

# Nature Environment and Pollution Technology

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### **Water resources and wetlands**

11th to 13th September 2014

Tulcea, Romania

**Website:** <http://limnology.ro/water2014/abstract.html>

**Contact person:** Petre Bretcan

### **9th International Soil Science Congress on “The Soul of Soil and Civilization”**

14th to 16th October 2014

Side, Antalya, Turkey

**Website:** <http://www.soil2014.com>

**Contact person:** Ridvan Kizilkaya

### **Third International Conference on Climate Change & Social Issues 2014**

28-29 July 2014, Colombo, Sri Lanka

**Website:** <http://www.globalclimate.info/>

**Contact person:** Prabhath Patabendi

### **4th International Chemical and Environmental Engineering Conference**

27th to 29th November 2014,

Kuala Lumpur, Malaysia

**Website:** <http://sciconference.net/iceec/index.php>

**Contact person:** Inamullah Bhatti

### **National Conference on Environment and Biodiversity of India**

4th to 5th October 2014

New Delhi, Delhi, India

**Website:** <http://www.ebiconference.com>

**Contact person:** J.S. Khuraijam

### **Radiocarbon in the Environment**

18th to 22nd August 2014

Belfast, Northern Ireland, United Kingdom

**Website:** <http://www.qub.ac.uk/sites/14C/>

**Contact person:** Evelyn Keaveney

### **ENVIRO'14**

17th to 19th September 2014

Adelaide, South Australia, Australia

**Website:** <http://www.enviroconvention.com.au>

**Contact person:** ENVIRO'14 Secretariat

### **EcoFiL 2014 - Ecology of Fish in Lakes and Reservoirs**

8-11 September 2014

Ceske Budejovice, Czech Republic

**Website:** <http://www.ecofil2014.wz.cz/>

**Contact person:** Katerina Soukalova

### **22nd International Conference on Modelling, Monitoring and Management of Air Pollution (Air Pollution 2014)**

7-9 July 2014, Rijeka Croatia (Hrvatska)

**Website:** <http://www.wessex.ac.uk/14-conferences/air-pollution-2014.html>

**Contact Person:** Genna West

**Email Address:** [gwest@wessex.ac.uk](mailto:gwest@wessex.ac.uk)

### **Uranium Mining and Hydrogeology 2014 International Conference (UMH VII)**

21st to 25th September 2014,

Freiberg, Saxony, Germany

**Website:** <http://tu-freiberg.de/umh-vii-2014>

**Contact person:** Alireza Arab

### **NCGG7 - Seventh International Symposium on Non-CO2 Greenhouse Gases (NCGG7)**

5th to 7th November 2014

Amsterdam, Netherlands

**Website:** <http://ncgg.info>

**Contact person:** Secretariat

### **Eleventh International Conference on Environmental, Cultural, Economic & Social Sustainability**

21st to 23rd January 2015

Copenhagen, Denmark

**Website:** <http://onsustainability.com/2015-conference>

**Contact person:** Conference Director

### **The 9th Conference on Sustainable Development of Energy, Water and Environment Systems**

20-27 September 2014

Venice/Istanbul, Italy

**Website:** <http://www.mediterranean2014.sdewes.org/index.php>

**Contact person:** Prof. Zvonimir Guzovic

## Conferences/Symposia/Workshops on Environment

### **WWEM, Water, Wastewater and Environmental Monitoring**

5-6 November 2014

Telford International Centre, St. Quentins Gate,  
Telford, TF3 4JH, United Kingdom

**Website:** <http://atnd.it/6117-0>

**Contact person:** Marcus Pattison

### **5th International Conference on Energy and Sustainability (Energy and Sustainability (2014))**

16-18 December, 2014 Kuala Lumpur, Malaysia

**Website:** <http://www.wessex.ac.uk/14-conferences/energy-and-sustainability-2014.html>

**Contact Person:** Christine Young

### **The International Conference on Contaminated Land, Ecological Assessment and Remediation (CLEAR -2014)**

5th to 8th October 2014

Chuncheon, Korea (south)

**Website:** <http://www.clear2014.org/>

**Contact person:** Professor Yong Sik Ok,  
Kangwon National University Korea

### **Wetlands Biodiversity and Services: Tools for Socio-Ecological Development**

14th to 18th September 2014

Huesca, Aragon, Spain

**Website:** <http://www.wetlands2014.eu>

**Contact person:** Francisco A. Comín

### **ENRIC 2014: Global Climate Change and Sustainability Pathways**

6th to 7th November 2014

Bangkok, Thailand

**Website:** <http://www.enrjournal.com/ENRIC/>

**Contact person:** Mrs. Sirinapat Charmondusit

### **International Conference on Civil and Environmental Engineering (ICOCEE – Cappadocia 2015)**

20th to 23rd May 2015

Nevsehir, Turkey

**Website:** <http://www.icocee.org/>

**Contact person:** Serkan Sahinkaya

### **Fifth International Symposium on Energy from Biomass and Waste**

17th to 20th November 2014

Venice, Italy

**Website:** <http://www.venicesymposium.it>

**Contact person:** Cinzia Mamberti

### **4th International Conference on Environmental and Agriculture Engineering (ICEAE 2014)**

6th to 7th August 2014

Singapore

**Website:** <http://www.iceae.org/>

**Contact person:** Ms. Flora Feng

### **7th International Conference on Climate Change: Impacts And Responses**

10th to 11th April 2015

Vancouver, British Columbia, Canada

**Website:** <http://on-climate.com/the-conference-2015>

**Contact person:** Conference Director

### **International Conference On Chemical, Environment & Biological Sciences (CEBS-2014)**

17th to 18th September 2014

Kuala Lumpur, Malaysia

**Website:** <http://www.iicbe.org/2014/09/20/49>

**Contact person:** Conference Secretary-CEBS-2014

### **Going Green - Care Innovation 2014**

17th to 20th November 2014

Vienna, Austria

**Website:** <http://www.care-electronics.net/CI2014/>

**Contact person:** Markus Rothensteiner

### **Radiocarbon in the Environment**

18th to 22nd August 2014

Belfast, Northern Ireland, United Kingdom

**Website:** <http://www.qub.ac.uk/sites/14C/>

**Contact person:** Evelyn Keaveney

### **International Conference on Fisheries Sciences 2014**

28th to 29th July 2014, Colombo, Sri Lanka

**Website:** <http://www.marinfish.org>

**Contact person:** Prabhath Patabendi

## ENVIRONMENTAL CALENDAR FOR 2014

### February

- 2nd : World Wetlands Day
- 28th : National Science Day

### March

- 21st : World Forestry Day
- 22nd : World Water Day
- 23rd : World Meteorological Day
- 31st : Earth Hour

### April

- 18th : World Heritage Day
- 22nd : Earth Day
- 27th : Save the Frogs Day

### May

- 14-15th : World Migratory Bird Day
- 18th : International Museum Day
- 22nd : International Day for Biological Diversity
- 23rd : World Turtle Day

### June

- 1st : National Whale Day
- 5th : World Environment Day
- 8th : World Oceans Day
- 15th : Global Wind Day
- 17th : World Day to Combat Desertification and Drought

### July

- 11th : World Population Day
- 28th : National Tree Day

### August

- 9th : International Day for World Indigenous People
- 12th : International Youth Day

### September

- 16th : International Day for the Preservation of the Ozone Layer
- 17th : World Parks Day
- 18th : World Water Monitoring Day
- 22nd : World Car-Free Day

### October

- 1st : World Habitat Day
- 4th : World Animal Day
- 17th : International Day for the Eradication of Poverty

### November

- 6th : International Day for Preventing the Exploitation of the Environment in War and Armed Conflict
- 21st : World Fisheries Day

### December

- 3rd : International Day of People with Disability
- 5th : International Volunteer Day
- 10th : Human Rights Day
- 11th : International Mountain Day

## ENVIRONMENTAL NEWS

### **Fertilizer Limits Sought Near Lake Erie to Fight Spread of Algae**

In a report on the algae problem, the agency, the International Joint Commission, said that fertilizer swept by rains from farms and lawns was a major source of phosphorus in the lake. It recommended that crop insurance be tied to farmers' adoption of practices that limit fertilizer runoff, and that Ontario, Ohio and Pennsylvania ban most sales of phosphorus-based lawn fertilizers.

The commission, which studies and regulates water uses in streams and lakes along the border of the United States and Canada, urged Michigan and Ohio to invoke the Clean Water Act to limit phosphorus pollution from farmland as opposed to from factories and other places where pollution can be pinpointed and measured.

Phosphorus — and especially phosphorus in fertilizer, which is designed to be easily absorbed by plants — is the source of the algal blooms, some of which are so toxic that they have killed dogs and sickened swimmers. Beyond clotting the lake's surface, decomposing algae consumes the oxygen in the lake's deep center each summer, creating a dead zone where deepwater fish that are essential to the lake's food chain cannot exist.

National and state governments rid the lake of algae in the 1980s, ordering big cuts in phosphorus pollution from factories and sewage plants. But the blooms returned in the late 1990s as farmers started applying fertilizer on frozen fields in the winter, and spreading or spraying it instead of injecting it into the ground.

In 2011, heavy spring rains washed so much phosphorus into the lake that the succeeding summer, algal bloom, at 1,920 square miles, was three times bigger than any previous one.

That and other large blooms have crippled tourism in a region where sport fishing and lake recreation are major industries, and they have forced towns and cities to filter and even shut off drinking water. The multibillion-dollar commercial fishing industry could be hit hard. The lake's growing dead zone has prompted deepwater fish to move upward in search of oxygen, only to run into warmer waters that they find hard to tolerate. Deepwater fish such as perch — a favorite food of one big commercial fish, the walleye — could suffer if the dead zone continues to expand.

Although the sources of phosphorus range from leaky septic tanks to storm sewers to ordinary rainfall, the biggest contributor is farming, the report indicates — and the biggest farm source is the fields along the Maumee River watershed in Ohio and Indiana.

Both the United States and Canada have set targets for reducing Erie's phosphorus load by 2018, but the commission's report states that those targets are too low. To return the lake to the mostly algae-free state it enjoyed in the mid-1990s, it states, the Maumee's phosphorus runoff must be cut by 39 percent.

Both governments and private organizations conduct programs that encourage farmers to voluntarily limit fertilizer runoff, but regulatory limits are mostly nonexistent. The commission's report urges a mix of voluntary and legal programs to achieve large reductions by 2022, with a focus on dissolved reactive phosphorus, the sort used in fertilizers.

For homeowners, the report recommends that Ontario, Ohio and Pennsylvania ban the sale of phosphorus-based lawn fertilizers except during the first growing season of new lawns, or when soil tests show that the phosphorus content is too low. It also says that Michigan and Ontario should require inspections of septic tanks to ensure they do not leak.

*The New York Times, 27-2-2014*



## ENVIRONMENTAL NEWS

### Arctic sea ice melting one warm river at a time

A new NASA study finds that warmer than normal waters from rivers draining into the Arctic Ocean each summer are eating away at the sea ice in the Arctic Ocean. Led by Son Nghiem of NASA's Jet Propulsion Laboratory in Pasadena, Calif., the research team used satellite data to measure the surface temperature of the waters discharging from Canada's McKenzie River into the Beaufort Sea during the summer of 2012 and noticed surface waters being warmed suddenly due to the sudden influx of warm river water. This warmed the surface layers of the ocean, which in turn increased the melting of sea ice.

*Environmental News Network, March 7, 2014*

### Genome of sesame sheds new lights on oil biosynthesis

Researchers from Oil Crops Research Institute of the Chinese Academy of Agricultural Sciences, BGI, University of Copenhagen and other institutes have successfully cracked the genome of high oil content crop sesame, providing new lights on the important stages of seed development and oil accumulation, and potential key genes for sesamin production. The joint efforts made sesame become the second Lamiales to be sequenced along with the former published minute genome of *Utricularia gibba*. The latest study was published online in *Genome Biology*.

Sesame, *Sesamum indicum* L., is considered as the queen of oilseeds for its high oil content and quality. It is grown widely in tropical and subtropical areas as an important source of oil and protein. Compared to other eatable oil crops such as soybean, rapeseed, peanut and olive, sesame has innate superiority for its high oil content (~55% of dry seed), and thus is an attractive model for studying lipid biosynthesis. However, currently only limited genomic data of sesame is available.

In this study, researchers presented a high-quality draft genome of the sesame genotype 'Zhongzhi No. 13', an elite cultivar in China been planted over the past ten years. After data process, the assembled sesame genome size is about 337 Mb, with a total of 27,148 genes. The result highlighted the absence of the Toll/interleukin-1 receptor domain in resistance genes, and suggested that this may be a new paradigm in elucidating the interaction of resistance genes along with diseases.

To explore the molecular mechanism of lipid biosynthesis, researchers conducted comparative genomic and transcriptomic analyses and found an expansion on type 1 lipid transfer genes by tandem duplication, a contraction on lipid degradation genes, and the differential expression of essential genes in the triacylglycerol biosynthesis pathway, particularly in the early stage of seed development. Researchers further resequenced 29 sesame accessions from 12 countries to investigate the genetic diversity of lipid-related genes.

Sesamin is an oil-soluble furofuran lignan typically present in sesame seed. Numerous studies on rats and mice have suggested various health benefits of sesamin. This compound is known to promote normalize blood pressure, lower cholesterol, protect the liver, and contribute to weight loss. Sesamin biosynthesis involves two key genes encoding dirigent protein (DIR) and piperitol/sesamin synthase (PSS), respectively. In this study, researchers found that DIR homologues were present in sesame and tomato, but the PSSs are only detected in sesame, indicating the genetic foundation for the sesame-specific product.

*Science Daily, March 7, 2014*

## ENVIRONMENTAL NEWS

### **Crop Pests Spread Towards Poles**

A new study has revealed that global warming is resulting in the spread of crop pests towards the North and South Poles at a rate of nearly 3 km a year. The study, carried out by researchers at the University of Exeter and the University of Oxford, shows a strong relationship between increased global temperatures over the past 50 years and expansion in the range of crop pests.

Currently 10-16% of global crop production is lost to pests. Crop pests include fungi, bacteria, viruses, insects, nematodes, viroids and oomycetes. The diversity of crop pests continues to expand and new strains are continually evolving.

Losses of major crops to fungi, and fungi-like microorganisms, amount to enough to feed nearly nine percent of today's global population. The study suggests that these figures will increase further if global temperatures continue to rise as predicted.

The spread of pests is caused by both human activities and natural processes but is thought to be primarily the result of international freight transportation. The study suggests that the warming climate is allowing pests to become established in previously unsuitable regions.

For example, warming generally stimulates insect herbivory at higher latitudes as seen in outbreaks of the Mountain pine beetle (*Dendroctonus ponderosae*) that has destroyed large areas of pine forest in the US Pacific Northwest.

In addition, the rice blast fungus which is present in over 80 countries, and has a dramatic effect both on the agricultural economy and ecosystem health, has now moved to wheat. Considered a new disease, wheat blast is sharply reducing wheat yields in Brazil.

Dr Dan Bebber from the University of Exeter said: "If crop pests continue to march polewards as the Earth warms the combined effects of a growing world population and the increased loss of crops to pests will pose a serious threat to global food security."

The study, funded by the HSBC Climate Partnership and Earthwatch, used published observations of the distribution of 612 crop pests collected over the past 50 years. It revealed that the movement of pests north and south towards the poles, and into new previously un-colonised regions, corresponds to increased temperatures during that period.

*ENN September 3, 2013*

### **A new renewable energy source? Device captures energy from Earth's infrared emissions to outer space**

When the sun sets on a remote desert outpost and solar panels shut down, what energy source will provide power through the night? A battery, perhaps, or an old diesel generator? Perhaps something strange and new. Scientists now envision a device that would harvest energy from Earth's infrared emissions into outer space. Heated by the sun, our planet is warm compared to the frigid vacuum beyond. Thanks to recent technological advances, the researchers say, that heat imbalance could soon be transformed into direct-current (DC) power, taking advantage of a vast and untapped energy source.

*Science Daily March 4, 2014*

## ENVIRONMENTAL NEWS

### **Virus Locked In Siberian Ice For 30,000 Years Is Revived In Lab**

Scientists at a laboratory in France have thawed out and revived an ancient virus found in the Siberian permafrost, making it infectious again for the first time in 30,000 years.

The giant virus known as *Pithovirus sibericum* was discovered about 100 feet deep in coastal tundra. The pathogen infects tiny amoebas — simple, one-celled organisms.

It isn't dangerous to humans, but its reanimation raises questions about what else might be lurking under the ice, says the French and Russian team that brought it back to life. Their work is in the latest issue of *Proceedings of the National Academy of Sciences*, or PNAS.

“The revival of such an ancestral amoeba-infecting virus ... suggests that the thawing of permafrost either from global warming or industrial exploitation of circumpolar regions might not be exempt from future threats to human or animal health,” the scientists write.

“If you start having industrial explorations, people will start to move around the deep permafrost layers,” Claverie says. “Through mining and drilling, those old layers will be penetrated and this is where the danger is coming from.” He adds that ancient strains of the smallpox virus, which was declared eradicated 30 years ago, could pose a risk.

“If it is true that these viruses survive in the same way those amoeba viruses survive, then smallpox is not eradicated from the planet — only [from] the surface,” Claverie says. “By going deeper, we may reactivate the possibility that smallpox could become again a disease of humans in modern times.”

The newly discovered virus belongs to a class of giants discovered just a decade ago. Because of its size (1.5 microns in length), it can be seen under a microscope, unlike other types of viruses.

*March 04, 2014, NPR*

### **Here's what to do with all that extra CO<sub>2</sub> you've got hanging around**

Liquid Light, a New Jersey tech startup, has developed a CO<sub>2</sub> converter that can transform emissions into feedstock for chemical-based products. Plastics, adhesives, and a whole slew of other products can now count recycled greenhouse gases as one of their crucial ingredients. The converter operates using low-energy catalytic electrochemistry. Inside the converter are catalysts that can produce more than 60 carbon-based chemicals, from just CO<sub>2</sub> and electricity. By linking many of these devices together, a chemical plant could convert CO<sub>2</sub> into hundreds of thousands of tonnes of products in a year.

Liquid Light's first market product will be ethylene glycol, which is a key ingredient in both antifreeze and the polyester used to make Rick Ross' favorite tracksuit. The company estimates that it could repurpose 31 million tonnes of CO<sub>2</sub> by making ethylene glycol.

*New Scientist*