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-33-8**   **Segment Number:**   1

Project Number: 4.41

Project Title: Nelchina Brown Bear Demographics

Project Duration: July 1, 2010 – June 30, 2011

Report Due Date: September 1, 2011

PRINCIPAL INVESTIGATOR: Becky Schwanke, ADF&G, Interim Principal Investigator

WORK LOCATION: Western GMU 13A, Southcentral Alaska

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I.   PROGRESS ON PROJECT OBJECTIVES DURING LAST SEGMENT

OBJECTIVE 1: Capture additional animals to augment estimation of Nelchina brown bear productivity, cub survival, and annual rate of population change (λ).

> Additional brown bears were captured and radiocollared during two spring capture events April-May. Collared bears were monitored with fixed-wing aircraft, and an additional year of productivity and cub survival data was documented. A capture-mark-resight density survey was conducted in May. The annual rate of population change (λ) for the entire project period will be calculated once the 2011 cubs are tracked through 2012.

OBJECTIVE 2: Identify degree of calf/adult moose killing by collared bears, both within and outside the study's moose calving area.

> An additional year of predation on large prey by individual bears was documented by visual observation while radio tracking with fixed wing aircraft, although fewer spring flights were conducted this reporting period compared to previous reporting periods. Large prey included moose calves, yearlings and adults, as well as caribou calves and adults.

OBJECTIVE 3: Develop an outline for a brown bear management strategy in Unit 13. The outline will provide the basis for addressing future intensive management objectives for moose set by the Board of Game.

> A management strategy for brown bears in Unit 13 will be drafted following data collection and analyses.

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

JOB/ACTIVITY 1A: Bear captures

During April and May of 2011, 23 bears were captured and radiocollared.

JOB/ACTIVITY 1B: Bear monitoring and data analysis

A total of 412 bear locations were collected throughout this reporting period. For the 2010-11, cub-of-the-year survival averaged 71% (N=21); yearling survival averaged 100% (N=8). A total of 72 individual collared bears were monitored from 1 July 2010 – 30 June 2011. In the spring of 2011 a total of (8) cub-of-the-year litters were documented; the average initial litter size was 2.1. A total of (8) yearling litters were documented; the average initial litter size was 2.3. Further data analyses are ongoing.

JOB/ACTIVITY 1C: Evaluation of sustainable harvest rate models in relation to this area

No recent density estimate was available prior to May 2011 by which to calculate a harvest rate. Preliminary May 2011 capture-mark-resight survey results indicate a population of 49 independent bears in the $3,000km^2$ subset of the study area (16.3 bears / $1000km^2$). The harvest rate will be calculated for this area once all the final sealing certificates are received for harvested brown bears for the current regulatory year (1 July 2011 – 30 June 2012).

JOB/ACTIVITY 1D: Collar removal upon completion of project

In June 2011, 27 collars were removed from males and females without cubs of the year or yearling cubs.

JOB/ACTIVITY 2A: Monitor predation characteristics of study bears

Of the 55 individual collared bears monitored throughout the fall of 2010, a total of 16 individual bears were observed on at least one fresh kill. Of the 55 individual collared bears monitored throughout the spring of 2011, a total of 7 individual bears were observed on at least one fresh kill. Fewer spring flights were conducted during this reporting period compared to previous reporting periods.

JOB/ACTIVITY 3A: Develop management strategy

No work was done on this job during this reporting period.

VI. RECOMMENDATIONS FOR THIS PROJECT

Continue to monitor existing radiocollared bears and their cubs. Once bears no longer have accompanying cubs, remove existing radio-collars. Summarize results, draft a management strategy, and report findings to appropriate venues.

Prepared by: Becky Schwanke, ADF&G, Interim Principal Investigator

Date: 19 August 2011