

Grasslands:

1. *Prairie Grasslands:*

Climate

Climatically, the Dry Mixedgrass Subregion is the warmest and driest in Alberta. It has a typical continental climate with cold winters, warm summers and low precipitation. Because of the warm summer temperatures and a high average wind speed, the rate of evaporation is high throughout the summer months. There is high daily and seasonal temperature variation. It is characterized by a mean annual temperature of 4 °C and a growing season (May - September) mean of about 16 °C. The mean winter temperature is typically - 7 °C and the mean summer temperature is about 16 °C.

Total annual precipitation is typically around 260-280 mm and summer precipitation is lowest of any Subregion in Alberta. Compared to other Subregions, the Dry Mixedgrass Subregion has a high year-to-year precipitation variability. Spring is the wettest season with about two-thirds of the annual precipitation falling as rain, the peak occurring in June. The amount of snow cover is relatively low as is the number of days of continuous snow cover. Chinooks are most common along the western border of the subregion where there are more than 30 chinook days per year.

Soils

The characteristics soils of the Dry Mixedgrass Subregion are Dark Brown Chernozems. Brown Solonetz soils are common in the extreme southeast of the subregion and in a large area north of Dinosaur Provincial Park.

Vegetation

The name 'Mixedgrass' comes from the predominance of both short and mid-height grasses. The most widespread are the mid-grasses, *Stipa* spp. (spear grass), *Agropyron smithii* (western wheat grass) and *Koeleria micrantha* (June grass) and the short grass, *Bouteloua gracilis* (blue grama). *Agropyron dasystachyum* (northern wheat grass) and *Stipa curtisetata* (western porcupine grass) are characteristic of moister sites within the Subregion.

The most widespread vegetation of sand dune areas is dominated by *Stipa comata* (spear grass), *Calamovilfa longifolia* (sand grass), *Koeleria macrantha* (June grass) and a variety of low shrubs including *Artemisia cana* (sagebrush), *Elaeagnus commutata* (silverberry), *Symphoricarpos occidentalis* (western snowberry) and *Rosa acicularis* (prickly rose).

Wildlife

On the upland plains, characteristic species of more heavily grazed areas include horned lark, McCown's longspur, chestnut-collared longspur and Richardson's ground squirrel. Species of lightly grazed areas include Baird's sparrow, Sprague's pipit, sharp-tailed grouse, and upland sandpiper. Western meadowlark and white-tailed jack rabbit are examples of species that tolerate a broad spectrum of grazing conditions.

Sage grouse, lark bunting, Brewer's sparrow and pronghorn show an affinity for sagebrush flats in the uplands and valley bottoms.

Sand plain and dune areas contain a number of rare and local species that are restricted to these habitats including Ord's kangaroo rat and western hognose snake. Wider ranging species that also occur here include sharp-tailed grouse, grasshopper sparrow and mule deer.

Riparian shrublands and forests support a diverse animal community. These include brown thrasher, gray catbird, yellow-breasted chat, mourning dove, northern flicker, house wren, northern oriole, deer mouse, Nuttall's cottontail, and white-tailed deer.

Rock outcrops and badlands are local but significant to a number of birds as nesting habitat including golden eagle, rock wren, ferruginous hawk, prairie falcon and mountain bluebird.

Marshes and wetlands are important habitat for many species of birds both breeding and migrating. Oxbow lakes of meandering streams provide key habitat for breeding amphibians including chorus frog, leopard frog, plains spadefoot and garter snakes.

2. Foothills Grassland:

Climate

The mean annual precipitation ranges from 650 mm in the far south to about 500 mm in the north. The mean May - September precipitation is 290 mm. The mean May - September temperature is 11 to 13 °C. The mean annual temperature is 3 °C and the frost-free period averages 90 days.

Soils

The soils of this subregion are predominantly Dark Brown and Black Chernozems. Solonetzic soils are not important in the Foothills Fescue Subregion.

Vegetation

The Foothills Fescue grasslands are dominated by *Festuca scabrella* (rough fescue), *F. idahoensis* (Idaho fescue), *Danthonia parryi* (Parry's oatgrass) and *Danthonia californica* (intermediate oatgrass). Associated grasses include *Koeleria macrantha*, *Agropyron dasystachyum*, *Stipa curtisetata*, *S. columbiana* (Columbia needle grass), *Poa cusickii* (Cusick's bluegrass) and *Helictotrichon hookeri*. In the Cypress Hills, *Danthonia parryi* is rare and *Agropyron trachycaulum* is common. *Potentilla fruticosa* (shrubby cinquefoil) is a locally dominant shrub on rapidly drained sites along the foothills and on moist sites in the Cypress Hills, where it has increased with grazing pressure on the herbaceous species.

Geranium viscosissimum (sticky geranium), *Anemone patens* (prairie crocus), *Lithospermum ruderales* (wooly gromwell), *Galium boreale*, *Thermopsis rhombifolia* (golden bean), *Artemisia ludoviciana* (prairie sagewort), *Hedysarum alpinum* (American sweet vetch), *Delphinium bicolor* (low larkspur), *Ranunculus cardiophyllus* (heart-leaved buttercup), *Dodecatheon* spp. (shooting star), and *Lomatium triternatum* (western wild parsley). *Balsamorhiza sagittata* (balsam-root) is characteristic of steep slopes of the foothills portion but is absent in the Cypress Hills.

Numerous species occur in the Foothills Fescue Subregion but not in the Northern Fescue Subregion. These include *Danthonia parryi*, *Agropyron spicatum*, *Festuca idahoensis*, *Stipa columbiana*, *Geranium viscosissimum*, *Lupinus sericeus*, *Besseyia wyomingensis*, *Lomatium triternatum*, *Bupleurum americanum*, *Perideria gairdneri*, *Lithospermum ruderales* and *Conimitella williamsii*.

Populus angustifolia (narrow-leaved cottonwood) woodlands occur on fluvial terraces of the Oldman, Belly, Waterton, and St. Mary's rivers. These are generally less extensive than those in the Mixedgrass Subregion.

Wildlife

Wildlife in the forests and shrublands of the southwestern rivers is similar to that of the Milk River in the Mixedgrass Subregion. Along the western edge of the Foothills Fescue Subregion, some Rocky Mountain species occur.