


Memo

To: Mitch Reister, PE, Newman Lake Flood Control Zone District Administrator 

Via: Marianne Barrentine, PE, Environmental Programs Manager 

From: Jane Clark, PE, Environmental Programs Engineer 

Date: February 3, 2016

Subject: Newman Lake Snow Pack/Lake Level Update

The first snow course monitoring of the year took place on January 29th and 31st in the Newman Lake watershed by Spokane County Staff. The monitoring results indicate the snow pack is 85% to 91% of average at the two lower snow course sites and approximately 135% of average at the Round Top snow course and the Quartz Peak SNOTEL site. Below is the comparison of Snow Water Equivalent readings (in inches) with previous year's data as of February 1:

SWE as of February 1

	Thompson Creek	Ragged Ridge	Round Top	Quartz Peak
Date	Elev. 2500'	Elev. 3250'	Elev. 4020'	Elev. 4700'
1997	8.6	11.3	16.0	24.8
1998	4.7	7.7	11.7	14.7
1999	3.8	9.5	12.9	21.2
2000	6.6	10.6	14.7	19.7
2001	5.0	6.2	7.2	8.6
2002	5.8	9.5	13.1	22.8
2003	1.3	2.9	5.3	11.1
2004	6.3	7.6	11.0	17.4
2005	0.4	0.8	0.0	4.8
2006	2.2	5.6	10.9	20.1
2007	3.4	6.1	9.6	15.2
2008	8.4	13.2	-	21.5
2009	8.1	10.2	11.7	13.4
2010	0.0	0.2	5.8	11.3
2011	4.6	4.8	9.4	16.6
2012	1.9	2.2	5.6	12.9
2013	4.7	6.2	9.8	14.2
2014	1.5	2.5	6.8	10.9
2015	2.5	2.4	5.0	8.6
2016	3.6	5.7	12.8	19.9
Average	4.2*	6.2	9.3*	14.8
2016 % of Average	85.7	91.4	138.4	134.7

*Avg. of previous years since 1997 (only available data)

The winter season so far has been a mixture of cold weather with above average precipitation. Both outlet gates are currently open 8/10ths and the lake level as of February 3rd was 2124.00 feet. We

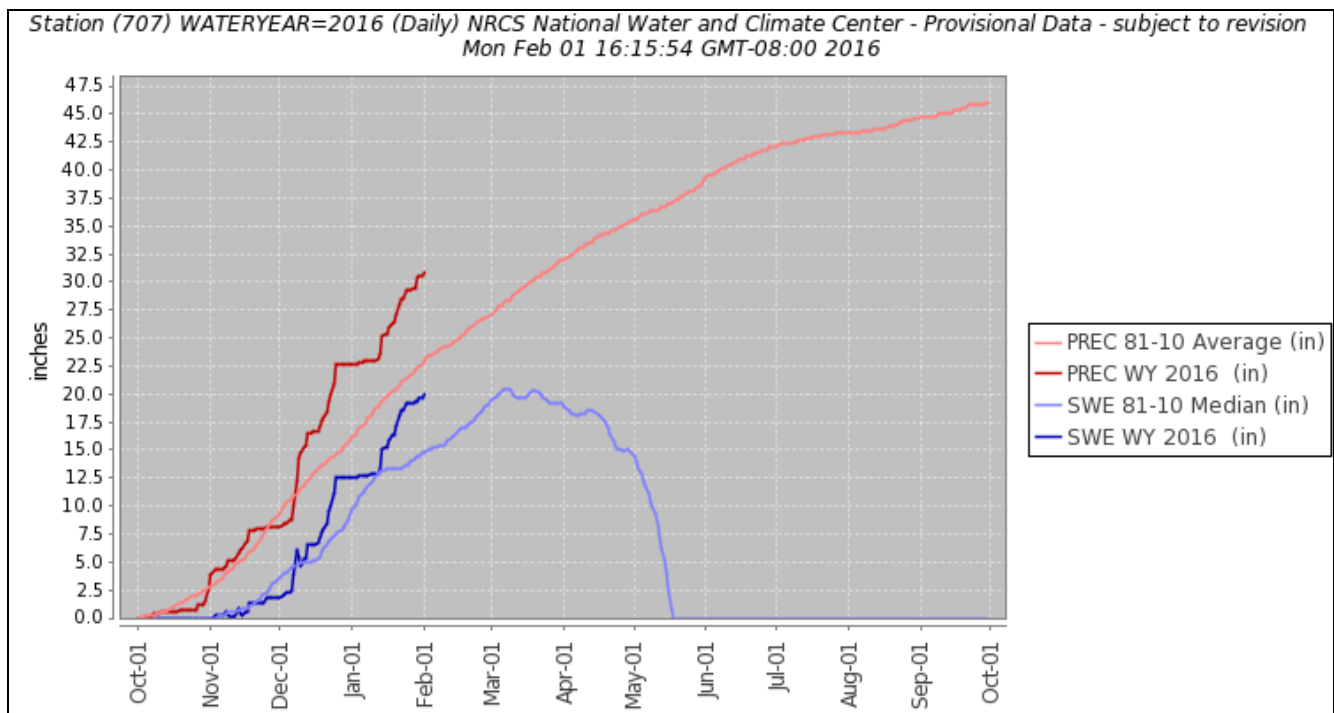
are trying to keep the lake level close to the winter goal elevation of 2123.9 feet and will begin raising the lake after the ice off.

The National Weather Service three month outlook is forecasting above average temperatures and below average precipitation for our region.

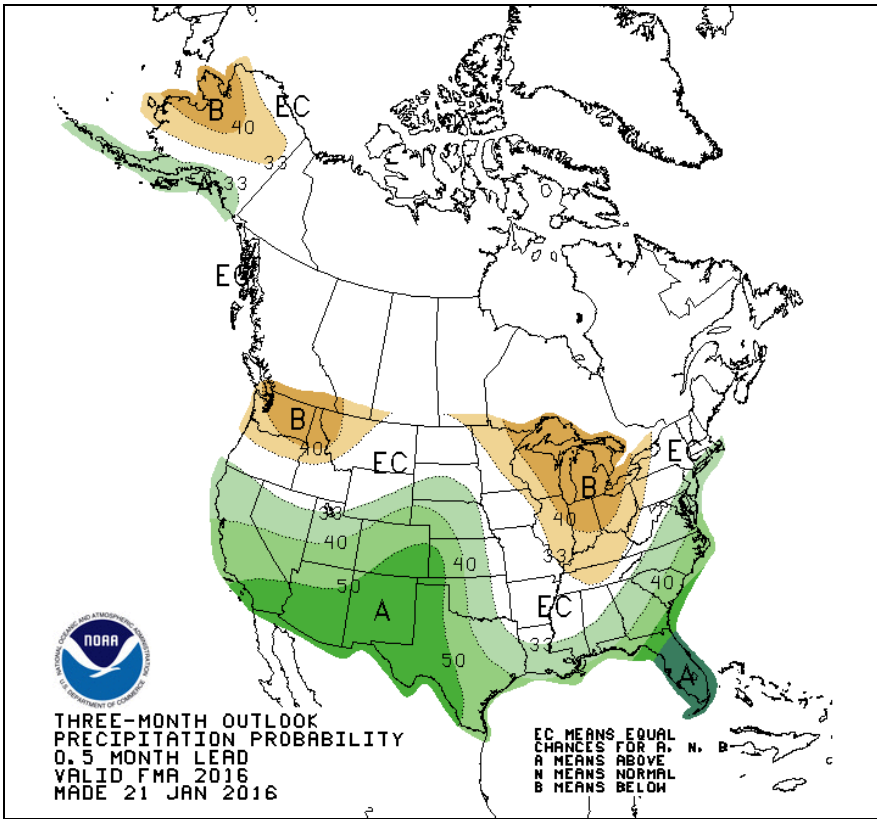
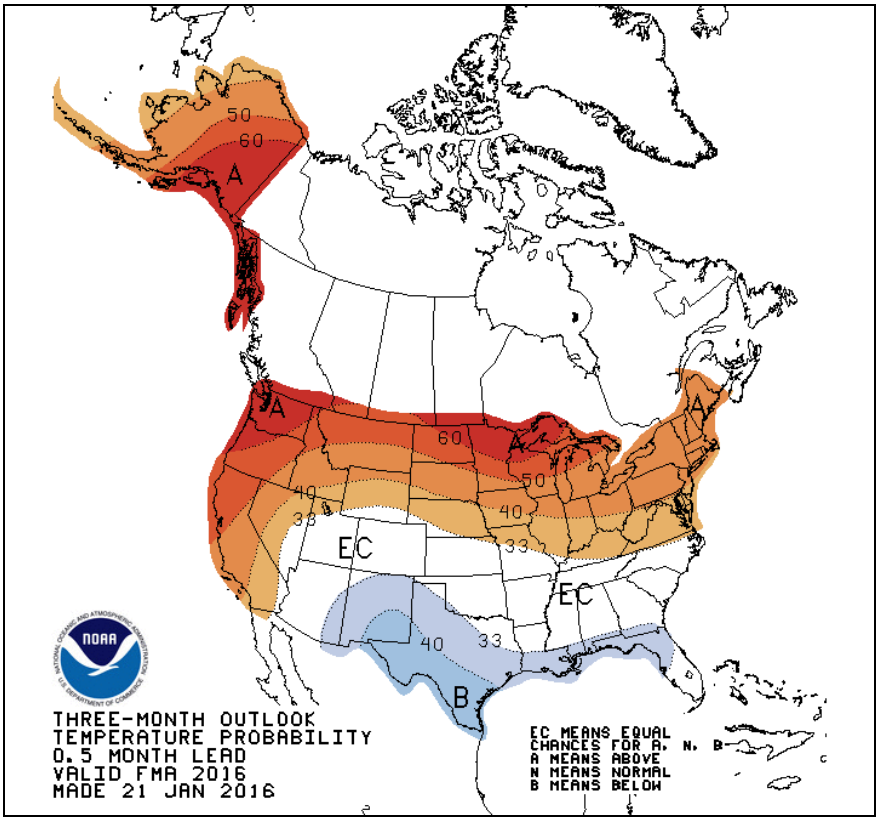
Per the HSPF model, assuming an average amount of precipitation (50 percentile) we estimate 11,800 acre-feet of runoff for the rest of the season. This 11,800 acre-feet of runoff equates to about 9.8 feet of water spread out over the lake surface. If assuming a below average amount of precipitation (10 percentile) we estimate 7,000 acre-feet of runoff for the rest of the season. This equates to 5.8 feet of water spread out over the lake surface. These values are based on the 19.9-inch snow water equivalent at the Quartz Peak SNOTEL on February 1st.

Operational Recommendations:

With the above average snowpack and long range forecast predicting above average temperature and below average precipitation, we will continue to monitor the lake level closely and keep the lake level close to the winter elevation and begin raising it after ice off.



SWE = Snow Water Equivalent, PREC = Precipitation



Obtained from the National Weather Service Climate Prediction Center
http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=01



Left: The Newman Lake outlet gate area on January 30, 2016.



Right: Looking at the Round Top snow course on January 31, 2016.



Left: Quartz Peak SNOTEL on January 31, 2016.