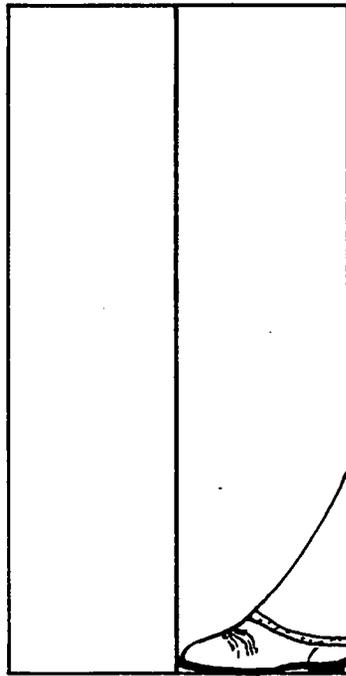
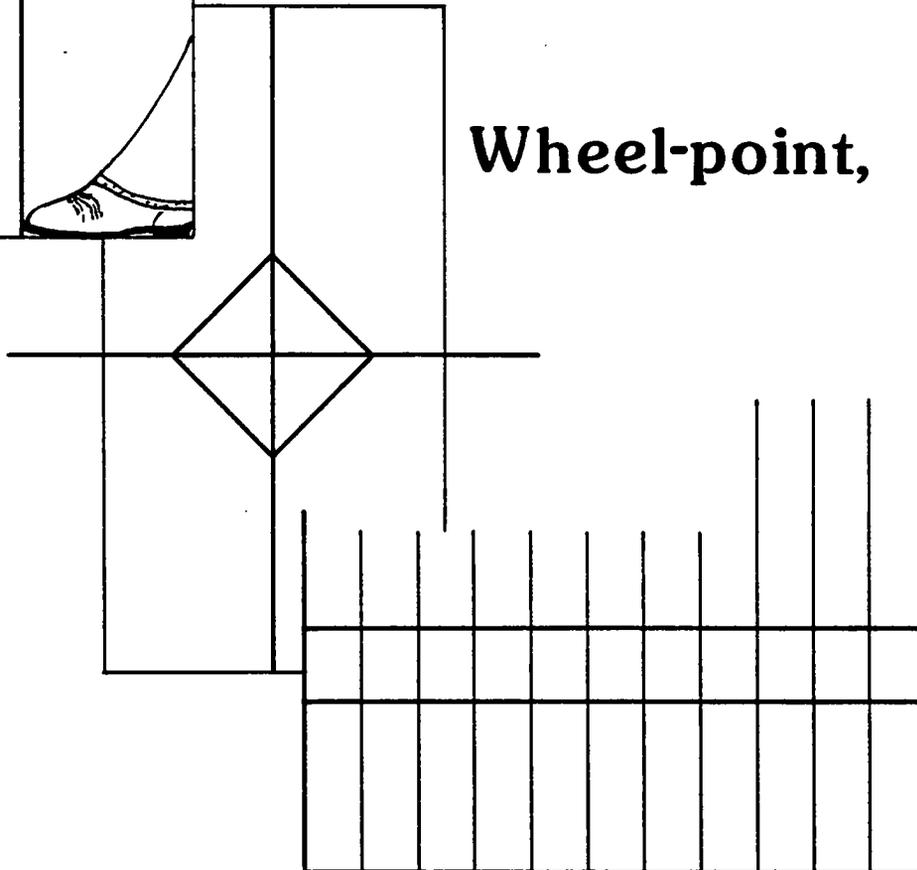


Measuring Cover Using



the Step-point

Wheel-point,



and Point-frame



Technical Bulletin 88-3
Idaho State Office
3380 Americana Terrace
Boise, Idaho 83706

Sampling Methods

Measuring Cover Using the Wheel-point, Step-point, and
Point-frame Sampling Methods

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March 1988

Measuring Cover Using the Wheel-point, Step-point, and Point-frame Sampling Methods¹

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ABSTRACT

This study compares basal and overstory cover as measured by the wheel-point, step-point, and point-frame cover sampling methods on a sagebrush-grass rangeland in southwestern Idaho. The results show that all three point methods provided similar estimates of basal plant cover, but there were some significant differences in first hit measurements with the point-frame measuring less plant cover and more litter, rock, and bare ground than the other two methods. There was also strong evidence of operator bias.

Key Words: Rangeland, Vegetation, Grassland, Basal Cover, Canopy Cover

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Introduction

Plant cover is a vegetation parameter which is widely used to describe ecological and hydrological conditions of rangelands (National Academy of Sciences 1962). It is a complex parameter because there are many types of cover and many ways to determine it. A major problem in determining cover is the lack of consistency among methods and individuals using the same method. Even though point methods of measuring cover are less subjective than area estimate methods, they still contain high levels of individual bias. Extensive citations on the use of point quadrat methods are given by Morris (1967), and Greig-Smith (1983). The purpose of this study was to compare three point-quadrat methods for measuring cover in three plant communities.

The three methods compared were: 1) wheel-point (Figure 1) (Tidmarsh and Havenga 1915, and von Broembsen 1965); 2) step-point (Figure 2) (Evans and Love 1957, and U.S. Department of Interior 1979); and 3) vertical ten-pin point-frame (Figure 3) (Goodall 1952, National Academy of Sciences 1962, and Hutchings and Pase 1963).

Study Area and Methods

This study was conducted at four sites on the Reynolds Creek Experimental Watershed in southwest Idaho. The Flats, Nancy Gulch, and Whiskey Hill study sites were sampled in 1981 using the wheel-point, step-point, and point-frame methods. In 1982, Nancy Gulch and Lower Sheep Creek were sampled using only the wheel-point and point-frame methods. All sampling was done near peak

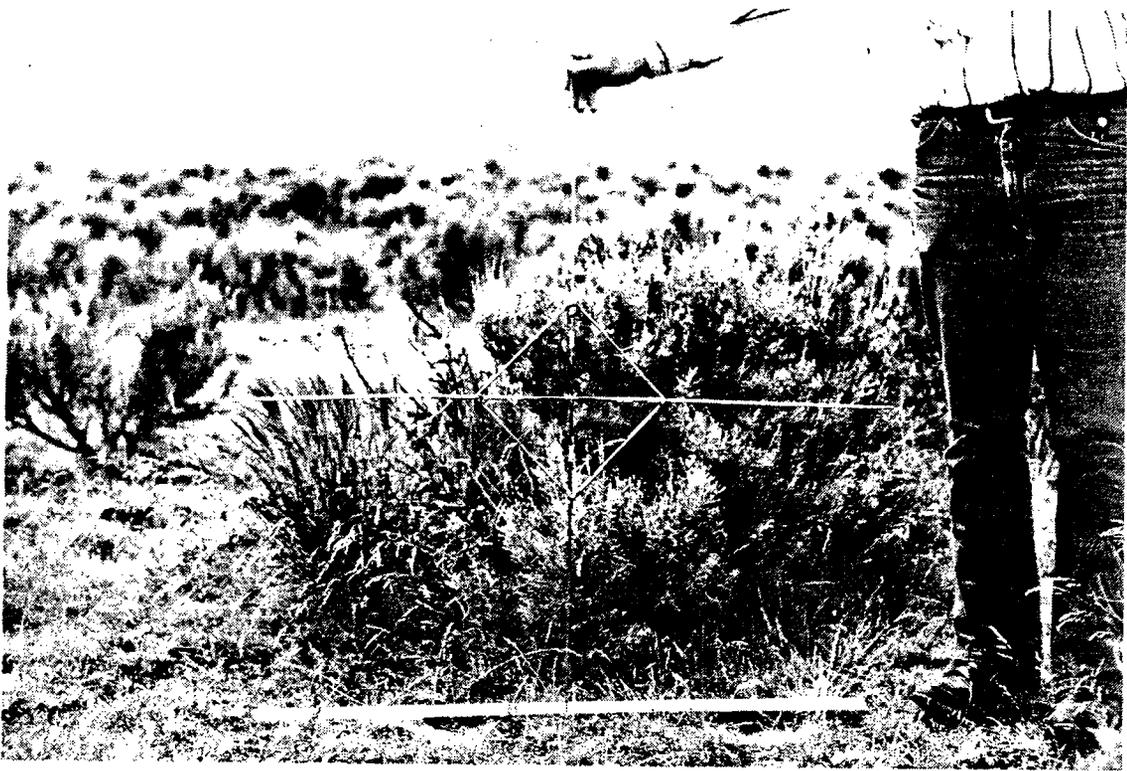


Figure 1. The wheel-point used in this study.

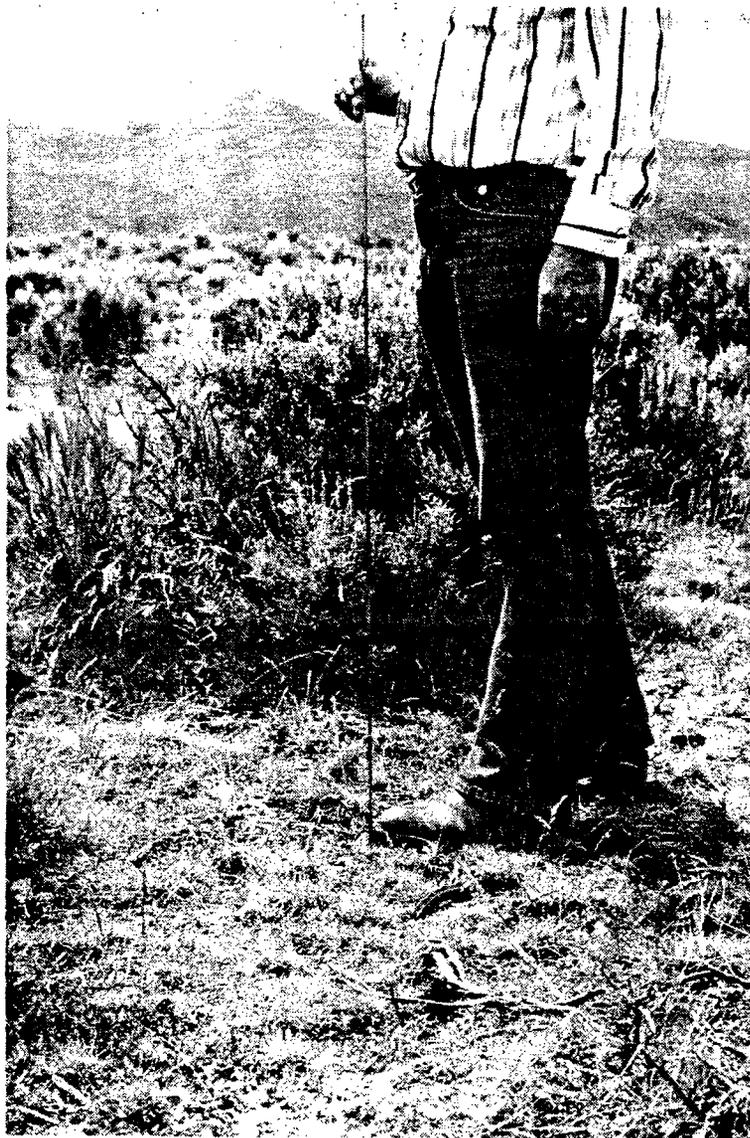


Figure 2. Step-point method using the pin at the toe of the boot.

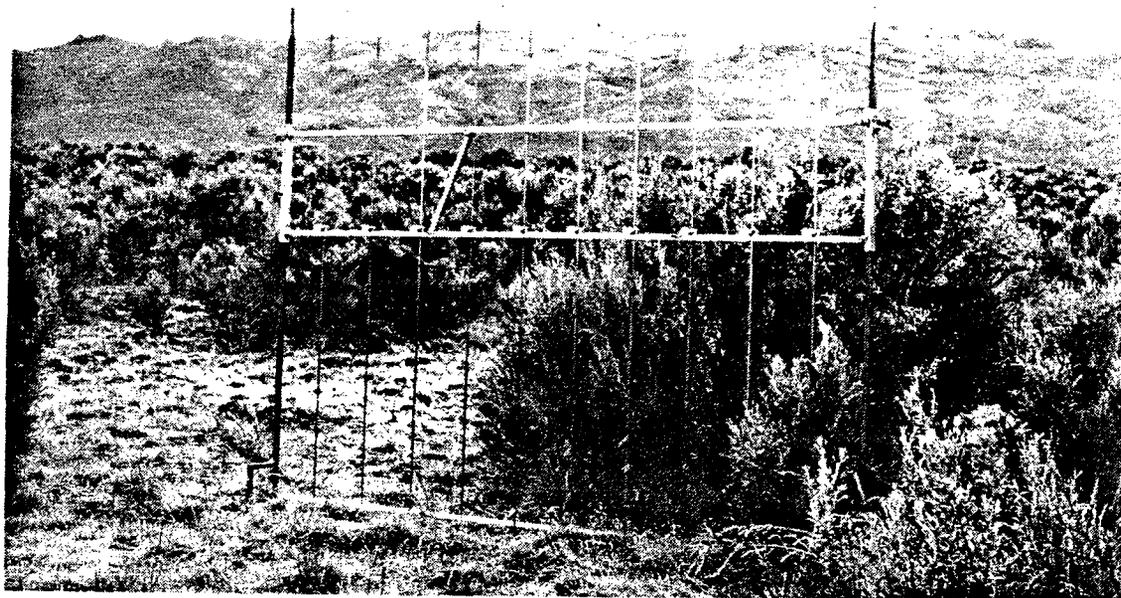


Figure 3. The ten-pin vertical point frame used in this study.