

**Alaska Department of Fish and Game  
Division of Wildlife Conservation  
September 2008**

## **Evaluation and testing of techniques for ungulate management**

**Tom Lohuis**

**Research Annual Performance Report  
1 July 2007–30 June 2008  
Federal Aid in Wildlife Restoration  
W-33-6  
Study 1.63**

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# FEDERAL AID ANNUAL RESEARCH PERFORMANCE REPORT

ALASKA DEPARTMENT OF FISH AND GAME  
DIVISION OF WILDLIFE CONSERVATION  
PO Box 115526  
Juneau, AK 99811-5526

**PROJECT TITLE:** Evaluation and testing of techniques for ungulate management

**PRINCIPAL INVESTIGATOR:** Tom Lohuis

**COOPERATORS:** Dr. Kimberlee Beckmen, ADF&G; Mr. Rick Ernst, Kenai National Wildlife Refuge, USFWS

**FEDERAL AID GRANT PROGRAM:** Wildlife Restoration

**GRANT AND SEGMENT NO.** W-33-6

**PROJECT NO.** 1.63

**WORK LOCATION:** Moose Research Center, Soldotna

**STATE:** Alaska

**PERIOD:** July 1, 2007 – June 30, 2008

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## I. PROGRESS ON PROJECT OBJECTIVES SINCE PROJECT INCEPTION

OBJECTIVE 1: Moose Research Center (MRC) Maintenance and Operations.

The MRC housed 22 moose and 4-9 caribou during the FY06 reporting period, and 22-25 moose, and 0-4 caribou during the FY07 reporting period. Four adult moose died during FY07, and two calves survived and were added to the captive herd. Various maintenance projects, including erecting 0.5 mile of new fence in FY06 and, upgrading the station electrical system, and assisting a Kenai National Wildlife Refuge work crew with the construction of a new 20' x 60' shop building were completed during this time. Brush and undergrowth were removed from approximately 2000' feet of fence in FY 06.

OBJECTIVE 2: Drug Testing.

Medetomidine/Ketamine, a combination of immobilizing drugs not previously tested in Alaskan moose, was tested in one male moose in FY06. A cocktail of butorphanol, azaperone, and medetomidine, a combination of immobilizing drugs not previously tested in Alaskan moose, was tested in eight adult moose in FY07.

OBJECTIVE 3: Moose nutrition, physiology, and reproductive studies.

We evaluated the effect of the TASER device as a nonlethal deterrent in four adult moose in FY07.

OBJECTIVE 4: Caribou nutrition, physiology, and reproductive studies.

Four caribou were euthanized and processed for body composition studies during FY 07.

OBJECTIVE 5: Preparation of reports and technical publications. No work was performed on this objective during the FY 06 reporting period. Annual reports and IACUC documents were prepared and submitted for the work completed under Jobs 2 and 3,

‘drug testing’ and ‘moose nutrition, physiology, and reproductive studies’ respectively during the FY07 reporting period.

## **II. SUMMARY OF WORK COMPLETED ON JOBS IDENTIFIED IN ANNUAL PLAN THIS PERIOD**

### JOB/ACTIVITY 1: Maintain captive moose herds at the MRC.

The MRC housed 21-22 adult and yearling moose, which were fed and cared for daily, during the past reporting period. One adult cow died in mid-March 2008, of unknown causes. Starting in mid-May, 2008, we attempted to add animals to the research herd of hand raised, human habituated moose at the MRC. Unfortunately, we did not experience as great success in doing so as we had in previous years’ attempts. Four calves, three males and one female, born to MRC cows, on May 15 and 24, 2008, were separated from their dams and were bottle fed for a period of one week before being killed by a black bear on May 31, 2008. As a result of these losses, between June 1 and June 9, we brought in five orphaned calves—all female—from various areas of the state. One male and one female calf were separated from an MRC cow on June 2 and raised with the orphans. These calves survived through the end of the reporting period on June 30. Unfortunately all but one have died since the end of the reporting period as a result of complications resulting from copper deficiency. I mention this here as the loss of calves at 40-50 days of age due to a nutritional deficiency has implications for the interpretation of calf survival/recruitment studies statewide. The final calf has survived after dietary copper supplementation and we anticipate that she will become part of the research herd at the MRC.

### JOB/ACTIVITY 1B: Cabin repair and upgrades. Repair and replace foundation and support logs and/or porches where necessary.

Continuing efforts to repair and replace fence utilized a crew of 12 boy scouts and four adult chaperones under the supervision of Christopher Becker, as part of the requirements for his Eagle Scout project. Chris’ crew cleared brush from approximately 3000’ feet of fence on the West boundary of Pen 2. This project will make it possible to replace the fence on the Western side of Pen 2 during the upcoming reporting period, an upgrade that has been greatly needed for several years. In addition, MRC staff constructed an additional 0.5 miles of fence in FY08 to complete an alleyway that will facilitate movement of moose from Eastern Pen 2 or Western Pen 3 to the animal handling area in Pen 2.

### JOB/ACTIVITY 2A: Evaluate use of Medetomidine and Ketamine in 6-8 moose.

In collaboration with Dr. Kimberlee Beckmen, the ADF&G wildlife veterinarian, we evaluated the efficacy of a combination of Butorphenol, Azaperone, and Medetomidine for immobilizing moose. This combination of drugs had not been previously tested in Alaskan moose prior to the FY07 reporting period when we tested it at the MRC. Three additional adult moose, two male and one female, were immobilized with this combination on May 5, 2008. During immobilizations, we recorded time and depth of immobilization, respiratory and heart rates, blood oxygen saturation, and collected blood samples for blood chemistry assessment. These immobilizations complete data collection for this assessment. Data is currently being analyzed and a manuscript written for peer review and ultimately, publication in a scientific journal.

JOB/ACTIVITY 3A, B & C: Moose nutrition, physiology, and reproductive studies.

On May 6, 2008, we evaluated the effect of the TASER device as a nonlethal deterrent in two adult male and one adult female moose. Animals were first immobilized with a standard dose of carfentanil/xylazine, and control values for time and depth of immobilization, respiratory and heart rates, blood oxygen saturation, and collected blood samples for blood chemistry assessment were recorded and collected. Next, the TASER device was applied, and the animals immobilized again. The same data was collected after application to determine if the TASER device had any additional deleterious physiological effect over and above that of a standard chemical immobilization. These tests complete data collection for this assessment. Data is currently being analyzed and a manuscript written for peer review and ultimately, publication in a scientific journal.

Six pregnant, adult female moose were fitted with vaginal insert transmitters (VITs) during late march and were closely monitored throughout the last trimester of pregnancy to determine if the device caused any complications. Dr. Kimberlee Beckmen and J. and S. Crouse immobilized these animals approximately 2 weeks prior to parturition and observed no deleterious effects to the birth canal. All six cows fitted with VITs gave birth to healthy calves in late May or early June 2008.

JOB/ACTIVITY 4A: Caribou nutrition, physiology, and reproductive studies.

This objective was inactive during the FY08 reporting period.

JOB/ACTIVITY 5A: Preparation of reports and technical publications.

Annual progress reports were completed for this project during the current reporting period. In addition, IACUC documents were updated and submitted for the work described under 'drug testing', Job 2; and 'Moose nutrition, physiology, and reproductive studies', Job 3.

**III. ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD**

None.

**IV. PUBLICATIONS**

None.

**V. RECOMMENDATIONS FOR THIS PROJECT**

None.

**VI. APPENDIX**

None.

Project No. 1.63 - Ungulates  
FY08 Annual Performance Report

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