Field Identification Guide for Common Plants Used to Assess Habitat as Part of the Lesser Prairie Chicken Range Wide Plan

Western Association of Fish and Wildlife Agencies

The Western Association of Fish and Wildlife Agencies (WAFWA) began in 1922 as an organization where state wildlife agencies could interact and develop comprehensive plans to address common goals or concerns that stretched across multiple states.

The Range Wide Plan (RWP) for the Lesser Prairie Chicken (LPC) is a unique effort to balance development activities in a working landscape with conservation efforts targeted in areas of good to moderate LPC habitat. This plan incentivizes development outside of core areas, while maintaining and improving habitat in core habitat areas.

As part of the RWP, impacted areas and conservation areas within the range of the LPC are assessed in the field using a Habitat Evaluation Guide (HEG) to quantify the quality of the habitat and calculate the habitat units impacted by a development project or conserved on a conservation property. Habitat units are converted to dollars based on the average land management costs for that ecoregion and used as the basis for industry mitigation fees and conservation payments to participating landowners. The calculated habitat units associated with the conservation properties are used to offset the impacted habitat units from development. The RWP stipulates that there must always be more habitat credits available then impacted habitat units to maintain a net gain in LPC habitat. This plant field guide is designed to assist with the identification and categorization of the vegetation present as one component of the HEG.

Cover photo: Grant Beauprez

Plant Category Assemblages

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Sodgrass Species

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Shrubs

All woody stemmed plants (trees/shrubs) less than 3 feet tall are considered shrubs. Cacti/yucca, are considered shrubs. Woody plants greater than 3 feet are trees.

Tufted Grasses

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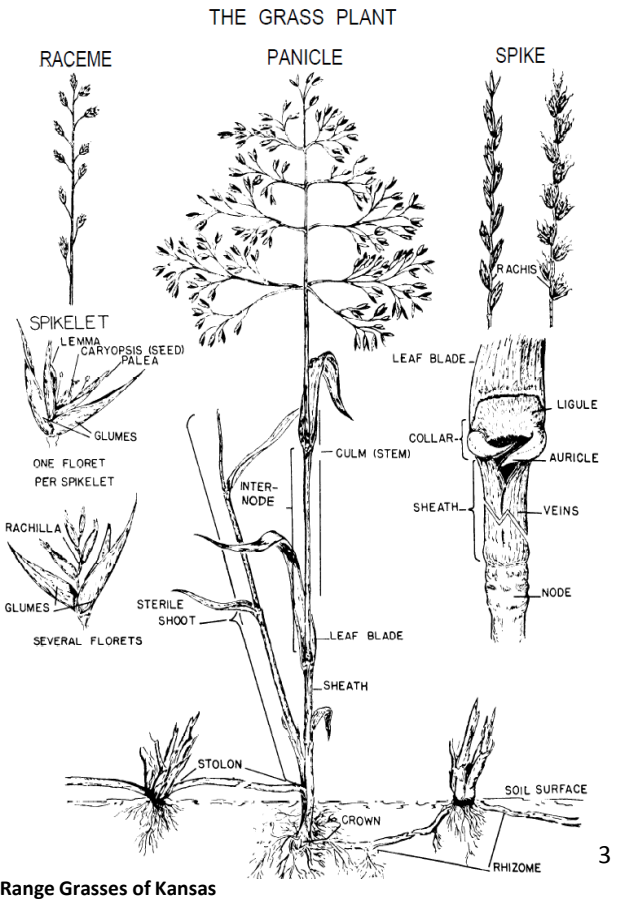
All grasses that are not Preferred grasses or Sod grasses are Tufted grasses.

Forbs

All flowers, and other soft stemmed plants are forbs.

Key plant identification parts



Native/warm season

Little Bluestem
Andropogon scoparius

Habitat Indicator
-Good quality prairie
-Common rangeland

Value/Use

Provides very nutritious grazing prior to maturity. Excellent nesting, used extensively by upland gamebirds and songbirds.

Characteristics

Bunch grass with flattened stems at the base of the plant. Stems often have purplish color near the base and a slight "J" bend.

Stems and leaf nodes are often very hairy, especially at younger ages.

Seeds resemble down feathers and create a white "glow" that is easy to recognize at a distance.

Turns a bright bronze-orange in the fall

Little Bluestem

Preferred Species

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Big Bluestem Native/warm season
Andropogon gerardii

Habitat Indicator
Deep, fertile soils but grows on shallow, gravelly ridges and near limestone ledges during wet periods

Value/Use
One of the highest-quality forage grasses on the prairie. Livestock usually prefer it to other grasses.

Characteristics

The lower sheaths and leaves usually are fuzzy and very hairy.

Ligule at leaf base protrudes up when leaf is bent back and reveals a jagged line of ligule spikes

Prominent stem joints at the nodes in taller grasses.

The seed heads usually come out in a three spike-like inflorescence resembling a turkey foot.

Big Bluestem

Preferred Species

Native/warm season

Indiangrass
Sorghastrum nutans

Habitat Indicator
Open prairies, bottomlands, and open woods, more abundant in deep, moist soils, but can also occur on dry slopes.

Value/Use
Very nutritious and is readily grazed by livestock. It decreases when grazed heavily. Birds and small mammals consume the seeds.

Characteristics
Prominent "hammer claw" or "rabbit-ear" ligules at the point where the leaf blade attaches to the stem.

The nodes are slightly fuzzy and the stem and leaf blades often have a dusty blue/green hue

The seed head panicle is long, torch shaped, and bronze to yellow in color. Individual seeds have a single “hair” sticking up about ½ inch long.

Indiangrass

Preferred Species

Native/warm season

Switchgrass
Panicum virgatum

Habitat Indicator
Moist, open lowland prairies, sand prairies, and open woods, on broad range of soils.

Value/Use
Many birds and mammals eat the seeds and foliage and use the plant for cover.

Characteristics
Semi dense hairs at leaf nodes – similar to big bluestem, but hairs don't go up leaf and there is no ligule, just hairs.

Moderate stem joints in taller grasses.

Inflorescence starts off with purple hue, changing to tan as it matures, has a "yellow" hue from a distance.

Inflorescence spreads wide with single flowers at the end of the branches.

Switchgrass

Preferred Species

Sideoats Grama

Native/warm season

Bouteloua curtipendula

Habitat Indicator

Rocky hillsides and dry, open grassland, in fine-textured limestone or chalk soils.

Value/Use

Side-oats grama is a high-quality and nutritious forage readily consumed by livestock. Provide good nesting and seeds For numerous songbirds and small mammals.

Characteristics

Hairs on stem, at leaf collar, and has single hairs growing out of small bulb-like spots on the leaf edge.

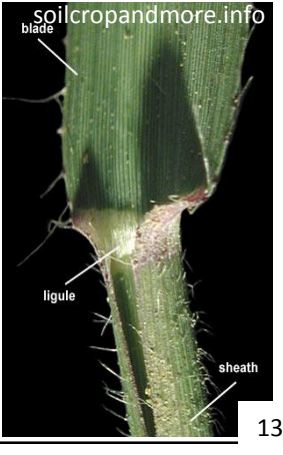
The inflorescence has many spikelets (20-50) usually twisting around to hang on one side when mature.

The bare seed-head stalk or spike is slightly zig-zagged when the seeds are gone.

Yellow-ish color when in motts, from a distance.

Sideoats Grama

Preferred Species



Native/warm season

Sand Bluestem
Andropogon gerardii

Habitat Indicator
Sandy soil, prairies and plains, sandhills

Value/Use
Perennial, warm season, native grass that provides fair grazing for wildlife; good grazing for livestock. Used by small mammals, seeds used by prairie chickens and songbirds.

Characteristics
The lower sheaths and leaves usually are fuzzy and very hairy.

Ligule 1/8 to 1/4" membranous, rounded and irregularly toothed.

Common in sandy soils, has long creeping rhizomes.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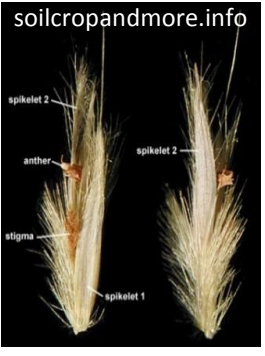
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Native/warm season

Sand Sagebrush
Artemisia filifolia

Habitat Indicator
Sand sagebrush communities are generally associated with deep sand deposits. Sand sagebrush is usually the dominant overstory component within these communities. The understory is composed primarily of annuals with sand-loving perennial forbs and grasses

Value/Use
Lesser prairie-chickens in New Mexico occupy semiarid grasslands that typically include a large component of shrubs, either sand shinnery oak or sand sagebrush

Characteristics
Sand sagebrush is a native, round, freely-branching woody shrub up to 5 feet (1.5 m) tall.

Sand Sagebrush

Preferred Species

Native/warm season

Shinnery Oak
Quercus havardii

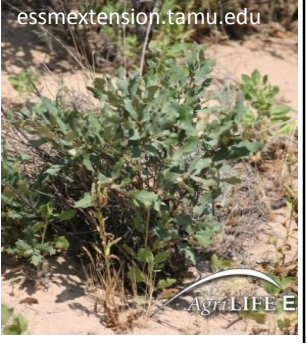
Habitat Indicator
Sandy plains, sand dunes, and sand hills of the southern Great Plains.

Value/Use
Diverse wildlife species utilize sand shinnery oak habitats for cover and food. Collared peccaries, lesser prairie-chickens, northern bobwhites, and other wildlife species eat sand shinnery oak acorns.

Characteristics
A low woody shrub to 2 m or occasionally a small tree. The leathery, highly variable leaves are grey green to olive green. Lustrous upper surface, and are whitish and densely hairy below. Leaves are alternate with variable shape (oblong, ovate, or elliptical). wavy or shallowly lobed margins. Bark on the larger stems is light gray and scaly.

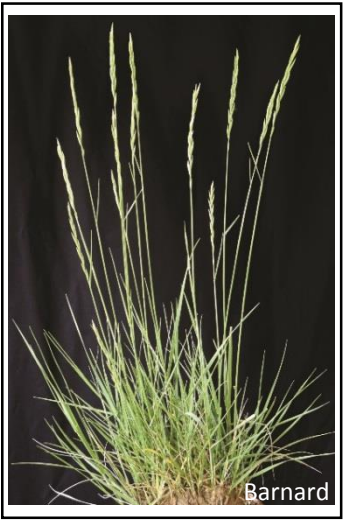
Shinnery Oak

Preferred Species



Native/warm season

Western Wheatgrass
Pascopyrum smithii



Habitat Indicator
Moist to dry prairies, most abundant in fine textured clay/clay pan alkaline soils. In native areas it is typically found with blue grama, buffalo-grass, needlegrasses, rough fescue.

Value/Use
Western wheatgrass is nutritious for livestock and is readily grazed during the early growth stage. It makes good quality, high-protein hay and the fall seeds are good for songbirds, game birds, and small mammals.

Characteristics
Western Wheatgrass often has a dusty blue green hue.

Course leaves branch alternately from the stem.

The auricles at the base of the leaf blade are finger-like projections that often clasp around the stem.


Barnard


Barnard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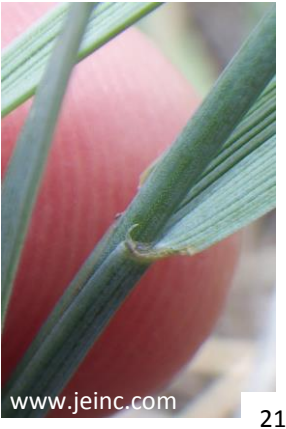
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Non-native/cool season

Smooth Brome
Bromus inermis

Habitat Indicator
Abundant in fertile sandy loam or clay loam soils. This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed.

Value/Use
Smooth brome is highly nutritious and palatable to livestock. It makes excellent hay and forage.

Characteristics
The plant produces numerous basal and stem leaves

Frequently the leaves are marked by a wrinkle resembling a “W” a short distance below the tip.

There are no auricles wrapping around the stem.

The ligule is a very short membrane.

Smooth Brome

Native/warm season

Silver Bluestem
Bothriochloa laguroides

Habitat Indicator
Dry prairies, roadsides, waste areas, and rocky slopes, particularly on sandy and limestone sites.

Value/Use
Fair for livestock and wildlife but is usually only grazed when young

Characteristics
The stems are round at the base, but sometimes branching at nodes. The lower part is purplish throughout the growing season and usually has a ring of white hairs at the nodes. Stems turn irregularly at each node.


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Sand Dropseed
Sporobolus cryptandrus

Native/warm season

Habitat Indicator
Sand dropseed is widely used in disturbed area plantings in short-grass prairies of the Great Plains. The fibrous root system stabilizes sand dunes. Its abundant seed production makes it a pioneer plant in disturbed areas and an invader of sandy soils.

Value/Use
Often it is the highest successional-level grass on the harshest soils/climates. It has admirable grazing value on any site. It can provide significant prairie nesting bird habitat requirement needs.

Characteristics
warm season bunch grass with a conspicuous collar of white hairs at leaf joints. The inflorescence is a panicle, 6 to 16 inches long and 1 to 5 inches wide, initially contracted and spike-like, but opening with maturity into a pyramidal shape. It has a distinguishing "flag leaf" protruding at a right angle from the stem.

Sand Dropseed

Native/warm season

Tall Dropseed
Sporobolus compositus

Habitat Indicator
The preference is full sun and mesic to dry conditions. Many types of soil are tolerated, including those containing loam, clay-loam, sand, or gravelly material.

Value/Use
Tall dropseed has only fair forage value. Palatability decreases with maturity.
It tends to increase in overgrazed bluestem pastures but it decreases in overgrazed short grass prairie.

Characteristics
Culms are generally solid and range from 8 to 51 inches (20-130 cm) tall. Tall dropseed leaves are generally from 2 to 28 inches (5-70 cm) long, 1 to 4.5 mm wide, and range from flat to involute. Longer leaf blades often have a very long “whispy” tip.

Tall Dropseed

Native/warm season

Purple Threeawn
Aristida purpurea

Habitat Indicator
Open, dry waste ground, often in sandy soils.

Value/Use
Purple threeawn has no forage value.

Characteristics
A bunchgrass averaging 6 to 30 inches tall. The leaves are mostly basal and very narrow; less than 2 mm wide, and involute or rolled. The ligule is ring of hairs 0.5 mm long. The inflorescence is a narrow panicle, 2 to 8 inches long with the lower branches ascending or spreading. The spikelets are reddish to purple colored. The floret bears a twisted awn column which divides into three awns 3/4 to 4 inches in length


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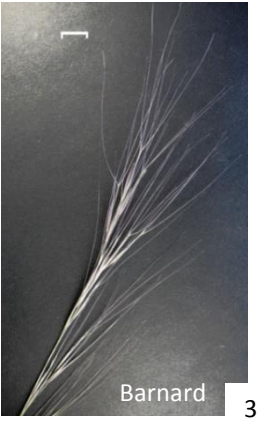
Barnard

Non-native/warm season

Weeping Lovegrass
Eragrostis curvula

Habitat Indicator
Weeping lovegrass prefers a light-textured, well-drained soil, and will thrive on soils of low fertility.

Value/Use
Cattle and deer feed on weeping lovegrass in its nonnative US range. Several small mammals and birds utilize weeping lovegrass habitats, although species richness and abundance may be higher in native grasslands than in weeping lovegrass stands.

Characteristics
Leaf blades are narrow, stiff, finely pointed, and measure up to 26 inches (65 cm) long and 3 mm wide. Leaf blade margins are often rolled inward.


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Native/warm season

Red Lovegrass
Eragrostis secundiflora

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Habitat Indicator
Grows on upland sandy soil and increases on overgrazed sites.

Value/Use
Poor grazing for both livestock and wildlife.

Characteristics
Stems are tufted, branching and spindly. The blades are 8 to 12 inches long. The panicle is about 8 to 18 inches long and green to purplish, becoming straw yellow when mature. The spikelets are flat and crowded in clusters with lemmas about 1⁄8 inch long.
Red lovegrass is a perennial, warm-season, native – 18 to 30 inches tall.

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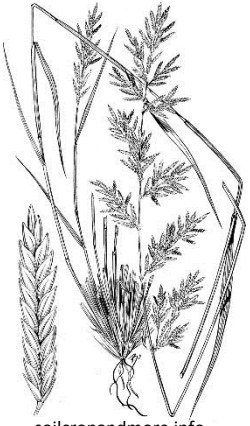

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Sand Lovegrass
Eragrostis trichodes

Native/warm season

Habitat Indicator
Prairies, open woods, and disturbed areas, in sandy soils.

Value/Use
Sand lovegrass provides excellent forage for livestock. It is sometimes called "ice cream grass" due to its high palatability.

Characteristics
A warm-season perennial, bunch grass found on sandy soil sites in the central and southern plains states. The erect culms are 80 to 120 cm tall, solid or hollow below. The leaf blades are flat to involute or rolled in at the margins, with a prominent midrib. The leaf blade is 20 to 46 cm long and 1.5 to 6 mm wide and taper to a slender point. The narrow leaf blade will roll inward under dry conditions to conserve moisture; this gives the leaf blade a threadlike appearance.


Barnard


Barnard


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Barnard

Native/warm season

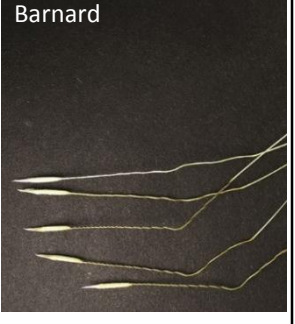
Needle and Thread Grass
Hesperostipa comata

Habitat Indicator
Dry prairies and pastures, on well-drained sandy or rocky soils.

Value/Use
Needle-and-thread has fair to good forage value for livestock prior to fruiting.

Characteristics
A perennial bunchgrass, 1- 4 feet tall with erect, smooth culms and long, flat leaves 8- 12 inches long. The inflorescence is a contracted panicle that remains partially in the sheath. The source of its name is the 4- 5 inch long twisted awn. It detaches from the inflorescence with the seed and gives the appearance of a short needle and long thread. The ligule, an identifying characteristic, is membranous and split.

Needle and Thread Grass



Non-native/warm season

Caucasian Bluestem
Bothriochloa bladhii

Habitat Indicator
Waste ground, roadsides, and pastures, more abundant on heavy-textured soils.

Value/Use
Occasionally planted for forage, but of only fair value.

Characteristics
Caucasian bluestem is a small blue-gray grass, with flowering stems that can reach 1 to 3 feet high. It forms dense tufts of blue-green smooth leaf blades, up to 12 inches long and less than ¼ inch wide with a thickened mid-vein. The nodes are purple-tinged and may be smooth or with short hairs. The inflorescence features side branches that are shorter than the central stem, and resembles a miniature version of Johnson grass.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Barnard


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Barnard

Native/warm season

Sand paspalum
Paspalum setaceum

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Habitat Indicator
Open ground of pastures, roadsides, and open woods; sandy soils.

Value/Use
The Kiowa considered paspalum a beneficial fodder plant.

Characteristics
This grass is a perennial with erect or prostrate stems that can exceed one meter in length. The flat leaf blades are hairless to slightly hairy. They vary in color. The panicle has up to 6 branches up to 17 centimeters long lined with small oval to rounded spikelets.

Sand paspalum

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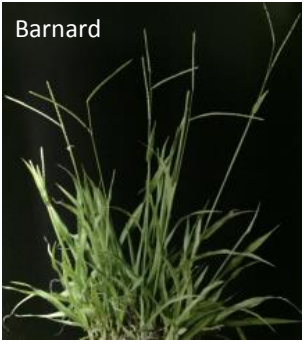

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Native/warm season

Hooded windmillgrass
Chloris cucullata

Habitat Indicator
Waste areas, prairies, pastures, lawns, and roadsides.

Value/Use
Hooded windmillgrass is grazed moderately by all livestock and the forage quality is fairly high.

Characteristics
Hooded windmillgrass is a native, warm-season, perennial bunch grass. The height is between 1 and 2 feet. The leaf blade is 2 to 6 inches long, folded to a sharp point, and bluish green in color.

Hooded windmillgrass

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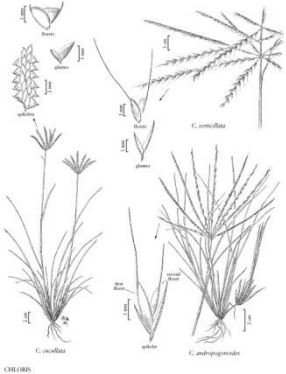

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Buffalograss
Buchloe dactyloides

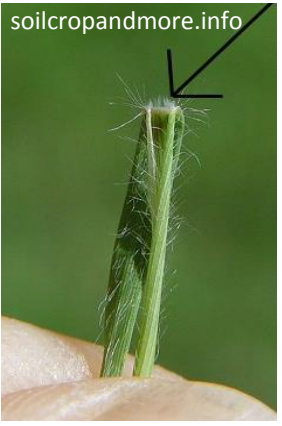
Native/warm season

Habitat Indicator
Exposed, well-drained sites on medium to fine textured soils. Will not tolerate shade.

Value/Use
Livestock readily graze buffalo grass, except during dry spells when it goes dormant. It can furnish good winter grazing. Buffalo grass protects itself from being overgrazed by producing its leaves very close to the ground.

Characteristics
A sod forming, warm season perennial that grows 4 to 6 inches in height. The leaf blade is 1/8 inch wide and 3 to 6 inches long. The ligule is a row of short hair. The plant is dioecious, with both sexes have a spike for the seed head. The female flowers are burs partially hidden among the leaves and the male flowers have 2 or 3 short spikes on slender, erect stems. Stolons are 2 to 24 inches long, creeping, rooting at nodes. The foliage turns reddish brown after frost.

Buffalograss Sodgrass



Blue Grama
Bouteloua gracilis

Native/warm season

Habitat Indicator
Found on dry prairies, particularly in sandy or gravelly soils; not found on wet, poorly drained soils.

Value/Use
Palatable and nutritious for livestock but provides low forage productivity. Blue grama will withstand moderately heavy grazing.

Characteristics
As blue grama seed heads mature, they bend into an eyebrow-like curve. Plant height at maturity ranges from 6 to 12 inches. Blue grama leaves are flat and taper to a point, growing 1 to 10 inches long and less than 1/8 inch (3 mm) wide, and persistent. Blue grama is solid-stemmed, and the flowering stems generally grow 7 to 18 inches (17-46 cm) tall.

Blue Grama Sodgrass

Native/warm season

Hairy Grama
Bouteloua hirsuta

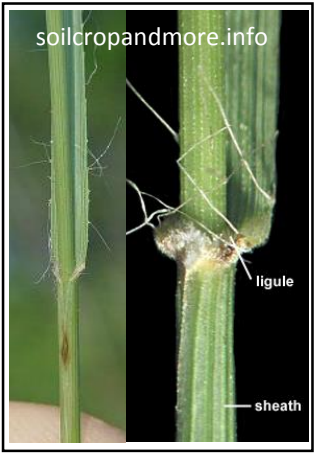
Habitat Indicator
Prairies or pastures, on dry, shallow, sandy or rocky sites.

Value/Use
Hairy grama is nutritious for livestock and has high palatability late in the growing season.

Characteristics
Hairy grama is a native, warm-season, perennial grass. The height is between 10 and 20 inches. The leaf blade is flat or slightly rolled; narrow; mostly basal; margins hairy. The leaf sheath is rounded; smooth; shorter than internodes. The seedhead is 1 to 4 spikes, purplish before maturity, about 1 inch long; rachis extends beyond spikelets. The Ligule is very short ring of hairs. Hairy grama grows in tufts but generally does not occur in large stands.

Hairy Grama

Sodgrass



Habitat Evaluation Guide (HEG) Methodology

Evaluation Units: Evaluation units will be generated by the GIS lab based on Ecological Side Description classes (soil groups) and fence lines (management) to create relatively homogenous sampling areas >= 5 acres. If management changes (fences) are not correctly mapped, note the changes and then add or merge units accordingly.

Sampling process within each evaluation unit:
1. Estimate the percent of tree cover. If tree cover is over 5%, no need to do vegetation transect sampling.

2. Vegetation Transect. Within each non-cropped evaluation unit, identify an area with vegetation proportions representative of the unit. Cropped units do not need sampling, just verify they are cropland.

Place a 150 ft. transect line with the 0 mark at the northeast end, and run the line to the southwest. Record the start and stop coordinate.

At the transect start, record the coordinates (decimal degrees) and take a photo looking down the line so that plants along the entire transect line are visible.

3. Vegetation Sampling: To sample, stand on the south side of the tape at the 0 mark. In a vertical decent, lower the end of a wire flag through the vegetation on the immediate north side of the tape.

Record vegetation "hits" in the order that the wire touches them (raindrops point of view). Multiple hits on the same plant and multiple litter hits are allowed, record each one. It must be detached from the plant to be litter. Record only confirmed hits, not almost touching. Record vegetation hits by plant group (PG, TG, FO, SG, SH….). Include Yucca, Prickly pears, and trees with other woody stemmed vegetation in the shrub category (SH). Bare ground (BG) is recorded at the mark when no canopy hits are recorded above the exposed soil.

Repeat sampling every 3 feet down the tape (0,3,6,9…).

4. Check site map infrastructure is mapped correctly. Assess the immediate area as well as the broader 1,700 meter radius for towers/turbines. Add locations for missing features and note if features mapped are not actually present on the landscape.

PG	Preferred Grasses	SO	Shinney Oak
TG	Tufted Grasses	WL	Woody Litter
SG	Sod Grass	HL	Herbacious Litter
FO	Forb	OL	Organic Litter
SH	Shrub	AL	Artificial Litter
SS	Sand Sagebrush	BG	Bare Ground

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Beauprez, Grant
New Mexico Game and Fish

Common Grasses of Oklahoma, Kansas and Nebraska
Barnard, Iralee . University Press of Kansas

DesertUSA
http://www.desertusa.com/flora

Eat the Weeds
http://www.eattheweeds.com

Houts, Michael.
Kansas Biological Survey

Johnston Seed Co.
www.jeinc.com/western-wheatgrass

Kansas Wildflowers & Grasses
www.kswildflower.org/index.php

Lady Bird Johnson Wildflower Center
www.wildflower.org

Medicinal Plants of the Southwest
http://medplant.nmsu.edu

Plants of Texas Rangelands
http://essmextension.tamu.edu/plants

Range Grasses of Kansas
http://www.bookstore.ksre.ksu.edu/pubs/C567.pdf

Rawlins, Clint
NRCS, Amarillo

Soil, Crop and More Information
http://www.soilcropandmore.info

USDA NRCS
http://plants.usda.gov

Utep.edu
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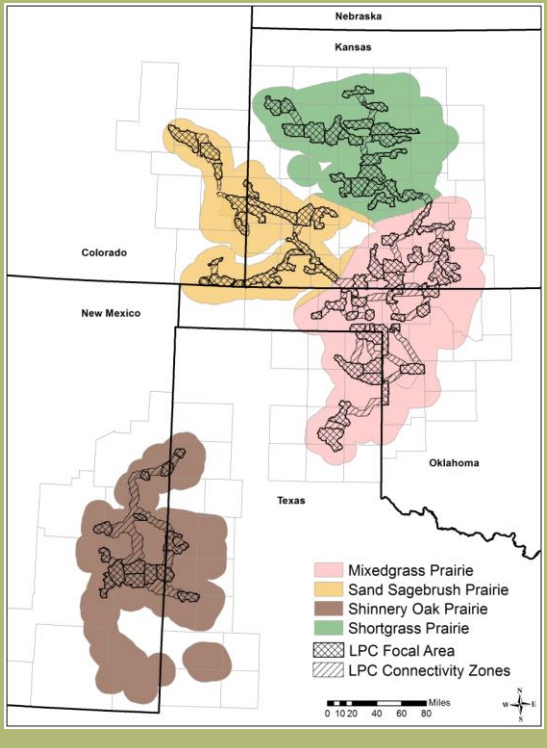
Range and Ecoregions of the Lesser Prairie Chicken



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