

# Memo

To: Bob Brueggeman, PE, Newman Lake Flood Control Zone District Administrator  
Via: Marianne Barrentine, PE, Environmental Programs Manager  
From: Jane Anderson, Environmental Programs

Date: March 2, 2010

Subject: Newman Lake Snow Pack/Lake Level Update

We completed the second snow course monitoring of the year on February 23<sup>rd</sup> in the Newman Lake watershed. The Quartz Peak snow pack is only at about 77% of normal. Of even more concern is the extremely low lower elevation snow pack that is under 50% of normal! Here is the comparison of Snow Water Equivalent readings (in inches) with previous year's data as of March 1:

	<b>Thompson Creek</b>	<b>Ragged Ridge</b>	<b>Round Top</b>	<b>Quartz Peak</b>
Date	Elev. 2500'	Elev. 3250'	Elev. 4020'	Elev. 4700'
1997	10.0	13.5	18.5	30.6
1998	3.4	8.2	13.1	19.2
1999	6.1	15.6	18.8	30.5
2000	6.9	10.6	14.0	23.8
2001	5.6	7.9	9.2	10.9
2002	7.4	12.2	17.2	26.2
2003	0.0	2.8	6.3	13.4
2004	6.4	8.8	13.1	20.5
2005	0.0	0.0	0.0	4.7
2006	3.0	7.1	12.2	23.1
2007	4.2	8.6	14.0	20.4
2008	11.3	17.2	20.4	26.0
2009	7.3	-	12.8	16.4
<b>2010</b>	<b>0.0</b>	<b>0.1**</b>	<b>8.0</b>	<b>14.6</b>
Average	5.5*	8.2	12.7*	18.9
<b>2010 % of Average</b>	<b>0.0</b>	<b>0.6</b>	<b>63.0</b>	<b>77.3</b>

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

\*\* This is the second lowest measurement on record (since 1982) for a March 1 reading at Ragged Ridge. The only lower reading was 0.0 in 2005.

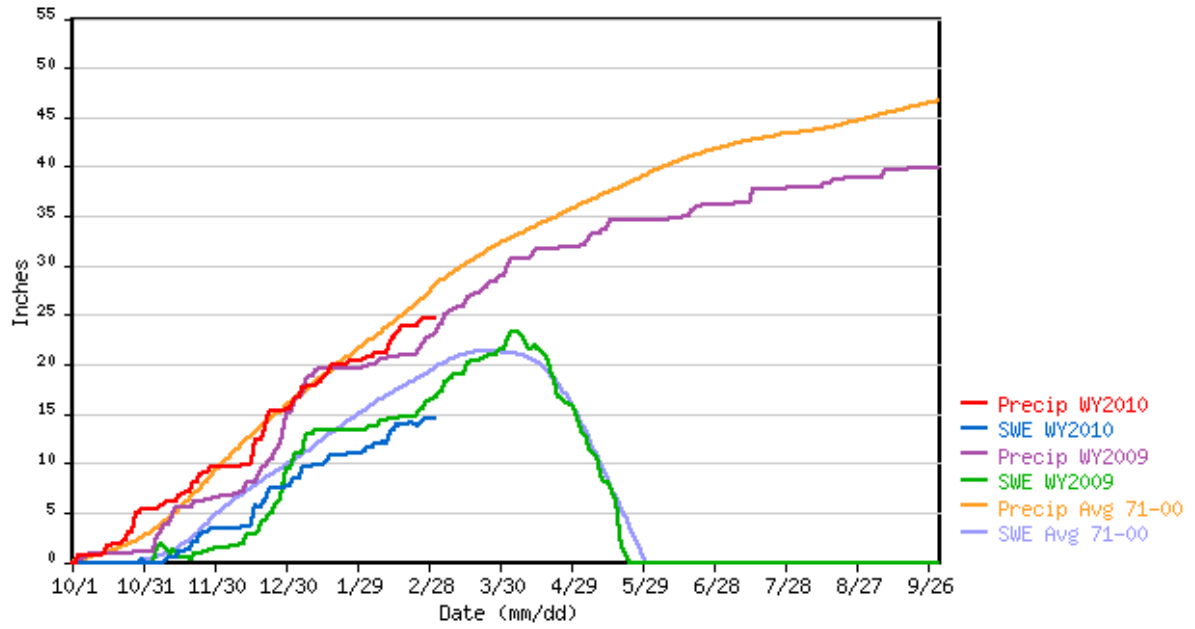
Per the HSPF model, we have an estimated 2,850 ac-ft of runoff based on an average precipitation the rest of the season. This is based on the snow depth at Quartz peak on March 1. This is about 2.4 ft of water spread out over the lake surface. We need just over a foot of water to bring it up to the Memorial Day elevation of 2125.6 ft. The long term forecast is for average precipitation levels in March and April.

This winter season has been quite warm. The lake level has been increasing the past few weeks and the lake is almost ice free. On March 1<sup>st</sup>, the lake level was 2124.45 feet with the gates open 1-ft each. We will continue to monitor the lake level and continue to raise the lake elevation.

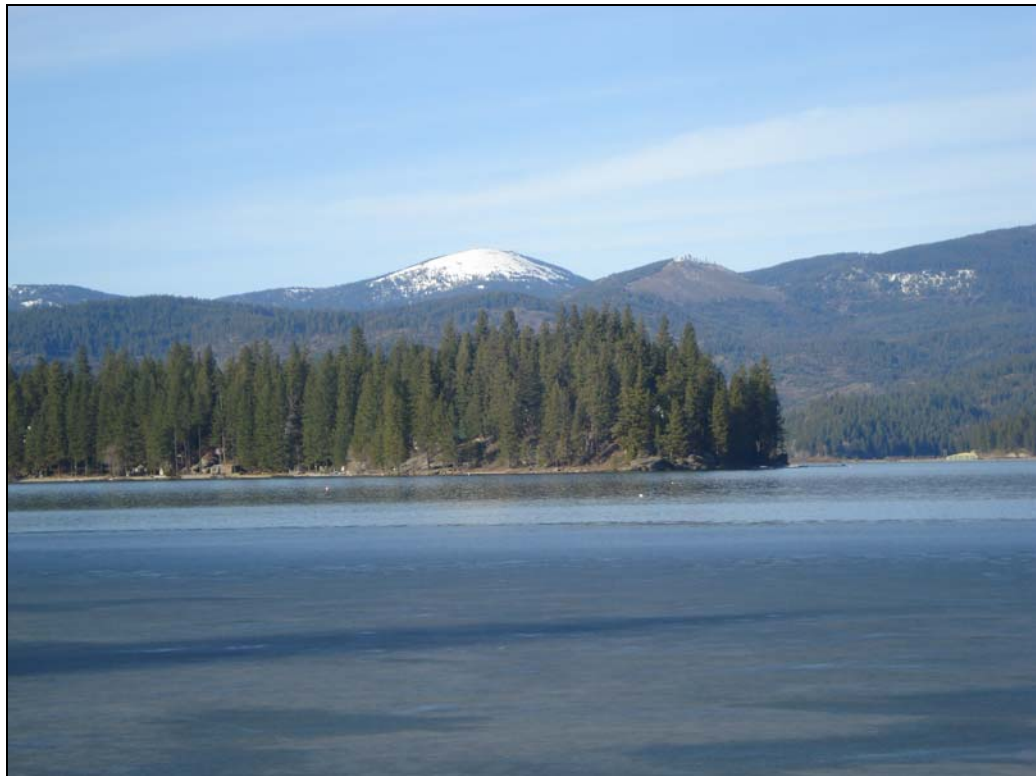
With the below average snowpack and long range forecast predicting average precipitation, we have to maximize the mountain runoff and slowly bring the lake level up.

QUARTZ PEAK SNOTEL as of 03/02/2010

\*\*\* Provisional Data, Subject to Change \*\*\*



SWE = Snow Water Equivalent, Precip = Precipitation



A portion of Sutton Bay is still covered by a thin layer of ice on 3/1/2010.



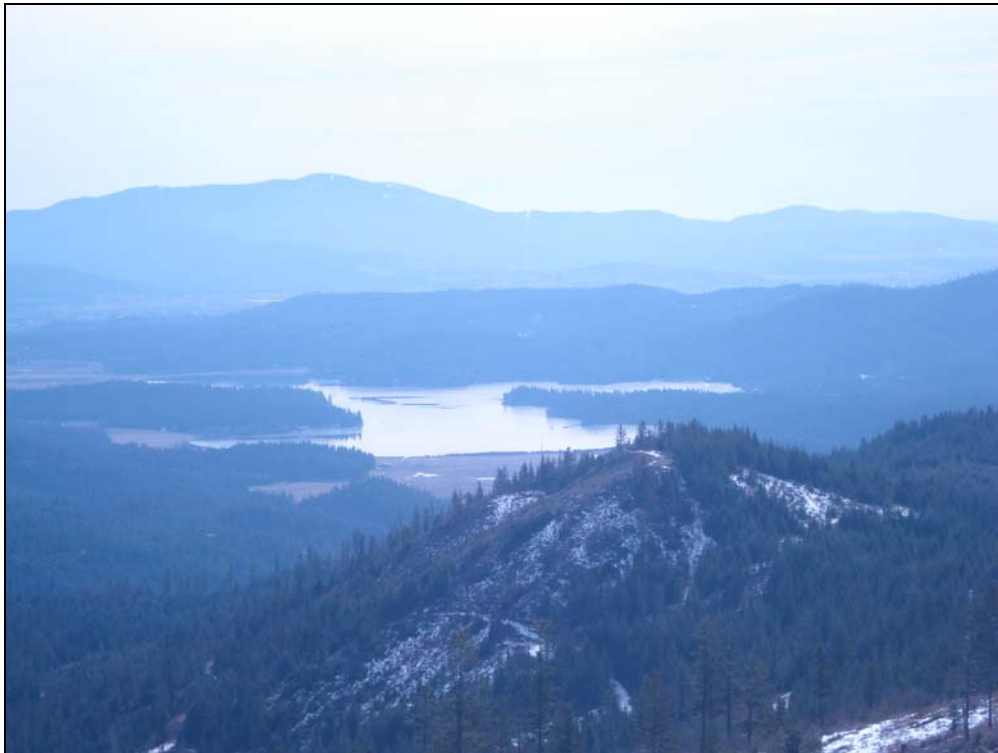
A bare Thompson Creek snow course (elev. 2500') on 2/23/2010.



A very thin layer of snow at Ragged Ridge snow course (elev. 3250') on 2/23/2010.



Round Top snow course (elev. 4020') with snow on 2/23/2010.



A view of Newman Lake on the way back from Round Top snow course on 2/23/2010.