

Wildlife in the north american great plains report sample

[Environment](#), [Animals](#)



The North American Great Plains is home to diverse species of flora and fauna. It is well-known for its prairies, which are large areas of land that are dominated by grass, and could be broadly categorized into three: shortgrass, tallgrass, or mixed (Fick 189). This paper will focus on two species, one animal and one plant, that are found within the North American prairies—the black-tailed prairie dog and the stinging nettle plant.

The black-tailed prairie dog (*Cynomys ludovicianus*) is one of five species of prairie dogs that exist in North America, and was the most common and widely distributed of the prairie dog species (Underwood and Van Pelt 3; May 1). Black-tailed prairie dogs are diurnal burrowing rodents that are highly social, stand about 12 inches tall, weigh ~1.5 lbs. and are brown in color, with a distinctive black tip on their tails (May 1; Breland et al. 1). Underwood & Van Pelt (5) and Breland et al. (1) both reported that unlike other species within the genus *Cynomys*, black-tailed prairie dogs do not hibernate—instead, they become less active and remain underground for several days during extremely cold weather. However, May (3) stated that while they may spend periods of time underground during harsh weather or in winter, black-tailed prairie dogs in more extreme northern regions do hibernate and may even go into light hibernation in severe winter weather in the other portions of their range or territory.

Being highly social creatures, black-tailed prairie dogs live in family groups called coterie, which typically consist of a dominant breeding or adult male, one to four breeding or adult females, and their juvenile or non-breeding offspring younger than two years of age. Different coterie then comprise a prairie dog town or colony. Multiple colonies, called a complex, exchange

dispersing individuals to allow repopulation of smaller colonies and to maintain genetic diversity, but are hindered by increased vulnerability to predation (Underwood and Van Pelt 5; Breland et al. 1). Black-tailed prairie dogs prefer open areas with short to mid-height vegetation at elevations of 700 meters (2297 feet) to 1700 meters (5577 feet), and avoid ungrazed areas with tall or thick vegetative cover (Underwood and Van Pelt 5; May 3). Well-drained, medium textured soils, such as sandy loam to silty clay soil, are necessary for structural support in burrow excavation and mound construction. Furthermore, soil depth and topography are also important in the habitat of the black-tailed prairie dogs. Level topography and low vegetation cover enable these prairie dogs to detect predators easily, while deeper burrows increase shelter from predators (Underwood and Van Pelt 6; Breland et al. 1).

Black-tailed prairie dogs mainly eat grasses, which make up 60 to 95% of their diet, and preferred vegetation may vary across regions. For example, a study of fecal pellets of the prairie dogs in western South Dakota revealed that four plants (sand dropseed, sun sedge, blue grama, and wheatgrasses) were their preferred food (Uresk 325). Forbs are also an important part of their diet, especially during the fall when grasses mature and have less nutritional value. Seeds, shoots of forbs and grasses, roots, and insects or arthropods are also occasionally included in their diet (Underwood and Van Pelt 4).

Black-tailed prairie dogs are considered keystone species and “ecosystem engineers” because their existence affects the entire ecosystem in unique and significant ways. Their complex burrowing systems have a great impact

on the physical, biological and chemical properties of the soil, as their burrowing allows aeration of the soil, redistribution of nutrients, addition of organic matter and increased water infiltration. Their foraging activities and vegetation clipping help maintain short stature grass, which ultimately facilitates the detection of predators. Furthermore, their foraging, burrowing activities and vegetation clipping contribute to the maintenance of the open area of grassland habitats and help prevent the growth of woody plants. Their alteration and maintenance of the grasslands provide proper habitat for many grassland animals, enhance the forage nutritional quality (which then attracts large herbivores such as the American bison and the pronghorn antelope to their colonies) and provide prey for predators. Moreover, their burrows offer refuge for amphibians, reptiles, birds and other mammals. Prairie dogs are also prey to many animals such as hawks, coyotes, foxes, badgers, bobcats, etc. In particular, the black-footed ferret, an endangered animal in North America, feeds exclusively on prairie dogs and uses their burrows for shelter. The negative impacts of prairie dogs extirpation are, among many others, regional and local biodiversity loss, increased seed depredation, and the persistence of invasive shrubs (Breland et al. 4; May 1; Underwood and Van Pelt 6; Martinez-Estevéz et al. 2).

The number of black-tailed prairie dogs has been declining over the past 150 or so years and is primarily due to anthropogenic factors. Urban development, agriculture, disease (especially the sylvatic plague), and competition with cattle ranching operations have reduced prairie dogs to less than 2% of their original abundance. Moreover, prairie dogs now occupy less than 1% of the area in their estimated historical geographic range

(Underwood and Van Pelt 3; Breland et al. 2). Various efforts have been undertaken to address the decline of prairie dogs in general, and increased sensitivity to environmental issues will fuel actions to mitigate the loss and destruction of biodiversity.

This paper will also report on a plant that is also found in the prairies of the North American Great Plains. The stinging nettle (*Urtica dioica*) is an annual or perennial plant that occurs in temperate zones of Asia, America and Europe. The stem and leaves of the plant are covered with stinging trichomes, Fluid from the trichomes contain histamine, 5-hydroxytryptamine, acetylcholine, formic acid and leukotrienes, which are responsible for blistering when skin comes in contact with the plant and produce the burning sensation similar to a bee sting (Bisht et al. 250; Trojnar 2). Nettle grows a lot in the wild and coupled with its sting, it is considered a weed by most. However, stinging nettle actually has a lot of uses, and has long been a subject of scientific studies. In traditional, alternative, or indigenous medicine, the stinging nettle has been used to treat, or at least relieve, arthritis, rheumatism, hypertension, gastrointestinal pains, and is even in alternative oncology therapy (Bisht et al. 251). A study on the water extract of stinging nettle was shown to have good antioxidant and analgesic capabilities, as well as antimicrobial activity against certain microorganisms and anti-ulcer activity against induced ulcerogenesis (Gülçin et al. 205). Moreover, methanolic extracts of different parts of the plant subjected to phenolic profiling suggests that the success of nettle in alternative medicine lie on its phenolic compounds (Otlés and Yalcin 1).

Stinging nettle also has high potential economic value as a fiber source due

to its high cellulosic content and properties similar to flax and hemp. It is used in small-scale paper-making and linen cloth production (Bisht et al. 251). It is even said to have been used by Native Americans to make fabric and thread nearly 2000 years ago (Trojnar 3). It can be fed to livestock when dried and comparative studies have shown that feeds supplemented with herbal blends containing nettles were better than non-supplemented or antibiotic-supplemented feeds (Grela et al. as cited in Trojnar 3). Nettle extracts find use in commercial applications such as in shampoos to control dandruff or eczema and to restore natural hair color. Moreover, young or vegetative nettles, when boiled, are safe for human consumption and dried nettles can also be drunk as tea (Bisht et al. 251). Thus, nettle finds use in many aspects of our lives.

In summary, this paper reported on two organisms that can be found in the North American Great Plains. The black-tailed prairie dog (*Cynomys ludovicianus*) is a keystone species whose activities affect many organisms and can be acknowledged as a somewhat keeper of the grasslands. The stinging nettle (*Urtica dioica*) is a plant species that causes pain and blistering when skin comes in contact with its trichomes. It finds usage as food for humans and even livestock, and is very popular as alternative medicine. Choice of the two species reported on this paper was due to personal interest, although the stinging nettle might be a small part of the black-tailed prairie dog's diet. However, this connection was not explored as the selection of both species was independent of each other—that is, the author chose among a list of fauna and flora existing within the North American Great Plains the plant and animal seemingly the most interesting

among their peers. Finally, it is worthwhile to note that urban development and other anthropogenic activities have decreased the area of prairies and other ecosystems that can be used by wildlife. Thus, management of ecosystems without impeding technological advancement is the key for a prosperous future.

Works Cited

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