

Nature Environment and Pollution Technology

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Design and Nature 2016

13th to 15th September 2016

New Forest, United Kingdom

Website: <http://www.wessex.ac.uk/16-conferences/design-and-nature-2016.html>

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Water Pollution 2016

27th to 29th June 2016, Venice, Italy

Website: <http://www.wessex.ac.uk/16-conferences/water-pollution-2016.html>

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Ecology and Safety 2016, 25th International Conference

23rd to 27th June 2016

Elenite, Burgas, Bulgaria

Website: <http://www.sciencebg.net/en/conferences/ecology-and-safety/>

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17th International Conference on Green and Sustainable Technology (GSUS)

15-16 June, 2016, Singapore

15th to 16th June 2016, Singapore

Website: <http://singaporegsus.com/>

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8th International Congress of Environmental Research

27th to 28th July 2016, Luebeck, Schleswig-Holstein, Germany

Website: <http://www.icer16.jerad.org/index.php>

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EurAsia Waste Management Symposium

2nd to 4th May 2016, Istanbul, Turkey

Website: <http://www.eurasiasyposium.com>

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Sustainable Development and Planning 2016

6th to 8th December 2016, Penang, Malaysia

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International Conference on Sustainable Materials, Design and Applications 2016 (ICSMDA 2016)

18-19, March, 2016, Perundurai, T.N., India

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ENVIRONMENTAL NEWS

Annual Antarctic ozone hole larger and formed later in 2015

On Oct. 2, 2015, the ozone hole expanded to its peak of 28.2 million square kilometers (10.9 million square miles), an area larger than the continent of North America. Throughout October, the hole remained large and set many area daily records. Unusually cold temperature and weak dynamics in the Antarctic stratosphere this year resulted in this larger ozone hole. In comparison, last year the ozone hole peaked at 24.1 million square kilometers (9.3 million square miles) on Sept. 11, 2014. Compared to the 1991-2014 period, the 2015 ozone hole average area was the fourth largest.

“While the current ozone hole is larger than in recent years, the area occupied by this year’s hole is consistent with our understanding of ozone depletion chemistry and consistent with colder than average weather conditions in Earth’s stratosphere, which help drive ozone depletion,” said Paul A. Newman, chief scientist for Earth Sciences at NASA’s Goddard Space Flight Center in Greenbelt, Maryland.

The ozone hole is a severe depletion of the ozone layer above Antarctica that was first detected in the 1980s. The Antarctic ozone hole forms and expands during the Southern Hemisphere spring (August and September) because of the high levels of chemically active forms of chlorine and bromine in the stratosphere. These chlorine- and bromine-containing molecules are largely derived from human-made chemicals that steadily increased in Earth’s atmosphere up through the early 1990s.

“This year, our balloon-borne instruments measured nearly 100 percent ozone depletion in the layer above South Pole Station, Antarctica, that was 14 to 19 kilometers (9 to 12 miles) above Earth’s surface,” said Bryan Johnson, a researcher at NOAA’s Earth System Research Laboratory in Boulder, Colorado. “During September we typically see a rapid ozone decline, ending with about 95 percent depletion in that layer by October 1. This year the depletion held on an extra two weeks resulting in nearly 100 percent depletion by October 15.”

The ozone layer helps shield Earth from potentially harmful ultraviolet radiation that can cause skin cancer, cataracts, and suppress immune systems, as well as damage plants. The large size of this year’s ozone hole will likely result in increases of harmful ultraviolet rays at Earth’s surface, particularly in Antarctica and the Southern Hemisphere in the coming months.

Ozone depletion is primarily caused by human-made compounds that release chlorine and bromine gases in the stratosphere. Beginning in 1987, the internationally agreed-upon Montreal Protocol on Substances that Deplete the Ozone Layer has regulated these ozone-depleting compounds, such as chlorine-containing chlorofluorocarbons used in refrigerants and bromine-containing halon gases used as fire suppressants. Because of the Protocol, atmospheric levels of these ozone depleting compounds are slowly declining. The ozone hole is expected to recover back to 1980 levels in approximately 2070.

This year, scientists recorded the minimum thickness of the ozone layer at 101 Dobson units on October 4, 2015, as compared to 250-350 Dobson units during the 1960s, before the Antarctic ozone hole occurred. Dobson units are a measure of the overhead amount of atmospheric ozone.

The satellite ozone data come from the Dutch-Finnish Ozone Monitoring Instrument on NASA’s Aura satellite, launched in 2004, and the Ozone Monitoring and Profiler Suite instrument on the NASA-NOAA Suomi National Polar-orbiting Partnership satellite, launched in 2011. NOAA scientists at the South Pole station monitor the ozone layer above that location by using a Dobson spectrophotometer and regular ozone-sonde balloon launches that record the thickness of the ozone layer and its vertical distribution. Chlorine amounts are estimated using NOAA and NASA ground measurements and observations from the Microwave Limb Sounder aboard NASA’s Aura satellite. These satellites continue a data record dating back to the early 1970s.

October 29, 2015, Science News

ENVIRONMENTAL NEWS

Here's a softer side to the disruptive weather phenomenon known as El Nino: An enormous blanket of colorful flowers has carpeted Chile's Atacama desert, the most arid in the world

The cyclical warming of the central Pacific may be causing droughts and floods in various parts of the world, but in the vast desert of northern Chile it has also caused a vibrant explosion of thousands of species of flowers with an intensity not seen in decades.

Yellows, reds, purples and whites have covered the normally stark landscapes of the Atacama, where temperatures top 40 degrees Celsius (104 Fahrenheit) this time of year.

From violet-and-white Chilean bell flowers, or "countryside sighs" (*Nolana paradoxa*), to red "lion claws" (*Bomarea ovallei*), to yellow *Rhodophiala rhodolirion*, they have filled the normally pale desert valleys with rivers of color.

"This year has been particularly special, because the amount of rainfall has made this perhaps the most spectacular of the past 40 or 50 years," said Raul Cespedes, a desert specialist at the University of Atacama.

October 30, 2015, Times of India

Climate change set to create unbearable heatwaves in Middle East cities

Heatwaves in Middle East cities, including Abu Dhabi and Dubai, are on track to become unbearably hot for humans by the end of the century if climate change continues, scientists found. Communities in the Philippines are struggling to recover from Typhoon Koppu's floods, while floods in Texas linked to Hurricane Patricia could leave the state with a hefty bill. Laos plans to expand its hydropower capacity to increase electricity exports. Tar sand operations in Canada are withdrawing too much water from the Athabasca River, according to an environmental group. Residents of Florida say water is the state's biggest environmental threat.

October 27, 2015, The Stream

South Africa begins water restrictions amid drought

A severe drought in South Africa forced utilities to put in place water restrictions for Johannesburg and other major cities, while state officials in drought-hit California prepared for floods from El Nino. Dry weather in Europe is creating a shortage of oil in some inland countries due to low river levels. Residents of small Pacific island nations may lose drinking water before they are flooded by rising sea levels. The World Health Organization plans to vaccinate thousands of people in Iraq against cholera.

October 29, 2015, The Stream

ENVIRONMENTAL NEWS

Harmful algal blooms and climate change: Preparing to forecast the future

The findings of the international workshop on HABs and climate Change were published in the journal *Harmful Algae*. The workshop was organized under the auspices of the North Pacific Marine Science Organization (PICES) and the Global Ecology and Oceanography of Harmful Algal Blooms (GEOHAB) and endorsed by the International Council for the Exploration of the Sea (ICES). The central findings were that while there are reasons to expect HABs to increase with climate change, poor scientific understanding seriously limits forecasts, and current research strategies will not likely improve this capacity.

Empirical observations suggest cause for grave concern. Northward expansion of phytoplankton species, wider seasonal windows for HAB development, and an increasing prevalence of HABs worldwide all indicate a future with greater problems.

The impacts of algal blooms are extensive. Although phytoplankton blooms normally fuel productive ecosystems, some blooms create very low oxygen concentrations in bottom waters, killing or driving out marine fish or benthic organisms. Others produce potent neurotoxins that threaten ecosystems and human health. Evidence suggests that these destructive blooms, called red tides in the past but more properly “harmful” algal blooms, are increasing in frequency and severity, possibly from human causes. “There is growing concern among scientists that climate change may exacerbate this trend,” said Prof. Mark Wells, University of Maine and organizer of the workshop. “We are frustrated by the inadequate national research focus to determine the likelihood of these worst-case scenarios.”

The combined effects of increasing temperature and atmospheric CO₂ are affecting ocean surface temperatures, nutrients, light, and ocean water acidity, all of which affect marine ecosystems. These factors influence not just the intensity of algal blooms but also their composition. The question is whether climate change will enable harmful species to outcompete other phytoplankton. “It is critically important that we learn as much as possible, as precisely as possible, to fill the critical gap in knowledge between the current and the future phytoplankton community structure,” says Professor Charles Trick, Western University, Canada.

The challenge is that the mechanisms driving the development of most HABs are only partially understood. “We need to build on and link our patchwork knowledge of HABs to the forecast patterns of climate change if we are to better prepare society for future HAB scenarios,” said Wells.

The intense toxic phytoplankton blooms off the west coast of North America this summer appear to be associated with unusual warming-related conditions. “Does this large scale harmful algal bloom provide a window into the future?” said Dr. Vera Trainer of NOAA Fisheries’ Northwest Fisheries Science Center. “While it still is unclear, there is reason for substantial concern.”

The workshop participants developed several urgent recommendations on research priorities. These include re-orientating research to study how harmful species interact in planktonic communities, focus more intensive study on key organisms, emphasize developing ecological and forecast models, and strengthen linkages among global, national and regional observation programs.

“Past research has brought great understanding of individual HAB organisms; future work must concentrate on how these harmful species fit into their ecosystems. It is the most significant coastal challenge facing society today,” said Trick.

Although workshop participants were optimistic, they urged fundamental shifts in HAB research so that science can better inform public debate over climate change effects on the oceans, rather than just seeking to explain destructive patterns after they develop.

October 26, 2015, Science News

ENVIRONMENTAL DAYS TO CELEBRATE IN 2016

S. No.	Date	Environmental Day
1	2-2-2016	World Wetlands Day
2	27-2-2016	International Polar Bear Day
3	3-3-2016	World Wildlife Day
4	21-3-2016	International Day for Forests
5	22-3-2016	World Water Day
6	22-4-2016	Earth Day
7	9-5-2016	World Migratory Bird Day
8	(11-15)-5-2016	Walk to Work Week
9	22-5-2016	International Day for Biological Diversity
10	5-6-2016	World Environment Day
11	8-6-2016	World Oceans Day