(57) BALANCING MOOSE POPULATION HEALTH AND HARVEST OPPORTUNITY: A COMPARISON OF FEMALE HARVEST SCENARIOS

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Abstract: Management of harvested moose populations at the upper end of their nutritional limitation requires a balance between population health and harvest opportunity. Female harvest strategies are often used to moderate population growth, improving population health and increasing harvest opportunity. Yet, population dynamics are highly sensitive to the harvest of adult females; therefore, a conservative harvest strategy should be used. Using a stage-structured population model we compared 2 female harvest strategies designed to mitigate nutritional stress by decreasing intraspecific competition for an Interior Alaska moose population. Harvest rates for both non-accompanied (cows ≥1 year that are not accompanied by calves) and cow-calf pairs were held constant (6% of female population) in order to achieve our population objective by the end of a 5-year period. Both harvest strategies produced the desired decrease in population size within 5 years, yet 54% more moose (11% more biomass) could be harvested when calves were included in the harvest. In addition, harvest of cow-calf pairs resulted in a lower overall harvest of yearling and adult females compared to harvest of non-accompanied females, leaving the population far more resilient to disturbance events. Although the cow-calf pair harvest strategy provided more harvest opportunity and a more robust age structure, this harvest strategy may not always be acceptable to hunters. We recommend incorporating modeled harvest scenarios into public outreach and education efforts to improve understanding and acceptance of female harvest strategies by the public. Overall, population models provide a useful management tool for exploring possible harvest strategies aimed at reducing populations when deemed necessary for sustained, long-term yield.

48th North American Moose Conference and Workshop

Girdwood, Alaska April 28-May 1, 2014

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