

### III. PRAIRIE RESOURCE CONSIDERATIONS

#### A. Prairie Resources Inventory

Felton Prairie is part of the tallgrass prairie ecosystem. At one time this grassland (Fig. 5) spanned 148 million acres from Manitoba to Texas (Samson, 1996). The boundaries of tallgrass prairie shifted in response to disturbances such as climate fluctuations and fire frequency. During periods of abundant rainfall and lower fire frequency, the tallgrass prairie reverts to woodland. After Euro-American settlement, agriculture became the dominant land use. Even those areas where the prairie escaped the plow, fire was suppressed and many of the native grazers like bison were eliminated. As a result, only 4% of the native tallgrass prairie remains. These areas are widely scattered and relatively small in size compared the historic range of tallgrass prairie. Biologists refer to this condition as fragmentation. In Minnesota an estimated 18 million acres of prairie covered the landscape prior to settlement. In 1994 only 75,000 acres remained in the state, a loss of 99.6% (Samson, 1996).

Biologists have identified three “landscapes of significance” in our region (Samson, 1996): the Sheyenne Delta in North Dakota, the Lake Agassiz beach ridges in Minnesota, and the Tallgrass Aspen Parkland in northwest Minnesota and southern Manitoba (Figure 6). The Lake Agassiz beach ridges run along the eastern side of the Red River Valley and cross into the Aspen Parklands. They are collectively referred to as the Agassiz Interbeach area. Landscapes of significance are recognized where “significant amounts of natural vegetation and concentrations of rare species” exist, or high quality examples of native communities can be found (Samson, 1996). The identification of significant landscapes is based on a biodiversity assessment. “The flora and fauna of the Agassiz Interbeach Area (and the Plains region as a whole) is largely a derivative one, recruited from adjoining regions. Despite this attribute, it is the many unique combinations of species (natural communities) that significantly enhance the biodiversity of these regions relative to other geographic regions,” (Ostlie, 1997). Felton Prairie exemplifies this richness of habitat. Within a few hundred yards vegetation will transition from lush wetlands to dry prairie as a beach ridge rises in elevation. Swales between the ridges of historic shorelines feature rich microclimates ranging from wetlands to mesic prairie, depending on the

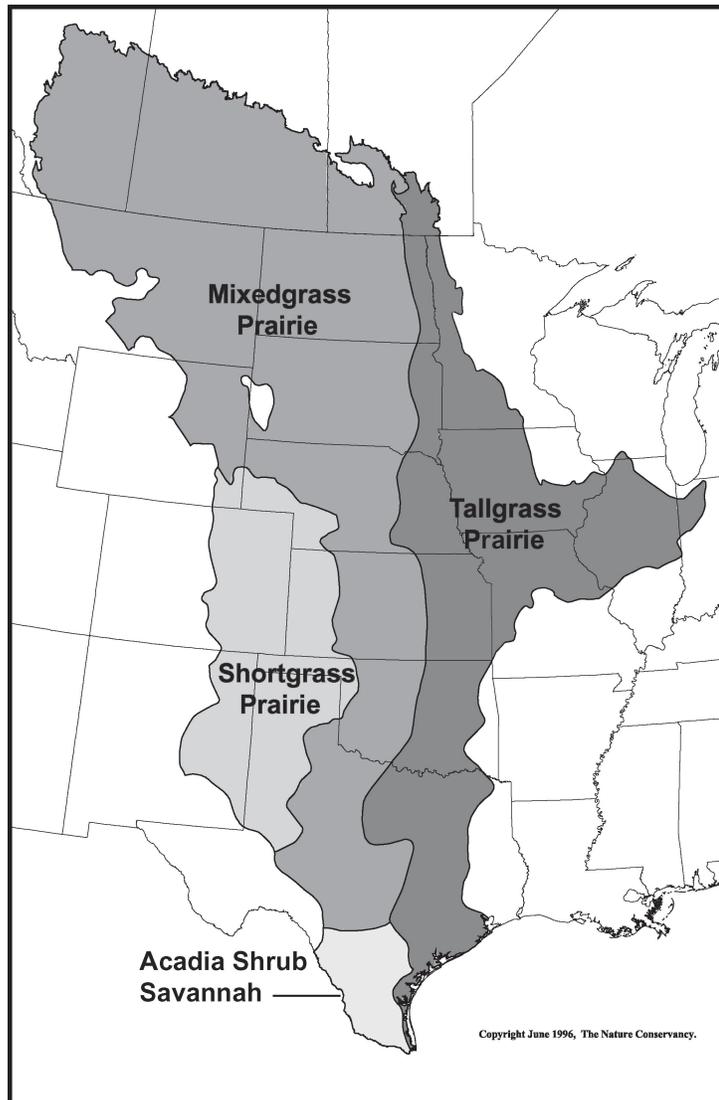
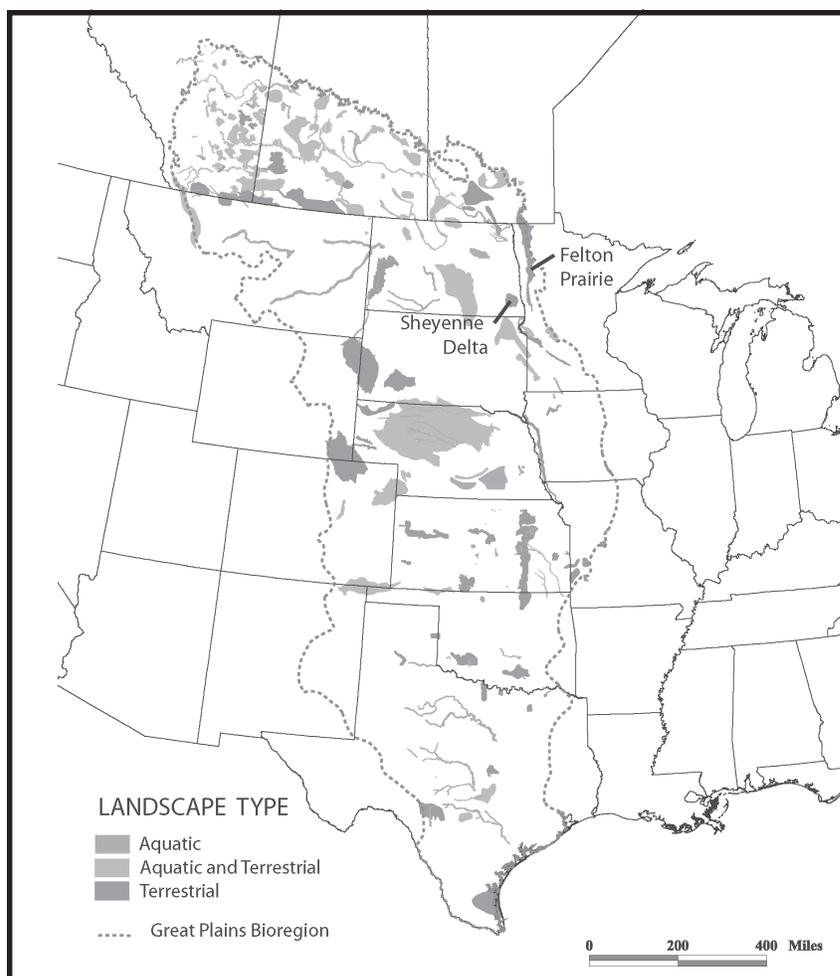


Figure 5: Prairie provinces of the United States. (Source: The Nature Conservancy)

elevation and local hydrology. Felton Prairie is a complex ecological mosaic of grasslands, wetlands, and shrub communities (Table 1) and is home to several rare and endangered species.



**Figure 6: Significant landscapes of the Great Plains shown in gray. (Source: The Nature Conservancy)**

Land Cover of Study Area	Number of Acres	Percentage of study area
Cultivated land & Grassland-Pasture	900	31%
Wet prairie	741	26%
Mesic prairie	497	17%
Shrub swamp	292	10%
Aggregate mining	214	7%
Dry prairie	151	5%
Mixed emergent marsh	91	3%
Calcareous seepage fen	20	1%
<b>Total</b>	<b>2906</b>	

**Table 1: Breakdown of community and land use type in the study area (MN DNR, CD-ROM, 1997).**

