**American Pika Status in Wyoming**

Annual Report for Wyoming Governor’s Big Game License Coalition

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As of November 2010, we have completed our first season of fieldwork. The main objective of the season was to establish and survey sites covering a broad range of climatic conditions and topography using existing variation of the Wind River Range, WY. We successfully established 117 sites for occupancy estimation, and almost all were determined occupied. A subset of 43 of these sites was used to conduct more intensive sampling of pika abundance, establish temperature data loggers, sample vegetation, and take habitat measurements. These abundance sites were selected *a priori* based on the habitat and climate characteristics we were interested in testing, and showed clear patterns of abundance in relation to the habitat measurements.

Preliminary analyses suggest overwhelming support for forage availability and elevation as important predictors of pika abundance. We ran a set of 45 general linear models based on intentionally selected predictor variables to test three hypotheses (summer heat, winter snowpack and forage availability) for what might be most limiting for pika populations at this latitude. We then followed up with model selection procedures, specifically AIC*c,* to determine the likelihood of the best-supported model given the data and candidate set of models. The top three models had varying terms for forage availability and elevation, showing support for these variables. The elevation data suggest a potential ceiling effect on abundance whereby pikas exist at lower abundance at our lowest and highest elevation sites. This suggests that pikas may not simply be able to migrate upslope with on-going climate change as many have suggested.

Preliminary project findings were presented by L. Yandow at the National Wildlife Society meeting in Utah and the Wyoming Chapter of the Wildlife Society annual meeting this fall. In the coming months we will incorporate remotely-sensed climate data (temperature and snowpack) into our model selection analyses to more specifically test what aspects of climate may influence pikas at our sites. Based on our best-supported model, we will select sites to sample next season that cover a range of predicted likelihood of pika abundance to validate the model. We will also re-visit the established sites to resample and collect temperature data loggers. These data and our results will ultimately be shared with WGFD, the US Forest Service, Tribal Fish and Game, as well as presented at professional meetings and published in a peer-reviewed scientific journal.

Given predicted on-going climate change, its potential impacts to alpine systems, and the potential for the American pike to serve as a sentinel species for such change, we believe that our research will constitute an important contribution. Moreover, to our knowledge, ours is the first systematic study of the pika in Wyoming, which will render threat assessments for the species at our latitude more do-able. Thank you for your support.