2023 North American Caribou Workshop & Arctic Ungulate Conference

ANCHORAGE, ALASKA

NACW-AUC 2023 Plenaries

Tuesday, 9 May

What Have We Missed?: A Commentary on the Status and Trends of Migratory Tundra Caribou

Internationally, Rangifer are in trouble with widespread and persistent declines. The problem with the declines is not so much that we don't know what is driving them, but that we struggle to apply our knowledge effectively to alter trends in abundance. Continental migratory tundra herds show an overall 70% decline since the 1990s and current status is 1.5 million individuals. Migratory mountain caribou are mostly declining or stable at reduced numbers. Describing declines has to take into account the role of natural cycles (regular fluctuations) and ask the questions about how factors integrate as additional threats and drive the declines beyond the range of natural (previous) levels? Generalizations are tricky as the underlying geography and ecology of the herds varies and management regimes differ in survey frequency and management response times. Despite all the monitoring and management planning, declines have persisted even to the point of herd collapses (>90% decline) so what are we missing? Some things we missed are obvious - anticipatory planning for cycles and a failure to act in time and to convince others (politicians) to act. We missed investigating what happens at the peak as declines start and how nutrition and parasites/diseases have a role. Instead, we emphasized harvest and predation despite Rangifer being a social herbivore: nutritional ecology, individual traits, social behavior and parasites were given short shrift. Then, as declines continued, threats changed which led to surprises such as emigration and all that against the background of a hotter climate.

Speakers: Don Russell (CircumArctic Rangifer Monitoring and Assessment Network [CARMA]) and Anne Gunn (CARMA)

Don Russell: After graduate degree work at UBC involving field experience at Prudhoe Bay, Alaska, he worked in caribou/forestry issues in central B.C. (1975-1976). Moving north, Don worked for the Yukon Government (1976-1983) as habitat and caribou biologist and researcher for Canadian Wildlife Service in Yukon (1983-2006). Since his graduate work in the early 1970s, he has developed computer modelling tools that help to better understand the nutritional ecology of the species, and better evaluate the combined effects on climate and human disturbance on caribou. He has sat on numerous territorial, national and international co-management boards and in 2004 helped form the CircumArctic Rangifer Monitoring and Assessment (CARMA) Network.

Anne Gunn: After university in the UK and Ireland, Anne came to Canada to work in the Arctic – a dream realized in the 1970s. She eventually settled down with the Government of the NWT (1979-2006) as the regional biologist in the central Arctic and then the Caribou Biologist based in Yellowknife. Her knowledge and experience are from working and traveling on the land with people; watching and counting caribou and muskoxen from the ground and the air. Since 2006, Anne continued with caribou but with CARMA and aboriginal co-management boards and councils including the Wek'èezhìi Renewable Resource Board and Kivalliq Inuit Association.

Ecology, Migration and Population Dynamics of Arctic Ungulates in the Context of Climate Change

Arctic ungulates are central to the ecology of Arctic ecosystems and the culture of northern human communities. As human development and climate change intensify in the arctic, concerns are raised about the future of arctic ungulates. Human disturbances and climate change have been suggested as potential causes for the decline of several caribou and reindeer populations across the arctic circle. Our research program Caribou Ungava aims to identify and quantify the factors determining population dynamics and space use of migratory caribou in the context of climate change and anthropogenic disturbance. We study the demography, genetics, space use and life-history strategies of migratory caribou and muskoxen, as well as interactions with their predators, mainly wolves and an expanding population of black bears. We have monitored >1000 individuals of two migratory caribou herds for nearly four decades in northern Québec and Labrador, the Rivière-aux-Feuilles herd (RFH) and the Rivière-George herd (RGH). We found that caribou avoided human disturbances, either by using seasonal areas that excluded disturbances, or by reducing their use up to 23 km from disturbances. Avoidance of disturbances translated into cumulative habitat loss reaching as much as 30% of seasonal ranges. The main determinant of wintering area selection was population size, suggesting intra- and inter-herd competition for wintering areas. Migrations tended to occur earlier with a warming climate. Spring arrival on calving grounds was delayed when caribou encountered mild temperatures and abundant precipitation during their migration,

as early snowmelt may increase cost of movements. We are continuing our research on the demography, connectivity among populations, habitat modifications with climate change and life-history strategies of arctic ungulates.

Speaker: Steeve Côté (Caribou Ungava and Centre for Northern Studies, Laval University, Québec, Canada)

Steeve Côté holds a PhD from Sherbrooke University (Canada) and has conducted post-doctoral research in France, Antarctica, Scotland and Norway. Since 2001, he has been a professor at the Department of Biology of Laval University in Quebec City, senior scientist at the Centre for Northern Studies, director of Caribou Ungava and holder of an NSERC industrial Chair. His research focuses on the ecology and behavior of large mammals, mainly migratory caribou in northern Quebec, long-term studies on life-history strategies of mountain goats in Alberta, white-tailed deer forest relationships on Anticosti Island, and more recently eastern moose-winter tick interactions. An important goal of his work is to produce knowledge useful for the management and conservation of populations of large mammals inhabiting boreal and arctic ecosystems.

Wednesday, 10 May

Bridging Indigenous and Western Ways of Knowing in Ungulate Management, Policy, and Research

Many agree that bridging Indigenous and Western ways of knowing ungulates is important, but it can be challenging to know how to build meaningful relationships and partnerships that blend different knowledge streams and approaches. This plenary will feature a group of experts who have worked to creatively bridge Indigenous and Western knowledge in support of ungulate management, policy, and research. In fish bowl and panel formats, speakers from a variety of backgrounds will share stories and lessons learned in pursuit of meaningful partnerships, and answer questions about their respective endeavors and approaches. We hope this encourages others to pursue open communication and collaboration across boundaries within their own work.

Speakers: Discussion with several invited speakers TBA

Thursday, 11 May

Collaborative Caribou Management in Alaska and Canada: Challenges and Opportunities

This plenary will consist of a panel focusing on collaborative management, co-stewardship, and Indigenous arrangements for taking care of caribou herds across Alaska and Canada. Discussion will examine challenges to conservation and subsistence and invite co-management "success stories." How are Indigenous organizations, biologists, and managers working to overcome challenges to conservation, continuation of subsistence use, and inclusion of people who rely on caribou through collaborative or indigenized arrangements? This panel will also consider harvest regulations and how they might better align with Indigenous paradigms and contribute to flexible management practices that are responsive to the increasing unpredictability of caribou populations due to climate change.

Speakers: Panel discussion with several invited speakers TBA