

Daubenmire R. A canopy-coverage method of vegetational analysis.

Northwest Sci. 33:43-64, 1959.

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The spread of foliage of each species is estimated by rather crude coverage classes in small plots. Since positive and negative errors of estimation tend to cancel each other out as a series of plots is analyzed, the method has a high degree of accuracy and reproducibility. [The SCI® indicates that this paper has been cited in over 185 publications, the most for any paper published in this journal.]

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"The number of reprint requests for this paper, some from foreign countries, surprised me since the publication contained nothing new except for its combination of methods and principles already scattered throughout the literature.

"From time to time, I had been trying different published procedures for quantitatively sampling vegetation without being satisfied with any of them. So when I was about to undertake an intensive study of steppe vegetation, I felt the need to review the literature extensively to settle upon a good technique for this long-term study.

"An incredible variety of methods has been used, but most have limited field application, are tedious, or yield data of limited biological significance. Most involve estimations subject to various interpretations and human error, so the results of different workers cannot be compared satisfactorily. The

synthesis which I proposed to use takes advantage of all established principles of good sampling: it places emphasis on species dominance (as canopy coverage), it provides a neat way of minimizing human error in evaluating dominance, and its efficiency is simply demonstrated. These appear to be the bases for widespread interest in the paper.¹

"Further, the method allows selection of a homogeneous sample out of a vegetative mosaic, yet the exact positions of the small plots cannot be influenced by personal bias. With systematic placement, plots can be reevaluated in subsequent seasons to detect changes in dominance.

"Plot size is so small, 20 × 50 cm, that positive errors in estimating the coverage class of a species should balance negative errors when results from a number of plots are averaged. The number of plots required depends on the richness of the vegetation and can be determined in the field by noting the change in averages as successive groups of a few plots each are added on in calculating the average for all of the series.

"The accuracy of the method was clearly shown by annual analyses of a piece of grassland starting shortly after it was burned. Slow but progressive change in coverage would have passed unnoticed but for the plot data.

"I submitted the manuscript to *Ecology*, but the editor, without rejecting it, indicated that he considered it marginal, and I felt sufficiently affronted to withdraw it. Later, I submitted it to *Northwest Science*, where it met with a much better reception. However, still somewhat miffed by the previous comments, I ordered only a few reprints and soon found that I had to have processed a condensed version to satisfy reprint requests."

1. Jorgensen H E. *Vegetation of the Yellow Water Triangle*. Montana. Helena, MT: Wildlife Division. Montana Department of Fish and Game. 1979. 57 p.