Alaska Department of Fish and Game
Wildlife Restoration Grant

Grant Number: AKW-23

Project Number: 28.0

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

Period of Performance: 1/10/2018 – 6/30/2018

Location*:* Statewide

Principal Investigator*:* Jeff Mondragon

I. PROJECT OBJECTIVES DURING PERIOD OF PERFORMANCE

- *Objective 1: Provide data management support to S&I and research field biologists and biometricians focusing on: large datasets (e.g. telemetry data) and high-risk/value datasets (e.g. data at risk of loss with staff turnover; moose, caribou and carnivore research; and small game studies).*

- *Objective 2: Optimize flow of research data from the field and, where possible, automate data storage, reporting requirements (e.g. drug/capture reporting), analyses, and archiving.*

- *Objective 3: Review and evaluate data management components of research operational plans to comply with Division policies.*

II. SUMMARY OF WORK COMPLETED ON PROJECT TO DATE

- Potential projects for this group were elicited during meetings with regional staff and statewide programs. The projects were compiled into a list that was submitted to Division leadership for prioritization. The prioritized project list was also used as a preliminary foundation for Division's capture and telemetry data model(s).

- Worked with the Region 4 carnivore biologist to design and implement a database to house the capture and telemetry data for the Region 4 wolf project. All data were imported into the database and user and data documentation were created.

- Developed an automated method to retrieve telemetry data for collared wolves for Vectronic GPS collars. These data are now automatically transferred from the Vendor's servers to the ADF&G database servers where the data become simultaneously available to the biologists and are archived for future use. The ADF&G database servers are updated every 4 hours with the most current location for each collared wolf and these data are available to the biologist(s) on their desktop computer in near real-time.

- Automation of drug reporting. Many of the drugs used during wildlife captures have mandatory drug reporting requirements. Historically, this process was performed manually by the Primary Investigator (PI). This process has been automated in the Region 4 wolf database so that the PI only needs to click a button to generate an Excel file that is submitted to fulfill the drug reporting requirements.

- Participated in meetings for improving the system for curating the department's spatial data.

- Provided the following biometric consultation:
  - Rock ptarmigan
    - estimated ptarmigan survival using data from collared birds
    - examined ptarmigan use of elevation with respect to day of year
    - reviewed and coauthored final report:
  - Black bear study in Prince William Sound
    - provided feedback on sampling design including spatial and temporal distributions for collar deployment
    - suggested analytical approaches for analyzing black bear behavior with respect to habitat and hunting pressure

- The following training/continuing education were successfully completed by one or more positions:
  - 1-day workshop, "Spatial Modeling Workshop (cran R)" to improve efficiency in handling spatial data
  - Learned use of "Rmarkdown" as a tool for creating clear and concise analytical reports
  - Implemented use of LaTex (typesetting language) for preparation of professional quality manuscripts and reports
  - Attended 3-day Data Modeling Master Class
  - Attended 2-day Wildlife & Sportfish Restoration Project Leaders Course

III. SIGNIFICANT DEVELOPMENT REPORTS AND/OR AMENDMENTS

None.

IV. PUBLICATIONS

- Merizon RA, Skinner JP, Spathelf MO (2018) Movement, Survival, and Nest Monitoring of Rock Ptarmigan in Game Management Unit 13B, 2013–2017 (Final Wildlife Research Report No. ADF&G/DWC/WRR-2018-1). p 39

V. RECOMMENDATIONS FOR THIS PROJECT

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