

**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: Grizzly and black bear distribution and abundance relative to the 2004 wildfires in eastern Interior Alaska: Possible intensive management consequences

PRINCIPAL INVESTIGATOR: Craig L. Gardner

COOPERATOR: None

FEDERAL AID GRANT PROGRAM: Wildlife Restoration

GRANT AND SEGMENT NO. W-33-7

PROJECT NO. 4.39

WORK LOCATION: Game Management Unit 20E, Fortymile River drainage

STATE: Alaska

PERIOD: 1 July 2008 – 30 June 2009

I. PROGRESS ON PROJECT OBJECTIVES SINCE PROJECT INCEPTION

OBJECTIVE 1: Determine the following trends relative to the 2004 wildfires in Unit 20E: 1) grizzly bear population size and distribution and possibly, predation on moose calves; 2) moose population size, composition, and trend; and 3) black bear population size and distribution and possibly, predation on moose calves. Develop an intensive management strategy that incorporates findings from this research.

This is the first year for Project 4.39. During fiscal year (FY) 2009, study direction changed substantially because sampling protocols that the original study plan depended on were not fully developed and ready to implement. Therefore, to meet the objective of evaluating grizzly bear population and distribution trends in relation to large scale wildfires, the study was redesigned to use both GPS-radiocollar technology and later on in the 5 year study, a DNA-based population estimate.

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

JOB/ACTIVITY 1A: Conduct literature review on grizzly bear habitat use and in particular seasonal use of habitats disturbed by wildfire.

On a monthly basis, I conducted a literature search for journal articles on grizzly bear habitat use, food habits, seasonal movement patterns, and habitat use statistical analyzes. I have acquired numerous publications that are being used to help focus my research questions and to develop methodologies.

JOB/ACTIVITY 1B: Develop a study design that answers the following: 1) grizzly bear and black bear population size and distribution in eastern Unit 20E relative to the area

disturbed by large-scale wildfires, and 2) seasonal habitat use by grizzly bears outside and within the areas disturbed by wildfires.

I consulted with 2 biometricians in project design and sampling protocol. The final study design was not completed for all the aspects of the study during FY09. It will be completed during FY10 after analyzing grizzly and black bear population size and distribution data collected within the study area during 2006 and grizzly bear movement data collected during the first year of this study.

JOB/ACTIVITY 1C: Deploy GPS-radiocollars on grizzly bears.

I deployed 3 GPS radiocollars, 2 on adult females and 1 on an adult male during July 2008 and 4 GPS collars all on adult females during May 2009. I also deployed 1 VHF radiocollar on an adult male during May 2009 to aid in finding adult females during the breeding season. The GPS collars record the bear's location once every 1 1/2 hours between 15 May and 15 October. I can upload the data while flying over the radiocollared bear in a fix-winged aircraft. I conducted data retrieval flights once every 2–3 weeks. The collars shut off during 16 October–14 May to save battery life. The GPS radio-transmitter's projected operational life is 2 1/2 years. Two of the GPS collars have failed prematurely and have been retrieved. The VHS collar on the adult male fell off during June 2009. At the end of FY09, I have 6 operating GPS collars, all of which are on adult females.

JOB/ACTIVITY 1D–F: Implement DNA-based mark–recapture study and complete the genetics laboratory work.

These activities were not accomplished during FY09. The DNA-based mark–recapture population estimate study is planned to occur during FY12.

JOB/ACTIVITY 1E: Data analysis and reporting.

Most of my effort was directed toward working with department programmers in developing a database storage system for a large and increasing data set that includes programs for data retrieval, maintenance, and analyses.

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

Map the study area and delineate between burned and unburned areas. Visit areas where there are clusters of bear locations to determine habitat type and if possible, identify the attractant.

VI. APPENDIX

None.

Project No. 4.39 – Bear/fire abundance
FY09 Annual Performance Report

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APPROVAL DATE: _____