

R7 I&M BRANCH PROPOSAL

KENAI DALL SHEEP AND MOUNTAIN GOAT SURVEYS

1. Station: Kenai National Wildlife Refuge	2. Org Code (FBMS): FF07RKNA00 FXRS126107BIOL1	3. Amount Requested: \$20,000
4. Project Title: Development of survey protocols for mountain goats and Dall sheep in the Kenai Mountains		
5a. Project Officer: Dom Watts	5b. Phone: 907-252-9857	5c. email: dom_watts@fws.gov
6. I&M Staff Name: McCrea Cobb	7. PRIMR Survey ID: FF07R <u>KNA 00 - 026</u>	8. Station Project Ranking: <u>1</u>

Problem Statement and Objectives

Mountain goat and Dall sheep populations in the Kenai Mountains are primarily managed for recreational hunting. Annual harvest limits are determined using population estimates derived from aerial surveys conducted in 31 survey areas. However, a limited number of areas are surveyed each year and comprehensive surveys have not been accomplished in decades due to insufficient funding. Consequently, no recent population-level estimates are available and harvest limits are often set using insufficient or outdated information. Comparisons between historic surveys and limited minimum-count data all indicate that Dall sheep populations have declined dramatically during the past 25 years (Herreman 2013). Similarly, data suggest that mountain goat populations have also decreased by roughly 30–50% since the 1990s (Herreman 2014). Declines in goat populations were primarily driven by overharvest resulting from liberal harvest limits (McDonough and Selinger 2008).

Management agencies have long recognized the need for improved information and for improved accuracy in survey data for these populations. In response to these concerns, an interagency working group including the USFWS, ADF&G, NPS, and USFS proposes to leverage funds, aircraft, and survey efforts to complete the first comprehensive surveys of the Kenai Mountains in decades. The overall objective of this proposed work is to complete long needed comprehensive estimates for goats and sheep throughout the Kenai Mountains. However, the proposed work also facilitates the development of improved survey methods (e.g., sightability model-based methods, line-transect methods) for the Kenai Mountains using existing radio-collars that would offer more accurate estimates of population status and trends. Collectively, these data would facilitate the improved management and conservation of mountain goats and Dall sheep in the Kenai Mountains and provide more accurate information for setting appropriate harvest levels in the area.

Specific objectives of the proposed work include: 1) generate comprehensive population abundance data for mountain goats and Dall sheep throughout the Kenai Mountains, 2) develop a robust and standardized survey protocol that provides improved estimates of mountain goat abundance in the Kenai Mountains and 3) compare mountain goat survey methods including minimum count methods, sightability corrected methods, and distance-based survey methods.

Methods/Scope of Work

Mountain goats and Dall sheep occur throughout the Kenai Mountains and these comprehensive surveys include all alpine habitats on the Kenai Peninsula. Abundance and other data (e.g., group composition, presence/absence of marked individuals, group size, habitat type, and climatic conditions) would also be collected by pilot/observer crews using fixed-wing aircraft during Aug-Sept (Herreman 2014, White et al. 2016). In addition to minimum count data, previously radio-collared mountain goats, distributed throughout mountain goat habitats, would serve as a marked segment of the population during surveys. The presence of these marked individuals in a variety of available habitats facilitates the development of model-based abundance estimates following (White et al. 2016). Use of these methods offers improved accuracy in mountain goat abundance estimates and a robust and effective method for the continued monitoring of mountain goat population status and trends.

Partnerships and Roles

Conducting surveys at such large scales requires collaborative survey efforts and cost-sharing. In response to regional needs for improved data regarding mountain goat and Dall sheep population abundance and trends, an interagency working group including the USFWS, ADF&G, NPS, and USFS has proposed leveraging funds, aircraft, and survey efforts in order to complete the first comprehensive survey of mountain goats and Dall sheep in the Kenai Mountains in several decades. Staff at the Kenai National Wildlife Refuge (KNWR) would serve as the lead for the development of model-based sightability survey estimates using radio-collared mountain goats and would assist with conducting minimum-count and line transect surveys. ADF&G staffs would be responsible for coordinating and implementing minimum-count surveys. NPS staffs would be responsible for coordinating and implementing line-transect surveys. All surveys would be conducted in close coordination among all partners and staffs.

Products and Schedule

Line-transect surveys will be conducted by NPS and USFWS staffs during July 2017. Minimum-count/sightability surveys would be conducted by USFWS, ADF&G, and NPS staffs during August–September 2017–2018. Additional flights to collect mountain goat sightability data for model-based estimates would also be conducted by USFWS and ADF&G staff during August–September 2017–2018. Model-based sightability estimates (based on data collected during fall 2017–2018) would be finalized during winter 2017–2018.

Budget Table

Item	FWS I&M Funds	Other funds (state source)
Personnel (hours x \$56 per person)	\$10,673.60 (estimated 95.3 hours, 2 staff)	\$2520 (ADF&G, estimated 45 hours) \$33,734.40 (NPS, estimated 150.6 hours, 4 staff)
CC-18 (\$125/hour)	\$11,912.50 (estimated 95.3 hours)	\$18,825 (NPS, estimated 150.6 hours) \$5625 (ADF&G, 45 hours)
Fuel (40 hours, 10 gal/hour @ \$4.00/gal)	\$3812 (estimated 953 gallons)	\$9000 (USFS) \$6024 (NPS)
Aircraft availability (1 month)	\$2620	\$2620 (NPS)
Total	\$29,018.0	\$75,990.40

Literature Cited

- Herreman, J. 2013. Units 7 and 15 Dall sheep management report. Alaska Department of Fish and Game.
- _____. 2014. Units 7 and 15 mountain goat management report Alaska Department of Fish and Game.
- McDonough, T. J., and J. S. Selinger. Mountain Goat Management on the Kenai Peninsula, Alaska: a New Direction, Pages 50-67 in Conference Mountain Goat Management on the Kenai Peninsula, Alaska: a New Direction.
- 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.



Station Project Leader Approval

