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A SYSTEM FOR
UNDERSTANDING
AND COPING WITH
CHANGE

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DIVESTING
FROM OIL
AND GAS

15

THE CIRCLE

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THE WWF ARCTIC
PROGRAMME

COVID-19
& THE
ARCTIC:

A GREEN
AND JUST
RECOVERY

SUSTAINABLE
FOOD
SYSTEMS

LOW-
CARBON
ECONOMIES



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Creating a better post-pandemic world for the Arctic

THERE ARE PROBABLY very few people on our planet who haven't been affected by the COVID-19 pandemic—and it's still not clear what the environmental, social, political, economic and health impacts will be in the months and years to come. While the world rushes to develop a vaccine, people everywhere are making efforts to strengthen their resilience and limit the effects of this novel, deadly virus.

One thing is certain: the world will be a different place when we emerge from the pandemic. The question is, what can we do now to ensure it will be a better one? This issue of *The Circle* attempts to provide some answers by delving into what shape the recovery could take in the Arctic, from tourism to food culture, health, investment, waste management and more.

WWF has ideas for a more resilient Earth. Based on nearly 60 years of conservation work around the world, we know that the health and well-being of people, wildlife and the environment are closely intertwined. That's why in June 2020, we called for **global action** to reduce the risk of future pandemics and heal our broken relationship with nature.

We know that industrial activities in all parts of the world ultimately affect the Arctic because pollution and climate have no geographic boundaries. With this in mind, we continue to ask all governments to structure their recovery and stimulus packages in ways that support sustainability and prevent ecosystem degradation. This is important for conserving Arctic biodiversity, jobs and Indigenous livelihoods.

Arctic governments themselves should also be working to stimulate sustainable, low-carbon development as they recover from COVID-19. They have a unique opportunity to create the jobs, economies and societies of the future by prioritizing clean energy solutions, responsible tourism and improved water and waste infrastructure rather than subsidizing oil drilling or expanding maritime cargo

transportation in and across the central Arctic Ocean.

Making the right choices for stimulus measures is important if we want to avoid another pandemic. The spread of zoonotic diseases like COVID-19 is closely linked with human encroachment on nature, trade in high-risk wild animals and reliance on unsustainable food systems that drive the large-scale conversion of land for agriculture.

Worldwide, the immediate priorities remain preventing outbreaks, saving lives and ensuring health systems aren't overburdened. But countries are already rolling out strategies and programmes to restart economies, recover jobs and

reinstate public services—and governments have launched packages worth trillions of dollars to help their societies return to a “new” normal. Some of these initiatives are heeding the call to address the ongoing nature and climate crises. Yet many others threaten to blindly pump funds into propping up outdated, polluting sectors that lack job security and worsen climate breakdown and

nature loss.

Lockdowns and economic downturns during the pandemic have given us a taste of a world where the air is cleaner, waters are clearer and nature can thrive again. These changes are temporary and have come at a massive cost to society, but they have also offered us a glimpse of what is possible if we decide to “**build forward better.**”

As recovery programmes continue, all governments face a choice: reconstruct the economies of the past, or build a new and better world that heals our relationship with nature and strengthens our resilience against future threats. For the sake of the Arctic and all life on Earth, we are working hard to help them make the right choice. ○

As recovery programmes continue, all governments face a choice: reconstruct the economies of the past, or build a new and better world that heals our relationship with nature and strengthens our resilience against future threats.



ELIZABETH ACEITUNO is the acting finance practice lead at WWF International. She is based in New York.

“ATLANTIFICATION” OF THE ARCTIC OCEAN

Deep heat melting Arctic sea ice from below

A NEW STUDY confirms that deep heat in the Arctic Ocean is melting sea ice from beneath, hastening its disappearance.

Water in the Atlantic and Pacific oceans is colder at lower depths. But the opposite is true for the Arctic Ocean: its surface layers are cooled by bitter winters and cold, buoyant water from river flows. Normally, these

frigid layers act as a barrier that helps preserve the ice’s underside.

But a mass of warm Atlantic water is sitting underneath those icy layers—and it’s growing. As it melts, reflective ice is being replaced by water, which is darker and absorbs more energy from the sun. This warmer water then makes its way down to join the mass.

Recent measurements show that the warm water mass—usually found about 150 metres or more below the surface—is now within 80 metres of the Arctic Ocean’s surface, and increased turbulence is allowing some of its heat to melt the ice above. In fact, there is enough warm water to devour the ice from below if the colder surface layer were to dissipate.

Waves washing up against sea stacks on Reynisfjara Beach in Iceland evoke the higher waves that may pound shorelines in Greenland and the Canadian Arctic as summer sea ice disappears.

RESILIENCE IN COMMUNITIES

An update from Port Heiden, Alaska

A YEAR AGO, *The Circle* brought you the story of Port Heiden, Alaska as an example of a community dealing with coastal erosion and the effects of the climate

crisis. The world has changed a lot in the past 12 months, but this remote, Native community of about 100 has kept to its daily routines despite the pandemic.

Gerda Kosbruk, administrator of the Native Village of Port Heiden, says her community is essentially a bubble: despite the pandemic, they can still come together to help one another and maintain connections. There are limits on outside visitors, and the community tracks who’s been where and with whom outside of town in the event that someone tests positive elsewhere in Alaska.

Relatively normal weather patterns,

including rainfall, have meant a good berry season. Kosbruk says the abundance will help ensure the community can continue to feed its residents even with irregular flights and deliveries.

Kosbruk has observed that being in a bubble supports her village’s culture. For example, kids continue to do things like make jam and take care of animals.

But the news is not all rosy. The coastal erosion that forced Port Heiden to begin relocating three decades ago continues. Goldfish Lake—separated just last summer from the advancing ocean by a crumbling road to the community’s former location—has since drained and disappeared.



The Circle, October 2019.

ARCTIC ON FIRE

Record wildfires

IN JUNE 2020, something astonishing happened in the small Arctic Circle town of Verkhoyansk, Russia: the temperature reached 38°C, the highest ever recorded in the Arctic. A *New York Times* article reporting on



Higher waves could threaten Arctic communities

NEW RESEARCH FORESEES

dire consequences for coastal communities in Greenland and the Canadian Arctic thanks to massive swells fuelled by disappearing summer sea ice.

In a recent study published in the *Journal of*

Geophysical Research:

Oceans, Canadian scientists projected that the average height of the Arctic Ocean's highest waves could grow by nearly six metres. Closer to shore, the equivalent change is expected to be about two additional metres.

One of the problems is

that if summer sea ice disappears completely, there will be larger expanses of water, creating a greater surface area over which wind can generate waves. Ice also helps to suppress waves.

Communities along the eastern shores of

Greenland and in Canada's western Arctic were already exploring ways to control shoreline erosion, but may now need to factor in significantly higher waves as well. The waves could also pose a threat to commercial shipping traffic.



Photo: Neil Cooper on Unsplash

worsen the climate crisis—and vice versa

the development noted that in a world without climate change, such a temperature would have been a one-in-100,000-year event.

But the climate crisis is propelling a vicious cycle and causing conditions that more

easily spark wildfires—which in turn drive up greenhouse gases. Higher temperatures cause more snow to melt, which creates dry vegetation, fuelling the fires. This year, the Arctic saw a massive outbreak of wildfires, including

on tundra underpinned by permafrost. Thawing permafrost releases more CO₂ and methane, compounding the problem.

By late August, Arctic wildfires had emitted more CO₂ in 2020 than in all of

2019—a 35 per cent increase that may unfortunately set a new precedent. About 600 active fires were observed in late July 2020 versus 400 in 2019 and an average of 100 from 2003 to 2018.

Adaptation

One Health: A system for understanding and coping with change

The concept of One Health can not only help us understand the social, ecological, economic and medical reasons behind the significant changes in the Arctic, but address and adapt to them in ways that are culturally appropriate and sustainable. ARLEIGH REYNOLDS explains how.

THE ARCTIC is experiencing environmental, social and economic change at a rate whose swift pace is without precedent. This poses great challenges—but it also offers great opportunities to use paradigm shifts to support adaptation and resilience in the face of change.

ARLEIGH REYNOLDS is a professor of veterinary medicine and director of the Center for One Health research at the University of Alaska Fairbanks.



Such shifts might serve as a management model for similar changes that are occurring more gradually across the globe.

To address these issues effectively, we

need an approach that integrates knowledge across disciplines and cultures and recognizes the interdependence of human, animal and environmental health. This concept—which has always been central to Indigenous worldviews—is now recognized in western science as One Health.

One Health was first developed as a means of understanding how zoonotic diseases—those caused by pathogens

that jump from animals to humans—arise. Some 65 to 70 per cent of emerging diseases in humans are of zoonotic origin, including the one that caused the ongoing COVID-19 pandemic. The impact we have on our environment—and how that influences human–animal interactions—plays a significant role in how these diseases develop and spread.

A HOLISTIC VIEW OF HEALTH

But health is more than the absence of disease. It can be defined as a state of well-being for individuals and their communities. Under this definition, health encompasses physical, mental, behavioural, cultural and spiritual health. Applying this approach to the One Health paradigm allows us to bring in expertise across natural and social sciences and synergize western science with traditional Indigenous ways of knowing. Such a broad and deep integration of knowledge and experience provides us with opportunities to understand complex issues like food safety, security and sovereignty at their roots, and engage stakeholders to build effective solutions.

The question is: how can One Health

help us understand and prepare for—and even prevent—pandemics? The current COVID-19 pandemic is a glaring example of how the way we change our environments, the way we conduct agriculture and the way we interact with each other can influence the transfer of diseases from animals to people.

For example, when intensive agriculture encroaches upon wild habitat, it increases the frequency of contact between wild animals and those raised for food. Pathogens for which the wild animals are well adapted are new to the domestic animals, so they may cause more severe disease and transfer easily to the humans who work with or eat them. As we have seen, in our modern world, where intercontinental travel is fast, easy and relatively inexpensive, new diseases can spread quickly.

In this context, One Health offers us a way to understand the social, ecological, economic and medical reasons for the changes that are leading to such diseases and address them in culturally appropriate ways that lend themselves to sustainable solutions based on adaptation and resilience. ○

While his family hunts, an Inuit child in Pond Inlet, Nunavut, Canada plays with a mini-sled he made to transport seal meat.

Reconnecting with food sources



COVID-19 affected food systems and food security around the world, causing many people to recognize the vulnerability of the complex networks we depend on to cover our most basic needs. Indigenous peoples around the world are pushing for the right to feed themselves and be less dependent on industrial food systems. Indigenous food webs recognize the intricate connections between how we obtain our food, what we choose to eat, and how these choices can affect our own health and that of the planet. For the Arctic, a just transition post-pandemic depends on understanding the region and its food supply through an Arctic lens. As [AVIAJA LYBERTH HAUPTMANN](#) argues, that means looking beyond a push toward plant-based food.

GENERATIONS AGO in Greenland, the Indigenous diet was composed almost entirely of animals. Even the most popular “vegetable,” as it was called, came from an animal: the stomach contents of the caribou, considered a delicacy. Today, a healthy, sustainable diet is increasingly assumed to empha-

size plants—but not all plant-based diets are equally healthy, and this assumption overlooks the importance of being connected to your food supply.

No food tastes as sweet as it does after you’ve literally felt the weight of it on your shoulders. The sweetness and nourishment you derive from that cari-

bou soup simmered over an aromatic crowberry fire—made with meat that you put your own blood, sweat and tears into obtaining—is indescribable. It’s more satisfying and energizing than the most luscious, cream-topped chocolate cupcake.

It’s important to describe this feeling



The author skins a muskox with her uncle (Gideon Lyberth) and cousin (Karl Lyberth) at Angujaartorfik, Greenland, where her family has hunted since the 1950s.

Photo: Aviaja Lyberth Hauptmann



A scenic view of Angujaartorfik, Greenland, the summer hunting grounds of the author's family.

Photo: Aviaja Lyberth Hauptmann

because it contains the key to what we are missing in our modern reliance on industrial food systems—as well as what we are missing in terms of health when we do not eat foods from and in nature, and what we are missing in terms of

When we eat only industrialized foods, we are not feeding that microbiome. We are only now beginning to realize that the industrial food system's control over microbes comes at a price: our health.

sustainability when we do not feel the weight of the resources we use.

In Greenland, we spend our summers hunting and fishing with our families. In 2017, the yearly hunting trip to Angujaartorfik (the summer hunting grounds for my family since the 1950s) also marked the start of my Greenland Diet Revolution research project. This project mapped out the microbes and parasites in foods associated with traditional caribou and muskox hunting practises. Dried meat, stomach contents of caribou, and parasites on the insides of caribou hides are all part of the traditional Inuit diet. This research is helping us understand that when we eat traditional Inuit foods, we are eating microbes from nature.

We are also realizing that some of the traditional dishes eaten by past generations, such as caribou stomach contents, must have been elemental for nutrition

and health in Greenland's original animal-sourced diet. When we analyse traditional Greenlandic foods—such as the dried capelin, a small fish caught in early summer and dried for the winter's food supply—we observe that we eat a greater variety of microbes from capelin dried in nature versus the version dried industrially.

Although bad microbes can make us sick, we need good ones to be healthy. In fact, we now know that our internal ecosystem, the gut microbiome, is elemental to our health and well-being. ➤



**AVIAJA
LYBERTH
HAUPTMANN**
was born
and raised

in Greenland and is of Inuit and Scandinavian descent. She is a postdoc and microbiologist with a specialty in microbial metagenomics.

When we eat only industrialized foods, we are not feeding that microbiome. We are only now beginning to realize that the industrial food system's control over microbes comes at a price: our health.

When you obtain food from nature, you relinquish control and rely on a trust-based collaboration with the environment. But for many generations, we have not trusted our environment. Nor have we acted in ways that would allow it to trust us, if it had such notions. When we assume that food is something to be made by strangers from ingredients around the world in places we will never see—and purchased in a store—we forego the chance to know or appreciate the resources it took to put that food in our mouths.



Photo: Staffan Widstrand

Inuit narwhal hunter Mamarut Kristiansen throws his harpoon, Qaanaaq, Greenland.

Outlasting COVID-19 in the Arctic

The Arctic Council has been studying the effects of the pandemic on the Arctic, and has identified vulnerabilities to address as well as potential sources of resilience to build upon.

SOURCES OF VULNERABILITY FOR ARCTIC COMMUNITIES



- Limited access to health care

- Threats to agriculture, fisheries and tourism from industrial activities, oil and gas drilling, and shipping

- Increased coastal erosion from loss of sea ice and extreme weather

- Unpredictable weather patterns caused by climate change

- Poor housing conditions

- Limited employment opportunities

- Infrastructure damage from thawing permafrost



SOURCES OF RESILIENCE



- A circular economy

- Remoteness from pandemic hot spots

- Habits of self-reliance

- Indigenous and historical knowledge

If we want to build a healthier, more sustainable planet post-pandemic, I believe we must begin with an understanding of how humans connect to nature and each other through food. As such, it does not make sense to draw hard lines between plant-based and animal-sourced foods. Both can be healthy and sustainable—and both can be the opposite. The question more worth pondering is: How do the many steps involved in commercial, industrial food systems keep us separated from nature?

In fact, I think we risk overlooking important perspectives to enable a green recovery if we assume that the colour green must also describe the food on our plates. When it comes to diet,

When it comes to diet, a just transition in the Arctic means putting aside the conventional assumption that plant foods are intrinsically healthier and more sustainable than animal ones.

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healthier and more sustainable than animal ones.

COVID-19 has made many of us think about the vulnerability of the systems that provide our most basic necessities, including foods and medicines. When industries and cities locked down in the spring, many people began to worry about direct access to food, which requires land, skills and time that few of us are fortunate enough to have.

But in the Arctic, many of us do have the privilege of direct access to foods that are nutritious, that connect us to our communities, and that are not dependent on vulnerable supply chains. I hope we can not only maintain and protect this privilege but make it a more integrated part of Arctic food systems. ○



How a circular economy can help the Arctic and the Earth



After the warmest winter on record, the northern sun returned to shine on a different world this summer, where both the stability of the permafrost and the material flows over it had been disrupted. For many of us, the words resilience and scarcity gained tangible meanings. But as [KARI HERLEVI](#) and [TIM FORSLUND](#) point out, the boundaries imposed by nature have always been more tangible in the Arctic—and no place on Earth now appears more at odds with our dated economic system.

“The exploitation has gone on for decades, and most of what is below us still remains unexplored. From the air it is hard to suspect that there is a large oil spill at least twice the size of Exxon Valdez in Alaska.”

THIS EXCERPT DESCRIBES a scene in northern Russia. You might assume it refers to this year’s massive oil spill in

The kingfisher's streamlined body has lessons for us when it comes to more efficient industrial design.

Photo: Hans Veth on Unsplash.

Norilsk. But actually, it's taken from *Ajunngilaq*, a book by Magnus Elander and Staffan Widstrand that recounts the 1994 oil pipeline disaster in the Russian Republic of Komi.

For a long time, we have seen the Arctic as an endless expanse of wilderness and riches. In reality, however, most resources are finite, the few have benefitted at the expense of the many, and the Arctic's ecosystems are among the world's most fragile. Our understanding

of and engagement with this complex region needs to evolve if we hope to have a post-COVID-recovery that lets us move toward a world where we are not overshooting our planetary boundaries.

It is important that we clean up polluting processes. But more than that, We need to go beyond "doing less bad" and address the root causes that drive these processes. We need to fundamentally redesign our global economic system.

The extraction and processing of materials, fuels and food today—many of them finite and toxic—account for half of all global greenhouse gas emissions and more than 90 per cent of biodiversity loss and water stress. Improved energy efficiency and renewable energy will play a central role, but as part of creating systemic change, we need to consume less, and in smarter ways. We need new rules of the game.

The post-COVID recovery presents us with a once-in-a-lifetime opportunity. We can choose to do nothing more than plug the holes in a faulty system, or we can reset the game altogether by building a more resilient economy—one that is more effective and less wasteful.

SOLVING MULTIPLE CRISES AND LEARNING FROM NATURE

A circular economy has the potential to help us solve multiple crises at once. Besides minimizing our dependence on finite resources, it is a powerful tool for mitigating the climate crisis. This is especially important for the Arctic, where the impacts have been felt earlier and more keenly than anywhere else.

What is a circular economy?

■ A linear economy relies on extractive "produce-use-discard cycles" that are at odds with our planetary boundaries. In contrast, a circular economy aims by design to keep resources in use—leveraging rental and sharing services as well as learnings from nature that help us get more from less.

... We need to go beyond "doing less bad" and address the root causes that drive these processes. We need to fundamentally redesign our global economic system.

During Finland's chairmanship of the Arctic Council from 2017 to 2019, climate mitigation and adaptation were key areas of focus.

In a circular economy, the focus shifts to keeping existing items in use and designing new ones in ways that avoid creating waste in the first place. We

can do this by learning from nature, where there is no waste—only food for other organisms. Such thinking has underpinned industrial ecosystems in Kemi-Tornio in northern Finland.

For example, trains have been designed to use 15 per cent less electricity by emulating the kingfisher's streamlined body. And in August, a study demonstrated how new materials can be developed for the aerospace and sports ➤

Photo: Maria Karttunen



KARI HERLEVI and TIM FORSLUND work with Finnish Innovation Fund Sitra, where they help to advance the global transition to a circular economy.

industries by studying the dactyl club of the mantis shrimp—a prey-conquering appendage made of a composite material that grows tougher with time and use. Like a form of insurance, diversity builds resilience, as exemplified by the Svalbard Global Seed Vault.

GETTING MORE FROM LESS AND EXPLORING THE ARCTIC'S POTENTIAL

Besides taking lessons from nature, the circular economy helps us get more from less. Careful design, repair, sharing and reuse are hardly novel concepts in the Arctic, where many communities are literally islands apart. However, marrying tried-and-true practices with new digital technologies

We can choose to do nothing more than plug the holes in a faulty system, or we can reset the game altogether by building a more resilient economy—one that is more effective and less wasteful.

would allow us to unlock more value from our existing assets by facilitating exchange and rethinking whether there are smarter solutions than owning all

our products. The COVID-19 crisis has challenged us to think beyond what we **want** and focus instead on what we **need**.

In few places are the consequences of our brittle and extractive economic system more evident than in the Arctic. Fortunately, the same can be said for the solutions hidden within the region's unique natural assets. These hold enormous potential when coupled with a deeper understanding of how to make the most of our existing resources. More thought is needed to understand what the circular economy could mean for the northernmost parts of our world, and how a more active exchange of circular solutions in the Arctic could benefit both the region and the planet at large. ○



Photo: Dorothea Oldani on Unsplash

The mantis shrimp's dactyl club is made of a composite material that grows tougher over time—an idea that could be explored by the aerospace and sports industries.

Could saying goodbye to oil and gas investments power a greener post-COVID recovery?

Earlier this year, [GoFossilFree.org](https://www.gofossilfree.org) reported that to date, almost 1,200 institutions and more than 58,000 individuals had committed to divesting from fossil fuels. This represents \$14 trillion in assets worldwide. Divestment campaigns first emerged about a decade ago, mainly in Europe. By 2015, the decision to move away from fossil fuels was reported to be the fastest-growing divestment movement in history. More recently, some of the world's largest financial institutions have begun backing away from oil and gas. And within the past year, several international banks, including five in the US, have announced policies that prohibit or restrict investment in new oil and gas projects in the Arctic specifically.

GENUS CAPITAL INVESTMENT in Vancouver is home to Canada's first fossil-free mutual fund family. It is also a signatory to the [UN Principles for Responsible Investment](#) and the [Carbon Disclosure Project](#). *The Circle* spoke to Mike Thiessen, a partner and director of sustainable investments at Genus, about how the divestment movement might contribute to a green recovery post-COVID, especially in the Arctic.

What does "fossil-free" mean in an investment context? Is it different from sustainable investing?

At Genus, fossil-free means we don't invest in companies that extract, process or transport fossil fuels, including railways. Impact investing takes this to another level by not just avoiding

companies that harm the environment or society, but investing in those that offer solutions to a lot of the world's big problems. We invest in renewables, green buildings, electric vehicles, education, health and so on.

Who and where are the investors who are opting to divest?

We've found that it's a social phenomenon, and tends to happen in waves. The first wave is usually activists and churches. We started seeing this at Genus about 20 years ago, when our activist clients wanted to divest—first from coal, then the oil sands. The second wave is public institutions, universities and cities: Paris, London and San Francisco have all decided to divest, as have many European universities. The third wave is pension funds and individuals. Pensions are where the big money is, and a number of European ones have already begun divesting. I would say Canada and the US are still in the second wave, but they've really increased the amount of sustainable assets under management in the past few years, as have Australia and Japan.

How might divestment support a green recovery post-COVID?

I think divestment can really change the overall market dynamics. When a lot of



Mike Thiessen, Genus Capital Investments.

asset owners divest, it decreases overall demand for fossil-fuel investments. That makes it harder for those companies to get loans at favourable interest rates. If money is more expensive, then they can't pursue as many projects—and fewer projects mean less carbon emitted. Of course, it works in reverse too: high demand for renewable energy projects means lots of low-cost money to fund them. Divestment also sends a signal—it stigmatizes fossil

Divestment also sends a signal—it stigmatizes fossil fuels. If a prominent asset owner like a university divests, that decision influences the next generation of students and leaders.

fuels. If a prominent asset owner like a university divests, that decision influences the next generation of students and leaders.

What impact could divestment have in the Arctic, specifically? Do investors distinguish between oil and gas in the Arctic versus elsewhere?

As an investment firm, we look at fossil fuels across all geographies, not specifically in the Arctic, because we don't want to invest in any fossil fuels. But we have techniques to screen out financial institutions that may invest in extreme fossil fuel projects, like drilling in the Arctic or big coal power plants. And as mentioned, if money for fossil fuel projects starts to cost more, then global carbon emissions

Historically, big Canadian banks have made a lot of money off the energy sector, so it's not going to be easy to wean them off of it. But I think overall, our financial institutions should be investing in the future, not the past.

Sustainable investing picking up speed

■ Worldwide, investment in sustainable assets has nearly tripled since 2012, when Europe was virtually the only region pursuing it. Europe is still responsible for about half of the world's sustainable investments, but other regions are quickly getting on board.

Sustainable assets under management in...	2012	2018
Canada	\$0.6 trillion	\$1.7 trillion
US	\$3.7 trillion	\$12 trillion
Europe	\$8.8 trillion	\$14.1 trillion
The world	\$13 trillion	\$31 trillion

Source: Global Sustainable Investment Alliance 2019.

will drop, which will mitigate climate change and be positive for the Arctic.

What are some strategies to increase sustainable investment?

I think it's important to raise awareness that it exists. A lot of people want their investments to align with their values, but don't realize it's possible. I also think making it clear that you can get good long-term performance from sustainable choices will help. Sustainability is a lot more attractive to people once they know they can still get the same strong returns. For example, our flagship fossil-free fund has been beating its benchmark by almost two per cent a year for the past seven years.

What kinds of sustainable investments do you suggest to clients who are particularly concerned about the Arctic?

Since mitigating climate change in gen-

eral will slow down changes in the Arctic, I believe that investments in clean energy infrastructure and clean tech innovation can have the most impact. Many of these investments could be attractive financially as well.

Should Canada's financing institutions play a leadership role in divestment?

Yes, I think they should. They control a lot of the big investment decisions around fossil fuel projects. They can decide what interest rate they're going to offer. Or they can decide not to invest in a fossil fuel project at all. That would send a signal to the market and cause other banks to pause and ask themselves whether they should take that risk. Historically, big Canadian banks have made a lot of money off the energy sector, so it's not going to be easy to wean them off of it. But I think overall, our financial institutions should be investing in the future, not the past. ○

WWF-US calls on the United States to prevent oil and gas drilling in the Arctic National Wildlife Refuge

■ This past spring, the US government announced that it saw no reason to stop oil and gas development in the Refuge. WWF strongly opposes this point of view: the climate crisis is already making the Arctic's future uncertain, and oil and gas development will compound the problem. It will also imperil wildlife in the Refuge. As polar bears' sea ice habitat shrinks,

the bears are forced onto land to find food and give birth. As a result, the Refuge has become an important nursery for them. Meanwhile, Alaskan Native communities near the refuge rely on caribou for subsistence needs, but oil and gas development would have an impact on the animals' migratory and calving grounds, causing population declines.

Along with a growing number of non-governmental organizations and Indigenous groups, WWF-US is asking US lawmakers to protect wildlife habitats along the Arctic National Wildlife Refuge Coastal Plain. Fortunately, banks are starting to respond with refusals to fund proposed drilling projects.



Photo: Frank Reardon

In search of better solutions for garbage in Iqaluit, Canada

Arctic communities face unique challenges when it comes to waste disposal. Iqaluit, the capital of the Canadian territory of Nunavut, is a case in point. Without any roads connecting the city of 8,000 to other northern communities or the rest of Canada, most garbage is either dumped in the city's aging landfill or shipped south by boat at significant expense.

Iqaluit will begin constructing a new landfill next year. It also plans to develop a recycling and eco-centre and alternative collection methods for residential, commercial and industrial waste. As Iqaluit's mayor, **KENNY BELL**, tells *The Circle*, a sound solid waste management programme is critical to protecting residents' health and safety as well as the environment upon which they depend.



Iqaluit's "dumpcano"

In spring 2014, a fire broke out at the Iqaluit dump that took the city four months to put out. Dubbed "Dumpcano," the 150 square metres or so of burning garbage created up to 2,000°C of heat. The fire also released chemicals into the air, causing schools to close for several days and resulting in health warnings. It cost the city more than \$3 million to extinguish.



What challenges has the city faced in dealing with its waste?

There are many. But one of the main things is our environment: it's harsh for most of the year. We have a lot of strong blowing wind year-round. There are also the costs. We are very remote. Shipping garbage south or even trying to recycle

it is almost impossible because the cost of transportation is just far too high. If you want to move stuff out of the communities, you have to store it until summer so you can ship it out by boat. Typically, only a small percentage of recyclable items actually end up getting recycled. It's hard for us to find a place

that even wants such a large amount at any particular time.

How have you dealt with your community's waste up to now?

We basically just bury everything by covering it with granular material. We do ship metal south, such as old vehicles



We love being on the land, so we can't just have garbage everywhere and landfills popping up all over the place. We need to make sure it's better for us for the future.

“fire watch” it because when you bury garbage, the decomposing material can cause fires or hotspots to flare up. We had a huge one here in 2014 that cost the city more than \$3 million. We need to close that area because it's already way over its capacity. Our current landfill is also along the water—right across from downtown, basically. The new one will be about eight kilometres inland, so at least plastics won't get into the water as easily.

With the new plan, waste that can't be separated for reuse will be delivered to the transfer station and sorted. Items being sent to the landfill will be wrapped in plastic and buried. There is also some recycling. The wood and cardboard brought to the site will be shredded and used as a fuel source for the biomass boiler. We have a tyre grinder coming in as well, so we can grind up tyres and hopefully use the rubber mulch in playgrounds. The plan is also to eventually offer composting. That will take most of the organic material out of the landfill.

What difference do you think these plans will make for the community and its long-term health?

We as Inuit and northerners respect the land, water, animals and environment. We use the environment on a regular basis. We love being on the land, so we can't just have garbage everywhere and landfills popping up all over the place. We need to make sure it's better for us for the future. From Nunavut's point of view, the whole territory needs a coordinated, strategic approach so we can contribute to its overall wellness. ○

and oil tanks. But most garbage is buried in a pit and covered with gravel. Obviously, we can't keep doing that. I mean, eventually there would just be a whole bunch of landfills all over the beautiful North, and that's not good for the environment.

How will the new waste management project help Iqaluit to address these challenges?

The new waste plan isn't going to solve all of our problems. But it is the first step toward positive waste management. Right now, our current landfill is under fire—literally. We have to

Photo: Frank Reardon

Tourism

COVID-19 disrupts Arctic beach



A polar bear in Svalbard, Norway naps on a pile of fishing debris.

clean-ups



On a beach in Svalbard, Norway, a polar bear sniffs at fishing nets that have washed ashore.

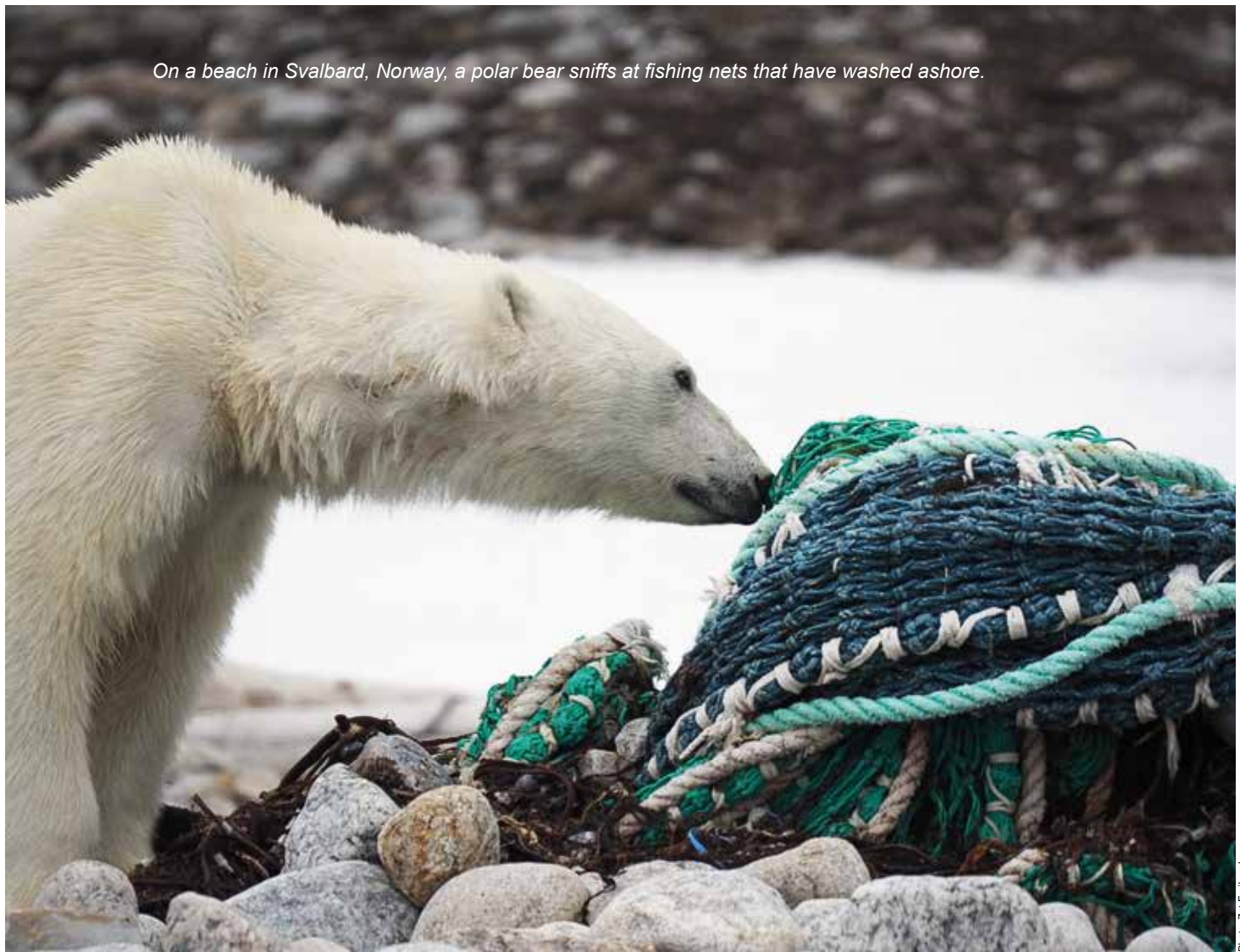


Photo: Zai Feilburgaus

For nearly two decades, with support from the governor of Svalbard, passengers on Arctic expedition cruises have been helping with clean-up efforts in the Arctic—and the industry as a whole has been working to enhance these efforts since 2018. But with almost no expedition cruises operating during the coronavirus pandemic, this will be the first year that tourists cannot help retrieve litter from Arctic beaches. As [MELISSA NACKE](#) writes, not only has the pandemic hindered clean-up efforts—it is creating new sources of pollution, such as masks, gloves and hand sanitizer bottles. And this growing trash problem will be compounded by the return of single-use items that the expedition cruise industry has worked hard to eliminate.

FOR MANY VISITORS, a trip to the Arctic becomes a chance to reflect on some of the most pressing environmental challenges of our time. When tourists set foot on Svalbard's remote beaches, their expectations of pristine and untouched nature are sometimes shattered by the

sight of marine litter piled up on the shorelines.

Transported by ocean currents, waste from other parts of the world can end up in the Arctic. Land- and sea-based activities, particularly commercial fishing, are regional sources of litter. Using

equipment provided by the governor of Svalbard, cruise passengers often pick up the litter, bringing it on board for transport to Longyearbyen, where it is handled at a waste reception facility. Scientists there also analyse the trash at the end of the season to learn more

Passengers from an expedition cruise vessel help remove a fishing net stuck in the sand on a beach in Svalbard, Norway in 2018.



Photo: Chelsea Claus

about what types of waste are showing up and where it is coming from. This information helps decision-makers develop action plans for tackling marine litter.

Marine litter puts Arctic wildlife at risk. In Svalbard, nine out of 10 fulmars (tube-nosed seabirds) have plastic in their stomachs, and polar bears have been observed ingesting garbage. Reindeer have caught their antlers in ropes and fishing nets that drift ashore—misadventures that have proved fatal in many cases.

Most expedition cruise vessels in the Arctic are members of the Association of Arctic Expedition Cruise Operators (AECO), an organization that is dedicated to managing safe, responsible, environmentally friendly tourism in

the Arctic. In 2018, AECO launched its **Clean Seas** project to step up efforts to combat marine litter by working with expedition cruise operators on solutions to cut back on single-use items, enhancing clean-up efforts and educating visitors about marine litter. However, the coronavirus pandemic has thrown a wrench into these efforts and disrupted the industry's plans.

For years, expedition cruise operators belonging to AECO have been rethinking their facilities and adapting their products to reduce waste—for example, installing water and soap dispensers, removing single-use items and requiring more eco-friendly product packaging. Since the coronavirus pandemic began, operators have been trying to figure out if and how operations can resume under

new guidelines and regulations. For example, refillable water bottle stations and shared salt and pepper shakers on dining tables are now being questioned for their ability to spread the virus, and operators fear they will have to revoke some of their efforts.

Unfortunately, this virus may be with us for some time. We must think beyond short-term solutions and continue to work toward sustainable and environmentally friendly tourism, even in this pandemic, without losing ➤



Photo: Haimen Foto

MELISSA NACKE is an environmental specialist in Tromsø,

Norway who works with the Association of Arctic Expedition Cruise Operators.

the positive momentum of responsible tourism that was created.

Historically, clean-up efforts by tourists and locals in Svalbard were hugely successful: more than 40,000 kilograms of marine litter have been removed to date. This success is largely due to the collaboration with the governor of Svalbard, highlighting the importance of establishing partnerships with local entities and ensuring that tourism benefits both operators and destinations.

In a post-COVID world, a “green recovery” for the Arctic needs to benefit the people who live there. This past season, along with losing tourists’ clean-up efforts, local Arctic communities have also foregone the revenue normally generated by expedition cruise operations. To ensure the safety of communities, alternative solutions for local engagement and benefits are being explored for when cruises resume. Early ideas include having vessels make “nature only” landings away from communities, bringing local crafts on board vessels for sale to avoid contact between tourists and locals, or having local artists set up art installations outside of communities for when tourists arrive. But given the ongoing uncertainties and frequent government rule changes, all these proposals are only suggestions for now, not plans.

Before the pandemic, AECO was looking to expand clean-up efforts in other Arctic areas and partnering with local stakeholders in Iceland. When expedition cruise operations can resume, we’re looking forward to seeing Icelandic locals and expedition cruise passengers work together to combat marine plastic pollution and reduce the overall environmental footprint while creating a space where mutual cultural understanding and respect are enhanced.

During this time of uncertainty, we must ensure that environmental progress is not lost, and continue to find innovative solutions to further reduce our impact. COVID-19 will not derail AECO’s work towards sustainable, responsible and safe Arctic cruise tourism. ○

Progress Interrupted

COVID-19 pandemic brings Arctic Council work to a standstill

When the COVID-19 pandemic broke out, the world changed dramatically almost overnight. From where we can travel to how we work, life hasn’t been the same for most people around the globe. However, while many organisations have found ways to move forward using online tools, the Arctic Council’s work isn’t well-suited to those—so many of its operations are facing challenges. The Council is the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic States, Indigenous communities and other Arctic inhabitants. As [TIMO KOIVUROVA](#) explains, the changes brought about by the pandemic are hurting the Council’s progress in terms of both science and diplomatic cooperation.

LIKE MANY PEOPLE around the world, my life changed dramatically in March. I went from being a relatively migratory person, travelling around the Arctic for work, to being stuck at home. There’s no question that some of the changes brought about by the pandemic have been positive. Life has slowed down and allowed many of us to spend more time with our families. Virtual meetings ensure more people can participate, and less travel means a reduced carbon footprint. But the fact remains that to accomplish the goals of the Arctic Council and Arctic science, we need conferences and seminars where we can see our colleagues in other countries.

Trying to run an international intergovernmental forum such as the Arctic Council through distant meetings poses some obvious challenges. Not only does

Closed borders, lockdowns and quarantines have brought most of the field work that would have occurred in the spring or summer to a standstill.



Photo: Arctic Council Secretariat/Unnea Nordström

Arctic Council officials meet in Rovaniemi, Finland, in November 2018. For now, meetings remain virtual.

it mean people are chained to their desks, but as borders remain closed and remote communities continue (justifiably) to shut their doors to outsiders, many important projects are also facing delays. Although restrictions are slowly relaxing, what we can achieve in the near future will depend greatly on how long this global pandemic lasts.

Although many meetings were scheduled for fall 2020, it is now clear that most will be fully or semi-virtual or postponed entirely. This is not good news for the Council. When you are trying to foster international cooperation, interacting through a computer screen isn't ideal. For one thing, virtual meetings are not conducive to building necessary trust. And much diplomacy takes place outside of formal meetings, such as in hallway discussions, coffee breaks, dinners and so on. You build trust when you get to know the whole person, not just the "e-personality" you meet through a computer screen. Without these personal connections, it is difficult to push projects forward as easily.

The other downside is the toll the pandemic has taken on Arctic research.

This situation is creating gaps in long-term data collection that will have an impact on research outcomes in the future.

Most of this research is international. Closed borders, lockdowns and quarantines have brought most of the field work that would have occurred in the spring or summer to a standstill. Some Arctic scientists have been able to continue their work using remote sensing and other equipment. But most other research in the Arctic has come to a screeching halt. It is even challenging to do research within one's own country because of the need to observe social distancing and related restrictions.

As well, there are fears of contamination if southern scientists travel north, as the rates of infection have been higher in the southern parts of Arctic

countries. In some cases, telephone or e-meetings are possible, but even then, there are often technical difficulties. Quality interviews need to be done in person to answer deeper questions. Most researchers cannot rely on remote surveys, satellites, drones or radar data. This situation is creating gaps in long-term data collection that will have an impact on research outcomes in the future. The big question for Arctic science is: how long will it take before a new normalcy is restored?

The Arctic Council recently released a study of the impacts of COVID-19 in the Arctic. The pandemic is poised to have significant effects on public health and societies in the region, so the Council recognized the need to consider how its work and mandate might be affected. It highlighted the value of activities like data sharing and collection, infectious disease

monitoring and assessment, public awareness campaigns and more.

Examining vulnerabilities and sources of resilience unique to Arctic communities (see infographic, page 11), the study

suggests strategies for "building back better," such as creating local green jobs and sustainable infrastructure, directing funds into local economies, and relying on nature-based solutions adapted for climate change.

Obviously, it's difficult to predict the future. We are sitting in limbo. One thing is for sure: we are all hoping that it will soon be safe to return to less restrictive measures. Unfortunately, we may have to wait for a vaccine. Only then will we be able to organize the international conferences and seminars we need and get back to doing critical field research across the Arctic. ○



TIMO KOIVUROVA is director of the Arctic Centre, University of Lapland, Finland, and is a member of the Social, Economic and Cultural Expert Group within the Sustainable Development Working Group (SDWG) of the Arctic Council.

Contributor Sonya Epifantseva demonstrates in Moscow's Pushkinskaya Square. Her sign says, "Fossil fuel economy is the last century! We need a new green one."



A Russian activist weighs the likelihood of a green recovery

The pandemic has changed life for everyone, but arguably none more so than the world's young people. For many, their lives have been put on hold. Their educations have been interrupted, and milestones such as graduations have been cancelled. But Russian youth climate activist [SONYA EPIFANTSEVA](#) sees a potential upside: she hopes the pandemic might help people across the Arctic— and around the globe—understand the need to choose a greener path forward.

I SPENT THE early months of the pandemic in my hometown, Novosibirsk, the capital of Siberia. For as long as I can remember, this large industrial city has been plagued by factory exhaust. But when industrial activities were suspended during the pandemic, the air became cleaner—at least, until summer forest fires filled the city with smoke again. Everyone assumed that last summer's tragedy—when 21 million hectares burned in Siberia—would not repeat itself, but unfortunately, this year has been even worse. Wishful thinking won't stop climate change—and the government isn't even putting out the fires in some places because they are considered "controlled fire zones."

During the self-isolation that marked the early days of the pandemic, many people in Russia began to analyse world events more critically. Many of my acquaintances began to take a more conscious approach to their lives, giving thought to how we treat our planet and where humanity may end up if we don't make changes. Unfortunately, despite this shift in attitudes, there is still very little action to address the climate crisis. Yet if we don't act, there is no doubt that the crisis will lead to unsuitable living conditions in many parts of the world, including mine.

This summer, it also became obvious that Russian companies are treating the Arctic with dangerous disrespect. The diesel fuel spill in Norilsk, a city on Siberia's Taymyr peninsula, made this abundantly clear. This industrial disaster happened when an abrupt spring thaw fatally damaged massive oil storage equipment at the Nor Nickel factory, which produces palladium, nickel, platinum and copper. The aged and badly maintained container fell apart, flooding local rivers with more than 15,000 tonnes of diesel oil.

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Investigations of the disaster's impact have since revealed that entire river ecosystems in the area are on the verge of collapse, and that hazardous waste has been draining into rivers in this beautiful, rich region for years. These are crimes for which we must hold companies accountable. Expanding industrial activity in the Arctic is accelerating the thawing of permafrost and the climate crisis, jeopardizing not only Russia's future, but that of the entire world.

As the economic recovery unfolds, the Russian government has a chance to choose a greener path and focus more on renewable energy sources. Unfortunately, this seems unlikely, as many regional economies in Russia depend on fuel exports—so if other countries switch to renewable energy sources, these regional economies will collapse. Russia is a huge country, with great untapped potential for wind and solar power installations. It needs to start thinking about the future, not only about its income. ○



SONYA EPIFANTSEVA, 19, studies at the Higher School of Economics in Moscow. She has been a climate activist for two years.

COVID-19 pushes Arctic Council meetings online



Like organizations around the world, the Arctic Council has had to change the way it does business because of the COVID-19 pandemic. In June 2020, its senior Arctic officials met virtually. Officials and Indigenous permanent participant organizations spent two days online discussing a number of topics, including the effects of the pandemic on the health, economies and cultures of Arctic peoples.



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