A WEIGHT ESTIMATE METHOD FOR THE DETERMINATION
OF RANGE OR PASTURE PRODUCTION

JOSEPH F. PECHARNEC AND G. D. PICKFORD

Estimates of plant cover density have been and are still being
used as a basis for the determination of grazing capacity. However, experiments carried on by the Intermountain Forest and Range Experiment Station have shown variations to occur in the grazing capacity of pastures between that calculated from ground cover or plant density surveys and that derived by actual grazing trials.

Since accurate grazing capacity estimates are essential to the formulation of sound policies for the maintenance or increase of range forage, these variations between calculated and actual grazing capacities found on native sagebrush-wheatgrass ranges were deemed serious enough to warrant a study of methods used in forage inventory.

It was the purpose of this study (a) to examine existing available methods of estimating grazing capacity and to select the most satisfactory method or, in the event that none was wholly desirable, to design a new method; and (b) to test the selected method in conjunction with estimates of density to determine the relative accuracy, personal error, and tendency for lesser dispersal of estimates.

FORAGE INVENTORY METHODS

Pasture and range analyses probably date back to the end of the nineteenth century. Since that time a widely diversified group of methods have evolved. Stapledon (18) introduced the specific frequency method and made extensive use of the percentage productivity method. Davies (4) adapted percentage estimation to determinations of percentage frequency and productivity. Levy (13) perfected the point method of pasture analysis. About the same time, Clements (2) began using square-meter quadrats. Sarvis (16), using list and chart methods, calculated percentage ground cover. Salcedo (15), Knott, et al. (11), and Davies and Trumble (3) used animal units in determining carrying capacity. DeVries (5) used the "rank method". Stewart and Hutchings (19) advanced the "point-observation-plot" method of determining vegetative ground cover.

Two of these methods of forage inventory, the "percentage-productivity-estimate method" and the "point-observation-plot method", are especially noteworthy from the standpoint of the principles embodied.

"Percentage productivity estimation" was discussed by Davies (4) and adapted by Beruldsen and Morgan (1), Davies and Trumble

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3 Figures in parenthesis refer to "Literature Cited", p. 904.