

A Method of Conducting Pasture and Forage Inventories to Be Used in the Development of Biologically Effective Management Strategies

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The goal of a biologically effective pasture and forage management strategy is to match the forage quantity and nutritional needs of the livestock with the herbage production curves and the nutrient-available curves of the various forage types so that the combination of forage types provides efficient use of the ranch natural resources. Development of a biologically effective pasture and forage management strategy for a ranch requires knowledge of the current quantity and quality of the available pasture and forage types. A pasture and forage inventory is needed to identify the resource types that will provide the forage needs of the livestock at their various production stages.

A major goal of the inventory is to identify the pasture and forage assets of the ranch and to identify the features that cause bottlenecks restricting the management unit from reaching its optimum potential production levels. The strongest pasture and forage asset of the ranch is the resource that determines what the ceiling for the livestock numbers would be if the resource were used during its optimum period and if the forage types used during the other livestock production stages could be brought up to an equivalent level. The bottleneck asset is the resource that limits livestock production and shows what the potential bottom for the livestock numbers would be if this problem were not corrected. The development of a biologically effective management strategy requires adjustments in the quantities of the natural resource types so that the needs of the livestock can be met efficiently during the entire 12-month period.

A pasture and forage inventory is a list of information about each parcel of land included in a livestock production operation. The main categories are pasture land, including native rangeland and domesticated perennial grass; hayland, including native rangeland, domesticated grass, and alfalfa; and cropland, including grazed annual forage, annual forage hay, and annual crops for grain used for feed or cash sale. The information needed for hayland and cropland inventory includes the size in acres, forage type, and average yield in tons per acre or bushels per

acre. The information needed for pasture land inventory includes the size in acres, stocking rate in ac/AUM, and carrying capacity in AUM's of available forage. A worksheet will help organize the pasture land information.

One of the major causes of low profit margins from livestock production is the inefficiency of capturing economic value from the land resources inherent in old-style traditional management practices; in addition, the common practice of changing livestock forage sources on short notice or in crisis situations is expensive. Increasing the economic value captured from the land requires effective planning. One of the first steps in this planning process is to designate specific parcels of land for forage production for each group of livestock.

The pasture location of livestock groups should be predetermined for an entire year. A monthly time line for livestock inventory worksheet is a useful planning tool. This worksheet is a planning list of each category of livestock, the number of livestock in each category, and the pasture name or forage type used for feed on a monthly schedule.

If gathering information for this worksheet is part of the initial stages of changing pasture and forage management from traditional practices to biologically effective methods, a monthly time line for livestock inventory should be completed according to the old-style management practices. After a biologically effective management plan is developed, a second monthly time line for livestock inventory should be completed.

Worksheets for the methods described in this report should be copied before procedures are begun.

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Steps in conducting a pasture and forage inventory for pasture land.

1. List pasture by name or number.
2. List total acreage of pasture.
3. List vegetation types in pasture (for example, native rangeland, crested wheat, smooth brome).
4. List acreage of each vegetation type in pasture.
5. List landscape sites in pasture (for example, lowland, upland, xeric) (see Info. Sheet #27, Generalized landscape site management units).
6. Estimate percentage of each landscape site in pasture.
7. Determine acreage of each landscape site in pasture by multiplying total pasture acres (Step 2) by % landscape site (Step 6).
8. Identify range condition as one of four broad categories of condition: excellent, good, fair, or poor (see Info. Sheet #28, Simplified assessment of range condition).
9. Determine stocking rates (ac/AUM) of landscape sites from average stocking rate value in ac/AUM tables (see Info. Sheet #29, Generalized average stocking rates).
10. Determine carrying capacity in AUM's by dividing the acreage of each landscape site (Step 7) by average stocking rate (Step 9).
11. Determine historical stocking rate (ac/AUM) for pasture by simple method (see Info. Sheet #29, Generalized average stocking rate).
12. Determine historical carrying capacity in AUM's by dividing total pasture acres (Step 2) by historical stocking rate (Step 11).

Example of Pasture Land Inventory

To illustrate how to fill out the pasture and forage inventory worksheet for a ranch, we will use an example of a West River Region pasture of one section (640 acres) with 10% crested wheat and 10% lowland, 50% upland, and 30% xeric landscape sites. The area is grazed for 4.5 months, from 1 June to 15 October, by 70 cow-calf pairs with the cow average weight at 1,000 pounds.

Steps in conducting monthly time line for livestock inventory.

1. Separate livestock into production categories.
2. List the number of head in each category for each month.
3. List the pasture name or forage type that each livestock category is planned to use for feed for each month.

Monthly Time Line for Livestock Inventory Worksheet													
Identify number of head and pasture location per month													
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mature Cows (A) 4's +	#head												
	Pasture												
Mature Cows (B) 4's +	#head												
	Pasture												
Mature Cows (C) 4's +	#head												
	Pasture												
Young Cows 2's, 3's	#head												
	Pasture												
Replacement Heifers	#head												
	Pasture												
Weaned Heifers	#head												
	Pasture												
Weaned Steers	#head												
	Pasture												
Bulls	#head												
	Pasture												
Horses (AUE X 1.5)	#head												
	Pasture												
Sick	#head												
	Pasture												
Other	#head												
	Pasture												