

Comparative Studies of Sympatric Bighorn Sheep and Mountain Goats in the Greater Yellowstone Area

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Abstract: Mountain ranges of Montana and Wyoming within the Greater Yellowstone Area (GYA) comprise one of the core ranges for bighorn sheep in North America. Following mountain goat introductions in the Montana and Idaho portions of the GYA from the 1940s through the 1960s, there has been a progressive increase in the abundance and distribution of non-native mountain goats. Mountain goats and bighorn sheep now share seasonal ranges in many parts of the GYA, but little is known about competitive interactions between these two mountain ungulates. The limited information available indicates potential for dietary overlap in some seasons and behavioral dominance of goats over sheep when foraging in the same areas, which suggests that bighorn sheep may be sensitive to inter-specific competition. In addition, bighorn sheep are well known for their sensitivity to a variety of diseases that can cause episodic die-offs that result in substantial population reductions. Though mountain goat populations do not appear to be susceptible to disease die-offs to any appreciable extent, mountain goats are effective hosts for a variety of parasites and pathogens that may also infect bighorn sheep. Thus, information regarding potential competition, disease transfer, and/or displacement of bighorn sheep by mountain goats is a key issue for natural resource managers in this region. We have initiated a 5-year research effort to address these biological questions and will report our initial efforts to consolidate all mountain goat and bighorn sheep records for the GYA to better understand mountain goat range expansion from the initial introduction sites and current seasonal distributions. These data were used to evaluate published habitat models for both species and the development of new habitat models for mountain goats in the GYA to help predict future distributions of mountain goats as this species continues to expand its range.