

showed a total of 626 column inches, about 7.5 times as much, or more than in any other paper in the selected group.

News of the activities of the United States Department of Agriculture or news traceable to the department as the source of information registered an increase of approximately 80 per cent. Of particular significance also was a comparative gain in the news traceable to the State colleges, experiment stations, and extension forces, which increased about 130 per cent. The comparative figures cover too brief a period to be conclusively representative. They indicate the trend, however, and confirm the observation and experience of the Press Service. They also indicate a deepening understanding by the press of the rôle which agriculture plays in the affairs of the nation.

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## **R**ANGE Surveys Help Livestock Industry and Conserve Forage Growth

When the administration of the western national forests was undertaken by the Forest Service great numbers of cattle, sheep, and horses grazed unrestricted on these areas. In many cases the more desirable and accessible ranges had been seriously damaged and the forage depleted through overgrazing. The more inaccessible range on the other hand remained unused.

In order to manage these grazing lands properly, some method had to be devised to determine how much forage was available on the various areas, what plants furnished the most and best feed, how much forage a cow or a sheep required in a given time, and what forms of management were necessary to maintain the forage crop so that the greatest amount of beef or mutton could be turned off. To meet these needs the present method of conducting range surveys has gradually been developed by the Forest Service.

Large numbers of stockmen and ranchers are affected by the results of good or poor management of the ranges. Depleted areas not only fail to provide good feed for large numbers of stock, but the lack of sheltering, soil-binding plants allows the soil to wash away. The danger of floods is increased, and during the dry season springs and streams may dry up because the water runs off rapidly and is not stored in the ground. The object of a range survey is to collect the information needed to formulate plans for the best correlated use of grazing, watershed, and other resources.

### Making a Range Survey

The work is usually done by crews of specially trained men. The range is mapped to show the location and acreages of the various types of forage, and the location of high ridges, canyons, watering places, and similar features of the range which influence grazing. The amount and kind of forage on all portions of the range are recorded. Each stockman operating on the area may then be allotted feed in proportion to the number of animals which he grazes and the stock can be distributed according to the amount of forage found on various parts of the range. (Fig. 144.)

Through pasture tests, as well as experiments on portions of the range itself, the amount of forage required for cattle or sheep is determined.

The results may be applied to any similar range on which the amount of available feed is known. The numbers of stock or length of season may then be adjusted so that the range is used fully and properly.

Turning out stock too soon after growth first begins is responsible for much range deterioration. During the early spring plants are easily damaged by grazing, and if this practice is continued the valuable forage is eventually thinned out or destroyed. Range-survey methods are used to determine the dates when each portion of the range is ready for use during an average season, and the stock may then be placed on each unit when it is ready to be grazed. Frequently stock may be turned on one portion of the range early and other parts may be allowed to rest. The following year another area may be used first, so that each part of the range will have a complete rest during the principal growing period at least every few years.

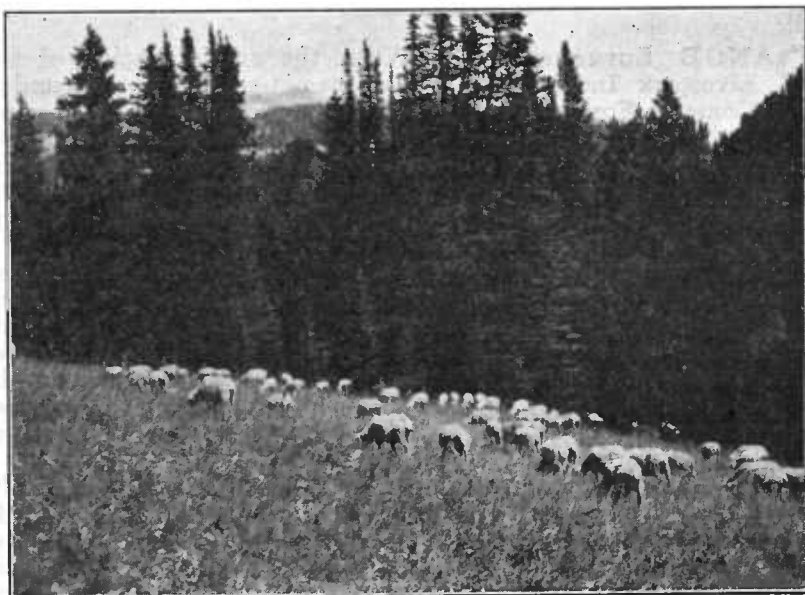


FIGURE 144.—Sheep grazing on the Jefferson National Forest, Mont.

### Salting Aids Proper Distribution

After the various natural divisions of each range are determined and the amount of feed within each is known, it is possible to work out a plan of distribution so that all parts of the range may be grazed to the same degree. Such a plan is greatly aided by refinements in actual practices of handling stock. Well distributed salt will do much toward keeping cattle scattered over the area and also toward drawing them to those portions of the range where use is ordinarily light. The salt grounds are usually located on ridges and in parks away from water so that cattle will feed off these areas as well as graze the range between water and salt. Range damage due to stock congregating along creeks and springs is largely eliminated and frequently, with proper salting, the range is capable of carrying larger numbers of stock with less accompanying damage. By knowing the amount of available forage

which each portion of the range supports, a definite plan can be drawn up showing how many cattle are to be located in each drainage or pocket and the needed amount and location of salt. (Fig. 145.)

On sheep range, the old method of trailing the band back to a central bed ground each night is detrimental to the sheep and very destructive to the range. The tepee system, as used on the national forests, provides for quiet open herding during the daytime, allowing the sheep to graze slowly outward and bed down where night overtakes them. The herder has a cook and supply camp centrally located on each range unit, but he moves his tepee and bed to the place where the sheep will be bedded for the night. This system of herding allows the sheep to graze progressively over the range, so that they are on fresh feed continuously. A range survey is necessary because the amount of forage in each area used from a central camp must be known in order that the

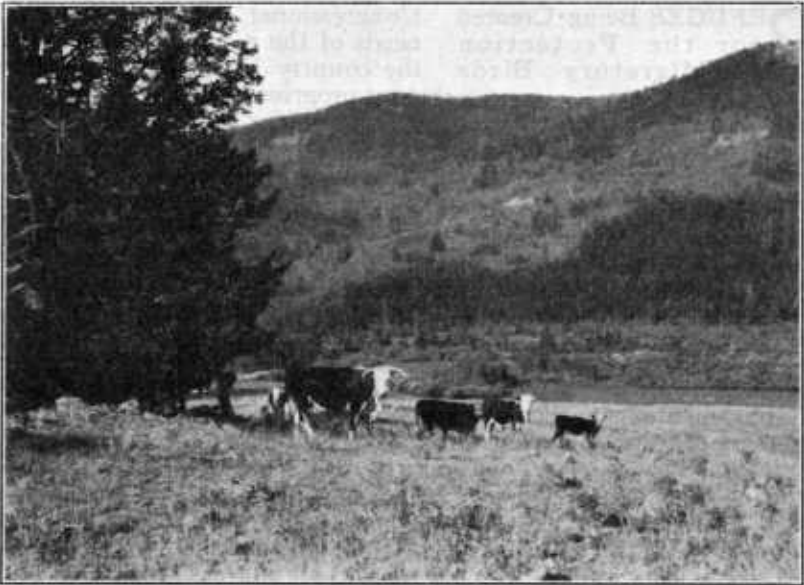


FIGURE 145.—Cattle using feed on ridges. Well distributed salt will do much toward drawing cattle to those portions of the range where use is ordinarily light

range can be evenly grazed. Otherwise, as frequently happens where the forage resources have not been estimated, some areas will be overgrazed and others not grazed at all or only lightly, because the herder has no guide to indicate how rapidly each area should be gone over.

#### Opening Areas Difficult of Access

Often through the construction of a few range improvements it is possible to open up inaccessible areas, to prevent too early use of the higher range, and to aid in the even distribution of stock so as to prevent local overgrazing. During the progress of a range survey a record is also kept of all needed improvements, such as development of springs, construction of stock trails and driveways, handling corrals, drift fences, and similar features that are necessary to good management. The boundaries of dangerous patches of poisonous plants are noted

so that, where possible, eradication may be undertaken, or serious losses may be prevented by modifying the management plan of the range.

While much progress in range management has been made, many additional refinements are desirable. Overgrazed and damaged ranges must be allowed to recuperate so that they may contribute their full share toward meat production and watershed protection. The lightly grazed areas should be made accessible in order that the forage can be used. When all of the information obtained in range surveys is fully applied in the management of the ranges, they should yield their maximum benefits to the users and the surrounding communities.

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## **R**EFUGES Being Created for the Protection of Migratory Birds

Congressional recognition of the needs of the migratory wild fowl of the country has resulted in important progress during the past year in

the creation of a national system of refuges for the wild ducks, geese, swans, and other migrants that twice each year, spring and fall, pass between this country and Canada. Two refuges—one in Montana and the other in Oklahoma—have been set aside by Executive order, following investigations as to their suitability under the migratory bird conservation act of February 18, 1929; two others—one in Colorado and the other in South Carolina—are being acquired by purchase of necessary lands as authorized by the Migratory Bird Conservation Commission created by this act; and in the Seventy-first Congress authorization was granted for the acquisition of 20,000 acres in central Kansas for migratory-bird refuge purposes. These beginnings in the establishment of a nation-wide system of sanctuaries for the threatened numbers of migratory birds are most gratifying to the wild-life conservationists throughout the country, who have been active for years to bring this about. The placing of these areas under administration marks a further step in this country's efforts to carry out its obligations under the migratory bird treaty of 1916.

### **The Refuge Programs**

The new conservation measure authorizes appropriations over a period of 10 years, aggregating about \$8,000,000, for the establishment of migratory game bird refuges. The initial allotment, made available on July 1, 1929, set up \$75,000, and this was used to explore and study regions recommended as suitable for reservation purposes. Two lines of investigation were at once instituted:

(1) Migratory-bird resources, existing and potential, were studied in 48 States, covering 189 units, with an aggregate area of about 3,700,000 acres. Of these 66 thus far have been found suitable as nesting, resting, and feeding grounds. (2) Within the acceptable units detailed examinations were made to determine accurately the types of land, ownership, the uses made of land and cover, and the character, extent, and value of existing improvements. At the end of the fiscal year 1930 valuation investigations had been completed on areas aggregating 1,225,000 acres in 24 States, and statistical data and maps compiled on 40 of the units under consideration.