

**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: 12

PROJECT NUMBER: 1.69

PROJECT TITLE: Movements and sightability of moose in Game Management Unit 21E

PROJECT DURATION: 1 July 2009–30 June 2015

REPORT DUE DATE: 1 September 2014

PARTNER: None

PRINCIPAL INVESTIGATORS: Thomas F. Paragi, Kalin A. Kellie Seaton, and Joshua M. Peirce

COOPERATORS: Bruce Seppi and Merben Cebrian, U.S. Bureau of Land Management; Jerry Hill, U.S. Fish and Wildlife Service; and Steven Kovach, U.S. Forest Service (formerly with U.S. Fish and Wildlife Service)

WORK LOCATION: Interior Alaska, Unit 21E

I. SUMMARY OF WORK COMPLETED THIS SEGMENT ON JOBS IDENTIFIED IN ANNUAL WORK PLAN

OBJECTIVE 1: Determine seasonal movements of moose that overwinter in the Yukon and Innoko River floodplains to assist managers in defining winter range, spring calving areas, and moose distribution during hunting season and periods of aerial surveys in autumn (age-sex composition) and late winter (abundance).

JOB/ACTIVITY 1B: Obtain GPS and VHF relocations.

We continued to periodically obtain new GPS location records from the ARGOS provider through ABR, Inc. of Fairbanks, a consulting firm that downloads the data weekly over the Internet and archives the data in a Microsoft Access® database maintained on its server. This service was part of a contract for project 1.67 (Comparative nutritional status among 6 high-density moose subpopulations in Interior Alaska).

Moose were recaptured using immobilization drugs in March 2014 to remove 23 GPS collars for direct download of telemetry data stored in the collar. A final search of the study area for mortalities in June 2014 recovered 3 additional GPS collars for downloading and 2 VHF collars. The June trip ended fieldwork on this project.

VHF telemetry flights to verify presence of calves with collared cows once each during fall and late winter were not feasible because of poor flying weather and workload schedule of McGrath area staff. U.S. Fish and Wildlife Service and Bureau of Land Management cooperators conducted an aerial search along transects in Unit 21E to observe parturient female moose for an estimate of twinning rate during 29–30 May 2014. They found 51 random parturient cows for an estimated twinning rate of 31%.

JOB/ACTIVITY 1C: Define seasonal ranges of moose for planning survey and inventory activities and to aid management decisions.

We continued to collect data for a multi-year assessment and reviewed potential analysis techniques in the scientific literature. S. Kovach provided an analysis of location accuracy from 3 collars prior to collar deployment.

JOB/ACTIVITY 1D: Define periods of rapid range shift to develop guidelines for frequency of VHF telemetry flights to aid survey and inventory activities and range definition.

Data collection was incomplete, so we did not analyze the data for this purpose yet.

OBJECTIVE 2: Use radiomarked moose to develop a sightability correction factor (SCF) for late winter surveys using a geospatial population estimator (GSPE) for moose abundance in Unit 21E.

JOB/ACTIVITY 2: Estimate an SCF by intensive searches and by detection of radiomarked moose during a population survey in Unit 21E (late winter 2012).

The draft memorandum on the 2012 survey was reviewed but not finalized; it requires consultation with our cooperating biometrician but has been a lower priority than his other assignments.

OBJECTIVE 3: Create an electronic archive as a GIS shapefile of moose relocations with associated attributes and metadata.

JOB/ACTIVITY 3: GPS data download and archive.

Downloads of location data delivered via the ARGOS satellite system were handled through a contract with ABR, Inc. (job 1b) until collars were recovered from the field in March and June. After collar recovery, store-on-board GPS location data were uploaded and combined with the dataset compiled from ARGOS downloads. Both store-on-board and ARGOS-delivered data types were preserved in the final database.

OBJECTIVE 4: Write annual progress reports and a final technical report. Give presentations at scientific forums, particularly in Alaska. Publish results in peer-reviewed journals for jobs where results have utility outside Region III.

JOB/ACTIVITY 4: Write progress report and give scientific presentations.

We completed this FY14 performance report and began drafting a wildlife research report (agency technical summary). Kellie Seaton gave an invited oral presentation "Moose distribution in riparian corridors during severe winters: Implications for habitat

manipulation" at a workshop on habitat selection at the Alaska Chapter of *The Wildlife Society* in Anchorage.

II. SIGNIFICANT DEVIATIONS AND/OR ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD

The project was extended 1 year to allow adequate time for data analysis and writing because removal of collars from the field could not be completed until June 2014.

III. PUBLICATIONS

None.

IV. RECOMMENDATIONS FOR THIS PROJECT

We will begin movement analysis using the complete data set and produce a final research performance report and a wildlife research report by 1 September 2015.

PREPARED BY: Thomas F. Paragi

DATE: 8 July 2014