

FEDERAL AID ANNUAL RESEARCH PERFORMANCE REPORT

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 115526
Juneau, AK 99811-5526

FEDERAL AID GRANT PROGRAM: Wildlife Restoration

GRANT AND SEGMENT NO. W-33-8

PROJECT NO. 4.38

WORK LOCATION: Region II

STATE: Alaska

PERIOD: July 1, 2008 – June 30, 2009

PROJECT TITLE: Kenai Peninsula brown bear population demographics

**I. PROGRESS ON PROJECT OBJECTIVES SINCE PROJECT INCEPTION.
SUMMARY OF WORK COMPLETED ON JOBS IDENTIFIED IN ANNUAL
PLAN THIS PERIOD.**

JOB/ACTIVITY 1: POPULATION MONITORING

Telemetry flights were conducted and Animal productivity determined. There are 46 animals being monitored.

JOB/ACTIVITY 2 : Animal Captures

Fall 2009 captures were not conducted due to injuries sustained by capture pilot. Captures were accomplished during spring 2010. Ten bears were captured (9 female; 1 male) and all females were collared. One female bear had been handled in 2004 but had shed her collar. All other bears were new to the study and bring the number of collared bears to 46. Several of these animals may be deceased and/or have shed their collars and field investigations are underway in fall 2010.

JOB/ACTIVITY 3 : Data Analysis The following information has been calculated from the demographic data through spring 2010:

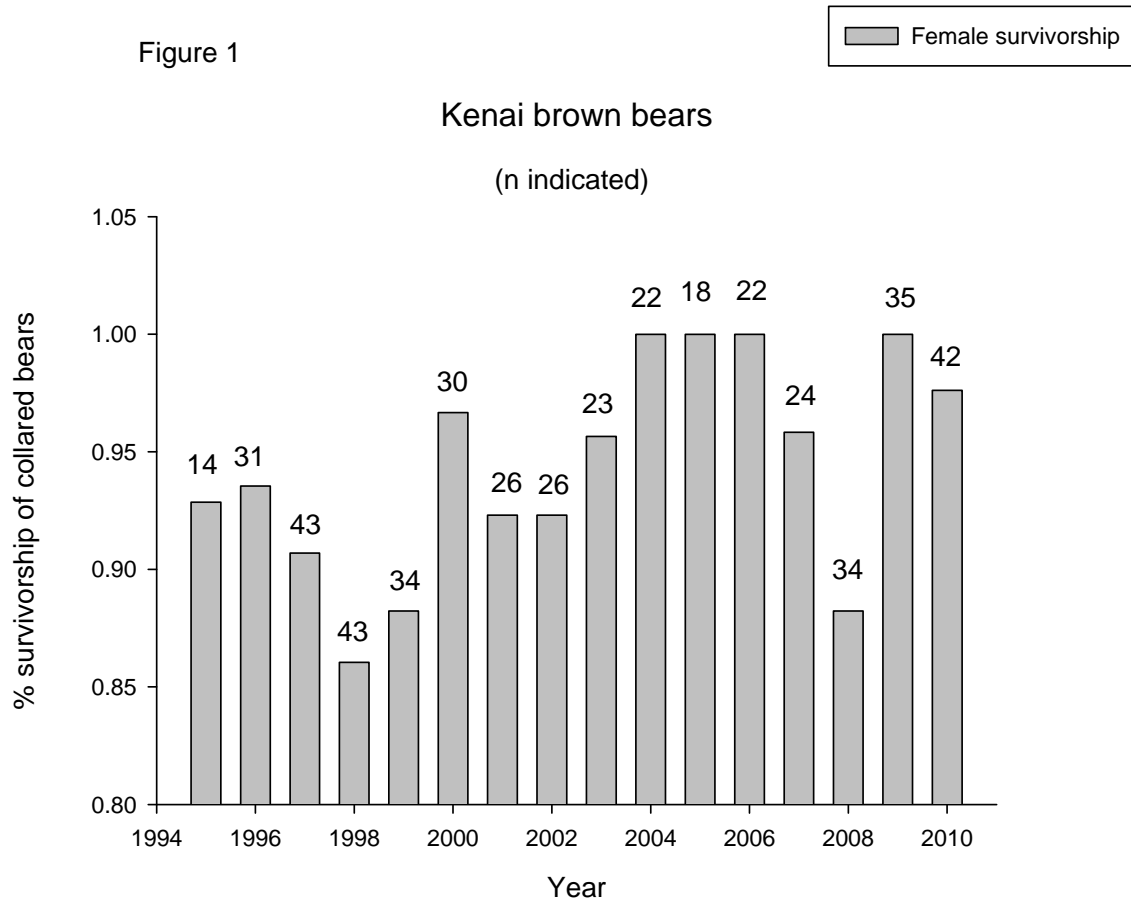
- 1) Annual Female survivorship has been calculated for the duration of the project (see Fig. 1)
- 2) Mean age of reproduction for the duration of the study has been calculated to be 11yr (std4) with a range of 3-23 years
- 3) Annual cub survival and litter size has been calculated for the duration of the project (see Tables 1 & 2).

4) Parameters from Tables 1 and 2 and Figure 1 were applied to a basic Excel spreadsheet population model written by Testa (perso comm..) and based upon Eberhardt and Siniff (1977). The age of first parturition was assigned 5 years with a range of 4 to 7. Mean annual birth rate was calculated from female cubs per female (assuming 50:50 ratio). An interbirth interval of 3.08 (3.05 to 3.17) was calculated from demographic data. Lambda was calculated to be 1.027 with upper and lower bounds of 1.028 and 0.982, respectively.

Job/Activity 4: Reporting/Meeting

Multiple meetings were held with USFS and USFWS the efficacy of a DNA based mark-recapture protocol for the Kenai Peninsula. Despite vigorous ADFG dissent, the USFWS chose to conduct a grid-based mark-recapture effort. It is presumed the results will require ADFG discussion.

Figure 1



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Tables 1 & 2: Cub survivorship and litter size for Kenai Peninsula brown bears.

Number of Cubs by Fate and Age to 2010

	Age of Cubs						
	0	1	2	3	Grand Total		
Sum of Survived	189	127	116	10	442		
Sum of Lost	75	65	1	0	141		
Sum of Censor	7	1	3	0	11		
Sum of Unknown	36	14	0	0	50		
Total	307	207	120	10	644		
Maximum Survival	0.72	0.66	0.99	1.00	To Weaning	0.47	Assumes Lost Cubs Died
Minimum Survival	0.63	0.62	0.99	1.00		0.39	Assumes Lost and Unknown Cubs Died

Number of Litters by Litter Size and Age of Cubs to 2010

	Age of Cubs				
Litter Size	0	1	2	3	Grand Total
1	24	20	14	1	59
2	67	52	29	3	151
3	47	27	16	1	91
4	3	0	0	0	3
Grand Total	141	99	59	5	304
Mean Litter Size	2.21	2.07	2.03	54.40	