

Central Tallgrass Grassland



General Description

The *Central Tallgrass Grassland* zone covers an area of approximately 8900 km² in the Red River basin of southern Manitoba. This zone represents the northern tip of the North American tallgrass prairie that extends south to Texas. The climate is the wettest of the grassland vegetation zones in Canada. The majority of the contemporary landscape supports crop cultivation.

Vegetation

Tallgrass prairie is characterized by dense stands of tall (up to 2 m) perennial grasses. Beneath the tall grasses, or in gaps within the stands, are shorter grasses (approximately 10-40 cm high). Interspersed among the graminoids is a perennial forb component with high species diversity; some stands are dominated by forbs. Woody vegetation is rare, but clumps of trees and tall shrubs can often be found along the boundary between tallgrass prairie and wetlands. Shrubs and trees are primarily cold-deciduous, broad-leaved species. Species composition and abundance in native grasslands can shift dramatically with grazing impacts, changes in fire regime or invasion by non-native species.

Dominant tallgrass species include big bluestem (*Andropogon gerardi*), prairie dropseed (*Sporobolus heterolepis*), yellow Indiangrass (*Sorghastrum nutans*) and old switch panicgrass (*Panicum virgatum*). Other important grasses include plains porcupine grass (*Hesperostipa spartea*), mat muhly (*Muhlenbergia richardsonis*), little bluestem (*Schizachyrium scoparium*), prairie junegrass (*Koeleria macrantha*) and slender wildrye (*Elymus*

trachycaulus). On moist sites, prairie cordgrass (*Sporobolus michauxianus*), bluejoint reedgrass (*Calamagrostis canadensis*), slim-stemmed reedgrass (*C. stricta*) and sedges (*Carex* spp.) often occur. On sand dunes, communities often include sand bluestem (*Andropogon hallii*) and prairie sandreed (*Sporobolus rigidus* var. *rigidus*).

Forbs can be abundant and often have high species diversity. Common forb species include downy false indigo (*Amorpha canescens*), prairie pasqueflower (*Anemone patens*), purple prairie-clover (*Dalea purpurea*), narrow-leaved purple coneflower (*Echinacea angustifolia*), sunflowers (*Helianthus* spp.), eastern yellow stargrass (*Hypoxis hirsuta*), blazing stars (*Liatris* spp.), black-eyed Susan (*Rudbeckia hirta*), blue-eyed-grasses (*Sisyrinchium* spp.), goldenrods (*Solidago* spp.), asters (*Symphotrichum* spp.) and golden alexanders (*Zizia aurea*).

Alluvial forests dominated by plains cottonwood (*Populus deltoides* ssp. *monilifera*), Manitoba maple (*Acer negundo*), red ash (*Fraxinus pennsylvanica*), balsam poplar (*P. balsamifera*), bur oak (*Quercus macrocarpa*) and American elm (*Ulmus americana*) occur on stable floodplain terraces. These stands often have shrub-rich understories.

Wetlands occur mostly in the riparian margins of rivers and streams, although some develop in small topographic depressions with poor drainage. Marshes dominated by broad-leaved cattail (*Typha latifolia*), bulrushes (e.g. slender bulrush [*Schoenoplectus heterochaetus*], hard-stemmed bulrush [*S. acutus*] or common spikerush (*Eleocharis*

palustris) occur on the margins of water bodies. Fens and wet meadows are dominated by a variety of graminoids, including sedges (e.g., lake sedge [*Carex lacustris*], tussock sedge [*Carex stricta*], sterile sedge [*C. sterilis*]) and grasses (e.g., bluejoint reedgrass [*Calamagrostis canadensis*], slim-stemmed reedgrass [*C. stricta*], prairie cordgrass [*Sporobolus michauxianus*], spike muhly grass [*Muhlenbergia glomerata*]). Shrub communities dominated by sandbar willow (*Salix exigua*) often occupy the active flood zone of rivers and streams.

Climate

The *Central Tallgrass Grassland* zone occurs in the subhumid continental temperate macroclimate of southern Manitoba. Winters are cold and summers are warm; mean annual temperatures average approximately 2.8°C. Growing degree days above 5°C vary between 1780 and 1950. Annual precipitation is approximately 525 mm. In this area, the climate is relatively wet and warm compared to other Canadian grassland vegetation zones but, in spite of the greater amount of precipitation, evapotranspiration is high enough to produce a moisture balance that supports natural grassland vegetation rather than forest.

Physiography, Geology, Topography and Soils

This zone lies on the Manitoba Plain, a subdivision of the Interior Plains physiographic region, which is underlain by level Mesozoic and Tertiary sedimentary rocks. Elevations are <300 mASL.

During and immediately following late Pleistocene glaciation, the entire zone was inundated by glacial Lake Agassiz. The land surface is mainly a level plain of deep glaciolacustrine silts and clays. Local relief is provided by postglacial valley complexes and Lake Agassiz beach and delta features, together with associated sand dunes. Soils are predominantly Vertisols and Chernozems, with Gleysols occurring on moist, poorly drained sites.

Notes

The *Central Tallgrass Grassland* zone is bounded on the north, west and east by the *Great Plains Parkland*. To the south, it continues into the United States.