



Climate change may mean more spring snowstorms in the future

The Washington Post, 21 March 2018

Another week, another nor'easter — the fourth powerful coastal storm of March 2018 has the big Northeast cities in its crosshairs. The region is notorious for vicious winter tempests, but four bomb cyclones in one month seems a bit much, especially when one comes on the first day of spring. March roared in like a lion. What happened to the lamb?

My New England neighborhood is usually peaceful this time of year; the quiet interrupted only by honks of Canada geese, wind in the towering white pines and the occasional hoot of a great horned owl. Not so much this winter. Rumbling generators, whining chain saws and rattling snowplows lasted many days after each pasting by Mother Nature. We New Englanders love to talk about weather, and we revel in our toughness, but even that is different this year. After comparing stories of fallen trees and property damage, the conversation increasingly shifts to "Why?" Is there an explanation for this relentless, persistent parade of destructive cyclones, storms so strong that if you didn't check the calendar you'd easily mistake them for hurricanes on the weather map? Perhaps. Some climate change skeptics always use snowstorms to argue that the planet is not actually warming. President Trump, during a sharp December cold snap on the East Coast, suggested that "perhaps we could use a little bit of that good old Global Warming," which he has called a hoax in the past. Last April, conservative news outlets rejoiced when snow canceled a march in Colorado to protest Trump's climate policies. But rather than being evidence that climate change isn't happening, the extreme weather the United States has seen this month should be viewed as a sign that it is. Although the atmosphere is a complex beast, researchers are fingerprinting a variety of ways that those increasing greenhouse gases are making winter storms more powerful and more likely.

Pollution to blame for heavy rain, cloud bursts in Indo-Gangetic plains: Study

Hindustan Times., 07 March 2018

Aerosols and particulate matter in polluted air are inducing the formation of larger clouds that trigger bursts of heavy rain in the Indo-Gangetic plains, according to the findings of a study by researchers at the Indian Institute of Technology (IIT)- Kanpur and the Pacific Northwest National Laboratory in the US.

For the study, the researchers simulated a storm over Kanpur city and found that the urban core and areas downwind from the city received more rainfall compared to upwind areas.

Using a weather research and forecasting model, they found similar patterns in Delhi, Agra, the Durgapur-Asansol region, and Kolkata, all located in the Indo-Gangetic plain where particulate matter pollution is at severely hazardous levels.

"The increased releases of latent heat in a polluted environment invigorate the cloud systems to generate more ice hydrometeors (ice particles in the atmosphere) and eventually more rain," the researchers wrote in a paper accepted by the *Journal of Geophysical Research*, the flagship publication of the American Geophysical Union.

The large agrarian population in the Indo-Gangetic plains is heavily dependent on the monsoon to irrigate farm holdings. Extreme rainfall interferes with sowing and harvesting patterns, adversely affecting crop productivity and the storage of harvest.

Aerosols are solid particles or liquid droplets suspended in the atmosphere. A higher aerosol load means there are more nuclei for water vapour to condense over, delaying the onset of warm rain (or rain caused when water particles coalesce or come together).

"These aerosols modify clouds and once they cross a certain threshold, they delay and redistribute rainfall in cities," said S N Tripathi, a co-author and professor at IIT-Kanpur.



Goodyear's Moss-Filled Tires Are Here to Save the Environment

Futurism, 08 March 2018

At the 2018 Geneva International Motor Show, the tire manufacturing company Goodyear debuted a new type of tire that aims to reduce the amount of carbon dioxide in the air.

The concept behind new tires, named Oxygene, is unique — it involves embedding living moss within the tires' sidewalls. The moss-filled tires not only absorb moisture from roads while in motion, but can also pull carbon dioxide out of the air to fuel the moss' photosynthesis. A byproduct of photosynthesis? Clean oxygen.

In a city roughly the size of Paris, Goodyear estimates these tires could produce 3,000 tons of oxygen and absorb over 4,000 tons of carbon dioxide per year.

To combat air pollution, Goodyear has debuted a tire design that uses moss to both power the tires' internal sensors and absorb carbon dioxide from the air.

At the 2018 Geneva International Motor Show, the tire manufacturing company Goodyear debuted a new type of tire that aims to reduce the amount of carbon dioxide in the air.

The concept behind new tires, named Oxygene, is unique — it involves embedding living moss within the tires' sidewalls. The moss-filled tires not only absorb moisture from roads while in motion, but can also pull carbon dioxide out of the air to fuel the moss' photosynthesis. A byproduct of photosynthesis? Clean oxygen.

In a city roughly the size of Paris, Goodyear estimates these tires could produce 3,000 tons of oxygen and absorb over 4,000 tons of carbon dioxide per year.

Goodyear explains that it wanted to focus more on how their tires would handle material waste, emissions, and energy loss. The end result is a tire with several interesting features that, if implemented on a greater scale, could significantly reduce carbon dioxide emissions.

Moss-covered CityTree bench designed to combat urban pollution

Dezeen., 21 March 2018

A mossy "living wall" with the pollution-absorbing power equivalent to hundreds of trees has been installed in London's Piccadilly Circus in a bid to combat the city's unsafe air quality levels.

Designed by German startup Green City Solutions, the CityTree is billed by the company as the world's first intelligent biological air filter. It was created in response to research conducted by the startup, which revealed that approximately 9,000 Londoners and 50,000 Britons die prematurely each year from respiratory, cardiovascular and other illnesses associated with pollutants.

Each bench is equipped with a so-called "living wall", which is filled with a variety of moss types that naturally absorb pollution. The whole design takes up a fraction of the space that would be needed to yield the same air-purifying results using 275 real trees.

"The ability of certain moss cultures to filter out and absorb air pollutants such as particulates and nitrogen dioxide makes them ideal air purifiers — but in towns and cities where air pollution presents the greatest challenge, mosses are barely able to survive, due to their need for constant water and shade," said the firm.

CityTree, therefore, uses protective, shade-giving plants to create an environment where the specially cultivated mosses can thrive in the urban conditions.

Powered by solar panels, the living structure also collects rainwater and automatically redistributes it using an inbuilt irrigation system.

The wall of irrigated mosses also generates a cooling effect on the surrounding area, helping to combat the "urban heat island effect."

The CityTree is not the first installation designed to combat pollution in urban areas — Dutch designer Daan Roosegaarde created a Smog Free Tower, which he describes as "the largest air purifier in the world."

**China's steps to fight pollution****NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW****China Declared a War on Pollution and Four Years Later It's Winning****EPIC India, 12 March 2018**

As China marks its four-year anniversary of declaring "war against pollution," a new analysis using data from more than 200 government monitors throughout the country finds air pollution has decreased across the board in China's most populated areas. Cities on average have cut concentrations of fine particulates (PM_{2.5})—widely considered the deadliest form of air pollution—by 32 percent in just four years.

"The data is in—China is winning its war against pollution," says Michael Greenstone, the Milton Friedman Professor in Economics and director of the Energy Policy Institute at the University of Chicago (EPIC), who conducted the analysis. "By winning this war, China is due to see dramatic improvements in the overall health of its people, including longer lifespans, if these improvements are sustained." The most populated cities saw some of the greatest declines: Beijing cut air pollution by 35 percent; Shijiazhuang, the Hebei Province's capital city, cut pollution by 39 percent; and Baoding, China's most polluted city as of 2015, cut pollution by 38 percent. If China sustains these reductions, Greenstone finds that residents would see their lifespans extended by 2.4 years on average. The roughly 20 million residents in Beijing would live 3.3 years longer, while those in Shijiazhuang and Baoding would add 5.3 years and 4.5 years onto their lives, respectively. These improvements in life expectancy would be experienced by people of all ages, not just the young and old. The analysis is the first in a series highlighting pollution challenges and improvements globally, drawing from the method underlying the Air Quality Life Index™, which EPIC introduced last year and plans to fully release in the coming months. The Air Quality Life Index, also known as AQLI™, shows the potential gain in life expectancy communities could see if their pollution concentrations are brought into compliance with World Health Organization (WHO) or national standards.

NPC 2018: China to step up fight against emissions, pollution in bid to protect 'blue skies', 'green land'**The Straits Times., 05 March 2018**

BEIJING - China will step up its fight against pollution this year, moving to further cut emissions that have befouled its air, water and soil.

Delivering the work report of the government on Monday (March 5), Chinese Premier Li Keqiang said that this year, the country would target to cut energy consumption per unit of gross domestic product by 3 per cent and continue to slash levels of major pollutants.

It would cut sulphur dioxide and nitrogen dioxide emissions by 3 per cent, and push polluting industries and diesel trucks to cut emissions, said Mr Li.

Cuts of 2 per cent in chemical oxygen demand and ammoniacal nitrogen emissions, a toxic pollutant found in landfills and waste products, would also be pushed through.

Speaking to 2,970 delegates from the National People's Congress (NPC), as the legislative body kicked off its annual meetings at the Great Hall of the People, Mr Li vowed that the rates of PM_{2.5} - a key smog indicator - will continue to decline.

"We all need to join hands and take action to build a beautiful China where the skies are blue, the land is green, and the waters are clear," he said. He unveiled a raft of environmental protection measures to clean up and restore the environment, including the planting of more than 6.67 million hectares of forest. China is the world's top polluter, where 40 years of breakneck growth have contaminated its farmland, rivers and air.

In 2014, Mr Li declared war on pollution during the opening of that year's NPC meetings. Since then, the country has clamped down on polluters, closing and fining factories in a bid to clean up the environment.

Mr Li said that in the past five years, notable progress had been made, pointing out that rates of PM_{2.5} dropped by more than 30 per cent in key areas.

**Bombay HC seeks report on charges of ecological damage by builder****The Times of India, 27 March 2018**

MUMBAI: Bombay high court on Monday directed that a report by a two-member committee appointed to check allegations of ecological damage by developers of Nahar Amrit Shakti township in Chandivli be placed before it. A division bench of Justices Abhay Oka and Riyaz Chagla was hearing a public interest litigation filed by local resident, Prakash Agrawal, who alleged there was no environmental clearance for the project and a hillock was damaged by the builders. The court has scheduled the matter for directions on April 4.

"Between 2004-17, the developers constructed an area of over 5 lakh sq metres without required prior environmental clearance and social impact assessment in violation of principles of sustainable development," said the PIL. "Large structures have been constructed without necessary permission. The developer has not provided requisite recreational garden spaces and other amenities. Construction of the 90ft and 60ft roads is not completed," the petitioner said. The PIL also alleged ecological damage, saying trees had been cut without undertaking replantation. The petition claimed a hillock in the area had been cut, reducing its size from 75,000 sq metres to 30,000 sq metres.

The PIL urged the court to stay further development and initiate an enquiry into how the project went ahead without permission.

Senior advocate Milind Sathe, counsel for Nahar Builders, refuted the allegations and said all permission was in place. The advocate said the petitioner could not have filed the PIL as he lived in the same area and was an interested party. The advocate claimed Agrawal had initiated multiple proceedings, including the HC, consumer forum and National Green Tribunal.

The bench said the issues would have to be looked into and allowed Agrawal to delete prayers in the PIL that sought directives against private parties.

Destruction of nature as dangerous as climate change, scientists warn**The Guardian., 23 March 2018**

Human destruction of nature is rapidly eroding the world's capacity to provide food, water and security to billions of people, according to the most comprehensive biodiversity study in more than a decade. Such is the rate of decline that the risks posed by biodiversity loss should be considered on the same scale as those of climate change, noted the authors of the UN-backed report, which was released in Medellin, Colombia on Friday. Among the standout findings are that exploitable fisheries in the world's most populous region – the Asia-Pacific – are on course to decline to zero by 2048; that freshwater availability in the Americas has halved since the 1950s and that 42% of land species in Europe have declined in the past decade. Underscoring the grim trends, this report was released in the week that the decimation of French bird populations was revealed, as well as the death of the last male northern white rhinoceros, leaving the species only two females from extinction. "The time for action was yesterday or the day before," said Robert Watson, the chair of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) which compiled the research. "Governments recognise we have a problem. Now we need action, but unfortunately the action we have now is not at the level we need." "We must act to halt and reverse the unsustainable use of nature or risk not only the future we want but even the lives we currently lead," he added. Divided into four regional reports, the study of studies has been written by more than 550 experts from over 100 countries and taken three years to complete. Approved by the governments of 129 member nations, the IPBES reports aim to provide a knowledge base for global action on biodiversity in much the same way that the UN's Intergovernmental Panel on Climate Change is used by policymakers to set carbon emission targets.