

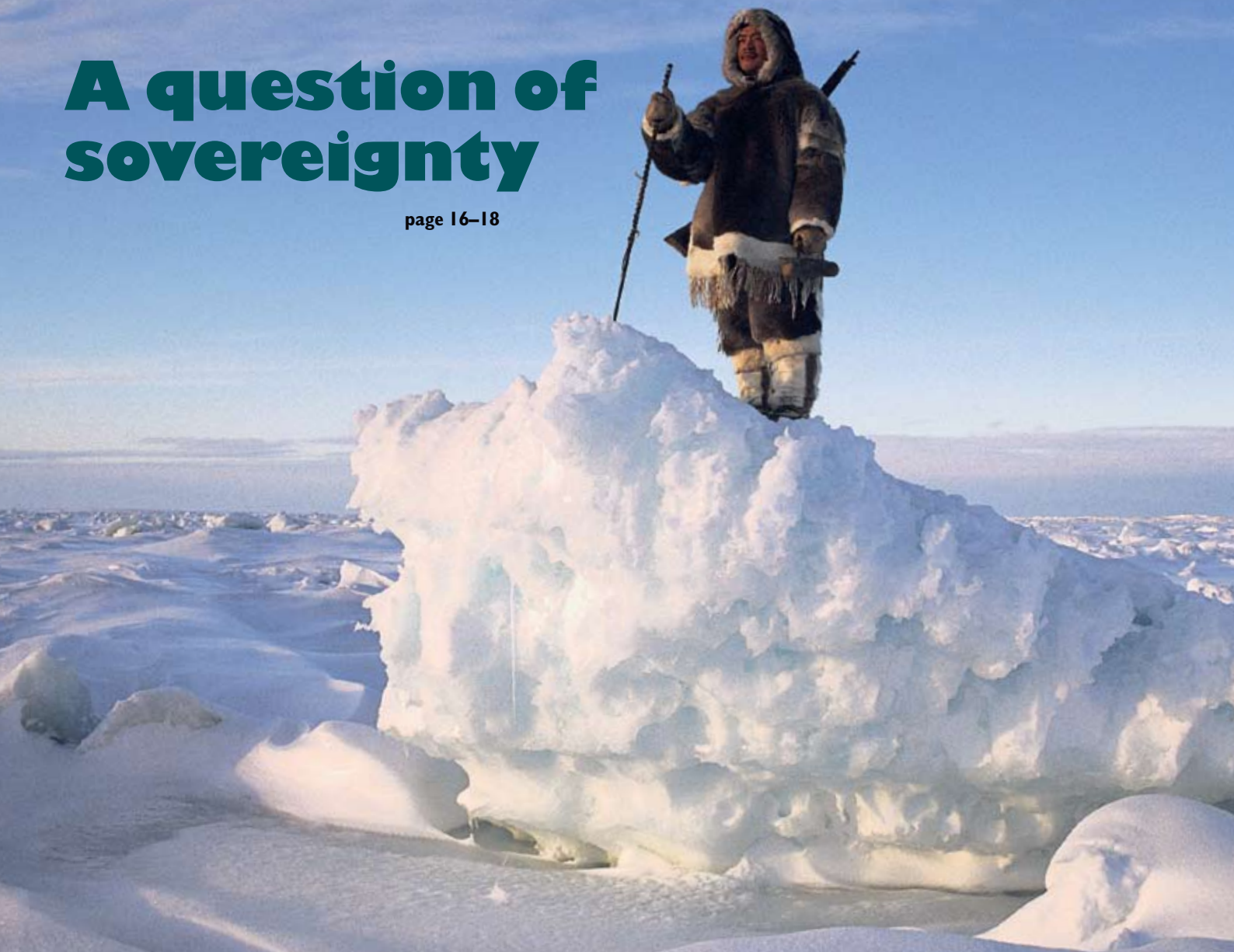


# Arctic Bulletin

No 4.06 • PUBLISHED BY THE WWF INTERNATIONAL ARCTIC PROGRAMME

## A question of sovereignty

page 16–18



Arctic pollution on the rise

p.5, 9

US move to declare polar bear endangered

p. 7


Climate change impacts northern forests

p. 14–15

New protected areas in northern Canada

p. 18–19

# Contents

- 
- Polar bear work p. 7
  - Progress for protected areas in northern Canada p. 18–20 ●
  - Climate witness in northern Nunavut p. 12–13 ●
  - Hearings continue for Mackenzie Gas Pipeline p. 8–9 ●
  - Sovereignty and Inuit in the Canadian Arctic p. 17–18 ●
  - Iceland hunts endangered fin whale p. 11
  - Climate Camp Alaska p. 16 ●
  - Climate change effects appear in the boreal forests of Alaska p. 14–15
  - Polar bears struggling in Beaufort Sea p. 6 ●
  - More oil and gas proposed for Alaskan seas p. 8–9 ●
  - Proposed offshore seismic, leasing and drilling in the Beaufort Sea p. 24
  - Norway chair of Arctic Council p. 10
  - New director for WWF Arctic Programme p. 4
  - New greenhouse gas on the surge p. 9
  - Banrock bear boost p. 4
  - Cod quota too high p. 10
  - WWF tracks goose route p. 4–5
  - Smog in the Arctic p. 5
  - New names for polar bears p. 6–7
  - US may recognise polar bear as threatened p. 7
  - A Danish perspective p. 20–21
  - World will connect with the Arctic for IPY p. 22

## The Arctic Bulletin

is published quarterly by the WWF International Arctic Programme. Reproduction and quotation with appropriate credit are encouraged. Articles by non-affiliated sources do not necessarily reflect the views or policies of WWF. Send change of address and subscription queries to the address on the right. We reserve the right to edit letters for publication, and assume no responsibility for unsolicited material. Please include name, title and address with all correspondence.

## Publisher:

WWF International  
Arctic Programme  
PO Box 6784  
St Olavs plass  
N-0130 Oslo, Norway  
Ph: +47 22 03 65 00  
Fax: +47 22 20 06 66  
Internet: [www.panda.org/arctic](http://www.panda.org/arctic)

## Acting

## Programme

## Director:

Magnus Sylven  
[msyiven@wwfint.org](mailto:msyiven@wwfint.org)

## Editor:

Julian Woolford  
[jwoolford@wwf.no](mailto:jwoolford@wwf.no)

## Assistant editor:

Nigel Allan  
[nallan@wwf.no](mailto:nallan@wwf.no)

## Design and production:

dEDBsign/Ketill Berger  
[ketill.berger@eunet.no](mailto:ketill.berger@eunet.no)

## Date of publication:

February 1st, 2007  
ISSN 1023-9081

**Cover:** An Inuit hunter uses a piece of pressure ice as a vantage point to look for seals. Igloolik, Nunavut, Canada.  
*Photo:* Bryan and Cherry Alexander,  
[www.arcticphoto.co.uk](http://www.arcticphoto.co.uk)

Printed at Merkur-Trykk AS  
on 100% recycled paper.



## Editorial

## Fare well

**T**his is my last editorial as director of the WWF International Arctic Programme. It's a good opportunity to look back and to share some personal views on ten years' working in and for the Arctic.

When I started at WWF, the Arctic was barely a blip on the rest of the world's radar screen. If people in the South thought about the Arctic at all, it was as a giant white spot on the map. I myself knew very little about the region back then. I was a southerner, newly arrived in Oslo, Norway after a career as a corporate lawyer in California.

My learning curve was short and steep. It helped to have spent time in the rural American South as a child. I knew plenty of people who spent their time outside, and used nature actively by hunting and fishing. I experienced the value and beauty of open spaces and wildlife. I learned a little about small communities; the importance of tradition, country food and language. In other words, there were a lot of things that were familiar, though the natural context was radically different.

When I began to visit the field, I fell in love with the region and found a constant source of inspiration. I've seen what I think are the world's most beautiful landscapes, from mountains, seas and fjords to tundra, boreal forest, ice sheets and glaciers. Like so many before me, I became addicted to the North.

Just as importantly, though, I got to know a wide range of people from most of the Arctic's 40-some different ethnic and language groups. I've been struck by their insights, their hospitality and in many cases their struggles for a decent way of life and even some basic rights.

The critical importance of protected areas was driven home to me by working on a campaign in Iceland. With local partners, WWF tried successfully to stop a hydro-power development that would have flooded an internationally important wetlands area. Afterwards, WWF and others were unsuccessful in stopping a similar development, in what was at the time Iceland's largest natural area. I saw the site before and after development started, and recognised a basic truth: once it's developed, it's gone forever. If one believes that biodiversity and natural areas have a unique value, then protected areas are still the best way to ensure their future.

Not surprisingly, then, until about five years ago the main conservation question for WWF in the Arctic was how big the protected areas should be. There were huge advances during the 1990s, particularly in Russia. We also worried about over-fishing, and to a lesser extent whether hunting in some areas was sustainable.

All of this changed with the start of the Arctic Climate Impact Assessment (ACIA). If I could pinpoint one event that really galvanised me and a lot of other people working in the Arctic, it would be ACIA. The report used peer-reviewed science to document the current and likely future

impacts of climate change on the North. It confirmed that climate change was a huge threat, not only to the Arctic but over time to the rest of the world.

In the two years since ACIA was published, climate science has moved rapidly. There is now a remarkable scientific consensus that the world is warming, its climate is becoming unstable, and human emissions are the primary cause of the changes we've seen over the last decades. Though there are many uncertainties, it's clear that we need to act to cut CO<sub>2</sub> emissions, while ensuring that basic needs for energy and security are met. This is a huge and long-term project, which requires fundamental changes in the way the world produces and uses energy. According to Dr Jim Hansen of NASA, we have perhaps a decade to start making these changes. The stakes are so high that we cannot afford not to take on this challenge.

But even then, in the Arctic, it may be too late to stop all of the impacts of climate change. Large parts of the region are likely to be very different within a generation or so. Adaptation to climate change, and an attempt to conserve the region's natural systems and wildlife, will be necessary on a large scale. Among other pressures, the political heat is on in the North, and will only increase due to the melting of sea ice, sovereignty disputes and a global thirst for the region's energy reserves. These issues should be addressed now, to avoid an environmentally damaging and conflict-filled race for resources.

On a personal note, I'd like to thank the very many friends, colleagues at WWF and even adversaries that I've worked with and met over the last ten years. In particular, my first boss at WWF, Dr Peter Prokosch, who taught me much of what I needed to know about conservation and the Arctic, and Sheila Watt-Cloutier, past president of the Inuit Circumpolar Conference, who is a shining example of courage, clarity and integrity as she ensures that the world hears about the effects on the Arctic, of first contaminants and then climate change. Of course there are many others too.

Finally, although I may be moving on to new challenges, I leave behind me an experienced and talented team at the WWF International Arctic Programme, dedicated to continuing WWF's work to conserve the Arctic for future generations. A new director, Dr Neil Hamilton, has already been appointed as my replacement and takes up his post in April. It is, in effect, business as usual for the Arctic Programme. I wish him and the team he will lead all the very best in the years ahead.



**SAMANTHA SMITH**

Outgoing director,  
WWF International  
Arctic Programme  
ssmith@wwf.no

### NOAA REPORT

The US National Oceanic & Atmospheric Administration's (NOAA) State of the Arctic report is now available.

The report is a review of environmental conditions during the past five years and updates some of the records from the Arctic Climate Impact Assessment.

The report shows convincing evidence of a sustained period of warm temperature anomalies in the Arctic, supported by continued reduction in sea ice extent, observed at both the winter maximum and summer minimum, and widespread changes in arctic vegetation. Download the report at: [www.arctic.noaa.gov/soa2006](http://www.arctic.noaa.gov/soa2006)

### INDIGENOUS PEOPLES' SECRETARIAT WEBSITE

The Arctic Council Indigenous Peoples' Secretariat has revised its web site at: [www.arcticpeoples.org](http://www.arcticpeoples.org). It provides information on the Arctic Council and the six indigenous peoples' organisations in the Arctic, as well as information on climate change, human development, monitoring, and toxins, and articles on a wide-range of northern topics, and a quarterly newsletter.

### LESS OIL IN THE ARCTIC?

The US should no longer consider the Arctic as a long-term strategic energy supply source, according to a new joint study by Wood Mackenzie and Fugro Robertson, *Future of the Arctic*. The study suggests the Arctic has significantly less oil than previous estimations have suggested. Andrew Latham, vice president for Energy Consulting at Wood Mackenzie and lead study author, said: "These findings are disappointing from a world oil resource base perspective." The study shows only around one quarter of the oil volumes previously assessed in key North American and Greenland basins.

# WWF tracks goose route

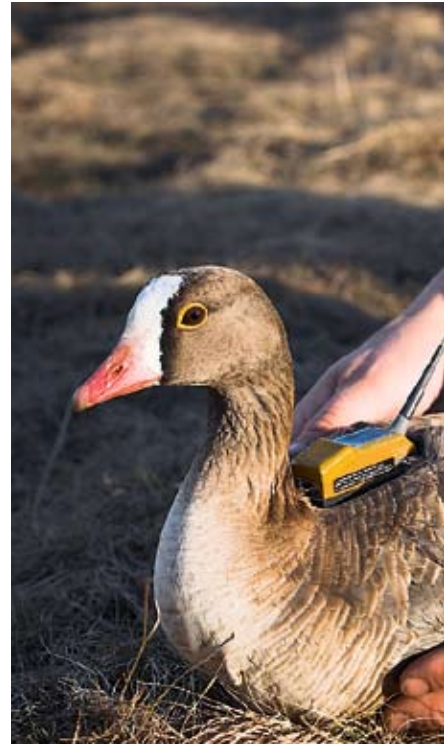
With the help of satellite tracking, scientists from WWF-Finland and partners have discovered an unknown migratory route of the lesser white-fronted goose – the most endangered arctic goose in Eurasia.

The migratory routes the geese take are relatively well-documented from northern Norway and Finland, to Russia's northern sub-arctic Kanin Peninsula.

From there, the migration

route splits, with some geese flying via eastern Hungary towards the Evros River delta on the border of Greece and Turkey, and others heading to northern Kazakhstan, and then south to the Caspian Sea region, even as far south as the Mesopotamian Marshes in Iraq.

But according to new satellite-tracking data from three lesser white-fronted geese tagged in Norway last spring as part of an EU LIFE



# Banrock bear boost

An Australian wine company is part-funding WWF's polar bear conservation work on Svalbard in the Norwegian Arctic.

Banrock Station Wines, from South Australia, has donated funds to support WWF's work with the Norwegian Polar Institute. Part of this work includes WWF's famous Polar Bear Tracker website ([www.panda.org/polarbears](http://www.panda.org/polarbears)).

Banrock raises funds for international environmental projects by donating part of the proceeds from every worldwide purchase of its wines. So far it has raised more than US \$1.5 million for rehabilitating wetlands in particular.

The Banrock Station property itself includes 3,400 acres of bushland and extensive wetlands that are being carefully restored to their natural state.

The success at Banrock Station encouraged Banrock to make annual donations to save and restore nature reserves throughout the world. Currently, Banrock Station's wetland sponsorships span ten countries throughout the globe. More recently, their sponsorship has extended to other conservation projects in other countries, including Norway.

Julian Woolford  
[jwoolford@wwf.no](mailto:jwoolford@wwf.no)

## New director for WWF Arctic Programme

WWF is delighted to announce the appointment of a new director for the WWF International Arctic Programme.

Dr Neil Hamilton, who begins work for WWF in April, is a geographer by training and has more than 15 years' experience in the strategic development and leadership of national and international global change

programmes on issues such as climate, the carbon cycle, water management, marine and bioregional planning, and food security.

Through that work, Neil has gained significant interdisciplinary experience, coordinating research, diplomatic and science policy with practitioners in Australia, Europe and the US.

Dr Hamilton, an Australian

by birth, takes over from outgoing director Samantha Smith, who has left WWF. We wish Samantha every success in her future career. WWF's Magnus Sylven is acting director in the interim.

We would also like to welcome Jeff Musk. Jeff joins the Arctic Programme as Financial Controller and Project Administrator.



**A researcher from the Norwegian Ornithological Society fits a lesser white-fronted goose with a radio transmitter.**

project, it now appears that some geese may be flying a previously unknown route from Kazakhstan, heading south-west towards Greece, rather than south to the Caspian region as initially thought.

Petteri Tolvanen, a conservation officer with WWF-Finland, said: "The present satellite tracking has provided a lot of valuable information about the routes of the geese.

"Mapping the flyways is essential for developing conservation activities aimed at protecting the species."

The Norwegian Ornithological Society caught the geese and put the transmitters on in northern Norway.

The lesser white-fronted goose (*Anser erythropus*) is the most endangered bird in the Nordic countries. Hunting and poaching are the main threat. There are only 20–30 breeding pairs in Norway, Sweden and Finland. The world population is around 25,000.

Petteri Tolvanen  
Conservation Coordinator  
WWF-Finland

Photo: Igar Jørgensen Olsen (Norwegian Ornithological Society)

## Smog in the Arctic

**A**rctic haze, a pollution haze layer that appears in the arctic air during spring, is again on the rise. This is one conclusion of a new study by the Arctic Council's Arctic Monitoring and Assessment Programme working group (AMAP).

The report *Arctic Pollution 2006: Acidification and Arctic Haze* is a follow-up to AMAP's comprehensive *State of the Arctic Environment Report*, released ten years ago.

Lars-Otto Reiersen, head of the AMAP Secretariat, told *Reuters*: "The haze might be linked to climate change – with increased temperatures there are more forest fires. That means more soot in the atmosphere."

Although there has been a drop in levels of sulphate – a main ingredient of arctic



**Emissions from smelters increase the acidity of soils and waterways and weaken the environment. These trees were killed by industrial emissions from Norilsk, Taimyr, Russia.**

haze – there are signs that other acidifying pollutants, such as nitrogen oxides have increased.

In addition to more forest fires, this changing picture of arctic air pollution is possibly

due to increasing emissions from industrialisation in Asia, which can be carried north by the wind.

Signs of arctic haze were first noticed in the mid-1950s when pilots flying over the Canadian High Arctic noticed a "brown-tinged haze". The haze was originally attributed to natural factors, but in the 1970s the source was identified as man-made.

The Assessment found no strong evidence of human health effects directly attributable to emissions from smelters on the Kola Peninsula, a major source of sulphur pollution.

An overview and a full scientific report can be downloaded from the AMAP website: [www.amap.no](http://www.amap.no).

Nigel Allan  
[nallan@wwf.no](mailto:nallan@wwf.no)

Photo: Peter Prokosh

## ALASKANS – GLOBAL WARMING A THREAT

A state-wide survey of 1,016 Alaskan adults found that more than 81 percent are convinced that global warming is happening and 55 percent believe it is caused primarily by human activities such as the burning of fossil fuels.

Most Alaskans believe global warming is already causing or accelerating the loss of sea ice (83 percent), melting permafrost (82 percent), coastal erosion (74 percent), and forest fires (72 percent) in Alaska, among other impacts. Two out of three say it will be bad for Alaska.

The study, funded by the US National Science Foundation, is part of a scientific study commissioned by Dr Anthony Leiserowitz of Decision Research through the Center for Research on Environmental Decisions (CRED). The full report is available online at: [www.alaskacclimatechange.org](http://www.alaskacclimatechange.org)

## SAN DIEGO ZOO TESTS POLAR BEAR HEARING

Researchers from the San Diego Zoo's Centre for Conservation and Research for Endangered Species (CRES) are studying polar bears' hearing. Determining how sensitive polar bears are to various tones and frequencies may help wildlife management agencies in the Arctic establish guidelines to protect the bears' from potentially harmful industrial noise.

Megan Owen, the study's lead scientist, said: "Extracting petroleum involves a great deal of heavy industrial machinery and activity, but nobody knows how disturbing this industrial noise is to the bears."

Source: [cres.sandiegozoo.org](http://cres.sandiegozoo.org)



# Polar bears struggling in Beaufort Sea

**T**he cub survival rate for the Southern Beaufort Sea polar bear population is declining according to a joint study by the US Geological Survey (USGS) and the Canadian Wildlife Service.

Cub survival rate is currently 43 percent compared with 65 percent in the early 1990s.

Although the researchers could not detect whether the actual population size has changed, they found that other indicators of the population's health are generally in decline.

Along with a decrease in the number of cubs surviving, the researchers also found that the physical size of the bears is declining.

Steve Amstrup, wildlife biologist with the USGS and co-author of the study, said: "The things we're observing are consistent with a population that is undergoing nutritional stress. We can't say definitively it's because of changes in the sea ice, but we don't know what else it would be."

The findings of this study parallel findings in the Western Hudson Bay polar bear population in Canada, where changes in cub survival and bear size preceded detection of a decline in the overall population. Those changes were correlated with longer ice-free periods in Hudson Bay.

During the course of the study, the ice-free season in areas of preferred polar bear habitat in the Southern Beaufort Sea increased from 82 days to 138 days, and changes in the population dynamics of polar bears may be related, as they were found to be in Hudson Bay.

Eric V. Regehr (USGS) and Ian Stirling (Canadian Wildlife Service) were also co-authors of the study.

The report is available online at: [pubs.usgs.gov/of/2006/1337/](http://pubs.usgs.gov/of/2006/1337/).

Nigel Allan  
[nallan@wwf.no](mailto:nallan@wwf.no)



## New names for polar bears

**F**ollowing the success of our 'Name Our Polar Bears' competition in the Netherlands in 2005, WWF's International Arctic Programme linked up with WWF-Japan last year to invite youngsters from Japan to give names to the two polar bears we follow on our Polar Bear Tracker website.

The competition generated huge interest in Japan, with national TV, radio and newspapers all including

stories about the impact of climate change on the Arctic, and details of the competition itself.

As a result, 1,970 people sent in their suggestions for names for the bears. The winning names were Sola (sky) and Yume (dream) and were chosen by Aoi Onda, 5, and Yukimi Abe 7, and 16 other entrants.

Masako Konishi, climate change officer with WWF-Japan, said:

"Polar bear mothers with cubs are good messengers for the impact of climate change on the Arctic as a result of global warming. Japanese people are very concerned about what's happening there and want to take action to combat global warming."

Unfortunately nothing is certain in the realm of the polar bear and soon after WWF decided on names for the two bears we've

# US proposes listing polar bear as endangered



The US Fish and Wildlife Service has proposed listing the polar bear as “threatened” under the US Endangered Species Act, a decision welcomed by WWF. The proposal is now open to a 90-day comment period.

WWF has supported the petition to classify the species as threatened, based on a large volume of compelling information about significant changes in the polar bear’s habitat, arctic sea ice, due to climate change.

Polar bears hunt, feed, mate and sometimes den on the sea ice. Yet, this sea ice habitat is vanishing as a result of warming air and sea temperatures over the last decades.

**Polar bears in the Southern Beaufort Sea are showing signs of vulnerability, such as diminished size, which researchers suspect is climate related.**

Photo: Eric V. Regier / USGS

Stefan Norris, head of conservation for the WWF International Arctic Programme, said: “The polar bear depends on sea ice for its existence. As the climate warms, and other threats such as oil and gas development, toxics and over-hunting increase, the polar bear’s future looks uncertain.

“Listing the polar bear as “threatened” is a good step forward in helping to preserve the polar bear as it commits the US to actively protecting its environment.”

WWF is the leading NGO in the Arctic supporting polar bear conservation, working with communities, scientists, and government agencies around the Arctic to protect polar bears.

For further details, visit: [alaska.fws.gov/fisheries/mmm/polarbear/issues.htm](http://alaska.fws.gov/fisheries/mmm/polarbear/issues.htm)

Julian Woolford  
[jwoolford@wwf.no](mailto:jwoolford@wwf.no)

been following since the spring, the bear recently christened “Sola” lost her collar, so we could no longer track her.

Why the collar has fallen off is a mystery, but it does happen from time to time. It is often due to wear of the collar itself, but sometimes the female rubs or gnaws it off herself.

Find out more about the bears on the Polar Bear Tracker website: [www.panda.org/polarbears](http://www.panda.org/polarbears).

Julian Woolford  
[jwoolford@wwf.no](mailto:jwoolford@wwf.no)

## Polar bear work

ABC News in the US and Channel 7 in Australia recently visited Hudson Bay, Canada with WWF’s Tonje Folkestad. They were filming the work of polar bear scientist Nick Lunn for tv features on the impact of climate change on polar bears.

As the sea ice melts earlier each spring and forms later each autumn in Hudson Bay, the time when bears can hunt for food on the sea ice becomes ever shorter leading to nutritional stress.

Between 1987 and 2004, the

Hudson Bay population dropped from 1200 to 930 or roughly 22 percent.

The research by Dr Lunn is part funded by WWF.

Dr Lunn began working with polar bears in 1981. For over a decade, he has worked with the Canadian Wildlife Service focussing on the condition of the Western Hudson Bay population of polar bears in relation to environmental change.

Nigel Allan  
[nallan@wwf.no](mailto:nallan@wwf.no)

# More oil and gas proposed for

Shell has announced plans to drill four new oil wells in the Beaufort Sea, off the coast from

the Arctic National Wildlife Refuge, while the US Minerals Management Service (MMS) recently proposed

opening up more areas to oil and gas exploration and production in the Beaufort Sea, Chukchi Sea and Bristol Bay areas.

At the US National Oceanic & Atmospheric Administration's National Marine Fisheries Service's annual Arctic Open Water Peer Review Meeting in October 2006, Paul Smith, operations manager for Shell, said that they have four wells planned for the Camden Bay area.

Two wells are planned for Siv Ullig field and another two at a location called Olympia. (See the map on the back page of the *Arctic Bulletin*)

WWF-US and Audubon Alaska lodged formal comments on the MMS proposed programme in

An oil rig on an artificial island in the Beaufort Sea.



Photo: NOAA

# Hearings continue for Mackenzie

Over the past year, many northern Canadians have expressed concern that the proposed Mackenzie Gas Pipeline (MGP) and related infrastructure, may compromise their cultural traditions, long-term access to clean water, and hunting and fishing areas.

In 2006, the MGP Joint Review Panel (JRP) heard from local people

as well as key affected organisations in many Mackenzie Valley communities.

Regional economic development is desired by many, but the Panel has been hearing that there are significant risks involved with such a mega-project in areas that are relatively undeveloped (on top of rapid changes from global warming).

WWF-Canada started 2006 in Inuvik, with a presentation by experts on sustainability and the 'Conservation First' principle, and the role of completing land use plans and adequate protected areas networks ahead of major development decisions. Professor Emeritus Gordon Orians, chair of the US Congress initiated review of 35 years of Prudhoe Bay oil-gas developments, shared valuable lessons on benefits and impacts in this landscape which is similar to Alaska.

Stephen Kakfwi, former NWT premier and dedicated conservationist, spoke on behalf of WWF-Canada in May about the importance of completing the NWT Protected Areas Strategy before the MGP proceeds.

For the JRP hearings in Norman Wells in August, on the topic of Conservation Areas and Measures, WWF-Canada brought together a world-class international conservation team to present on the imbalance of conservation planning measures in the NWT, and the critical questions of "how much conservation is enough?, the

## Conservation affordable

■ Repeated claims by proponents of the Mackenzie Gas Pipeline, that the project would only be "marginally profitable", have been challenged by a new financial and economic assessment.

The assessment by Pacific Analytics Inc., an independent resource economics firm, found that the project stands to be highly profitable. The report was commissioned by Alternatives North, an NWT-based environmental organisation.

Based on this assessment, the proponents, which include Imperial Oil, ConocoPhillips, ExxonMobil and Shell, are well able to afford conservation measures such as ensuring the full implementation of the land use plans, which would adequately protect environmentally and culturally important areas ahead of development.

This assessment also calls into question the massive subsidies that the proponents

are requesting from the Canadian government.

Jim Johnson, author of the report, said: "The Mackenzie Gas Project is a highly profitable development. My analysis shows that there is no need for any public subsidy to make this project viable."

Nigel Allan  
nallan@wwf.no

Source: Alternatives North



# Alaskan seas

the Beaufort Sea, Chukchi Sea and Bristol Bay, all wildlife-rich Alaskan marine areas.

The Beaufort Sea is home to walrus, seals, migratory birds and endangered bowhead whales. Its coast has the largest concentration of female polar bear denning areas in North America. This sea already has 181 active leases.

In the Beaufort and Chukchi Seas, climate change is causing severe changes, resulting in loss of habitat for polar bears, walrus and seals and migrating fish stocks. Oil and gas drilling would further exacerbate the threats to these species.

Nigel Allan  
nallan@wwf.no

# Gas Pipeline

benchmarking role of “protected areas networks”, and “how does climate change affect conservation goals?”

Due to the tremendous public interest and participation, the hearings have been extended to April 2007 and the JRP report is expected to be filed with governments and the National Energy Board (NEB) in autumn of 2007. A final regulatory decision by the NEB is not expected until 2008.

However, a recent Federal Court of Canada ruling found that the government had not adequately consulted with the Dene Tha' First Nation in northern Alberta about the effect that the pipeline could have on them and their lands. This will probably cause the environmental assessment hearings to be extended further into 2007.

Pete Ewins  
Director, Species Conservation  
WWF-Canada  
pewins@wwfcanada.org

The full record all public hearings can be found at <http://www.ngps.nt.ca/> which is updated daily.



Photo: NILU

**NILU-scientists monitor numerous atmospheric gases from the Zeppelin Observatory on the arctic island of Spitsbergen.**

# New greenhouse gas on the surge

**N**ILU scientists at the Zeppelin Observatory on Mount Zeppelin at Ny-Alesund in Svalbard, have recorded a surge in a highly potent greenhouse gas, called HFC134a.

One molecule of HFC134a has a warming effect more than a thousand times that of a molecule of CO<sub>2</sub>.

Since the ban on the chemically related CFCs, HFC134a has been manufactured in growing quantities for use in air conditioning systems in cars and buildings.

Manufacturers of air conditioners say their systems are designed to prevent leaks.

Chris Rose of the Multisectoral Initiative on Potent Industrial Greenhouse Gases, in London, told *New Scientist* magazine: “The rapid increase shows that whatever the industry claims, the gases are not being contained.”

Chris Lunder, senior scientist at The Norwegian Institute for

Air Research (NILU), said: “Our observations at the Zeppelin Observatory show that concentrations of HFC134a have doubled between 2001 and 2004.

“Considering the huge warming effect of this new gas, one thousand times that of CO<sub>2</sub>, and the sharp increase in its volume, it is of utmost importance to monitor it closely.”

Pål Prestrud, director of CICERO (the Center for International Climate and Environmental Research), in Oslo, Norway, agrees.

Prestrud said: “The amount of HFC134a is still too little to make an impact on global warming, but the fact that it is so potent and increasing rapidly in volume, makes it essential for us to follow its development closely.”

Stig Martin Solberg  
Norwegian Institute for Air Research  
sms@nilu.no

# Cod quota too high

Norway and Russia have agreed to an annual North East Arctic cod catch of 424,000 tonnes for 2007 – 115,000 tonnes more than the 309,000 tonnes recommended by the International Council for the Exploration of the Sea (ICES).

The decision was taken at the annual meeting of the Russian-Norwegian Fisheries Commission

in Tromsø, Norway, in November last year.

Maren Esmark, head of WWF-Norway's marine programme, said: "The new quota could be a potential disaster for the Barents Sea cod. It is 115,000 tonnes more than what ICES recommended, and in addition to this, we fear there might be as much as 100,000 tonnes of illegal

fishing taking place each year. If the scientific predictions are right, the spawning stock risks falling below precautionary levels."

The ICES recommendation was based on concerns for the future of the cod stock and the increasing impact of unreported catches. Estimates for 2005 indicate that about 166,000 tonnes of fish were unreported, 35 percent over the total allowable catch (TAC).

However, WWF fear that the decision to overfish the cod in 2007 undermines the work Norway is doing to try to stop the illegal fishing in the Barents Sea.

Esmark said: "It is difficult to explain to European Governments why they should help stop the illegal overfishing, when Norway and Russia are overfishing the stock anyway."

Organisations representing the fishing industry were present at the Commission's meeting and used their observer status to lobby for a higher TAC. WWF were not accepted as observers at the meeting but will apply again next year.



Photo: (c) WWF-Canada/In. Hudson

Atlantic cod, *Gadus morhua*

Nigel Allan  
nallan@wwf.no

## Norway chair of Arctic Council

■ Russia formally passed on the chairmanship of the Arctic Council to Norway at the Arctic Council Ministerial meeting in Salekhard, Russia last October. Norway will chair the Arctic Council for the next two years.

The programme for the Norwegian chairmanship will focus on some of the key challenges facing the arctic region, such as the need for integrated resource management and climate change.

Jonas Gahr Støre, Norwegian Minister of Foreign Affairs, said: "Sustainable development, environmental protection and climate issues have been at the top of the agenda during the Russian chairmanship. For Norway, this is an excellent starting point for our chairmanship."

Norway intends to strengthen

climate change research and address the capacity for northern residents to respond to a warming Arctic with a particular focus on the situation of and the challenges faced by indigenous peoples.

As part of their work on integrated resource management, Norway will be looking to address the co-existence of the fishing industry, oil and gas industry and marine transport in the Barents Sea.

WWF supports this integrated approach, which means that all sectors of industry are limited by the total impact on ecosystems.

Maren Esmark, head of WWF-Norway's marine programme, said: "If fish stocks are low due to overfishing, or seabird populations are vulnerable, petroleum activities or other sectors

that might have negative impacts must be limited and excluded from breeding and spawning areas.

"As the effects of climate change intensify in the arctic ecosystems, integrated oceans management means that other sectors must reduce their impacts."

Sweden will take over the chairmanship in 2008, and Denmark in 2010. Denmark and Sweden have agreed on a set of common priorities for the three chairmanships.

A secretariat will be established in Tromsø, Norway for the Norwegian, Danish and Swedish chairmanships from 2006 to 2012.

The Arctic Council website is: [www.arctic-council.org](http://www.arctic-council.org)

Nigel Allan  
nallan@wwf.no





Photo: Jonas Fr. Thorsteinsson

*A fin whale is butchered by Icelandic whalers. The Icelandic Government has allowed whalers to hunt nine endangered fin whales as part of its first commercial hunt in 20 years.*

# Iceland hunts endangered fin whale

Iceland has resumed commercial whaling despite an international moratorium for more than two decades.

In October 2006, Iceland's Fisheries Ministry issued licences to hunt nine fin whales and 30 minke whales by 31 August 2007. The hunt started on 21 October and by December seven fin whales had been taken.

Dr Susan Lieberman, director of WWF's Global Species Programme, said: "By choosing to hunt endangered fin whales, the Icelandic government is drawing a line in the sand.

"Not only is this unacceptable but it undermines the effectiveness of the International Whaling Commission, as well as a decision made in good faith by the international community over 20 years ago."

A letter of protest signed by diplomats from 25 nations was sent to the Icelandic government. The protest was led by the UK and was also signed by the US, Denmark, Sweden, Finland and Germany.

WWF has also sent a letter of protest to the Icelandic Minister of Fisheries.

Fin whales were severely reduced worldwide by modern commercial whaling and their current status is poorly known in most areas outside the North Atlantic. Today, the fin whale is listed as "endangered" by the World Conservation Union (IUCN).

Whale watching has seen major increases in numbers and economic value globally. It is Iceland's fastest growing tourism sector, with close to 100,000 paying visitors in summer 2006. One estimate indicates that the boom in whale watching may have generated approximately US\$40 million in 2006 in Iceland alone. Resumption in commercial whaling could undermine this important part of Iceland's economy, according to WWF.

Dr Lieberman said: "This is the thin edge of a dangerous wedge and WWF implores the Iceland government to step back.

"Whale stocks have not yet

recovered from the days of devastation from hunting. Today, whales face newer, increased threats such as ship strikes, being caught and killed in commercial fishing nets, and climate change.

## International market

Iceland has also indicated that it may attempt to sell the whale meat to Japan, but the Japanese ambassador in Iceland has stated that the Japanese already have enough whale meat, and they will not be buying any from Iceland.

If Iceland attempts to sell fin whale meat internationally, this would effectively undermine the value and effectiveness of the Convention on International Trade in Endangered Species (CITES) – a convention that is essential for the survival of seriously threatened and endangered species globally.

Stefan Norris  
Head of Conservation  
WWF International Arctic Programme  
snorris@wwf.no



# Climate witness in

**In May 2006, Julia Langer, director of WWF-Canada's Global Threats Programme, visited Nunavut, Canada to help record first-hand accounts of how climate change is affecting polar bears and Inuit communities.**

After a long flight from Toronto, we arrive in Taloyoak, a small community on the Boothia Peninsula in Canada's Nunavut Territory. After months of phone and e-mail planning, I finally meet Darren Keith, a traditional knowledge expert, researcher with the Kitikmeot Heritage Society, and principal researcher for this project.

The project involves interviewing around a dozen Elders about what they are witnessing as the Arctic warms with particular focus on the impact on polar bears. In addition to sessions in three communities, we decided to also camp on land for three days with four Elders (Darren describes them as the four PhDs of polar bears). This will give us the time and setting it takes to delve in depth into the changes they have seen in the weather, the effects on the landscape and wildlife, and what can and should be done.

Some of the traditional knowl-

edge (IK) and perspectives about polar bears will be new to everyone since the Boothia Peninsula area has not been widely surveyed. Along with Darren and myself, the team includes: co-researcher Jerry Arqviq, an experienced guide, translator and hunter from Gjoa Haven; his 14-year-old nephew Kenny; Samuel (Samo) Takkiruq from Gjoa Haven; Kean Moynihan, our videographer; Rudy Stroink, a Dutch architect and president of Holland's largest property development company, who took up the offer from WWF-Netherlands to join our expedition; Simon Oleekatalik and Abe Okuqtunnuaq, Elders from Taloyoak; and Guy Kakkianun and Levi Illuitok Elders from Kugaaruk.

We load up the kamatiks, homemade sleds about 15-feet-long, and depart Taloyoak, heading north-east, toward the Bay of Boothia. We travel around 100 kilometres across a series of frozen lakes and finally arrive at Nuvutiruaq, a small island in the Bay where we set up camp and have dinner. Abe catches a seal, which he skilfully reduces to a seal-skin bag of meat to be eaten later.

It is hard to tell when night turns to morning, when the sun barely dips below the horizon but by morning, Darren and Jerry are huddled in a circle outside, with ever-present cups of tea. It doesn't take long for the discussion to flow to detailed observations of climate change, each taking turns and comparing notes. Often there are nods of agreement and some joking. Darren is a keen interviewer; quiet, precise, not leading, head down and incessantly scribbling in his notebook, while tape recording everything. Jerry conveys the question in Inuktituk, listens intently, and quietly translates the responses.

As the talks progress into the second day, Darren and Jerry begin to ask for more precise details of climate change, including the changing quality of snow and ice, and patterns of bear behaviour.

Simon Oleekatalik says: "It is almost difficult to understand the snow nowadays, because even when you are trying to work with your snow knife

you can't even cut through some of the snow. And the layers are not the same. Some of it is too soft and some of it is too hard. Yes the snow conditions are different from a long time ago to today."

They spend a lot of time identifying areas used by polar bears and pencilling them in on the map. Darren ensures that they touch on all aspects of habitat and behaviour including denning, mating, and hunting. The Boothia area has not been the subject of polar bear IK surveys before.

At a more local and personal level the elders agree that secure food caches would be a good idea since they are noticing more bears coming scavenging around towns for food.

Levi Illuitok says: "I feel that there are more bears than a long time ago. Because we used to cache our meat further from the community, but now you can't even cache close to the community because the caches are taken by the bears. And they broke someone else's cabin close to town. It is even scary to put a cache close to town because the bears are getting at them. I agree that it is scary to camp even for a few days. You have to always watch out for something. You are always scared of something nowadays."

Towards the end of the talks, it is then my turn. I try to put the arctic warming that they are witnessing within the larger context of Canada and the rest of the world and WWF's role in trying to convince industries, governments and people to limit greenhouse gas emissions.

I ask the elders what they feel needs to be done to address climate change in the Arctic. They speak about the youth and how important it is to have the knowledge and experience of living on the land. With an sense of guilt they refer to the "smoke" their snow machines and electric plants produce and indicate the need for people in the north as well as the south to act against pollution.

We break camp early the following day and head for Kugaaruk. The route crosses the open bay where the ice is very different – lots of pressure cracks creating ice castles and pools that turn



# northern Nunavut



Photo: Darren Keith

a lovely aquamarine in the sun. My head aches, stomach is queasy and face is burned from 12 hours of bouncing in the kamatik.

Our meeting with the Kugaaruk Hunters and Trappers Organisation is very productive, both to introduce WWF and our objectives, and for their perspectives on changes in polar bears. There is talk of how bears seem leaner but also bolder, and concern about peoples safety both when they are out hunting and even coming into town.

But as one Elder put it, 'we are afraid of too many bears around now, but are afraid that there won't be any later'.

The Elder's knowledge, observations and concerns will be documented in a report, video and still images, available on WWF-Canada ([www.wwf.ca](http://www.wwf.ca)) and WWF's International Arctic Programme ([www.panda.org/arctic](http://www.panda.org/arctic)) websites.

A key point to this trip has been to build relationships and trust with Inuit communities so we can jointly respond

to the challenges climate change poses. Mountains of scientific studies have obviously not been enough to compel our governments, industries and citizens to reduce greenhouse gases, but perhaps these compelling and personal stories of climate impact will be.

Julia Langer  
Director, Global Threats Programme  
WWF Canada  
[jlanger@wwfcanada.org](mailto:jlanger@wwfcanada.org)

**Elders Simon Oleekatalik, Abraham Okuqtunnuaq and Guy Kakkianun (left to right) discuss environmental change and polar bears at the Nuvutiruk camp location.**



# Climate change effects appear

**Insects, forest fires and adverse environmental conditions are impacting the boreal forests of northern Alaska. Dr Glenn Patrick Juday, Professor of Forest Ecology at the University of Alaska – Fairbanks, explains the implications of climate change for northern forests.**

*Fire-devastated forest in Alaska.*

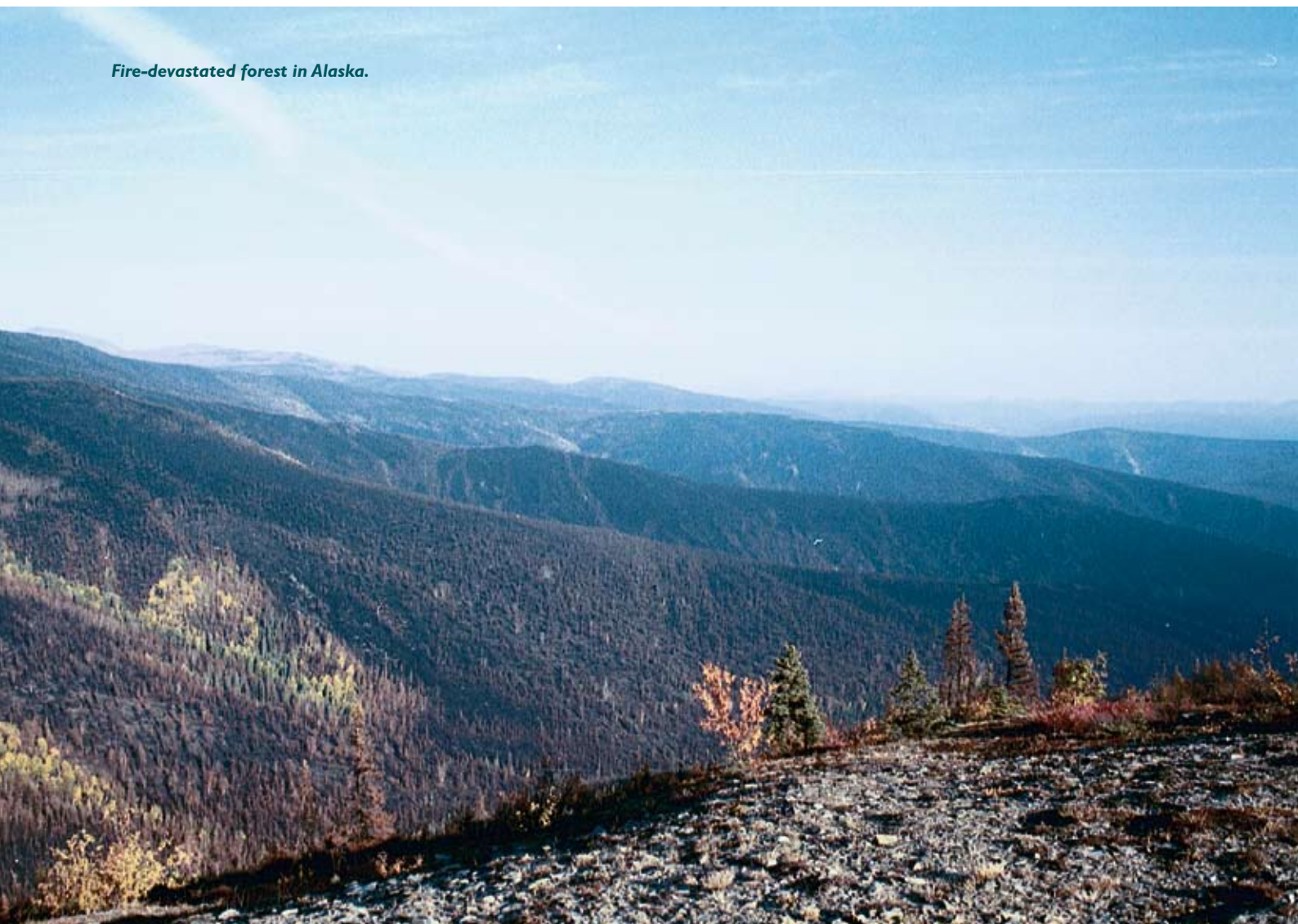


Photo: Glenn Patrick Juday

The last few decades across the Circumpolar North have been characterised by temperature increases and nowhere has this trend been stronger or more consistent than in the boreal forest regions of Alaska and adjacent Canada.

These climatic changes have already changed the boreal forest of Alaska to a degree not seen for at least several centuries. The probability of additional temperature

increases raises fundamental questions about what kind of forest and resource management will be necessary or even possible in boreal Alaska over the next few decades to century.

The NOAA National Weather Service data shows that temperatures in boreal Alaska since about 1977 are the warmest on a sustained basis in more than 100 years. Tree-ring reconstructions indicate that

summer temperatures were not warmer than now for at least the last 1,000 years in this region

During the period from 1949 to 2005, mean annual temperatures in central Alaska have increased by more than 2.5° C. Warming has been especially strong in the winter (4.5° to 5.0° C) and spring (~ 3° C).

The number of coldest days in the winter has decreased (see graphic).



# in the boreal forests of Alaska

At the University Experiment Station (UES)/Fairbanks station, growing season length has increased from about 80 days to around 120 days. A similar increase to 120 days occurred at the Talkeetna station south of the Alaska Range. The mean of daily low temperatures during the warm season (May - August) has increased very steadily for over a century, amounting to about 3.5° C (see graphic).

These actual temperature and seasonal increases during the last century are among the largest in the world during this time. The temperature increases actually measured in the region during the previous 100 years of instrument data are comparable to those produced by climate model scenarios for the 21st century in the Arctic Climate Impact Assessment.

A summary of recent Alaska temperature change data can be found online at: [climate.gi.alaska.edu/ClimTrends/Change/TempChange.html](http://climate.gi.alaska.edu/ClimTrends/Change/TempChange.html).

## ■ What changes has this warming caused in the boreal forest region?

The shorter snow accumulation season, warmer summers, and longer evaporation season that are now characteristic of Alaska are associated with widespread disappearance of open water surface area in closed-basin lakes and ponds in the boreal forest region.

Migrating shorebirds and waterfowl are dependent on Alaskan wetlands for resting or breeding habitat. This habitat has decreased by more than a third.

Permafrost soil temperatures are warming and the initial stages of permafrost thawing are observable. Trees rooted on ground subsiding from thawing of ice-rich permafrost topple and die, a widespread process easily seen today in central Alaska.

Recent research results show that the growth of many trees in boreal Alaska can be effectively predicted by index values of temperatures developed for the species and site type. Generally, on coolest and moistest sites, growth of at least

some trees has increased with recent warming.

But growth of many boreal trees is negatively related to temperature; these trees grow least in warm years and most in cool years. Drought stress is the cause of much of the negative response to warming, and tree growth reduction is widespread and even predominant across the boreal landscape of Alaska and western Canada. The strong warming of the late 20<sup>th</sup> century is associated with a growth reduction, depending of the species and site type, of up to 50 percent.

The boreal forest of central and western North America is adapted to stand-replacement disturbances, particularly wildland fire and insect-caused tree death. Sustained hot spells during the warm season are strongly correlated with fire and tree-killing insect outbreaks such as spruce bark beetle and spruce budworm.

The summer of 2004 was the warmest in the 102-year instrument record, and set the record for area burned since the 1950s and 2005 had the 3rd highest total area burned. In these two years somewhere between one quarter and one third of all forest area burned.

Forest insect survival is improved by the reduction of the coldest winter days and insect reproduction is increased by longer and warmer summers. A

variety of insect outbreaks, such as budworm, leaf miners, and wood borers have appeared across the landscape and reduced tree growth or killed trees.

## ■ What are the prospects for the Alaska boreal forest and forest management?

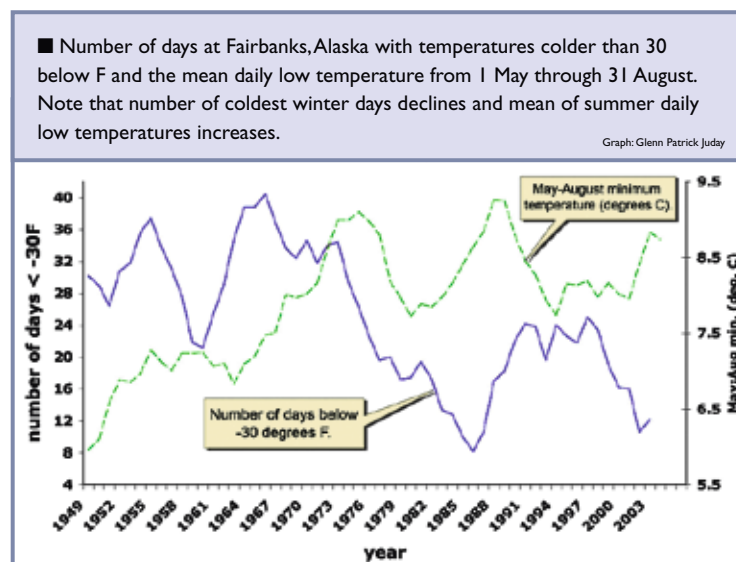
Depending on the species and the site type, the particular temperature indices that predict growth would allow another 2.5 to 4.5° C of warming before the predicted growth was zero or tree death. That range of temperature increase is essentially equal to the warming that occurred during the last century.

As long as warming persists, even forest management or other resource management actions taken now based on the assumption of sustainable timber production do not appear to have a high probability of success in Alaska and adjacent Canada.

Instead, a number of management crises based on widespread tree death or forest health problems related to stress are likely to continue and intensify.

Such a condition is already well underway.

Dr Glenn Patrick Juday  
Professor of Forest Ecology  
University of Alaska Fairbanks  
[g.juday@uaf.edu](mailto:g.juday@uaf.edu)



# Climate Camp Alaska

**A diverse group of researchers, conservationists and native community members – elders and youth – gathered in Homer, Alaska last October, to discuss the impacts of climate change in Alaska and how they can adapt and respond. David Aplin, of WWF-US, reports.**

The observations of Alaskan natives are confirming what climate models have predicted: western Alaska and the Bering Sea region are experiencing early and significant signs of global warming.

As communities are scrambling to adapt to diminishing sea ice coverage, increasing coastal erosion, melting permafrost, shifting fish and wildlife populations, and a growing list of other impacts, they are increasingly interested in

finding ways to minimise these impacts.

WWF is partnering with Alaskan native communities to develop strategies to help them investigate and begin to address the problems of climate change in their region, while empowering them to take action on the broader issue of global climate change.

In October, Dr. Lara Hansen, WWF-US chief climate change scientist, joined the Bering Sea staff to present Climate Camp Alaska

at the Islands and Ocean Visitor Centre in Homer, Alaska. The conference was a partnership between WWF's Alaska Field Office, the Centre for Alaskan Coastal Studies, and the Alaska Maritime National Wildlife Refuge.

Climate Camp Alaska brought together community members from six Bering Sea communities and scientists from a variety of disciplines to create a comprehen-

sive understanding of the current and potential impact of climate change.

A diverse group of speakers including oceanographers, fisheries and wildlife biologists, ecologists, social scientists, and community members created a common understanding of the global, regional, and local implications of climate change during the first day of the programme. Presenters and attendees emphasised the value of using both traditional ecological knowledge and scientific research in assessing the impacts of climate change and developing adaptation strategies. The FutureSearch facilitation method was employed on the second and third days of the event to further develop a shared understanding of the causes and potential impacts of climate change and to create action strategies that will guide education, policy, scientific monitoring, and rural community capacity building efforts. Action strategies can be found at the Climate Camp Alaska website.

A dozen high school students from the Coastal Communities for Science programme participated in a teen media training course held in conjunction with the event. Students used newly acquired audio production skills to interview scientists and community members attending Climate Camp and produce vox pop audio pieces and public service announcements featured on the Climate Camp website and distributed to their local radio stations for broadcast.

The WWF Alaska Field Office will build on the success of the media training project through a new initiative designed to empower Alaska's rural communities with valuable tools to document the change happening around them and communicate the impact of that change to a broader audience. Young people living in rural communities

will conduct and record interviews with family members, community leaders, and scientists. They will then share their stories and perspectives by producing audio programmes for publication on the Internet as well as on local, state, and national media channels, effectively reaching audiences well beyond their community. The interviews and stories will be permanently archived and made available to researchers, educators, and the public for future use in documenting the effects of climate change. A website will provide a forum for continued dialogue around climate change.

Other immediate outcomes of Climate Camp Alaska include technical and logistical support for Bering Sea communities to participate in Alaska Climate Change Commission hearings held around the state. The newly created commission consists of representatives of the Legislature, state agencies, and affected constituencies and is charged with developing policy guidance for the state regarding all aspects of climate change.

The Coastal Communities for Science programme funded Climate Camp Alaska. This National Science Foundation (NSF) funded programme launched in 2004 connects native communities with scientists to undertake research on environmental topics of shared interest. The programme has helped communities answer important questions about fish health, salmon habitat, declining fur seal populations, and most recently—climate change.

Additional information about climate camp – including presentations, Youth Media Programme audio pieces, and the workshop's final report can be found at [www.climatecampak.org](http://www.climatecampak.org).

David Aplin

Senior Programme Officer, WWF-US  
[david.aplin@wwfus.org](mailto:david.aplin@wwfus.org)



Photo: WWF-Carson/Kevin Schaefer

**Participants of Climate Camp Alaska heard about the impact of climate change on people and wildlife in Alaska, including the Northern fur seal in the Bering Sea.**





Photo: Bryan and Cherry Alexander, [www.arcticphoto.co.uk](http://www.arcticphoto.co.uk)

# Sovereignty and Inuit in the Canadian Arctic

*Louis Tepardjuk, paddling a floe edge boat through frost smoke while seal hunting at the ice edge near Igloodik, Nunavut, Canada*

**Paul Kaludjak, president of Nunavut Tunngavik Inc., which oversees implementation of the Nunavut Land Claims Agreement, calls for a more active and ambitious approach to Canada's northern foreign policy.**

What should the Canadian federal government do in the face of the continued American rejection of Canada's assertion of sovereignty over the Northwest Passage? Inuit occupy and travel throughout the area that Washington claims to

be international waters. We will be most affected if the passage is opened to shipping as a result of climate change.

Professor Donat Pharand, a recognised authority on northern Canadian waters, suggests that

Canada should make the Arctic Canada Traffic System compulsory; acquire at least one polar-class icebreaker capable of operating year round; install a submarine-detection system at the main entrances of the Northwest Passage; extend ► 18



17 ► radar coverage beyond the North Warning System; and increase the number of long-range patrol aircraft.

Professor Michael Byers at the University of British Columbia urges Canada to negotiate a Northwest Passage shipping and environmental management agreement with the United States, an idea similar to Professor Pharand's suggestion of a transit agreement between Ottawa and Washington. The proposed deal would recognise Canada's sovereignty over the passage and grant rights of transit for US ships to protect America's vital interests, including security. Both Pharand and Byers believe that threats to Canada's arctic sovereignty are real and may intensify.

Writing in a Canadian newspaper earlier this month, Franklyn Griffiths of the University of Toronto suggested that the issue is overblown, that our sovereignty is "well in hand" and that we are "secure in the benefits of de facto control of the Northwest Passage." He recommends against negotiating with the Americans to secure outright recognition of our sovereignty. Instead, he suggests a renewed focus on arctic stewardship as the "enactment of sovereignty" through a partnership between northerners and southerners.

Where is the Canadian Government in all of this? In Iqaluit last summer, Prime Minister Stephen Harper promised armed icebreakers, a deep sea port in Nunavut, increased surveillance by air, a beefing up of the predominantly Inuit Canadian Ranger patrols, and the deployment of more troops. He is putting all of Canada's arctic sovereignty eggs in the military's basket.

Harper's announcement was welcomed by Inuit organisations. Our nightmare is the poorly regulated use of the passage at some future date by convenience-flagged, oil-carrying tankers. Just imagine what an Exxon Valdez oil spill would mean in the Northwest Passage. This is why Inuit want Canadian law applied to all who use the area. We are being prudent, not alarmist.

The eight-nation Arctic Council will deliver a report in 2008 on the likely level of shipping in the

Arctic in 2020 and 2050. Others are preparing for the post-climate-change future. So should Canada.

Here are our suggestions: the Canadian government does not have a strategy to assert our sovereignty. Instead, individual departments have reacted to events. We need a long-term plan that knits together federal and territorial agencies and Inuit organisations. We all have roles to play. Asserting arctic sovereignty is a national, not a federal, project.

The 1993 Nunavut Land Claims Agreement acknowledges the contribution of Inuit to Canada's arctic sovereignty, yet key sovereignty-asserting provisions of this agreement, including monitoring, have not been implemented by federal agencies. As recommended by its Auditor-General in 2004, the Canadian government should commit to full implementation of the land-claims Agreement.

In 2007, scientists from more than 60 countries will be working in the Arctic for the International Polar Year. Norway has developed world-class research facilities in the Svalbard Islands in the Barents Sea as a means of securing sovereignty. Canada's research facilities in our Arctic are out of date and inadequate. Let's learn a lesson from Norway and develop research facilities in the Arctic as an International Polar Year legacy.

The best way to have our sovereignty accepted by the international community is not to restrict entry to territory, but to facilitate use of it in accord with Canadian regulations. This requires deeper political engagement among the federal government, international bodies, individual nations and international and national non-governmental organisations that want to use the Arctic for research, development, cultural, social and other purposes. We need a far more active and ambitious northern foreign policy.

We need creative thinking. Inuit who live in the Canadian Arctic are proud Canadians, and we invite the government of Canada to engage with us to protect the Canadian Arctic.

Paul Kaludjak

President

Nunavut Tunngavik Inc.

# Progress for

**The Canadian Government recently announced plans to establish a new national park on the East Arm of the Great Slave Lake and other protected areas in Canada's Northwest Territories.**

**Josh Laughren, WWF-Canada's director of communications, reports.**

In 1970, an area of the East Arm of Great Slave Lake in Canada's Northwest Territories (NWT) was set aside as a possible national park. At the time, the Lutsel K'e Dene First Nation, the traditional land-owners, were not ready for such a move as treaty negotiations had not yet been settled.

Over the next three decades, a series of negotiations took place with the Lutsel K'e Dene First Nation, which led to a reassessment of the initial planned national park area for the East Arm of Great Slave Lake to accommodate the Lutsel K'e Dene First Nation area, and to protect and conserve part of their traditional territory, which they call "Thaydene Nene".

With the signing of a Memorandum of Understanding (MoU) in October 2006, by Canadian Environment Minister Rona Ambrose, work has begun in earnest on a feasibility study, including consultations, with the Lutsel K'e Dene First Nation and other interests.

WWF-Canada strongly supports the signing of the MoU and the announcement of other new protected areas in the Mackenzie River watershed, in advance of industrial development.

The potential park on the East Arm of Great Slave Lake covers a total area of 33,525 km<sup>2</sup> (29,560 km<sup>2</sup> of land, 3,965 km<sup>2</sup> of water).

The ecologically diverse area around the East Arm of Great Slave Lake represents a spectacular part of Canada where the transi-

# protected areas in northern Canada



Photo: Leslie Luong

tion from boreal forest to tundra is more pronounced than anywhere in the country. It is also an important wintering area for several herds of barren-ground caribou, and supports viable populations of species such as wolf, moose, wolverine, great-horned owl, and American marten.

WWF-Canada has proudly supported the Lutsel K'e Dene First Nation conservation initiatives with funding and technical expertise for over five years. Active partners in this work include the Canadian Boreal Initiative and Pew Charitable Trusts, along with a core of loyal personal donors who care about the North.

Monte Hummel, president emeritus of WWF-Canada, says: "In many ways, this community of 350 people has bravely pioneered conservation measures that should be a model for all of us in Canada. They have insisted on the right to plan and reserve areas important to them while they still can, in the face of intense industrial pressure, especially from uranium and diamond exploration.

"With the signing of the MOU, WWF-Canada expects both the mining industry and the federal government to respect community wishes, by no longer staking in areas that the Dene want to protect. Until now, staking has been happening, despite written objections from the people who live there, and despite federal assurances that they would be given 'space to negotiate.'"

Important cultural features found in the "area of interest" include the traditional hunting and fishing areas of the Lutsel K'e Dene First Nation, the remnants of historic Fort Reliance, and Pike's Portage linking Great Slave and Artillery Lake.

Chief Adeline Jonasson, of the Lutsel K'e Dene First Nation, says: "The protection of Thaydene Nene is critical to the continued integrity of not only this pristine and beautiful natural landscape, but also to the well-being of the Akaitcho Dene people who have thrived on this land since time immemorial.

"The signing of this MoU is a significant step towards the conservation of our sacred places

and cultural heritage. We anticipate working together with Parks Canada in our new partnership."

Minister Ambrose also committed to following up on protecting a number of other areas put forward by Dene communities in the Mackenzie Valley: The Ramparts (Tsudehliline Tuyeta) as a National Wildlife Area (NWA) in the Sahtu region; and in the DehCho region, the Horn Plateau (Edehzhie) and Trout Lake (Saamba K'e) as NWAs, and the expansion of Nahanni National Park.

Stephen Kakfwi, former premier of the NWT, now special advisor to WWF-Canada and the Canadian Boreal Initiative, says: "I am from Fort Good Hope in the Sahtu, and I have worked with the community to protect the Ramparts – a sacred place with cliffs along the Mackenzie River and nationally-significant wetlands further inland.

"My sense is that the community is less than favourable to the pipeline under present circumstances. They need to know the federal government is equally committed

**Elders visit Perry Falls on the Lockhardt River, Northwest Territories, Canada, which they believe have healing properties. This area will be part of a potential national park at the East Arm of the Great Slave Lake. The park will accommodate unique ecological and cultural values.**



19 ► to protecting the land. I am glad to hear the Minister will obtain an actual land withdrawal soon, because it has been over two years since The Ramparts was proposed for protection.”

Monte Hummel and Stephen Kakfwi have worked together for new northern protected areas since right back to the Berger Inquiry of the 1970s, through the introduction of the NWT Protected Areas Strategy (PAS) in the mid-1990s, and the Mackenzie Valley Five-Year Action Plan in 2004.

Kakfwi says: “In the NWT, we are rapidly losing conservation options, in the face of extensive oil and gas leases and mineral staking.

“We need a more balanced approach. In fact, the government should be required to provide at least interim protection for all sites currently proposed through the PAS and land-use plans should be required before a decision is made on proposed projects such as the Mackenzie Gas Pipeline.”

Hummel added: “There’s lots of focus, including by the Prime Minister, on coming out of the current decade with world-class industrial development in the North to make Canada an ‘energy superpower.’ But there has not been enough emphasis on also making sure the legacy is one of world-class conservation accomplishments. That is still possible and northern communities want no less, so we hope today’s announcements by Minister Ambrose will be the first round of increased conservation progress as well.”

WWF-Canada has maintained a full-time presence in the NWT for over ten years now, and is a contributing partner to the NWT Protected Areas Strategy, along with the Canadian Parks and Wilderness Society, Ducks Unlimited, the Canadian Boreal Initiative, First Nations, industry and both the territorial and federal governments.

*Josh Laughren,  
Director of Communications  
WWF-Canada  
jlaughren@wwfcanada.org*

# A Danish perspective

**At the Arctic Council Ministerial meeting in Salekhard, Russia, late last year, the Danish Environment Minister, Connie Hedegaard presented a Danish view on the state of the Arctic and the role of the Council.**

Denmark, Greenland and the Faroe Islands had high hopes for the Arctic Council, when it was created ten years ago. And the Council has indeed developed into a forum for focused and constructive dialogue between the arctic nations and its peoples, and the Arctic is no longer considered a remote place of the Earth.

It is now of critical importance that the Arctic Council continues to address the many issues faced by the arctic communities and produce tangible progress towards sustainable development in their fragile environments.

## Climate change

Many changes in the Arctic have global significance.

Standing on the edge of the world’s most productive glacier – the view over the Ilulissat Icefjord in Greenland is simply breathtaking. Icebergs the size of skyscrapers are launched from the calving glacier at an unprecedented rate. But – in less than five years – the glacier front has retreated nearly 16 kilometres (ten miles).

In August 2006, one of the world’s leading glaciologists, Professor Dorthe Dahl-Jensen from the

University of Copenhagen, voiced her deep concern: “As scientists, we are shocked by this development,” she told Senator John McCain and a group of senators from the US, who were invited by Greenland and Denmark to visit this spectacular place and witness the effect of global warming for themselves.

An Inuit saying goes: “If you hide a ghost, it will continue to grow.” It is our responsibility to make sure that the international community is made aware of the effects of climate change in the Arctic. And it is our responsibility to act decisively on that knowledge.

The Arctic Climate Impact Assessment and more recent evidence tell us a story of escalating melting of the Greenland ice cap; and NASA reports of a 16 percent shrinking of the ice-cover of the polar sea. Climate change is happening much faster than was anticipated by the experts just a few years ago.

To not act upon this knowledge is not an option, and the Arctic Council must continue to address all the aspects of global warming – its regional consequences as well as its global impacts.

What we – as arctic nations – can do to enhance global climate policies





lems of reproduction in polar bears and damages to their liver, kidneys, bones and immune-system have helped in making the case that heavy metals and POPs are truly global problems.

Such findings demonstrate the need to continue the monitoring of contamination in the Arctic and its consequences in order to promote responsible chemical management throughout the world.

### **Sustainable development**

The Kingdom of Denmark is keenly aware of the social issues confronting the arctic peoples.

The "Survey of Living Conditions in the Arctic" – initiated by the Arctic Council and lead by Greenland – has given us valuable insight in how we can enhance the social, cultural and economic conditions in the Arctic. I very much hope that the partnerships between indigenous peoples and experts that has been established in this project can be continued and provide us with knowledge and ideas for the future.

### **Biodiversity**

The sustainable use of living resources is a precondition for the Greenland and Faroe societies, and as many of the animals of the Arctic are migratory the protection of biodiversity of the Arctic has global implications.

This underlines the importance of the work of the CAFF (Conservation of Flora and Fauna of the Arctic) working group, and we look forward to chair this group.

The arctic region faces many challenges. Sustainable development to the benefit of its inhabitants is the core issue. The environmental problems brought about by the global community have to be dealt with. We need to keep all of this in focus in the Arctic Council.

Looking ahead, it is my firm belief that the Council has an important role to play in promoting sustainable development and environmental protection in the Arctic.

We must continue to bring all the knowledge we have and the lessons we have learned to the attention of the people in the Arctic as well as the rest of the world.

*Connie Hedegaard*

*Danish Minister of the Environment*

and mitigate global warming, and what we can do and should do in the Arctic to allow the arctic peoples to adapt to its inevitable consequences should all be addressed in this forum. Concrete policy responses are urgently needed – in the international negotiations as well as in our own countries. The Arctic Council should be used to exchange experience and to help each other in finding a way forward.

Our countries are responsible for a large part of the global emissions of greenhouse gases and we have a special responsibility to respond to the findings of the Arctic Climate Impact Assessment and all of the other evidence on the consequences of man-made climate change.

Greenland is already striving to cope with the effects of climate change and yet we have only seen the very early signs of global warming. We need effective policy responses and we need them now.

### **Pollution of the arctic environment**

Persistent toxic substances are a serious threat to the health and well-being of arctic people. The pollutants are accumulating in

the food chain and they end up in fish, birds and mammals; important sources of food in the arctic communities. Studies from the Faroe Islands have shown alarming negative effects of mercury in pregnant women on the neural development of unborn children, with measurable effects on their mental development after birth.

Arctic citizens can not defend themselves from pollution coming from thousands of miles away – of course. We need concerted, global action – such as the Convention on Persistent Organic Pollutants – to deal with issues of this kind.

The burning of coal is one of the major sources of mercury emissions – globally as well as in the Arctic. Rapid economic development in the Far East and corresponding rise in the use of energy – based on coal to a large degree – makes it imperative to create a global, legally-binding instrument on mercury, and I would very much like to see the Arctic Council make its voice heard on that issue.

### **Continued monitoring**

The finding of PCB, DDT and other poisons in the breast milk of mothers in the Arctic and prob-

# World will connect with the Arctic for IPY

**The International Polar Year (IPY) will attract thousands of researchers and highlight some of the big issues that connect the Arctic with the rest of the world. WWF International Arctic Programme's Nigel Allan reports.**

From March 2007, the Arctic and Antarctic will be the subject of much international scientific attention, when the International Polar Year 2007-2008 (IPY) finally begins.

This is the largest science programme in the world with over 50,000 people from more than 60 nations involved in IPY activities.

Many countries will be expending huge resources to better understand the polar regions. In the Arctic, this will include the nations typically involved in northern research, such as Norway, Canada, US, Russia, and the UK, but it will also include some more recent arrivals such as India and China.

One of the six main themes of the IPY is global-polar linkages and many of the IPY projects are about understanding how much the Arctic and Antarctic are connected to other regions of the world.

The main physical connection is through a process called "teleconnection", which describes the



way that climate in one part of the world is influenced by events elsewhere. Teleconnection means that variations in arctic sea ice and snow cover can affect weather events in other parts of the world.

The Chinese are interested in the connections between variations in sea ice and snow cover in the arctic, particularly in the Barents Sea, and the effect that they have on weather and climate in eastern Asia.

Shen Aimin, associate professor of the Chinese Association for Science and Technology (CAST), says: "Further research of the [polar] regions would help people spell out the deep-seated causes of such disasters as hurricanes and tsunamis devastating Asian and Pacific areas."

China's first arctic research station, the Yellow River Station at Longyearbyen, Svalbard was established in 2003 and the Chinese say it has already collected data to demonstrate a connection between sea ice cover and rainfall anomalies in China. There are also connections between the Arctic and the very large and arctic-like Tibetan-Qinghai Plateau, which the Chinese wish to better understand.

The Tibetan-Qinghai Plateau is the largest and highest plateau in

the world, with an area of about 2.5 million square kilometres, or four times the size of France, and in recent years many of its glaciers have been receding.

India is also using the IPY to initiate a role in arctic research, and plans to send its first arctic expedition to Svalbard in 2007-08 and will be sending a vessel in 2009-10.

The Indian Ministry of Ocean Development's proposal says: "The understanding of climatic changes in the arctic region and their consequences on global climate changes has relevance to the Indian subcontinent as well. Therefore, efforts need to be initiated to address some of these scientific challenges in detail."

The last time the Polar Regions received this much global attention was during the International Geophysical Year in 1957-58. This event produced unprecedented exploration and discoveries in many fields of research and fundamentally changed how science was conducted in the Polar Regions.

Fifty years on, technological developments such as earth observation satellites, autonomous vehicles and molecular biology techniques offer enormous opportunities for a further quantum step upwards in our understanding of polar systems.

Beyond the physical connections associated with climate, the IPY will mean the sheer number of international researchers working in the Arctic will increase significantly. As findings are made and news created, the rest of the world will learn more about the Polar Regions and the influence that they have on us.

For more information about the International Polar Year, visit their website at: [www.ipy.org](http://www.ipy.org). There are also many websites for countries with IPY activities planned.

*China, an International Polar Year participant, established its first arctic station, named Yellow River Station, in Ny-Ålesund, Svalbard in 2003.*



Photo: Polar Research Institute of China

Nigel Allan  
nallan@wwf.no

## Forthcoming arctic meetings & events

### Arctic Council events

#### AMAP/IASC/CiIC Carbon Cycle Assessment Workshop

WHERE: Seattle, USA • WHEN: 27–28 February • CONTACT: [www.amap.no](http://www.amap.no) (click Meeting Schedule)

#### 21st AMAP WG meeting

WHERE: Hanover NH, USA • WHEN: 12–14 March • CONTACT: [www.amap.no](http://www.amap.no) (click Meeting Schedule)

#### AMAP Human Health Expert Group meeting

WHERE: Lofoten, Norway • WHEN: 16 April • CONTACT: [www.amap.no](http://www.amap.no) (click Meeting Schedule)

### Conferences and workshops

#### 7th International Conference on Global Change: Connection to the Arctic (GCCA-7)

WHERE: Fairbanks, Alaska, USA • WHEN: 19–20 February • CONTACT: [www.iarc.uaf.edu/workshops/GCCA-7/index.php](http://www.iarc.uaf.edu/workshops/GCCA-7/index.php)

#### Great Alaska Weather Modeling Symposium

WHERE: Fairbanks, Alaska, USA • WHEN: 13–15 March • CONTACT: [www.gi.alaska.edu/~kramm/gawms](http://www.gi.alaska.edu/~kramm/gawms)

#### Arctic Science Summit Week

WHERE: Hanover, New Hampshire, USA • WHEN: 14–20 March • CONTACT: [www.assw2007.org](http://www.assw2007.org)

#### North Atlantic Subpolar Gyre Workshop

WHERE: Kiel, Germany • WHEN: 19–20 March • CONTACT: [www.ifm-geomar.de/index.php?id=supolar-gyre](http://www.ifm-geomar.de/index.php?id=supolar-gyre)

#### Gordon Research Conference on Polar Marine Science

WHERE: Ventura, California, USA • WHEN: 25–30 March • CONTACT: [www.grc.org/](http://www.grc.org/)

#### 37th International Arctic Workshop

WHERE: Freysnes, Iceland • WHEN: May 2–5 • CONTACT: [www.earthice.hi.is/page/ies\\_arcticworkshop](http://www.earthice.hi.is/page/ies_arcticworkshop)

#### Canadian Meteorological and Oceanographic Society, Canadian Geophysical Union, and American Meteorological Society Congress 2007

WHERE: St. John's, Newfoundland, Canada • WHEN: 28 May–1 June • CONTACT: [www.cmos2007.ca/index.htm](http://www.cmos2007.ca/index.htm)

#### Cryogenic Resources of Polar Regions

WHERE: Salekhard, West Siberia, Russia • WHEN: 17–20 June • CONTACT: [www.ikz.ru/permafrost/](http://www.ikz.ru/permafrost/)

#### For more on these events and other meetings, please visit:

<http://www.arcus.org/Calendar/upcomingEvents.shtml> • <http://www.iasc.no/SAM/samtext.htm>

### ■ *Silent Snow: The Slow*

#### *Poisoning of the Arctic*

Marla Cone

ISBN: 080211797X

Pages: 256

Published: Grove Press

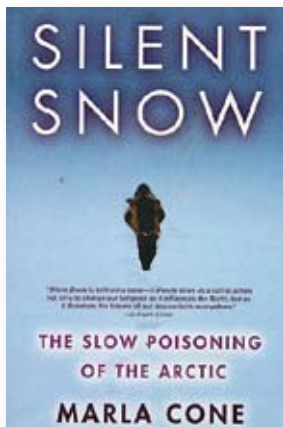
In *Silent Snow: Slow Poisoning of the Arctic*, author Marla Cone, who has spent 15 years covering environmental issues at the *Los Angeles Times*, details the toxic threat to the Arctic and at the same time provides a wonderful insight into many aspects of the arctic world.

Cone draws attention to the toxic chemicals (PCBs, HCHs, PBDEs, DDT) that reach the Arctic in the same way that *Silent Spring* by Rachel Carson drew attention to the environmental and health effects of DDT back in the 1960s.

We are introduced to a number

of people living in the High Arctic who still live very traditional lives and hunt beluga, walrus, narwhal and seal. Cone writes that “ironically, this close connection to the environment has left them vulnerable to the by-products of modern society”, as it is through their diet that countless northerners are exposed to toxic chemicals.

Amongst the many scientists that



Cone visited over the two-year period that she researched the book, she spent some time with Andy Derocher and Magnus Andersen of the Norwegian Polar Institute (NPI) as they tag polar bears on Svalbard, about 700 kilometres north of Norway. For anyone who follows bears on our Polar Bear Tracker ([www.panda.org/polarbears](http://www.panda.org/polarbears)), Cone gives an exciting account of the process involved in finding and tagging the bears.

Derocher, who has since moved back to Canada to work at the University of Alberta, originally went to Svalbard as he thought that it would be an opportunity to work in a pristine environment. He was shocked when blood samples from polar bears on Svalbard turned up extraordinarily high traces of PCBs.

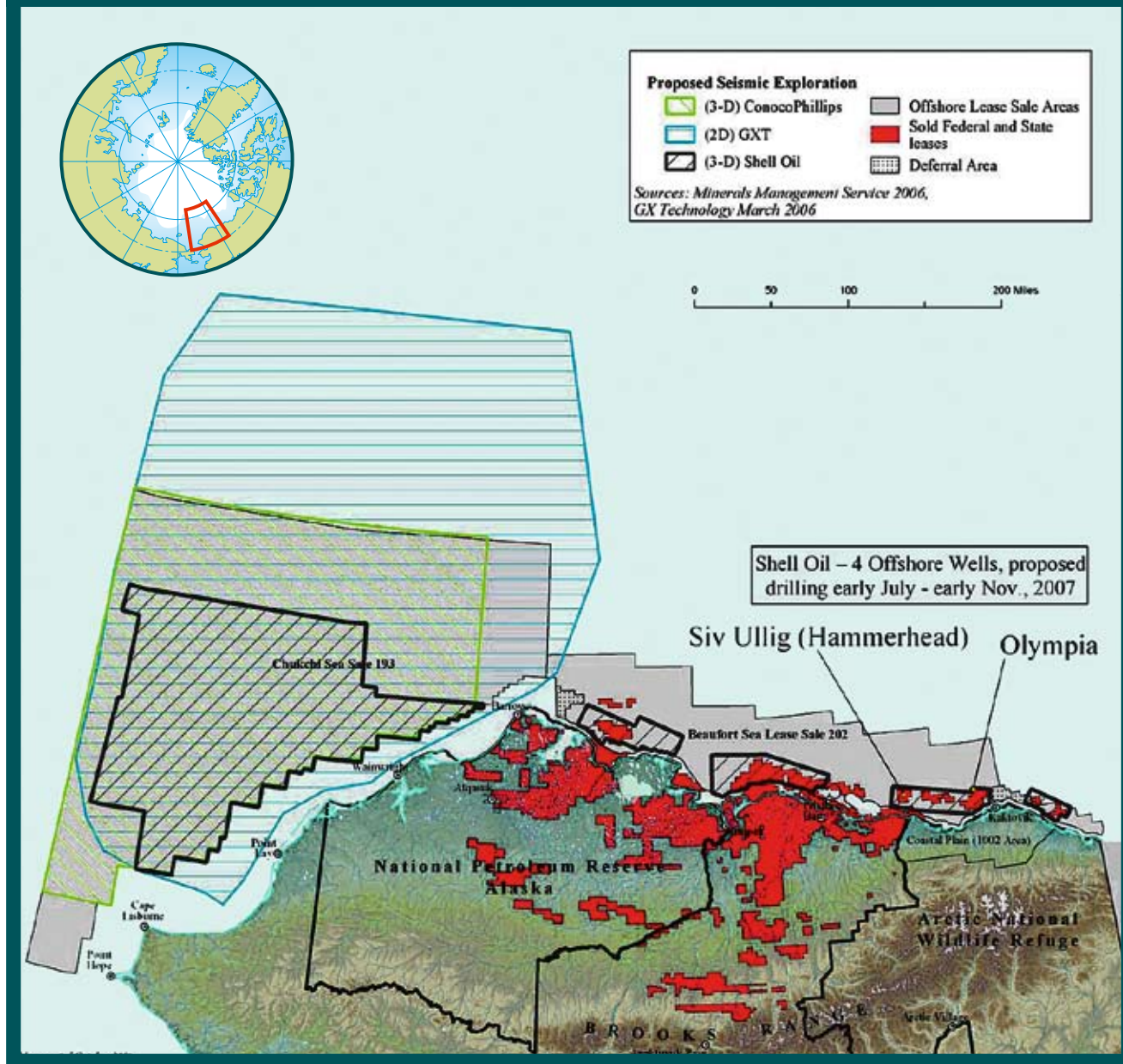
The chemicals that are showing up in the Arctic were banned in most countries years ago and it has become harder than ever to ban chemicals today. There are now an estimated 100,000 chemicals, of which little is known. As Cone points out, it is unrealistic for us to expect a toxic-free Arctic but if we continue to push for international agreements, like the Stockholm Convention, and government legislation then we can hopefully reduce the toxic threat.

*Silent Snow* is a great work of environmental journalism that highlights an important issue, tells an engaging story: I highly recommend it.

Nigel Allan  
[nallan@wwf.no](mailto:nallan@wwf.no)



## Proposed offshore seismic, leasing and drilling in the Beaufort Sea



### WWF ARCTIC OFFICES AND CONTACTS

**WWF INTERNATIONAL ARCTIC PROGRAMME**  
Kristian Augusts gate 7a,  
P.O. Box 6784 St. Olavs  
plass, N-0130 Oslo,  
Norway  
Ph.: +47 22 03 65 00,  
Fax: +47 22 20 06 66  
[www.panda.org/arctic](http://www.panda.org/arctic)  
Contact: Stefan Norris

**WWF-CANADA**  
245 Eglinton Ave.,  
East Suite 410  
Toronto, Ontario M4P 3J1  
Canada  
Ph.: +1 416 489 8800  
Fax: +1 416 489 3611  
[www.wwf.ca](http://www.wwf.ca)  
Contact: Peter J Ewins

**WWF-DENMARK**  
Ryesgade 3F  
DK 2200 Copenhagen N,  
Denmark  
Ph.: +45 35 36 36 35  
Fax: +45 35 39 20 62  
[www.wwf.dk](http://www.wwf.dk)  
Contact: Anne-Marie Bjerg

**WWF-FINLAND**  
Lintulahdenkatu 10  
SF-00500 Helsinki, Finland  
Ph.: +358 9 7740 100  
Fax: +358 9 7740 2139  
[www.wwf.fi](http://www.wwf.fi)  
Contact: Jari Luukkonen

**WWF-NORWAY**  
Kristian Augusts gate 7a  
P.O. Box 6784 St.  
Olavsplass  
N-0130 Oslo, Norway  
Ph.: +47 22 03 65 00  
Fax: +47 22 20 06 66  
[www.wwf.no](http://www.wwf.no)  
Contact: Rasmus Hansson

**WWF-SWEDEN**  
Ulrikdals Slott  
S-171 71 Solna, Sweden  
Ph.: +46 862 47 400  
Fax: +46 885 13 29  
[www.wwf.se](http://www.wwf.se)  
Contact: Lars Kristoferson

**WWF-USA**  
1250 24th St. NW  
Washington,  
DC, 20037 USA  
Ph: +1 202 293 4800  
Fax: +1 202 861-8378  
[www.worldwildlife.org](http://www.worldwildlife.org)  
Contact: Randall Snodgrass  
& Margaret Williams

**WWF INTERNATIONAL EUROPEAN PROGRAMME**  
Avenue du Mont Blanc,  
CH-1196 Gland,  
Switzerland  
Ph.: +41 22 364 92 25, Fax:  
+41 22 364 32 39  
[www.panda.org](http://www.panda.org)  
Contact: Magnus Sylvén

**WWF RUSSIAN PROGRAMME OFFICE**  
Contact: Viktor Nikiforov

■ mail within Russia:  
P.O. Box 55  
125319 Moscow, Russia  
Ph: +7 095 7270939  
Fax: +7 095 7270938  
[www.wwf.ru](http://www.wwf.ru)

■ mail from Europe:  
WWF, Russian  
Programme Office  
Account No. WWF 232  
P.O. Box 289 Weybridge  
Surrey KT 13 8WJ, UK

■ mail from the US:  
WWF Russian  
Programme Office  
Account No. WWF 232  
208 East 51st Street  
Suite 295  
New York, NY 10022,  
USA-

WWF is the world's largest and most experienced independent conservation organisation, with almost five million supporters and a global network active in 90 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature. WWF continues to be known as World Wildlife Fund in Canada and the United States of America.

