



LESSON FOUR:

Rangeland Plant Classification



Classification of Range Plants

Plant Type: The anatomical type of plant

Origin: Where the plant developed

Life Span: How long a plant lives

Season of Growth: When most of a plant's growth occurs

Growth Form: How a plant spreads vegetatively

Forage Value: How nutritious the plant is to grazing animals

Range
Plant
Type

Grasses

Grass-likes

Forbs

Succulents

Shrubs

Range Plant

Type: Grasses

Grasses are herbaceous plants that have:

- Long, narrow leaves with parallel veins
- Leaves in two rows on the stem
- Jointed stems with nodes that are hollow between the joints
- Seeds that are grain-like

Photo: Indiangrass



Range Plant

Type: Grass-like

Grass-like plants are herbaceous plants (including sedges and rushes) that:

- ❑ Look like grasses but have solid, unjointed stems
 - Sedges have triangular stems with leaves on three sides
 - Rushes have round stems with leaves on two sides

- ❑ Have leaves with parallel veins growing directly from the ground

Photo: Upland Sedge



Range Plant Type: Grasses & Grass- Likes

Sedges have edges

Rushes are round

Grasses are Hollow

What have you found?

Did you guess a rush?





Range Plant Type: Forbs

Forbs are herbaceous plants that:

- Have broad leaves of various shapes
- Have leaves with net-like veins
- Usually have showy flowers
- Have leaves and stems that die back to the ground each year
- Also may be called wildflowers

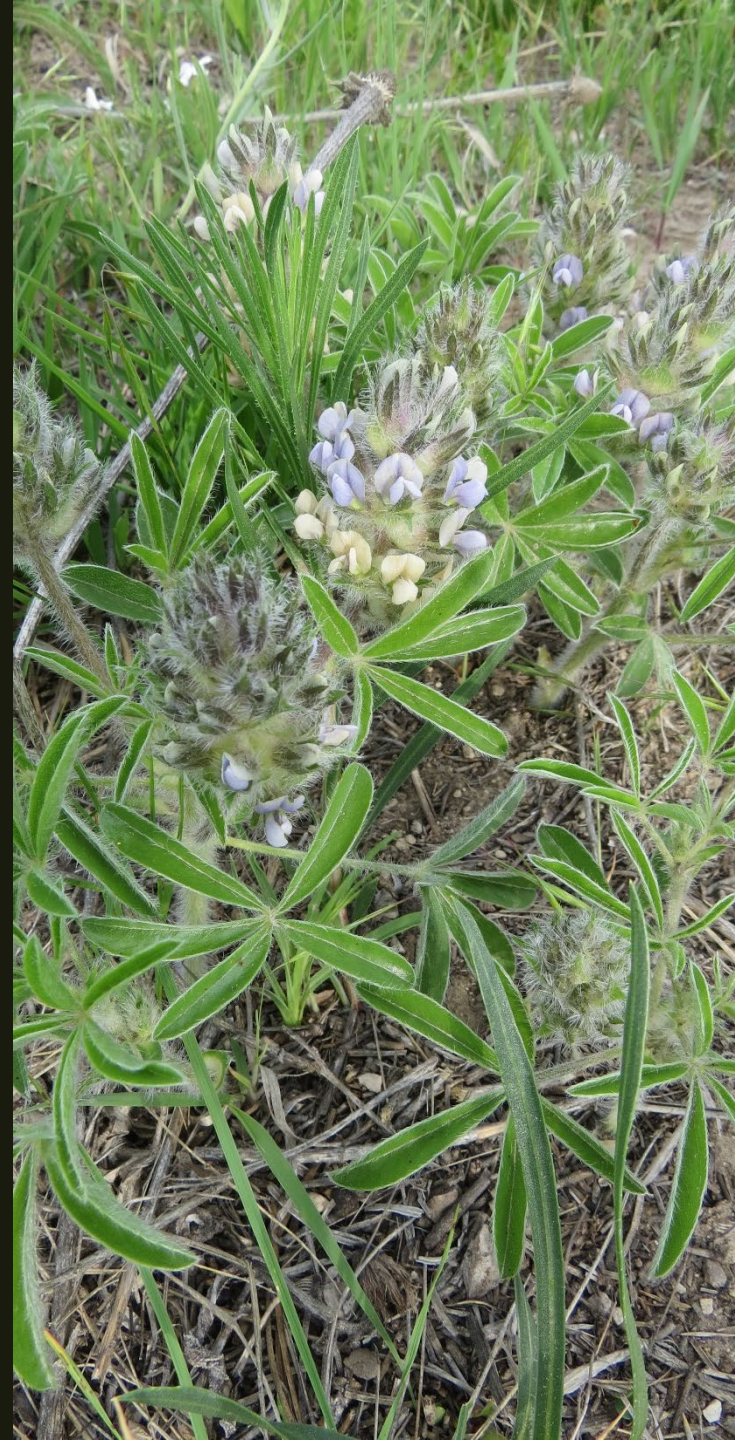
Photo: Compass Plant

Range Plant Type: Forbs-Legumes

Legumes are a type of forb that:

- Are members of the pea or legume family and include alfalfa, beans and peas.
- Contain symbiotic bacteria called Rhizobia within nodules of their root systems. These bacteria can fix molecular nitrogen from the atmosphere into ammonia. Ammonia is then converted to ammonium which can be used by the plants.
- Have a unique flower petal structure that includes standard or banner, two wings and a keel. See Legume Flower Morphology and Terminology: <https://orbisec.com/legume-flower-morphology-and-terminology/>

Photo: Breadroot Scurfpea (Indian Breadroot)



Range Plant Type: Forbs- Legumes

Nebraska is home to 59
native legume species.

Native Legumes include:

- Breadroot Scurfpea
- Purple, White, Silky,
Yellow and Nine Anther
Prairie Clovers
- Roundhead Lespedeza
- Prairie Golden Pea
- Leadplant



Photo: Showy Peavine



Range Plant Type: Succulents

- ❑ Succulents have leaves or stems that are thickened and fleshy to store water in arid conditions
- ❑ When the stems are the water storage organ, leaves are small and short-lived or leaves have become sharp spines
- ❑ All cacti are succulents but not all succulents are cacti

Photo: Plains Pricklypear

Range Plant

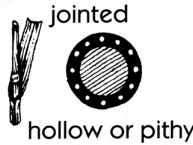




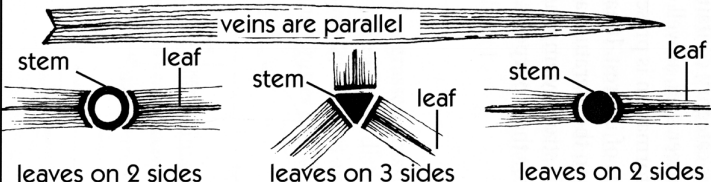
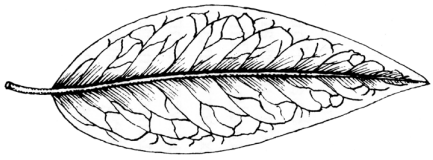
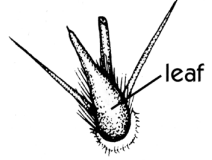

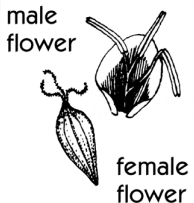
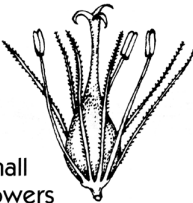








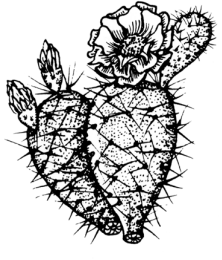
Type: Shrubs

Shrubs are woody plants that:

- Have persistent, woody stems that remain alive year to year
- New growth begins from points above the ground
- Differ from trees because they have several main stems and do not have a main trunk
- The part that animals may consume is called browse

Photo: Rubber Rabbitbrush



	Grasses	Grasslikes	Forbs	Shrubs	Cacti	
Stems	 <p>jointed hollow or pithy</p>	 <p>solid, not jointed</p>	 <p>solid or pithy</p>	 <p>growth rings solid</p>	 <p>fleshy</p>	
Leaves	 <p>veins are parallel</p> <p>leaves on 2 sides leaves on 3 sides leaves on 2 sides</p>			 <p>veins are pinnate (netlike)</p>	 <p>small, seldom present</p>	
Flowers	 <p>floret</p>	 <p>male flower female flower</p>	 <p>small flowers</p>	 <p>showy or small</p>	 <p>showy or small</p>	 <p>showy</p>
Examples	 <p>Western wheatgrass</p>	 <p>Threadleaf sedge</p>	 <p>American bulrush</p>	 <p>Scarlet globemallow</p>	 <p>Prairie wildrose <i>Delaney, Parker, Johnson</i></p>	 <p>Plains pricklypear</p>

Drawing from: *Nebraska Plants Toxic to Livestock including Bloat-Causing Plants Rangeland, Pastureland and Cropland* – Stubbendieck, Carlson, Dunn, Anderson Redfearn

Range Plant Origin

Native

Introduced

Range Plant Origin

Native plants are part of the original vegetation of North America.

Examples of Native plants:

- Big Bluestem
- Western Wheatgrass
- Dotted Gayfeather
- Winterfat

Photo: Big Bluestem



Range Plant Origin

Introduced plants have brought to North America from another continent. These plants may have been intentionally introduced because they have good forage value or ornamental value or accidentally introduced as a contaminant in crop seeds.

Examples of Introduced plants:

- Smooth Brome
- Cheatgrass
- Musk Thistle
- Common Mullein

Photo: Smooth Brome



Range Plant Lifespan

Annual

Biennial

Perennial



Range Plant

Lifespan: Annuals

Annual plants live only one growing season. They do not grow a second year from roots or crowns but must start from seeds each year. Annuals may be winter annuals or summer annuals.

- *Winter annuals germinate in the fall, form a rosette of leaves that lives through the winter. The next year it grows, flowers and seeds and dies.*
- *Summer annuals germinate in the spring, complete all growth by the end of the growing season and then die.*

Examples of Annual plants:

- Wild Buckwheat
- Cheatgrass
- Six Weeks Fescue

Photo: Annual Buckwheat

Range Plant

Lifespan: Biennials

Biennial plants live only two growing seasons and only flower during the second growing season. Normally biennial plants form a basal cluster of leaves their first growing season and send up a seed stalk during their second growing season.

Examples of Biennial plants:

- Common Mullein
- Musk Thistle
- Fourpoint Evening Primrose

Photo: Common Mullein



Range Plant

Lifespan: Perennials

Perennial plants live from one year to the next and produce leaves and stems for more than two years from the same crown. Most range plants are perennial.

Examples of Perennial plants:

- Little Bluestem
- Dotted Gayfeather
- Winterfat

Photo: Little Bluestem



Range Plants Season of Growth

**Cool
Season**

**Warm
Season**

Range Plants Season of Growth: Cool Season

Cool Season plants make their principal growth during the cool conditions in spring and fall. Cool season plants flower in late spring or early summer.

These plants are called C3 plants because their photosynthetic pathway first yields a 3-carbon sugar. Their optimum growth occurs when air temperatures are 60-70° F.

Examples of Cool Season plants:

- Prairie Junegrass
- Needleandthread
- Western Wheatgrass
- Downy Bromegrass

Photo: Prairie Junegrass



Range Plants Season of Growth: Warm Season

Warm Season plants make their principal growth during the warmer conditions in late spring through mid-summer. Warm season plants develop seed in late summer or early fall.

These plants are called C4 plants because their photosynthetic pathway first yields a 4-carbon sugar. Their optimum growth occurs when air temperatures are 80-95° F.

Examples of Warm Season plants:

- Indiangrass
- Big Bluestem
- Little Bluestem
- Blue Grama

Photo: Prairie Sandreed



Range Plant Growth Form

Rhizomatous

Stoloniferous

Bunch



Range Plant Growth Form: Rhizomatous

Rhizomatous plants have spreading underground stems. New plants may grow from these rhizomes. Rhizomatous grasses are also classified as sod-forming.

Examples of Rhizomatous plants:

- Prairie Sandreed
- Prairie Cordgrass
- Goldenrods

Photo: Prairie Sandreed

Range Plant Growth Form: Stoloniferous

Stoloniferous plants spread by above ground stems. New plants may root at the nodes and form new plants. Stoloniferous grasses (along with rhizomatous grasses) are also classified as sod-forming.

Examples of Stoloniferous plants:

- Buffalograss
- Bermuda grass

Photo: Buffalograss



Range Plant Growth Form: Bunch

Bunchgrasses have neither rhizomes or stolons. These grasses may grow as individual plants or in distinct clumps or bunches.

Examples of bunchgrasses:

- *Blue Grama*
- *Little Bluestem*
- *Sand Lovegrass*
- *Sand Dropseed*

Photo: Blue Grama



Range Plant Forage Value

High

Medium

Low



Range Plant Forage Value

Forage value is a rating of how well a plant provides nutrients to grazing animals.

Forage Value varies from species to species of grazing animal.

For example, a plant could have high forage value for cattle and low forage value for deer.

Forage Values are characterized as High, Medium or Low.

Range Plant Forage Value

High Forage Value plants are nutritious, palatable and produce abundant forage.

Medium Forage Value plants provide adequate nutrients if eaten, but it is not preferred by the grazing animal and/or does not produce abundant forage.

Low Forage Value plants do not provide adequate nutrients to the grazing animal. Some plants with low forage value are poisonous or toxic.





Activities

Collect plant specimens and determine the plant type, origin, lifespan, season of growth, growth form, and season of growth,

Study the structure of legume flowers so that you can identify plants as legumes or non-legumes.

Learn which plants in Nebraska have high forage value for beef cattle.

References:

[Range Judging Handbook and Contest Guide for Nebraska](#)

[Range Plant Classification – YouTube](#)

Photo: Sawtooth Sunflower



Scribner Rosettegrass



Winterfat



**Pitchers or
Blue Sage**

END OF LESSON FOUR