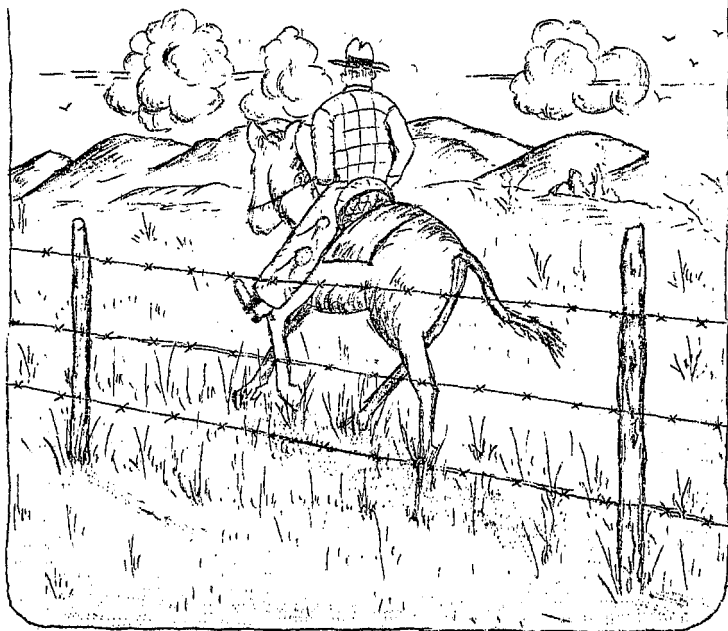




of the season. The cattle in the pasture having an abundance of shrubby species such as four-wing saltbush, rabbitbrush, and broom snakeweed, gained 108 pounds, while those in the pasture having pure short-grass forage gained only 58 pounds.

During October, 1941, most of the cattle on reserve pastures lost weight although a large supply of forage was present. Gains during the same month in 1940 amounted to one-half pound a day. Apparently a better quality of forage was produced in 1940, a year of normal rainfall, than in 1941, when rainfall was excessive and great quantities of forage somewhat lacking in quality were produced.

The condition of the animal is very important in determining the amount of gain which will be made on reserve pastures. Animals in good condition may be expected to gain only small amounts on a diet of shortgrass in late fall, while those in relatively poor condition, may make large gains. During October, 1940; the cattle on a heavily grazed pasture lost an average of 29 pounds. When placed on reserve pasture they gained 50 pounds each during a period of 25 days. Other animals which had experienced no feed shortage and had maintained a steady gain previous to that time lost an average of 27 pounds during the same period in the same reserve pasture.

A study of the feed value of short-grass forage is being started to determine nutrient deficiencies which are believed to exist after the grass has cured or leached. The results of this study should help to explain differences in gains made under different range conditions and suggest better management practices on short-grass ranges.

- GEORGE T. TURNER -

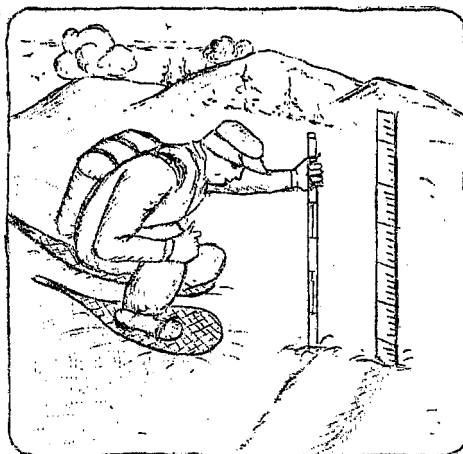
MAIN RANGE WATERSHED YIELDS FIVE TIMES AS MUCH WATER
AS PRODUCED BY A FRONT RANGE WATERSHED.

During 1939, stream-gaging stations were built to measure water yields from typical watersheds on the Manitou Experimental Forest in the Front Range (Missouri Gulch) and on the Fraser Experimental Forest in the Main Range (Fool Creek). The Missouri Gulch watershed embraces approximately 4,800 acres and supports ponderosa pine together with some Douglas fir and aspen. The Fool Creek watershed includes about 700 acres and is principally in the lodgepole pine type, although the creek bottom and the ridges near timber line support considerable Engelmann spruce and alping fir,

Records for the first complete Water year, October 1, 1940, to September 30, 1941, indicate that the water yield from Fool Creek is between five and six times as great per unit area as that from Missouri Gulch. This is especially striking since the amount of precipitation falling on the Fool Creek watershed was not much greater than that occurring on Missouri Gulch. In the following table are presented the runoff and precipitation data for each stream:

	---77117Touri Gulch (4800 acres)	Fool Creek (700 acres)
Runoff, acre-feet	817.7	700.2
Runoff, inches depth	2.04	12.00
Precipitation, inches	21.86	24.18
Runoff in percent of precipitation -	9.3	49.6

A possible explanation for the sharp difference in runoff between the two watersheds is the type and distribution of the precipitation. On Fool Creek no melt takes place during the winter and the stream discharge is entirely base flow derived from slow ground seepage. The precipitation that falls during this time accumulates until the spring thaw, at which time the soil is completely recharged and the excess drains off, producing high discharge peaks. Following the last of the snow melt the streamflow decreases gradually as the saturated soil is slowly drained, maintaining the streamflow at relatively high rate well into the summer. Summer rainstorms, while producing small peaks, have little effect in maintaining streamflow. Apparently they do little more than recharge the surface soil, and this recharge in turn is quickly lost to transpiration and evaporation.



On the Misspuri Gulch watershed the typo and distribution of the precipitation is quite different.. Rarely has enough snow accumulated in the spring to recharge the soil completely. While the melt may produce a fair-ly large peak it does not maintain the streamflow into the summer to any Tpreciable extent. Most-of the precipitation comes in the form of rain throughout the summer. Each storm produces an individual discharge peak, but, apparently, much of the water is held in the surface soil and is eventually dissipated through transpiration and evaporation. This is especially true when several days elapse between storms and the soil becomes qutte dry.

- C. H. NIELTRHOF -

OF ALL HUMAN ACTIVITY war generates the wildest and most baseless rumors. Be sensible and ignore unfounded talk. (Copperweld Magakine, Feb., 1942)

It would be better if the February orators told us what Lincoln aid do, instead of what he would do. (Copperweld Magaane, Feb., 1942.) —