

## **BLACK DEATH ON THE PRAIRIE: PLAGUE, PRAIRIE DOGS, AND BURROWING OWLS<sup>TRWS</sup>**

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Sylvatic plague represents the biggest challenge to the conservation of black-tailed prairie dogs (*Cynomys ludovicianus*) and their habitat associates, such as the burrowing owl. Plague epizootics can decimate prairie dog populations by 95-100 percent. Decreases in prairie dogs may eventually lead to the loss of burrowing owls (*Athene cunicularia*) as nesting holes unattended by prairie dogs collapse. I studied the direct and indirect effects of plague on prairie dogs and burrowing owls from 1999 to 2002 on the Ft. Belknap Indian Reservation, Montana. A plague epizootic was detected on the reservation in autumn 1999. The epizootic reduced occupied prairie dog habitat by over 50 percent in two years. Plague also reduced mean colony size and increased colony edge. Owls nested among fewer prairie dogs at the local and landscape scales. Despite these apparent changes to owl habitat, the population size and productivity of nesting owls remained relatively constant. Density of prairie dogs rebounded to pre-plague levels after only 3 years, but overall range of prairie dogs has increased slowly. Long-term management of prairie dogs in Montana will be difficult because of the cyclic nature of plague.