

Spring Strategies of Parturient Moose: Shifts From Predictable to Unpredictable Movement as Calving Date Approaches

K.A. Kellie and P. Doak (Institute of Arctic Biology, 311 Irving I, University of Alaska Fairbanks, AK, 99775; ftkak@uaf.edu, ffpd@uaf.edu.)

R.D. Boertje (Alaska Dept. of Fish and Game, 1300 College Rd., Fairbanks, AK, 99701; rod_boertje@fishgame.state.ak.us)

Parturient moose are under extreme nutritional demands in spring. In the Tanana Flats, parturition occurs concurrently with the green up of vegetation. This may cause conflicting priorities if there is a high risk of calf predation associated with areas of high-quality forage. In three Alaska populations (Denali, Nelchina and Tanana Flats), a proportion of moose (20%, 35% and 30%, respectively) move above-average distances (> 5 km) just prior to parturition. The reasons for movement are not well understood. We examine several possible explanations for movement just prior to parturition: (1) experience level: primiparous versus pluriparous, (2) migratory versus resident strategy, (3) innate behavior in individuals, (4) direct interaction with predators, and (5) isolation from other moose. We also address site fidelity of moose to both calving and pre-calving areas at multiple spatial scales. Locations were recorded every 48 hours for 66 parturient moose from 15 May until parturition date each spring 1996-2002. We found that movement prior to parturition was not related to experience, migratory strategy, innate behavior of individuals, or direct interaction with predators. However, moose are further from nearest collared neighbor at the parturition site than they were 6 days prior to parturition. This indicates that moose may be isolating themselves from conspecifics just prior to parturition. Moose were faithful to calving areas at the landscape scale, but not to individual sites. Moose were more faithful to pre-calving sites than to calving sites in successive years. The distance between closest pre-calving sites in successive years was not significantly different from the 272 m measurement error. This suggests that moose movements are highly conservative during the pre-calving season; possibly to re-use areas of high or early forage availability. Moose switch to random, isolating movements just prior to parturition. Our data support the hypothesis that movement just prior to parturition is related to isolation from conspecifics; perhaps to minimize predation risk and avoid interference from conspecifics.



54th Arctic Science Conference

<http://arctic.aaas.org>

**Arctic Division
American Association for the Advancement of Science**

Extreme Events

**Understanding Perturbations to the Physical
and Biological Environment**

**21-24 September 2003
Westmark Hotel and Convention Center
Fairbanks, Alaska**

Program and Abstracts

**Published by
AAAS :: Arctic Division**

UAF UNIVERSITY OF ALASKA
FAIRBANKS