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## **INVESTIGATING HABITAT CHARACTERISTICS IMPORTANT TO HOARY MARMOTS IN MONTANA**

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Alpine ecosystems will be impacted by climate change, which will shift distributions of alpine species on the landscape. Understanding which habitat characteristics are important to alpine species will be necessary to predict changes in distribution reliably. The hoary marmot (*Marmota caligata*) is an alpine obligate whose range extends from Alaska into western Montana. Although hoary marmots are relatively abundant, they are a potential species of concern in Montana because we lack information on their distribution and habitat requirements. We initiated a project to investigate the genetic connectivity and habitat characteristics that promote occupancy of marmots. Between June and August 2014, we visited five mountain ranges in search of hoary marmots. At two to three sites per mountain range, we trapped marmots for genetic samples and surveyed areas visually to quantify occupancy. We sampled 47 sites during 79 surveys; at least one marmot was detected by at least one observer in 12 of these surveys (15%). Marmots were more likely to occupy sites with increased cover of boulders and wet meadow and less likely to occupy sites with increased cover of shrubs and grasses. Overall, the probability of detecting a marmot was 0.59 (SE = 0.10) and the probability of occupancy across all sites was 0.27 (SE = 0.10). Our work will provide information about non-game species in alpine environments and inform the design of monitoring programs that can aid managers as they begin to understand where hoary marmots are on the landscape and where they could be in the future.