

Wildlife Restoration MULTI-YEAR GRANT 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-B-R3-2020

PROJECT NUMBER: 3.0

PROJECT TITLE: Alaska's Region III Caribou S&I program: Caribou Populations and Factors Influencing Their Status in Interior and Northeast Alaska

PERIOD OF PERFORMANCE: July 1, 2019 - June 30, 2021

PERFORMANCE YEAR: July 1, 2019 - June 30, 2020; year 1 of a 2-year grant

REPORT DUE DATE: Submit to FAC August 28, 2020

PRINCIPAL INVESTIGATOR: Doreen Parker McNeill

COOPERATORS: N/A

Authorities: 2 CFR 200.328
2 CFR 200.301
50 CFR 80.90

I. PROGRESS ON PROJECT OBJECTIVES DURING PERFORMANCE YEAR

This caribou survey and inventory project was conducted throughout Region III. Wildlife management is divided into 6 area offices within the region that reflect wildlife distribution and cultural differences. The 6 area offices manage the following caribou herds:

1. Chisana Caribou Herd (Unit 12)
2. Macomb Caribou Herd (Portions of Units 12 and 20D):
3. Delta Caribou Herd (Unit 20A)
4. White Mountains Caribou Herd (Units 20B, 20F and 25C)
5. Beaver Mountains, Big River-Farewell, Rainy Pass, Sunshine Mountain and Tonzona Caribou Herds (Units 19A, 19B, 19C, 19D, 21A and 21E):
6. Fortymile Caribou Herd (Units 20B, 20C, 20D, 20E, 25C)
7. Galena Mountain, Ray Mountains, Hodzana Hills, and Wolf Mountain Caribou Herds: (Units 20F, 21B, 21C, 21D, 24A, 24B, and 25D)
8. Porcupine Caribou Herd (Units 25A, 24B, 25D, and 26C)
9. Central Arctic Caribou Herd (Units 26B and 26C)

OBJECTIVE 1: Conduct 3 investigations by 06-30-2021.

Project statement objectives:

Objective 1: Population Size, Status, and Trend. Assess the size and status of each population to determine the 5-year trend.

1.1 Conduct aerial photocensus population surveys of 1-9 herds

Accomplishments:

- During 5–8 July 2019, we monitored movements and aggregations of the Fortymile Caribou Herd for sufficient aggregations for a photocensus, but sufficient aggregations did not form to warrant a photocensus, during 29.8 hours of fixed-wing flight time.
- In addition, GPS collars of the Fortymile Caribou Herd were monitored daily via satellite data downloads during the typical insect harassment periods (July 1–15, 2019 and June 10–30, 2020) to assess herd aggregations for photocensus surveys, but sufficient aggregations did not form to warrant a photocensus during these periods.
- During 7, 9, and 13 July 2020 we conducted a photocensus of the Central Arctic Caribou Herd during 55 hours of fixed-wind flight time and counted approximately 28,000 caribou.
- GPS collars were monitored daily during the typical insect harassment period (July 1–15 and June 10–30) for sufficient aggregations for a photocensus, but sufficient aggregations did not form to warrant a photocensus or pre-photocensus survey flights for the Porcupine Caribou Herd.

1.2 Process digital photos, enumerate caribou, and estimate caribou numbers for 1-9 herds

Accomplishments:

- We readied a single-camera system during 70 hours of staff time.
- During about 150 hours of staff time we processed digital photos of caribou so caribou could be counted from the photos.
- We continued our work with automated counting using commercial off-the-shelf software.
- We have no major equipment issues to report.

1.3 Conduct aerial minimum population survey of 1-6 small herds

Accomplishments:

- We conducted an aerial minimum population survey and composition count of 802 Macomb herd caribou on 17 October using 6 hours of helicopter flight time and 5 hours of fixed-wing flight time.
- We conducted an aerial minimum population survey and composition count of 1,079 Delta herd caribou in October using 3.4 hours of helicopter flight time and 2.9 hours of fixed-wing flight time.
- We conducted an aerial minimum population survey of the Wolf Mountain, Ray Mountains and Hodzana Hills herds on 17–18 June by locating 58 radiocollared caribou and conducting pre-survey flights to assess aggregation from fixed wing aircraft during 12.7 hours of fixed-wing flight time. We used hand-held digital photography to capture caribou and enumerated caribou from photos.
- We conducted an aerial minimum population survey during 2 May 2020 to assess population status, monitor herd distribution, and determine sex and age composition of the Hodzana Hills and Ray Mountains herds during 3.8 hours of fixed-wing flight time.
- We conducted aerial surveys during 6 July 2019 to assess population status, monitor herd distribution of the Beaver–Sunshine Mountain herd during 5.25 hours of fixed-wing flight time.
- We conducted an aerial composition count of 3,855 Central Arctic Caribou Herd caribou during 14–15 October using 14 hours of helicopter flight time and 12 hours of fixed-wing flight time.
- We conducted an aerial minimum population survey and composition count of 227 Chisana herd caribou in Alaska on 9 October using 4.5 hours of helicopter flight time.

1.4 Analyze mixing of 1–3 herds

- We tracked 130 radiocollared caribou during FY2020 to determine when the Central Arctic Caribou Herd mixed with other herds and used GPS telemetry data to analyze radiocollared caribou locations in order to understand whether herd mixing plays a role in population trajectory of adjacent herds using methods described in co-authored papers published in FY2021.
- We began a herd integration database to manage radio collar data.
- Used GPS telemetry data to analyze radiocollared caribou locations in order to determine whether herd mixing plays a role in population trajectory of the Central Arctic Caribou Herd and adjacent herds, resulting in 2 publications, listed below
- We monitored GPS collars via satellite during the winter Fortymile caribou herd hunting season to determine whether herd mixing occurred to assess potential harvest of other herds during the Fortymile winter hunt.

1.4 Conduct parturition surveys

- Galena
- We conducted parturition and post-calving surveys of the Central Arctic Caribou Herd during 26 August 2019 and 1–3, 20–21, 27–28 June 2020 and assessed 143 caribou in 48.5 hours of fixed-wing flight time.

- We conducted parturition and post-calving surveys of the Porcupine Caribou Herd during 5/31/20-6/8/20, 6/20/20-6/26/20 and assessed 97 caribou in 98.1 hours of fixed-wing flight time.
- We conducted parturition surveys of the Fortymile caribou herd during May 14–29, 2020, and to determine parturition rates of 97 caribou during 145.4 hours of fixed-wing flight time.

1.5 Radiocollar caribou

- During October, we captured and radiocollared 6 Macomb Herd caribou with VHF collars during 5 hours of fixed-wing and 4 hours of helicopter flight time.
- We purchased 10 VHF radio collars for the Delta Herd, but no collars were deployed due to COVID-19 restrictions and attendance at the Board of Game meeting.
- We captured caribou and deployed 31 GPS collars and 3 VHF radio collars on caribou from the Galena Mountain, Ray Mountains, Hodzana Hills, and Wolf Mountain herds during 25 hours of fixed-wing and 25 hours of helicopter flight time.
- We purchased 20 GPS radio collars for the Central Arctic Caribou Herd, but no collars were deployed due to COVID-19 restrictions. We downloaded satellite data for 100 GPS radio collars to determine whether caribou are adequately grouped for a photocensus. We retrieved 34 radio collars from dead caribou during 22 hours of helicopter flight time.
- We purchased and deployed 75 GPS radio collars for the Porcupine Caribou Herd, using 27.1 hours of fixed-wing flight time during 17–18 March 2020. No helicopter time was paid using this grant. We downloaded satellite data for GPS radio collars to determine whether caribou are adequately grouped for a photocensus.
- During 7 and 12–17 October 2019 and 7–9, 14, 22 and 24 April 2020, we deployed 31 GPS collars in the Fortymile Caribou Herd on adults (13 bulls and 18 cows) and 40 VHF collars on short-yearling females. In addition, we captured 5 additional 4 month-old female calves to collect biological information. All short-yearlings captured in October were weighed, and biological data was collected on all caribou. These captures occurred during 90.7 hours of fixed-wing and 58.9 hours of helicopter flight time.

Objective 2: Mortality, Harvest Monitoring and Regulations. Assess the number of caribou harvested by hunters and other sources of mortality that might have an impact on each population.

2.1 Monitor harvest caribou harvest through field observations, hunter harvest reports, and contact with hunters

and

2.2 Analyze harvest data to determine harvest rate and effect on caribou populations.

Accomplishments:

- We monitored caribou harvest during the hunting season through field observations, hunter harvest reports, and contact with hunters. We analyzed 8,828 reports obtained from hunters for caribou hunting seasons varying 2–300 days in length (primarily during fall and winter), including caribou taken in a general hunt applicable throughout most of the region, 3 drawing permit hunts, 5 registration permit hunts, and 1 special permit. Harvest data were analyzed, and the results were applied to management planning and ongoing population assessment, including monitoring hunter reports of 7,445 registration hunt permits in 5 hunts with 2- to 3-day reporting requirements and in-field monitoring for 1 hunt during 2 days of heaviest harvest.
- We received 10 ceremonial harvest authorizations requesting 23 caribou

2.3 Monitor herd location in relation to hunter access locations prior to and during hunting seasons.

Accomplishments:

- During August, we conducted aerial surveys of the Macomb Caribou Herd to assess range-wide distribution prior to and during the hunt and logged 6 hours of fixed-wing flight time, while locating 18 radiocollared caribou.
- We monitored GPS collars via satellite and conducted periodic aerial surveys of the Fortymile Caribou Herd during August–September and March to assess herd distribution and proximity to highways just prior to and during the fall and winter hunts. Logged 8.4 hours of fixed-wing flight time to conduct low level visual flights to determine real-time herd distribution along highways to help with hunt management decisions.

2.4 Assess Natural Mortality:

- We assessed 6 calves in the Macomb Caribou Herd, collected blood and nasal swabs, and sent the samples to Veterinary Services for testing.
- We collected nasal swabs from approximately 12 caribou and blood from 19 caribou from the Galena Mountain, Ray Mountains, Hodzana Hills, and Wolf Mountain Caribou Herds submitted samples for testing.
- We estimated annual mortality of the Central Arctic Caribou Herd by calculating the death rate of 130 radiocollared caribou.
- We estimated adult female, short yearling female, and adult bull survival in the Porcupine Caribou Herd using 113 radiocollared caribou
- We estimated adult female, short yearling female, and adult bull survival in the Fortymile caribou herd using 319 radiocollared caribou.

Objective 3: Habitat Enhancement and Assessment. Assess the nutritional status of the caribou population directly or indirectly where it is feasible.

3.1 Monitor movement caribou to and from seasonal ranges through reconnaissance flights using both very high frequency (vhf) and satellite telemetry.

- We monitored 31 GPS radio collars on Ray Mountains and Hodzana Hills caribou on a weekly or more frequent basis throughout the year to monitor herd distribution to assess seasonal range use.
- As part of the aerial minimum population survey of the Wolf Mountain, Ray Mountains and Hodzana Hills herds on 2 May 2020 and 17–18 June (objective 1.3) we determined distribution of these herds.
- We used GPS collar data to monitor seasonal Fortymile caribou herd movements using 75 radiocollared caribou

3.2 Monitor herd density

- We monitored Porcupine herd density during calving and seasonal migrations throughout the year in conjunction with flights and collar monitoring conducted under objectives 1, 2, and 4.
- We used GPS telemetry data to estimate calving grounds and concentrated calving grounds of the Porcupine Caribou Herd using 42 radiocollared caribou
- We used GPS collar data to herd density Fortymile caribou herd using 75 radiocollared caribou

3.3 Work with land agencies and landowners and developers to minimize the impact of human activities on caribou habitat and to promote a near-natural fire regime.

Accomplishments:

- Co-authored a paper on dynamic selection for forage using GPS radiocollared caribou data. Johnson et. al; submitted to Ecology and Evolution.
- We worked with the Bureau of Land Management, National Park Service, private landowners, Alaska Fire Service, and developers to minimize the impact of human activities on caribou habitat.

3.4 Regulate caribou hunting along the Dalton Highway to reduce conflicts between consumptive and nonconsumptive uses

Accomplishments:

- This objective has been deleted and is not expected to be accomplished. Conflict between consumptive and nonconsumptive users is low and has not been affected by regulation of caribou hunting along the Dalton Highway.

Objective 4: Caribou Management with Public Participation and Outreach. Manage each caribou population with an emphasis on engaging the public through public meetings, working groups, educational materials, and incentive programs.

4.1 Prepare information for 5-year regional caribou management operational plans.

Accomplishments:

- Six area offices compiled information and data, and continued writing 9 five-year Caribou Management Reports and Plans for caribou herds named in section I. These reports include historical and current data, management directions, methods, Board of Game actions, harvests and natural mortality, habitat assessments, and local and statewide non-regulatory issues. 2 reports were completed in FY2020, as listed in Section IV.

The remaining 7 reports are in preparation and are expected to be completed in FY2021 and posted at the following location:

<http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.wildlifepublications&sort=all&species=Caribou&publicationtype=Species+Management+Report+%28and+Plan%29&submit=Search>

4.2 Provide information to state and federal regulatory processes on caribou management.

Accomplishments:

- Six area offices communicated and coordinated with and attended meetings of 15 local Fish and Game Advisory Committees, the Alaska Board of Game, 3 Federal Regional Advisory Councils, the Federal Subsistence Board, Office of Subsistence Management, numerous local village councils and Native corporations, the North Slope Borough wildlife department, and the Wrangell–St. Elias Subsistence Resource Commission about caribou management and to prepare, review and analyze biological information for proposals for the Alaska Board of Game and the Federal Subsistence Board.
- We prepared the caribou portion of Upper Yukon–Tanana Predation Control Area’s Annual Intensive Management Report for the Board of Game to comply with regulatory requirements for Intensive Management programs, as listed in Section IV.
- We worked with 5 Fish and Game Advisory Committee and 1 Federal Advisory Council representatives, and Canadian representatives to complete a final Fortymile Caribou Harvest Management Plan and presented the plan to the Alaska Board of Game and the Federal Subsistence Board.
- We used satellite collar locations to determine caribou distribution during spring military exercises. Based on this information, we provided recommendations for avoidance areas to the military approximately every 3 days during May 15–June 5.

4.3 Complete and mail 1-4 herd-specific newsletters to the public and other interested parties in order to disseminate information about that herd's recent population status, management and research, and regulatory changes

Accomplishments:

- We printed and mailed 1 Central Arctic Caribou Herd newsletter to 1,343 recipients and printed and distributed 1,550 Central Arctic Caribou Herd flyers.

4.4 Develop updated population objectives and recommended regulations in cooperation with the public and other agencies.

ACCOMPLISHMENTS:

- Data and information from activities in objectives 1–4 were used by biologists in 6 area offices to review population and harvest objectives to determine whether each objective remained relevant during the current year and assessed whether harvest was impacting each population.

4.5 Attend meetings with resource management agencies, oil companies, and caribou users with the intent of minimizing conflicts between the herd and major development projects.

- Six area offices worked with the Bureau of Land Management, National Park Service, Fish and Wildlife Service, private landowners, Alaska Fire Service, and developers to regarding caribou in Region III.
- We chaired, organized, prepared, and presented biological information at 1 Porcupine Caribou Technical Committee meeting.
- We prepared and presented biological information at 1 International Porcupine Caribou Board meeting.

II. SUMMARY OF WORK COMPLETED ON PROJECT TO DATE.

Results of objectives 1–4 will be summarized in the report portion of the 5-year caribou management report and plan, listed in the publications section of this report, or scheduled to be published in FY2021.

III. SIGNIFICANT DEVELOPMENT REPORTS AND/OR AMENDMENTS.

One SDR was submitted and approved. It is listed in Section I under as objective 1.4 Analyze mixing of 1–3 herds. Accomplishment are reported in Sections I and IV.

In addition to progress noted in section I, more costs than expected were expended in contractual and supplies due to the following:

1. Contractual: increased hourly rates for fixed-wing and helicopter flight time

2. Supplies: Increased cost of purchasing additional GPS radio collars.

IV. PUBLICATIONS

Annual Report to the Alaska Board of Game on Intensive Management

Caribou portion of the Annual report to the Alaska Board of Game on intensive management for Fortymile caribou with wolf predation control in the upper Yukon–Tanana predation control area of Game Management Units 12, 20B, 20D, 20E, and 25C. Division of Wildlife Conservation, Juneau.

http://www.adfg.alaska.gov/static/research/programs/intensivemanagement/pdfs/2020_uy_tpcp_intensive_management_annual_report.pdf

Caribou Management Reports and Plans:

Barton, J. B., 2020. Caribou management report and plan, Game Management Units 19, 21A, and 21E: Report period 1 July 2012–30 June 2017, and plan period 1 July 2017–30 June 2022. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2020-4, Juneau.

http://www.adfg.alaska.gov/static/research/wildlife/speciesmanagementreports/pdfs/caribou_2012_2022_units_19_21a_21e.pdf

Caikoski, J. R. 2020. Porcupine caribou herd management report and plan, Game Management Unit 25A, 25B, 25D, and 26C: Report period 1 July 2012–30 June 2017, and plan period 1 July 2017–30 June 2022. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2020-22, Juneau.

http://www.adfg.alaska.gov/static/research/wildlife/speciesmanagementreports/pdfs/caribou_2012_2022_porcupine.pdf

Harvest Management Plan

Harvest Management Coalition. 2019. Fortymile caribou herd harvest plan 2019– 2023. Alaska Department of Fish and Game, Fairbanks, Alaska.

https://www.adfg.alaska.gov/static/research/plans/pdfs/fortymile_harvest_plan_2019_2023.pdf

Herd Mixing

Prichard, A.K., L.S. Parrett, **E.A. Lenart, J. Caikoski**, K. Joly, and B.T. Person. Interchange and overlap among four adjacent Arctic caribou herds. *Journal of Wildlife Management* 1-15; 2020; SOI: 10.1002/jwmg.21934.

<https://wildlife.onlinelibrary.wiley.com/doi/full/10.1002/jwmg.21934>

Prichard, A. K., B. E. Lawhead, **E. A. Lenart**, J. H. Welch. Caribou Distribution and Movements in a Northern Alaska Oilfield. *Journal of Wildlife Management* 1-17; 2020; SOI: 10.1002/jwmg.21932. <https://doi.org/10.1002/jwmg.21932>.

No other publications were completed during the report period.

V. RECOMMENDATIONS FOR THIS PROJECT

We recommend continued funding for this project in order to effectively survey, inventory and manage caribou populations in Interior and Northeast Alaska.

Prepared by: Doreen Parker McNeill

Date: October 2020