

The sentimental ecologist

Challenged by a Utah city councilman to explain why an outbreak of plague among the locally despised prairie dog population isn't a good thing, wildlife biologist David Jachowski realized that the desire to preserve the status quo, whether ecologically or culturally, is a natural human instinct and is something that he and the councilman had in common.

It wasn't the first question – rather the eighth or tenth – following my presentation, but it has reverberated in my mind ever since: “Why should we stop something that is natural?”

The man who asked was a city councilman in Cedar City, Utah – a moderately sized town of relatively untapped development potential, given its proximity to Zion and Bryce Canyon National Parks and to a decent ski slope. I was at Cedar City's city hall to speak about sylvatic plague, or rather plague mitigation, talking to managers and interested local parties about my research on the ecology of the disease and how it was linked to protecting the endangered Utah prairie dog (*Cynomys parvidens*) from extinction.

I was used to pointed questions about why we were more concerned with prairie dogs than with ranchers' bottom lines. I grew up in the American West, and have spent most of the past 5 years in small, rural towns in South Dakota, where there are three things you are not supposed to talk about: religion, politics, and prairie dogs. Persecution of prairie dogs is ingrained early in most rural prairie families. Going far beyond being the objects of target practice, these rodents are vilified for eating grasses intended for cattle and, as such, have been the subject of well-organized and well-funded poisoning campaigns sponsored by the US Federal Government for at least the past century. Living on the land, the ranchers I met knew more about prairie dog biology than most conservationists. They were also aware that plague was a new threat to prairie dogs, a species they have helped push to the brink of extinction.

To disease ecologists, plague is one of the great, persistent ecological mysteries of our time. The same bacterial species that caused the Black Death of Europe and Asia in the 14th century reached North American shores around 1900 and has spread east, into the Great Plains. I moved through slides of our findings on the ecology of fleas, which are the primary vector of plague in Utah prairie dogs. I talked about seasonal and species-specific ebbs and flows of flea populations that could be linked to the spread and outbreak of plague (Tripp *et al.* 2009). I talked about how we still don't know where or how plague persists between epizootic outbreaks. I emphasized how this disease is decimating North American fauna as a result of its exotic origin and the associated lack of immune resistance among native species. I also discussed how plague is a concern for ecologists in other subdisciplines because of its cascading effects on Great Plains



Figure 1. The author, camping near field sites in southern Utah.

ecosystems, in which prairie dogs are a keystone species (Biggins and Kosoy 2001).

After the councilman's question, and without hesitation, I reiterated that plague was endemic to Asia, unintentionally brought across the Pacific via shipborne rodents and their fleas a hundred years ago. I pointed out that if we could stop plague and maintain prairie dog colonies on government lands far from Cedar City, there would be less pressure on landowners near town for prairie dog conservation. He wasn't impressed. He glared at me, dismissing our years of toil in the field collecting fleas and countless hours in the lab identifying them. I paused and, in the moment between questions when the room was silent, I realized he meant something deeper. He had undoubtedly attended years of public meetings where he thought ecologists used what they define as “nature” to aid their conservation agenda, pitting man against wildlife. I saw in his eyes that he believed that here, finally, was an example of nature *helping* man – a predestined path or a natural progression of events that would help the town rid itself of a species that historically was a bane to generations of ranchers in the area, and today restricts building and development.

So what is “natural”? I was still pondering the councilman's question days later, as I sat at one of our remote

field sites on the edge of a plateau. Utah is a land of geological beauty unmatched by what I've found in my travels elsewhere in the world. Red and orange canyons are on a scale that is picturesque yet foreboding to travelers, and inhospitable to all but a few small communities. I had seen Cedar City change over the years, with its new boutique shops downtown and a liquor store on the edge of town. I knew the councilman's concern for balancing small-town persistence with the need for economic growth and his unspoken fear of losing the conservative religious culture at the heart of his community's belief system in the face of an influx of out-of-state human immigrants. Perhaps he found some solace in the thought that nature, like his town, is changing in ways that cannot be entirely controlled or counteracted.

Looking east, down into the basin that strained itself into slot canyons leading to a shallow river in the distance, I was left with a feeling of wonder at the unseen habitats hidden under canyon rims and the wildlife that surely lives there, away from the hot desert sun. I turned and looked north toward the benches and snow-capped 8500-foot peaks and knew that an isolated and little-known Utah prairie dog population thrives there, just below the tree line. To me, this was nature, wild and unkempt, of the highest order.

But to an ecologist, the question of "what is natural?" is also changing. I brought out my field notebook and jotted down notes for the day. My mind shifted from field to office mode; I thought of entering data, writing papers, and trying to put these ideas in order. What is natural in a world where everything changes and stochastic processes affect ecosystems? I was reminded of a relatively new movement in ecology, that of "novel ecosystems" (Seastedt *et al.* 2008), in which ecosystems are viewed as constantly changing, gaining and losing species as a result of human disturbance. Some ecologists would argue that these changes are not something to counteract, but that they are natural and instead need to be monitored and studied for their own sake. Working with an imperiled species, it is obvious to ask the pragmatic follow-up question: "Why should we *protect* anything at all?" It is far easier to give up and say extinction is a natural process, and shift our work to systems where we can obtain large sample sizes and undertake more robust experiments, rather than focusing on careful observations of declining species.

To a truly objective, modern ecologist, the occurrence of plague in North America is natural – as natural as an urban ecosystem, as natural as global warming. Humans are altering every ecosystem, and the golden age of ecology, and of ecologists who study undisturbed ecosystems, largely ended with the 20th century (Schaller 2007). As an ecologist who works under the novel ecosystem paradigm, perhaps there should be no sentimentality toward the past, only the use of the past to inform hypotheses about the present and the future. Ecology is the study of living organisms and their interactions with the environ-



Figure 2. A Utah prairie dog near Bryce Canyon National Park, Utah.

ment, and that includes humans. I was, at first, disheartened by the realization that, under this paradigm, my drive to conserve species on the brink of extinction was sentimental and no different than the sentimentality behind the beliefs of the councilman. We had a common bond, in that we both wanted to retain what we knew and held dear about the land. We both held onto something biased and value-laden. We resisted the mounting evidence that things will change. In his case, the threats were globalization and a growing real-estate market that brings in people from out of state; in my case, they were the decline of wildlife and loss of species. Perhaps the only thing that is natural is the urge to hold onto and protect what we know and hold dear.

References

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