

# Seasonal Suitability, A Grazing System for Ranges of Diverse Vegetation Types and Condition Classes<sup>1</sup>

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## Highlight

**Seasonal suitability grazing, a grazing system long in use on southwestern ranges, consists of grazing diverse vegetation types in accord with seasonal use requirements of and benefits to vegetation and livestock. On ranges of diverse vegetation types, it is a superior system with respect to maintenance and improvement of the range, harvest of forage and livestock production.**

Stoddart (1960) has pointed out that the management of a range, including the grazing system used, may have a marked influence on its grazing capacity. While differences in capacity due to grazing system are not always great or even significant, grazing system may in some instances account for considerable differences in grazing influences, capacity and returns. On the Edwards Plateau in Texas, Merrill (1959) found that range improvement was greater under rotation grazing at 32 animal units/section than under yearlong grazing at 16 AU/section. Selection of the proper grazing system for a particular range, therefore, may be of primary importance and should be one of the first things to be considered in managing the range.

Four systems of grazing commonly have been recognized as applying to western rangelands: continuous grazing (yearlong or seasonlong) and the specialized systems—deferred grazing, rotation grazing, and deferred-rotation grazing. There appear to be some differences of opinion concerning definitions and distinctions between certain of these systems. Heady (1961) points out that, while the specialized systems may be distinguished easily by definition, distinction in application is not so easily made. Distinguishing between de-

ferred grazing and rotation grazing on the basis of the objective of deferring—whether for seed production only as opposed to other objectives—(Sampson, 1952) substantiates Heady's point. While different grazing systems may have some characteristics in common, truly different systems should be distinguished on the basis of some significantly different characteristic or combination of such characteristics.

The purpose of the present discussion is to point out seasonal suitability grazing as a distinct grazing system, different in its essential feature from the other recognized systems, and co-ordinate in value with them. Like the other systems, it is an integration of the pastures of a ranch into a whole, functioning to supply forage and maintain range, both at an optimum level. Its essential differentiating characteristic is that the integration is on the basis of best season of use of the pastures comprising the ranch. Seasonal suitability grazing may be defined as grazing the various range vegetation types, subtypes, and/or condition class areas comprising a ranch when grazing is most advantageous to vegetation or livestock or both. This is a specialized system, but not narrowly so. It is comprehensive of many variations and it is flexible and opportunistic. Stoddart and Smith (1955) note that seasonal use of range is often not obligatory, but merely convenient. This is true, but on most ranges of diverse vegetation types, seasonal grazing is strongly indicated by requirements of both range and livestock, or by opportunities to benefit either or both.

The application of the seasonal suitability system to a range consisting of various kinds of vegetation common on southwestern rangelands is shown by the example presented in Table 1. Under the seasonal suitability system, each pasture is grazed for only two or three months, generally only once during the year. Alternate seasons of use are indicated for two pastures—Nos. 5 and 6. There is no rotation of use through the seasons; once a season of use has proven advantageous in a pasture, the same season of use is generally continued through the

years. However, for those pastures which represent different condition classes of the same vegetation subtype, season of use may be changed as range condition changes. The actual length of the grazing period for each pasture depends upon its grazing capacity and condition, and upon the necessity of achieving approximately equal month-by-month stocking on the ranch as a whole.

As the potential black grama pastures, Nos. 5, 6, and 7, improve to good condition, it might be desirable to establish a subsidiary system involving true rotation grazing for them and Pasture 3, covering the fall, winter, and spring seasons. Such a rotation system would not alter the fact that the main system on the range is seasonal suitability. For pastures in very poor to fair condition, the level of grazing use should be such that the key species, black grama, is allowed to recover its natural dominance; shifting the season of use alone, without regard for level of use, will not bring about satisfactory recovery.

The flexible and opportunistic aspects of the seasonal suitability system are exemplified by the practice of ranchwide grazing in late spring and early summer on certain southwestern ranges. On these ranges this period is, as a rule, one of stress on animals. The limited green forage present should be made available to stock wherever it is located, regardless of the designated season of use of pastures. Generally this forage is selectively grazed, with but little use of the key species. Also, significant amounts of winter forbs occasionally appear, which should be made available to livestock without regard to seasonal designation of pastures. Even if pastures involved are in very poor or poor condition, the fresh growth will be sought out and grazed almost exclusively. These departures from scheduled seasons of use are not real departures from the basic system. The occurrence of winter, spring, and early summer forb growth is so erratic on southwestern rangelands, in both amount and location on a given range, that plans for using it, specific as to time and place, can not be made. Only general plans are possible, and such plans and their

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Table 1. Vegetation diversities commonly found on Southwestern rangelands, seasonal grazing values and limitations, and indicated season of use.

Pasture No.	Vegetation Type, Subtype, or Condition Class	Seasonal Grazing Values and Limitations	Season to be Grazed
1	Tobosa grass ( <i>Hilaria mutica</i> )-burro grass ( <i>Scleropogon brevifolius</i> ); good condition.	Tobosa grass and burrograss palatability and nutritive value highest in summer, very poor to fair in other seasons.	July-September, depending upon summer rains.
2	Creosotebush ( <i>Larrea tridentata</i> )-tarbush ( <i>Flourensia cernua</i> )-alkali sacaton ( <i>Sporobolus airoides</i> ); poor condition.	Alkali sacaton affords late spring-early summer forage; palatability and nutritive value of new growth fairly good.	April-June.
3	Black grama ( <i>Bouteloua eriopoda</i> )-mesa dropseed ( <i>Sporobolus flexuosus</i> ); good condition.	Black grama palatable and nutritious yearlong, especially valuable in winter, loses basal cover and yield under full use in growing season; mesa dropseed good in fall, poor in winter.	November-February.
4	Mesquite ( <i>Prosopis juliflora</i> )-fourwing saltbush ( <i>Atriplex canescens</i> )-mesa dropseed; poor condition.	Saltbush especially valuable in winter and spring; mesa dropseed valuable in winter with saltbush browse.	February-April.
5	Black grama-mesa dropseed; fair condition.	Regular winter grazing should be avoided to minimize black grama use; mesa dropseed, especially palatable in summer, will carry much of the grazing load in summer and on into early fall, with black grama receiving only light to moderate use.	July-September or October-November.
6	Mesa dropseed-black grama; poor condition.	Similar values and limitations as Pasture 5, with greater emphasis on minimizing use of black grama.	July-September or October-November.
7	Summer forbs-mesa dropseed-black grama; very poor condition.	Regular fall, winter and spring grazing should be avoided to minimize use of black grama; use in main summer growing season will allow forbs and mesa dropseed to carry most of the grazing load.	July-September when forb and mesa dropseed growth is good.

execution are practices within the seasonal suitability system.

There has been some tendency to confuse seasonal suitability and rotation grazing, or at least to include both systems under the term "rotation." Pearse (1950) gives evidence of this in referring to the use of tobosa grass range in summer and black grama range in winter on the Jornada Experimental Range in southern New Mexico as rotation grazing. This can lead to erroneous conclusions concerning the value of both systems and also to errors in actual management. Range suited to rotation grazing offers little if any basis for seasonal suitability grazing; and range on which the seasonal suitability system is applicable will not perform well under rotation grazing. As Jardine and Anderson (1919) recognized, the essential characteristic of rotation grazing is the shift in use of pastures through the seasons of the year or periods into which growing seasons may be divided, that is early, middle, and late. They also recognized that, in order to accommodate the shift in season of grazing, the vegetation of a range or allotment on which rotation grazing is properly applicable should be similar in character throughout. Stoddard and Smith (1955) also give recognition to this point in noting that for an ideal deferred-rotation plan, all pastures must be usable at any season.

Heady (1961) notes among the disadvantages of specialized grazing systems that certain pastures must be used at the same time every year. This disadvantage disappears with the recognition that seasonal suitability is a specialized system designed specifically for ranges of diverse vegetation types with fixed optimum season of use.

As has been indicated, the seasonal suitability system is not new to range management, nor have its values been unappreciated. It has been the avenue through which one of the four cardinal principles of range management, proper season of use, has been achieved. Jardine and Hurtt (1917) pointed out that seasonal grazing was practiced on the Jornada Range Reserve (now the Jornada Experimental Range).

Wooton (1922) observed that seasonal grazing was necessary to avoid premature grazing and to achieve proper seasonal use of forage. Wooton also pointed out that the seasonal suitability system is in effect in the summer grazing of mountain rangelands and winter grazing of lowland ranges by the same livestock. Jardine and Anderson (1919), in distinguishing between spring, summer, fall, and winter ranges, recognized the applicability of the seasonal suitability system in the management of national forest ranges. Perry (1966) has recently pointed out how year-long stocking of a forest and woodland allotment on the Coconino National Forest in Arizona is achieved by means of the seasonal suitability system, under which summer, spring-fall, and winter pastures are recognized. There can be little doubt that, through the years, numerous practical range managers have used the seasonal suitability system, perhaps emphasizing its characteristics which are beneficial to livestock.

Paulsen and Ares (1962) note that season of grazing of black grama grass on the Jornada Experimental Range influences the capacity of the range. One pasture, on which forage use had been 88.2% in winter-spring and 11.8% in summer-fall, had a capacity of 14.2 AU years/section. Another, on which forage use had been 57.5% in winter-spring and 42.5% summer-fall, had a capacity of 7.6 AU years/section. Canfield (1939) found that when black grama range on the Jornada was shifted from yearlong use to semi-deferred use (light summer-fall use followed by full use in winter-spring), the perennial grass cover increased from 1.41 to 4.46%.

The practices described by Paulsen and Ares and Canfield are variations of the seasonal suitability system involving differences in range condition within the black grama

grass subtype in fair to excellent condition. Very poor and poor condition black grama range call for different seasons of use. Ordinarily winter-spring grazing of very poor and poor condition black grama range should be avoided because the relatively high palatability of black grama during the dormant period induces selective use of the species. These points, exemplified in Table 1, illustrate the important varying seasonal values and requirements of different range condition classes, variations to which the seasonal suitability system is well adapted.

The long established use of the seasonal suitability system of grazing, even though not designated as such, and its demonstrated value well warrant its formal recognition. Such recognition would be beneficial to students in coming to a fuller understanding of grazing systems and to professional and practical range managers in planning and carrying out management of the range. Its recognition, consideration, and adoption—where applicable—focus attention on the importance of optimal season of use, as it pertains both to the permanently different range vegetation types and subtypes and to the temporarily different condition class areas on a range. Such use realizes the most from the range forage resources, the greatest improvement of poor and fair condition range, and the greatest benefit to the range livestock.

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