



UNEP RONA

NEWSLETTER

JULY 2013



Photo: NASA

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- 11-13 July 2013 - Third Global Environmental Summit on Urban Environmental Accords, San Antonio, Texas, U.S.A.
- 27-28 July 2013 - Our Task Earth 2100 Conference - 2nd annual youth conference to bring Earth and its communities safely and sustainably to 2100 and beyond! George Mason University, Fairfax Campus, Virginia, U.S.A.
- September 2013 - Launch of GEO-5 for Business Washington, D.C and New York, U.S.A.



President Obama submits 2014 budget with slight reduction for UNEP



Photo: Google Images

The U.S. budget for Fiscal Year (FY) 2014 is currently under negotiation in the two chambers of Congress. On 10 April, President Obama released his budget request to Congress for FY 2014 with a proposed 6% cut to funding for foreign affairs compared to the FY 2012 enacted level. The budget request totaled US\$11,160,000 for UNEP, US\$190,000 less than FY 2012. The President's request includes significant increases for

the Global Environment Facility (GEF) and the Strategic Climate Fund within the GEF, as well as for the Clean Technology Fund of the World Bank. Little action has taken place in Congress to date on the State and Foreign Operations budget, which includes all International Organizations and Programs such as UNEP. The House Appropriations Committee will review its State and Foreign Operations bill on 19 July, but the Senate Committee has not scheduled their review. Both houses will need to pass their respective bills and the two versions will need to be reconciled. The House will likely propose cuts to UNEP funding, but the Senate will likely pass funding levels similar to what President Obama proposed.

Obama proposal cuts EPA budget by \$296M

Funding for climate and air quality programs at U.S. EPA would stay about the same or dip slightly under the FY 2014 budget proposal. EPA's budget would be cut by US\$296 million, the fourth straight year the administration has sought to squeeze agency funding. The spending plan would give EPA US\$8.2 billion, 3.5 percent less than the US\$8.5 billion enacted in FY 2012. The largest cuts would come from the Drinking Water and Clean Water state revolving funds, which provide cash to states for water programs.

Former EPA head goes to Apple

Former EPA Administrator Lisa Jackson will be in charge of Apple Corporation's environmental policy, according to an announcement made by CEO Tim Cook on 28 June. In the past, Apple has come under scrutiny for its data centers' energy performance, but recently has been given better marks. Jackson will report directly to Cook.



Photo: Google Images

STATE DEPARTMENT UNEP OFFICER DETAILED TO THE WORLD BANK

John Matuszak, long engaged with UNEP as Division Chief for Sustainable Development and Multilateral Affairs, in the Bureau of Oceans and International Environmental and Scientific Affairs at the State Department, has been detailed to the World Bank for one year. He will continue to work with UNEP as his portfolio will focus on the Bank's Wealth Accounting and the Value of Ecosystem Services Partnership (WAVES).



Photo: Google Images

President Obama outlines his climate agenda

President Obama delivered a forceful push for action on climate change on 25 June 2013. Speaking to a youth group, he emphasized the country's moral obligation to future Americans to curb carbon emissions. His plan focused on three categories: cutting U.S. carbon emissions; protecting the country from the effects of climate change through adaptation; and promoting international efforts to combat global warming. The most significant initiative he proposed was directing the U.S. EPA to propose limits to carbon dioxide emissions from existing coal and gas-fired utilities by 2015. Other initiatives would provide US\$8 billion in loan guarantees for clean fossil fuel projects, such as carbon capture and storage, increases of loan guarantees for wind and solar projects on public lands, development of fuel-economy standards for heavy-duty vehicles, reduce HFCs and development of a methane reduction strategy.

At the international level he supported the call for a new climate change treaty and committed to expanding new and existing multilateral and bilateral initiatives to reduce emissions including with China, India and other major emitting countries. He also pledged to end U.S. government support for public financing of new coal-fired power plants abroad, except for efficient coal plants in the poorest countries and in plants using carbon capture.

In a surprise announcement, President Obama said he would approve the controversial Keystone XL pipeline, which would carry crude oil from Canada to the Gulf of Mexico, if it "does not significantly exacerbate the climate problem."

World Bank President welcomes Obama climate initiative

In an op-ed in the 28 June edition of the *Washington Post*, World Bank President Jim Yong Kim said President Obama's climate proposal "injected a new sense of hope in the fight against climate change globally." He said he saw the initiative "... in the context of growing mobilization on climate change worldwide," especially among the U.S., China, India and the EU, who he described as major polluters where the burden of emissions reduction are required. Warning that the world is on a trajectory to warm more than 3 degrees Celsius, he called for action in five critical areas: setting a price on carbon, phasing out fossil fuel subsidies that encourage wasteful consumption; building cleaner cities; developing climate-smart agriculture; and investing in energy efficiency and sustainable energy sources.



Photo: Google Images

WORLD BANK PRESIDENT SEEKS COLLABORATION WITH UN SYSTEM ON CLIMATE CHANGE

On 25 June, speaking to the U.S. Global Leadership Coalition Annual Conference in Washington, D.C., Kim said he wanted to work very closely with the UN system on climate initiatives. Noting the global successes in curbing and treating HIV since the mid-1980s, he urged the audience to help build similar broad social movements to bring about the political pressures needed to make the tough decisions necessary for addressing climate change.

U.S. AND CHINA PLEDGE 'LARGE-SCALE COOPERATIVE ACTION' TO REDUCE EMISSIONS

Secretary of State John Kerry signed climate change agreements with China and Japan on 13-14 April, making the issue he championed in the U.S. Senate a centerpiece of his first Asia tour. Both declarations of cooperation stressed practical measures aimed at reducing greenhouse gas emissions and mostly ignored the contentious issues in the U.N. climate change negotiations, according to news reports. Analysts said the agreement between the United States and China -- which pledged to "set the kind of powerful example that can inspire the world" -- has the makings of a major move forward, putting the world's two largest emitters at the center of serious clean energy work.



Photo: NASA Goddard Photo and Video / Flickr / CC BY

U.S. Releases a new Arctic Strategy

The Obama Administration unveiled its National Strategy for the Arctic Region on 10 May. As opportunities in the region open to drill for oil and gas, exploit minerals and increase other forms of economic activity, the 13-page document sets out three broad priorities it plans to employ: strengthening defense and other national security activities in the region, as

well as the infrastructure to support them; working to protect the region's environment; and working with other Arctic countries bilaterally and through multilateral organizations like the Arctic Council, to manage activities in ways that reduce the potential for conflict. The Strategy also calls for the U.S. to ratify the United Nations Law of the Sea Convention.

U.S. Interagency report on the Arctic calls for “whole of government” approach to the region

As interest in Arctic development mounts, Federal agencies must work collaboratively to ensure that decisions in the region are guided by science and informed by local input, according to an interagency report released on 4 April 2013. The report was commissioned by President Obama and led by Interior Department Deputy Secretary David Hayes. The report calls for an integrated management strategy and highlights the need for a coordinated approach that uses the best available science to integrate cultural, environmental and economic factors in decision-making about development and conservation in the region. It might serve as a guide for other governments considering their own approach to emerging Arctic issues.

U.S. SENATE CONFIRMS ERNEST MONIZ AS SECRETARY OF ENERGY



Photo: Google Images

The Senate voted 97-0 on 16 May to confirm Ernest Moniz to head the Department of Energy. Moniz was a professor of physics at the Massachusetts Institute of Technology (MIT) and Director of the MIT Energy Initiative. In his first public remarks after being sworn in, Moniz promised a forceful commitment to promoting energy efficiency.

PENNY PRITZKER CONFIRMED AS COMMERCE SECRETARY



Photo: Google Images

Billionaire Penny Pritzker was confirmed to head the Department of Commerce, and will take up her new post in July. Heiress to the Hyatt Hotel fortune and part of the Chicago elite, Pritzker is a longtime supporter of Obama. Until last month, Pritzker served on the Chicago Board of Education. Pritzker takes over a department that has a wide-ranging mission with control over everything from the National Oceanic and Atmospheric Administration to the International Trade Association.

Final National Ocean Policy Implementation Plan released by the White House

On 16 April, the Obama Administration released its final Implementation Plan to translate the National Ocean Policy into action. The final Plan incorporates significant public input from a wide spectrum of individuals and interests, and focuses on increasing efficiency through improved coordination among federal agencies involved in ocean management work, without creating new regulations or authorities. Coordination between the federal and state governments, as well as other stakeholders, will also be enhanced through the formation of Regional Planning Bodies. The Plan also recognizes the broad interests in the Arctic for national security, domestic energy and natural resources, and environmental and cultural sustainability, as it becomes more accessible due to climate change. A Congressional staff briefing was held on 6 May, led by Deerin Babb-Brott, Director of the National Ocean Council Office, and with panelists from the National Oceanic and Atmospheric Administration, the Department of Agriculture, the Department of the Interior, the Navy and the Coast Guard.

Short-Lived Climate Pollutant Reduction Act is introduced in U.S. Congress

Representative Scott Peters (Democrat from California) introduced the Super Pollutant Emissions Reduction Act of 2013 on 9 May to establish a task force to reduce short-lived climate pollutants (SLCPs) under existing authorities. The bill designates SLCPs, including methane, black carbon, hydro-fluorocarbons and tropospheric ozone, as “super pollutants” because their global warming potential is many times higher than carbon dioxide. Peters said, “Government at multiple levels is already beginning to address these super pollutants, but it is time to coordinate our efforts to maximize the effectiveness of the programs.” A bill is also expected to be introduced in the Senate, and a coalition of non-governmental organizations, including 181 foreign policy experts, sent a letter to the Obama Administration calling for the creation of an SLCP task force.

USAID unveils strategy to broaden access to clean water

Warning that climate change, population growth and rising energy costs are squeezing the world's water supply, the U.S. Agency for International Development (USAID) released a new strategy to manage the increasingly scarce resource. The first-ever water blueprint doesn't call for new funding, but rather aims to ensure the estimated US\$425 million the agency spends on water projects achieves two overarching objectives: improving health outcomes and enhancing food security. Under the new directive, USAID has set a goal of providing 10 million people with sus-

tainable and improved water services and six million people with improved access to sanitation over the next five years. Climate change, the new strategy notes, already is causing rapid glacier melt and decreases in snow packs that will upend water supplies. The report points out that lack of access to clean drinking water and basic sanitation remains a dire problem, leading to direct health problems. About two million people die from diarrhea each year, most younger than five. More than 88 percent of diarrhea cases are attributed to unsafe drinking water and are preventable, according to the report.

ARCTIC ISSUES FEATURED IN TWO WASHINGTON CONFERENCES

On 17 April, the former President of Iceland, Olafur Ragnar Grimsson, opened a major and well-attended conference entitled The Arctic: Energy, Indigenous Communities and the Arctic Council, which featured panel discussions involving Arctic Council government representatives, energy experts and indigenous communities. They presented their views on the need for sustainable development in the Arctic. Considering the rapidly rising importance of Arctic issues as they relate to climate change, President Grimsson called on North American governments to assert strong leadership as they take over the Chair of the Arctic Council. Canadian Government representative Patrick Borbey, President of the Canadian Northern Economic Development Agency and newly named Chair of the Arctic Council's Senior Arctic Officials outlined Canada's plans for its Council leadership in the coming two years beginning in May 2013.

On 22 April, the Center for Strategic and International Studies (CSIS) featured a panel at their conference entitled Conservation on Thin Ice: What You Need to Know about the Changing Arctic Environment during which they launched the 2013 Arctic Summer College on the environmental and social impacts of a rapidly changing Arctic. RONA is exploring a possible collaboration with CSIS on a speaker series which would highlight key developments related to the Arctic.



Minister reaffirms Canada's commitment to the Arctic



Photo: Google Images

Minister for the Arctic Council, Leona Aglukkaq, told Canadians in a meeting of the Economic Club of Canada that the Government recognizes the importance of the North, not only to Canada's heritage and future, but to the world. She said "As Chair of the Arctic Council, Canada will place the well-being and prosperity of people living in the North at the forefront of its Chairmanship." She emphasized Canada's focus on development for the people of the North, including the responsible development of Arctic resources, safe shipping, and support for sustainable circumpolar communities. She stated that the Government would work on oil-spill prevention during her chairmanship and will enhance engagement with the business community through the creation of a circumpolar business forum.

ALBERTA PREMIER SAYS FOCUS ON GREENHOUSE GAS REGULATIONS IS PREMATURE

Alberta Premier Alison Redford urged a Washington, D.C., audience to consider the climate facts about the Keystone XL pipeline, while environmentalists criticized her government for failing to control the growth of oil sands emissions and establish policies to meet climate targets. Redford sought to dispel reports of a rise in the Canadian carbon tax and arguments against the pipeline that she stated were far from the truth. Redford stated greenhouse gas emissions stemming from oil sands were less than half of one percent of global emissions. Environmentalists assert that these numbers camouflage how far emissions are from government targets.



Photo: Google Images

UNEP Launches Global Report at WED North America



Following a six-week period that linked Earth Day on 22 April to World Environment Day (WED) on 5 June, WED in North America culminated with the launch of the UNEP and World Resources Institute (WRI) report entitled *Reducing Food Loss and Waste* at a press conference in Portland, Oregon – host city of this year's WED in the region. City officials also showcased a number of innovative approaches to addressing food waste and hunger. The press conference, attended by Charles Hales, Mayor of Portland, Oregon, was well attended and received significant media coverage.

WED in North America Culminates with Significant Announcements by Portland Mayor



The Mayor of Portland took advantage of World Environment Day to make a number of significant announcements in a speech at the launch of the *Reducing Food Loss and Waste* report. He urged the State of Oregon to divest all of its holdings in fossil fuel companies and pledged that Portland, which owns no fossil fuel stocks directly, will begin implementing a 2012 resolution instructing city bureaus to buy 100 percent of their energy from renewable sources. In his keynote speech, the Mayor said that his city will apply to participate in the Rockefeller Foundation's 100 Resilient Cities Centennial Challenge designed to prepare for major weather events.

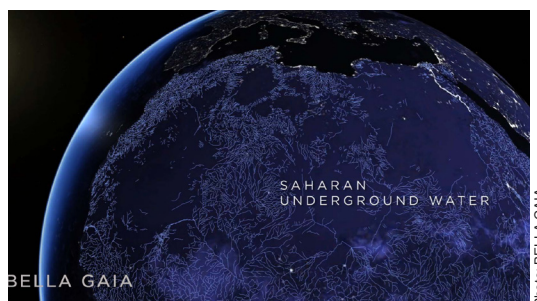
YOUNG ENVIRONMENTAL ARTISTS HONORED AT CHILDREN'S PAINTING COMPETITION AWARD CEREMONY

Jessica Qiu a third-grader at Faria A+ Elementary School in San Jose, California, received the top North American prize in UNEP's 22nd annual International Children's Painting Competition (ICPC) on the Environment – a signature event of the North American World Environment Day celebrations for six years. The ICPC invites elementary and middle school students, ages six to 14, to learn about the environment and express that knowledge creatively through art. This year, more than 63,000 paintings from 109 countries were received in UNEP offices around the world. Jessica's painting addressed the theme Water: Where does it come from? Also honored at the Portland, Oregon award ceremony were second-place winner Amy Zhu, a fourth-grader at John Gomes Elementary School in Fremont, California, and 'Portland's Best' first and second-place winners sixth-graders Marcellus Omer at Faubion Elementary School and Cali Rawhouser-Mylet from Holy Redeemer Catholic School. The winners received their award from Nancy Hales, the First Lady of Portland, Dr. Mae Jemison, the first African-American female astronaut and Bayer Making Science Make Sense programme Spokesperson, and Amy Fraenkel, Director UNEP RONA



RONA and Bella Gaia Launch short film using UNEP Live data

On the occasion of World Environment Day, UNEP and BELLA GAIA, a performance group that displays NASA visualizations of Earth from Space accompanied by live music and dance, launched a short film titled *Hotspots to Hopespots* - a multimedia presentation of scientific data and images on the planet's changing environment. Directed by award winning filmmaker, music producer and classically trained violinist Kenji Williams, the film highlights this year's World Environment Day theme of food waste and showcases visualizations of Hotspots that have turned into Hopespots. These images are available on the UNEP Live portal, which is based on research led by UNEP's Division of Early Warning and Assessment (DEWA). The film, which also features data produced by NASA, BELLA GAIA and the Brooklyn-based data visualization company, Culture Shock, illustrates earth science stories from around the globe. The partners worked together to show real time anthropogenic activity spanning decades. The video can be found at Vimeo, at <http://vimeo.com/67499493>.



RONA Participates in Climate Change Mitigation Panel

On 21 May, RONA Programme Officer Hilary French participated in a climate change mitigation panel at the Aid and International Development Forum in Washington D.C. She was joined by experts from the Center for Global Development, Mercy Corps, Friends of the Earth USA and Worldwatch Institute. Hilary presented key features of UNEP's climate change programme and stressed UNEP's goal to keep temperature rise below 2°C. The main discussion centered around the role that development organizations should play in climate change mitigation. Main topics of the panel included climate financing, clean energy development and adaptation, global lending practices and carbon taxes.

UNEP represented at sustainability discussion of finance ministers at World Bank annual meeting

RONA Director Amy Fraenkel attended the third annual meeting of about 30 finance ministers, joining World Bank President and the United Nations Secretary General, at a discussion on sustainability during the Bank's annual meeting. Observers at the included Helen Clark (UNDP), Naoko Ishii (GEF), and Christiana Figueres (UNFCCC). The discussion focused on climate change and fossil fuel subsidies, which Bank President Kim has made a centerpiece of his agenda. He noted that failure to address climate change will roll back decades of development, and that "mitigation is the only form of adaption in a four degree world". The Secretary-General emphasized the urgent need for governments to fund the Green Climate Fund, and mentioned that he would be meeting with the heads of the various MDBs about how to mobilize clean energy investments. The Deputy Director of the IMF, David Lipton, reported on a major study on energy subsidy reform.

UNEP MAKES A SPLASH AT CAPITOL HILL OCEANS WEEK

On 5 June, as part of efforts to celebrate World Oceans Day, RONA hosted an information booth at the annual Capitol Hill Oceans Week (CHOW) conference in Washington, D.C. CHOW is a three-day event, organized by the National Marine Sanctuary Foundation, in which marine professionals, government officials and ocean enthusiasts come together to network, advance policy goals and mingle with ocean champions. Topics discussed this year included climate change impacts on coastlines and adaptation measures, the roles of federal and local governments, NGOs and coastal communities, oceans as economic engines through sustainable tourism, fisheries and trade, and "blue journalism", among others. Carla Friedrich and Monika Thiele, RONA Programme Officers, and RONA intern Melissa Benn represented UNEP. The booth helped raise awareness about UNEP's work on coastal and marine issues, including the RONA Two Minutes on Oceans with Jim Toomey video series, as well as the World Environment Day food waste theme, the Sustainable Consumption and Production Clearinghouse and the Convention on the Conservation of Migratory Species.



Melissa Benn, RONA Environment Policy intern, staffing UNEP booth at CHOW conference

Scientists underscore concerns about climate change and severe weather



Photo: US Department of Defense; Mark C. Olsen, US Air Force

Scientists and policymakers discussed the science of severe weather events at the American Geophysical Union's annual science policy conference in Washington, D.C. The panel discussion began with a straightforward fact: in 2012, the United States had the world's two costliest disasters, totaling more than US\$100 billion. One was Superstorm Sandy and the other was the yearlong Midwest drought. The linkage between climate change and these and other significant, costly weather events is one of considerable scientific and public policy interest. While in some areas the science on this link is evolving, in other realms, such as the effects of sea-level rise on storm surges and flooding, the connection is clear, said Radley Horton, a scientist at Columbia University's Center for Climate Systems Research.

Warm oceans melting the bottom of Antarctica's ice shelves

A recent study released in the journal *Science* has found that a majority of Antarctica's ice shelves are melting from the bottom up. This is contrary to the previously held belief that the ice shelves were melting from the ends. However, each ice shelf is different and may melt in different fashions. Overall, the scientists found that basal melt accounted for 55 percent of total ice shelf mass loss across Antarctica from 2003 to 2008, the period studied. This finding is important for understanding how ice shelves might melt in the future.

Scientists discover new transfer route of carbon into waterways

A recent study by *Nature GeoScience* has found that humans may be contributing to the transfer of carbon from land to lakes, rivers and coastal zones. This is contrary to the previously held theory that carbon transfer between land and water was part of a natural loop with little interference from humans. As a result, the amount of carbon stored in land ecosystems such as forests may be 40 percent lower than IPCC estimates, the scientists said. Human activities such as deforestation may be driving more carbon into inland waterways than previously believed, creating a massive and little-studied carbon sink in lakes, rivers and coastal zones.

MITIGATION OF SHORT-LIVED CLIMATE POLLUTANTS WOULD SLOW SEA-LEVEL RISE

A research study published by the journal *Nature Climate Change* on 14 April concludes that short-lived climate pollutants, such as methane, tropospheric ozone, hydrofluorocarbons and black carbon, can have significant effects on sea level rise. These pollutants can decrease the rate of sea-level rise by 24-50 percent and reduce the cumulative rise by 22-42 percent by 2100, the report says. If the mitigation of these pollutants is delayed by 25 years, the warming from pre-industrial temperature would exceed two degrees Celsius by 2050 and the impact of mitigation actions on sea level rise would be reduced by about a third. Among the research team was Veerabhadran Ramanathan, who had a lead role in UNEP's Integrated Assessment of Black Carbon and Tropospheric Ozone in 2011.

World's fish have been moving to cooler waters for decades

Fish and other sea life have been moving toward Earth's poles in search of cooler waters, part of a worldwide, decades-long migration documented for the first time by a study published in the journal *Nature*. The study provides more evidence of a rapidly warming planet and has broad repercussions for fish harvest around the globe. University of British Columbia researchers found that significant numbers of 968 species of fish and invertebrates they examined moved to escape the warming waters of their original habitats. Previous studies had documented the same phenomenon in specific parts of the world's oceans. But the new study is the first to assess the migration worldwide and looks back as far as 1970. The conclusions have important implications for fisheries and the people who depend on them. In developed countries, the fish migration poses costly challenges for the commercial fishing industry, and in less-developed nations and the tropics, the movements could threaten a critical source of food.

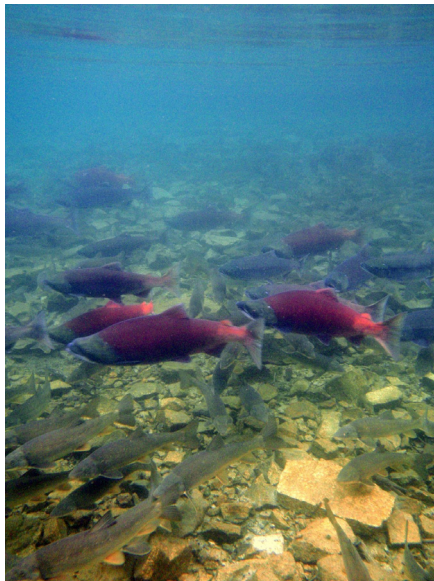


Photo: National Park Service

U.S. amphibians declining at an alarming rate

A study released by the U.S. Geological Survey (USGS) on 22 May says that frog, toad and other amphibian populations are declining so rapidly in the U.S., that if the trend continues at the current rate, they will vanish from half their current habitats in 29 years. Scientists found the declines are more widespread and significant than previously thought and said that amphibian populations are disappearing at an overall rate of 3.7 percent annually. The study looked at 48 species at 34 sites over a decade. USGS researchers also determined that amphibians listed as threatened by the IUCN are disappearing from their habitats at a rate of 11.6 percent a year. The study did not address causes of the decline.



Photo: Flickr/Jucuman

NEW STUDY FINDS IMPROVED COOKSTOVES SOLVE ONE PROBLEM, BUT CAN CREATE OTHERS

A study published in the U.S. journal *Environmental Science & Technology* on 25 March states that some improved cookstoves produce three times as many ultra-fine particles with diameters below 30 nanometers of black carbon for a given unit of fuel, compared to open fires. The study states that larger particles are more likely to be filtered by the nose and mouth and produce effects that originate in the lungs, while the smaller particles of the new cookstoves are more likely to make it further into the lungs and from there enter into the body and induce harmful effects beyond the lungs. Researchers are still trying to determine more about what those effects outside the lungs can be.

SCIENTISTS DEVELOP METHODS TO TRACK EMISSIONS FOR INDIVIDUAL CITIES

Scientists are considering expanding their current efforts to trace the greenhouse gas emissions produced by individual cities. Currently, two projects in Paris and Los Angeles are trying to determine whether the cities are on track to meet their emissions reduction goals. France and the United States have spent about US\$3 million each on the effort. Scientists at NASA's Jet Propulsion Laboratory are using sensors and models to try to determine the various sources of greenhouse gases. Another city-emissions tracking project is planned for Sao Paulo, Brazil.

Thawing tundra soils could produce lower CO2 emissions than previously thought

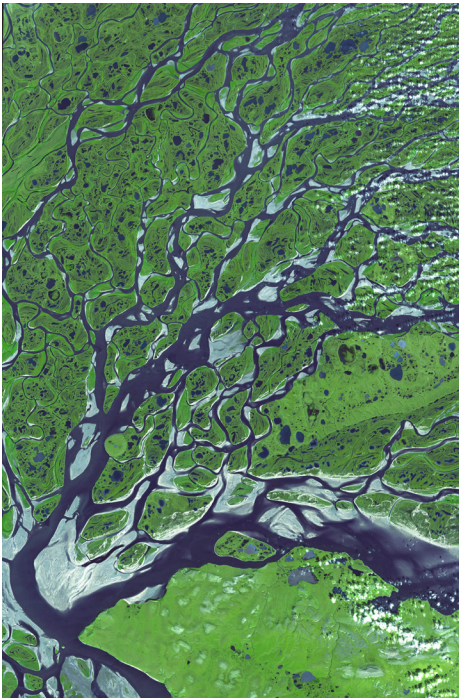


Photo: NASA-GSFC-MIT-ERSDAC-JAROS, and the U.S.-Japan ASTER Science Team

For years, scientists have shown that rising temperatures stimulate microbes that decay plant matter, releasing carbon more quickly into the atmosphere. However researchers have uncovered a mechanism in the Alaskan tundra that doesn't seem to follow the climate change script for soil carbon. Researchers have collected samples dating back to 1989 from greenhouses at the Arctic Long-Term Ecological Research site that show no change in total soil carbon over 20 years. Scientists attribute this stasis of carbon levels to the increased plant growth, which deposits atmospheric carbon into the soil, also caused by climate change. This redistribution of soil carbon storage raises questions of whether the balance provided by larger plants will stand in the long term or whether the more active microbes detected in the deeper soils will eventually offset the increased carbon in those deeper soils.

Greenland's accelerated melt may have helped shift North Pole

Accelerated ice melt in Greenland and corresponding sea-level rise may have helped shift the North Pole several centimeters east per year since 2005, according to a study in *Geophysical Research Letters*. Scientists have long known the locations of the Earth's geographic poles are not fixed. Between 1982 and 2005, the pole drifted southeast toward Canada's northern Labrador at 2 milliarcseconds (a little more than 2 inches) a year. But in 2005 it suddenly started moving east toward Greenland at more than 7 milliarcseconds a year. According to the study, more than 90 percent of post-2005 polar shift was explained by accelerated ice loss and associated sea-level rise.



Photo: NASA, Joughin-UW Polar Science Center

STUDY SHOWS ICE-FREE ARCTIC WHEN CO2 LEVELS WERE SIMILAR TO TODAY

A study published in the journal *Science* analyzed the longest land-based sediment core ever taken in the Arctic and found that during the period from 3.6 million to 2.2 million years ago, the area around the North Pole was much warmer and wetter than it is now. In the middle Pliocene, summer temperatures in the Arctic were around 60 degrees Fahrenheit, which is about 14 degrees warmer than they are now, the study found. In their analysis, the scientists found the part of the core from 2.2 million to 3.6 million years ago contains enough fossil pollen and other signs of vegetation to bolster the idea that the mid-Pliocene Arctic was warm and forested, making it highly unlikely that the region had year-round sea ice at that time. According to the authors, this suggests that the Arctic today is not in equilibrium with the greenhouse gas settings, meaning that we can expect significant increases in Arctic temperatures and precipitation even if the level of greenhouse gases keeps constant.



Photo: Robert Simmon, NASA Earth Observatory, NASA-NOAA GOES

Toll of 2012 disasters means higher cost of climate change

“Climate change will make events like the ones in 2012 more likely, and are illustrative of what we can expect in years to come,” said Nick Cunningham, policy analyst at American Security Project (ASP) and co-author of a fact sheet on the rising costs of climate change. According to the paper, nearly half of all Americans experienced some sort of extreme weather event last year, which was the warmest recorded year in the United States to date. It was also an abnormally dry year that saw roughly 80 percent of America’s farmland suffer from extreme drought.

Superstorm Sandy, hit the United States last year, flooding entire towns and shutting off power to an estimated 7.5 million people.

The storm killed 131 people and is believed to have caused US\$70 billion in economic losses. The ASP paper notes that extreme weather events have been increasing costs for U.S. taxpayers for the last 10 to 15 years. From 2000 to 2009, the federal government spent US\$392 billion responding to big disasters. In the 1990s, the total came to US\$227.8 billion, and it was US\$189.9 billion in the 1980s, inflation-adjusted.

The Natural Resources Defense Council also documented the financial impacts of recent climate-related events in a separate report. According to the authors, the federal government spent nearly US\$100 billion on the consequences of droughts, storms, floods and forest fires last year alone.

A third of common animals and half the plants will see dramatic habitat loss

A study release in the journal *Natural Climate Change* found that not only will endangered species be hurt by climate change, but common plants and animals will be affected as well. If humans keep emitting carbon dioxide at today’s rates, more than half of common plants and about a third of common animals are likely to lose more than 50 percent of their present range by the 2080s. The study found that we could avoid 60 percent of those losses if emissions of greenhouse gases peak in 2016, and if emissions peaked instead in 2030, we could avoid 40 percent of those losses. While most previous work looking at the effects of climate change has focused on impacts to rare species, researchers on this study decided to see what happened to about 50,000 common species of plants and animals.

MELTING GLACIERS BIG CONTRIBUTORS TO SEA-LEVEL RISE

The melting of the world’s glaciers contributes as much to rising global sea levels as the Greenland and Antarctica ice sheets combined, according to a new study published in *Science* magazine. The study found that glacial regions caused roughly 29 percent of the rise in global sea levels between 2003 and 2009, even though glaciers hold only 1 percent of the world’s land ice. According to several analysts, the work provides clarity for the scientific community, as previous studies widely varied in their findings about the glacier contribution to rising sea levels. “For the first time, we can precisely say how much glaciers contribute to sea-level rise,” said Alex Gardner, an assistant professor at Clark University and lead author of the study, which included 16 researchers from 10 countries. The scientists reported that global glaciers – the ice bodies outside the Greenland and Antarctic ice sheets - shed about 260 billion metric tons of meltwater annually during the six-year study period, causing the world’s oceans to rise about .03 inch annually over that time.



Photo: NASA Earth Observatory, IKONOS satellite image, GeoEye

IV. ON THE CALENDAR



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Photo: Keith Ramos, US Fish & Wildlife Service

Third Global Environmental Summit on Urban Environmental Accords

11-13 July 2013

San Antonio, Texas, U.S.A.

Our Task Earth 2100 Conference - 2nd Annual Youth Conference to Bring Earth and its Communities Safely and Sustainably to 2100 and Beyond!

27-28 July 2013

George Mason University, Fairfax Campus, Virginia, U.S.A.

Launch of GEO-5 for Business

September 2013

Washington, D.C and New York, U.S.A.



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Published by UNEP Regional Office for
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Contact: elisabeth.guilbaud-cox@unep.org
www.rona.unep.org