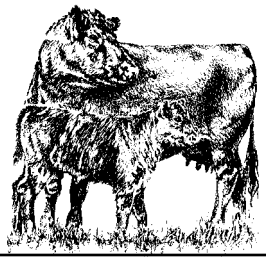

Western Beef Resource Committee *Fourth Edition*

Cattle Producer's Handbook

Range and Pasture Section 599

Range Management Terms, Definitions, and Acronyms

Allotment—Area of federal lands designated for the grazing use of a prescribed number and kind of livestock under a specific plan of management.

Allowable Use—The degree of utilization considered desirable and attainable on various parts of a ranch or allotment considering the present nature and condition of the resource, management objectives, and level of management.

Animal Impact—The sum total of the direct physical influence animals have on the land: trampling, dunging, urinating, salivating, rubbing, digging, etc.

Animal Unit—One mature (1,000 pounds) cow or the equivalent based upon average daily forage allowance of 26 pounds dry matter per day under range conditions. This allows for forage trampled or used by other animals. (Animal Unit Conversions: Yearling .6 AU, Bull 1.25 AU)

Animal Unit Month—(1) Amount of forage required by an animal-unit for one month; (2) tenure of one animal-unit for a period of one month.

Annual Plant—A plant that completes its life cycle and dies in one year or less.

Annual Range—Range on which the principal forage plants are self-perpetuating, annual, herbaceous species.

Apparent Trend—An interpretation of trend based on observation and professional judgment at a single point in time (see Trend).

Available Forage—That portion of the forage production that is accessible for use by a specified kind or class of grazing animal.

Available Soil Moisture—Water in the soil that is accessible to plants for growth and development.

Bare Ground—All soil surface not covered by vegetation, rock, or litter.

Basal Area—Cross sectional area of the stem or stems of a plant or of all plants in a stand. Herbaceous and small woody plants are measured at or near the ground level; larger woody plants are measured at breast or other designated height. (synonym: basal cover)

Base Property—Land or controlled livestock water that qualifies a person for a grazing privilege, permit, or preference on other land, either public or private (same as Commensurate Property).

Biennial—A plant that lives for two years, producing vegetative growth the first year and usually blooming, fruiting, and dying in the second year. Usually grouped with annuals.

Biological Soil Crust—Soil crust formed by living organisms and their by-products, creating a crust of soil particles bound together by organic materials. Types of biological soil crusts include cryptogrammic, microbiotic, cryptobiotic, and micophytic crusts.

Biomass—The total amount of living plants and animals above and below ground in an area at a given time.

Biome—A major biotic unit consisting of plant and animal communities having similarities in form and environmental conditions, such as the desert, chaparral, or grassland biomes.

Brittle Environments—Characterized by unreliable precipitation (regardless of amount), poor distribution of precipitation through the year as a whole, high rate of oxidation and physical decay (weathering) in old plant and animal material, and very slow successional development from bare and smooth soil surfaces. With a lack of adequate physical disturbance for years, the plant communities become simpler, less diversified, and less stable. A continuous scale exists from non-brittle to brittle environments.

Browse—Leaf and twig growth of shrubs, woody vines, and trees available for use by animals. Also, to search for or consume browse.

Bunchgrasses—Grasses that reproduce by seed and/or tillering and grow in tufts.

Originally authored by Bill Frost and George Ruyle, Arizona State University, Rancher's Management Guide.
Additional definitions complied by Todd Yeager, Montana State University.

Canopy Cover—The percentage of ground covered by a vertical projection of the outermost perimeter of the natural spread of foliage of plants. Small openings within the canopy are included. It may exceed 100 percent (an example of >100% canopy would be in the presence of multiple layers of canopy). (synonym: crown canopy)

Carrying Capacity—The average number of livestock and/or wildlife, which may be sustained on a management unit compatible with management objectives for the unit. In addition to site characteristics, it is a function of management goals and management intensity, or the potential number of animals or liveweight that may be supported on a unit area for a grazing season based on forage potential.

Chemical Soil Crust—See Physical Soil Crust.

Climax Community—The final or stable biotic community in a successional series; it is self-perpetuating and in equilibrium with the physical habitat. The assumed end point in secondary succession. Determined primarily by climate but also influenced by soil, topographic, vegetative, fire, and animal factors.

Commensurability—Capacity of a grazing permittee's base ranch property to support permitted livestock during the period such livestock are off public land.

Commensurate Property—Land or controlled livestock water, which qualifies a person for a grazing privilege, permit, or preference on other land, either public or private.

Community—A general term for an assemblage of plants and/or animals living together and interacting among themselves in a specific location.

Community Type—An aggregation of all plant communities with similar structure and floristic composition.

Comparison Area—An area with a documented history and/or condition that is used as a standard for comparison.

Continuous Grazing—Grazing an area without rest periods or rotation. A method of grazing where animals have unrestricted access to an entire grazing unit throughout a large portion or all of the grazing season.

Cool-Season Plant—A plant that generally makes the major portion of its growth during the winter and spring and sets seed in the late spring or early summer.

Cover, Total—Percentage of ground area covered by aerial parts of live plants, litter, gravel, and rocks.

Cover, Total Vegetative—Percentage of ground area covered by aerial parts of live plants.

Critical Area—An area that must be treated with special consideration due to inherent site factors, size, location, condition, values, or significant potential conflicts among users.

Decreasers—Plant species of the assumed original or climax vegetation that decrease in relative amount with continued overuse. In grass communities, they are usually the taller, more palatable grasses on the site.

Deferment—Delay or discontinuance of livestock grazing on an area for an adequate period of time to provide seed production, establishment of new plants, or restoration of vigor of existing plants. Generally defined as delay of grazing until the seed of the key forage species is mature.

Deferred-Rotation Grazing—A grazing system that provides for a systematic rotation of the deferment among pastures. Moving grazing animals to various parts of a range in succeeding years or seasons to provide for seed production, plant vigor, and for seedling growth.

Density—Number of individuals or stems per unit area.

Desired Plant Community—Of the several plant communities that may occupy a site, the one that has been identified through a management plan to best meet the plan's objectives for the site. At a minimum, it must protect the site.

Dominant—Plant species or species groups, which by means of their number, coverage, or size, have considerable influence or control upon the conditions of existence of associated species. Also, those individual animals which, by their aggressive behavior or otherwise, determine the behavior of one or more animals, resulting in the establishment of a social hierarchy.

Dual Use—Use of range by two kinds of livestock within the same grazing year or season.

Ecological Site—A kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in its ability to produce vegetation and to respond to management.

Ecological Status—The present state of vegetation and soil protection of an ecological site in relation to the potential natural community for the site. Vegetation status is the expression for the relative degree to which the kinds, proportion, and amounts of plants in a community resemble that of the potential natural community. Soil status is a measure of the present vegetation and litter cover relative to the amount of cover needed on the site to prevent accelerated erosion.

Ecosystem—Organisms together with their abiotic environment, forming an interacting system, inhabiting an identifiable space.

Ecotone—A transition area of vegetation between two communities, having characteristics of both kinds of neighboring vegetation as well as characteristics of its own.

Foliar Cover—The percentage of ground covered by the vertical projection of the aerial portion of plants. Small openings in the canopy and intra-specific overlap are excluded. Foliar cover is always less than canopy cover.

Forage—Browse and herbage, which is available to and may provide food for grazing animals or be harvested for feeding. Also, to search for or consume forage.

Forage Production—Weight of forage produced within a designated period of time on a given area. For example, lb/acre/year.

Forb—Herbaceous plant, usually with broad net-veined leaves. In general, any herbaceous plant other than those in the grass, sedge, or brush families.

Forestland (Forest)—Land on which the vegetation is dominated by trees. Lands shall be classified forestland if the trees now present will provide 25 percent or greater canopy cover at maturity.

Frequency—The ratio of the number of sample units that contain a particular species and the total number of sample units.

Grasses—Plants of the Gramineae family. Usually herbaceous plants with narrow, parallel-veined, two-ranked leaves.

Grassland—Lands on which the vegetation is dominated by grasses, grasslike plants, and/or forbs.

Grasslike Plants—Plants of the Cyperaceae and Juncaceae families. Usually herbaceous plants with slender, usually solid, round or three-angled stems and parallel-veined, often three-ranked leaves.

Grazing Capacity—Same as carrying capacity.

Grazing Cell—A parcel of land subdivided into paddocks and grazed rotationally.

Grazing Cycle—The length or passage of time between two grazing periods in a particular paddock of a grazing unit. One grazing cycle includes one grazing period and one rest period.

Grazing Management—The manipulation of grazing and browsing animals to accomplish a desired result.

Grazing Period—The amount of time that livestock are present on a particular paddock during a particular grazing season.

Grazing Pressure—The relationship between the number of animals or animal units and the mass of forage dry matter available at a particular point in time.

Grazing Unit—A parcel of land assigned a particular management strategy and managed as a production unit.

Ground Cover—The percentage of material, other than bare ground, covering the land surface. It may include live and standing dead vegetation, litter, cobble, gravel, stones, and bedrock.

Habitat Type—The collective area that one plant association occupies or will come to occupy as specific succession advances. The habitat type is defined and described on the basis of vegetation and its associated environment. Habitat type is similar in concept to ecological site depending on how specifically plant associations are defined. Habitat is commonly misused to refer to classification of vegetation or wildlife habitat rather than a land classification.

Half-Shrub—A perennial plant with a woody base whose annually produced stems die back to the woody base each year.

Herb—Any plant that is not woody above ground, such as forbs and most grasses.

Herbage—The aboveground material of any herbaceous plant.

Herd Effect—The impact on soil and vegetation produced by a large herd of animals in an excited state. Generally produced by concentration with excitement, such as at supplements or other attractants, and then applied to areas of the range where required.

High-Intensity/Low-Frequency Grazing—Heavy, short-duration grazing in which all livestock in a set of several range units or pastures graze one pasture at a time. The animals are left in a pasture until the desired degree of use is obtained and then are moved to another pasture.

Historical Climax—The plant community considered to best typify the potential plant community of an ecological site before the advent of European man. May no longer be one of the potential plant communities for the site.

Increasers—For a given plant community, those species that increase in amount as a result of a specific abiotic/biotic influence or management practice.

Indicator Species—(1) Species that signify the presence of certain environmental conditions, seral stages, or previous treatments; (2) one or more plant species selected to determine the level of grazing use.

Introduced Species—Species not a part of the original fauna or flora of an area.

Invaders—Plant species absent, or present in very small amounts, in undisturbed portions of original vegetation on a specific range site, which invade after disturbance or continued overuse.

Key Area—A relatively small portion of a range selected because of its location, use, or grazing value as a monitoring point for grazing use. It is assumed that key areas, when properly selected, reflect the overall acceptability of current management over the range and serve as an indicative sample of range conditions, trend, or degree of use.

Key Species—Forage species whose use serves as an indicator to the degree of use of associated species. Those species that must, because of their importance, be considered in the management program.

Leaf Area Index—Sum of total leaf area expressed as a percentage of ground surface. Leaf area index may exceed 100 percent.

Litter—The uppermost layer of organic debris on the soil surface; essentially the freshly fallen or slightly decomposed vegetal material.

Management Intensive Grazing (MIG)—Grazing management where a grazing unit is subdivided into subunits (paddocks), which are used as a tool in balancing animal demand with forage supply through the grazing season. This management may involve short pasture rotations and an increase in stocking rates, forage utilization, labor, resources, and/or capital, and results in increased production per unit area of animal.

Mulch—A layer of dead plant material on the soil surface, or an artificial layer of material, such as paper or plastic on the soil surface. Also, the cultural practice of placing rock, straw, asphalt, plastic, or other material on the soil surface as a surface cover.

Native Species—One which is part of the original fauna or flora of the area in question.

Nonbrittle Environments—Totally nonbrittle environments are characterized by reliable precipitation regardless of amount, good precipitation distribution through the year as a whole, a high rate of biological decay in old plant and animal material, speedy successional community development from smooth and sloped surfaces, and the development of complex and relatively stable communities with a lack of disturbance over many years. A continuous scale exists from nonbrittle to brittle environments.

Overgrazing—Grazing during active growth, which is both severe and frequent, and exceeds the recovery capacity of the range. Generally results in reducing vegetation production and ultimately in death of the plant.

Overrest—Rest of any perennial plant that is so prolonged that accumulating old material hampers growth and/or kills the plant.

Paddock—A pasture subdivision within a grazing unit.

Palatability—The relish an animal shows for a particular plant as forage. This varies with succulence, fiber content, nutrient and chemical content, and morphological features, such as spines or thorns. Palatability and preference are sometimes incorrectly used interchangeably.

Perennial Plant—One with a life cycle of three or more years.

Physical Soil Crust— Soil crust formed by inorganic factors, such as a salt crust or platy surface crust.

Pioneer Species—A plant or animal capable of establishing itself in a bare or barren area and initiating an ecological cycle.

Plant Association—A kind of climax plant community consisting of stands with essentially the same dominant species in corresponding layers.

Plant Community—An assemblage of plants occurring together at any point in time, thus denoting no particular ecological status.

Plant Community Type—See Community Type.

Plant Succession—Process of vegetational development whereby an area becomes successively occupied by different plant communities from a higher ecological order.

Poisonous Plant—One containing or producing substances that cause animal sickness, death, or deviation from a normal state of health.

Potential Natural Community—See Potential Natural Vegetation.

Potential Natural Vegetation—An historical term defined as the stable vegetation community, which could occupy a site under current climatic conditions without influence by man. Often used interchangeably with Potential Natural Community.

Potential Plant Community—One of usually several plant communities that may become established on an ecological site under the present environmental conditions, either with or without interference by man.

Preference—Relative consumption of one plant over another by a specific class of animals when given free choice at a particular time and place.

Proper Use—Degree and time of use of current year's growth, which, if continued, will achieve management objectives and maintain or improve the long-term productivity of the site. Proper use varies with time and systems of grazing. (synonym: proper utilization)

Range—Includes rangelands and forestlands that support a cover of herbaceous or shrubby vegetation suitable for grazing by livestock or game.

Range Condition—A generic term relating to present status of a unit of range in terms of specific values or potentials. Specific values or potentials must be stated. Also defined as the present state of vegetation of a range site in relation to the climax (natural potential) plant community for that site.

Range Condition Class—One of a series of arbitrary categories used to classify range condition as that term has been variously defined.

Range Condition Trend—Direction of change, whether stable, toward (upward), or away (downward) from the site's potential.

Range Degradation—The process that leads to an irreversible reduction in capability of an ecological site to produce vegetation.

Range Improvement—Any activity or program on or relating to rangelands that is designed to improve production of forage, change vegetation composition, control patterns of use, provide water, stabilize soil and water conditions, or provide habitat for wildlife and livestock.

Range Inventory—The systematic acquisition and analysis of resource information needed for planning and for management of rangeland.

Range Site—Synonymous with ecological site when applied to rangeland.

Range Type—An historical term that refers to, and only to, the 18 standard range vegetation types recognized

by the 1937 Task Force (Interagency Range Survey Committee).

Residual—The amount of forage remaining after a grazing period. Expressed as mass of dry matter per acre or as height from ground level. Not synonymous with residue.

Residue—Dead, decaying plant material present on the soil surface. Not synonymous with residual.

Resource Value Rating (RVR)—The value of vegetation present on an ecological site for a particular use or benefit. RVR's may be established for each plant community capable of being produced on an ecological site, including exotic or cultivated species.

Rest—Prolonged non-disturbance to soils and plant community.

Rest Period—The length of time between two consecutive grazing periods on a particular paddock.

Rest-Rotation Grazing—A system in which one part of the range is ungrazed for an entire grazing year or longer, while other parts are grazed for a portion, or perhaps all, of a growing season.

Retrogression—An historical term used to mean succession in reverse.

Rotation Grazing—A system in which animals are moved from one range unit or pasture to another on a scheduled basis.

Seral Community—The relatively transitory communities that develop under ecological succession. (synonym: seral stage)

Sere—The whole series of communities that develop in a given situation during ecological succession.

Short Duration Grazing—Grazing system involving many pastures where animals are in each pasture for a short period of time. Pastures are grazed several times during each year. (synonyms: rapid-rotation, time control, and cell grazing)

Shrub—A plant with persistent, woody stems and relatively low growth. Generally produces several basal shoots (stems) and many branches.

Site Conservation Rating—An assessment of the protection afforded a site, by the current vegetation, against loss of potential.

Site Conservation Threshold—The kind, amount, and/or pattern of vegetation needed as a minimum on a given site to prevent accelerated erosion.

Sodgrasses—Those that reproduce by stolons and/or rhizomes and form a dense turf.

Species Composition—Proportions of various plant species in relation to the total on a given area. Proportions may be expressed in percentages based on weight, cover, density, etc.

Standing Crop—The total amount or number of living things or of one kind of living thing in an area at a given time.

Stocking Density—The number of animals, animal units, or total initial liveweight present at a particular point in time on a defined area. Stocking density is usually expressed on a per-acre basis.

Stocking Rate—The number of specified kinds and classes of animals utilizing a unit of land for a specific time period. May be expressed as animals per acre, section, or the reciprocal (land area/animal).

Stockpiling— The practice of allowing forage to accumulate for grazing at a later date. Most commonly done with winter grazing and/or tall fescue summer grazing.

Strip Grazing—The practice of dividing a larger pasture into strips with movable fences to control grazing access.

Succession—Process of vegetational development whereby an area becomes successively occupied by different plant communities of higher ecological order.

Tree—A large, woody perennial plant, usually single stemmed, that has a definite crown shape and characteristically reaches a mature height of more than 10 feet.

Trend—The direction of change in ecological status or resource value rating observed over time. Trend in ecological status should be described as toward or away from the potential natural community, or as not apparent. Trend in a resource value rating should be described as up, down or not apparent. Trends in resource value ratings for several uses on the same site at a given time may be in different directions, and there is no necessary correlation between trends in resource value ratings and trend in ecological statues.

Usable Forage—That portion of the forage that can be grazed without damage to the basic resources; may vary with season of use, plant species, and associated plant species.

Use, Utilization—Proportion of current year's forage production consumed by grazing animals. May refer to the use of a pasture or individual species.

Vegetation Management Status—The relative degree to which the kinds, proportions, and amounts of vegetation in the present plant community resemble the desired plant community chosen for an ecological site.

Vegetation Type—A kind of existing plant community with distinguishable characteristics described in terms of present vegetation that dominates the aspect or physiognomy of the area. Examples include sagebrush, creosotebush, mesquite, shortgrass, tallgrass, etc.

Vigor—Relates to the relative robustness of a plant in comparison to other individuals of the same species. Reflected primarily by the size of a plant and its parts in relation to its age and the environment in which it is growing.

Warm-Season Plant—One that makes most of its growth during the spring and summer and sets seed in the late summer or early fall. It is normally dormant in winter.

Weed—Any unwanted or undesirable plant; whether grass, forb, shrub, or tree.

Wolf Plants—Individual plants of generally coarse, moderately-palatable species that when ungrazed become stemmy and remain ungrazed year after year.

Glossary of Acronyms Commonly Used in Federal Land Planning Documents

AMP (Allotment Management Plan)—Contains action program needed to manage the range resource for livestock grazing with consideration to soil, watershed, wildlife, recreation, timber, and other resources on lands within a range allotment.

AUM (Animal Unit Month)—Quantity of forage required by one mature cow, or equivalent, for one month. Tenure of one animal-unit for a period of one month.

CE (Categorical Exclusion)—The act of excluding an Environmental Analysis from being documented in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) because no significant environmental effects were predicted.

C&T (Condition and Trend)—Refers to range condition and trend.

Condition: Current developmental stage of the range in relation to the potential or climax stage of which the area is naturally capable, either in terms of species composition or productivity.

Trend: Direction of change whether stable, toward (upward), or away (downward) from the site's potential.

CYL (Cattle Year Long)—One animal grazing for an entire year.

DM (Decision Memo)—A decision document that is prepared when projects are categorically excluded from preparation of an Environmental Assessment (EA) or Environmental Impact Statement (EIS). A Decision Memo documents the rationale for the project and the project's exclusion from documentation.

DN (Decision Notice)—The decision document that accompanies an Environmental Assessment and Finding of No Significant Impact documenting the rationale for the decision.

EA (Environmental Assessment)—A report that documents the analysis and the determination of whether to prepare an environmental impact statement.

EIS (Environmental Impact Statement)—A document or set of documents prepared for projects having significant environmental effects that disclose the effects of the project and alternatives.

FONSI (Finding Of No Significant Impact)—A brief document that accompanies an Environmental Assessment (EA) in which the determination was that an Environmental Impact Statement (EIS) would not be prepared because the environmental effects of the project are not significant.

FSM (Forest Service Manual)—The manual used by Forest Service employees that contains the regulations, policies, and direction for Forest Service activities.

ICO's (Issues, Concerns, and Opportunities)—ICO's are what projects will resolve or capitalize on. Commonly called "issues."

IDT (Interdisciplinary Team)—A group of people including the project leader, are primarily responsible for the project design and analysis. Also known as Project ID Team.

IRM (Integrated Resource Management)—A land management philosophy, which recognizes that all natural resources are connected through an intricate series of interrelationships. An interdisciplinary approach to project design is used to define resource relationships and integrate procedural requirements.

LAC (Level of Acceptable Change)—A system of planning recreation in wilderness.

LMP (Land Management Plan)—Defines long-term direction for managing a given National Forest. Purpose is to provide for multiple use and sustained yield of goods and services from the Forest in a way that maximizes long-term net public benefits in an environmentally sound manner.

LO (Line Officer)—The person with decision authority on the project (e.g., District Ranger, Forest Supervisor, Regional Forester, or Chief).

NEPA (National Environmental Policy Act of 1969)—A Congressional Act that established a national policy for the environment and provided for the establishment of the Council on Environmental Quality (CEQ).

NFMA (National Forest Management Act of 1976)—Requires each National Forest to prepare a Forest Land Management Plan. All subsequent management actions must be directed at effective implementation of the plan.

NI (Natural Increase)—Livestock offspring that are held over (past January lst) to take advantage of winter and spring annuals in the desert ecosystem.

NOI (Notice Of Intent)—A notification published in the Federal Register to inform the public that an Environmental Impact Statement (EIS) will be prepared for a project.

PIL (Project Initiation Letter)—The letter from the district ranger to the project leader to start the Integrated Resource Management (IRM) process on the project.

PR (Project Record)—The file of all products of the analysis phases.

PRIA (Public Rangelands Improvement Act of 1978)—A Congressional act that established a national policy for Forest Service and permittee roles in allotment management.

PU (Production-Utilization Surveys)—A document that provides information on forage availability for: (1) determining estimated grazing capacity (allowable forage harvest) by livestock and wildlife; (2) analyzing opportunities to improve management technique; (3) correcting grazing problems; (4) establishing correct grazing management; and (5) locating needed range improvements.

RATM (Resource Access Travel Management)—A management plan being developed to determine access to resources through the current forest systems roads (e.g., which roads will remain open and which roads should be closed).

RBF (Range Betterment Funds)—The portion of the funds collected through grazing fees that comeback to the forest and district where they were collected for use on range improvements.

ROD (Record Of Decision)—The record of decision documents the rationale for selecting the project alternative, developed in the preparation of the Environmental Impact Statement (EIS), which will be implemented.

RPA (Forest and Rangeland Renewable Resources Planning Act of 1974)—Requires the preparation of a program for the management of all acres of land administered by the Forest Service.

T&E (Threatened and Endangered Species)—Threatened and endangered species of plants and animals that are listed by the U.S. Fish and Wildlife Service and must be protected under the terms of the Endangered Species Act.

TES (Terrestrial Ecosystem Survey)—Survey used in making land management decisions through integration of soils, vegetation, and climate data.

VQO (Visual Quality Objective)—The desired level of excellence based on physical and sociological characteristics of an area.

All U.S. Department of the Interior Offices:
http://www.doi.gov/

All USDA Agencies and Staff Offices:
http://www.usda.gov/agencies/agencies.htm#160

Fire Information Affect Site (allows access to plant species value as forage for herbivory):
http://www.fs.fed.us/database/feis

Invaders Plant Database:
http://invader.dbs.umt.edu/

NRCS Plants Database:
http://plants.usda.gov/

Plant Breeders Association (description of forage species):
http://web.css.orst.edu/Topics/Species/

Natural Resource Web Site Addresses

Author's Note

Multiple sources were used in the compilation of these definitions. Many definitions were taken directly from Range Management Terms/Definitions originally authored by Bill Frost and George Ruyle, Arizona State University. Additional definitions were compiled and/or modified slightly by the author from the various sources listed below.

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