

CLIMATOLOGICAL DATA FOR MAY, 1912.

DISTRICT NO. 10, GREAT BASIN.

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GENERAL SUMMARY.

For the district as a whole May was favorable for all interests. The temperature averaged below normal, but no injurious frosts occurred, and the fruit crop promises to be heavy. Precipitation averaged below normal, but was sufficient for all purposes.

There was considerable cloudiness, especially in the Utah area, and the wind movement was higher than usual. The average number of rainy days was 5, clear days 12, partly cloudy days 10, and cloudy days 9.

In all parts of the district the crops were put in late, and in general the season is nearly a month later than usual. Up to the present time no injurious floods have occurred, although the streams are quite high, the melting of the snow being kept back by the cold weather. Ranges were in good condition, and forage was abundant.

TEMPERATURE.

The average monthly temperature for the district was 52.9°, which is 2° below normal. The highest local mean temperatures occurred at the lower stations of the Utah area and in the southern half of the Nevada area; and the lowest in the Idaho, Wyoming, and Oregon areas.

The local mean temperature ranged from 42° at Tahoe, Cal., to 64.6° at Lemay, Utah. Nearly all stations in the district reported temperatures below normal, but the greatest minus departures occurred in the northern portions of the Utah and Nevada areas.

The month began moderately warm in all parts of the district, but the weather grew colder after the 1st, and many stations reported their lowest temperatures from the 2d to the 6th. Warmer weather set in near the middle of the month and continued until the 20th, when another cool spell occurred lasting only a few days, the temperature gradually rising and culminating in the warmest weather of the month on the 29th.

The following were the highest temperatures that occurred in the various areas of the several States of this district: 83° at Cokeville, Wyo.; 82° at Weston, Idaho; 95° at Low, Utah; 99° at Jean, Nev.; all of which occurred on the 29th; and 68° at Placer, Cal., on the 17th, and 80° at Burns, Oreg., on the 18th, and at Silver Lake, Oreg., on the 14th.

Very nearly every station in the district reported minimum temperatures below freezing. In the Utah area there were several frosty days in the fruit belts of the State, but so far as ascertained there was no damage, and the general prospects are very good. In the Nevada area light frost formed several times during the month, and heavy frosts were general on the morning of the 22d in the agricultural districts, except in the southern portion, resulting in considerable damage to fruit and garden truck in exposed places, but only slight or no damage in well protected places along the foothills.

The lowest temperature for the district was 12° at Weston, Idaho, on the 3d. In other States having areas in this district the following low temperatures were registered: 18° at Cokeville, Wyo., on the 14th; 16° at Pinto, Utah, 23° at Silver Lake, Oreg., and 22° at Tahoe, Cal., on the 3d; 20° at Millet and Potts on the 4th, at

Halleck on the 13th, at Carlin on the 20th, at Lovelocks on the 21st, and at Quinn River Ranch on the 22d, all in Nevada.

PRECIPITATION.

The precipitation averaged 1.09 inches, which is 0.40 inch below normal. The greatest amounts fell in the Utah, Wyoming, Idaho, and Oregon areas; the least in the Nevada area. At Carlin, Nev., no rain occurred, and the largest local monthly amount was 3.38 inches at Tahoe, Cal. Very few stations reported amounts above normal, and the average in every State was below normal, except in the Wyoming area, where more than the normal amount was recorded.

Precipitation was well distributed throughout the month, the largest amounts falling during the first decade in all except the Oregon area, where the wettest period extended from the 19th to the 29th, inclusive.

Most of the precipitation was in the form of rain, but some snow fell at the higher stations. The cold weather of the past three months retarded the melting of the snow in the mountains, and in consequence the period of high water in all districts was later this year than usual. The snow cover toward the close of the month was diminishing rapidly.

NOTE.—One of the cooperative observers of the Utah section, Mr. B. F. Eliason, contributes an interesting article on his snow survey of the Pole Creek Watershed. It is to be regretted that Mr. Eliason had no instrument with which to measure snow density, but his stick measurements will be valuable in making comparison in future seasons, and especially so if he will make the surveys personally.

SNOW SURVEY ON POLE CREEK WATERSHED,
SANPETE COUNTY, UTAH.

By B. F. ELIASON, Cooperative Observer, Moroni, Utah.

Pole Canyon is the source of a large part of the irrigation water used in the neighborhood of Moroni and Freedom, in Sanpete County, Utah, and it is an important watershed to the farmers in this section of the country. It was for this reason I decided to make an examination of the snow supply on this watershed this spring. Being unable to get anyone to accompany me, I made the trip alone on the 28th of April, 1912.

It was impossible at that time to procure a snow sampler, or tube, and scales, so my equipment consisted of a long measuring stick, with proper foot and inch markings to facilitate making the measurements. This, with a pair of web snowshoes and some eye shields, completed the outfit. I contemplated taking my rifle, but it was well that I did not do so, for the only living thing seen on the trip was a single grouse. Chicken tracks were numerous among the balsams, as were those of mice and chipmunks, but no others were seen.

It was a very pleasant day, the sky being lightly overcast and the sun glare being absent from the snow. This being my first extensive snowshoe trip, the start was made early from my residence, near Moroni. A mile and a half on horseback brought me to the edge of the snow fields,

at an elevation of about 7,200 feet above sea level, or about 1,200 feet above my ranch. The snow layer became continuous at the foot of the mountains, which are about 6 miles a little north of due west from the town of Moroni and near the eastern border of the Nebo National Forest. My horse was picketed here and the webs were tied to my feet.

The first measurement near here, on Smiths Flat, about 1 rod from the edge of the snow, was 18 inches; another average measurement was 20 inches, these being the only soundings made in this region. The snow was fairly solid, with a 4-inch crust on top and another crust 10 inches beneath the surface; but on my return in the early afternoon the crust was gone and my dog had to be carried out of the soft snow.

The road was followed from here west, up the wash toward Dutchmans Flat. Eight measurements of the depth gave an average of 33 inches, the depth of the snow increasing with the elevation. On the sidehills the snow was heavier than on the bottoms, being less affected by the sun's rays. On the crest of the gradual slope which is called Dutchmans Flat there was less snow than on the slope. I crossed the flat proper going and coming. A great deal of the early irrigation water comes from here, and by crossing twice the resultant figures of snow depth were fairly representative. Fifteen measurements here ran from 12 inches on the open part of the flat to 46 inches on the timbered slope, the average being 28 inches of solid snow, as most of it faced the sun.

Slightly higher and to the west is the Dry Lake Flat, so called from a lake thereon which dries up in late summer. Here the snow was from 18 inches on the flat to 57 inches on the sidehill near the edge of the flat. The average here includes several measurements taken on the sidehill of the flat and for 21 measurements was 35 inches, the depth being slightly greater on the upper part of the flat than on the lower portion. Five measurements made in the bottom of Left Hand Fork of Pole Creek gave an average of 32 inches. Continuing upward, the sidehill to the south was climbed, where the snow was of very uniform depth and density, apparently, averaging 44 inches deep. It might be well to state here that all measurements are made perpendicular to the snow surface and not vertically.

On reaching the top of the ridge the labyrinth of ledges and chasms known as Maple Canyon unfolded itself before me. At one point the snowshoes were removed, and I crawled to the edge of a precipice, which is a sheer drop of about 1,000 feet. The entire region here for 2 miles south is a conglomerate mass, composed of caves, chasms, and natural bridges. This snow goes to another watershed, but owing to the very rough and broken nature of the region the snow is of little consequence. However, farther south, on the slopes that face the north, the snow drifts to great depths from an immense flat on top of the mountain above to the southwest and the southeast. The only region of probable snowslides is at the head of Currant Canyon, in this vicinity. The easterly slope here, to the Pole Canyon drainage area, gave an average depth of 33 inches. A little farther on the top of the mountain was reached, where, owing to drifting, the snow was very irregular in depth. The top here is a backbone with a layer of 34 inches of snow on the northeast side, while the southwest side is bare.

From here a drop of 150 yards was made below the drift, and around the head of Left Hand Fork, making 19 measurements on the way, the mean of which was 33 inches on the south hollow and 38 inches on the north hollow. The climb to the top was made here at the head of Hog's Gulch in the Levan watershed. Measure-

ments near the top, but on the Pole Canyon side, were 58 inches in depth. Three measurements at the head of Hog's Gulch averaged 58 inches. From here the head of Right Hand Fork of Pole Creek was covered, with an occasional trip to the top. The depth below the crest drift was about 40 inches, while in places the drift was from 20 to 30 feet in depth and as hard as ice. The measuring stick could not be driven into the face of it. The slope here was such that traveling was very difficult. Here is the only place an avalanche could occur on the Pole Canyon watershed, but when they do occur they are so small that no damage is done.

Coming to the top again at Joe's Springs Trail below Monument Peak, the snow layer was 48 inches thick and very uniform, as the top here is nearly flat, and no drifting of importance occurs here. The climb from here for the next half mile is up Monument Peak to an elevation of 9,000 feet. The south, southwest, and west slopes here were bare, with an immense drift on the east. The north side of the peak, above the drift, gave a depth of 76 inches or more in several places. From here the route led west through the Ranger Station pasture over snow from a trace to 49 inches deep, the average for five measurements being 31 inches. The Moroni Cowboy Cabin was all but buried under a snow layer of 62 inches, while the corral 300 yards south was submerged save for the tops of the posts. There was 52 inches of snow here, this being a small flat on the top of Corral Ridge.

The trail from here led homeward. The road around the ranger pasture was followed, and as it is cut through an aspen thicket, some fairly deep drifts were encountered, averaging well above the 7-foot posts in the fence. Emerging from the timber to the wind-swept Salt Ridge the ground was bare as this is the crest of the mountain, having an elevation of about 8,900 feet. To the northwest is one of the largest drifts of this region, as it usually lasts until August; but as it is on the Birch Creek watershed it is beyond our present consideration. The pasture and corral previously mentioned are likewise beyond the present range of observations, being in the Levan watershed.

Following around the north side of Monument Peak on the Birch Creek drainage basin, the mean of seven measurements was 53 inches. East of the peak, on Pole Canyon drainage area, the snow was 44 inches deep over the entire region, while at the Burned Corral below the Joe's Spring Pass the snow measured 35 inches. From here east to the abandoned coal mines the travel was on 40 inches of snow, and around the mines the average depth was about 26 inches. The ice on the lake south of here was buried under 30 inches of snow, as indicated by surrounding country, while a series of 30 measurements in the vicinity of Jack Springs averaged 52 inches. The reason for the large number of measurements here is that region is almost identical with the large flat region which constitutes the greater portion of the upper part of the Pole Creek watershed.

Below here is a flat where the water from the lake joins that from the west; on this flat the snow was 40 inches deep. The figures below here are included in those of other regions farther down the canyon.

The average for the entire Pole Creek watershed was about 41 inches deep from about 160 measurements. Northeast of the region traversed is a large scope of country nearly level which carried about 2 feet of snow, but the sun and wind get most of it, so it is of no consequence to irrigators.

The entire trip required about six hours, the distance covered being between 8 and 9 miles. It was probably the most enjoyable trip the writer has ever had in this region.