



WWF

MAGAZINE

No. 2

2021

WATER
INSECURITY IN
THE ARCTIC

6

WWF'S
OIL AND GAS
POLICY

16

THE CIRCLE

PUBLISHED BY
THE WWF ARCTIC
PROGRAMME

THE ARCTIC UNDER PRESSURE

- **EDITORIAL: LEANNE CLARE** A region under pressure 3
- **IN BRIEF** 4
- **ANTONIA SOHNS** In rural Alaska, things are not as they seem 6
- **INTERVIEW: PAUL OKALIK** Saying no to the Baffinland mine expansion in Canada's Arctic 8
- **JENNIFER BRANDON** Increasing ship traffic means a noisier Arctic Ocean 12
- **RAGNHILD ELISABETH WAAGAARD** WWF oil and gas policy aims to transform where we get our energy 16
- **INTERVIEW: EARL EVANS** The Beverly and Qamanirjuaq caribou herds of Canada: On the road to serious decline 19
- **FEMKE HILDERINK** Strategies to help people and animals coexist 22
- **ARSENII KIRGIZOV-BARSKII and PÉTUR HALLDÓRSSON** Building intergenerational dialogue to solve Arctic challenges 24
- **LEIF SAANDVIG IMMANUELSEN** Drumming up a cultural connection for Greenlandic Inuit 26
- **THE PICTURE** 28

The Circle is published quarterly by the WWF Arctic Programme. Reproduction and quotation with appropriate credit are encouraged. Articles by non-affiliated sources do not necessarily reflect the views or policies of WWF. Send email address changes and subscription inquiries to gap@wwfcanada.org. We reserve the right to edit letters for publication, and assume no responsibility for unsolicited material.

Publisher:
WWF Arctic Programme
8th floor, 275 Slater St., Ottawa,
ON, Canada K1P 5H9

Internet: www.panda.org/arctic

ISSN 2073-980X = The Circle

Date of publication:
June 2021

Editor-in-chief:
Leanne Clare, lclaire@wwfcanada.org

Managing editors:
Sarah MacFadyen, sarah@sarahmacfadyen.com
Patti Ryan, patti@southsidecommunications.ca

Web and social media:
Fanni Barocsi, fbarocsi@wwfcanada.org

Design and production:
Film & Form/Ketill Berger, ketill.berger@filmform.no

COVER: Dalton Highway, Alaska.

Photo: Bob Wick, Bureau of Land Management Alaska, CC, Flickr

ABOVE: Muskoxen on the Dalton Highway, Alaska.

Photo: Craig McCaa (BLM), CC, Flickr.

A region under pressure

WHEN I STARTED working with WWF in fall 2017, one of the first meetings I attended was about the organization's plans for the two years leading up to what it was calling "the Super Year": 2020 was seen as a critical year in the history of our planet, a time when countries around the world would achieve important targets to prevent biodiversity loss and finally articulate their plans to reduce carbon emissions for a healthier planet. As we all know, 2020 will be remembered for a very different reason.

But the factors that created the need for a Super Year in 2020 have not gone away. In fact, it is now even more urgent that countries take swift and concrete actions to stop the loss of diverse life on this planet and the impacts of the climate crisis, particularly in the Arctic.

Just last month, the Arctic Council's Ministerial Declaration warned us that Arctic warming is no longer happening twice as quickly as the rest of the planet: it is happening *three times* as quickly. To understand what pressures this accelerated temperature rise is creating for the people and species who call the Arctic home, we decided to share a range of stories in this issue of *The Circle* that document the sources of some of these pressures—along with their consequences and some possible responses.

Several of the articles explore the pressures of industrial activities on the Arctic, from dramatic increases in underwater noise from ship traffic to how resource extraction and growing infrastructure threaten wildlife and communities. We also explore possible solutions to alleviate those pressures, from transforming our energy sources to educating people to building stronger relationships across generations.

The COVID-19 pandemic has reminded us in a visceral way that people are a part of nature, and that while our interdependence can be our greatest vulnerability, it can also be our greatest strength. Many important climate-related meetings that were planned for 2020 have been rescheduled for this fall. Let's hope that the mounting pressures faced by the Arctic are foremost in the minds of global leaders as they figure out how to rebuild and restore this beautiful planet.

This will be my last issue as editor-in-chief of *The Circle*. I have viewed this magazine as WWF's way of facilitating an

engaging, diverse and informed conversation about the Arctic through storytelling. Overseeing that conversation has been one of the greatest pleasures of my job.

I have loved working with the editorial and production team for *The Circle*. They are smart, creative and dedicated to making this magazine a

great read every time. I want to thank the many contributors who share their stories with us for free because they love the Arctic and want to be part of our ongoing dialogue about how best to conserve it. And of course, I want to thank you, the readers, because without you, there is no way these quarterly conversations could spark real change.

My colleagues at WWF have inspired me every day with their commitment to change the world and make it a better place. They believe it can't be done without ensuring a healthy Arctic. Let's all continue to support this cause—for ourselves, for the Arctic and for the planet. ○

The COVID-19 pandemic has reminded us in a visceral way that people are a part of nature, and that while our interdependence can be our greatest vulnerability, it can also be our greatest strength.



LEANNE CLARE is *The Circle*'s editor-in-chief and senior manager of communication with the WWF Arctic Programme.



Photo: Charles J. Sharp, Wikimedia Commons

THE ICE AGE

Did hyenas once roam the Arctic?

A NEW STUDY suggests hyenas may once have hunted or scavenged for prey in the Arctic. The idea is based on two Ice Age teeth discovered by palaeontologists in Yukon, Canada.

The teeth are thought to belong to an ancient hyena species known as *Chasmaporthetes*. Their fossils had previously been found as far north as Mongolia in Asia and the southern United States, but never in between. The question is: how did they get to North America? The hypothesis is that the hyenas crossed through Beringia, an area that connects Asia to North America (when sea levels are low) in places like Alaska and Yukon. The hyenas' ability to transit this area and survive is a testament to their incredible resilience, according to researchers.

The teeth have been dated to between 1.4 million and 850,000 years old, though the earliest known hyena fossils in America date to about 5 million years ago. They were found a few decades ago, but drew scientists' attention again recently when an expert in hyena palaeontology realized they represented the first evidence of *Chasmaporthetes* crossing Beringia.

Hyenas are commonly assumed to be limited to African savannah ecosystems, but they can survive in a range of habitats and conditions.

CHANGING WEATHER PATTERNS

Arctic lightning strikes on the rise

ACCORDING TO A study published recently in *Geophysical Research Letters*, lightning strikes in the Arctic have become 300 per cent more common in the last 11 years—and another study published in *Nature Climate Change* around the same time predicts the strikes could be twice as common by 2100.

Rising temperatures in the Arctic are creating the right conditions for lightning to strike: when warm, humid air rises and meets cold air in the upper atmosphere, the moisture condenses suddenly while the cold air drops toward the ground.

When these systems mix into a deep convective cloud, the cloud can create lightning.

Lightning strikes are the key cause of wildfires in the Arctic—and burning permafrost releases vast quantities of greenhouse gases. The strikes and subsequent fires amplify the climate crisis, accelerating the cycle.

Last year's Arctic wildfires smashed previous records for carbon dioxide emissions, with most of the increased wildfire activity taking place in Russia's Sakha Republic, where millions of acres of land were destroyed.

COLLABORATING ON POLAR BEAR RESEARCH

Tracking polar bears and seals across Russian and American borders

AMERICAN AND RUSSIA politicians are not known for cooperating—but it seems scientists are a different breed. In a multi-year study, scientists from both countries collaborated on a project to track polar bears and their prey, ice seals. Both animals depend on sea ice, but neither ice nor animals confine themselves to political boundaries, so researchers need access to both American and Russian waters to monitor them accurately.

To survey polar bears and ice seals across the entire Chukchi Sea, US researchers with the National Ocean and Atmospheric Administration and the US Fish and Wildlife Service partnered

with Russian scientists to produce a 2016 aerial survey that observed the species' populations.

The researchers used a combination of infrared technology, photography and visual observations to track the bears' abundance and distribution non-invasively. Their results were published in May 2021 in the scientific journal **PLOS One**. They found high polar bear densities on sea ice in Russian waters south of Wrangell Island in the spring, and concluded that springtime aerial surveys may be the best approach for studying the abundance and distribution of polar bears and their prey over large, remote areas.



ArcNet is a network of priority areas for marine conservation that spans the entire Arctic Ocean and adjacent seas.

PROTECTING MARINE LIFE

WWF launches ArcNet

IN MAY, WWF released a new tool to help marine life in the Arctic stay healthy and resilient despite the ongoing climate crisis: ArcNet, an Arctic Ocean network of priority areas for conservation. It is designed to help governments, scientists, communities and industry work together to protect the region's vulnerable coastal and marine areas.

ArcNet's goal is to help meet international targets to protect and conserve at least 30 per cent of the planet by 2030. The ArcNet map shows a network of all the priority areas governments and communities need to conserve throughout the Arctic Ocean. It proposes a process and provides tools for marine planning and management that include

a database of marine life that shows where more than 800 different features and functions of the Arctic's ecosystem can be found.

"ArcNet is a vision for the Arctic Ocean where its diverse web of life continues to provide food, livelihoods and cultural identity for the Arctic's four million people," says Dr. Martin Sommerkorn, head of conservation

with the WWF Arctic Programme. "It will help governments to ensure a healthy and connected Arctic Ocean where plankton, fish, whales and seabirds all contribute to the well-being of nature and people around the world."

Download the full report: [A Guide to ArcNet: An Arctic Ocean Network of Priority Areas for Conservation.](#)



Water truck, Bethel, Alaska.

Photo: Andrea Pokrzywinski, CC, Flickr

Water (in)security

In rural Alaska, things are not as they seem

Many people have the impression that water is widely available to everyone in the Arctic. They would be surprised to learn that actually, rural Alaskan households often lack sufficient access to the water they require for their daily needs. [ANTONIA SOHNS](#) explains.

ANYWHERE IN THE WORLD, a household's access to water can be affected by many factors. In the Arctic, these factors are likely to include ageing or deteriorated local or regional water infrastructure, decreased funding for new construction, climate change and the price of water.

Despite a number of well-intentioned government- and community-led initiatives, infrastructure challenges have affected Alaska's water systems for more than 45 years. Due to the difficulties involved in building and maintaining

water infrastructure in the north, Alaska ranks fiftieth among the United States for household connections to running water and sewer service. More than 200 rural Alaskan communities have inadequate access to water.

The residents of these communities are primarily Alaska Native people. Due to the lack of in-home water, many households must haul water to their homes from central watering points or their preferred water resources. If a resident does not have a vehicle,

four-wheeler or snowmobile, or cannot afford gasoline, they must depend on family, neighbours and friends to gather enough water for their personal use and consumption.

The range of water service between rural communities—and between rural and urban households—means different communities can pay very different prices for water. The harder it is for people to get their water, the higher the price they pay. In the Highlands subdivision of Anchorage, the metered rate

per 1,000 gallons (about 3,786 litres) of water was US\$4.98 for a household in 2017. In comparison, in Eek, Alaska, home to just under 500 mostly Alaska Native residents, people continue to haul treated water from a community watering point, and they pay US\$50 per 1,000 gallons.

In 2020, the Alaska Department of Environmental Conservation developed an indicator to help determine the affordability of residential rates for water and sewer utilities. The indicator produces a score to determine the level of burden based on water and sewer costs as a percentage of household income as well as on socioeconomic factors that affect affordability. Many remote Alaskan communities have a burden level that is considered high.

VARIATIONS IN WATER ACCESS AND USE

Due to the costliness of water and the challenges involved in accessing it, rural Alaskan homes without piped water were found to use just 5.7 litres of water per person per day on average, far below the World Health Organization standard of 20 litres. In comparison, the average American resident uses 302 to 379 litres per day. Researchers have documented that before in-home water service became available in some Alaskan homes, mean household water use was 3.4 to 5.7 litres per person per day compared to 34.8 to 143.3 litres per person per day afterward.

Alaska has remarkably low water access even compared to other Arctic areas. In Nunavut, Canada, water use in 2014 was reported to be 110 litres per person per day, with a Canadian mandate to provide 90 litres. In the Northwest Territories, the Canadian mandate requires 90 litres of water per person per day if the water is trucked, 225 litres if piped. In Lapland, the Finnish mandate requires 120 litres per person per day. Norway's mandate calls for 200 litres.

Like Alaska, Greenland and the Russian Arctic have comparatively low water access. All of these Arctic commu-

With the impacts of the climate crisis manifesting more than twice as quickly in the Arctic as in the rest of the world, household water insecurity in the area is growing. Climate change can cause lakes and rivers to sink into thawing permafrost or change their courses. It can rupture pipes due to thawing and warping in warmer temperatures.

nities have been especially challenged during the COVID-19 pandemic, as global health professionals recommend increased handwashing and hygiene. Many households cannot easily increase their water use to protect themselves from the deadly virus.

THE CONSEQUENCES OF RESTRICTED ACCESS TO WATER

Recent research into the factors that contribute to water insecurity in Alaskan households has found that policymakers tend to focus more on the causes of water insecurity than on the consequences, even though the consequences can include people being forced to make trade-offs between water, food and energy, or suffering mental health

impacts from the chronic stress of water insecurity.

Another notable consequence that has received more attention is the higher rate of waterborne disease: gastrointestinal infections are caused by poor water quality, and water-washed diseases (such as skin and respiratory infections) are caused by inadequate water quantity. In rural Alaskan communities where fewer than 10 per cent of homes have piped water, infants are hospitalized for pneumonia and respiratory infection at a significantly higher rate.

With the impacts of the climate crisis manifesting more than twice as quickly in the Arctic as in the rest of the world, household water insecurity in the area is growing. Climate change can cause lakes and rivers to sink into thawing permafrost or change their courses. It can rupture pipes due to thawing and warping in warmer temperatures. Communities across the Arctic face new and growing water security challenges because of climate change.

Going forward, all Arctic nations must engage with one another to address water insecurity in their rural communities. By collaborating and sharing their experiences, they may learn from one another and identify best practices for designing more resilient water infrastructure and for creating policies that consider local residents' perspectives and needs. ○



ANTONIA SOHNS is a postdoctoral researcher with the Sustainable Futures Lab in the Department of Natural Resource Sciences at McGill University in Canada.



Photo: Travis, CC, Flickr

The price of water in Alaska varies widely among different locations and is much more expensive in remote areas.

Saying no to the Baffinland mine expansion in Canada's Arctic



The Mary River mountain before the mine opened. This iron ore mountain will be levelled over the next 10 to 20 years by the mine operation.

Located on the northern tip of Canada's Baffin Island, Baffinland's Mary River Mine produces 6 million metric tonnes of iron ore every year. It's already the biggest industrial development project in the Canadian Arctic, but the company wants to more than double its production to 12 million tonnes per year. It also plans to build a dedicated 150 kilometre railway to transport ore to a port in Milne Inlet.

Inuit in the area are concerned about the effects that a railway and increased shipping traffic could have on the region, and a public hearing has been taking place in Iqaluit and Pond Inlet since 2019 to discuss the expansion. [PAUL OKALIK](#), WWF–Canada's lead Arctic specialist, is participating in the hearings. As he told *The Circle*, without strong environmental safeguards, the project will have long-term negative consequences for local wildlife and Inuit communities. ➤



► **What communities and species call the area around the mine home?**

The area that is being mined is home to the northern part of the Tuktu (barren-ground) caribou herd, which has already declined to extremely low numbers. The marine part of the project is home to narwhals in the summer months, which are a food source for the primarily Inuit communities of Pond Inlet and Arctic Bay, north of the mine. South of the mine is the community of Clyde River. These are the three communities that are bearing the brunt of the project.

The mine has already had an impact on the hunters and the animals that depend on the area. I explained during the hearings that there's less fish and less seal, and the narwhals have been displaced. Further inland, at the mine site, iron ore dust is turning the roadsides into red earth where traditionally there was nice soil for animals. Hunters are also not allowed to drink water in the vicinity of the mine.

This would be the first railway in Canada's Arctic. How could it affect the caribou herd, which migrates in the area?

A railroad is a permanent structure, and steel railways will likely scare caribou



Paul Okalik in Kugaaruk.

away from the area. That's a real concern for the Inuit. Right now, there is a 100 kilometre mining road in Baker Lake in the central part of Nunavut that's been in place for a while. Studies have shown that when there's constant

traffic on that road, the migratory patterns of the caribou are affected. But when the road is shut down for a two-week period, the caribou can travel back and forth freely. In the years when there has been no shutdown, the caribou have been unable to migrate to their wintering or summer areas. Considering these impacts, a permanent railway with ongoing traffic and rail cars is a real concern.

What do you think the long-term consequences will be for other wildlife, whether marine or terrestrial?

The Arctic char have already been affected. The community has noticed that fewer fish are being caught in the vicinity of the port. There is already constant ship traffic, with about 150 ship transits a year, and they want to double that. Seals in the area have also been displaced from where they would normally have their pups in the early spring. And as I mentioned earlier, the narwhals have pretty much been displaced and scattered in the summer months. Those things are happening now at six million metric tonnes, and they want to double that? So, God knows what'll happen.

How have the communities managed to voice their concerns?

It has been difficult. These meetings have often included technical sessions along with community days. The technical sessions have been challenging



At the mine site, iron ore dust is turning the roadsides into red earth where traditionally there was nice soil for animals like the caribou. Hunters are also not allowed to drink water in the vicinity of the mine.



Photo: © Spence Bay Hunters and Trappers Association

because the rules were changed midway through, when the board felt time was running out. That really confined our ability to take part. But we have argued that this project will have an ongoing impact on the surrounding communities. Understandably, some of the community members held a very public protest and blockade of the mining road and the mine's airport. Their message was, "Look, slow down. We have concerns with this. We would like to be heard." That blockade was a first up here, and it had broad support from outlying communities. The communities want to be heard.

What steps would you like to see taken to mitigate the impact of this mine?

The communities have a real concern about the shipping activity, because it's daily and constant, and it's having an impact on their environment, particularly the narwhal harvest, which is a big food source for them. They want to find ways to reduce that impact. Instead of trying to increase production, let's find ways to reduce the impact it's having already. So that's one part.

The company has already shipped up

Some of the community members held a very public protest and blockade of the mining road and the mine's airport. Their message was, "Look, slow down. We have concerns with this. We would like to be heard."

the railroad tracks at the mine port site area and an enclosed crusher. Those are up there now even though they're not being utilized because the assumption is that the project will be approved. The current project employs a crusher that's not enclosed, so all the dust is blown onto the land and down the tundra. It's just a matter of time before that area will become like a wasteland as all the vegetation is weighed down by the iron ore dust.

During the hearings, I asked, "Can't you just replace the current crusher with this enclosed crusher to limit your

impact on the environment?" That is something that I would like the environmental board to review and recommend: let's use this structure to limit the dust being produced. That's another area that needs to be looked at during these proceedings.

Where do things stand now with this expansion proposal?

The mining company always tries to pressure the communities by saying that if the expansion is not approved, they'll shut down the mine. Well, so what? The last week of hearings were supposed to proceed in April, but then COVID-19 struck in Iqaluit, where the hearings were taking place. We'll have to find a week for the communities to take part in the hearings and have their issues heard. Once that's been done, then the environmental board will write a report with recommendations and submit it to the federal minister, who will then have to decide whether to accept, reject or vary the project proposal.

I think a "nay" at this point is the only way to proceed so that we can find ways to reduce the impact the project is already having on Pond Inlet and the surrounding communities. ○

Underwater noise

Increasing ship traffic means a noisier Arctic Ocean

It's common knowledge that as the Arctic melts, more ships are able to pass through the Arctic Circle. As [JENNIFER BRANDON](#) writes, these ships—combined with the Arctic basin's unique geographic properties—are increasing noise levels in the area significantly, creating a big problem for Arctic marine mammals who rely on sound to communicate, navigate and hunt. ➤

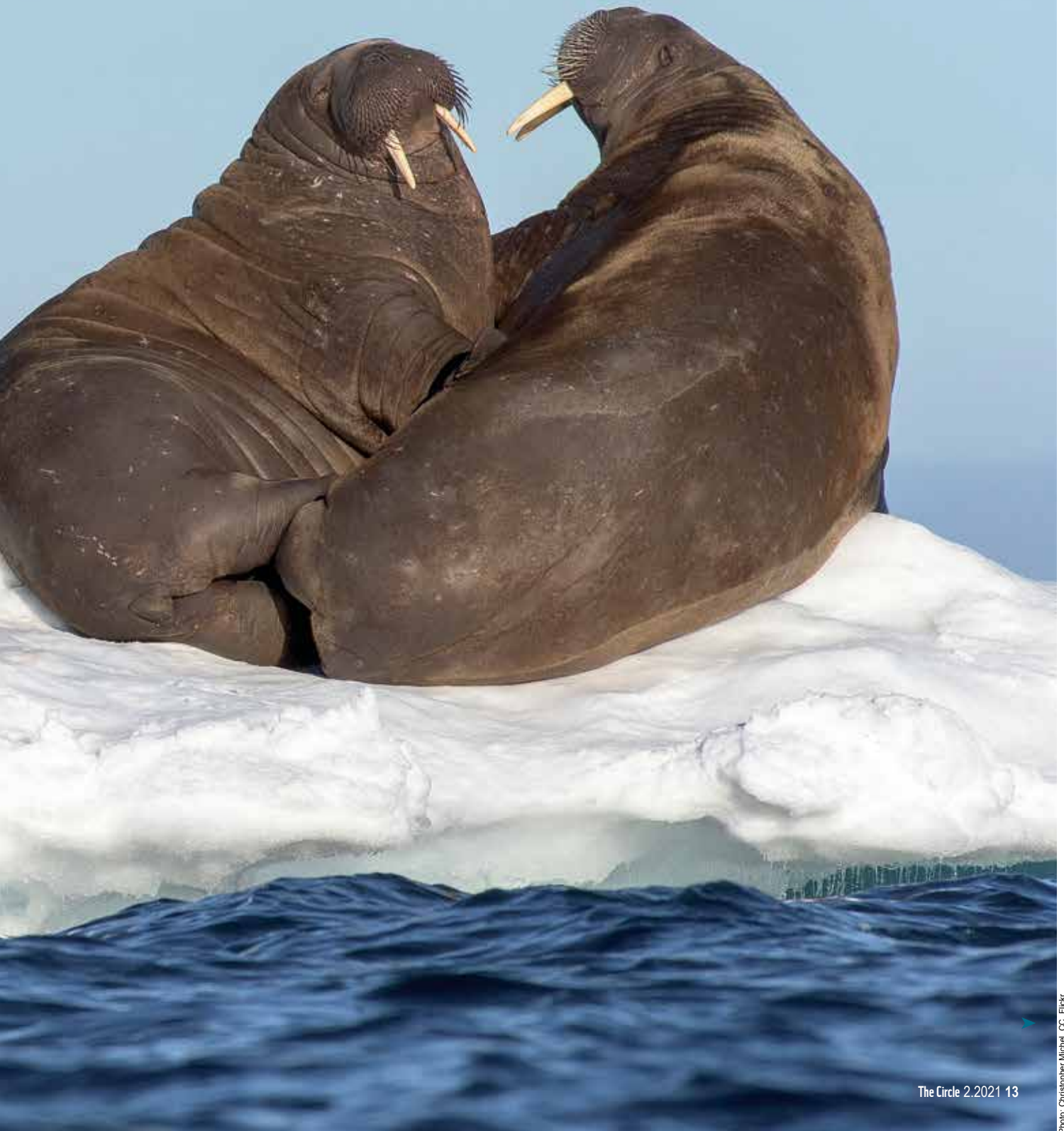




Photo: jomilo75, CC, Flickr

Young spotted seal.

► **CLOSE YOUR EYES** and picture yourself in the middle of a quiet, calm meadow full of flowers. Then imagine you have suddenly been transported to the centre of a thumping, deafening, crowded rock concert. Which one seems like an easier place to have an important conversation with friends, to call out to someone far away, or even to hear yourself think?

It's a rhetorical question, of course.

JENNIFER BRANDON is a senior scientist and director of communications at Applied Ocean Sciences in California in the United States.



But a similarly upsetting change is going on right now in Arctic waters. Thanks to its landscapes of sound-absorbing ice, the Arctic has been one of the world's

least-disturbed ocean environments for centuries, filled only with the natural sounds of marine life. But in the past six years, that serenity has been radically altered by anthropogenic noise—and the marine mammals who live there are struggling to communicate.

A DOUBLING OF NOISE LEVELS

A new report by the Arctic Council, supported by research from Applied Ocean Sciences, DW-ShipConsult and

the WWF Arctic Programme, found that from 2013 to 2019, underwater noise in the Arctic more than doubled, and increased by even more than that in certain areas. The main source of this increase in noise was more shipping traffic.

Arctic marine mammals evolved to live in a dark, quiet, ice-covered Arctic. With little light penetrating the thick ice, they use sound to “see” their world as well as to navigate, hunt and find potential mates. The higher noise levels caused by ships in the area have decreased their communication ranges by half. Researchers have also detected increased levels of stress hormones in the species they have studied.

The Arctic's soundscape is unique

More ships will mean more underwater noise, more emissions and collisions—and big problems for Arctic marine ecosystems and the marine mammals who call them home.

because of its cold surface water temperatures and relatively shallow basin, both of which help sound to travel extremely long distances near the surface, where marine mammals come up to breathe. Because of this, just a few ships can greatly increase noise levels throughout the Arctic Circle. For comparison, in a tropical environment, the noise would quickly dissipate.

Not all Arctic marine mammals use the same acoustic frequency (or speed of vibration of sound), and not all frequencies have increased at the same



The Sarfaq Ittuk passenger ferry can carry 238 passengers. It travels to west and south Greenland from April to January.



Photo: Lars Svankjer, Arctic Umiaq Line, CC, Flickr

problematic rate. But there is a high degree of overlap between the frequency ranges of ships and of Arctic marine mammals. In other words, the Arctic is getting louder at the exact same acoustic frequency that many marine mammals use to communicate.

HOW SCIENCE CAN INFORM POLICY

To inform policies that will have the power to mitigate the effects of increased shipping noise, scientists must first identify the habitats of the

most vulnerable marine mammals where noise has increased significantly. They will then have to measure the specific biological and ecological effects of increased noise pollution on more Arctic marine mammals. They also have to better monitor noise sources in the Arctic and predict how marine mammals will respond as climate change continues to be a sad and worsening reality in the region. Policymakers should use this information to better manage shipping in the region to protect the majestic, vulnerable animals who live there.

Melting ice is one of the most obvious signs of global climate change in the Arctic. As it continues, new shipping routes will open up and existing routes will stay open for longer than ever. More ships will mean more underwater noise, more emissions and collisions—and big problems for Arctic marine ecosystems and the marine mammals who call them home.

We must act quickly to manage the increase in Arctic shipping to protect the soundscape for these important animals—before it is too late. ○

We must move to a system that provides affordable, accessible energy for all without generating greenhouse gas emissions. Unless we can make this transformation profoundly and swiftly, the climate crisis will fundamentally and irreversibly change the conditions for life in the Arctic and on the planet.



Energy

WWF oil and gas policy aims to transform where we get our energy

We are trying to halt climate change because we want to protect the whole planet from devastating ecosystem changes that will fundamentally alter our lives. The solutions that will help us bend the curve on climate emissions seem so easy, yet are difficult to pursue. We have to stop burning fossil fuels and enable nature to store carbon. WWF's oil and gas position aims to make this happen. [RAGNHILD ELISABETH WAAGAARD](#) explains.

HERE IN THE ARCTIC, the effects of the climate crisis have been more visible, profound and rapid than in the rest of the world. We are tired of news stories about record low ice cover, record high temperatures and the unprecedented scale of wildfires. The rapid changes in climate are already affecting our priority species, such as polar bears, caribou, wild reindeer and whales. These impacts will worsen in

the foreseeable future even if we manage to limit global warming to 1.5°C. And the World Meteorological Organization is telling us there is a decent chance we will surpass that limit within the next five years.

In 2019, 93 per cent of the world's CO₂ emissions came from coal, oil and gas. Most of us have seen the steep curve of emissions reductions that will be required if we are to have a chance at not exceeding ➤

- ▶ a 1.5°C rise in the global temperature. Global emissions must peak immediately and begin a swift decline if we are to stay within the remaining carbon budget. This margin offers limited space for emissions from producing and consuming oil and gas.

TRANSFORMING ENERGY PRODUCTION

Easy access to cheap energy has changed the way we live: it has given us lighting, heating, cooling, refrigeration, computers, airline travel and much more. The idea of returning to a time without these benefits seems unthinkable. In fact, it seems only fair that these same energy services should become more available to more people around the world.

But at the same time, accelerating climate change requires us to transform how we meet our energy needs. We

RAGNHILD ELISABETH WAAGAARD

is leading the climate and energy team at WWF—Norway and the oil and gas work in the broader WWF network. Her main task has been to develop an oil and gas policy that will keep the world within the threshold of a 1.5°C temperature rise.



must move to a system that provides affordable, accessible energy for all without generating greenhouse gas emissions. Unless we can make this transformation profoundly and swiftly, the climate crisis will fundamentally and irreversibly

change the conditions for life in the Arctic and on the planet.

WWF is working to stop this from happening with our global policy on oil and gas. Its cornerstones are that exploration for—and production of—new oil and gas should cease, and existing oil and gas production and associated infrastructure must be wound down. Between now and 2050, we need to build an energy system that is 100 per cent based on sustainable renewables.

We are driven in large part by our understanding of the power of the



Residential solar project in Anchorage Alaska by Arctic Solar Ventures Corp.

Photo: Dennis Schroeder, NREL, CC, Flickr

climate crisis to devastate communities, individuals and the economy. Developing countries and vulnerable regions like the Arctic are most affected by the changing climate and least able to cope with its consequences. Being powerless to prevent and respond to the impacts of climate change increases the vulnerability of these communities, leading to the loss of development gains and the deterioration of living conditions. Making our society independent of fossil fuels is key to sparing these regions the most severe negative impacts.

NO TIME TO WASTE

It's not an easy task, but the huge investments required to make this transition also have the potential to bring about great opportunities—from exciting new technologies to new commercial and employment opportunities—as the International Energy Agency showed in its recently launched road map for **Net Zero by 2050**. The world economy will need a massive systems change and restructuring, and we have to make sure that the transition does not destroy our valuable nature.

All energy production, whether it is based on fossil fuels or renewables, comes with some cost to nature as well as to the people who live near energy

production or resource extraction sites. Ensuring that the transition is just—and that it respects the rights of local and Indigenous communities—means designing and applying mutually reinforcing environmental and social policies.

WWF's oil and gas policy provides recommendations on how different countries, regions, businesses, investors and WWF itself can manage the transition away from fossil fuels and make the switch to alternatives. We have to prioritize and invest in zero-emissions solutions and harness the potential of renewable energy while prioritizing the projects that cause the least harm to nature. We strongly urge countries and businesses to make their future decisions based on the physical, economic and legal implications of the associated climate risks.

As a global society and economy, we need to limit our production and use of oil and gas for our climate, our nature and our future—and we need to start now. WWF's oil and gas policy lays the foundation for how we could do this and our future energy work. ○

*Download **The Transition Away From Oil & Gas: A WWF Network Policy Position**.*

The Beverly and Qamanirjuaq caribou herds of Canada: On the road to serious decline

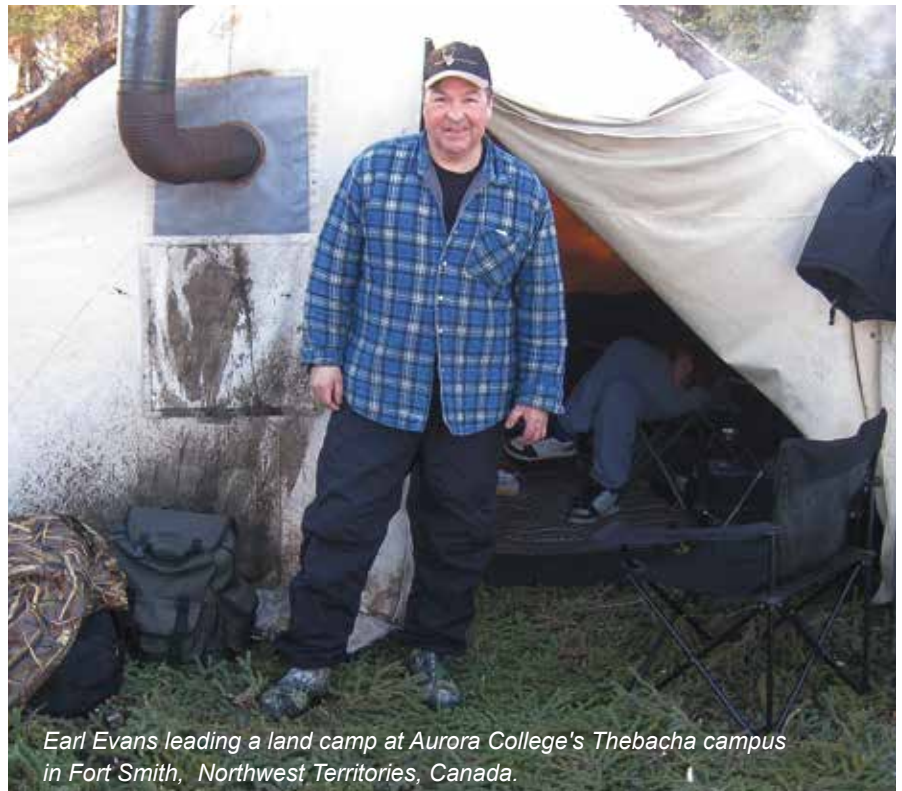
The Beverly and Qamanirjuaq barren-ground caribou herds migrate seasonally in search of food, using habitat in Nunavut, Northwest Territories, northern Saskatchewan and northern Manitoba. Unfortunately, these herds are in slow decline.

The neighbouring Bathurst herd has been declining precipitously and is now under a harvest moratorium—and there are concerns that the Beverly and Qamanirjuaq herds are heading in the same direction. This winter, in an effort to prevent this, the Beverly and Qamanirjuaq Caribou Management Board (BQCMB) sounded the alarm about irresponsible hunting practices (including by non-Indigenous hunters) along the winter road to the diamond mines in the Northwest Territories. **EARL EVANS** is chair of the BQCMB and has lived and worked in the Fort Smith area of the territories his entire life. *The Circle* spoke to him about the role that roads and other factors are playing in the decline of the caribou and what actions the BQCMB is taking to safeguard the Beverly and Qamanirjuaq herds.

What is the current state of the Beverly and Qamanirjuaq caribou herds?

Both have been in a slow decline since 1994. This winter, some of the Beverly caribou were mixed in with the Bathurst herd in a protection area, so they were inadvertently protected. But the ones that came out of that zone were heavily hunted. The Beverly herd is more accessible to hunters than the Qamanirjuaq herd because of the ice road that supplies the diamond mines. Once you drive about five hours out of Yellowknife, you get out of the trees. It's all barren land up there, and the Tibbitt to Contwoyto Winter Road—a 400-kilometre ice road, also known as the TCWR—goes across these barren lands. It's rebuilt every year.

When people see caribou tracks, they follow the animals. They camp along the road in their trucks—some put up tents—and they just wait for the herd to come out of the no-hunting zones. ➤



Earl Evans leading a land camp at Aurora College's Thebača campus in Fort Smith, Northwest Territories, Canada.

Photo: Aurora College



Photo: Green Raven Photography CC, Flickr

A barren-ground caribou in Bathurst Inlet, Nunavut, Canada.

- Sometimes a group of 200 caribou will come out, and they'll kill every last animal. The ice road is a large factor in the number of caribou that are harvested because of the access it creates. If that road wasn't there, I'd say probably 80 per cent of the hunting of these herds would not occur.

When did roads first appear in the area, and how much have they contributed to the decline of caribou?

The first roads were built in the early eighties—the TCWR was constructed to supply the Lupin Gold Mine in Nunavut. The diamond mines took off in the nineties. Today we have the all-weather Ingraham Trail from Yellowknife, and

then the ice road, which runs northeast, with spur roads to the mines.

In the mid-eighties, there were 400,000 to 450,000 animals in the Bathurst herd, and now 98 per cent of them are gone. The TCWR was a major contributing factor to their decline. At the time, there were so many caribou around, and the hunting regulations were pretty lax. There were no limits on caribou harvest by Indigenous People in the Northwest Territories. A non-Indigenous person who had lived there for more than two years was allowed up to five caribou tags. There was so much waste at the time, things just got out of hand. And now there's like 2 per cent of that herd left. We don't want the same thing to happen to the Beverly or Qamanirjuaq herds.

What other threats are these herds facing, besides over-harvesting?

Mining exploration within the Bathurst, Beverly and Qamanirjuaq caribou ranges increased rapidly from the early nineties to the mid-2000s. There was a lot of disturbance from helicopters doing survey work in some areas, especially on the Bathurst summer range. I was speaking to some Inuit who live up there and are really knowledgeable about these caribou, and they say these choppers really disturb the animals'

During migration, the caribou bunch up along the road, not crossing, and the wolves kill them because they have nowhere to go. Bears will kill a lot of caribou, too, when they're really vulnerable like that.

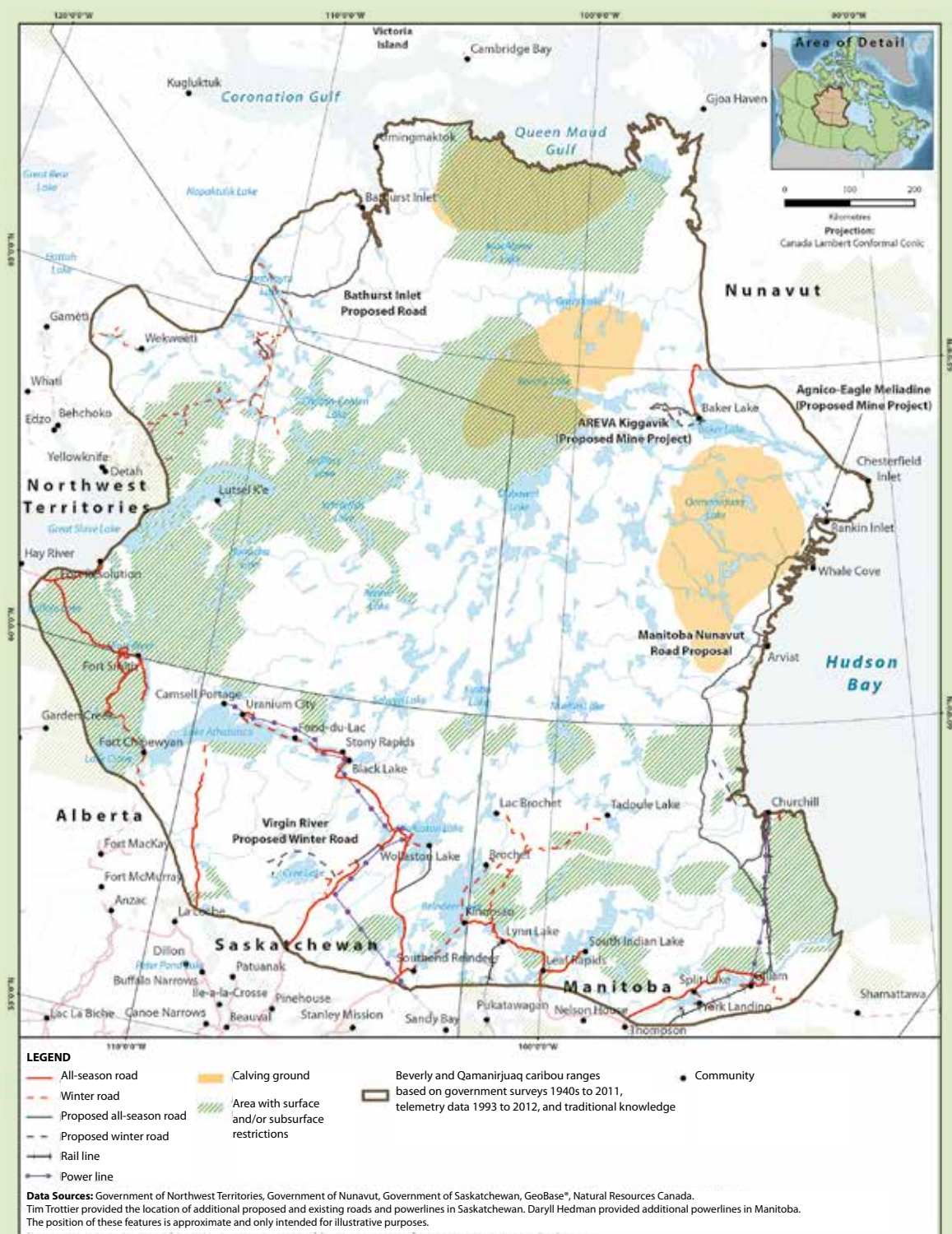
feeding. They'll see a herd feeding and then all of a sudden, a chopper comes and they will stop eating. And 10 or 15 minutes later, another chopper comes, and the caribou are still watching. When that happens, it takes them longer to gain weight at crucial times. In late August, early September, they really feed voraciously to try to put on a lot of fat for the fall. If the females aren't fat enough going into fall, they won't get pregnant and won't have calves the next year, so they miss that cycle, and the herd starts declining.

And then you have predators. We've discovered that a lot of bears and wolves are living right in the calving grounds—and the new roads are helping them. For example, Nunavut just started putting in its fair share of roads. We have the Meadowbank Road—that's 150 kilometres from the community of Baker Lake North to the Agnico Eagle Meadowbank Gold Mine. During migration, the caribou bunch up along the road, not crossing, and the wolves kill them because they have nowhere to go. Bears will kill a lot of caribou, too, when they're really vulnerable like that.

What steps are being taken to manage and protect the Beverly and Qamanirjuaq herds?

We're doing anything and everything we can to mitigate the loss of animals. Education is a huge, huge part of what we do, because the more people know what's happening, the more they can

The ice road is a large factor in the number of caribou that are harvested because of the access it creates. If that road wasn't there, I'd say probably 80 per cent of the hunting of these herds would not occur.



Map: Beverly and Qamanirjuaq Caribou Management Board (BQCM)

The Beverly and Qamanirjuaq barren-ground caribou herds migrate seasonally in Nunavut, Northwest Territories, northern Saskatchewan and northern Manitoba. Roads built to facilitate access to mines make it easier for hunters and natural predators to kill them.

contribute. It is really important to create awareness of what's happening to cut down on waste and get everyone to take only what they need. Some of the local people are trying to limit the amount of animals that are taken on the

road—it's a matter of controlling your people.

We're also trying to protect the calving grounds, a huge issue. We have supported stronger protection for the Beverly calving grounds, and caribou

protection measures where exploration work is done on calving and post-calving areas. We support the federal listing of barren-ground caribou as an at-risk species to give us more ammunition to combat the loss of the herds. ○

Melting sea ice in the Arctic is forcing polar bears to spend more time on shore, where they are more likely to encounter people, sometimes with fatal consequences.





Human-wildlife conflict

Strategies to help people and animals coexist

Around the world, human-wildlife conflict is seriously affecting conservation efforts and livelihoods—and sometimes leading to casualties on both sides. An upcoming WWF report will elevate the issue globally. And as FEMKE HILDERINK explains, it highlights the need to unlock resources and partnerships aimed at enabling long-term coexistence.

FOR THOUSANDS OF YEARS, the Arctic's reliable sea-ice habitat naturally limited interactions between Indigenous Peoples and polar bears. But not anymore. In recent years, the loss of sea ice due to the climate crisis has intensified human activity in the region and forced polar bears to spend more time on shore, where they are in closer proximity with people.

As a result, the bears are becoming more accustomed to village and community food sources. The higher frequency of interactions between people and bears is also forcing community members to alter their habits and take safety precautions. ➤

- In some places, it is leading to deadly consequences on both sides.

Similar conflicts are escalating around the world, affecting wildlife populations and societies on multiple levels. Animals are being killed in defence or retaliation, a situation that can lead to total or regional extinction and negatively affect the ecosystems where they live. People can also suffer from injuries and the loss of livestock, crops or other property, and sometimes lose their lives. For example, in Sri Lanka, 121 people and 405 wild elephants were killed in conflicts in 2019. In Tanzania, interactions between lions and people lead to the deaths of about 60 people and 150 lions every year.

FEMKE HILDERINK is a wildlife conservation advisor with WWF—Netherlands and co-lead of the WWF network-wide working group on human-wildlife conflict.



In addition, wildlife can affect agriculture and livestock production, often resulting in food insecurity and negative economic impacts at various levels.

Human-wildlife conflict can result in diverse societal responses that lead to disagreements among people or groups and have indirect impacts, such as fear and psychological problems.

Unfortunately, our current solutions are clearly no match for the scale of the problem. While it is not realistic to expect that we can completely prevent human-wildlife conflict, a well-planned, integrated approach could reduce conflicts and lead to a form of coexistence. Such an integrated approach requires simultaneous work on prevention, mitigation, response, research, and monitoring, all backed by strong policy support and the participation of local communities.

SCALING UP STRATEGIES AND SOLUTIONS

WWF's upcoming report is a call to action to place human-wildlife conflict

on the global governance, livelihood, development and biodiversity conservation agendas. It is intended to elevate the issue to the highest levels and help the global community address the issue at the scale required to achieve long-term impacts. It is also a call to go beyond focusing on the symptoms and adopt solutions that identify and address the underlying causes of conflict worldwide by involving affected communities as active and equal participants.

We know that achieving some form of coexistence is possible. As many of the case studies in the report demonstrate, successful human-wildlife conflict management can be achieved through the implementation of holistic and integrated approaches, backed by policies that create an enabling environment for coexistence.

Living among wildlife is an inherent part of life for many people in the Arctic, especially those who rely on local animal species for food and cultural traditions. These people understand firsthand the benefits of living with wildlife because their lifestyles depend on it. To improve the safety of both people and wildlife, WWF supports polar bear patrols, whose mission is to protect the residents of coastal villages around the Arctic that are within the polar bears' ranges. Also, trials are underway to build bear-safe food storage facilities and better waste management systems. Research focusing on the drivers and impacts of human-wildlife conflict and possible monitoring systems is ongoing.

Although great initiatives are being implemented, more collective action on a larger scale is needed to enhance the safety of people and bears well into the future. ○

WWF's report, A Future for All: The Need for Human-Wildlife Coexistence, will be available at panda.org later this year.

Youth and the Arctic Council Building intergenerational

Having recently celebrated 25 years of existence, the Arctic Council continues to evolve. It is now chaired by Russia after Iceland passed along the chairship in May 2021. The organization's focus on youth engagement has been growing and is a major priority of the Russian chairship. ARSENI KIRGIZOV-BARSKII and PÉTUR HALLDÓRSSON share their perspectives on how the Arctic Council and youth can work together during the Russian chairship to solve Arctic challenges.

THE ARCTIC FACES complex and nuanced challenges that have been created by a combination of climate change, loss of biodiversity and colonialism. These forces have negatively affected its rich diversity of cultures, languages and knowledge systems, in turn impairing the resilience of its communities and their ability to manage the region sustainably. Recovering from this situation will require an unprecedented level of international, interregional and cross-cultural cooperation.

We believe cooperation between the Arctic Council and youth is one of the key elements needed to bridge gaps in collaboration. We are encouraged to see that the Council has recognized this by implementing the Conservation of Arc-

Generational dialogue to solve Arctic challenges

tic Flora and Fauna Youth Engagement Strategy and setting up partnerships that involve the Arctic Youth Network in both the Sustainable Development Working Group's Arctic Youth Wellness Network and the Gender Equality in the Arctic Youth Advisory Board.

It's exciting to see Russia's chairship include a wide variety of partners in its programming, including the Federal Agency of Youth Affairs, the Ministry of Foreign Affairs of Russia, the Ministry of the Russian Far East and Arctic, the new project office of International Youth Cooperation in Yamalo-Nenets Autonomous Okrug, regional authorities, the Northern Forum and more.

Increased networking opportunities and the chance to build a trusting dia-

logue with governments are two of the key outcomes that youth hope will result from their engagement with the Arctic Council during the Russian chairship.

NETWORKING OPPORTUNITIES

The diversity of the organizing partners is also a good indicator of the networking prospects available to participating youth. As an example, the Federal Agency for Youth Affairs and the Ministry of Foreign Affairs of Russia are coordinating Model Arctic Council Russia 2022. It will be held in Arkhangelsk, with organizing committee members from the Moscow State Institute of International Relations University and Arctic Club, the Northern (Arctic) Federal University (known as NArFU) and

the University of the Arctic. This kind of collaboration has the potential to create valuable connections between officials and young professionals, which could make it easier for other youth to engage in high-level discussions on important topics.

BUILDING TRUST AND UNDERSTANDING

Finally, we can look at opportunities for youth to engage in dialogues with their governments outside the scope of formal events, such by raising awareness about climate change and sustainability issues, climate strikes and environmental demonstrations.

This can be a sensitive topic, and requires building trust between parties, but the benefits of open and constructive dialogue make it an invaluable asset to both governments and youth. It can promote increased understanding and better problem-solving.

Youth engagement is a work in progress and a learning process for everyone involved. But we believe that by continuing along this constructive trajectory together, we will have greater success in solving Arctic challenges. ○

UPCOMING ARCTIC COUNCIL EVENTS FOR YOUTH

There are numerous and diverse events and projects on the horizon to that have the potential to boost youth participation and engagement in Arctic issues. These include:

- The Arctic Youth Leaders Forum
- The Eurasia Global Forum
- The second Northern Youth Forum
- The Arctic Council–Northern Forum Interaction Model
- Model Arctic Council Russia 2022
- The Startup Forum (by the Northern Youth Forum)
- The Arctic Youth Entrepreneurship Webinar Series
- The Arctic Biennale of Young Art
- The International Festival of Indigenous Youth of the Arctic
- The Indigenous Youth Leaders Forum
- The International Scientific Conference for Students

There will also be events related to topics like volunteering, youth entrepreneurship, creative industries, best practices in international and inter-ethnic communications and sustainable development, science and education, Indigenous languages and culture, and traditional outdoor activities and sports.



**ARSENI
KIRGIZOV-
BARSKII** is
a graduate
student and

deputy chair of the Arctic Student Research Club at the Moscow State Institute of International Relations (MGIMO) in Russia.



**PÉTUR
HALLDÓRSSON**
is a member of
the Arctic Youth
Network and a
biologist with

a postgraduate diploma in public administration from the University of Iceland.

Restoring harmony

Drumming up a cultural connection for Greenlandic Inuit



Leif Saandvig Immanuelson

FOR CENTURIES, the Kalaallit—the Inuit of Greenland—have lived in harmony with polar bears, narwhals, seals, birds and the other Arctic species in the region. But it is a connection that Leif Saandvig Immanuelson fears is quickly disappearing.

Saandvig Immanuelson is a traditional drummer, storyteller and actor. He grew up in Kangersuatsiaq, in the northwest part of Greenland, but has called Nuuk home for much of his life. He has seen the connection the Inuit feel with their past diminish over time.

“Even the people living in Greenland, so many don’t know about how our ancestors lived or how they can survive the extreme nature here,” he explains.

That’s why 10 years ago, he started making drums and sharing this traditional art form with others.

“I have been travelling a lot between the towns in Greenland to make drums for children and adults. I tell the people how our ancestors used the drum in Greenland and how I’m using it myself today, so they can see the two different worlds. So I can inspire the people and make them think about where they are from.”

Despite the COVID-19 pandemic, Saandvig Immanuelson has continued to travel the country to present his drumming stories. He tells the same story everywhere he goes—and he shared it with *The Circle*.



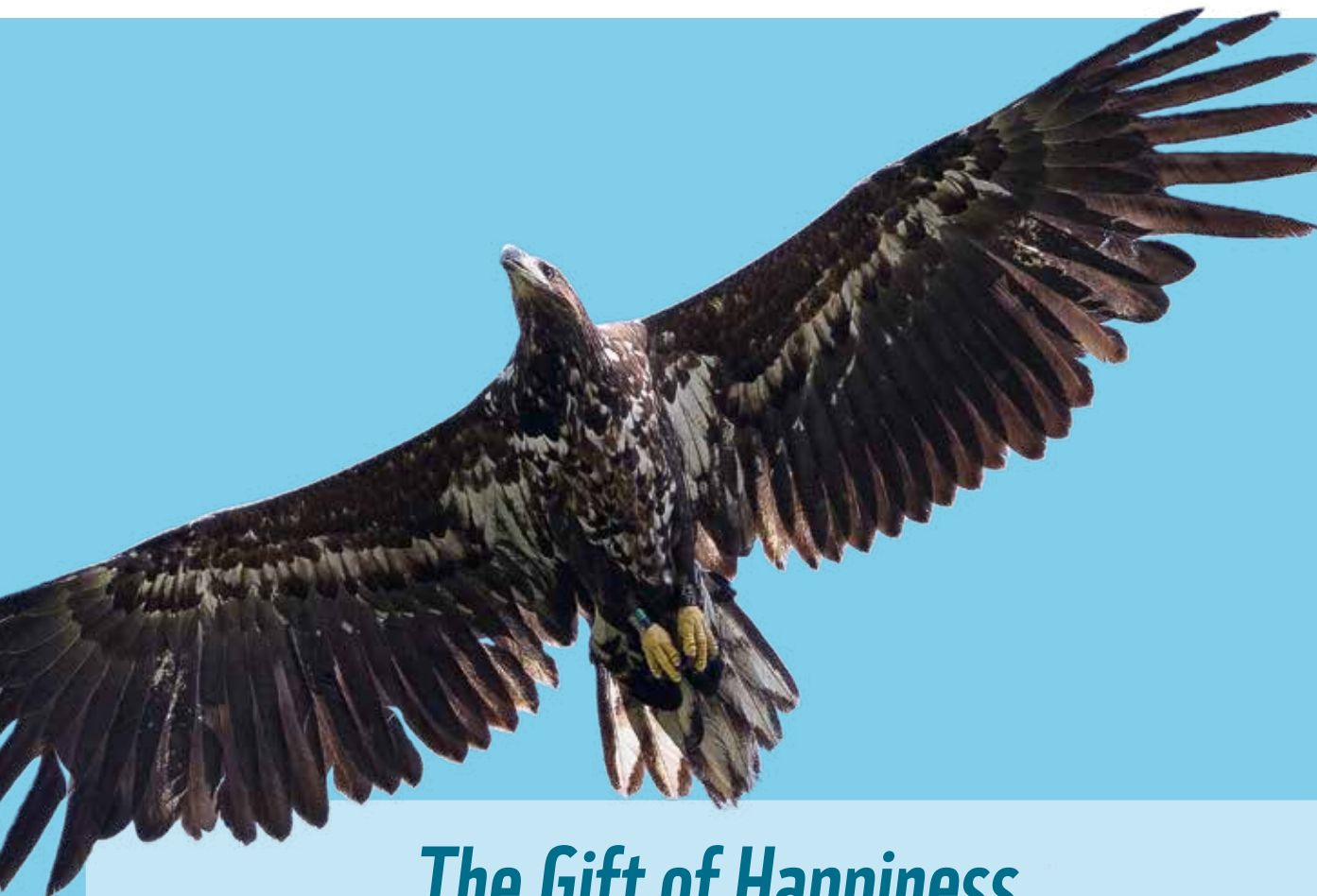


Photo: Radovan Václav, CC, Flickr

The Gift of Happiness

The eagle flew high up over Inuit Nunaat lands, and he could see that the people weren't happy. They didn't even smile, they didn't even laugh.

The eagle could see from up high that one of the hunters was in a different place than others. The Inuk was alone, picking berries. The eagle decided to go meet him.

The eagle said to him, "I have seen many days from the sky, when I'm flying, that you people are not happy. You are not even smiling. You are not even laughing. You don't know about happiness. That's why I will invite you to my parents. They live in the fjord."

The Inuk said to the eagle, "What for? I don't want to listen to you."

The eagle said, "Come on, please, my parents can teach you the good things. I know that you need something."

"Okay, we can do it if you have some good mamaqtuq," said the hunter. So, they both went to see the eagle's parents.

When they arrived, the Inuk saw that they had many mamaqtuq. So they ate dry meats and all the good things. And they drank very clear water. When they finished eating, the eagle said to the father, "Hey, father, those Inuit, they are unhappy. They don't know how to live better. Can you help them?"

But the eagle father said to the son, "It's not worth it to help them because they are lost."

"Please father, help them so they can make it."

The father said, "Okay, I can help him. I can teach him." And he took out his drum, and the Inuk saw the drum for the first time in his life.

"What is it?" the Inuk asked.

"Okay, sit down over there so you can watch," said the eagle father. He then began drumming songs.

The eagle son said to the Inuk, "Hey, you have to listen carefully. You have to remember all these things my father is playing for you."

The Inuk listened and concentrated on the drum songs, and when the father played a funny one, the Inuk smiled for the first time in his life. The eagle father made his face funny, and the Inuk smiled and felt that he could be happy. The eagle father taught him many drum songs.

When he was finished, the eagle father said to him, "When you go home, you have to teach your family those good things, all those drum songs. And when they learn those drum songs, you have to talk to your neighbours, too, and teach them. And when you are finished with the village, you have to go to other places to teach them."

So, that is how our ancestors learned about happiness. ○

THE PICTURE

A glimpse of the past



Photo: Hayne, Wikimedia Commons

Just a few decades ago, there were hundreds of thousands of barren-ground caribou in the Canadian Arctic, as shown in this archival photo from 1978. Today, fewer than half remain—and some herds have declined by more than 95 per cent.



Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

www.panda.org/arctic