Peace Grasslands

Description

Xeric south, southwest or southeast facing slopes above major tributaries in northeastern British Columbia are associated with development of grassland plant communities and associated shrub draws. Mesic solonetzic uplands may also develop similar plant communities. While the total area of these communities is relatively small, they are ecologically significant. They contain unique plant species and assemblages; notably, they contain a high proportion of species that are considered true grassland species (i.e., porcupine grass, old man's whiskers, Hooker's oatgrass). Peace grassland complexes provide critical wildlife habitat, particularly during winter. They are also an important source of forage for both wild ungulates and domestic livestock.

Location

This range type occurs in northeastern British Columbia, and is locally common around the municipalities of Fort St John, and to a lesser extent, Dawson Creek. Sites are typically small in size and are found on south-facing slopes above major tributaries of the Peace, Beatton and Halfway Rivers. Ecologically similar plant communities have been described in Alberta near the municipalities of Grande Prairie and Peace River. This range type is found adjacent to forests, with the leading species of these forests almost always trembling aspen (*Populus tremuloides*).

Representative Reference Area

The Beatton RRA captured this site but In 2008, most of this site slid into the Beatton River.

BEC Correlation

BWBSmw1

Site Characteristics

Soil

Typically found on well-drained soils. The soil texture is often high in clay, although lighter textured soils may be found on steeper slopes. Parent material can be glacio-fluvial, morainal or (occasionally) lacustrine.

Elevation range

700 – 1000 m

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Seral Stages

PNC Climax

Peace Grassland Type PNC interspersed with Peace shrublands

Plant Community PNC	
Species	**Canopy cover (%)**
Porcupine Grass	20-60
Northern wheatgrass	10-35
Western wheatgrass	3-20
Junegrass	3-12
Upland Sedge(s)	2-10
Fringed Sage	0-10
Goldenrod	5-12
Bastard Toadflax	2-8
Prairie Crocus	2-8

Productivity

Production ranges between 700-1100 kg/ha of herbaceous material. There is variation in productivity both between sites and between years with productivity correlated with growing season and fall/winter precipitation patterns.

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Range Management consideration

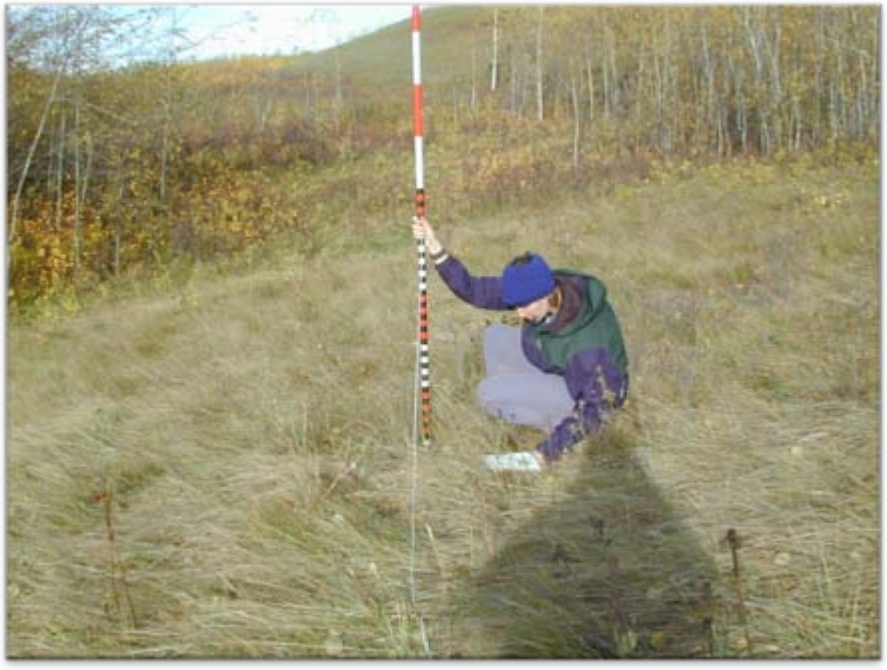
Peace grasslands, while small in extent, comprise an important rangeland resource. These areas provide important wildlife habitat with less snowpack and more sun exposure over the winter due to a moderating southern aspect. In addition, south-facing slopes are open (snow free) first and green up earlier relative to adjacent plant communities. Both the plant communities and the soils that underlay them are relatively fragile. Therefore, early spring use should be light and followed by sufficient rest. Managers should delay grazing until plants have sufficient leaf material. Livestock use should cease when or before stubble height thresholds are met. For porcupine grass and western wheatgrass, a stubble height of 12 cm is recommended. Northern wheatgrass is more sensitive to grazing, and for this reason a stubble height of 15 cm is suggested. Because of the slope position and risk for soil compaction or movement, care should be taken to avoid or limit grazing when the ground is wet and/or during periods of heavy precipitation.

Properly Functioning Condition

These communities typically score as properly functioning.

Late Seral

Peace Grassland Community Late-Seral



Plant Community Late-Seral	
Species	**Canopy cover (%)**
Porcupine Grass	20-60
Northern Wheatgrass	5-25
Western Wheatgrass	5-20
Junegrass	3-12
Upland Sedges	2-10
Fringed Sage	0-12
Goldenrod	5-15
Bastard Toadflax	2-8
Prairie Crocus	2-8

Productivity
600 – 1000 kg/ha

Range Management consideration
Late-seral is the targeted/desired plant community. Under normal climatic parameters, it can tolerate light to moderate grazing pressure. Moderate (25% use with a stubble height of 12cm on needlegrass and western wheatgrass and 15cm on northern wheatgrass) grazing should be followed by rest. Early spring grazing should be avoided or done with great care and low stocking rates, as this is when plants are initiating growth and are therefore vulnerable to damage from over-grazing. Grazing should be delayed until wheatgrass plants reach the 4.5-5.0 leaf stage OR needlegrass plants reach the 2.5-3.0 leaf stage to ensure sustainability of the range resource. Fall use is less damaging to growing plants. If fall grazing occurs, sufficient litter (carryover) needs to be left on site to protect the soil and ensure root reserves are maintained for subsequent growing seasons. Litter needs to be left on site to assist in the capture of snow and to impede runoff. These areas often get rain or rapid snow melt on frozen ground. If litter and live plant material is too low, excessive run-off may occur.

Properly Functioning Condition
Late--seral sites score as properly functioning.

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Mid-Seral

Peace Grassland Community Mid-Seral

Plant Community Mid-Seral	
Species	**Canopy cover (%)**
Porcupine Grass	5-20
Northern Wheatgrass	5-20
Western Wheatgrass	8-30
Junegrass	1-20
Upland Sedge(s)	1-10
Fringed Sage	10-20
Goldenrod	3-12
Bastard Toadflax	10-30
Prairie Crocus	10-35
Kentucky Bluegrass	0-10
Strawberry	0-10

Productivity

500-900kg/ha

Range Management consideration

Preferred palatable species such as northern wheatgrass and porcupine grass will decline in abundance, as secondary species (junegrass, western wheatgrass) increase and invader species (Kentucky bluegrass) become established. Showy locoweed will increase which contains selenium and is known to be toxic.

Mid-seral sites can exhibit soil compaction and demonstrate alteration in hydrological and biogeochemical cycling within an area. Sites that are characterized as mid-seral should be managed conservatively. With sustained use, particularly if rest and recovery is overlooked, there is potential for further decline in condition and an increase in risk to the community. Forage production is often reduced, relative to late-seral and PNC sites. Because of the purported reduction in productivity and more importantly, because of the potential for decline without appropriate management, conservative (max. 25% use, with 12 cm stubble height on both wheatgrasses and needlegrasses) is suggested.

Properly Functioning Condition

Mid-seral sites may score as properly functioning to at risk.

Early-Seral

Peace Grassland Community Early-Seral

Plant Community Early-Seral	
Species	**Canopy cover (%)**
Porcupine Grass	5-15
Northern Wheatgrass	0-10
Western Wheatgrass	10-30
Junegrass	2-30
Upland Sedge(s)	2-15
Fringed Sage	2-10
Goldenrod	2-10
Bastard Toadflax	15-40
Prairie Crocus	0-12
Kentucky Bluegrass	5-25
Strawberry	5-25

Productivity
250-700 kg/ha

Range Management consideration
Early-seral condition sites have reduced productivity, are missing taller structural layers, reduced levels of litter and show an increased incidence of bare soils. Plant community composition shifts away from desirable, preferred forage species with species composition consisting of less-preferred forage species, including lower-statured species (strawberry), unpalatable or toxic species (showy locoweed, American milk-vetch) and invaders (Kentucky bluegrass). These factors leave sites vulnerable to wind and water erosion and also effect the site's ability to recover fully from disturbance or stress. In the absence of active management, these sites can become further degraded. Early-seral sites should rested until they recover to mid-seral, or grazed lightly (15% use) with a long rest.

Properly Functioning Condition
Early-seral condition on this range type will score at risk to non-functioning.

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