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Importance of Maintaining the Diverse Tallgrass Prairie

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By Shelley Kosola

Prairie lands once inhabited approximately 170 million acres across North America (Figure 1; NPS 2015). Yet today, only 1% of the original tallgrass prairie remains (Sampson and Knopf 1994). The loss in tallgrass prairie was caused primarily by conversion of the land for agriculture, especially row-crop agriculture. There are currently large losses of grasslands, including prairie, in the Western Corn Belt due to continued expansion by row-crop agriculture (Wright and Wimberly 2013). Continued destruction and increased isolation of tallgrass prairies threatens this important, and once dominant, ecosystem.

Prairie systems are remarkably complex and diverse. On average, 80% of the prairie is composed of grasses (40-60 species) and the other 20% consists of forbs (~300 species), lichen, and liverworts (~100 species) (NPS 2015). Each of those species plays an intricate role in sustaining a thriving environmental community or niche. Diversity is a key element in creating balance within those ecosystems. An analysis by Dr. Forest Isbell and colleagues (2011) of grassland systems found:

Different species promoted ecosystem functioning during different years, at different places, for different functions, and under different environmental change scenarios. Furthermore, the species needed to provide one function during multiple years were not the same as those needed to provide multiple functions within one year… although species may appear functionally redundant when one function is considered under one set of environmental conditions, many species are needed to maintain multiple functions at multiple times and places in a changing world.

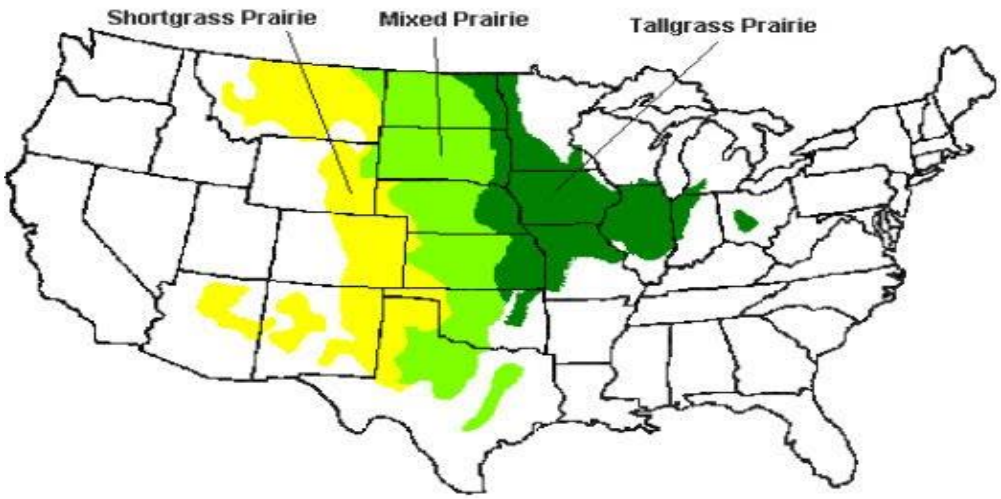

Figure created by U.S. Fish and Wildlife Service


Photo by Meghann Jarchow

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