

**COUGAR ECOLOGY AND COUGAR-WOLF INTERACTIONS IN  
YELLOWSTONE NATIONAL PARK: A GUILD APPROACH TO LARGE  
CARNIVORE CONSERVATION<sup>TWS</sup>**

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Cougars (*Puma concolor*) and wolves (*Canis lupus*) coexist on the Northern Range of Yellowstone National Park. Understanding of how these two species partition resources may influence the management of these predators and their prey populations. Our study is designed to examine cougar population characteristics including: density, sex and age structure, reproductive and survival rates, dispersal and recruitment events, prey selection, predation rate, and spatial movements. These parameters will be compared with estimates made prior to wolf restoration (Phase I data, Murphy 1998), and current parameters for the wolf population, to assess competition and resource partitioning between the two species. The cougar population was increasing during Phase I and stable in Phase II. Litter sizes have not changed, but a peak in births during summer months in Phase I has been replaced by a more even distribution of births occurring through the year. Mortality from harvest and other cougars has remained the same, but wolves have directly and indirectly killed cougars in two family groups. Prey selection and predation rates are similar between Phase I and II. Elk are the primary prey, the predation rate is nearly the same, and biomass killed per day is slightly greater in Phase II. Cougars kill proportionally more elk calves, and fewer cow and bull elk than wolves during winter. Wolves were known to have displaced cougars from kills in 23 percent of visits; bears in 19 percent of visits. We have begun using GPS collars to look at interactions and habitat use among cougars, wolves, and bears.