

# PUBLIC SECTOR DIGEST

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## Climate change now a high priority as Arctic Council Chairmanship passes from Canada to the US

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On April 24th leaders from the Arctic nations met in Nunavut to mark the official transfer of the two year Arctic Council Chairmanship from Canada to the United States. While Canada's Environment Minister Leona Aglukkaq used the opportunity to admonish Russia's aggression in the Ukraine, scientists and world leaders condemned Canada for drawing focus away from climate change mitigation in the Arctic, at the event but also over the course of Canada's entire Arctic Council Chairmanship. At the meeting in Nunavut, Minister Aglukkaq had the following to say in reference to Canada's accomplishments as Chair of the Arctic Council, "As a Canadian, born and raised in Canada's Arctic, I am proud Canada has advocated putting northerners at the forefront of the Arctic Council agenda." To be fair, Canada has rightfully put northerners at the forefront of Arctic policy development. But whether Canada was also able to bring focus to the daunting challenge of climate change mitigation in the Arctic is a hotly contested point. What is clear is that the United States will be making climate change its number one priority as Chair of the Arctic Council. With Secretary of State John Kerry leading the initiative, a well-respected authority on climate change matters, the US hopes to make headway on issues like black carbon emissions reduction in the next two years.

Before moving forward, it is important for the Arctic Council, and all interested parties, to take stock of the current threats to the Arctic and the implications for climate change on a global scale. On Earth Day, one day after Canada's Federal Government presented a budget devoid of any mention of climate change, the Canadian Climate Forum (the Forum) hosted a gathering of leading climate change scientists and Arctic experts in Ottawa. The Forum, the successor to the Canadian Foundation for Climate

and Atmospheric Sciences (CFCAS), is an Ottawa-based non-profit with a mission to disseminate and convene climate science knowledge to guide decision makers in the development of mitigation and adaptation strategies. The Earth Day gathering, entitled 'The Unraveling of the Arctic' featured two expert panels, the first focusing on the latest environmental changes that have been measured in the Arctic, and the second highlighting the impact of those changes on Arctic peoples and biodiversity.

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## **Melting Glaciers**

All three of the presenters from the first panel painted a similar picture of alarming environmental change in the Arctic that will not only have serious consequences for the North, but for the entire planet. According to Martin Sharp, a glaciologist from the University of Alberta, "the last decade in the Canadian Arctic has been unlike anything we've seen in the last 9000 years." Sharp's dramatic statement was in measure with the scale of loss in the mass of Canadian glaciers. Due to the increase in air temperature, changes in snowfall, and rising ocean temperatures, our Arctic glaciers are melting, contributing to the rise in global sea levels. To make matters worse, scientists have detected microbial growth on the surface of Arctic glaciers, decreasing what is called the 'albedo trend' – the glacier's ability to reflect sunlight instead of absorbing it. As glaciers become covered with microbial growth, the albedo trend decreases, more sunlight is absorbed, and the glacier melts further. The rate of loss in the total mass of glaciers has been accelerating at an alarming rate since the 1990s. For Sharp, "this is not an Arctic problem, it is a global problem. Places like Bangladesh will be most affected by sea level rise and yet barely contribute to the problem."

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## **Thawing Permafrost**

Antoni Lewkowicz, a scientist from the University of Ottawa and President of the World Permafrost Association, explained the effect of a warming planet on permafrost – earth material whose temperature remains equal to or below zero degrees Celsius for at least two years. If the average air temperature in a climate is cold enough, but there are no glaciers present, permafrost occurs. Permafrost is a natural part of the Arctic environment,

home to the peoples of the Arctic and a source of natural resources like Siberian natural gas. Due to climate change, permafrost is warming in all parts of the Arctic and completely thawing in some areas. According to Lewkowicz, permafrost can be likened to a "freezer full of carbon." As Arctic permafrost continues to warm and thaw, massive stores of carbon will be released into the atmosphere, accelerating climate change trends. Currently, one gigaton of carbon per year is released from Arctic permafrost. Lewkowicz warns that by the year 2100, the rate at which carbon is released from permafrost alone would result in a 'no turning back' scenario for climate change.



Photo credit Ed Struzik

## **Melting Sea Ice**

As glaciers retreat from our northern landscapes, sea ice is disappearing from our northern seas, contributing further to rising global sea levels. Bruno Tremblay, Associate Professor in McGill's Department of Atmospheric and Oceanic Sciences, reported that as warmer water is being pushed into the Arctic from the Pacific Ocean, even the oldest thickest sea ice is no longer safe from melting. Arctic sea ice has also become more mobile, allowing for larger amounts to flow out of the Arctic instead of remaining through to the winter and contributing to the thickening of the

sea ice. The minimum extent of the Arctic sea ice ebbs and flows with the conditions of each year, but there is a clear downward trend overtime toward less and less sea ice in the Arctic, raising sea levels and jeopardizing the way of life of northern peoples and wildlife who depend on the ice for hunting.

## **Biodiversity in Flux**

As temperatures warm in the north, new vegetation is growing, inviting southern grazing species further north with their predators hot on their trail. Warmer temperatures have also caused an explosion in biting insect populations in the Arctic, pushing southern species even further north as they seek to escape the onslaught of insect pests. Traditionally southern species like the grizzly bear and the red fox are coming in contact with northern species like the polar bear and Arctic fox, causing conflict and in some cases hybrid populations. Some species will fare better than others as the Arctic environment continues to transform. According to Dr. Risa Smith of the Arctic Council's biodiversity working group, Conservation of Arctic Flora and Fauna (CAFF), Pacific walruses "are particularly vulnerable due to the loss of sea ice in the Arctic." As the sea ice disappears in the Russian Arctic, Pacific walruses have been forced onto the land which makes hunting far less accessible. In one area, a colony of 90,000 walruses has been forced together on land where food is scarce and infants are unwittingly crushed by adults. Meanwhile, Atlantic walruses, being far less dependent on sea ice for hunting, will likely better adapt to the changing Arctic.



Photo credit Ed Struzik

## **Stewards of the Arctic**

As scientists and politicians from the south discuss the future of the Arctic, the Inuit of Canada's Far North are reminding us all that the Arctic is home to people with generations of knowledge about the Arctic environment and its challenges. "The Arctic is not the last frontier, it is our home" explained Terry Audla, President of the nonprofit organization ITK that represents Canada's Inuit people. "Traditional knowledge is inextricably linked to scientific knowledge, especially in Canada's Arctic" added Audla. Despite receding sea ice, 70 percent of Inuit households are still hunting in the Arctic, using traditional knowledge of the sea and the land. But development has also come to the Arctic, with natural resource extraction and tourism – both on land and sea – expanding in the Far North. According to Audla, "the Inuit people support development, but not development at all costs." The unemployment rate remains four times higher for aboriginals versus non-aboriginals in the Canadian Arctic. Economic development will bring more opportunity to the north, but environmental protection still remains a high priority for northern people. As temperatures warm and permafrost thaws, northern infrastructure is failing as the ground shifts, jeopardizing economic development and public safety. Ed Struzik, a Fellow with Queen's University's Institute for Energy and Environmental Policy and award winning Arctic author and

photographer, warned of the dangers of increased shipping in the Arctic. "Not if, but when there is an oil spill, the closest ice breaker could be a week away" explained Struzik. Once a cleanup crew finally arrives, separating oil from ice becomes a nearly impossible task. Climate change will continue to bring opportunity and challenge to the inhabitants of the Far North, but for Audla, "the Inuit will remain the stewards of the Arctic."

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## **Policy Progress**

Although progress cannot yet be measured in the Arctic on climate change mitigation, there are signs of progress on the policy front. Previously it was believed that all carbon emissions were equally detrimental to our planet's climate, but scientists have discovered that black carbon and methane emissions in and near the Arctic have a much larger impact on climate change. These pollutants not only contribute to warming temperatures, but the black sediment that returns from the atmosphere to the snowy and icy surfaces of the Arctic absorb sunlight and further warm the earth. On Friday April 24<sup>th</sup> at the Arctic Council's meeting in Iqaluit, ministers from the eight Arctic nations and leaders of Arctic Indigenous peoples signed the Framework for Action on Enhanced Black Carbon and Methane Emissions Reductions. The agreement includes targets for emissions inventories from each nation, action plans on mitigation strategies, and national reporting on progress to the Arctic Council. Erika Rosenthal, a staff attorney with Earthjustice, stated "it is extraordinary for eight countries to get together to sign this document." While the framework could have included more robust targets, "we've got a tremendous amount to work with" said Rosenthal.

The theme of Canada's Chairmanship of the Arctic Council 'Development for the People of the North' aptly reflected its ambitions and accomplishments over the last two years, including the creation of the Arctic Economic Council (AEC), a new independent business forum for the Far North. The United States has adopted the theme 'One Arctic: Shared Opportunities, Challenges and Responsibilities' for its Chairmanship now underway. The new US Chair, John Kerry, expressed his priorities at the Iqaluit meeting: "There's only 'one Arctic' and all of us – the United States, other nations, indigenous peoples, and Arctic communities - must join together to ensure responsible stewardship of this incredible region." For Rosenthal, Kerry represents strong leadership for climate change mitigation in the Arctic: "We're lucky to have Secretary Kerry at the helm."

US Ambassador to Canada Bruce Heyman was present at the Canadian Climate Forum event to provide closing remarks. Ambassador Heyman outlined the three overarching goals for America's Chairmanship of the

Arctic Council: To continue strengthening the Arctic Council as an intergovernmental forum; to introduce new long-term priorities into the Arctic Council; and to raise Arctic and climate change awareness within the United States and across the world. With a two-year focus on northern development at the Arctic Council, many see the explicit emphasis on climate change awareness as a welcome shift. It may seem odd to most Canadians – residents of a vast northern nation that cherishes its wilderness – that America would be filling the void left by Canada in climate change awareness for the Arctic. But the times, just like our climate, they are a-changing'.



Photo credit Ed Struzik