



# CLIMATE – NEWS

ISSUE – XIV

July to September, 2007

**ICFRE – CLIMATE CHANGE NEWS From the Biodiversity and Climate Change (BCC) Division, Indian Council of Forestry Research and Education, P.O: New Forest, Dehra Dun – 248006**

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## CLIMATE CHANGE INTERNATIONAL NEWS

### CLIMATE CHANGE TOPS AGENDA AT GLOBAL FOREST MEET

Taellberg, Sweden, July 01, 2007, Zee News (<http://zeenews.com>)

Some 500 politicians, scientists, business leaders and aid-workers from 60 countries gathered in a small Swedish forest town to discuss innovative ways of tackling climate change. The annual conference was held in the resort village of Taellberg, located 250 kilometers (155 miles) north of the Swedish capital of Stockholm.

Speaking to an audience of over 1,000 at the opening ceremony, Queen Rania analysed current international efforts to address climate change. "Too many of us are pushing each other away at precisely a time when we should be pulling together. So let me take a provocative stand and call for a new global warming, a positive collective climate change within our heads and in our hearts."

A leading climate scientist, the head of the NASA Goddard Institute, James Hansen warned that "we are on the brink of a climate crisis and much closer than we realise. The world has already passed several tipping points in terms of climate change."

### PLAN TO DUMP IRON IN OCEAN AS CLIMATE FIX ATTRACTS DEBATE

Kelly Hearn, National Geographic News, July 25, 2007

Global warming is heating up opportunities for companies that can find ways to pull carbon dioxide (CO<sub>2</sub>) out of the atmosphere and sell "carbon credits" on emerging markets. But one company's attempt to dip its toes into free-market climate solutions appears to be headed for a high-seas standoff. In the coming days to weeks, Planktos, a small California-based "ecorestitution" company, will use a 115-foot (35-meter) research ship to dump a

hundred tons of iron dust into international waters some 200 miles (322 kilometers) west of the Galápagos Islands.

Iron, a nutrient naturally carried into the ocean by wind encourages plankton growth, which can absorb atmospheric CO<sub>2</sub>, a greenhouse gas. The company ultimately wants to fertilize plankton blooms, measure the carbon they capture, and sell the corresponding credits

### **MISSING CARBON MYSTERY: CASE SOLVED?**

Jane Burgermeister, July 30, 2007, Nature Reports Climate Change, doi:10.1038/climate.2007.35

Scientists claim to have located the 'missing carbon sink' in tropical forests that are absorbing around one billion tonnes more carbon than previously thought. Of the 8 billion tonnes of carbon that human activity produces each year, 6.4 from fossil-fuel emissions, and 1.6 from deforestation, mainly in the tropics, on average, 3.2 billion tonnes remain in the atmosphere, 2.2 billion tonnes are stored in the oceans and 2.6 billion tonnes are sucked up by land-based carbon sinks, mainly forests.

Carbon-uptake models predict that as much as 2.4 billion tonnes of this carbon ends up in northern mid- to high-latitude forests. But scientists searching for it on the ground, measuring trees and carbon exchanges between the vegetation and the atmosphere, have only been able to account for about 0.7 billion tonnes there.

Researchers led by Britton Stephens from the National Center for Atmospheric Research in Boulder, Colorado in the USA have now found an answer to this mystery. In a paper published in *Science*, they show that tropical forests are absorbing about one billion tonnes more carbon than previously thought and that northern mid-latitude forests are absorbing 0.9 billion tonnes, or 38%, less than assumed up until now.

### **DAMS 'CONTRIBUTE TO GLOBAL WARMING'**

Jessica Marszalek, www.news.com.au, September 04, 2007

The world's dams are contributing millions of tonnes of harmful greenhouse gases and spurring on global warming, according to a US environmental agency. International Rivers Network executive director Patrick McCully today told Brisbane's Riversymposium rotting vegetation and fish found in dams produced surprising amounts of methane - 21 times potential than carbon dioxide.

"Often it's accepted that hydropower is a climate friendly technology but in fact probably all reservoirs around the world emit greenhouse gases and some of them, especially some of the ones in the tropics, emit very high quantities of greenhouse gases even comparable to, in some cases even much worse than, fossil fuels like coal and gas," Mr McCully said.

He said when water flow was stopped, vegetation and soil in the flooded area and from upstream was left to rot, as well as fish and other animals which died in the dam. They then released carbon dioxide, methane and nitrous oxide into the air. "Basically they're factories for converting carbon into methane and methane is a very powerful greenhouse gas - it's less known than carbon dioxide but it's actually about 21 times stronger than carbon dioxide in terms of trapping heat in the atmosphere."

The Brazilian National Space Agency estimated that it work out to about 104 million tonnes of methane each year, or 4 per cent of the human impact on global warming, he said. Mr McCully said that was a lot for such a small sector. But he said it was an area that was under-researched so a clearer picture of how dams were contributing to global warming was not known.

### **THE SEA ICE IS GETTING THINNER**

Alfred Wegener Institute for Polar and Marine Research, [www.physorg.com](http://www.physorg.com), September 13, 2007

Large areas of the Arctic sea-ice are only one metre thick this year, equating to an approximate 50 percent thinning as compared to the year 2001. These are the initial results from the latest Alfred-Wegener-Institute for Polar and Marine Research in the Helmholtz Association lead expedition to the North Polar Sea.

50 scientists have been on board the Research ship- Polarstern for two and a half months, their main aim; to carry out research on the sea-ice areas in the central Arctic. Amongst other things, they have found out that not only the ocean currents are changing, but community structures in the Arctic are also altering. Autonomous measuring-buoys have been placed out, and they will contribute valuable data, also after the expedition is finished, to the study of the environmental changes occurring in this region.

Oceanographers on board the research ship Polarstern are investigating the composition and circulation of the water masses, physical characteristics of sea-ice and transport of biological and geochemical components in ice and seawater. Sea-ice ecosystems in the seawater and on the ocean floor will also be a focus of investigations. Scientists will take sediments from the ocean floor in order to reconstruct the climatic history of the surrounding continents.

### **CALL TO BAN PETROL CARS BY 2040**

BBC News ([www.news.bbc.co.uk](http://www.news.bbc.co.uk)), September 17, 2007

The Liberal Democrats have backed a radical series of proposals to tackle climate change - including a ban on petrol powered cars by 2040. Environment spokesman Chris Huhne said tackling global warming would need an "enormous economic change". He set out plans to make Britain carbon neutral by 2050 at the party's annual conference in Brighton.

Mr Huhne warned that climate change means "far more wild weather" following the devastating floods over the summer. Setting out his "green vision", Mr Huhne warned there was little time left to change the way people live.

Some of the other key proposals in the Liberal Democrats' Zero Carbon Britain plan are:

- Introduce green mortgages to encourage more environmentally friendly homes
- Charging lorries to use the UK's roads in order to double rail investment, possibly creating a high speed line running north to south
- Boosting spending on flood defences to respond to climate change
- Encouraging microgeneration by paying a higher rate to producers who export energy to the National Grid
- Creating a climate change levy of £10 on domestic flights

## ICFRE NEWS

### **PARTICIPATION BY DG – ICFRE IN HIGH-LEVEL MEETING ON FORESTS AND CLIMATE**

Sydney, Australia, July 23 –25, 2007

Shri Jagdish Kishwan, DG – ICFRE participated in the High-Level Meeting on Forests and Climate organized under the '**Global Initiative on Forests and Climate**' of the **Department of Foreign Affairs and Trade**, AusAID and Department of the Environment and Water Resources, Government of Australia from 23 – 25 May 2007 at Sydney, Australia on nomination by the Ministry of Environment and Forests, New Delhi.

Shri V.R.S. Rawat Scientist D, Biodiversity and Climate Change Division, ICFRE Dehradun attended 10 days training course on **micro-meteorological measurement and CO<sub>2</sub> flux measurements** during 17-07-2007 to 26-07-2007 at Yousei University, Seoul, Korea. The training was organized by Asia Flux, a net work of CO<sub>2</sub> flux study sites in Asia.

## UPCOMING EVENTS

### **CDM 2.0: CONFERENCE ON POST-2012 MECHANISMS**

15 October 2007, Brussels-Belgium

The conference wants to put ongoing discussions about the state of the CDM into the context of the international negotiations on a post-2012 climate treaty. The discussion will be on programmatic and policy-based, baseline and credit types as well as separately funded sustainable development policies. These discussions will be analysed with regard to the UN summit in Bali just a few weeks later. This conference, organised by Climate Action Network Europe, The Netherlands Society for Nature and Environment and Hivos, will bring together experts from civil society, governments, industry and the financial sector - not just from Europe. For more information contact: Matthias Duwe - Director, CAN-Europe <http://www.climnet.org/>; Ton Sledsens - Climate & energy, The Netherlands Society for Nature and Environment <http://www.natuurenmilieu.nl/page.php?pageID=35>; Harrie Oppenoorth - Programme Officer Renewable Energy & Climate, Hivos <http://www.hivos.nl/>

### **5<sup>TH</sup> MINISTERIAL CONFERENCE ON THE PROTECTION OF FORESTS IN EUROPE:**

5 - 7 November 2007. Warsaw, Poland.

This conference will address climate change mitigation, promotion of wood as a renewable energy carrier and the role of forests in the protection of water quality and quantity, and will include a multi-stakeholder dialogue. For more information contact: Liaison Unit Warsaw; tel: +48 22 331 70 31, +48 22 331 70 39; fax: +48 22 331 70 32; e-mail: [liaison.unit@lu-warsaw.pl](mailto:liaison.unit@lu-warsaw.pl); Internet: <http://5th.mcpfe.org/>

### **27<sup>TH</sup> SESSION OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE:**

12 - 16 November 2007. Valencia, Spain.

IPCC-27 will focus on the adoption of the IPCC's Fourth Assessment Report (AR4). For more information contact: Rudie Bourgeois, IPCC Secretariat; tel: +41-22-730-8208; fax: +41-22-7 30-8025/13; e-mail: [IPCC-Sec@wmo.int](mailto:IPCC-Sec@wmo.int); Internet: <http://www.ipcc.ch/>

### **THIRTEENTH CONFERENCE OF THE PARTIES (COP 13) TO THE UNFCCC AND THIRD MEETING OF THE PARTIES TO THE KYOTO PROTOCOL:**

3 - 14 December 2007. Bali, Indonesia.

UNFCCC COP 13 and Kyoto Protocol COP/MOP 3 will take place from 3-14 December 2007 at the Bali International Conference Center and adjacent Nusa Dua facilities, Indonesia. These meetings will coincide with the 27th meetings of the UNFCCC's subsidiary bodies and the Ad Hoc Working Group on Further Commitments from Annex I Parties under the Kyoto Protocol. COP 13 and COP/MOP 3 are also expected to be accompanied by a UNFCCC Dialogue on Long-Term Cooperative Action on Climate Change and various other events. For more information contact: tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: [secretariat@unfccc.int](mailto:secretariat@unfccc.int); Internet: <http://www.unfccc.int>

## **RECENT STUDIES**

### **'NO SUN LINK' TO CLIMATE CHANGE**

Richard Black, BBC Environment Correspondent, July 10, 2007, BBC News (<http://news.bbc.co.uk>)

A new scientific study concludes that changes in the Sun's output cannot be causing modern-day climate change. It shows that for the last 20 years, the Sun's output has declined, yet temperatures on Earth have risen. The researchers say cosmic rays may have affected climate in the past, but not the present. The scientists' main approach was to look at solar output and cosmic ray intensity over the last 30-40 years, and compare those trends with the graph for global average surface temperature, which has risen by about 0.4C over the period.

"This paper reinforces the fact that the warming in the last 20 to 40 years can't have been caused by solar activity," said Dr Piers Forster from Leeds University, a leading contributor to this year's Intergovernmental Panel on Climate Change (IPCC) assessment of climate science. The IPCC's February summary report concluded that greenhouse gases were about 13 times more responsible than solar changes for rising global temperatures.

### **INDIA STARTS WORK ON CLIMATE ACTION PLAN**

NewScientist.com news service (<http://environment.newscientist.com>)

India have taken the first step towards developing a national plan to tackle the effects of global warming and assess its own greenhouse-gas emissions on Friday. Prime Minister Manmohan Singh's new Council on Climate Change (CCC) held its first meeting in a bid to come up with a plan ahead of a key United Nations climate-change meeting in Bali, Indonesia, in December. But the national plan will not set any national emissions targets. "India is now responding to the urgency of the situation," says Sunita Narain, CCC member and director of the New Delhi-based think-tank, the Centre for Science and Environment. "We have never been very good at stating our position and it is the right time to articulate all the things that India is doing, and plans to do, to mitigate and adapt to global warming."

India's economy has grown by more than 8% a year recently, and the nation is responsible for 5.6% of global greenhouse-gas emissions, according to the World Resources Institute. It is one of the top five emitters among developing countries, along with China, Mexico, Brazil, and Indonesia. Its emissions are rising by between 2% and 3% a year. But as a developing nation, the country is not required to cut emissions under the UN Kyoto protocol, although there is mounting pressure from environmental groups and industrialised nations to do so.

### **OZONE HAS 'STRONG CLIMATE EFFECT'**

Paul Rincon, Science reporter, July 25, 2007 BBC News (<http://news.bbc.co.uk>)

Ozone could be a much more important driver of climate change than scientists had previously predicted, according to a study in Nature journal. Ozone near the ground damages plants, reducing their ability to mop up carbon dioxide (CO<sub>2</sub>) from the atmosphere. As a consequence, more CO<sub>2</sub> will build up in the atmosphere instead of being taken up by plants. Scientists already knew that ozone higher up in the atmosphere acted as a "direct" greenhouse gas, trapping infrared heat energy that would otherwise escape into space.

Ozone closer to the ground is formed in a reaction between sunlight and other greenhouse gases such as nitrogen oxides, methane and carbon monoxide. Greenhouse emissions stemming from human activities have led to elevated ozone levels across large tracts of the Earth's surface. This study is described as significant because it shows that O<sub>3</sub> also has a large, indirect effect in the lower part of the atmosphere. Research into ground-level ozone has tended to concentrate on its harmful effects on human lungs. But the gas also damages plants, reducing their effectiveness as a "carbon sink" to soak up excess CO<sub>2</sub> from the atmosphere.

Ozone enters plants through pores, called stomata, in the leaves. Interfering with the reactions involved in photosynthesis, it leaves the plants weakened and undersized.

### **GLOBAL WARMING IS CHANGING THE WORLD'S RAIN**

David L. Chandler, July 28, 2007 NewScientist.com news service  
(<http://environment.newscientist.com>)

DROUGHT, famine and war have made life hard enough for the people of northern Africa. Yet things are likely to get worse. For the first time we have proof that greenhouse gas emissions have already begun to alter how much rain falls around the world, and the effect will become more extreme over the coming decades. Tropical regions north of the equator, including Africa's Sahel, have already begun to get even drier. Far-north regions, including Canada, northern Europe and Russia, will get wetter, as will the southern tropics.

Detecting the effects of climate change on rainfall patterns has been difficult, as precipitation levels naturally vary much more than temperature, for example. To do so, researchers took results from 92 simulations that rely on 14 different global circulation models, some which included the forcing affects of human greenhouse gas emissions, and some which did not, to arrive at the average predicted.

### **GLOBAL WARMING DOUBLES NUMBER OF HURRICANES**

Maxim Kniazkov, Yahoo News (<http://news.yahoo.com>), July 30, 2007

Global warming's effect on wind patterns and sea temperatures have nearly doubled the number of hurricanes a year in the Atlantic Ocean over the past century, says a new study by US scientists. The study by Greg Holland of the National Center for Atmospheric Research and Peter Webster of Georgia Institute of Technology released in the United States, identifies three periods since 1900, during which the average number of hurricanes and tropical storms increased dramatically and then remained elevated and relatively steady.

From 1930 to 1940, the authors point out, the annual average increased to 10, consisting of five hurricanes and five tropical storms. In the most recent period, from 1995 to 2005, the average reached 15, of which eight were hurricanes and seven were tropical storms. "These numbers are a strong indication that climate change is a major factor in the increasing number of Atlantic hurricanes," Holland said in a statement.

The scientists see a strong correlation between the spike in storm activity and rising sea surface temperatures, which "feed" hurricanes. Over the last 100 years, these temperatures have risen by about 1.3 degrees Fahrenheit, or 0.7 degrees Celsius, the study asserts.

## **CLIMATE CHANGE WORRIES FOR BIRD**

BBC News (<http://news.bbc.co.uk>), August 2, 2007

A rare mountain bird is to be radio tracked following concerns that its numbers are declining because of climate change. Ring ouzels could be struggling because warmer weather is drying out soil making it harder for them to catch earthworms. Fledglings in the Cairngorms National Park are to be monitored in a project backed by other organisations. Also known as mountain blackbirds, they winter in Spain and Morocco. The decline was not thought to be linked to poor breeding.

## **THE FUTURE'S WET**

Samia Mantoura, *Science* 317, 233–235, September 9, 2007

Global warming may result in even more rain than that currently projected by climate models. Models and observations agree that a warmer planet will have more water in the atmosphere, but exactly how much of this will fall as rain has been hard to pin down.

Frank J. Wentz of Remote Sensing Systems in Santa Rosa, California and co-workers analysed trends in water vapour, surface wind and precipitation from global satellite data between 1987 and 2006. Although climate models indicate that precipitation should have increased by only 1–3% per degree Celsius of surface warming during this period, they found an increase of 7% per degree Celsius — the same rate at which water vapour increased in the atmosphere.

The lower rainfall in the model simulations can be explained by the fact that they projected weaker global surface winds than those observed in the satellite data. Stronger surface winds increase the evaporation of moisture from the Earth's surface and transport it upwards into the atmosphere where it falls as rain. Where this additional rain will fall in the future remains a mystery: will it alleviate drought in arid areas or contribute to flooding in wet regions?

## **GLOBAL WARMING IS KILLING TREES IN CALIFORNIA PARKS**

mongabay.com, September 12, 2007

A new study ties a 22 percent increase in mortality among trees in the California Sierra Nevadas to a temperature-driven increase in drought. The research, published in the October issue of *Ecology Letters*, suggests that California forests "may be poised for die-back if future climates continue to feature rising temperatures without compensating increases in precipitation."

U.S. Geological Survey scientists, Phillip J. van Mantgem and Nathan L. Stephenson, measured the annual mortality of 21,338 trees in Sequoia and Yosemite national parks for more than two decades. The duration and extent of the study allowed the researchers to "correlate short-term variations in mortality with short-term variations in climate and other potential drivers of change" and assign "proximate causes of tree death... with a high degree of confidence, helping [them] identify probable mechanisms driving changes in mortality."

Van Mantgem and Nathan L. Stephenson found that mortality rates increased for all trees combined, across most elevational zones and for each of two dominant types of conifers. The deaths were linked to changes in water availability.

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