Seroprevalence of Canine Parvovirus and Canine Distemper in Wolves in Relation to Human Activity in the Canadian Rocky Mountains

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Diseases affect social carnivores that occur in high density areas, like wolves (*Canis lupus*). Carrier species (feral dogs, coyotes, foxes) travel between the urban/wildlife interface; thus, transmitting diseases to wolves. We sampled 99 wolves from the years 2000 to 2008 for canine parvovirus (CPV) and canine distemper virus (CDV) in Banff and Jasper National Parks and surrounding areas of the Canadian Rockies. Of the 99 wolves, 92 tested positive

for CPV, 22 tested positive for CDV and 22 tested positive for both diseases. We tested whether seroprevelence of CPV and CDV was higher closer to human activity (roads, town sites, campgrounds, federally designated Indian reserves) and as a function of sex, age class, and different wolf packs using mixed-effects logistic regression models. CPV and CDV seroprevalence was found to be higher in areas closer to human activity and was higher in younger age classes of wolves. Understanding disease transmission between urban areas and wildlife areas with high wolf densities, like the Canadian Rockies, could yield pertinent information about disease profiles. Disease profiles from the Canadian Rockies could help conserve the recently delisted wolf species in areas like Yellowstone National Park where human activity is high relative to wolf activity.