



# Northern Climate ExChange

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

NCE Update October 28, 2009



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## Announcements

### 1. New Bachelor of Science Program - Yukon College

In collaboration with the University of Alberta, **Yukon College will be offering a Bachelor of Science (BSc) in Environmental and Conservation Sciences.**

Public information sessions are available to learn more about the BSc Program and admissions for January and September 2010:

- **October 29th**, Yukon College, Whitehorse (Ayamdigut), Main Lobby, 7:00-8:30 pm. Public information session.
- **October 30th**, Community campuses via videoconference, 12:00 -1:00 pm. Public information session.

Please contact your Yukon College community campus for information on how to participate.

For more information, contact:

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[www.yukoncollege.yk.ca](http://www.yukoncollege.yk.ca)

## **2. Arctic Peoples, Culture, Resilience and Caribou IPY project - Launches New Website**

The Arctic Peoples, Culture, Resilience and Caribou IPY project has just launched its website. This project proposes to investigate the role of three key elements associated with community resilience and health (social networks, traditional knowledge and language, governance and institutional capacity) in the context of the changing nature of caribou-community relationships in Arctic Indigenous communities.

Basic information on the project is available now and more content will be loaded over the coming months.

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

## **3. CCFM Framework for Forest Management Offset Protocols released - October 2009**

The Canadian Council of Forest Ministers (CCFM), has just released this framework for use by provinces and territories in developing forest management offset protocols that are relevant to each jurisdiction's forest type and context.

The CCFM provides a forum for the federal, provincial and territorial governments responsible for forests, to work cooperatively to address major areas of common interest, provides leadership on national and international issues and sets direction for the stewardship and sustainable management of Canada's forests.

[Download the Report.](#)

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

## **4. NOAA Arctic Report Card - Update for 2009**

Issued annually, the Arctic Report Card is a timely source for clear, reliable and concise environmental information on the state of the Arctic, relative to historical time series records. Some of the essays are based upon updates to articles in the Bulletin of the American Meteorological Society State of the Climate in 2008.

Material presented in the Report Card is prepared by an international team of scientists and is peer-reviewed by topical experts of the Climate Experts Group (AMAP) of the Arctic Council. The Conservation of Arctic Flora and Fauna (CAFF) Circumpolar Biodiversity Monitoring Program (CBMP) provides collaborative support through the delivery and editing of the biological elements of the Report Card.

[Download Full Report.](#)

[Download Printable Handout](#)

[www.arctic.noaa.gov](http://www.arctic.noaa.gov)

## **5. RETHINK - Contemporary Art & Climate Change**

RETHINK - Contemporary Art & Climate Change is an exhibition of 26 works

created by trendsetting Nordic and international contemporary artists working in the intersection between art, culture and climate change.

The exhibition is a result of a cooperation between the National Gallery of Denmark, Den Frie Centre of Contemporary Art, Nikolaj Copenhagen Contemporary Art Center and the Alexandra Institute and will present works of Tomas Saraceno (AR), Henrik Håkansson (SE), the Icelandic Love Corporation (IS), Superflex (DK), Eke Bright Ugochukwu (NG), Olafur Eliasson (IS/DK) and many others.

RETHINK has been appointed "Nordic Exhibition of the Year 2009-2010" by the Nordic Culture Fund and is supported by the Branding Denmark Fund, the City of Copenhagen and the Danish Arts Council. In addition, the exhibition is a part of the official culture programme for the United Nations Climate Change Conference COP15 that will take place in Copenhagen from December 7th to 18th.

[Download Press Release](#)

[More on the Exhibition](#)

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

## Articles

### 1. Arctic sees more signs of accelerating climate change

Greenbang  
October 26, 2009

This past summer might have seen more Arctic sea ice cover than in 2007 or 2008, but scientists continue to see dramatic - and accelerating - signs of climate change in the region, according to the latest Arctic Report Card. The annual assessment is a collaborative effort of 71 national and international scientists.

"The Arctic is a special and fragile place on this planet," said Jane Lubchenco, undersecretary for oceans and atmosphere and an administrator with the National Oceanographic and Atmospheric Administration (NOAA). "Climate change is happening faster in the Arctic than any other place on Earth - and with wide-ranging consequences. When I visited the northern corners of Alaska's Arctic region earlier this year, I saw an area abundant with natural resources, diverse wildlife, proud local and native peoples - and a most uncertain future. This year's Arctic Report Card underscores the urgency of reducing greenhouse gas pollution and adapting to climate changes already under way."

Among the changes highlighted in the 2009 update to the Arctic report card were:

- A change in large-scale wind patterns affected by the loss of summer sea ice;
- The replacement of multi-year sea ice by first-year sea ice;
- Warmer and fresher water in the upper ocean linked to new ice-free areas;
- A continued loss of the Greenland ice sheet;
- Less snow in North America and increased runoff in Siberia; and
- The effect of the loss of sea ice on Arctic plant, animal, and fish species.

The Arctic Report Card is an annual assessment that was introduced by NOAA's Climate Programme Office in 2006. The report card established a baseline of conditions in the region at the beginning of the 21st century, and the annual updates track and monitor the often quickly-changing conditions in the Arctic. Using a color-coded system of red to indicate consistent evidence of warming and yellow to indicate mixed signals about warming from climate indicators and species, the report card is updated annually in October and tracks Arctic data in six categories: atmosphere, sea ice, biology, ocean, land, and conditions in Greenland.

"The Arctic we see today is very different from the Arctic we saw even five years ago," said Jackie Richter-

Menge of the USACE Cold Regions Research and Engineering Laboratory in Hanover, New Hampshire, and the report's chief technical editor and contributing author. "It's a warmer place with less thick and more mobile sea ice, warmer and fresher ocean water, and increased stress on caribou, reindeer, polar bears and walrus in some regions."

The 2009 update to the report card reflects the contributions of an international team of 71 researchers from countries that include the US, Canada, UK Belgium, China, Denmark, Japan, The Netherlands and Russia.

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

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## **2. Arctic Sediments Show That 20th Century Warming Is Unlike Natural Variation**

ScienceDaily  
October 25, 2009

The possibility that climate change might simply be a natural variation like others that have occurred throughout geologic time is dimming, according to evidence in a Proceedings of the National Academy of Sciences paper published October 19.

The research reveals that sediments retrieved by University at Buffalo geologists from a remote Arctic lake are unlike those seen during previous warming episodes.

The UB researchers and their international colleagues were able to pinpoint that dramatic changes began occurring in unprecedented ways after the midpoint of the twentieth century.

"The sediments from the mid-20th century were not all that different from previous warming intervals," said Jason P. Briner, PhD, assistant professor of geology in the UB College of Arts and Sciences. "But after that things really changed. And the change is unprecedented."

The sediments are considered unique because they contain rare paleoclimate information about the past 200,000 years, providing a far longer record than most other sediments in the glaciated portion of the Arctic, which only reveals clues to the past 10,000 years.

"Since much of the Arctic was covered by big ice sheets during the Ice Age, with the most recent glaciations ending around 10,000 years ago, the lake sediment cores people get there only cover the past 10,000 years," said Briner.

"What is unique about these sediment cores is that even though glaciers covered this lake, for various reasons they did not erode it," said Briner, who discovered the lake in the Canadian Arctic while working on his doctoral dissertation. "The result is that we have a really long sequence or archive of sediment that has survived arctic glaciations, and the data it contains is exceptional."

Working with Briner and colleagues at UB who retrieved and analyzed the sediments, the paper's co-authors at the University of Colorado and Queens University, experts in analyzing fossils of bugs and algae, have pooled their expertise to develop the most comprehensive picture to date of how warming variations throughout the past 200,000 years have altered the lake's ecology.

"There are periods of time reflected in this sediment core that demonstrate that the climate was as warm as today," said Briner, "but that was due to natural causes, having to do with well-understood patterns of the Earth's orbit around the sun. The whole ecosystem has now shifted and the ecosystem we see during just the last few decades is different from those seen during any of the past warm intervals."

Yarrow Axford, a research associate at the University of Colorado, and the paper's lead author, noted: "The 20th century is the only period during the past 200 millennia in which aquatic indicators reflect increased warming, despite the declining effect of slow changes in the tilt of the Earth's axis which, under natural conditions, would lead to climatic cooling."

Co-authors with Briner and Axford are Colin A. Cooke and Alexander P. Wolfe of the University of Alberta; Donna R. Francis of the University of Massachusetts; John P. Smol, Cheryl R. Wilson and Neal Michelutti at Queens University; Gifford H. Miller of the University of Colorado and Elizabeth K. Thomas, who did this work at UB for her master's degree in geology.

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

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### **3. New fossil finds as witnesses for fluctuations of Arctic sea ice cover during the past 30,000 years**

Alfred Wegener Institute

October 23, 2009

Geoscientists have succeeded in reconstructing the ice conditions in the Fram Strait, a narrow passage between eastern Greenland and Spitsbergen, during the past 30,000 years. They used a new research method. Based on fossilized algal remains in sediment cores, researchers from the Alfred Wegener Institute for Polar and Marine Research in the Helmholtz Association in collaboration with colleagues from the University Plymouth, Great Britain, worked out a uniform picture of the expansion of sea ice in this area that is particularly important for worldwide climate conditions. The publication of "Variability of sea-ice conditions in the Fram Strait over the past 30,000 years" will be issued on Sunday October 25th in the online edition of the periodical Nature Geoscience.

The examination of a sediment core from the northern Fram Strait, the only deep-water connection between the central Arctic Ocean and the Atlantic Ocean, provides clues for extreme sea ice fluctuations during the past 30,000 years. "Our reconstructions of the various ice conditions show how drastic the Arctic reacts even to short-term climate fluctuations", explains Juliane Müller, geoscientist at the Alfred Wegener Institute.

By means of fossil organic molecular remains, so-called biomarkers which are contained in the layers of the sediment cores, the researchers were able to verify the dates when the Fram Strait was either ice-covered or ice-free. The biomarker IP25, a complex molecule produced by algae living in the sea ice, was found in varying concentrations in the sediment; it was used as an indicator for the ice cover. A second biomarker called brassicasterol which is produced by algae living in the open water was used as counterpart in the analyses. The presence of brassicasterol in the sediments indicates ice-free periods. The combination of these two parameters enables the researchers to reconstruct different ice conditions.

For a period of extremely cold climate conditions, the last glacial maximum of about 20,000 years ago, the absence of these two biomarkers indicates permanent ice cover in the northern Fram Strait. The lasting lack of light and nutrients under the thick ice shield minimized the growth of the ice algae. A short but significant warming of the climate about 15,000 years ago, the early Bølling, caused the Arctic sea ice to melt so far that the Fram Strait remained ice-free during the winter months. The ice marker IP25 is absent in the sediment layers of this period, while the content of brassicasterol is highly increased. The simultaneous occurrence of both biomarkers in sediments of the past 5,000 years, the late Holocene, shows that the strait was only ice-covered during the winter and spring months. This seasonal change between ice-covered and ice-free water surface therefore enabled the growth of both algal species.

The sharp decline of sea ice in the central Arctic with a dramatic minimum in the year 2007 caused alarm in many researchers. "Examinations on natural changes of sea ice extent in times when humans had no impact on the climate have become a focus of numerous international research projects in the Arctic", explains Prof. Dr. Rüdiger Stein, geoscientist at the Alfred Wegener Institute. Arctic sea ice plays an important role in the thermal balance of the oceans. The ice influences among other things the mechanisms of global ocean currents, a circulation propelled by differences in temperature and salt concentration. It is in particular responsible for the mild climate in Europe in the form of the Gulf Stream. One power source of this "heat pump" is located in the Fram Strait.

Notes for Editors:

Your contact persons at the Alfred Wegener Institute are Juliane Müller (Tel: ++49 471 4831-1232; E-Mail: [Juliane.Mueller@awi.de](mailto:Juliane.Mueller@awi.de)) und Prof. Dr. Rüdiger Stein (Tel: ++49 471 4831-1576; E-Mail: [Ruediger.Stein@awi.de](mailto:Ruediger.Stein@awi.de)). Your contact person in the department Communication and Media at the Alfred Wegener Institute is Folke Mehrstens (phone: +49 471 4831-2007; email: [Folke.Mehrtens@awi.de](mailto:Folke.Mehrtens@awi.de)).

The Alfred Wegener Institute carries out research in the Arctic and Antarctic as well as in the high and mid latitude oceans. The institute coordinates German polar research and provides international science with important infrastructure, e.g. the research icebreaker Polarstern and research stations in the Arctic and Antarctic. The Alfred Wegener Institute is one of 16 research centres within the Helmholtz Association, Germany's largest scientific organization.

[www.awi.de](http://www.awi.de)

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#### **4. FACTBOX: Impacts of glacier retreat on hydropower**

By Alister Doyle  
Reuters  
October 21, 2009

Retreating glaciers from the Alps to the Andes are likely to disrupt hydropower generation in coming decades.

Following are details of glaciers and the wider impacts of climate change on hydropower, the most widely used form of renewable energy:

##### **\* Worldwide**

More than a billion people live in river basins fed by glacier or snow-melt. Climate change will lead to a retreat of glaciers and cause wider disruptions to rain and snowfall patterns from tropical Monsoons to Arctic snowfall.

##### **\* Asia**

Himalayan glaciers may shrink to 100,000 square km (40,000 sq miles) by the 2030s from 500,000 sq km if current warming rates continue. That would increase river flows in some river systems for two to three decades, followed by decreasing flows.

Water supplies will be hit in areas fed by melt water from the Hindu Kush and Himalayas, on which hundreds of millions of people in China, Pakistan and India depend.

##### **\* Europe**

Small glaciers will disappear and larger glaciers will shrink by between 30 and 70 percent by 2050. For the whole of Europe -- where 20 percent of electricity comes from hydropower -- generating potential of hydropower plants is projected to decrease by six percent by the 2070s, mainly because of changes in precipitation.

That translates into a 20-50 percent decline around the Mediterranean, a 15-30 percent increase in northern and eastern Europe and little change for western and central Europe.

##### **\* South America**

Over the next 15 years, inter-tropical glaciers are very likely to disappear in the Andes, reducing water availability and hydropower generation in Bolivia, Peru, Colombia and Ecuador. The issue is already "critical" in the four nations.

##### **\* North America**

A potential fall in the level of the Great Lakes could mean big economic losses as a result of reduced hydropower generation both at Niagara and on the St. Lawrence River.

By the 2020s, about 41 percent of water supplies to southern California are likely to be vulnerable to warming from loss of Sierra Nevada and Colorado River basin snowpack.

#### \* **Africa**

Hydropower generation is likely to be hit by climate change, according to a study of hydro-electric power generation in the Zambezi Basin. The snows on the peak of Kilimanjaro, Africa's highest peak, have shrunk by 80 percent in the past century.

#### \* **Australia, New Zealand**

Annual streamflow in Australia's Murray Darling basin is likely to fall by 10-25 percent by 2050 and 16-48 percent by 2100. In New Zealand, annual flow from larger rivers in the Southern Alps is likely to increase. Proportionately more runoff is very likely in winter and less in summer -- helping hydro-electric generation during the winter peak demand period.

(Sources: 2008 and 2007 reports by the U.N.'s Intergovernmental Panel on Climate Change - IPCC)

(Editing by Sara Ledwith)

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

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## **5. Mapping climate impacts**

Met Office  
October 22, 2009

A new map illustrating the global consequences of failing to keep temperature change to under 2 °C was launched today by the UK Government, in partnership with the Met Office.

The map was developed using the latest peer-reviewed science from the Met Office Hadley Centre and other leading impact scientists. The poster highlights some of the impacts that may occur if the global average temperature rises by 4 °C above the pre-industrial climate average.

Ahead of December's international climate change talks in Copenhagen, the Government is aiming for an agreement that limits climate change as far as possible to 2 °C. Increases of more than two degrees will have huge impacts on the world.

The poster shows that a four degree average rise will not be spread uniformly across the globe. The land will heat up more quickly than the sea, and high latitudes, particularly the Arctic, will have larger temperature increases. The average land temperature will be 5.5 degrees above pre-industrial levels.

The impacts on human activity shown on the map are only a selection of those that may occur, and highlight the severe effects on water availability, agricultural productivity, extreme temperatures and drought, the risk of forest fire and sea-level rise

Agricultural yields are expected to decrease for all major cereal crops in all major regions of production. Half of all Himalayan glaciers will be significantly reduced by 2050, leading to 23% of the population of China being deprived of the vital dry season glacial melt water source.

The Foreign Secretary, David Miliband said: "We cannot cope with a four degree world. This map clearly illustrates the scale of the challenge facing us today - climate change is a truly global problem that needs a global solution and it is a solution we have within our grasp.

"But to tackle the problem of climate change, all of us - foreign ministries, environment ministries, treasuries, departments of defence and all parts of government and societies - must work together to keep global temperatures to two degrees. It is only by doing this that we can minimise the huge security risks presented by a future four degree world."

Ed Miliband, Energy and Climate Change Secretary said: "This map shows that the stakes couldn't be any higher at the Copenhagen talks in December. Britain's scientists have helped to illustrate the catastrophic effects that will result if the world fails to limit the global temperature rise to two degrees. With less than 50 days left before agreement must be reached, the UK's going all out to persuade the world of the need to raise its ambitions so we get a deal that protects us from a four degree world."

Vicky Pope, Head of Climate Change Advice at the Met Office, said: "If emissions continue at the current rate the global average temperature are likely to rise by 4 °C by the end of this century or even substantially earlier. The science tells us that this will have severe and widespread impacts in all parts of the world, so we need to take action now to reduce emissions to avoid water and food shortages in the future."

[Link to climate impacts map.](#)

[www.metoffice.gov.uk](http://www.metoffice.gov.uk)

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## **6. Climate Events Let Ice Age Mammoths Pass Far Below 40 Degrees North Latitude**

ScienceDaily  
October 27, 2009

ScienceDaily (Oct. 27, 2009) - Europe's southern-most skeletal remains of *Mammuthus primigenius* were unearthed in a moor on the 37°N latitude. This is considerably south of the inhospitable habitat than one usually imagines for mammoths, and for the characteristically dry and cold climate that prevailed during the ice ages in the north of Eurasia.

The remains of the ice age giants from Padul were examined in a joint scientific project of four research institutions, namely, the Quaternary Paleontology arm of the Senckenberg Research Institutes of Germany, the Universities of Madrid and Oviedo in Spain, and the Natural History Museum of Rotterdam, the Netherlands.

"These woolly mammoths finds do not belong to stray animals who only chanced to head south, but belonged to Granada's permanent inhabitants at this time", says Diego Álvarez-Lao from the University of Oviedo. Dick Mol, ice age expert at the Natural History Museum of Rotterdam adds: "Nevertheless, the Spanish mammoths have not differed anatomically from their congeners in more northern regions."

Climate- and environmental data show that it was not the longing for summery temperatures or the chirp of crickets that lured the ice age giants to the south, but a diet of grass, various herbs and shrubs. The expansion of the mammoth steppe with its typical vegetation allowed the wandering of the giants and other ice age animals below the 40° N latitude and far to the south.

Nuria García from the University Complutense de Madrid explains: "Fossil plants which have been found in drill cores from scientific drilling in Spain and the nearby Mediterranean Sea, as well as our investigations of the Padul sediments indicate that the animals lived on the plants of the mammoth steppe."

Among the discoverers of Europe's southern-most finds is Senckenberg scientist Ralf-Dietrich Kahlke, who focused on the reasons that *Mammuthus primigenius* passed below the 40°N latitude. "A comparison with other sites between the 38°N and 36°N latitude shows that the animals pushed south 30 to 40 thousand years ago also in areas outside of Europe", the ice age paleontologist explains and demonstrates with maps. Thus the southern-most sites of the ice age giants lie on a belt which stretches from Western Europe via Georgia, the Siberian Baikal region to eastern China and from Korea till the Midwest of America.

Nevertheless the dispersal of the giants was blocked now and then. The impressively high Sierra Nevada at Padul formed a natural barrier. Likewise, the Rocky Mountains in North America had a similar effect. Other obstacles were areas that did not offer suitable food, as desert-like regions or the Great Plains of North America which expanded on account of a vegetation change.

The present study documents for the first time the southerly push of *Mammuthus primigenius* in Europe and points out that their migration to southern Spain and Italy happened the same time as similar advances into eastern China, to the north of Japan and to Kamchatka. The team of scientists suggests that this phenomenon is related to coupled climate events in the northeast Atlantic and the northwest Pacific. Dr. Kahlke concludes: This is proof that global mechanisms which regulated climate already during the ice age also influenced vegetation and with it also animal migration".

#### **Journal reference:**

Álvarez-Lao et al. The Padul mammoth finds - On the southernmost record of *Mammuthus primigenius* in Europe and its southern spread during the Late Pleistocene. *Palaeogeography Palaeoclimatology Palaeoecology*, 2009; 278 (1-4): 57 DOI: [10.1016/j.palaeo.2009.04.011](https://doi.org/10.1016/j.palaeo.2009.04.011)

*Adapted from materials provided by [Senckenberg Research Institute and Natural History Museum](#), via [AlphaGalileo](#).*

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## **7. Palms grew in ice-free Arctic 50 million years ago: study**

By Alister Doyle  
Reuters  
October 25, 2009

Palms flourished in the Arctic during a brief sweltering period about 50 million years ago, according to a study on Sunday that hints at big gaps in scientific understanding of modern climate change. The Arctic "would have looked very similar to the vegetation we now see in Florida," said Appy Sluijs of Utrecht University in the Netherlands who led an international study. Evidence of palms has never been found so far north before.

The scientists, sampling sediments on a ridge on the seabed that was about 500 km (300 miles) from the North Pole 53.5 million years ago, found pollens of ancient palms as well as of conifers, oaks, pecans and other trees.

"The presence of palm pollen implies that coldest month mean temperatures over the Arctic land masses were no less than 8 Celsius" (46.40F), the scientists, based in the Netherlands and Germany, wrote in the journal *Nature Geoscience*.

That contradicts computer model simulations -- also used to predict future temperatures -- that suggest winter temperatures were below freezing even in the unexplained hothouse period that lasted between 50,000 and 200,000 years in the Eocene epoch.

Palms are quickly killed by frost.

Sluijs said that it was also striking that palms, which do not lose their leaves in winter, grew in an area where the sun does not shine for about five months. Experiments with modern palms indicate that they can survive prolonged darkness.

### **Surprises**

The scientists said that presence of palms -- it was not clear if they were trees or plants -- hinted that the modern climate system could yield big surprises.

Temperatures are now rising because of man-made greenhouse gases, mainly from burning fossil fuels, according to the U.N. Climate Panel. Arctic ice shrank in 2007 to its smallest size since satellite measurements began in the 1970s.

One possibility for the ancient spike in temperatures was an abrupt rise in carbon dioxide levels, to far beyond concentrations now. That might have been caused by volcanic eruptions, or a melt of frozen methane trapped in the seabed.

"We cannot explain this with the current knowledge of the climate system," Sluijs said. One possibility was that new types of clouds formed in the Arctic as it warmed, acting as a blanket that trapped ever more heat and accelerated warming.

"If the ocean was very warm it's possible that these clouds form at a higher latitude than now," he said. Such effects caused by new cloud formation could be an unexpected tripwire in accelerating modern climate change.

More than 190 nations are due to meet in Copenhagen from December 7-18 to agree a new U.N. climate treaty to succeed the U.N.'s Kyoto Protocol.

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

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## **8. Arctic Scientists Launch Tour to Warn of East Coast Flooding Ahead**

Yahoo News  
October 21, 2009

As the International Day of Climate Action approaches this Saturday, Oct. 24, scientific researchers just returned from the poles have launched a tour of the U.S. East Coast to warn that sea-level rise of a meter or more is likely as a result of accelerated melting and "dynamic changes" in ice sheets they witnessed in the Arctic and Antarctic. Their "Hip Boot Tour," sponsored by the global warming solutions group Clean Air - Cool Planet, kicked off yesterday in Philadelphia and continues with stops in Portland, ME; Hampton, NH; Norfolk, VA; Wilmington, NC; Miami, St. Petersburg, and Tampa, FL.; New York, NY; and Washington, DC. Details at <http://www.hipboottour.info>.

Portsmouth, NH (Vocus) October 21, 2009 -- New science from scientists just returned from the poles indicates that sea level rise of a meter or more is likely as a result of melting and "dynamic changes" in ice sheets in the Arctic and Antarctic, threatening coastal cities worldwide this century.

The U.S. East Coast is particularly vulnerable to the new higher estimates of sea-level rise, and Clean Air - Cool Planet (CA-CP), a non-profit focused exclusively on solving the global warming problem, is getting the word out.

Together with local organizations, CA-CP is hosting coastal community roundtables and outreach events in Philadelphia, PA; Portland, ME; Hampton, NH; Norfolk, VA; Wilmington, NC; and Miami, St. Petersburg, and Tampa, FL over the next two weeks.

The scientists' "Hip Boot Tour" will culminate in November with stops to be announced in New York City and Washington, DC.

Each event will feature presentations by scientists currently involved in snow-and-ice research at the poles, and who have contributed to new research to be released by the Arctic Council in conjunction with the Copenhagen climate talks this December.

"Our colleagues in the Arctic science community have uncovered startling new evidence that we are losing the world's ice reservoirs much faster than predicted in the last report by the Intergovernmental Panel on Climate Change," said Arctic policy expert Brooks Yeager of CA-CP. "Basically, the estimates of likely sea-

level rise have gone from knee-high to chest-high in the last five years, as the melting is outstripping even the previous worst-case scenario."

Yeager noted that new and more accurate science - revealing more rapid changes in the polar regions - is responsible for the new projections. "The scientists are now more comfortable with saying that these increases are 'likely' or 'probable' as well - which is good news for science, but bad news for us," Yeager said.

The roundtable events, which will be co-sponsored by Clean Air-Cool Planet and local organizations in each city, will feature new maps and TV-ready animations that are the most detailed yet for sifting out exactly which local landmarks are most at risk in the metropolitan areas the tour will visit.

"We really want to deliver a message that you, as a regular person, should care about this - because it's happening, and it's happening soon," Yeager said. "But there are solutions, and we're bringing those, too."

In addition to presenting the science, each symposium will also feature a discussion of available policy solutions, including strong national efforts to reduce greenhouse gases through federal cap-and-trade legislation, and to catalyze the economy into shifting to clean energy and highly efficient vehicles, homes, appliances, and factories.

"We've also been working for some time on international efforts to reduce short-lived pollutants that scientists tell us are accelerating the melting in the Arctic," Yeager said. "By cutting emissions of black carbon from agricultural burning and diesel fuel, and reducing methane and tropospheric ozone, which don't last very long in the atmosphere, we can significantly reduce warming in the region and 'buy time for the Arctic' - which also buys time for the rest of the planet."

The U.S. is involved in these efforts, Yeager said. "We hope it will be enough time for us to take action on carbon dioxide pollution of the atmosphere, which is the main problem."

The Hip Boot Tour's maps and demonstrations of how high a meter is - using actual hip boots, blue tape, and creatively employing a Mylar-festooned Hula Hoop - make it clear that the cost of the cleaning up the damage or adapting with sea walls and other infrastructure would dwarf the cost of switching to clean energy or cutting carbon dioxide.

"The bottom line is, if we want to keep the sea water where it is, we have to act quickly," Yeager said. "The good news is, we have what we need. We just need to do it."

For a full schedule of events and further information, please see <http://www.hipboottour.info>.

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

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Northern Climate ExChange

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*The next Update from the Northern Climate ExChange will be sent out **Wednesday, November 4, 2009***