

**FEDERAL AID ANNUAL  
RESEARCH PERFORMANCE REPORT**

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

**Alaska Department of Fish and Game  
Wildlife Restoration Grant**

**GRANT NUMBER:** W-33

**SEGMENT NUMBER:** 10

**PROJECT NUMBER:** 16.10

**PROJECT TITLE:** Distribution, movements, and survival of muskoxen in northeastern Alaska

**PROJECT DURATION:** 1 July 2006–30 June 2013

**REPORTING PERIOD:** 1 July 2011 – 30 June 2012

**REPORT DUE DATE:** 1 September 2012

**PRINCIPAL INVESTIGATOR:** Stephen M. Arthur, ADF&G

**COOPERATORS:** Patricia Reynolds, Arctic National Wildlife Refuge; Perry Barboza, University of Alaska Fairbanks; David Gustine, U.S. Geological Survey

**WORK LOCATION:** Eastern North Slope, Unit 26B

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**I. PROGRESS ON PROJECT OBJECTIVES DURING LAST SEGMENT**

**OBJECTIVE 1:** Estimate annual birth rates for muskox cows in northeastern Alaska.

No additional work was planned or performed.

**OBJECTIVE 2:** Estimate annual recruitment of muskox calves in northeastern Alaska.

Muskox recruitment through October 2011 was 29 calves out of a minimum of 55 known births (53% survival).

**OBJECTIVE 3:** Determine rates and causes of mortality of muskox in northeastern Alaska.

No muskoxen were known to have died during this period.

**OBJECTIVE 4:** Assess prevalence of major diseases and parasites in muskoxen in this population.

No additional work was planned or performed.

**OBJECTIVE 5:** Assess nutritional status of muskoxen.

Muskox fecal samples were analyzed to determine ratios of fecal nitrogen isotopes.

**OBJECTIVE 6:** Analyze and publish results.

Annual progress reports were completed.

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

JOB/ACTIVITY 2: Estimate annual calf recruitment through October.

All known groups of muskoxen were located by aerial radiotracking several times per week during the calving season (April–June), then twice monthly during June–October. In spring 2011, a minimum of 55 calves were born, of which at least 29 (53%) survived until October.

JOB/ACTIVITY 3: Determine rates and causes of mortality of muskox during July–October and April–June.

Muskox groups were observed by aerial radiotracking at 2-week intervals during July–October 2011. No muskoxen were known to have died during this period.

JOB/ACTIVITY 5: Assess nutritional status of muskoxen in each area (contract with UAF to complete sample analysis).

Analyses of fecal nitrogen isotopes from samples collected during spring 2011 were completed by P. Barboza's lab at UAF. Samples were sent to the University of Washington for microhistological assessment of muskox winter diets. Further analysis of these data will be conducted in association with D. Gustine, USGS.

JOB/ACTIVITY 7: Analyze and publish results.

Annual progress reports were prepared. Analysis of muskox diet quality data was begun.

## **IV. PUBLICATIONS**

None.

**PREPARED BY:** Stephen M. Arthur

**DATE:** 13 August 2012