriston Rates being maintained through August and into early September. This projection assumes a normal hydrology from this point forward. If the watershed does not get the necessary precipitation in the coming weeks, river flows will definitely fall off sooner. But at this point no additional water conservation measures are scheduled to be implemented as normal Truckee River flows are projected through Labor Day pursuant to TMWA’s drought conservation measures laid out in the 2010-2030 Water Resources Plan (see Table 1).

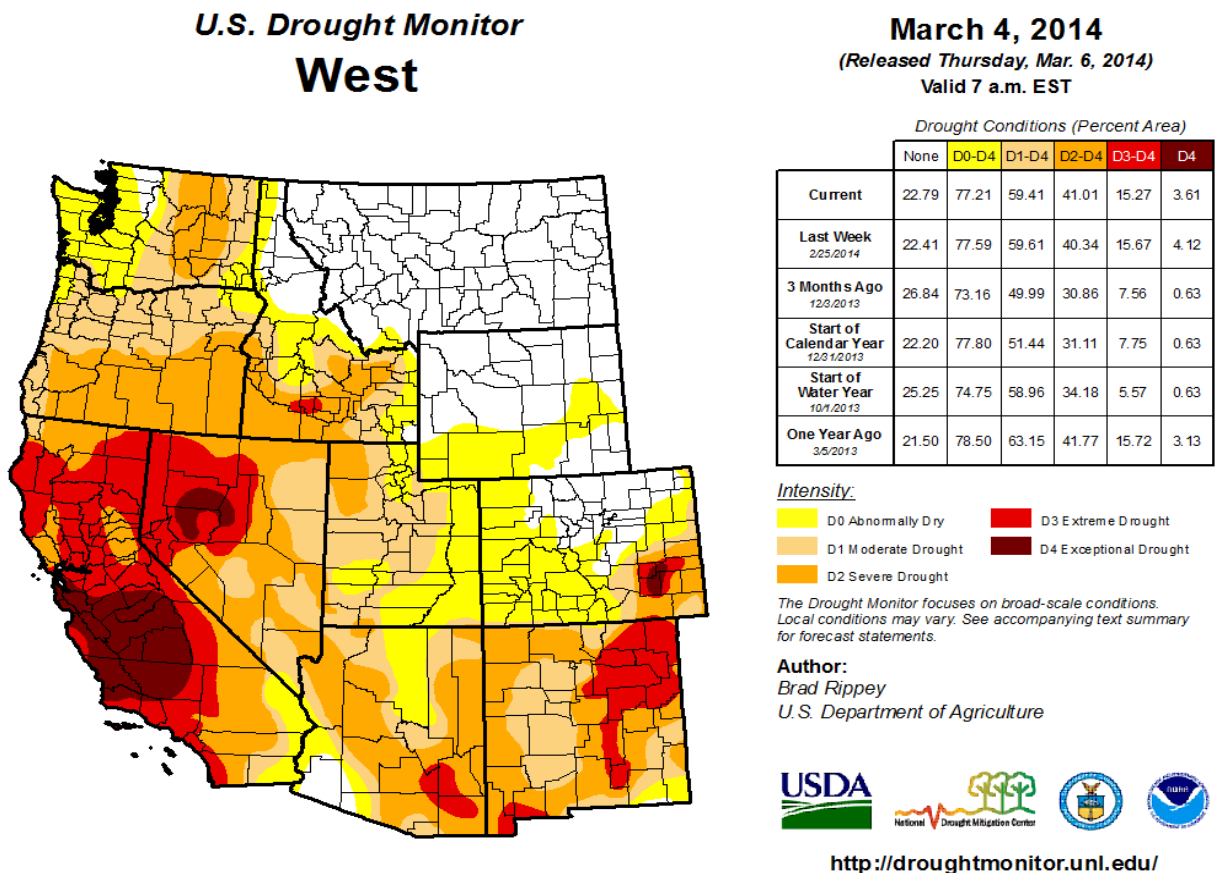


Figure 1. USDA Drought Monitor as of March 4, 2014.

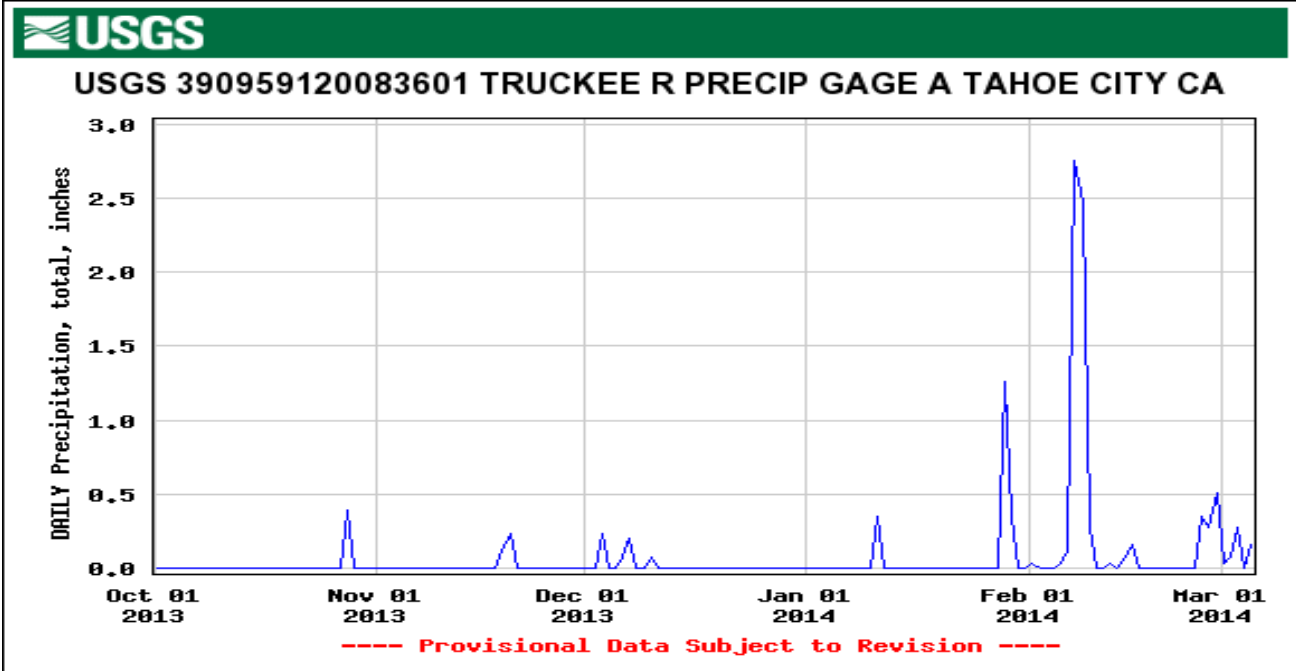


Figure 2. Precipitation at Lake Tahoe, Tahoe City, CA.

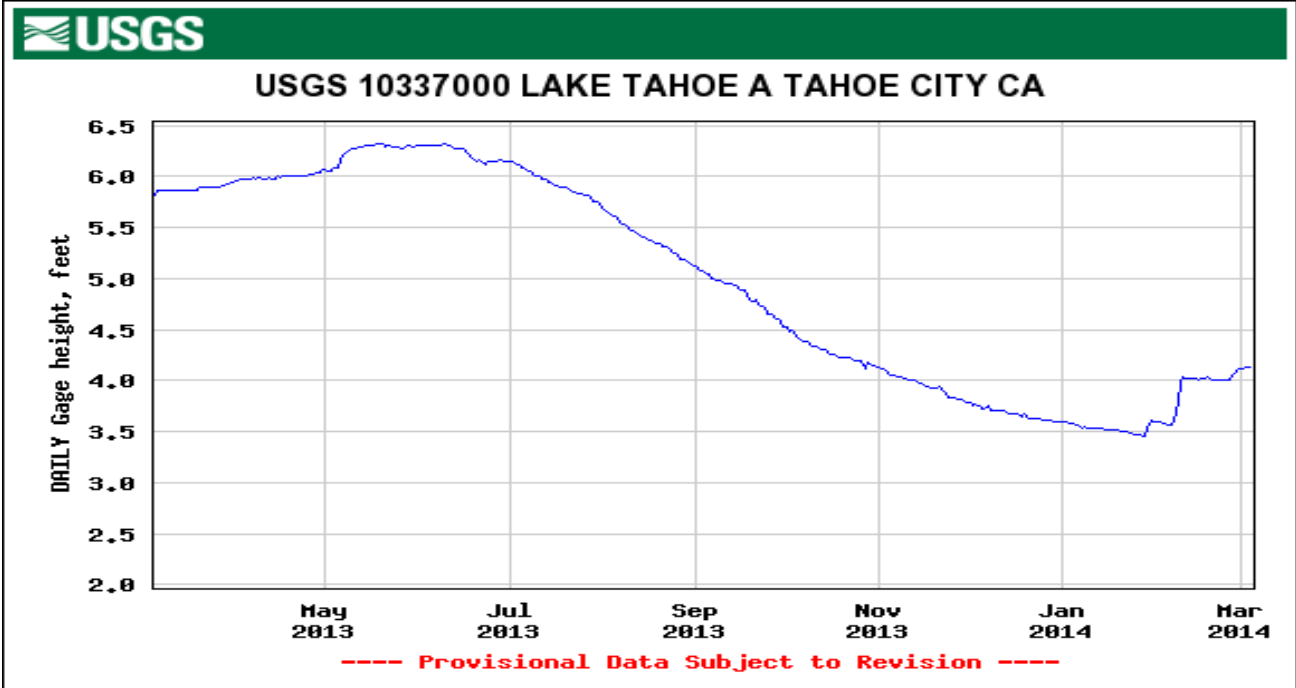


Figure 3. Lake Tahoe Elevation for the Past 12 Months.

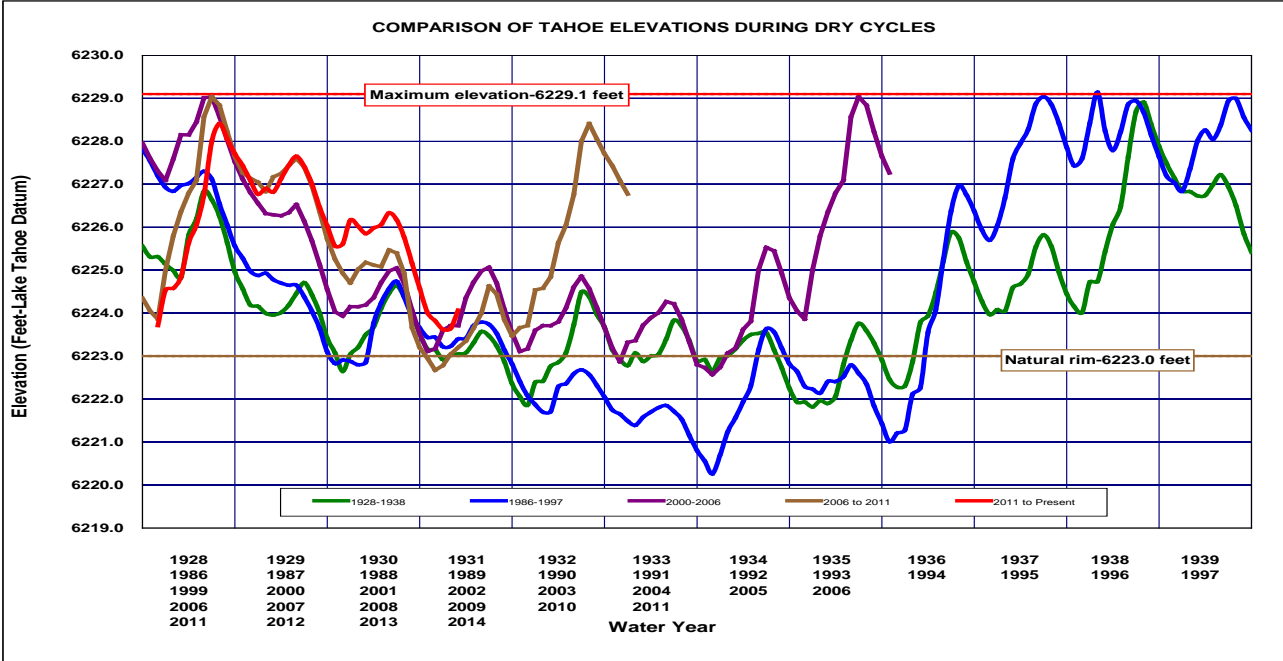


Figure 4. Lake Tahoe Elevations During Historical Drought Cycles.

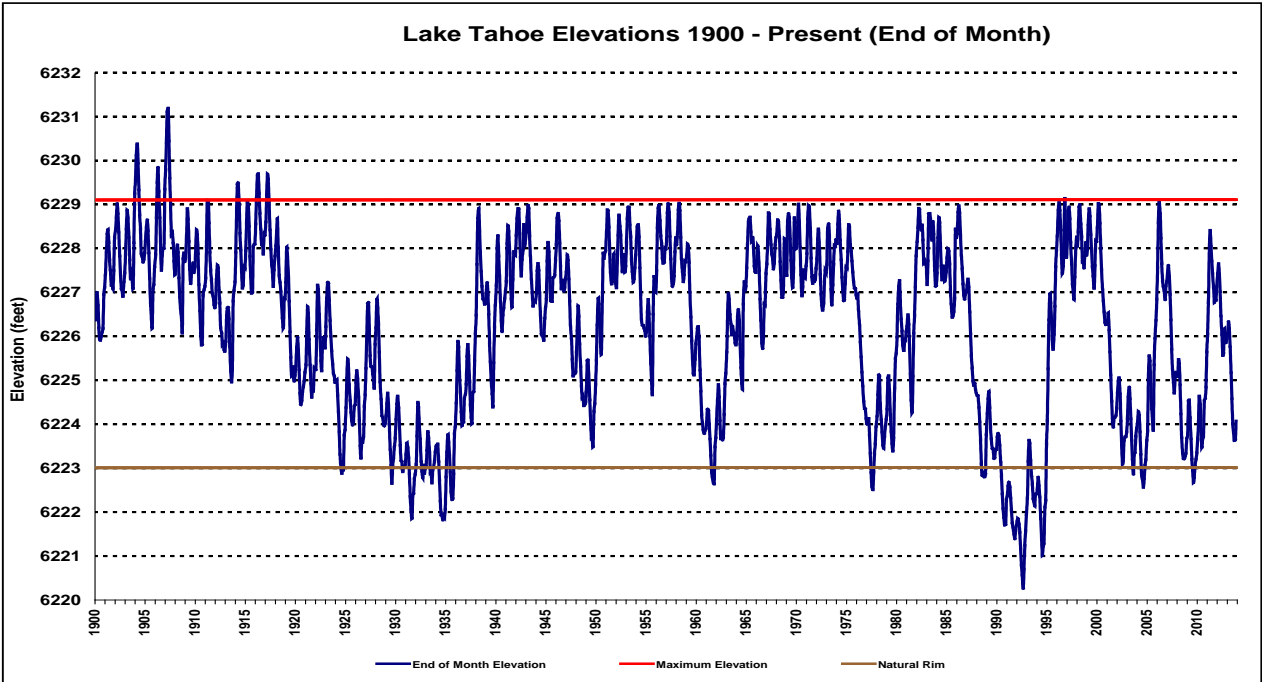


Figure 5. Lake Tahoe Elevation from 1900 to Present.

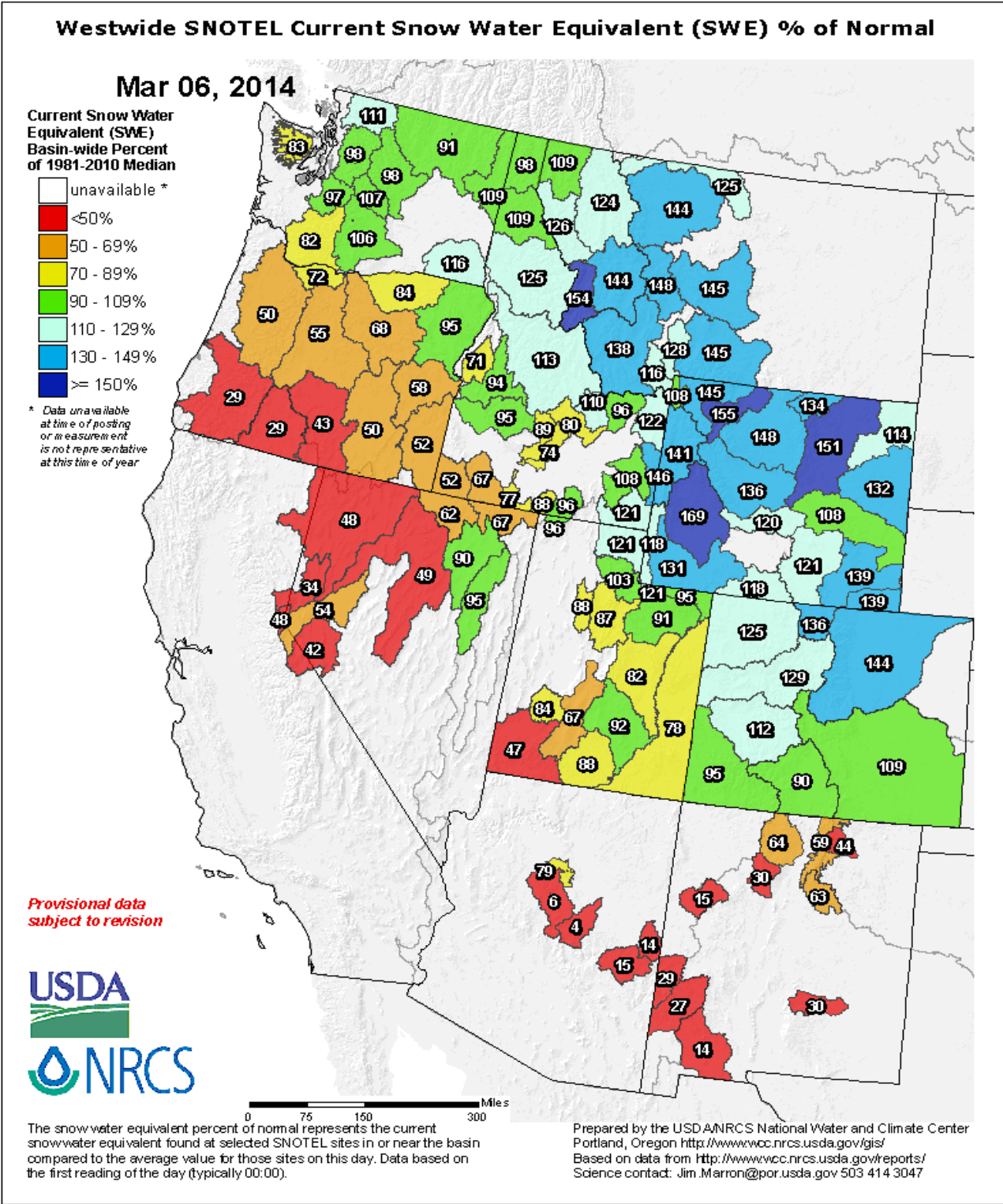


Figure 6. Snowpack in the Truckee River Basin as of March 6, 2014.

*TRUCKEE RIVER Time Series Snowpack Summary
Based on Provisional SNOTEL data as of Mar 06, 2014*

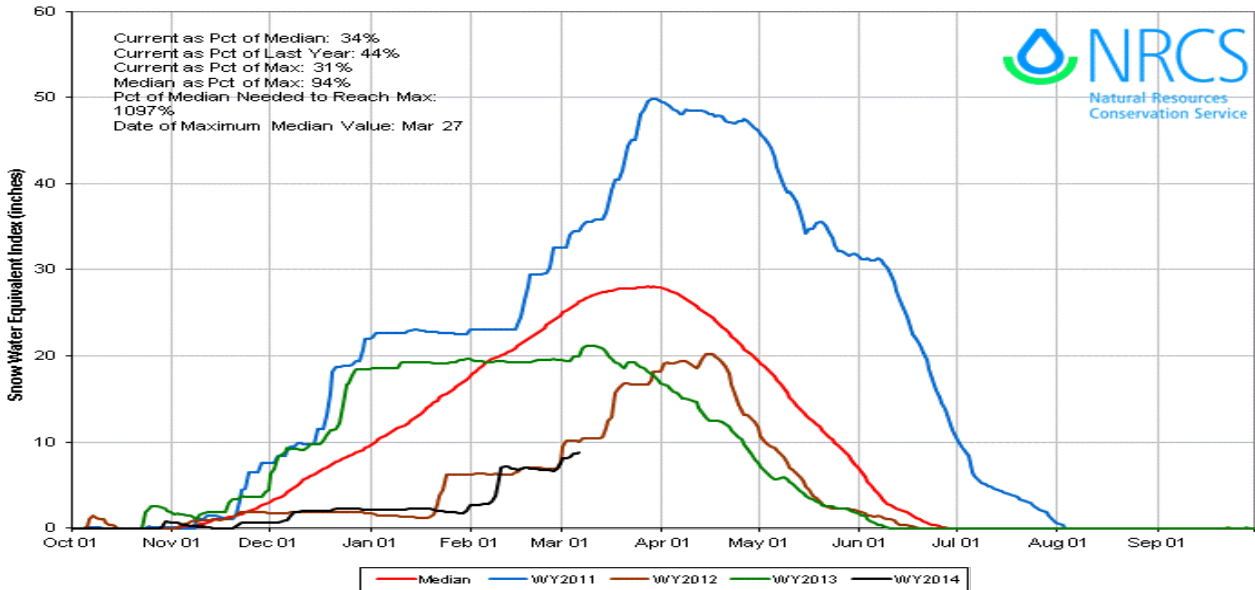


Figure 7. Snow Water Equivalent Statistics for the Truckee River Basin.

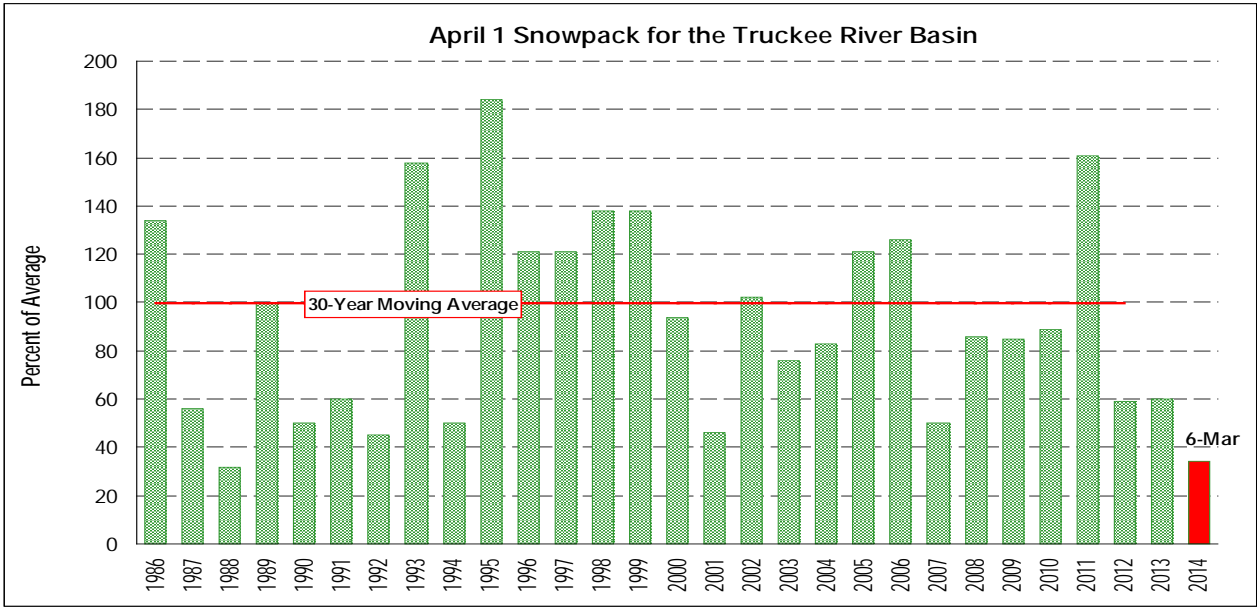


Figure 8. Snowpack in the Truckee River Basin for the Last 30 Years.

	<i>Non-Drought Situation</i> Supplies are Normal	----- <i>Drought Situation</i> ----- Supplies are Adequate [River Flows Drop-Off After Labor Day]	----- <i>Drought Situation</i> ----- Supplies are Impacted [River Flows Drop-Off Before Labor Day]
	-----a-----	-----b-----	-----c-----
<i>A Assigned Day Watering</i> Monday	No water day	No water day	No water day
Even addresses:	Tuesday, Thursday and Saturday	Tuesday, Thursday and Saturday	Tuesday, Thursday and Saturday
Odd addresses:	Wednesday, Friday, and Sunday	Wednesday, Friday, and Sunday	Wednesday, Friday, and Sunday
<i>B Water Day Time Restrictions</i> Between Memorial Day and Labor Day	12 to 6 PM	12 to 6 PM	11 AM to 7 PM
<i>C Public Education & Advertising</i>	Standard programs	Standard programs	Increased programs
<i>D Water Waste Prevention</i>	Standard enforcement	Standard enforcement	Increased enforcement
<i>E Other Actions</i> Though not inclusive, these enhancements could be deployed depending on the severity of the circumstances and the potential impact to supplies			Expand water day time restrictions Reduce the number of watering days Set daily watering allotments Drought rates

NOTE: The term "supplies" refers to (1) Truckee River water available from natural flows plus releases from Federally operated reservoirs to support Floriston Rates and (2) TMWA's Privately Owned Stored Water held in Independence and Donner Lakes and Federal reservoirs.

Table 1. Drought Conservation Measures from TMWA's 2010-2030 Water Resources Plan.