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FEDERAL AID ANNUAL RESEARCH PERFORMANCE REPORT

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

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Alaska Department of Fish and Game
Wildlife Restoration Grant

GRANT NUMBER: W-33   **SEGMENT NUMBER:** 9

PROJECT NUMBER: 5.20

PROJECT TITLE: Habitat evaluation techniques for moose management in Interior Alaska

PROJECT DURATION: 1 July 2007–30 June 2012

REPORT DUE DATE: 1 September 2011

PRINCIPAL INVESTIGATORS: Thomas F Paragi and Kalin A. Kellie, ADF&G

COOPERATORS: Jennifer Schmidt (University of Alaska Fairbanks), Ronald Barry (Ronald Barry Consulting)

WORK LOCATION: Interior Alaska (Region III)

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

OBJECTIVE 1: Develop a spatial model of winter habitat occupancy by moose to quantify the area to which density estimates should be extrapolated when setting population objectives for intensive management.

JOB/ACTIVITY 1A: Define the proportion of each game management unit (Unit) in Region III that contains vegetated cover for year-round moose habitat, and define the proportion of each unit that contains browse-producing species for winter range.

This job was completed during the last reporting period.

JOB/ACTIVITY 1B: Conduct sampling of snow accumulation at the landscape scale to predict snow depth.

We contracted with a biometrician (Ronald Barry) to produce a model predicting snow depth and variance of depth across Interior Alaska on 1 April 2008 using data we collected at multiple scales of distance between sites on that date. Environmental variables in the model include vegetation and terrain. We met with the contractor to define modeling objectives and deliverables, provided the data, and consulted with him as modeling proceeded.

JOB/ACTIVITY 1C: Estimate winter habitat use by moose with respect to snow depth.

Data compilation was completed in the last reporting period.

JOB/ACTIVITY 1D: Construct a spatial model of winter range use by moose.

We contracted with a biometrician (Ronald Barry) to produce a model of habitat selection by female moose based on presence or absence of a calf and environmental variables including vegetation, terrain, and snow depth (severe vs. non-severe winters). We met with the contractor to define modeling objectives and deliverables, provide data, and consult with him as modeling proceeded.

OBJECTIVE 2: Improve understanding of the relationship between proportional removal of browse production and moose twinning rate in the boreal forest of Interior Alaska to gauge the utility of browse removal as an alternative index to when nutritional condition of moose hinders productivity.

JOB/ACTIVITY 2A: Estimate browse production (kg/ha) and proportional removal.

We conducted browse surveys in Units 20B (Fairbanks Management Area) and 20C in late March and early April 2011.

JOB/ACTIVITY 2B: Conduct moose twinning surveys in browse surveys areas.

Galena area staff conducted a twinning survey in Unit 24B.

OBJECTIVE 3: Create an archive of moose survey and harvest information to permit spatial analysis of population and harvest trends.

JOB/ACTIVITY 3A: Collate historic moose survey and harvest/sealing records for moose, bears, and wolves as attributes of an associated spatial extent for electronic storage, analysis, and display.

No additional work was completed during this reporting period.

OBJECTIVE 4: Write annual progress reports, a research interim technical report in FY10, 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: Data analysis (snow and habitat modeling, browse surveys) and annual progress report.

Paragi gave an oral presentation on results from job 2A at the Alaska chapter of *The Wildlife Society* in April 2011. Kellie collaborated on an analysis of moose harvest with Jennifer Schmidt/UAF based on data compiled in job 3A, and the paper is being submitted to a peer-reviewed journal.

OBJECTIVE 5: Evaluate the potential to increase browse production with prescribed fire in subalpine habitat and the subsequent response in browse removal by moose (job amended to study plan 28 October 2008).

JOB/ACTIVITY 5A: Conduct an experimental burn by aerial ignition of fine fuels in spring to evaluate the vegetative response in current annual growth.

The burn prescription was met periodically during the approved window of dates in the burn plan, but the burn was not conducted because fire specialists or equipment were not available during feasible weather conditions.

IV. RECOMMENDATIONS FOR THIS PROJECT

In FY12 we will prepare manuscripts for peer reviewed publication on the modeling results from jobs 1B and 1D and conduct browse surveys in Unit 20A in collaboration with other management and research projects. Job 5A will be terminated because the project is ending and potential to conduct this burn is low based on past experience.

PREPARED BY: Thomas F. Paragi

DATE: 12 August 2011