

Appendix H: Available Native Plant Materials for Use on Public Lands in Alberta

Alberta Agriculture, Food and Rural Development / Alberta Environment June 2000

This listing of native species is based on currently available plant materials, and on plants that are considered to be key components of various ecosystems (and may be commercially available within a five year time frame). The plant lists are subject to revision based on seed availability, and will be updated yearly. **This document should be treated as a starting point only.** The public land manager should be consulted during the planning phase of a project, and prior to purchasing seed, for more specific site requirements. The Alberta Native Plant Council (Garneau P.O. Box 52099, Edmonton, AB T6G 2T5; www.anpc.ab.ca) also puts out an annual listing of available native plant materials. Percentages of plant species to use are not included in this document because of fluctuations in availability and varying site/land use requirements. The scientific names listed are based on Moss (1983).

A detailed listing of native species present on various site types throughout Alberta is available in the publication: “*A Guide to Using Native Plants on Disturbed Lands*”. This publication is available from the Alberta Agriculture, Food and Rural Development Publications office (call 1-800-292-5697 (Canada) or 780-427-0391). The guide also has more complete information on suitability of various native species for specific site types, relative percentages of species found on undisturbed sites and detailed information about individual species.

Grassland Natural Region

Notes:

- Shrub replacement may be required where shrub islands have been disturbed.
- Annual nuisance weeds tend to disappear from reclamation sites within 3-4 years.
- If mowing is done, it should be done high enough (15 cm) to avoid damage to re-establishing native plants.

■ Dry Mixedgrass/Mixed Grass Prairie

Dry Mixedgrass/Mixed Grass Prairie - Upland Brown Chernozemic Soils:

needle and thread grass (limited quantity)	<i>Stipa comata</i>
northern wheatgrass	<i>Agropyron dasystachum</i>
June grass	<i>Koeleria macrantha</i>
blue grama grass (limited quantity)	<i>Bouteloua gracilis</i>
western wheatgrass	<i>Agropyron smithii</i>

Other species, as they become available:

grass/grass-like: plains reedgrass, Canada wild rye, Sandberg bluegrass, blunt/sun-loving sedges
forbs: annual sunflower, scarlet mallow, bee plant, prairie asters

Dry Mixedgrass/Mixed Grass Prairie - Upland Dark Brown Soils:

western porcupine grass (limited quantity)	<i>Stipa curtiseta</i>
green needle grass	<i>Stipa viridula</i>
northern wheatgrass	<i>Agropyron dasystachyum</i>
western wheatgrass	<i>Agropyron smithii</i>
June grass	<i>Koeleria macrantha</i>
blue grama grass (limited quantity)	<i>Bouteloua gracilis</i>
slender wheatgrass	<i>Agropyron trachycaulum</i> var. <i>trachycaulum</i>
American vetch (limited quantity)	<i>Vicia americana</i> / <i>sparsifolia</i>
purple/white prairie clover (limited quantity)	<i>Petalostemon purpureum</i> / <i>candidum</i>
prairie coneflower (limited quantity)	<i>Ratibida columnifera</i>

Other species, as they become available:

grass/grass-like:	plains reedgrass, Sandberg bluegrass, blunt/sun-loving sedges, sweet grass, early bluegrass
forbs:	blue lettuce, scarlet mallow, annual sunflower, prairie asters, blazing star

Dry Mixedgrass/Mixed Grass Prairie - Subxeric to Submesic (sandy):

sand grass	<i>Calamovilfa longifolia</i>
Indian rice grass	<i>Oryzopsis hymenoides</i>
western wheatgrass	<i>Agropyron smithii</i>
needle and thread grass (limited quantity)	<i>Stipa comata</i>
sand dropseed	<i>Sporobolus cryptandrus</i>
June grass	<i>Koeleria macrantha</i>

Other species, as they become available:

grass/grass-like:	blunt sedge, Hooker's oat grass, Canada wild rye, plains reed grass
forbs:	bee plant, blazing star, scurf pea, golden bean

Dry Mixedgrass/Mixed Grass Prairie - Solonetzic Soils:

western wheatgrass	<i>Agropyron smithii</i>
northern wheatgrass	<i>Agropyron dasystachyum</i>
needle and thread grass (limited quantity)	<i>Stipa comata</i>
June grass	<i>Koeleria macrantha</i>
blue grama grass (limited quantity)	<i>Bouteloua gracilis</i>
Nuttall's alkali grass	<i>Puccinellia nuttalliana</i>

Other species, as they become available:

grass/grass-like:	Sandberg bluegrass, blunt sedge, plains reedgrass, alkali bluegrass, Canby bluegrass
forbs:	Scarlet mallow, golden bean, annual sunflower

■ Northern Fescue Grassland

Northern Fescue Grassland - Mesic Sites:

plains rough fescue (limited quantity)
western porcupine grass (limited quantity)
green needle grass
awned wheatgrass (limited quantity)
June grass
Rocky Mountain fescue
northern wheatgrass
western wheatgrass

Festuca hallii
Stipa curtiseta
Stipa viridula
Agropyron trachycaulum var. *unilaterale*
Koeleria macrantha
Festuca saximontana
Agropyron dasystachyum
Agropyron smithii

Other species, as they become available:

grass/grass-like: blunt/sun-loving sedge, Hooker's oatgrass, sweet grass
forbs: harebell, goldenrod, golden bean, prairie asters, pea vine, yarrow, fleabane,
blanket flower, sweet vetches

Northern Fescue Grassland - Sandy Sites:

needle and thread grass (limited quantity)
sand grass (limited quantity of local species)
sand dropseed (limited quantity of local species)
western porcupine grass (limited quantity)
June grass
awned wheatgrass (limited quantity)
green needlegrass
plains rough fescue (limited quantity)
northern wheatgrass

Stipa comata
Calamovilfa longifolia
Sporobolus cryptandrus
Stipa curtiseta
Koeleria macrantha
Agropyron trachycaulum var. *unilaterale*
Stipa viridula
Festuca hallii (not for **very** sandy sites)
Agropyron dasystachyum

Other species, as they become available:

grass/grass-like: Canada wild rye, blunt/dryland sedge
forbs: goldenrod, annual sunflower, blanket flower, golden aster, mouse-eared
chickweed, fleabane, three flower avens

Parkland Natural Region

■ Foothills Parkland

foothills rough fescue (limited quantity)
fringed brome (limited quantity)
mountain brome
nodding brome (limited quantity)
awned wheatgrass (limited quantity)
June grass
green needle grass
northern wheatgrass

Festuca campestris
Bromus ciliatus
Bromus carinatus
Bromus anomalus
Agropyron trachycaulum var. *unilaterale*
Koeleria macrantha
Stipa viridula
Agropyron dasystachyum

Other species, as they become available:

grass/grass-like: Idaho fescue, Parry oatgrass, sun-loving/blunt sedges, northern awnless brome, California oatgrass, Rocky mountain fescue, sweet grass, alpine timothy

forbs: American sweet vetch, smooth aster, Canada goldenrod, yarrow, northern bedstraw

shrubs: shrubby cinquefoil, smooth/beaked willows

■ **Peace River Parkland (Peace River Slopes)**

western porcupine grass (limited quantity)

Stipa curtiseta

June grass

Koeleria macrantha

northern wheatgrass

Agropyron dasystachyum

western wheatgrass

Agropyron smithii

awned wheatgrass (limited quantity)

Agropyron trachycaulum var. *unilaterale*

green needlegrass

Stipa viridula

Rocky Mountain fescue

Festuca saximontana

Other species, as they become available:

grass/grass-like: Columbia needlegrass, plains reed grass, blunt sedge

forbs: yarrow, smooth aster, smooth fleabane, Missouri goldenrod, harebell, scarlet mallow

shrubs: snowberry, saskatoon, choke cherry, pin cherry, prairie rose

■ **Central Parkland (see Northern Fescue Grassland p. 50)**

Boreal Forest Natural Region (except Dry Mixedwood Subregion)

■ **For natural recovery (no seeding) option in the Boreal Forest:**

- Rollback on majority of areas, especially access and slopes.
- Where a weed problem exists in the area, access points can be rolled back; the remainder seeded to grass and a weed control program implemented for 2 years prior to leaving bush to encroach.
- Seeding of cover crops on slopes may be required.

■ **Mesic Sites in the Boreal Forest:**

fringed brome (limited quantity)

Bromus ciliatus

awned wheatgrass (limited quantity)

Agropyron trachycaulum var. *unilaterale*

fowl bluegrass

Poa palustris

tufted hairgrass

Deschampsia cespitosa

slough grass

Beckmannia syzigachne

northern wheatgrass

Agropyron dasystachyum

Other species, as they become available:

grass/grass-like: hairy wild rye, purple oat grass, blunt/hay sedge, Canada wild rye, spike
trisetum, tickle grass, mountain rice grass

forbs: fireweed, cream-coloured peavine, yarrow, smooth fleabane, Canada
goldenrod

■ Subxeric-Submesic (Sandy) Sites in the Boreal Forest:

Rocky Mountain fescue	<i>Festuca saximontana</i>
June grass	<i>Koeleria macrantha</i>
American vetch (limited quantity)	<i>Vicia americana</i>

Other species, as they become available:

grass/grass-like: hairy wild rye, Canada wild rye, spike trisetum, purple oatgrass, plains reed grass, blunt/hay sedge, northern rice grass
forbs: wild strawberry, northern sweet vetch, twin-flower

■ River Banks in the Boreal Forest

The preference is that these not be seeded to grass, but that shrubs be planted instead. Erosion concerns can be addressed using geotextiles, mulches and vegetated geogrids. Suggestions for shrub plantings in the boreal forest include (see book for other possibilities): dogwood, rose, cranberry, alder, honeysuckle, raspberry, willow.

■ Dry Mixedwood Subregion of the Boreal Forest Natural Region -Mesic Sites:

nodding brome (limited quantity)	<i>Bromus anomalus</i>
fringed brome (limited quantity)	<i>Bromus ciliatus</i>
awned wheatgrass (limited quantity)	<i>Agropyron trachycaulum</i> var. <i>unilaterale</i>
June grass (add for sandy sites)	<i>Koeleria macrantha</i>
northern wheatgrass (add for sandy sites)	<i>Agropyron dasystachyum</i>
Rocky Mountain fescue (add for sandy sites)	<i>Festuca saximontana</i>
American vetch (limited quantity)	<i>Vicia americana</i>

Other species, as they become available:

grass/grass-like: hairy wild rye, purple oatgrass, mountain rice grass, hay sedge
forbs: fireweed, cream-coloured peavine, smooth fleabane, Canada goldenrod, harebell
shrubs: hazelnut, dogwood, rose, cranberry, alder, honeysuckle, raspberry and willow

Foothills Natural Region

■ Lower Foothills: Same as boreal

■ Upper Foothills - Moister Sites (valley bottoms):

tufted hairgrass	<i>Deschampsia cespitosa</i>
fringed brome	<i>Bromus ciliatus</i>
awned wheatgrass	<i>Agropyron trachycaulum</i> var. <i>unilaterale</i>
fowl bluegrass	<i>Poa palustris</i>
American vetch	<i>Vicia americana</i>

Other species, as they become available:

- grass/grass-like: hairy wild rye, spike trisetum, tickle grass, sweet grass, sedges (*Carex praegracilis, atherodes, praticola, atrosquama, aurea*)
forbs: alpine milkvetch, fireweed, yarrow, sweet vetches, alpine aster
shrubs: willow, shrubby cinquefoil

■ **Upper Foothills - Drier Sites (Conifer):**

- Rocky Mountain fescue *Festuca saximontana*
fringed brome *Bromus ciliatus*
tufted hairgrass *Deschampsia cespitosa*
awned wheatgrass (limited quantity) *Agropyron trachycaulum* var. *unilaterale*

Other species, as they become available:

- grass/grass-like: broad-glumed wheatgrass, northern rough fescue, alpine bluegrass, hairy wild rye, bluebunch wheatgrass
forbs: American vetch, three-flowered avens, alpine milkvetch, fireweed
shrubs: prickly rose, green alder, juniper, buffaloberry, willow

Rocky Mountain Natural Region

■ **Montane (southern)**

- foothills rough fescue (limited quantity) *Festuca campestris*
awned slender wheatgrass *Agropyron trachycaulum* var. *unilaterale*
Rocky Mountain fescue *Festuca saximontana*
mountain brome *Bromus carinatus*
June grass *Koeleria macrantha*
American vetch *Vicia americana*

Other species, as they become available:

- grass/grass-like: Idaho fescue, Richardson needle grass, Columbia needle grass, northern awnless brome
forbs: three flowered avens, American vetch, showy locoweed, yarrow, American sweet vetch, harebell, smooth aster

Note: At higher elevations: also use broad-glumed wheatgrass, spike trisetum, alpine bluegrass.
On moister sites: add tufted hairgrass, green needle grass.

■ **Subalpine (north of Highway #1)**

- Rocky Mountain fescue *Festuca saximontana*
fringed brome *Bromus ciliatus*
alpine bluegrass *Poa alpina*

Other species, as they become available:

grass/grass-like: broad-glumed wheatgrass, spike trisetum, northern rough fescue, hairy wild rye
forbs: alpine milk vetch
shrubs: alder, willow, buffaloberry, blueberry, bog cranberry

■ **Subalpine (south of Highway #1)**

alpine bluegrass	<i>Poa alpina</i>
foothills rough fescue (limited quantity)	<i>Festuca campestris</i>
fringed brome	<i>Bromus ciliatus</i>
Rocky Mountain fescue	<i>Festuca saximontana</i>
mountain brome	<i>Bromus carinatus</i>
American vetch (limited quantity)	<i>Vicia americana</i>

Other species, as they become available:

grass/grass-like: broad-glumed wheatgrass, spike trisetum
forbs: alpine milkvetch, three flowered avens, showy locoweed,
shrubs: alder, willow, buffaloberry, blueberry, bog cranberry

■ **Alpine Subregion**

alpine bluegrass	<i>Poa alpina</i>
Rocky Mountain fescue	<i>Festuca saximontana</i>

Other species, as they become available:

grass/grass-like: spike trisetum, broad-glumed wheatgrass, bog sedge
forbs: alpine milk vetch, sweet vetches
shrubs: mountain heather, willow, low bilberry, red elderberry, prickly rose, yellow mountain avens

Acceptable Native Plant Substitutions

Every effort should be made to secure supplies of appropriate native plant materials. It is not advisable to mix native cultivars with native species that have not undergone genetic selection for agronomic characteristics, as the native cultivars are more competitive and will dominate the stand. Substitutions should only be made when the desired native species are not available and should be accompanied by supporting documentation.

1. Northern/western/streambank wheatgrasses all right to substitute for each other; note that western wheatgrass is out of range in the boreal forest, except on Peace River slopes (northern/streambank persist for at least 8 yrs in the boreal forest).
2. Green needle grass all right to substitute for needle and thread grass and western porcupine grass (until supplies of latter species improve). Be aware that green needle grass is adapted to moister conditions.

3. Mountain brome (native to Southwestern Alberta, Montana and Cypress Hills; out of range in northern Alberta and may not perform well): all right to substitute for fringed brome.
4. Fowl bluegrass okay to substitute for rough hair grass/tickle grass; source: Peace River area.

Notes:

- Maximum percent (PLS) of rhizomatous wheat grasses should be 20% especially on prairie sites; up to 50% may be all right if the site is not fenced and being grazed. Slender wheatgrass is very competitive and should be seeded at <10% PLS of the mix.
- Light weight seed should be broadcasted (and pressed into the ground) following drilling of heavy seed. 6-8 kg/ha (drill seeded) is currently being recommended for prairie; may require a specialized drill; often requires use of a carrier (chick starter, sand, etc). Where the seed mix has less than 40% large seeded species (less than 500 seeds/gram, e.g., wheat grasses), the seeding rate for drilling can be increased to 10-12 kg/ha. Rates should be doubled for broadcasting.

Natural Recovery (no seed)

This option is becoming more accepted by industry and regulators for small disturbances where the potential for erosion is low. Natural recovery (no seeding) can be applied with the permission of the landowner or inspector. On the mixed grass prairie, native species will move onto a disturbed site at the rate of 3 to 5 metres per year (with adequate moisture). Some points to consider when deciding to use this option include:

- The preferred seed for an area is unavailable.
- The percent of non-native species in the surrounding vegetation is not significant.
- Restricted or noxious weeds in the area are not known to be a problem.
- Range condition surrounding the disturbed area is good to excellent.

Non-Native Substitutions

The use of non-natives (other than as a cover crop) should be a last resort when trying to establish a native plant community, unless there is scientifically valid data that shows that the species being used will not persist in the long term. Any use of non-native species should be accompanied by documentation that outlines the reasons that the non-native species are being used, and evidence of the unavailability of the preferred native plants. Though the species listed below are not considered invasive at this time, some may be persistent when planted in native plant communities. It should be noted that mixing competitive non-native species with native species is also not recommended.

Acceptable Non-Invasive Non-Native Perennial Substitutes

1. Sheep's fescue- persistent though not invasive; suitable for dryland through parkland; drought tolerant; low growing bunch growth habit.

2. Daurian wild rye (biennial)- suitable for dryland as a substitute for slender wheatgrass; short-lived (3-4 years) except in wetter areas; can be persistent because of prolific seed production.
3. Intermediate wheatgrass- not persistent under grazing pressure; used as a substitute for native wheatgrasses in mixed grass prairie.
4. Pubescent wheatgrass-a form of intermediate wheatgrass; considered to be better adapted to droughty and saline sites.
5. Redtop- used as a substitute for hair grass/tickle grass in moister areas.
6. Perennial rye grass- considered to be too competitive unless used at very low percentages; winter kills but does reseed; >10% in a mix inhibits germination of other species.
7. Cicer milkvetch- considered the least aggressive of the introduced legumes but is persistent on foothills grassland and in the Boreal Forest; should be used in small percentages (5-10%).
8. Alsike clover- this species is too competitive with tree seedlings but may be used elsewhere.
9. Alfalfa- may be used in site-specific circumstances, e.g. sandy sites where no suitable native legume is available, if it can be shown that it will not persist on the site past 5-7 years.

Acceptable Non-Native Annuals

Non-native annuals are generally used to provide interim erosion control on erodible slopes while slower-growing native perennials are becoming established. Annuals should not be used where they compete with native plants for moisture or nutrients. Seeding of annuals is also not recommended for early spring grazed pastures in southern Alberta.

1. Annual ryegrass- likes moist conditions; use <10% in mix, otherwise too competitive.
2. Regreen (a cross between wheat and western wheatgrass)- has sterile heads; small survival of plants to second and third years; gets as tall as grain and has same palatability. Regreen is a relatively new product, and has not undergone extensive field testing under Alberta conditions.
3. Barley- can attract grazers.
4. Oats- can attract grazers.
5. Winter wheat (southern Alberta) or durum
6. Flax