

Utilization Methods

What is Utilization?

Utilization is the proportion or degree of current year's forage production that is consumed or destroyed by grazing animals (including insects). Utilization is determined by comparing the amount of forage left with the amount of forage produced during the year. Utilization may refer to use of individual plant species, a group of species, or the vegetation as a whole.

Why Do We Measure Utilization?

Utilization data can be an effective management tool to evaluate and modify the impact of grazing animals on soil, water, and vegetation resources. Utilization data, in conjunction with other monitoring information such as vegetation cover trend data, weather data, and past management actions can help land managers in:

1. Analyzing distribution of grazing animal use across a management unit that becomes the basis for location of additional rangeland improvements, such as watering or salt locations and fences.
2. Interpreting cause and effect relationships for observed changes in soil cover, species composition, vegetation cover, etc.
3. Adjusting stocking rates and/or timing of grazing when used in conjunction with other monitoring information including long term vegetation or habitat data, current and historical stocking records, precipitation records, etc.

Utilization measurements are not land management objectives. It is a tool used with other information to interpret whether management actions are meeting land management objectives.

When and Where Do We Measure Utilization?

The timing of utilization measurement in relation to growing season and grazing season is important. Utilization is defined as the percentage of the current year's growth that is removed by, or disappears during, grazing. Current year's growth can only be observed after the end of the growing season. Utilization compares the amount of forage removed to the total amount produced during the entire growing season.

Utilization measured during the growing season does not meet this definition and is referred to as Seasonal Utilization. Seasonal utilization is the percentage of the forage produced in the current growing season to date of measurement that is removed by grazing. This percentage is different from utilization because it does not account for subsequent plant growth during the growing season.

It is important to understand the difference between Utilization and Seasonal Utilization. Seasonal utilization measured early in the growing season has no consistent relationship to utilization based on total production at the end of growing season. The proper time to measure utilization depends upon on the purpose for which the data will be used. Both types of utilization measurements help with determining management actions.

Utilization measurements are usually made in key areas. Key areas are representative of the larger management unit, located within a single ecological site or plant community, contain the key species where the key species concept is used, and capable of showing a response to management actions.

Utilization can be measured on the forage vegetation as a whole or by focusing on key species. Key species are forage species whose use serves as an indicator of the grazing use of associated species.

How Do We Measure Utilization?

Several methods have been developed to estimate utilization. Each method has its strengths and weaknesses. A good description of major methods for rangelands are found in:

[Utilization Studies and Residual Measurements](#)

Further Reading

[Principles of Obtaining and Interpreting Utilization Data on Rangelands](#)

[Utilization and Residual Measurements: Tools for Adaptive Rangeland Management](#)