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## **USING OCCUPANCY SURVEYS TO ASSESS SUMMER RESOURCE SELECTION OF SYMPATRIC BIGHORN SHEEP AND MOUNTAIN GOATS IN NORTHERN YELLOWSTONE**

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Both bighorn sheep and mountain goats are generalist herbivores that overlap extensively in broad food and habitat requirements, but there have been few studies examining the potential for competition between sympatric populations. One area in which native bighorn sheep are living in sympatry with non-native mountain goats is the southern Gallatin Mountain range within and adjacent to the northwest boundary of Yellowstone National Park. Existing data of bighorn sheep and mountain goat observations for the area vary in spatial precision and records of areas where observers looked for but did not detect animals are not available. To gain a better understanding of the relationship between bighorn sheep and mountain goats and their habitat, it is necessary to understand resource selection and the extent of overlap in resource use among sympatric populations on fine spatial and temporal scales. In order to meet this need we designed and implemented formal, ground-based occupancy surveys during the summer of 2011. A crew of four spent 113 observer days in the field and hiked approximately 210 miles recording presence-absence data for both mountain ungulates. A total of 6,932 sample units were surveyed, with 68 bighorn sheep and

95 mountain goat groups detected. Detection probabilities for bighorn sheep and mountain goats were 66.9% and 54.5% respectively. We summarize the objectives and field design of the project and report on our efforts to develop enhanced habitat models which will provide managers with additional ecological insights.