

**(39) POPULATION FLUCTUATIONS AND MORTALITY FACTORS FOR THE  
NORTHERN-MOST MOOSE POPULATION**

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*Abstract:* The objective our moose monitoring program has been to track population trends of the Colville River moose population and, when possible, determine reasons for increasing or decreasing numbers. Colville River moose are the most northern moose population in America. Moose became established on the North Slope by the early 1950s. They increased slowly between 1970 and 1991 from 1,219 to 1,535 (1.1% per year). From 1992 to 1996 the population suddenly declined by 79% to 326 moose. Analysis of samples taken from captured moose as part of a mortality study indicated that bacterial disease contributed to the decline. Eight of 43 sampled cows tested positive for antibodies to the bacteria *Brucella suis* Biovar 4. Six of 30 sampled cows tested positive for antibodies to the bacteria *Leptospira interrogans* serovar pomona. In addition, there was predation, starvation, copper deficiency, weather factors, and competition with snowshoe hares. Shortly after the mortality study started both adult and calf mortality declined dramatically. Recruitment went from less than 1% in 1996 to 23% in 1997 and averaged 22% through 2006. The moose population steadily increased from 1997 to 2008 when we counted 1,116 moose (10.7% per year increase), but then declined by 51% by 2011 when we counted 545 moose. This time none of the moose tested positive for bacterial disease. There was a high wolf:moose ratio. There was malnutrition, but browse studies did not indicate overbrowsing (12% browsing rate). Browse quality and weather factors, including length of growing season, are being examined.



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