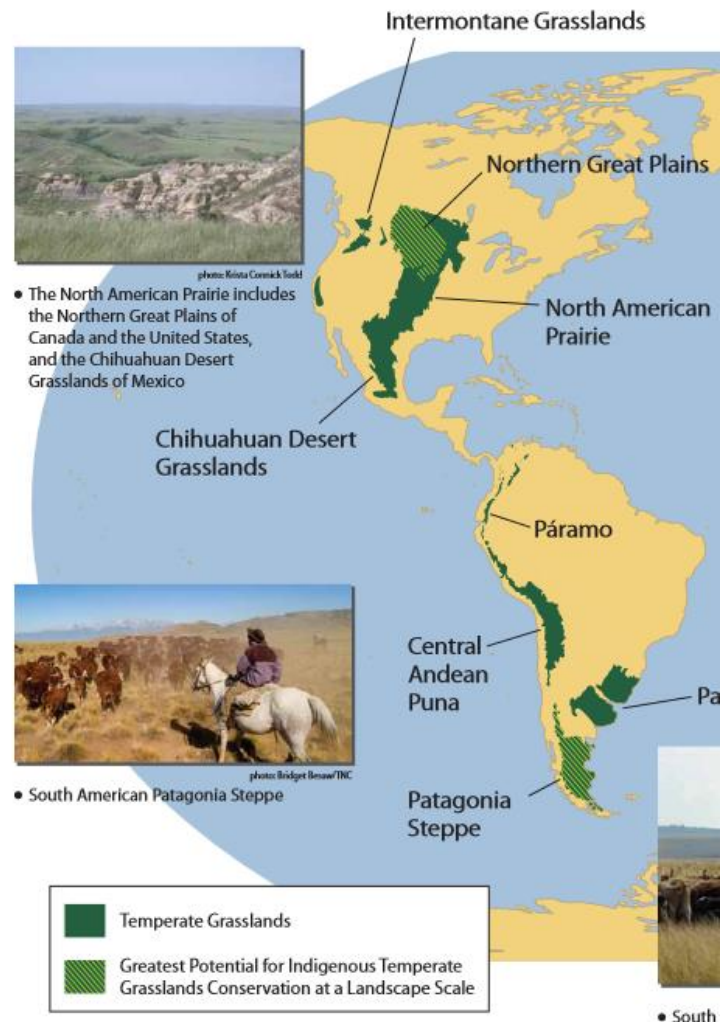


# ALBERTA'S GRASSLANDS IN CONTEXT

## GLOBAL GRASSLANDS<sup>1</sup>

Temperate grasslands, located north of the Tropic of Cancer and south of the Tropic of Capricorn, are one of the world's great terrestrial biomes<sup>2</sup>. This biome occurs on every continent, in about 20 countries and occupies 9 million km<sup>2</sup>, or 8% of the earth's terrestrial surface. The major temperate grasslands include the veldts of Africa, the pampas of South America, the steppes of Eurasia, and the plains and prairies of North America. While they were once home to some of the largest assemblages of wildlife the earth has ever known (e.g. vast herds of North American Bison), the world's remaining intact temperate grasslands now support only remnant populations. Today native temperate grasslands are considered to be the most altered and endangered terrestrial ecosystem on the planet (IUCN 2010).

Although species and habitat declines continue, temperate grasslands have the lowest level of protection of the world's 14 biomes, with only 5% of the biome currently within the global system of protected areas. Several international bodies have suggested that achieving at least a 10% level of protection should be considered a minimum, yet this is a monumental challenge in an ecosystem now so vastly altered. With more than half of all temperate grasslands converted for crop production, forest plantations, urbanization and other land uses such as energy and mining development, considerable effort will be required to



<sup>1</sup> Information and figure is excerpted from the IUCN's *Temperate Grasslands Strategy Paper 2010: Toward a Strategy for the Conservation and Protection of the World's Temperate Grasslands*. Available online.

<sup>2</sup> Biomes are the major, naturally occurring communities of plants and animals occupying a major habitat. There are 5 major global biome types: marine, freshwater, desert, grassland and forest, which are sometimes subdivided further such as grasslands into temperate and savanna grasslands. Depending on how the types are split, there are between 9-10 terrestrial biomes and 4-5 aquatic biomes in the world.

increase this level of protection.

Temperate grasslands include the North Great Plains, which are considered to be internationally significant. The previous figure also shows that the area of the Great Plains where they extend north into Alberta have the greatest potential for grassland conservation at a landscape scale. The temperate grasslands within Alberta lie mostly within the Grassland Natural Region, which is further subdivided into Mixedgrass, Dry Mixedgrass, Foothills Fescue, and Northern Fescue Natural Subregions.

## CURRENT AND HISTORICAL EXTENT OF THE CANADIAN AND ALBERTA GRASSLANDS

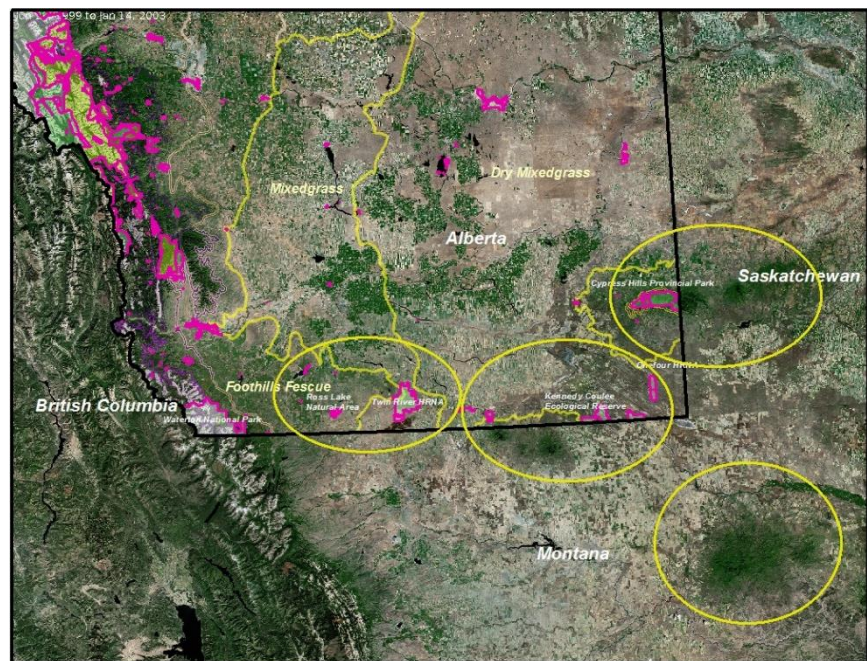
Most of the natural grassland remaining in Canada is considered *mixedgrass prairie type*. The mixedgrass prairie found on dark brown and brown soils in Alberta, Saskatchewan and Manitoba makes up part of the extensive grassland region that occupies North America southward to northern Texas. Mixedgrass prairie is roughly analogous with the Mixedgrass and Dry Mixedgrass Natural Subregions in Alberta.

Estimates vary of the original extent of grasslands in Canada. Various authors have estimated that there was between 30 – 50 million hectares of “open” grassland in Canada east of the Rockies prior to settlement (Coupland 1973, Weins 1996, Samson and Knopf 1994). Approximately 30% of Canada’s grasslands lie within Alberta.

Because temperate grasslands are particularly suitable for agriculture, the Canadian prairie is among the most intensively developed landscapes in the world. Various reports have agreed that overall, at least 70% of the native prairie in Canada has been transformed through cultivation, industrial development, roads, urbanization and other factors. Recent estimates indicate that of the 9.5 million hectares within the Grassland Natural Region of Alberta, only 4 million hectares remain in a native state; a nearly 60% decline. Of that, just over half are located on Crown lands (2.4 million hectares) with the remaining located on private land.

Some of the best blocks of contiguous temperate grasslands in North America occur in southern Alberta. In fact, only Texas and North Dakota retain a larger native grassland base than Alberta. In this recent satellite imagery, the darker areas highlight some of the best remaining native prairie in Southern Alberta, Montana and Saskatchewan.

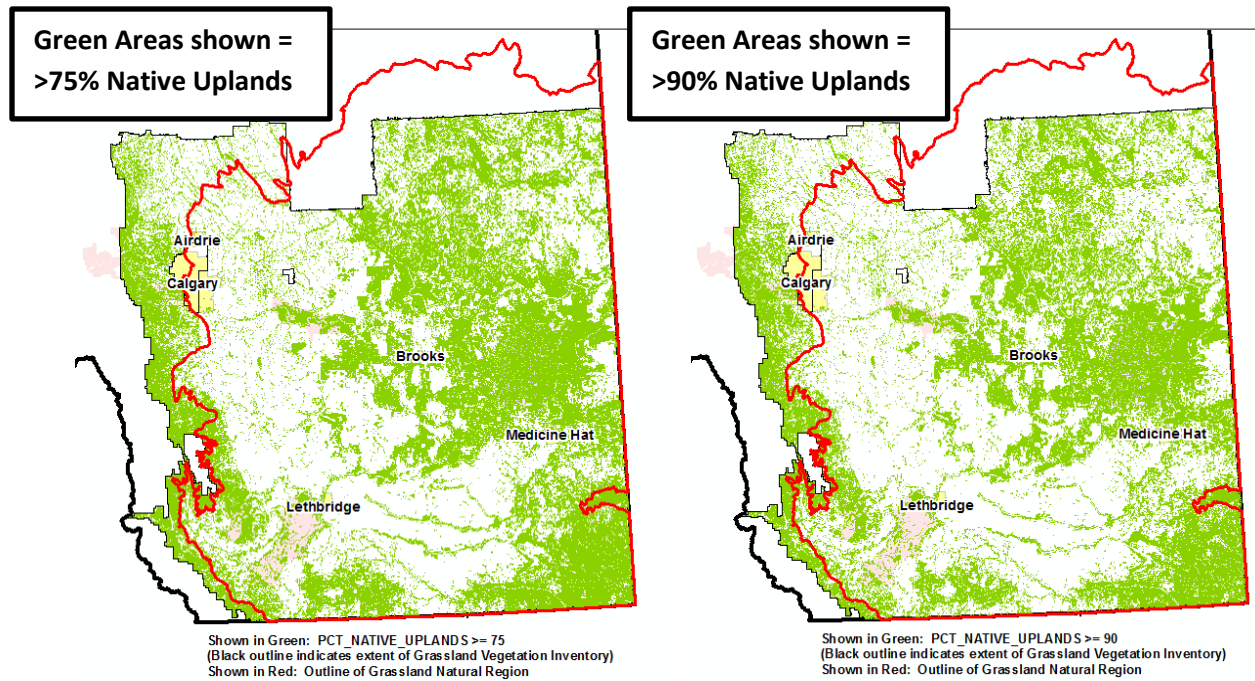
The grasslands found on black chernozemic soils of Alberta are considered part of the range of *fescue prairie types* and are roughly analogous to the



Foothills Fescue and Northern Fescue Natural Subregions. It is estimated that fescue prairie originally covered over 25.5 million hectares in the Prairie Provinces, but by 1973 only 2 to 4 million hectares of natural fescue grassland remained (Coupland 1973). Some of the most severe losses of native grassland in Alberta have occurred

in the Foothills Fescue and Mixedgrass subregions. The amount of mixedgrass prairie in the Mixedgrass and Dry Mixedgrass Natural Subregions in Alberta alone has declined by at least 60% from the original extent (Samson and Knopf 1994).

In the following figure, the Government of Alberta's (GOA) "Grassland Vegetation Inventory" database shows blocks of native prairie with either >75% native or >90% native uplands remaining within the Grassland Natural Region of Alberta.



Based on an analysis of this Grassland Vegetation Inventory, the following table shows that less than half of native uplands remaining are located on crown land in the Mixedgrass and Dry Mixedgrass subregions respectively. Only 2% of the remaining native uplands within the Foothills Fescue subregion are on provincial crown land.

Additionally:

- No Natural Subregion has more than half the uplands remaining in greater than 90% native vegetation;
- Looking at uplands that have greater than 75% native vegetation, only the Dry Mixedgrass Natural Subregion has over 50% remaining; and
- Even using the less stringent 75% native upland category, only 318 km<sup>2</sup> remain in native vegetation on crown land in the Foothills Fescue Subregion.

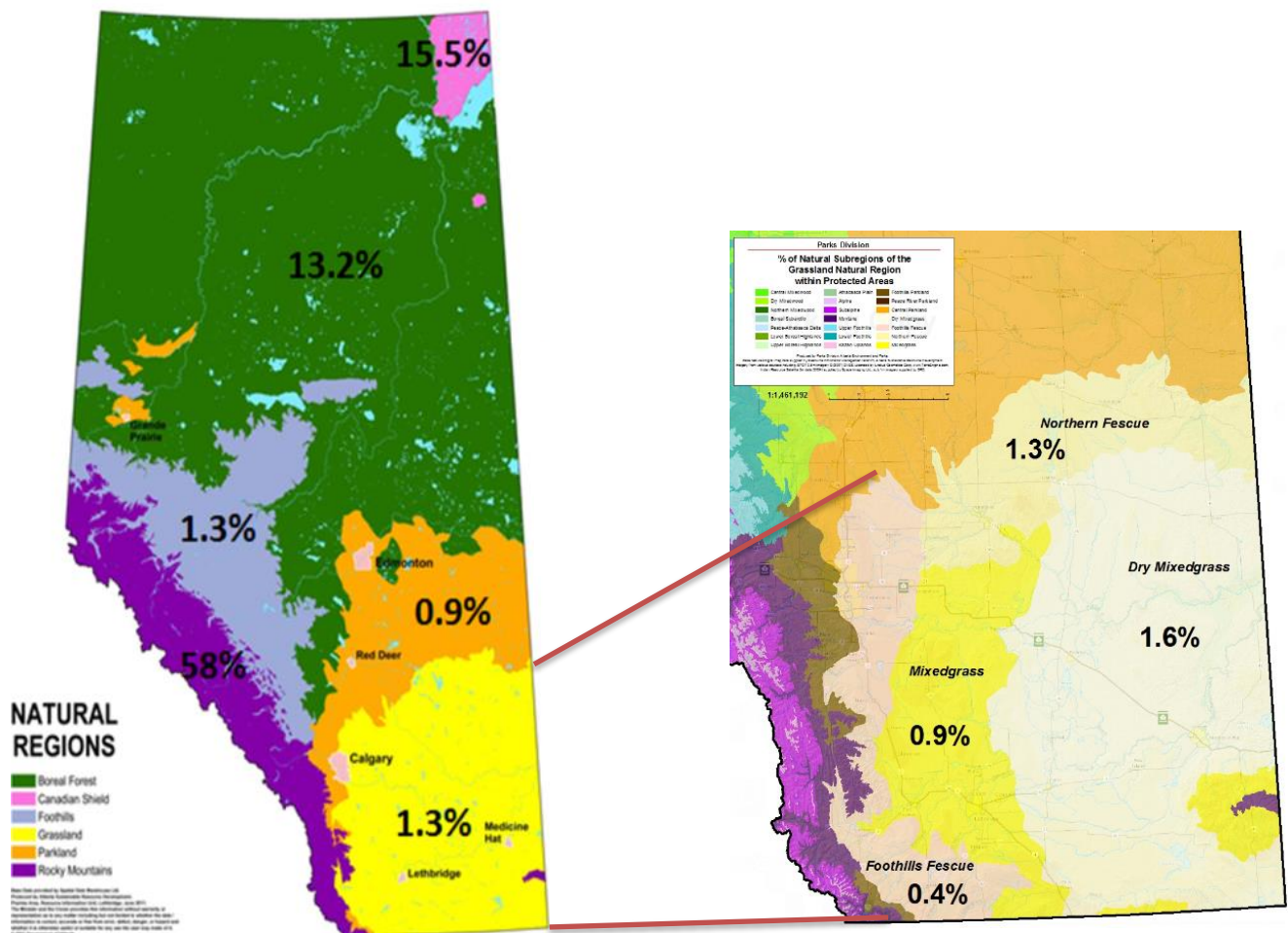
Subregion	Subregion Area (km <sup>2</sup> )	Native Uplands* >=75%			Native Uplands* >=90%		
		Total Area (km <sup>2</sup> )	Area on provincial Crown Land (km <sup>2</sup> )	% of Subregion in native uplands on provincial crown	Total Area (km <sup>2</sup> )	Area on provincial Crown Land (km <sup>2</sup> )	% of Subregion in native uplands on provincial crown
<b>Mixedgrass</b>	20,072	5,586	2,545	13%	4,703	2,164	11%
<b>Dry Mixedgrass</b>	46,937	23,923	11,926	25%	21,461	10,631	23%
<b>Foothills Fescue</b>	13,623	3,852	318	2%	3,452	290	2%

\* Native upland figures taken from GOA Grassland Vegetation Inventory GIS data

\* GVI does not cover all of the Northern Fescue Natural Subregion, which was thus excluded from this analysis.

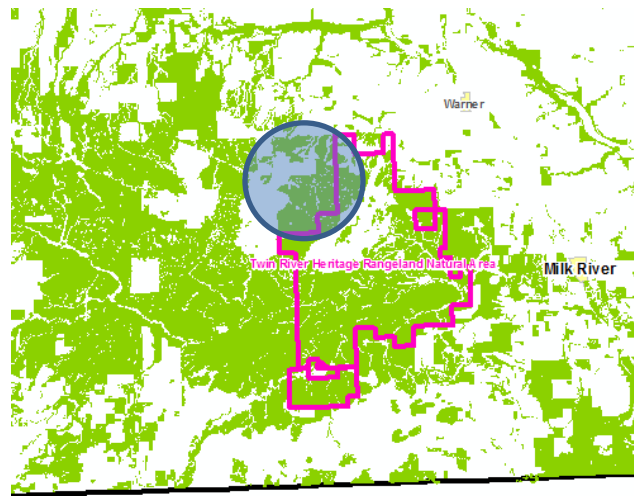
## GRASSLANDS AND PROTECTED AREAS IN ALBERTA

Protected Areas are globally recognized as a key tool for in situ conservation of biodiversity with the aim of stemming the loss of biodiversity worldwide. One of the core goals of the protected areas network in Alberta is to ensure protection of representative examples of the entire range of Alberta's natural diversity. Currently, less than 2% of the Grassland Natural Region as a whole is represented within the protected areas network in Alberta. Within the Grassland Natural Region, the Foothills Fescue Natural Subregion in particular has the least representation within protected areas of any of the 21 subregions in Alberta. Currently, less than half of 1% (0.4%) of the subregion lies within protected areas and almost half of the typical landscape types are completely unrepresented. Although slightly better off than the Foothills Fescue, the Mixedgrass Natural Subregion still has less than 1% represented in protected areas in Alberta.



## TWIN RIVER HERITAGE RANGELAND NATURAL AREA PROPOSAL

The native uplands in the Twin River Heritage Rangeland Natural Area fall within either the Mixedgrass Natural Subregion, or the Foothills Fescue Natural Subregion. The proposed addition highlighted below, lies mostly within the Foothills Fescue Natural Subregion. This subregion is the most poorly represented in the Alberta Parks system, with less than 0.5% of the subregion located within protected areas. Ross Lake Natural Area and the current Twin River Heritage Rangeland Natural Area alone account for almost three quarters (35 hectares) of the protected areas representation in this natural subregion. The balance of the proposed addition (approximately 5 km<sup>2</sup>) lies within the Mixedgrass subregion, which has less than 1% within protected areas in Alberta. Overall, the proposed addition would make an important contribution to protection of native grasslands in the parks and protected areas system in both these subregions and contribute to protection of one of the most endangered ecosystems on the planet.



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