

## CLIMATE CHANGE CHRONICLE 16

### Tuktoyaktuk

We get increasing daily reminders in the media about climate change. Why do many of us have so much difficulty dealing with it?

I think it is because the major impacts seem so far away. There are the monsoons and droughts in Asia, the forest fires in California, the hurricanes and rising waters in the lower United States. But we fail to notice a classic example of climate change in part of our own country—the Canadian Arctic.

Like the Arctic regions in the other countries (Russia, the U.S-Alaska, Greenland-Denmark, Sweden and Finland) our Canadian Arctic is melting and warming faster than the rest of the planet. The major cause of the melting is the loss of ice in the ocean.

(*Albedo* is a measure of how well the earth's surface reflects sunlight. Snow-covered sea ice has a high albedo and reflects 85 per cent of sunlight back into space. But as the ice melts in summer the open water is revealed and is darker. It reflects just seven per cent of sunlight into space. The less sunlight is reflected, the more heat the planet absorbs.)

So how does this melting affect communities? Here is an example. The Inuvialuit community of Tuktoyaktuk on the Arctic Ocean is a sort of posterchild for Arctic warming.

In the 1990s my work took me to Tuk. In the winters before a 138 K road was built from Inuvik, I discovered that the only way to get there, if you can believe it, was by taxi.

I'd fly into Inuvik, hire a cab and we would drive north down the ice road in the Mackenzie River and out into to the Arctic Ocean. We would then take a right hand turn onto another ice road down the ocean, and after an hour or so we would turn right again into a third ice road that took us into Tuk. The cab fare was \$200.

So why is Tuk a poster child? Because it manifests all the challenges and impacts of climate change in the Nunavut and high Arctic communities of the Northwest Territories.

Most of these indigenous Arctic communities were created on the edge of the oceans to give residents easy access to seals, fish and other forms of sea food. But because the Arctic is melting the oceans are rising, eroding beaches and damaging the foundations of houses.

In my Tuk visits I remember, in particular, the community freezer. It was built beneath the ground. You walked down a set of steps into a large cellar. The fish, seals, and caribou were lined up in rows. Recently I saw a picture of the freezer. It is now nothing but an abandoned hole in the ground. It had been built into the permafrost and the permafrost had melted.

Dissolving permafrost (with the release of methane) is taking its toll on all aspects of life in the Arctic. It is affecting the roads across the tundra's lakes and streams to mines that depend upon the roads for equipment and supplies. It is damaging community houses buildings, roads and bridges. It is affecting the local economies and the ability of community and territorial governments to meet the increasing need for the basics of life.

It is also affecting caribou, a food staple for most indigenous peoples. There has been a decisive decline in most if not all caribou herds. Rain from the lengthening fall seasons hits the ground and freezes. Then it snows and the migrating herds have difficulty breaking through the ice to get at the lichen they depend upon for food. The softer snow also impedes caribou migrations. They sink deeper into the snow and their young, in particular, have more trouble walking and escaping from predators.

The warming is also affecting Indigenous cultures. For centuries the hunters have travelled the same trails into the hunting grounds, often across lakes and rivers or along the edge of the ocean. But because of the melting permafrost the trails have become dangerous.

So why is Tuk such an important example? Because it reminds us that climate change is not something out there in a faraway place. It is happening in dramatic fashion in our own country. It helps us understand that we need a different way of preparing for a climate changing future.

Most of us have experience preparing for the future. We save money for our children's college education, we save for our own retirements. We can get flood insurance, and if you live on the West Coast, you can even buy earthquake insurance.

So why can't we buy climate change insurance to prepare for our climate changing future? Because there is no climate change insurance and I doubt there ever will be.

We are beginning to live in a very different anthropocentric world faced with irreversible transformations. It is a new kind of world that we have never experienced before. The only insurance we have is the hope in ourselves and our willingness to accept this challenge.

It will be a hard struggle but as Dana Meadows once noted, "*We have exactly enough time—starting now.*"

And as the melting world of Tuk reminds us... "*What happens in the Arctic doesn't stay in the Arctic.*"

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