

**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: 6.15

PROJECT TITLE: Demographics and spatial ecology of Dall sheep in the central Brooks Range

PROJECT DURATION: 1 July 2008–30 June 2014

REPORTING PERIOD: 1 July 2011 – 30 June 2012

REPORT DUE DATE: 1 September 2012

PRINCIPAL INVESTIGATOR: Stephen M. Arthur

COOPERATORS: Merben Cebrian, U.S. Bureau of Land Management; National Fish and Wildlife Foundation; Perry Barboza, University of Alaska Fairbanks

WORK LOCATION: Central Brooks Range, Unit 24A

I. PROGRESS ON PROJECT OBJECTIVES DURING LAST SEGMENT

OBJECTIVE 1: Investigate seasonal and annual distributions and movement patterns of Dall sheep in relation to survey units and the Dalton Highway utility corridor.

GPS data were obtained from radiocollared sheep. Data were entered into a database and screened for errors.

OBJECTIVE 2: Estimate annual birth rates for Dall sheep ewes.

No work performed during this period.

OBJECTIVE 3: Estimate survival of lambs to yearling age class and determine causes of mortality.

Lambs collared during May 2011 were monitored through May 2012 to estimate survival. Survival rate of lambs for this year was 28%.

OBJECTIVE 4: Evaluate nutritional status of sheep in comparison to other populations.

Fecal and urine samples were obtained from 5 sites. Samples were sent to UAF for analysis of nitrogen isotope ratios.

OBJECTIVE 5: Prepare annual and final reports.

Quarterly and annual reports were prepared.

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

JOB/ACTIVITY 1b: Collect and analyze GPS data.

GPS-equipped collars were recovered from 21 adult ewes after automatic release mechanisms were activated on 1 March. GPS data were downloaded from the collars and entered into a database. A preliminary analysis identified one area of particularly high use by sheep. Additional studies are planned to identify specific attributes that make this area attractive to sheep.

JOB/ACTIVITY 2a: Fixed-wing radiotracking flights to determine birth rates of ewes.

No work on this job was planned or performed.

JOB/ACTIVITY 2c: Collect urine and fecal samples.

Sheep urine and fecal samples were collected from 5 sites during March 2011. These samples were sent to P. Barboza, UAF, for analysis of nitrogen isotope ratios.

JOB/ACTIVITY 3b: Fixed-wing radiotracking flights to determine survival of lambs.

Radiotracking flights were conducted at approximately 2-week intervals during July–October 2011 and February–May 2012 to estimate survival of 12 lambs collared during May 2011 that had survived through June 2011. Collars detached prematurely from 5 lambs, which were excluded from analysis. Survival through May 2012 was 28%, estimated for all 18 lambs collared during 2011 whose fates were known.

JOB/ACTIVITY 3c: Helicopter flights to investigate lamb mortalities.

Seven instances of potential lamb mortality were investigated during this period. Five of these were cases where lamb collars apparently detached prematurely due to a manufacturing defect. The remaining 2 lambs were both killed by unidentified predators.

JOB/ACTIVITY 4a: Data analysis, report writing, and travel.

Quarterly and annual progress reports were prepared.

IV. PUBLICATIONS

None.

PREPARED BY: Stephen M. Arthur

DATE: 13 August 2012