

Northern Climate ExChange

Independent Information - Shared Understanding - Action on Climate Change

NCE Update August 12, 2009

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Announcements

1. Employment Opportunity: Regional Climate Scenarios Project Coordinator, Northern Research Institute, Whitehorse

As the Regional Climate Scenarios Project Coordinator, you will serve as the link between the science of climate change scenarios and the needs of communities and stakeholders in the Yukon. Duties include organizing meetings and workshops, developing and implementing a communications strategy, writing reports and promoting/maintaining partnerships.

Regional Climate Scenarios Project Coordinator,
Northern Research Institute,
Ayamdigut Campus, Whitehorse
Term Position to March 31, 2010
Salary: \$28.32 to \$33.71 per hour
(Based on 75 hours bi-weekly)
Initial Review Date: August 10, 2009
Competition No.: 09.58

[Click here](#) for more information on this competition.

www1.yukoncollege.yk.ca

2. Employment Opportunity: Regional Climate Change Scenarios Technical Analyst, Northern Research Institute, Whitehorse

As the Regional Climate Scenarios Technical Analyst, you will be responsible for gathering all scientific, weather, climate and meteorological data and inputting the



data into the Canadian Climate Change Scenarios Network (CCCSN) server. Duties include: Collating all Yukon climate information into the database; preparing and writing technical reports and liaising with Governments and other agencies.

Regional Climate Scenarios Technical Analyst
Northern Research Institute
Ayamdigut Campus, Whitehorse
Term Position to March 31, 2010
(Based on 75 hours bi-weekly)
Salary: \$26.21 to \$31.21 per hour
Initial Review Date: August 10, 2009
Competition No.: 09.59

[Click here](#) for more information for more information on this competition.

www1.yukoncollege.yk.ca

3. Our World 2.0: Interview with Many Strong Voices - August 2009

These are the words of Dr. Ilan Kelman, co-coordinator of Many Strong Voices, a programme that works to connect indigenous communities from around the world that are affected by climate change.

www.soundcloud.com

4. Report of the American Psychological Association (APA) Task Force on Psychology and Global Climate Change - August 5, 2009

APA's Task Force on the Interface Between Psychology and Global Climate Change examined decades of psychological research and practice that have been specifically applied and tested in the arena of climate change, such as environmental and conservation psychology and research on natural and technological disasters. The task force presented its findings at APA's 117th Annual Convention in Toronto in a report that was accepted by the association's governing Council of Representatives.

The task force's report offers a detailed look at the connection between psychology and global climate change and makes policy recommendations for psychological science.

[Download report here](#)

www.apa.org

Articles

1. Three 'benchmark glaciers' rapidly retreating

CLIMATE CHANGE: Alaska, Washington landmarks are global melting indicators.

By Erika Bolstad
Alaska Daily News
August 6, 2009

WASHINGTON - Climate change is shrinking three of the nation's most studied glaciers at an accelerated rate, a finding that government scientists say hastens global concerns about rising sea levels and the availability of fresh drinking water.

Known as "benchmark glaciers," the South Cascade Glacier in Washington state, along with the Wolverine Glacier on Alaska's Kenai Peninsula and the Gulkana Glacier in Interior Alaska, have all shown a "rapid and sustained" retreat, the report said.

For years scientists have reported glaciers around the world were melting, but the study, conducted by the

U.S. Geological Survey, offers some of the most definitive findings to date. Because the three glaciers represent different climates and elevations, they can be used to understand thousands of other North American glaciers.

"They are living on the edge," Ed Josberger, a USGS scientist based in Tacoma, Wash., said of the glaciers in the study. "We've crossed a threshold, and these glaciers, along with those globally, are shrinking."

Scientists with the USGS have been taking measurements and detailed pictures of the three glaciers since 1957, including using ice-penetrating radar to map the bedrock underneath them. The studies, begun as part of the International Geophysical Year, were part of the Cold War-era interest in polar science spurred by the threat of war with another polar nation, Russia.

The result is a half-century's worth of data to use for modeling future changes, said Shad O'Neel, one of the Anchorage-based USGS scientists who worked on the study.

"These three glaciers have been losing mass since they've been studied, and that mass loss has gotten more rapid in the past 15 years," O'Neel said. "The most important thing about having a long record like this is that we can use these records to verify and validate models out into the future."

Although their data show a marked retreat in the size of glaciers, changes to Alaska's many glaciers are visible to the naked eye, O'Neel said. Gulkana Glacier is "markedly different than it was in the late 1980s," he said.

U.S. Sen. Mark Begich, D-Alaska, made the same point this week when he introduced a legislative package related to climate change and polar issues. Begich illustrated the effect of global warming in Alaska by showing a picture of himself as a child in front of Alaska's Portage Glacier in 1970. In 2005, his son Jacob stood in the exact same spot for a photo Begich displayed on the Senate floor -- but the glacier was "nowhere to be seen because it has dramatically receded due to global warming," Begich said. At the beginning of the 20th century, when glaciers were at their last peak in terms of size, the mass or volume of the remote South Cascade Glacier was estimated at one-half a cubic kilometer. In 1958 it had shrunk to half that size. The latest measurement, in 2004, found it had shrunk in half yet again, scientists said.

"We are getting warmer and glaciers are shrinking," Josberger said.

With some exceptions caused by unique or unusual local conditions -- the glaciers on California's Mount Shasta, for example -- more than 99 percent of the country's thousands of glaciers are shrinking, Bruce Molnia, another USGS scientist, said.

Worldwide, most glaciers are losing mass and some are disappearing altogether. Glacier National Park's glaciers in Montana decreased from 150 to 26 over the past 99 years. If current warming trends continue, scientists predict they will disappear entirely by 2030. And scientists have predicted that the famed snows of Africa's Mount Kilimanjaro could retreat by 2015.

Scientists at the U.S. Geological Survey's Northern Rocky Mountain Science Center, who study the glaciers in Montana, point out that a drop in runoff means changes in water temperature for the creatures in the downstream ecosystem: insects, fish and the animals that eat them.

It also means less available drinking water, O'Neel said, pointing out that in Anchorage, the drinking water comes from Eklutna Glacier runoff. There's little threat to Anchorage's water supply, but Bolivia's Chacaltaya Glacier disappeared this year, earlier than predicted. Its disappearance worries scientists that other glaciers in the region could be melting faster than expected, potentially threatening water supplies for millions of people in South America.

The long-term study is "exactly the kind of science we need to invest in to measure and mitigate the dangerous impacts of climate change," said Interior Secretary Ken Salazar.

Les Blumenthal of the McClatchy Washington Bureau contributed to this report.

www.adn.com

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2. Study examines hazardous weather's impact on northerners

CBC News

August 5, 2009

A Canadian study underway in eastern Nunavut is probing the impact snowstorms, strong winds and other hazardous weather conditions have on northerners.

Researchers with the Storm Studies in the Arctic (STAR) project are interviewing about 100 elders, hunters and other longtime residents of Iqaluit and Pangnirtung this year, to discuss how severe weather affects their daily lives.

"We hope to integrate the scientific knowledge with the traditional knowledge, local knowledge, and get a better idea of what's needed in the North in terms of weather information, and make sure that everyone does feel that they have the resources necessary to prepare for hazardous weather," said Jadah Folliott, a lead investigator on the hazardous weather study from the University of Western Ontario in London, Ont. Hazardous weather in the Arctic can include:

- Dangerous flying conditions caused by high winds or heavy snowfall.
- Snow drifts that block roads and bury entire buildings.
- Strong winds that damage buildings.
- Warm temperatures that can melt permafrost, destabilizing infrastructure.
- Freezing precipitation that affects wildlife habitats.

"Homeowners definitely have concerns in terms of, yeah, the winds," Folliott said. "One lady lost her railing in a wind storm, and windows have been broken."

Folliott said many of those surveyed have talked about how warm and dry it's been in Nunavut this summer, and how those conditions are affecting the land.

Researchers are also talking to local daycare workers about severe weather, and how daycare closings affect people's lives.

Climate change affecting seasons, forecasting

Many of those interviewed have talked about how rapidly the climate is changing, said Iqaluit resident Lazarus Arreak, who is helping researchers talk with people in Inuktitut.

Arreak said people have mentioned how the timing of the seasons is changing, and how unreliable weather forecasting has become.

Hunters and elders are particularly worried about the safety of people going out on the land.

Arreak said some are calling for more public awareness of "how to be prepared and basically to notice things around you, to be sure that you have the proper gear and that you inform appropriate people."

Information from the study, which is the second phase in the multi-year STAR project, will be provided to Nunavut communities in summer 2011.

Folliott said researchers hope the information they gather will help northerners adapt to future weather changes, for instance by changing the ways buildings are constructed and ensuring that boats are better protected from the elements.

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3. Arctic Ocean may be polluted soup by 2070

By Kate Ravilious

NewScientist

August 6, 2009

WITHIN 60 years the Arctic Ocean could be a stagnant, polluted soup. Without drastic cuts in greenhouse-gas emissions, the Transpolar Drift, one of the Arctic's most powerful currents and a key disperser of pollutants, is likely to disappear because of global warming.

The Transpolar Drift is a cold surface current that travels right across the Arctic Ocean from central Siberia to Greenland, and eventually out into the Atlantic. It was first discovered in 1893 by the Norwegian explorer Fridtjof Nansen, who tried unsuccessfully to use the current to sail to the North Pole. Together with the Beaufort Gyre, the Transpolar Drift keeps Arctic waters well mixed and ensures that pollution never lingers

there for long.

To better understand the dispersal of pollution in the Arctic Ocean, Ola Johannessen, director of the Nansen Environmental and Remote Sensing Center in Bergen, Norway, and his colleagues studied the spread of radioactive substances such as strontium-90 and caesium-137 from nuclear testing, bomb factories and nuclear power-plant accidents. Measurements taken between 1948 and 1999 were plugged into a high-resolution ocean circulation model and combined with a climate model to predict Arctic Ocean circulation until 2080.

Their model confirmed that most pollutants, including pesticide, petroleum residue and nuclear fallout, are currently washed out into the north Atlantic by the Transpolar Drift. But perhaps not for much longer.

In a "business-as-usual" scenario, in which atmospheric carbon dioxide levels double by 2070, Johannessen and his colleagues found that the Transpolar Drift stops and the Beaufort Gyre, Greenland Current and Gulf Stream weaken considerably (Journal of Environmental Radioactivity, DOI: 10.1016/j.jenvrad.2009.01.003). One reason for this sluggish behaviour is a change in wind patterns driven by global warming and rapid melting of the Arctic sea ice.

As a result, pollution takes much longer to disperse in this scenario. Much of this pollution would congregate along the non-European coastlines of the Arctic Ocean, the model suggests.

Jeff Ridley of the Met Office Hadley Centre in Exeter, UK, agrees that surface circulation in the Arctic Ocean will weaken if sea ice disappears, but he doubts it will happen quite so fast. He also points out that other currents in the region would continue to disperse pollutants.

www.newscientist.com

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4. Arctic ice watchers concerned by warm summer

Associated Press
CBC News
August 10, 2009

The Arctic Ocean has given up tens of thousands more square kilometres of ice in a relentless summer of melt, with scientists watching through satellite eyes for a possible record low polar ice cap.

From the barren Arctic shore of the village of Tuktoyaktuk in the Northwest Territories, veteran observer Eddie Gruben has seen the summer ice retreating more each decade as the world has warmed. By this weekend, the ice edge lay some 128 kilometres at sea.

"Forty years ago, it was 40 miles (64 kilometres) out," said Gruben, 89, patriarch of a local contracting business.

Global average temperatures rose 0.6 degrees C in the past century, but Arctic temperatures rose twice as much or even faster, almost certainly in good part because of manmade greenhouse gases, researchers say.

In late July, the mercury soared to almost 30 C in this settlement of 900 Inuvialuit, the aboriginal people of the western Arctic.

"The water was really warm," Gruben said. "The kids were swimming in the ocean."

As of Thursday, the polar ice cap extended over 6.75 million square kilometres, after having shrunk an average 106,000 square kilometres a day - almost twice the size of Nova Scotia - in July, according to the U.S. National Snow and Ice Data Center.

Record high melt in 2007

The rate of melt was similar to that of July 2007, the year when the ice cap dwindled to a record low

minimum extent of 4.3 million square kilometres in September.

In its latest analysis, the Colorado-based NSIDC said Arctic atmospheric conditions this summer have been similar to those of the summer of 2007, including a high-pressure ridge that produced clear skies and strong melt in the Beaufort Sea, the arm of the Arctic Ocean off northern Alaska and northwestern Canada.

In July, "we saw acceleration in loss of ice," the U.S. centre's Walt Meier told The Associated Press. In recent days, the pace has slowed, making a record-breaking final minimum "less likely but still possible," he said.

Scientists say the makeup of the frozen polar sea has shifted significantly the past few years, as thick multiyear ice has given way as the Arctic's dominant form to thin ice that comes and goes with each winter and summer.

The past few years have "signalled a fundamental change in the character of the ice and the Arctic climate," Meier said.

Ironically, the summer melts since 2007 appear to have allowed disintegrating but still thick multi-year ice to drift this year into the relatively narrow channels of the Northwest Passage, the east-west water route through Canada's Arctic islands. Usually impassable channels had been relatively ice-free the past two summers.

Polar bears face difficulties

"We need some warm temperatures with easterly or southeasterly winds to break up and move this ice to the north," Mark Schrader, skipper of the sailboat Ocean Watch, emailed The Associated Press from the west entrance to the passage.

The steel-hulled sailboat, with scientists joining it at stops along the way, is on a 40,232-km circumnavigation of the Americas, to view and demonstrate the impact of climate change on the continents' environments.

Environmentalists worry, for example, that the ice-dependent polar bear will struggle to survive as the Arctic cap melts. Schrader reported seeing only one bear, an animal chased from the Arctic shore of Barrow, Alaska, that "swam close to Ocean Watch on its way out to sea."

Observation satellites' remote sensors will tell researchers in September whether the polar cap diminished this summer to its smallest size on record. Then the sun will begin to slip below the horizon for several months, and temperatures plunging in the polar darkness will freeze the surface of the sea again, leaving this and other Arctic coastlines in the grip of ice. Most of the sea ice will be new, thinner and weaker annual formations, however.

At a global conference last March in Copenhagen, scientists declared that climate change is occurring faster than had been anticipated, citing the fast-dying Arctic cap as one example.

A month later, the U.S. National Oceanic and Atmospheric Administration predicted Arctic summers could be almost ice-free within 30 years, not at the century's end as earlier predicted.

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5. Many strong voices

By Mark Notaras and Megumi Nishikura
United Nations University
August 11, 2009

"It is ironic that indigenous people from the Arctic and from the Small Island Developing States are the ones who have contributed least to climate change, yet those are the ones who are suffering most."

"What we do with Many Strong Voices is try to bring all these exciting, dynamic and strong [indigenous] voices together to give them a forum to lobby internationally, to talk to the media and to try to present, exchange and develop their ideas for dealing with climate change."

Many Strong Voices works in particular with communities from the Arctic and from [Small Island Developing States \(SIDS\)](#).

"By bringing these people together, it's amazing the commonalities that we find," says Kelman.

"For example, for many of the communities, their livelihoods are based on fish. But with climate change, the ocean temperature changes, currents change, and so fish will move. Some species will migrate in, some will migrate out. It means that the knowledge that has sustained the people over centuries might be more difficult to apply to new fish."

Giving indigenous people a voice

Many Strong Voices is concerned about the lack of consultation with indigenous people in international climate change negotiations.

"Often their ideas are marginalized, even though they can help. They know what's going on in their communities, they know the challenges faced and they have solutions," Kelman points out.

We have seen strong evidence of this in action from Our World 2.0 video briefs, filmed in countries like Papua New Guinea and Indonesia, where communities are empowering themselves from the bottom up. Community leaders from the Carteret Islands shared with us their plans to relocate people who are being displaced by rising sea levels. We also heard from the Dayaks of Borneo on how they are protecting their forests by combining traditional and modern conservation methods.

These, and our forthcoming video briefs on communities in Central Asia have been developed in collaboration with the United Nations University Institute of Advanced Studies [Traditional Knowledge Initiative](#) (TKI). TKI aims to "promote and strengthen research on traditional knowledge of indigenous and local communities conducted from a global perspective, grounded in local experience."

According to Kelman, partnership with communities and organizations is essential to provide indigenous people with an outlet for their climate change knowledge, as well as for spreading awareness globally about the effects that are being felt in remoter regions.

Many Strong Voices is complementing work done by many other non-governmental and international organizations, he says, such as the [UNESCO Climate Frontlines](#) and the [World Wildlife Fund Climate Witness](#) programmes that provide indigenous people with platforms to document their stories.

Combined knowledge is power

As well as being a passionate advocate for indigenous issues, Kelman is a Senior Research Fellow specialising in islands and disasters at the [Center for International Climate and Environmental Research - Oslo](#) (CICERO).

Perhaps reflecting his dual roles as a scientist and activist, he has an open and constructive mind when it comes to accepting both traditional and scientific knowledge.

"It's amazing what different knowledge forms give, and what they do not give. So we find that science, for example, completely misses many local signals and the knowledge that people have gleaned from their environment over the years and passed down amongst generations."

"Conversely, what science can give us are remote measurements from satellites, from aircraft as well as looking back thousands and millions of years trying to indicate what the environment might have looked like before and how it might look like in the future."

Kelman told us about an interesting [collaboration in Clyde Bay, Nunavut](#), in Northern Canada, where scientists are matching their knowledge with that of local people to determine how hunting seasons and

techniques will have to change to respond to changing weather and ice conditions.

"Rather than denigrating a single form of knowledge, rather than saying that one form of knowledge is superior, they both have positives, they both have negatives and they need to work together."

Eyeing Copenhagen

Based on consultations with its [consortium of partners](#), Many Strong Voices is seeking tangible outcomes from December's [COP15 Conference](#) in Copenhagen.

"What the indigenous people are pushing for, particularly for Arctic, for SIDS, but around the world, is that emissions have to be reduced," Kelman informs us.

In addition, they are seeking a world mandate to assist those suffering directly from the challenges produced by climate change.

"They [indigenous people] need external support, particularly funding, in order to deal with climate change, such as moving buildings away from eroding sites, such as adjusting their livelihoods to changing weather."

Despite the need for such external assistance, Kelman reiterates that indigenous communities can and should be leading these strategies for themselves.

"The small isolated communities know their land, they know their own people. They know from their knowledge and their history that things are changing and how they can deal with it."

We can also help by calling on our leaders to ensure that the many, but varied indigenous voices, are heard strongly in global climate discussions.

www.ourworld.unu.edu

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6. 'Hydropalooza' Provides Deeper Understanding of Alaska's Kachemak Bay

NOAA

August 12, 2009

NOAA ships and scientists have returned to Alaska's Kachemak Bay to kick off year two of Hydropalooza - a NOAA-led project to develop the most detailed seafloor and coastline maps ever generated of the area.

Kachemak Bay, one of south central Alaska's most productive and ecologically diverse estuaries, supports maritime commerce, ferry transportation, fishing, and recreational boating from the nearby harbors of Homer and Seldovia. Up-to-date NOAA nautical charts, as well as sea bottom, water level, and shoreline information, are needed to ensure safe navigation, manage coastal resources, and support local planning.

"The mapping data that NOAA collects will be used by state and local officials to make better informed decisions related to the coast, its habitats and its people," said James Hornaday, mayor of Homer. "I welcome our NOAA friends back to Kachemak Bay."

Crews on board NOAA ships Fairweather and Rainier will conduct hydrographic surveys of the seafloor, measuring depths and identifying obstructions. When the ships complete data collection in early September, they will have surveyed more than 350 square nautical miles - an area nearly twice the size of Chicago.

"This is one of our largest survey efforts of the year," said Capt. Steven Barnum, director of NOAA's Office of Coast Survey and U.S. national hydrographer. "The data we collect will contribute to navigation safety in the state and also be used to keep the coast healthy and productive."

The vessels will also install new tide stations and high-precision global positioning system (GPS) base stations, which will record water levels and location information in real time. With Kachemak Bay's 28-foot tidal range from low to high tide - the fourth largest in North America - these data are needed to ensure the

best quality surveys are conducted.

Scientists from the NOAA Kasitsna Bay Laboratory, Kachemak Bay National Estuarine Research Reserve, Alaska Department of Fish and Game, University of Alaska Fairbanks and other NOAA offices are collaborating on how to use Hydropalooza mapping data to improve assessment and management of coastal resources. NOAA and Alaska Department of Environmental Conservation scientists are also conducting sediment sampling to assess pollutant levels and biodiversity on the seafloor.

NOAA and the University of Alaska-Fairbanks will also use this detailed mapping data to provide an opportunity for college students to train in how to better sustain marine ecosystems in the Arctic and subarctic.

The collection of shoreline and seafloor mapping data for a range of uses is the primary objective behind the federal multi-agency Integrated Ocean and Coastal Mapping initiative. The program allows NOAA and its partners to maximize the benefits of the data collected.

"Our data are used by countless federal, state, and local stakeholders," said Captain Roger Parsons, NOAA Corps (ret.), IOCM director. "Coastline and seafloor data, once collected solely for updating NOAA's national suite of nautical charts, is now used for marine spatial planning efforts, ocean circulation monitoring, and assessing the impacts of climate change, among other uses."

Data collected during Hydropalooza will be made free to the public online at:

<http://hydropalooza.noaa.gov>.

www.noanews.noaa.gov

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7. Thaw point

Tundra is among the least-studied types of terrain on Earth. That is about to change

The Economist
July 30, 2009

TOOLIK LAKE, ALASKA - The Arctic tundra is one of the world's most extensive ecosystems, and the frozen soil known as permafrost, which underlies it, can be hundreds of metres deep. But as the world warms up in response to the millions of tonnes of carbon dioxide and other greenhouse gases being poured into the atmosphere each year, so does the permafrost. As the permafrost thaws, bacteria start chewing up the organic matter it contains. This releases yet more carbon dioxide, as well as methane, another greenhouse gas, which has 25 times the warming potential of CO₂. Edward Schuur of the University of Florida in Gainesville, a doyen of the field, estimates that the world's permafrost contains twice as much carbon as its atmosphere. If even a fraction of that were released as CO₂ and methane, it would be bad news.

Nor is that all. Thawing permafrost also leaks nitrates and phosphates into the tundra, allowing novel plant species to get a foothold in what was, to start with, a fairly spartan habitat. It distorts the Earth's surface, too, creating a landscape of domes and pits known as thermokarst because of its resemblance to the karstic terrain of limestone-rich parts of the world. This changes the tundra's ecology. It also plays havoc with human structures, such as buildings, roads and pipelines, that sit on top of it. For all of these reasons, then, more research is needed into this icy realm. And that is the object of a project with the unsnapppy name of Spatial and Temporal Influences of Thermokarst Failures on Surface Processes in Arctic Landscapes, which was kicked off by a group of scientists who gathered in late June at the Toolik Field Station in northern Alaska.

Karsting the first stone

The project, which is led by Breck Bowden of the University of Vermont in Burlington, involves 17 research groups from America and Canada. To start with, they will use a combination of aerial photography, field measurements, and ground- and satellite-based sensors to compile a map of all the thermokarstic areas of Alaska. This will provide a reference point from which changes can be measured.

The team will then try to work out how the development of features such as "retrogressive thaw slumps" and "active-layer detachments" (different ways in which thawing permafrost can cause a hillside to slip) are associated with the local climate, geology and vegetation. They will look, too, at the amount of ice in the ground, and the temperature and the moisture of the soil. All these data will be fed into computer models which, the researchers hope, will allow them to develop an automated way of predicting where and when new features will form, and to monitor them when they appear.

Dr Bowden and his colleagues also hope to understand the impact of thermokarst activity on the structure of the soil, and its nutrient content. They will concentrate on a few sites that can be studied intensively and which are affected by different types of activity. They will measure the amount of carbon, phosphate and nitrate in the soil, together with the rate of plant growth and microbial decomposition. That will let them work out just how "leaky" thawing permafrost is and thus how big its contribution of greenhouse gases to the atmosphere might be, should the worst come to the worst.

It will also help them forecast changes in the tundra's vegetation. The softening of the soil and the consequent release of nutrients is likely to encourage the growth of shrubs on land that is now dominated by grass, moss and lichens. The researchers will monitor the growth of this vegetation around newly formed thermokarst features and use experimental field plots to test how conditions mimicking such features affect which species will thrive.

Last, the project will try to work out how thawing permafrost will affect the numerous streams, rivers and lakes of the Arctic. Together, these amount to the biggest acreage of water on "dry" land. As water moves through affected areas, it picks up both nutrients and sediment that would otherwise be held in the permafrost's icy grasp. These, paradoxically, have opposite effects on the growth of algae. The phosphates and nitrates stimulate it whereas the extra sediment suppresses it by trapping nutrients in the beds of such bodies of water.

Muddy waters

It is not only natural habitats and future generations that are threatened by the thawing of the permafrost. People in the here and now are affected, as well. Sediments from a huge thermokarstic area have, for example, dammed the Selawik River in north-western Alaska, interfering with fish and threatening the livelihood of nearby villages. Elsewhere in the state, a combination of melting sea ice and thawing permafrost has exacerbated the erosion of several coastal villages, which will have to be relocated at a considerable cost.

Whether anything short of reversing climate change can be done about all this is a moot question. But at least when the project reports, in five years' time, the size of the threat will be clearer. The news it brings may not be welcome. But it is surely better than living in ignorance about one of the world's most important habitats.

www.economist.com

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8. The Psychology of Climate Change: Why We Do Nothing

By Tom Levitt
The Ecologist
August 12, 2009

Well-publicized simple steps like using energy-saving light bulbs may be making it more difficult to prepare people for the bigger changes needed to tackle climate change, argue psychologists

Upwards of 75 per cent of the general public, going by recent polls in the US and UK, say climate change is an important issue.

But few of us are doing much to actually tackle the problem and reduce our own emissions.

It is a conundrum that we are, perhaps belatedly, realising should be seen as a psychological one.

Anxiety and helplessness, argues a [report published last week by the American Psychological Association](#), rather than ambivalence or apathy are the biggest barriers to individuals taking action.

The report says that unlike other environmental problems like river pollution or GM food, people do not see climate change as an immediate threat.

'What is unique about current global climate change is the role of human behaviour,' said report chair Janet Swim, of Pennsylvania State University. 'We must look at the reasons people are not acting in order to understand how to get people to act.'

The report identified some key barriers, including:

Uncertainty - Research has shown that uncertainty over climate change reduces the frequency of "green" behaviour.

Mistrust - Evidence shows that most people don't believe the risk messages of scientists or government officials.

Social comparison - People routinely compare their actions with those of others and derive subjective and descriptive norms from their observations about what is the "proper" course of action. i.e. Al Gore's large residence has been used as a justification for inaction.

Undervaluing risks - A study of more than 3,000 people in 18 countries showed that many people believe environmental conditions will worsen in 25 years. While this may be true, this thinking could lead people to believe that changes can be made later.

Lack of Control - People believe their actions would be too small to make a difference and choose to do nothing.

Perceived behavioural control - Because climate change is a global problem, many individuals understandably believe that they can do nothing about it. This is the well-known collective action problem.

Habit - Ingrained behaviours are extremely resistant to permanent change while others change slowly.

The report says psychology has already been used by government and campaign groups to tackle these barriers.

For example, people are more likely to use energy-efficient appliances if they are provided with immediate energy-use feedback. Devices that show people how much energy and money they're conserving can yield energy savings of up to 12 per cent.

'Behavioural feedback links the cost of energy use more closely to behaviour by showing the costs immediately or daily rather than in an electric bill that comes a month later,' said Swim.

However, there are potential shortcomings with this approach.

Big changes

WWF change strategist Dr Tom Crompton points out that appeals to self-interest such as the recent Act on CO2 TV campaign will not necessarily translate to the bigger changes people need to make.

'It may be the most effective way of engaging people on this simple energy saving action but not as a basis for escalating up to more ambitious changes,' he said.

'The evidence is that people pre-occupied with saving money or buying things to look cool tend to be more resistant to adapting the big changes needed.'

WWF has produced a number of reports over the past few years looking at psychological barriers to tackling climate change. Dr Crompton said there needed to be a shift away from short-term campaigning.

'The environmental movement has for too long focused on the policy response, without considering the social and psychological barriers.

'Policy is critical but if we are going to contemplate the scale of policy intervention needed we are going to have to address the way we work round with these barriers,' he said.

Apathy

Among the research currently been done, Renee Lertzman from the Cardiff School of Social Sciences, is looking at the unconscious motivations behind many people's responses to climate change.

She has argued previously in the Ecologist that people may simply be paralysed by the size of the problem.

'If people don't recycle I am not going to assume they don't care about the environment. There is not a simple causal relationship. In fact it could be if there is a sense of inevitability or powerlessness then recycling is not going to make any sense to them,' she said.

'If a psychologist was confronted with the same situation with a patient they wouldn't shout or bombard them with all kinds of facts about their damaging or destructive behaviour.

'They would actively try to work out ways to mobilise their ability to respond constructively,' she said.

Lertzman said more participant-led models such as the Transition Town movement where people were encouraged to bring their own ideas rather than being lectured at, were more likely to succeed.

'We need to find a way to communicate these issues with people in an honest and realistic way that doesn't trigger anxiety.'

Get involved

Do not despair. If you're starting to feel helpless, don't forget the success of individuals like Rob Hopkins, who started the Transition Town movement, and other local heroes profiled in the Ecologist over the past few years.

Individuals can make a difference.

If you're looking for a campaign to join, try any or all of the following:

- * [Transition Town movement](#)
- * [Climate Camp](#)
- * [350.org](#)
- * [Climate Rush](#)
- * [Plane Stupid](#)
- * [Read about more campaigns](#)

See also

[What campaigners need to know about human nature](#)

[It's all in the mind - Rupert Sheldrake](#)

[The myth of apathy - Renee Lertzman](#)

[350.org - the ultimate climate change campaign?](#)

[WWF - Strategies for Change](#)

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*The next Update from the Northern Climate ExChange will be sent out **Wednesday, August 26, 2009***