



Fact Sheet #2 The Ecological Importance of Prairie Dogs

The role of prairie dogs as a keystone species is now well-established scientifically (Kotliar et al. 1999; Kotliar 2000; Miller et al. 2000). Indeed, prairie dogs probably qualify under multiple categories of keystone species – as prey and for their modification of habitat (Mills et al. 1993).¹ More studies are regularly coming forth reporting strong relationships between prairie dogs and other wildlife. For example, Barko et al. (1999) report greater avian abundance on prairie dog colonies than on uncolonized areas and Manzano-Fischer et al. (1999) urge the protection of prairie dogs in order to mitigate against further decline of many grassland birds. These findings are particularly important for biodiversity, as grassland birds are suffering the sharpest decline of any other group of birds since the early 1970s (Knopf 1994). Miller et al. (2000) report more studies along these lines.

As Kotliar et al. (1999) noted, over 200 species have been observed on or near prairie dog colonies. Not all of those species are dependent upon prairie dogs and the habitat they create. However, Kotliar et al. found that nine species can be considered to be dependent on prairie dogs and their colonies (black-footed ferret, burrowing owl, mountain plover, ferruginous hawk, golden eagle, swift fox, horned lark, deer mouse, grasshopper mouse). In addition, these researchers noted that twenty species benefited from opportunistic use of prairie dog colonies. Moreover, 117 have biological needs indicating that they benefit from prairie dogs and their colonies, but there is insufficient data about those species.

Indeed, it may be that scientific research will never be able to determine all historic prairie dog associates, as research in this area has largely been post-1960. By 1960, an estimated 98% of prairie dog acreage had already been destroyed. In the face of scarcity of prairie dog acreage, associated wildlife may have altered their behavior to survive.

Those wildlife species most closely associated with prairie dog towns – black-footed ferrets (*Mustela nigripes*), mountain plovers (*Charadrius montanus*), swift foxes (*Vulpes velox*) – are highly imperiled due to prairie dog decline. The ferret, which is listed as endangered under the Endangered Species Act depends on prairie dogs for over 90% of its diet and on their burrows for habitat. Ferrets cannot persist outside of prairie dog towns (Miller et al. 1996). At present, ferret recovery is flailing due to a lack of sufficient prairie dog acreage. Other species, such as the ferruginous hawk (*Buteo regalis*) and burrowing owl (*Athene cunicularia*), are also showing declines due to their close association with prairie dogs and their colonies.

¹Mills et al. 1993 disclose these different categories of keystone species, but they question the utility of the keystone concept in species conservation.

Prairie dog colonies are clearly important for the contribution to biodiversity they provide. In addition, thriving prairie dog complexes are an integral component for a healthy short- and mixed-grass prairie mosaic – where prairie dog colonies shoulder up to taller grass areas, alongside rich riparian zones. At present, most of those factors are missing – prairie dogs are underrepresented on the landscape, cattle have caused tremendous damage to upland and riparian areas alike, rangelands continue to be converted to cropland, and bison have largely been extirpated from the Great Plains. When examining biodiversity, we need to consider prairie dog colonies as part of the broader landscape and, in particular, how they are fragmented, isolated, and increasingly diminishing on that landscape.

References

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