

**WILDLIFE RESTORATION OPERATING
GRANT
FINAL 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-B-SW-2020 Amendment #1

Project Number: 28.0

Project Title: Data processing and analytical support for research and survey & inventory projects

Period of Performance: 7/1/2020 – 6/30/2021

Report Due Date: September 1, 2021

Principal Investigator: Jeff Mondragon

Cooperators: Christine Schmale, John Skinner, Grey Pendleton

I. PROGRESS ON PROJECT OBJECTIVES DURING PERIOD OF PERFORMANCE

Objective 1: Provide data management support to biologists focusing on the creation, implementation, and support of standardized databases that facilitate the efficient use of the data to accomplish the study's goal and aid in the data documentation and the archiving of data for future use.

Accomplishments:

- Loaded data from disparate sources into existing databases, updated project data documentation, and edited data that reside in existing databases.
- Began developing a single Microsoft Access front end for the multi-project telemetry database
- Continued to support and modify existing databases and associated Access front ends
- Developed additional Access front ends to support the increasing number of users and projects

Objective 2: Develop processes to streamline data flow from the collection through the analyses. When possible, automate data delivery, data storage, reporting requirements (e.g., drug/capture reporting), analyses, and archiving.

Accomplishments:

- Continued development on Division-wide telemetry database
- Added more Vectronic collars to previously developed automated data system
- Designed, developed, and deployed an automated downloading, delivery, and archive application for the Division's Telonics Globalstar and Iridium satellite telemetry collars

- Designed, developed, and implemented an automated process to integrate store-on-board collar data into telemetry database

Objective 3: Provide analytical support to field biologists and aid in the publication of project results.

Accomplishments:

- Performed analysis of intensive management impacts on moose harvest. Finalized and presented results for models estimating factors associated with success in moose harvest and provided additional summary results and feedback for the intensive management review report.
- Prepared and submitted manuscript titled “Efficacy of Ground-based Trapping of Coastal American Black Bears in Prince William Sound, Alaska” that was accepted by the Wildlife Society Bulletin and is currently undergoing minor revisions.
- Began preparing data and designing methodology for an analysis of denning behavior for PWS black bears.
- Completed analyses and assisted with preparation of a manuscript titled “Relationships between diet and stress-related hormones and reproduction in American marten (*Martes americana*)”. The manuscript is currently in review with the Journal of Mammalogy.
- Provided analytical support for an application that provided GPS clusters for investigating wolf prey kill sites.
- Drafted a proposal describing a new approach for assessing trends in ptarmigan numbers based on output from acoustic recorders.
- Completed development of a Bayesian estimation model to estimate the number of dusky Canada goose nests on Middleton Island that accounts for plot size and habitat and corrects estimates for the number of undetected nests. Manuscript in development.
- Produced estimates using the Bayesian estimation model mentioned above for use by the ADFG Waterfowl Program and the Pacific Flyway.
- Consulted with ADFG Waterfowl Program staff to investigate a transect-based sampling design for dusky Canada goose nests as an alternative to the current plot-based sampling. Helped conduct a trial of the transect-based design for comparison with the plot-based estimates, in terms of the precision of the estimates, field effort, and required assumptions.
- Provided analytical consultations for various biologists.

Objective 4: Meet with regional staff and Division leadership to continually revise Divisional priorities.

Accomplishments:

- Participated in meetings with regional GIS and Biometric staff for improving the system for curating the Department’s spatial data
- Attended Region 1 annual meeting (virtual)
- Attended Region 4 staff meeting (virtual)

- Attended quarterly Research Coordination Team (RCT) meetings (virtual)
- Attended and participated in weekly staff meetings for Data Analytics Group and semimonthly staff meeting for Information Services group (virtual)
- Appended, revised, and submitted list of potential database and analytical projects to Division Management Team for review and approval

Objective 5: Attend professional training and conferences to stay current with contemporary data management and analytical techniques.

Accomplishments:

- Attended virtual Data Modeling Workshop (1 staff)

II. SUMMARY OF WORK COMPLETED ON PROJECT TO DATE

Efforts continued to consolidate, store, and analyze the Division’s field-related data. We are continuing to design, develop, and implement a standardized and centralized processes for the downloading, analysis, and archiving of the Division’s thousands of telemetry devices (i.e., collars) that are currently deployed. These collars are from a variety of vendors. Each vendor has their own proprietary data format and nuances when working with the data gathered from their collars. The goal of this project is to migrate all the Division’s data into centralized databases and incorporate contemporary data management and analytical practices for all current projects and to archive and prevent loss of data collected from historical projects as staff turnover.

III. SIGNIFICANT DEVELOPMENT REPORTS AND/OR AMENDMENTS

The original project statement included salary for three positions (PCNs: 11-2249, 11-2248, 11-2011). The project was later amended to include 5.5 months of salary for an additional position (PCN 11-4173, Biometrician III). Additionally, the requested grant budget was adjusted during the Divisional allocation. The table below contains a breakdown of expenditures between the requested budget (post amendment) and allocated budget.

| | Requested Budget | Allocated Budget | Actual Expenditures | Percent of Requested Budget Spent | Percent of Allocated Budget Spent |
|---------------------------------|-------------------------|-------------------------|----------------------------|--|--|
| Line 7100 (salary) | \$483,720 | \$549,436 | \$521,561 | 107.8% | 94.9% |
| Line 7200 (travel) | \$10,000 | \$0 | \$0 | 0% | 100% |
| Line 7300 (software, etc.) | \$14,500 | \$8,855 | \$3,106 | 21.4% | 35.1% |
| Line 7400 (Supplies & services) | \$10,000 | \$644 | \$601.5 | 6% | 93.3% |

| | | | | | |
|-----------------------------------|-----------|-----------|-----------|--------|------|
| Line 7500 (Equipment >\$5K) | \$0 | \$0 | \$0 | 0% | 100% |
| Total | \$518,220 | \$558,937 | \$525,269 | 101.4% | 94% |

Overall, 107.8% of the requested budget was spent and 94.9% of allocated budget was spent. A breakdown of the deviations by line number is as follows:

- IV. Line 7100 allocation was increased to cover salary increases for PCN 11-2011 that was reclassified from Research Analyst 3 to Biometrician 2 and contractual salary increases.
- V. Line 7200 requested budget was reduced to \$0 during Divisional allocation due to COVID-related travel restrictions.
- VI. Line 7300 requested budget was reduced during Divisional allocation. Some anticipated expenses were not necessary which resulted in under spending. Additionally, some money was moved to cover expenses in other line items that were under allocated during Divisional allocation.
- VII. Line 7400 requested budget was reduced to \$0 during the Division's allocation and some money was moved from line 7300 to cover necessary expenses.

VIII. PUBLICATIONS

This grant contributed to one published manuscript.

Porter, B., D.P. Gregovich, A.P. Crupi, G.W. Pendleton, S.W. Bethune. 2021. Black bears select large woody structures for dens in Southeast Alaska. *Journal of Wildlife Management* 85:1450-1461. DOI 10.1002/jwmg.22097.

In addition, two manuscripts were submitted for publication and are currently undergoing review by the respective journals.

IX. RECOMMENDATIONS FOR THIS PROJECT

This project should be continued as described in the project statement.