

INTERACTIONS AMONG GRAY WOLVES AND COYOTES IN YELLOWSTONE NATIONAL PARK

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Few studies to date examine the effects of introduced top-carnivores on other carnivores. Interspecific interactions between competing predators can influence ecosystem function, trophic structure, and the distribution and density of sympatric predator species. The recovery of gray wolves (*Canis lupus*) in Yellowstone National Park provides a unique opportunity to study intraguild interactions with coyotes (*Canis latrans*), which have persisted without wolves for > 60 yrs. Our objectives were to quantify observed wolf-coyote interactions and describe the context and degree of competition and coexistence. Using radio-collared wolves to observe behavioral interactions with other species, we documented 337 wolf-coyote interactions over twelve years. Most (75%) interactions occurred at ungulate carcass sites. Wolves initiated (85%), outnumbered (39%) and dominated (91%) most interactions. Wolves mostly (79%) chased coyotes without physical contact; however 25 interactions resulted in a

coyote death. Interactions decreased over time suggesting coyote adaptation and/or a decline in coyote density. In most (80%) fatal interactions, wolves outnumbered coyotes. However, wolves did not outnumber coyotes in interactions ($n = 18$) where coyotes chased or attacked/harassed wolves. Our data suggests that there are circumstances where coyote group size influences the outcome of interactions. Although coyote density may have decreased since the reintroduction of wolves, and wolves represent a mortality risk to coyotes, the benefits of utilizing wolf-killed carcasses outweigh the potential costs of interactions with wolves.