



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 a 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'èezhii 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:

- Shelley Calliou (Kelly Lake Cree Nation)
- Jim Dau (ADF&G, retired)
- Amanda Dumond (Kugluktuk Angoniatit Association)
- Andrea Hanke (University of Calgary)
- Scott McNay (Wildlife Informatics)
- Jean Polfus (Canadian Wildlife Service)
- Elmer Seetot, Jr. (Western Arctic Caribou Herd Working Group)
- Chief Roland Willson (West Moberly First Nations)

Shelley Calliou: Shelley is a Cultural advisor, and Nehiyaw iskwew — a Cree woman — from Kelly Lake Cree Nation (KLCN). She was raised in Kelly Lake and currently resides in her community. She is a mother of three and an Aunty to many. Wahkotowin is a strong Cree value of being aware of our relatives and how we are relative to the land. Shelley was raised in a horse culture and grew up learning inherent land teachings.

Shelley is a researcher for KLCN and has spent the last six years researching the Nation's footprint. She feels most at home when on the land. Shelley works with the Nation to develop and plan cultural camps, fueling her passion for Elder Knowledge. She currently sits as KLCN's representative on the Jasper Indigenous Forum, as well as the Indigenous Advisory Committee for the South Peace Archives. Shelley is actively involved in many Indigenous platforms, working and collaborating with other First Nations on Truth and Reconciliation. She currently works for her Nation assisting as a Cultural Advisor and in the Lands Department. She recently completed an Environmental Certificate with UNBC.

Shelley takes great pride in giving a voice to those who have not been heard for 120 years. Her people were displaced from Jasper National Park in 1907 and Flyingshot Lake near Grande Prairie, Alberta in 1911. Many of the ancestors are still buried in these places. As a result of the displacement, the As'in'ī'wa'chī Nī'yaw people were not signatories to Treaty 6 or Treaty 8. Today most of the community's members are considered "Non Status Indians," excluding them from many of the benefits and protections afforded to Treaty members. KLCN has been fighting for recognition in a land grievance against Canada since 1996. Kelly Lake is located in the northeast British Columbia (BC) near the BC-Alberta border. KLCN represents more than 800 citizens whose territory includes extensive areas in present day northeastern BC and west-central Alberta.



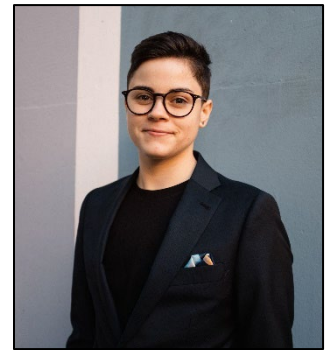
Jim Dau: Jim Dau (b. 1952, northern Michigan) spent 4 years (1972-1976) in the Navy Seabees as a heavy equipment operator and explosives handler. After his discharge, he earned a bachelor's degree in wildlife management from the University of Alaska Fairbanks in 1982. He worked for the Alaska Department of Fish and Game on the Susitna Hydroelectric moose, wolf and wolverine projects during 1981-1982. During 1982-1985, he returned to UAF to earn a master's degree in wildlife management studying Central Arctic Herd caribou movements and distribution in relation to weather, insect harassment and oilfield infrastructure in the Kuparuk Oil Field. In 1986-1988, he held a research associate position with the UAF Reindeer Research Project and moved to Nome, Alaska. In 1988, he accepted a wildlife biologist position with the Alaska Dept. of Fish and Game and moved to Kotzebue. He was initially an area wildlife management biologist for Unit 23 (Kotzebue Sound) and later became the Departments' lead research and management biologist for the Western Arctic Caribou Herd. In 1992, he became a state-certified pilot for ADF&G and, for the rest of his career, assisted with surveys for all species of wildlife in northwest Alaska. Dau retired from ADF&G in 2016. He continues to live in Kotzebue and is an amateur wildlife and bird photographer.



Amanda Dumond: Amanda is an Inuk who lives and works in Kugluktuk, Nunavut. She is a hunter, mother and daughter and has been raised on the land. She is the current manager at the hunters and trappers organization.



Andrea Hanke: Andrea (they/them) is a PhD candidate in the Faculty of Veterinary Medicine at the University of Calgary, Canada. They are a queer and non-binary researcher who works with Inuit harvesters to document Indigenous knowledge of caribou, including trends in their abundance, distribution, and health. In 2017, Andrea began working in Kugluktuk, Nunavut alongside Amanda Dumond. They have been also working with harvesters in Ekaluktutiak, Nunavut, and Ulukhaktok, Northwest Territories.



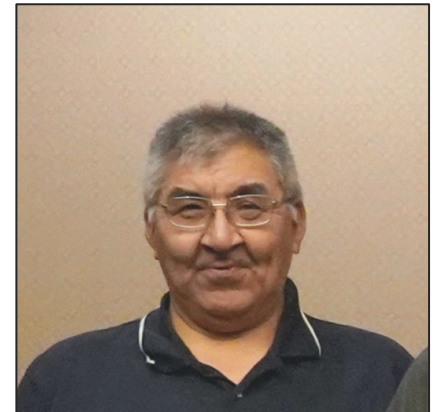
Scott McNay: Scott is the Senior Wildlife and Forest Ecologist at Wildlife Infometrics Inc. in Mackenzie, British Columbia (BC) where he implements and manages wildlife research and inventory projects for the firm. Scott is a registered professional biologist in both Alberta (AB) and BC, a registered professional forester in BC, and holds a PhD in forest wildlife ecology. Throughout his 30+ year career, Scott has championed the use of habitat supply modeling and adaptive management as basic tools to resolve difficult problems in the integrated management of wildlife resources. During the past 23 years, Scott's interest has focused on the challenge of recovering threatened populations of woodland caribou leading to his participation in many provincial-level recovery programs, his work with many caribou herds across northern BC and one in AB, and his role as manager of the caribou recovery program undertaken by the Nikanese Wah tzee Stewardship Society in the Central Group of Southern Mountain Caribou in BC. (photo credit: Jayce Hawkins/The Narwal)



Jean Polfus: Jean Polfus is a conservation biologist who is interested in interdisciplinary approaches to conservation that respect the lives and experiences of people that depend on natural resources for their livelihood. She received her B.A. from Dartmouth College, M.S. from the University of Montana, Ph.D. from the University of Manitoba and was a Liber Ero Postdoctoral Fellow. Currently, Jean is a Senior Species at Risk Biologist with the Canadian Wildlife Service of Environment Climate Change Canada, in Kelowna, BC. Her work has focused on building collaborative research projects with Indigenous partners to better understand relationships among caribou populations and people in order to inform and prioritize management efforts. She is interested in helping to find creative ways to decolonize the language we use to describe caribou by collaborating with Indigenous communities and focusing on Indigenous languages and descriptions of caribou biodiversity from an Indigenous perspective. Jean has an expertise in art (drawing, illustration, painting, photography and design) which complements and enhances her professional interests through science communication and outreach tools. In her free time Jean enjoys skjoring, taking photos, and spending time outdoors with her family, including her three young children and dog.



Elmer Seetot, Jr. : Elmer is from Brevig Mission, Alaska. He has been part of the Western Arctic Caribou Herd Working Group since its establishment, helping to support management of the herd and its use. He also joined the Seward Peninsula Regional Advisory Council in 1995.



Roland Willson: Roland Willson was first elected as Chief of the West Moberly First Nations in August 2000, and has continued to serve in that position for the past 23 years. Chief Willson sits on several boards and councils, including the BC First Nations Energy and Mining Council, the BC First Nations Gaming Committee, the Pacific Trails Pipeline First Nations Limited Partnership and the Northeast Aboriginal Business and Wellness Centre. In recent years, he has made numerous presentations at various forums and seminars concerning issues important to First Nations, including the duty to consult, aboriginal land and resource management, and the impacts of the oil and gas and shale gas industries on First Nations in northeastern BC. In the past five years,



the Chief has presented at forums and seminars held by the Canadian Institute, Insight Information, the University of Waterloo, the Munk School of Global Affairs at the University of Toronto, the BC Land Summit, the University of Alberta Faculty of Native Studies, the Alberta Society of Professional Biologists, the federal Department of Justice (Ottawa), the Planning Institute of BC, and the University of British Columbia's Natural Resources and Environmental Studies Colloquium. He has also appeared twice before the Standing Senate Committee on Aboriginal Peoples, once with respect to the federal Specific Claims policy and once on the topic of aboriginal economic development. Chief Willson is an active enthusiast of Land and Treaty preservation and has been an outspoken advocate for the recovery of caribou populations. (photo credit: Ryan Dickie/The Narwhal)

Thursday, 11 May

Caribou Crossing: Collaborative Caribou Stewardship in a Changing Arctic

This plenary panel will focus 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 and local 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 local and indigenous paradigms and contribute to flexible management practices that are responsive to the increasing unpredictability of caribou populations due to climate change.

Speakers:

- Henry Huntington (Moderator)
- Naungaq Cyrus Harris (Western Arctic Caribou Herd Working Group)
- Vern Cleveland, Sr. (Western Arctic Caribou Herd Working Group)
- Karen Linnell (Ahtna Intertribal Resource Commission)
- Earl Evans (Beverly and Qaminirjuag Caribou Management Board)
- Deana Lemke (Porcupine Caribou Management Board)
- Joe Tetlich (Porcupine Caribou Management Board)
- Jody Pellissey (Wek'èezhì Renewable Resources Board)
- Dan Dunaway (Bristol Bay Regional Advisory Council)

Naungaq Cyrus Harris, Iñupiaq, Sisualik, Alaska:

Cyrus Harris was raised at Sisualik by his parents and grandparents. He grew up following them around hunting, fishing and living off the land and continues to live at Sisualik (located on a spit of land 12 miles across the bay from Kotzebue) as much as possible, living a subsistence lifestyle. His passion is for raising and training sled dogs. He is the Natural Resource Advocate for Maniilaq Association which allows him to participate in many different forums like the Western Arctic Caribou Working Group (currently vice-chair) and the Alaska Migratory Bird Co-management Council representing the people of northwest Alaska. He manages the Hunter Support program which funds people in the region to hunt for the Elders and he maintains the traditional foods program facility (the Sigluuq) which provides traditional foods to the Elders residing at Kotzebue's Long-Term Care facility. Currently, Cyrus serves on the Ice Seal Committee, the Alaska Beluga Whale Committee, and the Alaska Nannut Co-Management Council as the Native Village of Kotzebue representative. He has served on the Native Village of Kotzebue Tribal Council for the last 9 years.

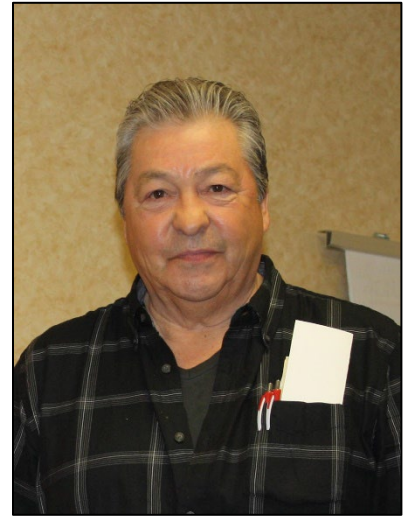


Vern Cleveland, Sr. (Western Arctic Caribou Herd Working Group)

Karen Linnell: Karen Linnell is the Executive Director for the Ahtna Intertribal Resource Commission (AITRC). Ms. Linnell has been involved with AITRC since its inception and has served as chair from 2011-2015 and brings more than 18 years of experience in project management and cost control. Having worked in Ahtna's land department and served as Land Committee Chair, Ms. Linnell has been actively participating in resource management and protecting customary and traditional hunting and fishing rights for many years. Ms. Linnell was appointed by the Secretary of Interior to the Wrangell-St. Elias Subsistence Resource Commission and has served from 2011-2017. She has served as an officer to the Copper Basin Fish and Game Advisory Committee from 2008-2016 and 2021-Present. Ms. Linnell has served on Alaska Governor Bill Walker's Transition Team as the Chair of the Wildlife Committee and has served Alaska Board of Game 2016-2019 and the Governor's Tribal Advisory Committee Natural Resources subcommittee 2017-2018. Ms. Linnell currently serves as Co-Chair to the Western Region-Tribal Conservation Advisory Committee and as an Alaskan Representative to the Tribal Interior Budget Committee.



Earl Evans: Earl Evans has lived and worked in the Fort Smith, Northwest Territories area his entire life. He has an extensive background in hunting and trapping and is working hard to keep alive many of the traditional ways by passing on knowledge to the young people of his region and beyond. He has represented the communities in the South Slave region (Northwest Territory Metis Nation, Fort Smith) on the Beverly and Qamanirjuaq Caribou Management Board (BQCMB) since 2003, and has served as the Chair of the BQCMB since 2012.



Joe Tetlich: Joe Tetlich has served as the Chair of the Porcupine Caribou Management Board (PCMB) since his appointment in 1995. He was born at his family's traditional camp on the Peel River 75 kilometers upstream from Fort McPherson, Northwest Territories. After 12 years in residential school, Joe decided to spend some time out on the land to reconnect with his parents, living a traditional subsistence way of life. Twenty years later, he decided to move back into the community. He served as Chair of the Tetlit Gwich'in Renewable Resource Council and Chief of the Tetlit Gwich'in First Nation in the Northwest Territories. Joe moved to Old Crow, Yukon, in 1995 and lived there with his wife and two sons until 2008. He presently lives in Whitehorse, Yukon but shares his time between Old Crow and Fort McPherson as well. As Chair of the PCMB, Joe has traveled extensively to share the PCMB's co-management experience with other groups and organizations that may be struggling with similar challenges and situations. The Board continues to seek ways of complementing the wealth of science-based knowledge with more local and traditional knowledge, with the goal of making balanced, informed decisions and building positive, enduring relationships among governments and community stakeholders. Joe also has served as a member of the International Porcupine Caribou Board since 1995.



Deana Lemke: Deana Lemke has lived in Whitehorse, Yukon since 1979. She has served as the Executive Director of the Porcupine Caribou Management Board since 2003. With a background in administrative and program support and financial management for various First Nation, government, and non-government organizations, she has operated her business (Beyond Words Business Services Inc.) in Yukon since 1993. Deana holds an Adult Instructor Diploma and is a certified boards and committees trainer. She has a keen interest in supporting co-management and developing effective collaborative networks among government and northern communities built on meaningful and respectful stakeholder

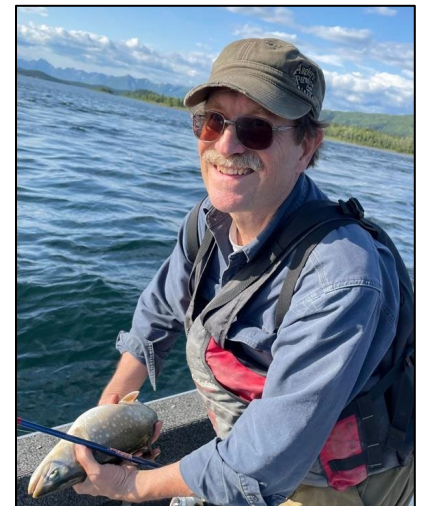


engagement. She has been involved in the development and implementation of several management plans and coordinated various projects focused on integrating science and indigenous knowledge related to the Porcupine Caribou herd.

Jody Pellissey: Jody has worked as the executive director for the Wek'èezhì Renewable Resources Board (2010 to present) and the Sahtu Renewable Resources Board (1999 – 2009). As a part of this co-management work, Jody has helped develop and implement caribou range plans and caribou management plans with the Advisory Committee for the Cooperation of Wildlife Management and the Bathurst Caribou Advisory Group.



Dan Dunaway: Dan was born and raised in Anchorage Alaska. He obtained a Bachelor's Fisheries Science from UAF in 1977. Dan worked for ADFG seasonally on fishery field projects in Bristol Bay, Cook Inlet and Alaska Peninsula 1973-1979. He first joined ADFG as a full time assistant crab biologist in 1980 working in Unalaska and Sand Point. Since 1990 he has lived in Dillingham where he was the assistant Sport Fishery Biologist then from 1998 as Area Biologist until retirement in 2002. He has maintained his keen interest in fish and wildlife issues and currently serves as secretary on the Nushagak ADFG Advisory Committee over 15 years and on the Bristol Bay Federal Subsistence Advisory Council about 15 years. During his tenure on these advisory groups, Dan has helped develop moose and caribou regulations and management plans. Dan is married and has 2 adult sons, one in pilot training and the other fishes commercially. Dan grew up fishing and hunting and remains an avid subsistence and sport angler, hunter, sometimes trapper. One of his favorite activities is helping with an annual Fly Fishing and Guide Academy to help local youth learn about the business. He is also a Hunter Education instructor.



Henry Huntington: Henry Huntington lives in Eagle River, Alaska. His research includes documenting Indigenous knowledge of marine mammals, examining Iñupiat and Inuit knowledge and use of sea ice, and assessing the impacts of climate change on Arctic communities. Huntington has been involved in several international research programs and is currently lead author of the Alaska chapter of the Fifth National Climate Assessment. He also works for Ocean Conservancy to promote evidence-based conservation of the Arctic marine environment. Huntington has made long trips in the Arctic by dog team, small boat, and snowmobile.

