

SUMMARY OF SNOW RESEARCH BY THE ROCKY MOUNTAIN FOREST AND  
RANGE EXPERIMENT STATION AT LARAMIE, WYOMING

Ronald D. Tabler, Hydrologist<sup>1/</sup>

The Rocky Mountain Forest and Range Experiment Station is conducting research on snow movement and the management of snow on Wyoming's windswept plains. One area of research centers on the use of snow fences to increase usable water yield or to augment moisture available for on-site use. Snow accumulation and melt are also being studied as part of a program to determine the hydrologic characteristics of sagebrush (Artemisia L.) lands and to evaluate the effects of current sagebrush control programs to improve forage values on western rangelands.

Snow fences. Three small drainages in southeastern Wyoming have been under calibration since 1961. The snow catch on one of these will be modified by means of snow fences, starting in Fiscal Year 1970. Effects of this treatment on snow accumulation, total annual flow, and seasonal distribution of flow will be studied over the next 5 years. The performance of the watershed fence system will be related to characteristics of the concurrent snow flux across the watershed.

During calibration of the watersheds, field tests have been directed toward developing a realistic treatment prescription. A model has been developed for determining optimum spacing in a series of fences, and field data

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<sup>1/</sup>Hydrologist, Rocky Mountain Forest and Range Experiment Station, Forest Service, U. S. Department of Agriculture; central headquarters at Fort Collins, Colorado, in cooperation with Colorado State University. Research reported here was done at Laramie, in cooperation with the University of Wyoming.

have been collected to test some of the associated hypotheses. Data from a study to determine the effect of fence height on snow accumulation are being used to develop an empirical relation for predicting the amount of snow stored behind a fence as a function of cumulative precipitation and fence height.

Sagebrush. The effects of sagebrush control on water yield are being studied on paired watersheds near Dubois, Wyoming (elevation 2890 m) and near Saratoga, Wyoming (elevation 2380 m). Auxiliary plot studies are being used in both areas to determine some of the characteristics of the snowpack in big sagebrush (A. tridentata Nutt.) stands, and to evaluate the effects of sagebrush control on snow accumulation, disappearance, and disposition of melt water.

**PROCEEDINGS  
OF THE WORKSHOP  
ON SNOW AND ICE  
HYDROLOGY**

**AT  
COLORADO STATE UNIVERSITY  
AUGUST 18-22, 1969**

**JAMES R. MEIMAN, EDITOR**



**A UNITED STATES CONTRIBUTION  
TO THE INTERNATIONAL HYDROLOGICAL DECADE**

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