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Dear Wyoming Wild Sheep Foundation:

Numerous bacterial pathogens exist across ranges occupied by bighorn sheep, and although the jury is still out, the pathway between a single pathogen and an epizootic dieoff remain either unclear or nonexistent. Separation between domestics and wild sheep are a primary goal in avoiding exposure and subsequent epizootic dieoffs, but in many instances we now seek to manage herds that while exposure to domestics is eliminated or radically reduced, the pathogens responsible for epizootic dieoffs remain. Therefore, we seek to manage herds with chronically infected animals wherein epizootic dieoffs associated with pneumonia may still occur without any new exposure to domestics. Therefore, recurring dieoffs within chronically infected herds are likely dependent upon certain ecological or environmental conditions—understanding these interactions could yield management alternatives to help reduce the frequency of epizootics and dampen fluctuations in abundance.

Our aim with the Bighorn Sheep Nutrition/Disease Study is to explore the interface between nutrition and disease, while calibrating nutritional levels associated with animal-indicated nutritional carrying capacity (NCC) in bighorn sheep. Since March 2015, we have employed a longitudinal design to data collection across the Jackson, Dubois, and Cody sheep herds in northwestern Wyoming to connect seasonal changes in nutritional condition, reproduction, survival, recruitment of young, presence of respiratory pathogens, and immunocompetence. During this time, we have learned that in particular, bighorn sheep population exposed to respiratory pathogens are not divorced from basic principles of population ecology. In particular, suppressed lamb recruitment in Dubois is clearly related to some combination of disease and nutritional suppression on summer range, whereas the population in Jackson appears to be experiencing increased nutritional limitation as the population grows to abundances where historically, epizootic dieoffs proceeded thereafter.

Our next steps in this project is to shift our focus based on what we have learned to zero in on contributions of summer nutrition, and identify survival and cause-specific mortality of lambs. Notably, our direction is entirely driven by data garnered to date in the project, and yet are in line with priorities outlined previously in The Wyoming Plan by the State-wide Bighorn/Sheep Domestic Sheep Interaction Working Group (2004).

Please accept my humble thanks for your instrumental support in helping overcome the challenges associated with advancing sound habitat and population management for bighorn sheep by your support of this project. Our request herein will bridge the gap in funding needed between the current phase of work, and our aim to begin the lamb survival and summer nutrition project in autumn 2018. In the interim, we will seek partners in addition to those that have already been instrumental in supporting this work. Other partners we seek will include the Wyoming

Wildlife and Natural Resource Trust, Morris Animal Foundation, and National Wild Sheep Foundation. Attached with this letter please find our proposal and a project update. Please don't hesitate to contact me with any questions, and again, thank you for your time and consideration.

Respectfully,

A handwritten signature in black ink, appearing to read "Kevin L. Monteith". The signature is fluid and cursive, with a large, sweeping flourish at the end.

Kevin L. Monteith  
Assistant Professor  
University of Wyoming  
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