

Introducing Ungulates to Unfamiliar Environments: Behavioral and Endocrine Responses in Bighorn Sheep

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Abstract: Restoring bighorn sheep to their former range requires active metapopulation management involving frequent translocations between subpopulations and reintroduced to new areas. One strategy is to maintain a closely monitored non-hunted subpopulation in a predator- and disease free environment, such as Antelope Island State Park (AISP) in Utah, for use as a source from which to regularly translocate batches of selected animals. Potential problems, however, include (1) susceptibility to cougar predation when naïve bighorns are released, (2) decreased immunocompetence caused by poor nutrition and elevated stress when adults are released during winter into unfamiliar environments with new social hierarchies, and (3) dispersal of introduced animals into areas occupied by domestic sheep, leading to further disease concerns. A study is currently underway to compare pre- and post-translocation vigilance behavior and fecal glucocorticoid profiles in a group of 35 bighorns recently translocated from AISP. The same comparisons are also being made between animals raised on AISP and those “wild-raised” in the release area (Stansbury Mountains, UT), while post-release ranging patterns of AISP-raised animals are being compared with those of “wild-raised” residents. Data collection is stratified by age and sex class to identify the optimal composition of groups for future translocation efforts.

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