

WATER SUPPLY PROSPECTS FOR NORTHERN UTAH, 1930

The seasonal snow survey over the Northern Utah watersheds was made March 30-April 2, inclusive. This survey covered an area of about 40 miles long which is representative of the watersheds of Blacksmith Fork, Little Bear, Logan, and Cub Rivers and all the small streams draining the west face of the Bear River Range.

At Franklin Basin, elevation 8000 feet, which lies at the head of the Logan River, there was an average snow cover 66.7 inches deep containing 26.8 inches of water. The area in the vicinity of Tony Grove Lake, at elevation 8300 showed an average cover 80.3 inches deep containing 31.5 inches of water. These two stations are about 15 miles apart. Mt. Logan lies about 25 miles south of Tony Grove Lake and at a little higher elevation. The average snow cover on this area was 67 inches deep and contained 29.4 inches of water. The depth and water content of the snow cover decreases rapidly with decrease in elevation. At elevation 6250 feet, the average snow cover was 20.6 inches deep and contained 9.4 inches of water.

The water content of the snow cover this year is considerably below that of 1929 but not so low as in 1926. The percentage decrease over 1929 varies from approximately 25 per cent at Tony Grove Lake to 13 per cent at Franklin Basin. It will be noticed that there is very little low snow this year as compared with 1929, also that the density of the snow cover is much higher. The density is so high in fact that much of the snow below 8000 feet elevation has already melted and seeped into the ground. The range was quite dry last fall and will absorb a considerable amount of the snow unless a rapid rise in temperatures occur to cause a rapid runoff.

The season of 1929 was characterized by a cold backward spring. The snow melted slowly and seeped into the ground, later appearing as runoff. As a result the discharge of the Logan River was well maintained throughout the season

although the total discharge was materially reduced.

This year the snow cover which is approximately 15 per cent below last year has a high density and if a warm early spring follows there will result a high early runoff and a water shortage during late summer. If however, we have a cold backward spring with much rain the snow cover will come off slowly resulting in a better distribution of the season's runoff.

The above normal temperatures during the last of March have caused a melting of much of the low snow and the Blacksmith Fork and Little Bear Rivers have started to rise. Only a cold spring with abnormal rain during April will prevent a water shortage on these streams. The condition on the Logan River is better due to larger areas of high watershed but even on the Logan the runoff is expected to be considerably less than in 1923 and not so well distributed.

In general the water prospects for northern Utah are only fair. If abnormally heavy rains occur during April and May a shortage will be prevented. If abnormally low rains occur together with high temperatures during April and May, a water shortage of rather serious nature can be expected.

The following table is a summary of the snow cover records on northern Utah watersheds since 1924.

Table I. Showing Snow Cover on and Runoff from Logan River Drainage Area -- 1924-1929

Year	Mt. Logan : Depth : : Snow :	Water : : in :	Tony Grove Lake: : Depth : : Snow :	Franklin Basin : Water : : in :	Tony Grove R.S. : Depth : : Snow :	Mud Flat : Water : : in :	R.S. : Water : : in :	Runoff Logan : River, April- : September, Incl. : in A.F.			
1924	80.3	26.3	77.6	31.8	71.5	25.8	24.7	10.0	31.6	11.8	118 000
1925	73.0	31.6	72.5	35.6	60.2	28.4	No snow	No snow	14.8	7.0	134 000
1926	72.6	22.0	58.9	21.9	50.4	18.4	No snow	No snow	No snow	No snow	95 000
1927	112.0	41.5	108.0	43.6	86.0	33.8	20.3	8.5	29.0	10.2	144 000
1928	81.0	31.2	86.8	34.3	81.0	31.7	Only a patch of snow		21.9	8.5	139 000
1929	90.7	35.0	97.0	41.9	84.0	31.1	26.3	11.4	30.6	12.4	152 000
Mean, 1924: to 1929	84.9	31.3	83.4	34.9	72.2	28.2	15.3	6.6	25.5	10.0	130 300
1930	67.0	29.4	80.3	31.5	66.7	26.8	20.6	9.4	24.2	10.1	

Note: Mean April - September Precipitation, 30-year record, 173 000 A.F.