

Prairie dogs have become the subject of many studies. For one thing they are social and colonial; for another, they exist only on the North American plains. Interested scientists seek to explain why animals have social behavior, and some have found prairie dogs to be the model species.

These amazing animals have a social system that in some respects resembles the behavior of humans. Their communications rival that of primates. Because they live in established colonies, which means they are limited in mobility, they have had to develop a keen awareness of the predators to whom their dwellings are well-known. They spend a considerable amount of time being vigilant, relying on their acute hearing and color vision. Awareness, in turn, has produced sophisticated communication systems, both visual and acoustic. Current findings are that prairie dogs have: a) different alarm calls for different species of predators; b) different escape behaviors for different species of predators; c) transmission of semantic information (playbacks of alarm calls in the absence of predators lead to escape behaviors that are appropriate to the kind of predator who elicited the alarm calls); d) alarm calls containing descriptive information about the general size, color, and speed of travel of the predator.

White-tails may hibernate for up to six months on their mountain plains, while their black-tailed cousins sometimes emerge on especially warm days. They leave their burrows in daylight to feed on grasses, roots, and seeds. They communicate with loud cries. A warning cry, for example, will send a colony's denizens hustling to their holes at the approach of a badger, coyote, or other predator. A second, "all-clear" call alerts the community when the danger has passed. By living in groups, they increase the likelihood of their survival.

Much of the Great Plains has been converted to farming or pastureland, where the large squirrels are often killed as pests. During the 20th century, about 98 percent of all prairie dogs were exterminated, and their range has shrunk to perhaps five percent of its historic spread. A major threat has been bubonic plague, brought about in the 1930s by animals that accompanied humans.

Plague is not native to North America and is unknown in Mexico. It arrived in 1899-1900, showing up in rats in San Francisco and expanding eastward ever since. Unlike dogs and coyotes, prairie dogs have no resistance to plague; once it gets into a colony, mortality can be 85% to 99%, and the animals succumb within a matter of days.

Why should we care if a species goes extinct when so many others have disappeared in times past? Authors Slobodchikoff, Perle, and Verdolin address this question at length, for they seek to convince us to help bring back the small mammals from the brink of extinction. The rapid disappearance of the ground-squirrel-like creatures should be of concern to all of us, they write, and they do their best to impress us why this should be so.

The authors of "Prairie Dogs" begin their argument by acknowledging, many people feel that prairie dogs are merely rodents, so what's the difference if they go extinct? Their answer is that, first off, prairie dogs are a "keystone species," which means they help support an entire ecosystem of predators, prey, insects, and plant communities; hence, the widespread reduction of prairie dogs has had domino-effect declines on many other species: the swift fox, the burrowing

owl, the golden eagle, the ferruginous hawk, the mountain plover, and the black-footed ferret. (The authors cite peer-reviewed studies that document their findings.)

Species are one of the fundamental units that keep ecosystems functioning, and biodiversity is structured through an interlinked system. Life has evolved this system over billions of years; it cannot exist without it. The degradation that humans have imposed on the natural world—in this case, on the formerly huge North American plains that has caused the vanishing of prairie dogs—is “a universal tragedy,” they write. The tragedy should not be overlooked by anyone. Its outcome is potentially very dangerous to the physical, emotional, and ethical health of humans, not to mention the health of other species who share the world with us.

Prairie dogs, unlike mice and rats, do not bear litters throughout the year to help their populations bounce back. Females come into estrus only once a year and their litters typically comprise fewer than six pups, the majority of which do not survive past the first year of life. Even the survivors often don't live long enough to procreate. The system may have evolved to keep populations at a constant, thus avoiding competition over living space: their vast warrens or “towns” of tunnels serve for hundreds of years, and these dwellings are energy-intensive to build, maintain, and expand.

The rate of species extinction today is more than 1,000 times higher than background (non-human caused) extinction levels, the authors state. Yet humans (and plant- and animal species globally) exist by the grace of the plants and animals in forests, grasslands, oceans, rivers, shrublands, and deserts that keep the energy, water, and nutrients cycling through ecosystems. We are all interdependent species.

The authors strenuously object to subsidies that one study has called “perverse,” meaning subsidies that adversely affect the economy and the environment in the long run by encouraging farmers and ranchers to convert grasslands even when the output from these lands is only marginal; for example, grasslands in very arid southwestern states where irrigation, nutrient loss, and salination is very costly. Subsidized poisoning of prairie dogs is another perverse subsidy. These practices could be halted or reversed, the authors believe, with subsidies that would encourage the retention of ecosystems, which would help curb global warming and result in the conservation of prairie-dog habitat.

Viewed from a wider perspective, prairie-dog decline is part of a larger web of degradation that humans are imposing on the natural world. Species do go extinct over time, but such extinctions often take place over millions of years, because of long-term climate change or catastrophic events such as meteor impact. We humans don't begin to comprehend how current extinctions, which are happening in the blink of a second in geologic terms, will affect the health of our planet and with it our own survival as a species.