

Alberta Range Plants and Their Classification

Plants are the primary producers on rangeland. *Range plants* cluster in communities. Effective range management requires that plant communities, vegetation types, pastures, and finally ranches, be operated as *range ecosystems*.

A range ecosystem is a complex of living and non-living (biotic and abiotic) factors of an environment where everything is connected to everything else. It functions as a unit and anything that affects one part of the unit, such as by grazing, affects the whole complex.

All the organisms within the community, the vegetation, the pasture, or the ranch affect each other, and, in addition, they also affect the abiotic or non-living portion of the environment. A circular system of cause-effect relationships is thus set up in which the biotic fractions of the environment affect each other as well as the abiotic. At the same time, the abiotic fraction affects the biotic. This continuum of interrelated cause-effect relationships is neverending as long as the habitat supports life in any form.

Thus, while the concept of the range ecosystem is complex, it is based largely on individual plants. It follows that, as range managers, we must know the plants, their structure and their habits.

Range plants, like people, have names. This name is the key to finding additional information about the plant. In addition to being named, range plants can be classified or grouped on the basis of growth form, lifespan, origin, response to grazing, and forage value. Plants with the same growth form are grouped into grasses, grass-like, forbs, shrubs, and trees. Life span differentiates between annual, biennial, and perennial plants, while origin refers to plants that are native to North America or are introduced from other continents. Plants grouped on the basis of response to grazing are divided among decreaseers, increaseers, and invaderes. Palatability, or acceptability of plants by grazing animals, determines the forage value of the plants; these ratings are

reported as good, fair, poor, or poisonous, the latter if plants contain toxic substances.

Range plants also can be classified as to the season of the year in which they make their best growth. Most of the plants listed here show cool season response in that they make the major portion of their growth during spring and early summer. Some plants – *Bouteloua gracilis*, *Andropogon scoparius*, and *Aristida longiseta* – are classed as warm season plants because they grow slowly during the early part of the season and make their best growth in late spring and summer.

Definition of plant characteristics

Grasses – plants that have hollow, jointed stems and leaves in two rows on the stems. The seeds are borne between two scales.

Grass-like plants – these look like grasses but have solid stems (not hollow) which are often triangular and have no joints. Veins are parallel in the leaves. These are sedges and rushes.

Forbs – broad-leaved plants with annual tops and net-like veins in the leaves (range weeds and flowers).

Shrubs – woody perennials with stems that live over the winter and branch from near the base.

Trees – woody, single-stemmed perennial plants that reach a mature height of at least 3 m.

Annual plants – live only for one season. They do not come up a second year from roots or crown.

Biennial plants – require two years to complete life cycle. Grow vegetatively during the first year and fruit and die the second.

Perennial plants – live over from year to year, producing leaves and stems for more than two years from the same root system.

Native plants – plants native to North America.

Introduced plants – have been brought in from outside North America - not present in the original vegetation.

Grazing response – how the various kinds of plants on the range react when they are grazed. This may vary with soil and climate for any one species. Range plants are grouped as follows:

Decreasers – Highly productive, palatable plants that grow in the original climax vegetation stand. They are palatable to livestock, and will decrease on a range when exposed to heavy grazing pressures.

Increasers – These species are also native plants but they increase in site and number to take the place of decreasees that have weakened or died because of heavy grazing or other range abuse. The increaser plants are normally shorter, lower producing and less palatable to livestock.

Invaders – These are plants that invade and replace the plants that have died or become seriously weakened. They may be annuals, perennials, or shrubs and have some or no grazing value.

Forage values – the worth of a plant for livestock determined by considering its palatability, nutritive quality, volume of forage produced, longevity, and area or primary distribution. Forage value varies depending upon kind of livestock using the plants and the season of use.

Key to list

Life Span:	Annual (A) Biennial (B) Perennial (P)
Origin of plant:	Native (N) Introduced (I)
Grazing response:	Decreaser – Decr. Increaser – Incr. Invader – Inva.
Forage value:	Good – G Fair – F Poor – P Poisonous – X

Common name	Scientific name	Life span	Origin	Grazing response	Forage value
Grasses					
Alkali cord grass	<i>Spartina gracilis</i>	P	N	Incr	P
Alpine timothy	<i>Phleum alpinum</i>	P	N	Decr	G
Bearded wheat grass	<i>Agropyron subsecundum</i>	P	N	Decr	G
Bluebunch wheat grass	<i>Agropyron spicatum</i>	P	N	Decr	G
Blue grama	<i>Bouteloua gracilis</i>	P	N	Incr	G
Canada blue grass	<i>Poa compressa</i>	P	I	Inva	G
Canada wild rye	<i>Elymus canadensis</i>	P	N	Decr	G
Canby blue grass	<i>Poa canbyi</i>	P	N	Decr	G
Cheat grass	<i>Bromus tectorum</i>	A	I	Inva	P
Columbian needle grass	<i>Stipa columbiana</i>	P	N	Decr	G
Creeping red fescue	<i>Festuca rubra</i>	P	I	Inva	G
Crested wheat grass	<i>Agropyron cristatum</i>	P	I	Inva	G
Desert salt grass	<i>Distichlis stricta</i>	P	N	Incr	P
Early blue grass	<i>Poa cusickii</i>	P	N	Incr	F
Fowl blue grass	<i>Poa palustris</i>	P	N	Decr	G
Fowl manna grass	<i>Glyceria striata</i>	P	N	Decr	G
Foxtail barley	<i>Hordeum jubatum</i>	P	N	Inva	P
Fringed brome	<i>Bromus ciliatus</i>	P	N	Decr	G
Giant wild rye	<i>Elymus piperi</i>	P	N	Decr	F
Green needle grass	<i>Stipa viridula</i>	P	N	Decr	G
Hairy wild rye	<i>Elymus innovatus</i>	P	N	Incr	P
Hooker's oat grass	<i>Helictotrichon hookeri</i>	P	N	Decr	F

Common name	Scientific name	Life span	Origin	Grazing response	Forage value
Grasses (continued)					
Idaho fescue	<i>Festuca idahoensis</i>	P	N	Incr	G
Indian rice grass	<i>Oryzopsis hymenoides</i>	P	N	Decr	G
Inland blue grass	<i>Poa interior</i>	P	N	Decr	G
June grass	<i>Koeleria macrantha</i>	P	N	Incr	G
Kentucky blue grass	<i>Poa pratensis</i>	P	I	Inva	G
Little bluestem	<i>Andropogon scoparius</i>	P	N	Incr	P
Marsh reed grass	<i>Calamagrostis canadensis</i>	P	N	Decr	F
Mat muhly	<i>Muhlenbergia richardsonis</i>	P	N	Inva	F
Mountain brome	<i>Bromus carinatus</i>	P	N	Decr	G
Needle-and-thread	<i>Stipa comata</i>	P	N	Incr	G
Northern awnless brome	<i>Bromus pumpellianus</i>	P	N	Decr	G
Northern manna grass	<i>Glyceria borealis</i>	P	N	Decr	G
Northern reed grass	<i>Calamagrostis inexpansa</i>	P	N	Decr	F
Northern wheat grass	<i>Agropyron dasystachyum</i>	P	N	Decr	G
Nuttall alkali grass	<i>Puccinellia nuttalliana</i>	P	N	Decr	G
Orchard grass	<i>Dactylis glomerata</i>	P	I	Inva	G
Parry oat grass	<i>Danthonia parryi</i>	P	N	Incr	G
Pine grass	<i>Calamagrostis rubescens</i>	P	N	Incr	F
Plains muhly	<i>Muhlenbergia cuspidata</i>	P	N	Incr	F
Plains reed grass	<i>Calamagrostis montanensis</i>	P	N	Incr	F
Porcupine grass	<i>Stipa spartea</i>	P	N	Decr	G
Red threeawn	<i>Aristida longiseta</i>	P	N	Inva	P
Redtop	<i>Agrostis alba</i>	P	I	Inva	F
Reed canary grass	<i>Phalaris arundinacea</i>	P	I	Inva	G
Richardson needle grass	<i>Stipa richardsonii</i>	P	N	Decr	G
Rough fescue	<i>Festuca scabrella</i>	P	N	Decr	G
Rough hair grass	<i>Agrostis scabra</i>	P	N	Inva	F
Sand dropseed	<i>Sporobolus cryptandrus</i>	P	N	Decr	F
Sandberg blue grass	<i>Poa sandbergii</i>	P	N	Incr	G
Sand grass	<i>Calamovilfa longifolia</i>	P	N	Incr	F
Sheep fescue	<i>Festuca ovina</i>	P	N	Incr	G
Six-weeks fescue	<i>Vulpia octoflora</i>	P	N	Incr	F
Slender wheat grass	<i>Agropyron trachycaulum</i>	P	N	Decr	G
Slough grass	<i>Beckmania syzigachne</i>	P	N	Incr	F
Smooth brome	<i>Bromus inermis</i>	P	I	Inva	G
Spike trisetum	<i>Trisetum spicatum</i>	P	N	Decr	F
Sweet grass	<i>Hierochloe odorata</i>	P	N	Incr	F
Tall manna grass	<i>Glyceria grandis</i>	P	N	Decr	G
Timber oat grass	<i>Danthonia intermedia</i>	P	N	Incr	G
Timothy	<i>Phleum pratense</i>	P	I	Inva	G
Tufted hair grass	<i>Deschampsia caespitosa</i>	P	N	Decr	G
Tumble grass	<i>Schedonnardus paniculatus</i>	P	N	Incr	P
Western porcupine grass	<i>Stipa spartea</i> var. <i>curtiseta</i>	P	N	Decr	G
Western wheat grass	<i>Agropyron smithii</i>	P	N	Incr	G
White-grained mountain rice grass	<i>Oryzopsis asperifolia</i>	P	N	Decr	F
Grass-like plants					
Awned sedge	<i>Carex atherodes</i>	P	N	Decr	G
Baltic rush	<i>Juncus balticus</i>	P	N	Incr	P
Beaked sedge	<i>Carex rostrata</i>	P	N	Decr	G
Low sedge	<i>Carex eleocharis</i>	P	N	Incr	P
Small-flowered woodrush	<i>Luzula parviflora</i>	P	N	Decr	G
Threadleaf sedge	<i>Carex filifolia</i>	P	N	Incr	G

Common name	Scientific name	Life span	Origin	Grazing response	Forage value
Forbs					
Alumroot	<i>Heuchera richardsonii</i>	P	N	Incr	P
American vetch	<i>Vicia americana</i>	P	N	Decr	G
Aster	<i>Aster</i> spp.	P	N	Incr	F
Ballhead sandwort	<i>Arenaria congesta</i>	P	N	Inva	P
Balsamorhiza	<i>Balsamorhiza sagittata</i>	P	N	Incr	F
Beard tongue	<i>Penstemon</i> spp.	P	N	Incr	F
Bluebell	<i>Campanula rotundifolia</i>	P	N	Incr	P
Buttercup	<i>Ranunculus</i> spp.	P	N	Incr	P
Cactus	<i>Opuntia</i> spp.	P	N	Incr	P
Canada thistle	<i>Cirsium arvense</i>	P	I	Inva	P
Cinquefoil	<i>Potentilla</i> spp.	P	N	Incr	P
Clover	<i>Trifolium</i> spp.	P	I	Incr	G
Common peppergrass	<i>Lepidium densiflorum</i>	A	N	Inva	P
Cut-leaved anemone	<i>Anemone multifida</i>	P	N	Incr	P
Dandelion	<i>Taraxacum officinale</i>	P	I	Inva	P
Death camas	<i>Zygadenus venenosus</i>	P	N	Incr	P (X)
Diffuse knapweed	<i>Centaurea diffusa</i>	A or B	I	Inva	P
Dock	<i>Rumex</i> spp.	P	I	Inva	P
Dotted blazingstar	<i>Liatris punctata</i>	P	N	Decr	G
Early yellow loco-weed	<i>Oxytropis sericea</i>	P	N	Incr	P (X)
False dandelion	<i>Agoseris glauca</i>	P	N	Incr	F
Fleabane	<i>Erigeron</i> spp.	P	N	Incr	P
Gaillardia	<i>Gaillardia aristata</i>	P	N	Incr	P
Goatsbeard	<i>Tragopogon dubius</i>	B	I	Inva	P
Goldenrod	<i>Solidago</i> spp.	P	N	Inva	P
Gumweed	<i>Grindelia squarrosa</i>	P	N	Incr	P
Hairy golden aster	<i>Heterotheca villosa</i>	P	N	Incr	F
Hawk's-beard	<i>Crepis</i> spp.	P	N	Decr	G
Hawkweed	<i>Hieracium</i> spp.	P	N	Decr	G
Heartleaf arnica	<i>Arnica cordifolia</i>	P	N	Incr	P (X)
Hedysarum	<i>Hedysarum americanum</i>	P	N	Incr	P
Indian paint brush	<i>Castilleja</i> spp.	P	N	Incr	P
Lamb's-quarters	<i>Chenopodium album</i>	A	I	Inva	P
Leafy spurge	<i>Euphorbia esula</i>	P	I	Inva	P (X)
Low larkspur	<i>Delphinium bicolor</i>	P	N	Incr	P (X)
Meadowrue	<i>Thalictrum</i> spp.	P	N	Incr	P
Moss phlox	<i>Phlox hoodii</i>	P	N	Incr	P
Narrow-leaved milkvetch	<i>Astragalus pectinatus</i>	P	N	Incr	P (X)
Narrow-leaved worm wood	<i>Artemisia dracunculus</i>	P	N	Incr	P
Prairie crocus	<i>Anemone patens</i>	P	N	Incr	P
Prairie onion	<i>Allium textile</i>	P	N	Incr	F
Prairie sage	<i>Artemisia ludoviciana</i>	P	N	Incr	P
Purple-peavine (Purple vetchling)	<i>Lathyrus venosus</i>	P	N	Decr	G
Pussytoes	<i>Antennaria parvifolia</i>	P	N	Inva	P
Redroot pig weed	<i>Amaranthus retroflexus</i>	A	N	Inva	P
Russian thistle	<i>Salsola kali</i>	A	I	Inva	P
Scarlet mallow	<i>Sphaeralcea coccinea</i>	P	N	Incr	P
Seaside arrow grass	<i>Triglochin maritima</i>	P	N	Incr	P (X)
Shining arnica	<i>Arnica fulgens</i>	P	N	Incr	P
Silvery lupine	<i>Lupinus argenteus</i>	P	N	Incr	P (X)
Small-leaved lamb's-quarters	<i>Chenopodium desiccatum</i>	P	N	Incr	P
Spotted knap weed	<i>Centaurea maculosa</i>	B or P	I	Inva	P

Common name	Scientific name	Life span	Origin	Grazing response	Forage value
Forbs (continued)					
Spotted water-hemlock	<i>Cicuta maculata</i>	P	N	Inva	P (X)
Sticky geranium	<i>Geranium viscosissimum</i>	P	N	Decr	G
Sweet clover	<i>Melilotus</i> spp.	B	I	Inva	G
Tall larkspur	<i>Delphinium glaucum</i>	P	N	Incr	P (X)
Three-flowered avens	<i>Geum triflorum</i>	P	N	Incr	P
Tufted fleabane	<i>Erigeron caespitosus</i>	P	N	Incr	P
Tumble pig weed	<i>Amaranthus albus</i>	A	N	Inva	P
White camas	<i>Zygadenus elegans</i>	P	N	Incr	P (X)
Yarrow	<i>Achillea millefolium</i>	P	N	Incr	P
Yellow umbrella plant	<i>Eriogonum flavum</i>	P	N	Incr	P
Shrubs					
Broom snake weed	<i>Gutierrezia saothrae</i>	P	N	Inva	P (X)
Bush-cranberry	<i>Viburnum</i> spp.	P	N	Decr	F
Chokecherry	<i>Prunus virginiana</i>	P	N	Decr	F but young leaves are poisonous
Gooseberries, currants	<i>Ribes</i> spp.	P	N	Incr	P
Greasewood	<i>Sarcobatus vermiculatus</i>	P	N	Incr	F (X)
Kinnikinnick – (Bearberry)	<i>Arctostaphylos uva-ursi</i>	P	N	Incr	F
Oregon grape – (Creeping mahonia)	<i>Berberis repens</i>	P	N	Incr	P
Pasture sage	<i>Artemisia frigida</i>	P	N	Incr	P
Pincherry	<i>Prunus pensylvanica</i>	P	N	Decr	F
Roses	<i>Rosa</i> spp.	P	N	Incr	P
Rubber rabbitbrush – (Stinking rabbitbrush)	<i>Chrysothamnus nauseosus</i>	P	N	Inva	P (X)
Russet buff aloberry – (Canada buffaloberry)	<i>Shepherdia canadensis</i>	P	N	Incr	P
Saltsage (Atriplex)	<i>Atriplex nuttallii</i>	P	N	Decr	G
Saskatoon (Service-berry)	<i>Amelanchier alnifolia</i>	P	N	Decr	F
Shrubby cinquefoil	<i>Potentilla fruticosa</i>	P	N	Incr	P
Silver berry	<i>Elaeagnus commutata</i>	P	N	Incr	F
Silver buff aloberry	<i>Shepherdia argentea</i>	P	N	Incr	P
Silver sagebrush	<i>Artemisia cana</i>	P	N	Incr	F
Skunkbush	<i>Rhus trilobata</i>	P	N	Incr	P
Thin-leaved snowberry	<i>Symphoricarpos albus</i>	P	N	Incr	P
Western snowberry – (Buckbrush)	<i>Symphoricarpos occidentalis</i>	P	N	Incr	P
Willow	<i>Salix</i> spp.	P	N	Incr	F
Winterfat	<i>Eurotia lanata</i>	P	N	Decr	G
Trees					
Aspen poplar	<i>Populus tremuloides</i>	P	N	Inva	F
Balsam poplar	<i>Populus balsamifera</i>	P	N	Inva	P
Lodgepole pine	<i>Pinus contorta</i>	P	N	Inva	P
Spruce	<i>Picea</i> spp.	P	N	Inva	P

NOTE: (X) = Poisonous

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