

# Northern Climate ExChange

*Independent Information - Shared Understanding - Action on Climate Change*

NCE Update November 18, 2009

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## Announcements

### 1. Report: **The Carbon the World Forgot - November 12, 2009**

Boreal forests store more carbon than any other terrestrial ecosystem on earth - twice as much per area as tropical forests. Past estimates of this carbon greatly underestimated the amount, depth, and longevity of this carbon. As the most intact remaining forest on earth, the boreal forest also has exceptionally high potential to accommodate plants and animals forced to shift due to climate change.

This report, **The Carbon the World Forgot**, questions whether international negotiations on carbon and forest protection have adequately considered boreal forests in light of the scientific findings outlining their significance.

[Download press release](#)

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[www.borealbirds.org](http://www.borealbirds.org)

### 2. Whitehorse Community Adaptation Project (WhiteCAP) - Bioregional Mapping Session

November 19: 6-9 pm  
Yukon College, Room A2404

Northern Climate ExChange is developing bioregional maps to support



climate change adaptation planning in the community. Bioregional maps communicate regional values.

Please come out and show us what about Whitehorse is important to you.

**For more information contact:**

Ryan Hennessey, Community Adaptation Project Manager,  
668-8874, [rhennessey@yukoncollege.yk.ca](mailto:rhennessey@yukoncollege.yk.ca).

Snacks, tea and coffee will be provided.

[www.taiga.net/nce/adaptation](http://www.taiga.net/nce/adaptation)

### **3. European Research Framework Programme - Research on Climate Change**

This publication has been prepared for the **Third World Climate Conference** (Geneva, September 2009) and will be presented at the **15th Conference of the Parties to the United Framework Convention on Climate Change** (COP-15, Copenhagen, December 2009). It provides an overview of recently completed and ongoing climate research projects undertaken under the 6th and 7th Research Framework Programmes of the European Community. EC-funded research projects selected for this publication contribute to the understanding of the climate system ranging from climate processes and their modelling, to the assessment of climate change impacts and the costs of response measures.

[Download Report - pdf](#) (7.8 MB)

[www.ec.europa.eu](http://www.ec.europa.eu)

### **4. GLOBAL DAY OF ACTION - International Demonstrations on Climate Change, December 12th 2009.**

The **Global Day of Action** on climate has occurred every year since 2005 at the time of the annual United Nations Talks on climate change (the COP or "Conference of Parties" to the United Nations Framework Convention on Climate Change or UNFCCC). People from all around the world have come together on the same day to demand urgent action on climate, and climate justice, from the governments of the world meeting at the annual climate talks. The Global Day of Action 2009 will take place **December 12**, during the United Nations Talks on climate change (COP15/MOP5) in Copenhagen, Denmark.

[www.globalclimatecampaign.org](http://www.globalclimatecampaign.org)

## **Articles**

### **1. Roll a marble, observe climate change in Cambay**

*Buckling floors reveal effects of warming*

By Jane George  
Nunatsiaq News  
November 16th, 2009

You might think Cambridge Bay is located too far north to experience the effects of global warming.

But this Kitikmeot community is definitely feeling changes to its environment.

These include the presence of new birds like sparrows and extreme weather events like hail and thunderstorms as well as increased permafrost melt and erosion.

Buildings are also showing the impact of the changing climate. If you roll a marble on the floor in one Cambridge Bay home, it gravitates to the centre because the building is buckling in due to permafrost melt underneath.

In a cabin located outside of town, water started flowing up through the floor, also due to permafrost melt.

Ponds and rivers that used to freeze earlier and stay frozen longer are among the other signs of change which mean Cambridge Bay should prepare for a future that will require new ways of going out on the land and living in the community.

To this end, Cambridge Bay is one of five communities in Nunavut now under scrutiny as part of the Canada-Nunavut climate change or atuliquq partnership, formed to support adaptation to climate change in Nunavut communities.

The name of the pilot project, Atuliquq (which means coming into force in Inuktitut), reflects its goal of trying to help communities minimize damage from climate change damage and benefit from any positive opportunities from climate change, an overview of this project says.

The Government of Nunavut, federal government departments, and the Canadian Institute of Planners are now working with Iqaluit, Arviat, Whale Cove, Kugluktuk, and Cambridge Bay to come up with local climate change impact and adaptation plans, which will evaluate changes in the climate and how to deal with them.

The first phase of the project looked at developing climate change plans for Hall Beach and Clyde River.

As for the kind of changes that lie ahead in Iqaluit, Arviat, Whale Cove, Kugluktuk, and Cambridge Bay, these communities all face a probable sea level rise by 2100- which could be as much as 50 centimetres for Kugluktuk and Cambridge Bay, according to a draft report on sea level projections prepared for the five-community pilot project.

The sea-level rise is not significant as was thought, says Christine Callihoo, one of the planners involved in the project.

Over much of Nunavut, the land is rising because when glaciers melt, land rises, so this is expected to lessen the effects of rising global sea levels.

But erosion caused by rougher seas, high winds and melting permafrost may make the impact of any sea-level rise worse, as is the case in Alaska where communities like Shismaref are crumbling into the sea.

If that happens, Nunavut communities may have to think about relocating some infrastructure which could be affected by permafrost melt.

In Cambridge Bay, this could mean the possible relocation of water supply, sewage lagoon, fuel tank farm, which may be at risk of erosion or damage due to permafrost loss.

The members of the Atuliquq climate change consultant team returned to Cambridge Bay on Nov. 10 for a community supper and meeting to discuss the project's progress so far.

Cambridge Bay now has a preliminary plan of how to better tackle climate change.

The proposals for action include:

- Establishing more accurate measuring and reporting methods of local ice and weather conditions to the community;
- Recognizing information that hunters and trappers provide on ice and snow condition and providing them with new forms of communication, like satellite phones, so they can warn the community about potential dangers;
- Increasing community awareness about climate change; and,

- Documenting elders' knowledge to better measure and report local ice and weather conditions.

By 2011, the project wants to prepare community adaptation plans for all five pilot communities.

These plans will also come up with tools that can be used by other communities in Nunavut, such as a climate change planning kit and a training module for hamlets.

Another goal of the project is to establish a Nunavut permafrost monitoring network.

[www.nunatsiaqonline.ca](http://www.nunatsiaqonline.ca)

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## **2. Inuit leaders demand action at climate-change conference**

By Bob Weber  
CBC News  
November 16, 2009

Inuit leaders are calling on Canada's three northern territories to be more vocal about the need to address climate change, as the United Nations conference comes up in Copenhagen next month.

Canada will be among 193 nations represented at the UN's 15th Conference of the Parties to the Kyoto Protocol, to be held Dec. 7-18 in Copenhagen.

The 193 countries have ratified the United Nations Framework Climate Change Convention.

Nunavut Premier Eva Aariak and Northwest Territories Premier Floyd Roland, as well as Yukon deputy premier and Environment Minister Elaine Taylor, will be among representatives from across Canada at the Copenhagen conference.

"Of all the peoples in the world, knowing just how negatively impacted we have been by globalization, we should be in the lead as to how we are going to create balanced sustainability in our own Arctic," Inuit environmental activist Sheila Watt-Cloutier told CBC News.

Watt-Cloutier said lowering greenhouse gas emissions and slowing climate change is a human rights issue, so it's critical for countries like Canada to make a commitment to that effect in Copenhagen.

The Inuit Circumpolar Council, which represents about 160,000 Inuit from Canada, Russia, Greenland and the U.S., is also calling on northern and international leaders to take strong action in Copenhagen.

"I can't think that they're doing enough," said Duane Smith, president of the Inuit Circumpolar Council Canada.

"They should be more visible and proactive in regards to trying to come up with alternative energy sources, ensuring that our negative impacts on the environment, right at the community level as well, are minimized to the greatest extent possible."

The council has listed six commitments it wants from global leaders, including deeper cuts to greenhouse gas emissions, an international fund dedicated to climate change adaptation, and support for green energy technology.

The council says that setting up a climate change adaptation fund, which would be financed by G20 nations, would require an immediate investment of \$20 billion US, going up to \$100 billion US by 2020.

"We think that too much time is being wasted in discussions and downplaying the need and the urgency to address climate change issues," he said, adding that Inuit are experiencing the effects of climate change first-hand.

Smith said the Inuit Circumpolar Council will have several representatives in Copenhagen, and they will have kiosks and displays as well as a side event to raise awareness of Arctic indigenous peoples.

[www.cbc.ca](http://www.cbc.ca)

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### **3. Inuit practices "assaulted" by global warming: ICC**

*"The Arctic is at the epicenter of climate change"*

By Jane George  
Nunatsiaq News  
November 17, 2009

There's no time to lose in tackling climate change, says Jimmy Stotts, president of the Inuit Circumpolar Council, which represents Inuit in Russia, Alaska, Canada and Greenland.

"The Arctic is at the epicentre of climate change. Inuit traditions and subsistence practices have already been assaulted," Stotts said in a Nov. 13 ICC news release.

ICC's six-point "call to global leaders" comes less than three weeks before politicians, officials and scientists meet in Copenhagen Dec. 7 to 19 to reach some consensus on how to curb and manage climate change. ICC wants to draw attention to its needs and establish the right of Inuit communities to benefit from the billion-dollar climate change adaptation fund, which is expected to be part of a new global plan on climate change.

Help to cope with the already-visible impacts of climate change the Arctic will be the key to success in Copenhagen, ICC says.

And any climate change adaptation fund should recognize the responsibility of wealthy countries to help communities within their borders, which are the most vulnerable to climate change impacts, including indigenous peoples, ICC says.

The climate change adaptation fund shouldn't just help the citizens of developing, Third World nations, says Edward Itta, ICC vice-chair for Alaska, who is also the mayor of the North Slope borough.

"We Inuit live in so-called developed countries. Yet we are getting ready to relocate entire communities and rebuild our infrastructure as our permafrost melts and our shorelines erode", said Itta.

The upcoming meeting in Copenhagen, which is the focus of ICC's "call for action," is generally referred to as "COP15" because it's the 15th time that there has been a conference among the parties or 200 governments involved in international policy-making on climate change.

US president Barack Obama and Germany's chancellor Angela Merkel are among the many world leaders expected to make an appearance at the end of the two-week conference.

"We hope that the world's political leaders will listen," Stotts said.

Aqqaluk Lyngé, ICC's vice-chair for Greenland, says the Greenland ice cap's rapid melt shows the world that Inuit are among the most vulnerable people in the world.

"Government leaders at COP15 must take the strongest possible measures to protect our Arctic homeland," Lyngé said. "We need resources and technology to help us adapt."

Duane Smith, ICC vice-chair for Canada, says Inuit communities need small-scale, non-polluting technologies to help them cope.

"Many Arctic communities want green technology to help offset the high cost of living. But access to green energy is still expensive here," Smith said.

At COP 15, ICC wants to see:

- **A new global deal that will limit greenhouse gasses to keep long-term temperature increases below 2 C:** "an increase in average global temperatures of 2 C, currently identified as a "point of no return" for climate change impacts, would mean an increase of 3.2 to 6.6 C in the Arctic - an increase that would have major impacts on sea ice and glaciers..."
- **Recognition that climate change impacts on the Arctic need to be avoided:** "the Arctic plays a uniquely important role in helping to support the ecological adaptations on which our global human civilization depends."
- **An assessment of the impact of climate change on indigenous peoples:** addressing the role of traditional knowledge in policy decisions;
- **Creation of an international climate change adaptation fund to help people adapt to climate change, which would go directly to vulnerable groups, communities and countries** "Inuit communities in the Arctic, alongside other indigenous communities, are among those most affected by climate change, [so] adaptation mechanisms must be directed not only towards developing countries but also vulnerable populations within developed states;" and,
- **Green technology subsidies:** for small-scale energy technology for communities and households. Inuit leaders also offered to help the climate change deliberations in Copenhagen with their traditional knowledge of the environment.

"We offer our traditional knowledge, which is based on living closely with the land and sea over many generations, and is passed down from grandmother to granddaughter, grandfather to grandson," said Tatiana Achirgina, ICC vice-chair for Chukotka.

UN member states and their scientists should "draw upon this knowledge as they tackle climate change impacts and adaptation challenges," Achirgina said.

Many hope the Copenhagen meeting will produce a framework for a legally-binding global treaty on climate change to replace the Kyoto Protocol, which expires in 2012.

In 1997, Canada signed the Kyoto Protocol, committing to reduce greenhouse gas emissions by six per cent below 1990 levels by 2010.

Scientists now say industrial countries like Canada should reduce these emissions by 25 to 40 per cent from 1990 levels by 2020.

The outcome of COP15 is likely to be a political agreement on targets to reduce greenhouse gas emissions and what kind of help developing countries can expect.

This agreement would list reduction targets for greenhouse gas emissions from the industrialized countries, spell out what the developing countries, like China and India, are ready to do, and say who will foot the bill to support and develop new, non-polluting technologies.

No matter what deal COP 15 finally produces, ICC wants to keep the Arctic in the forefront and is planning an Arctic Day in Copenhagen's North Atlantic house on Dec. 16 to highlight climate change's impact on the region.

Inuit leaders, including Nunavut's premier Eva Aariak, a member of the official delegation for Canada, will also be in Copenhagen.

[www.nunatsiaqonline.ca](http://www.nunatsiaqonline.ca)

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#### 4. Global warming a growing threat to Arctic reindeer

By Catherine Marciano  
Agence France Presse - AFP

*Yahoo News On-line*  
November 13, 2009

JARFJORD, Norway (AFP) - On Norway's border with Russia, the consequences of climate change are affecting the reindeer population as rising temperatures hit food stocks and industry growth eats into vital grazing land.

"Over the past three years, I've had to give some hay to my 800 reindeer during the coldest months. It's more expensive and it gives me more work," said Jan Egil Trasti, a reindeer herder from the native Sami people.

The reason: the lichen his animals graze on has become tougher to find as winter temperatures rise. The snow thaws, and along with rain, then freezes anew -- covering the ground in layers impervious to all but the most tenacious reindeer.

Grazing land is also disappearing under the weight of industry as buildings, pipelines, roads and other infrastructure increasingly dot old pastures.

Trasti's nomadic ancestors have raised these beasts for hundreds of years. His grandfather worked the Russian tundra before moving to the Norwegian coast.

"I have it in my blood. I hope one of my sons will take over," the herder said. He has, though, a hint of doubt in his eyes, his meagre earnings well below the average Norwegian salary.

Only a minority of Sami -- some 3,000 -- make their living raising and herding in Norway, home to around 240,000 reindeer.

In this month of November, just weeks ahead of a key UN climate summit in Denmark, snow has not yet blanketed the flora in the Far North.

Indeed temperatures in this region near the Barents Sea are unseasonably mild, above zero degrees Celsius.

In the past, when the snows have come, they have generally fallen on dry ground, whereas now they fall on lichen engorged with water.

Trasti is no scientist, and environmental experts hesitate to link specific weather events to long-term climate change, but trends over the last several decades have clearly shown the Arctic hit hard by global warming.

In September, a study in the journal *Science* reported dramatic effects on animals in the Arctic due to a one-degree Celsius warming over the past 150 years.

The Arctic tends to warm three times faster than elsewhere in the Northern Hemisphere because of a phenomenon called Arctic amplification -- a separate study in the same journal noted that summer temperatures were some 1.4 degrees Celsius warmer than they should have been by the year 2000.

Jonathan Colman, specialist in "reindeer ecology" at the University of Oslo, explained that sometimes "there's wet ice in the lichen."

"It gets into their stomachs and they can't digest the food."

To avoid losing precious livestock, the Sami are forced to move reindeer to drier ground, meaning it is more important than ever to respect the tradition of driving herds across the entire north of the nation.

An animal can sell for 240 euros (359 dollars), and its meat for around seven euros a kilogramme (10.46 dollars per 2.2 pounds).

Trasti can make extra money selling the hides or antlers to tourists, and also gets compensation if his animals are killed by predators.

Norwegian Sami follow the herd with vehicles, but their cousins in Russia still accompany the animals with sleds, camping as they go.

But the drive, and the ability to follow the reindeer, has been increasingly hampered by industrialisation.

An iron ore mine which was closed down 15 years ago has re-opened nearby, while elsewhere liquid gas terminals, wind farms and roads are dotted across, or separate, traditional pastures.

The International Centre for Reindeer Husbandry has expressed regret that "the herders have only a marginal influence on the development of their own traditional lands."

That's despite a law that "Norway was built on the territory of two people, the Sami and the Norwegians," said Christina Henriksen, a Sami who coordinates an aid programme for native peoples in the Arctic region.

"For me, being a Sami means herding reindeer," said Trasti, who does not speak his native language.

"My parents weren't allowed to speak Sami at school in the 60's," he said, and out of guilt, they "didn't teach us the language."

For the moment though, reindeer numbers are holding up under the strain of global warming, but that's a fact Colman puts down to their very resilience.

"If reindeer weren't as adaptable, there wouldn't be any left," he said.

[www.news.yahoo.com](http://www.news.yahoo.com)

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## **5. Greenland ice loss 'accelerating'**

By Richard Black  
BBC News  
November 12, 2009

The Greenland ice sheet is losing its mass faster than in previous years and making an increasing contribution to sea level rise, a study has confirmed.

Published in the journal Science, it has also given scientists a clearer view of why the sheet is shrinking.

The team used weather data, satellite readings and models of ice sheet behaviour to analyse the annual loss of 273 thousand million tonnes of ice.

Melting of the entire sheet would raise sea levels globally by about 7m (20ft).

For the period 2000-2008, melting Greenland ice raised sea levels by an average of about 0.46mm per year.

Since 2006, that has increased to 0.75mm per year.

"Since 2000, there's clearly been an accelerating loss of mass [from the ice sheet]," said lead researcher Michiel van den Broeke from Utrecht University in the Netherlands.

"But we've had three very warm summers, and that's enhanced the melt considerably.

"If this is going to continue, I cannot tell - but we do of course expect the climate to become warmer in the future."

In total, sea levels are rising by about 3mm per year, principally because seawater is expanding as it

warms.

## **Sea change**

Changes to the Greenland sheet and its much larger counterpart in Antarctica are subjects commanding a lot of interest within the scientific community because of the potential they have to raise sea levels to an extent that would flood many of the world's major cities.

The 2007 Intergovernmental Panel on Climate Change (IPCC) report projected a sea level rise of 28-43cm during this century.

But it acknowledged this was almost certainly an underestimate because understanding of how ice behaves was not good enough to make reliable projections.

By combining different sources of data in the way it has, and by quantifying the causes of mass loss, the new study has taken a big step forwards, according to Roger Barry, director of the World Data Center for Glaciology at the University of Colorado in Boulder, US.

"I think it's a very significant paper; the results in it are certainly very significant and new," he said.

"It does show that the [ice loss] trend has accelerated, and the reported contribution to sea level rise also shows a significant acceleration - so if you multiply these numbers up it puts us well beyond the IPCC estimates for 2100."

Professor Barry was an editor on the section of the IPCC report dealing with the polar regions.

## **On reflection**

An ice sheet can lose mass because of increased melting on the surface, because glaciers flow more quickly into the ocean, or because there is less precipitation in the winter so less bulk is added inland.

The new research shows that in Greenland, about half the loss comes from faster flow to the oceans, and the other half from changes on the ice sheet itself - principally surface melting.

Another analysis of satellite data, published in September, showed that of 111 fast-moving Greenland glaciers studied, 81 were thinning at twice the rate of the slow-moving ice beside them.

This indicates that the glaciers are accelerating and taking more ice into the surrounding sea.

Melting on the ice sheet's surface acts as a feedback mechanism, Dr van den Broeke explained, because the liquid water absorbs more and reflects less of the incoming solar radiation - resulting in a heating of the ice.

"Over the last 10 years, it's quite simple; warming over Greenland has caused the melting to increase, and that's set off this albedo feedback process," he told BBC News.

"Quite likely the oceans have also warmed, and it's likely that explains the [acceleration of] outlet glaciers because they're warmed from below."

Data provided over just the last few years by the Grace satellite mission - used in this study - is giving researchers a closer view of regional variations across the territory.

Grace's twin satellites map gravity at the Earth's surface in unprecedented detail; and it is now possible to tease out from the data that most of the mass is being lost in the southeast, southwest and northwest at low elevations where the air will generally be warmer than at high altitudes.

Professor Barry cautioned that the Grace mission, which has produced valuable data about Antarctica as well as Greenland, has only a further two years to run, and that no replacement is currently scheduled.

[news.bbc.co.uk](http://news.bbc.co.uk)

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## **6. Boreal forests store carbon, need help-Canada study**

By David Ljunggren  
Reuters  
Nov 12, 2009

OTTAWA, Nov 12 (Reuters) - The world needs to do more to protect boreal forests and peatlands, which store more carbon than any other ecosystem and help mitigate the effects of climate change, a Canadian report issued on Thursday said.

Boreal forests, found in northern areas like Canada, Russia, Scandinavia and parts of the United States, cover 11 percent of the earth and store 22 percent of all carbon on the land surface in soil, permafrost, peatlands and wetlands.

"Action is needed to conserve a region that contains 'The carbon the world forgot'," said the 36-page report from the Canadian Boreal Initiative, an environmental group ([here](#)).

The report said the 208.1 billion tonnes of carbon estimated to be stored by Canada's boreal forest and peatland was equivalent to 26 years worth of the world's 2006 carbon emissions from fossil fuel burning.

It's not clear if the Canadian government, which walked away from the Kyoto Protocol climate pact, might use the report as a possible way to win concessions in international talks on curbing greenhouse gas emission.

Russian Prime Minister Vladimir Putin said earlier this month that climate talks in Copenhagen next month should take account the role of the ability of Russia's forests to absorb carbon dioxide when setting climate change targets.

The Canadian report said boreal forests and peatland had a net cooling effect on the climate because they can remove carbon dioxide from the atmosphere and store it underground.

But these gases are released when the forests are logged or soils are disturbed, accelerating global warming, it said.

The report complained that the Kyoto climate pact focused almost exclusively on tropical forests, offered no incentives for forest conservation and excluded peatlands.

"Because the boreal forest is the largest terrestrial carbon storehouse on earth, keeping the boreal carbon reservoir in place is essential to avoid accelerating climate change."

The United Nations hopes a major climate meeting in Copenhagen in December will lead to a broader framework to expand or replace Kyoto, whose first phase ends in 2012.

"Any effective and affordable response to climate change should include preserving the world's remaining, carbon-rich old-growth forests," said Steve Kallick, of the Pew Environment Group's International Boreal Conservation Campaign.

This would require drastic cuts in industrial emissions and a vast increase in the area designated off limits to the kinds of industrial disturbances likely to release more carbon into the atmosphere, the report said.

[www.reuters.com](http://www.reuters.com)

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## **7. The Arctic Council prepares for COP 15**

By Tana Lowen Stratton  
Arctic Council  
November 17, 2009

In a successful two-day meeting in Copenhagen, the Arctic Council Senior Arctic Officials approved a number of reports and from the Council's working groups and discussed two new task forces.

The first Senior Arctic Official (SAO) meeting of the Danish Chairmanship of the Arctic Council (2009-2011) took place on 12-13 November in Copenhagen. The SAO Chair, Mr. Lars Møller, was very satisfied with the decisions taken at the meeting, "The meeting was very productive and we achieved our objectives. I am especially delighted that we now are well prepared for the Arctic Council activities at COP 15."

On climate change, SAOs approved the Arctic Council report on the Greenland Ice Sheet to be presented to the UN Climate Conference in December. Information about the Arctic Council will also be presented at an "Arctic Venue" during the CoP15. SAOs agreed that the Key Messages of Arctic Council's Arctic Biodiversity Trends - 2010: selected indicators of change report will be submitted to the Convention on Biological Diversity for inclusion in the upcoming third Global Biodiversity Outlook report.

SAOs approved work on a set of priorities for follow-up activities to respond to the recommendations in the Arctic Marine Shipping Assessment (AMSA) 2009 Report. These include an Arctic Council review of the global and regional measures that are in place for the protection of the Arctic marine and coastal environment, and to enhance cooperation in oil spill prevention.

SAOs also discussed the work of the Arctic Council's new Task Forces on Search and Rescue and on Short-lived Climate Forcers.

Maintaining and strengthening Arctic observation networks is an important priority. The Arctic Council, in cooperation with IASC and other international partners, leads continued work to advance the Sustaining Arctic Observing Networks (SAON) process. In addition, the Arctic Council's Circumpolar Biodiversity Monitoring Program continues to enhance coordination of long-term Arctic biodiversity monitoring.

Arctic Council assessments, for example on Snow, Water, Ice and Permafrost in the Arctic (SWIPA) and the Arctic Biodiversity Assessment (ABA), are assessing the most up-to-date scientific information including results from recent IPY research. The Oslo IPY Science Conference to be held 8-12 June 2009 will also be an opportunity to highlight results emerging from the intensive research undertaken during the IPY. The next SAO meeting will be held 28-29 April 2010 in Ilulissat.

[www.arctic-council.org](http://www.arctic-council.org)

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## **8. Declaration from the DAMOCLES symposium in Brussels 2009**

*The scientists attending the symposium have worked out a declaration summarizing the key findings from the project, as well as future projections and scenarios.*

DAMOCLES  
November 12, 2009

More than 150 scientists attended the international symposium "The Arctic climate system, its present status, future evolution and potential impacts". Two important outcomes of the symposium are a declaration and a conference statement incorporating results and perspectives from a large number of people and scientific disciplines. The declaration is building on the conference statement.

"We have achieved major accomplishments in all scientific fields of the project and the conference statement sum up the most important developments, observations and findings during the project period", said Jean Claude Gascard, scientific coordinator of DAMOCLES.

During the last 100 years, the Arctic atmosphere has warmed almost twice as fast as the global average. The sea-ice cover has rapidly decreased and thinned during at least three decades. The process is

accelerating because the amount of heat required to melt the remaining ice is reduced and moderate changes in heat flux from the ocean and the atmosphere can have large impacts on the Arctic ice cover.

The September 2007 sea-ice extent was an all-time record minimum, and September 2008 and 2009 had the second and third lowest summer ice extents ever observed. Projections show that it might completely disappear in summer by the end of this century with large potential consequences for ecology and humans.

The scientists are deeply concerned that the most recent CO2 emission estimates, are even higher than the most extreme IPCC-AR4 release scenario. Unless emissions are curbed significantly, a stabilisation of the Arctic's climate system will be unlikely.

The scientists in DAMOCLES achieved for the first time a systemic approach in integrating atmosphere physics (including solar radiation), glaciology (sea-ice) and oceanography in order to observe, understand and to quantify climate change in the Arctic. The project is Europe's flagship in the field of Arctic and climate research, and a major contributor to the International Polar Year. 46 institutions and 12 countries are involved, and the consortium is performing a remarkable research effort.

DAMOCLES started in 2005, and will end in June 2010.

"It is very important that the research effort of DAMOCLES is followed up, and that Arctic research is maintained in the future as well", said Gascard.

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*The next Update from the Northern Climate ExChange will be sent out **Thursday, November 25, 2009***