FEDERAL AID INTERIM 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: AKW-19.10 Wildlife Restoration **Segment Number:**

Project Number: 19.10

Project Title: Region 1 research planning, design, and support

Project Duration: 1 July 2016–30 June 2017

Report Due Date: 1 September 2017

PRINCIPAL INVESTIGATORS: Dave P. Gregovich

WORK LOCATION: Southeast Alaska

I. PROJECT OBJECTIVES DURING LAST SEGMENT

OBJECTIVE 1: Conduct strategic evaluations of research needs based on current management needs and objectives.

Design and support are an important part of maintaining a high quality research program. Planning is needed at many levels from strategic planning to planning experimental protocols of individual projects. A research plan is necessary to develop and maintain program direction, structure, and function that complement the Division of Wildlife Conservation's (DWC) strategic plan. Short and longer-term research priorities were established through discussions and meetings with regional and headquarters staff. Additional discussions were held with others outside of the regional staff, including other regions, federal management agencies, and universities. Research questions were designed to answer management questions. Regional priorities were reevaluated related to this new information and in conjunction with potential funding.

OBJECTIVE 2: Develop research design alternatives based on identified priorities.

In the evaluation of regional research priorities, alternative studies were considered for all projects. Final decisions on topic selection, research design, and field techniques were based on an analysis of the likelihood of accomplishing the research objectives, logistical considerations, and available staffing and expertise to work on the study.

OBJECTIVE 3: Compare alternative research designs using specific evaluation criteria.

Research designs were re-evaluated and modified as necessary with the input of our statistical and biological staffs, based on information learned in previous years.

OBJECTIVE 4: Conduct routine and sophisticated statistical and population estimation analyses.

We coordinated with our staff biometrician in the review of projects. In addition, our staff biometrician conducted various analyses of research data for final reports and publications. We also consulted with our research analyst to improve the support capabilities of our research program. The research analyst collected, processed, and analyzed spatial data used to provide information on wildlife-habitat relationships. Foremost amongst such habitat-related analyses are resource selection functions (RSFs) which assign probabilities to wildlife species use of various landscape features.

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

JOB/ACTIVITY 1: Establish research program priorities.

Accomplishments:

Short and longer-term research priorities were evaluated through discussions and meetings with regional staff, other regions, federal management agencies, and universities. Regional priorities were re-evaluated related to this new information and in conjunction with potential funding. Because of partnering opportunities and targeted funding for specific wildlife species, regional staff identified additional research priorities for mountain goats and wolves, as well as fisher. Additionally, in FY 2017 we identified the need to hire a Sitka black-tailed deer researcher (Wildlife Biologist III) to join the research team. Recruitment is ongoing (posting closes 12 September 2017) and we expect to hire in fall 2017. These projects were in addition to ongoing research priorities for brown bears, moose, mountain goats, and Sitka black-tailed deer.

JOB/ACTIVITY 2: Develop research design alternatives.

Accomplishments:

Alternative studies were again considered for several of the projects in order to ensure we are using the most up to date and sensible methods. For the POW wolf population assessment, we implemented several minor changes in our sampling scheme and data analysis to incorporate our larger sample size and alternate methods. We also evaluated alternative methods for wolf diet analysis to continue to fine-tune our results. Final decisions on topic selection, research design, and field techniques were based on an analysis of the likelihood of accomplishing the research objectives, logistical considerations, and available staff to work on the study.

JOB/ACTIVITY 3: Evaluate research designs.

Accomplishments:

Research designs were re-evaluated and modified as necessary with the input of our statistical staff, based on information learned in previous years. We slightly modified the wolf population estimation methods of data collection to incorporate a larger study area and take advantage of data collection by collaborators.

JOB/ACTIVITY 4: Statistical and population estimation/biometric services.

Accomplishments:

We coordinated with our staff biometrician in the review of projects. We provided technical support for various staff as needed. These analyses mostly focused on habitat selection.

Research Analyst Dave Gregovich played an important role in several divisional research projects which resulted in output critical to DWC's mission. Dave also worked to build divisional capacity for future wildlife resource selection and movement studies, and provided educational outreach to outside professionals. Dave assisted Kevin White in analyzing and writing a paper on mountain goat habitat selection in the area of the Kensington Mine. He also built RSF models of brown bear den sites in three elevation zones in the Yakutat area. These models are in large part the basis for a paper that Anthony Crupi (WB III) is in the process of writing on the factors that influence den site selection.

Dave built home ranges for Gretchen Roffler (WB III) in support of a co-authored paper on wolf space-use on Prince of Wales. This involved interpretation and implementation of the methods for home range estimation presented by Calabrese et al. 2016. Additionally, he wrote R code for use in simulating the effects of climate change on projected mountain goat population trajectories (Accepted, Global Change Biology).

Dave assisted the 'AERIAL' alpine working group with selection of GLORIA long-term vegetation monitoring sites, including developing an algorithm that searched a potential study area for appropriate mountain peaks to conduct research. Dave continues to work with intern Andre Fetzer on a vegetation mapping project on Douglas Island and areas surrounding Juneau. So far this has resulted in a land cover map of Douglas Island with more results expected in the upcoming year (FY18).

Dave continued working with Rich Lowell (WB III) on a research report on space-use by elk on Etolin Island, and performed all analysis (home range estimation and RSF modelling) for the report. Report completion expected Fall 2017.

In an effort to evaluate new or alternative research methods, Dave attended a workshop conducted by Elie Gurarie (UMD) on use of continuous-time movement models, and implemented the methods learned in constructing wolf home ranges. Additionally, he attended a course on the botany of southeast Alaska, and spent a day in the field with the instructor identifying alpine plants. This knowledge was acquired in hopes of being useful for characterizing vegetation for land cover development. Dave also participates in the SEAGUG GIS users group, and a Forest Service-led vegetation mapping team.

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

None.

V. PUBLICATIONS

Colson, K. E., K. S. White, and K. J. Hundertmark. 2016. Parturition site selection in moose (Alces alces): Evidence for social structure. Journal of Mammalogy 97(3):788-797.

Flynn, R. W., and T. V. Schumacher. 2016. Age structure and fecundity of American martens trapped on Chichagof Island, Southeast Alaska, 1991–1998. Alaska Department of Fish and Game, Wildlife Research Report ADF&G/DWC/WRR-2016-8, Juneau.

Flynn, R. W., and T. V. Schumacher. 2016. Determining sex and age of martens in the North Pacific Coast: Using skull length and temporal muscle coalescence. Alaska Department of Fish and Game, Wildlife Research Report ADF&G/DWC/WRR-2016-5, Juneau.

Flynn, R. W., and T. V. Schumacher. 2016. Habitat selection of American martens on northeast Chichagof Island, Southeast Alaska, 1991–1997. Alaska Department of Fish and Game, Wildlife Research Report. ADF&G/DWC/WRR-2016-6, Juneau.

Roffler, G. H., J. N. Waite, R. W. Flynn, K. R. Larson, and B. D. Logan. 2016. Wolf population estimation on Prince of Wales Island, Southeast Alaska: A comparison of methods. Alaska Department of Fish and Game, Final Wildlife Research Report ADF&G/DWC/WRR-2016-1, Juneau.

White, K. S., and D. P. Gregovich. 2016. Mountain goat resource selection in relation to mining-related disturbance, near the Kensington Mine, Southeast Alaska. Alaska Department of Fish and Game, Wildlife Research Report ADF&G/DWC/WRR-2016-2, Juneau.

White, K. S., G. W. Pendleton, and J. N. Waite. 2016. Development of an aerial survey population estimation technique for mountain goats in Alaska. Alaska Department of Fish and Game, Final Wildlife Research Report ADF&G/DWC/WRR-2016-9, Juneau.

VI. RECOMMENDATIONS FOR THIS PROJECT

This project should be continued as described in the study plan and project statement.

Literature Cited

Calabrese JM, Fleming CH, Gurarie E. 2016. Ctmm: an R package for analyzing animal relocation data as a continuous-time stochastic process. Methods in Ecology and Evolution 7:1124–1132.

Prepared by: Susannah Woodruff

Submitted by: Susannah Woodruff, Research Coordinator

Date: 1 September 2017