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Climate & Health News

Monthly Newsletter of the JHU-UPF Public Policy Center Climate Change Working Group



MAY 2017

Welcome to the May Climate and Health Newsletter!

Headlines from climate news last month featured the “March for Science” (April 22) and the “March for Climate” (April 29) mobilizing large crowds (see some of the best signs around the world from [BBC coverage](#)); [China](#) stepping forward toward greater climate leadership; and former NYC Mayor Bloomberg’s [new book](#), “Climate of Hope: How Cities Businesses and Citizens Can Save the Planet.”

Extreme weather hit Latin America hard last month; see stories on the human effects of alternating drought and [downpours in Chile](#), [flooding in Peru](#), and [mudslides in Colombia](#). In our special section on cities, see the impact of flooding in [Guangzhou](#), and implications for sea-level driven migration for several [cities in the US](#). Many cities are also finding solutions: check out the stories on [green transport leaders](#), and [Hangzhou's free bicycle program](#).

Newly published climate health science articles include evidence from [Viet Nam](#) of hypertension with infiltration of saline sea water in fresh water sources, risks of [dengue fever in the Southwest US](#), and a review of [traffic-related air pollution \(TRAP\) on allergies](#). In terms of solutions – take a look at a new cellphone [app](#) for diagnosing malaria, and a [kit](#) for identifying harmful algal bloom biotoxins.

In news from the [JHU-UPF Barcelona Public Policy Center](#), 40 students from the Masters of Public and Social Policy took an intensive course on climate change and health April 10-12. Student projects pick up on topics including air pollution in Madrid, Mexico City and Santiago, dengue fever in Lima, flooding in Buenos Aires and Manila, and hurricanes in La Havana.

As always, comments and suggestions are welcome!

CLIMATE CHANGE POLICY

[March for Science](#)

Thousands of scientists have taken part in demonstrations around the world in protest against what they see as a global political assault on facts. The first-ever March for Science, which was timed to coincide with Earth Day, was aimed at promoting action to protect the environment. Organisers said it was a celebration of science and a call to support and safeguard the scientific community.



People marched in Washington DC against President Trump, who is cutting funding for scientific research- Getty Images

[Bloomberg to world leaders: Ignore Trump on climate change](#)

Former New York City Mayor Michael Bloomberg has released a new book, "Climate of Hope: How Cities, Businesses, and Citizens Can Save the Planet," co-authored by Sierra Club Executive Director, Carl Pope. He is quoted: "Washington won't determine the fate of our ability to meet our Paris commitment... We hope this book will help to correct that wrong impression — and help save the Paris deal."



Former NYC Mayor Michael Bloomberg- AP Photo/Carolyn Kaster, File

[Deleting of Arctic climate data](#)

Scientists claim that the Trump Administration is deleting datasets, webpages and policies about the Arctic.

[China makes strong statement showing leadership on climate](#)

In the week before Donald Trump began to roll back Obama-era climate regulations, China's government made its clearest statement yet that it sees climate action as central to its best interests.

[Bangladesh offers assistance to the US](#)

A researcher in Bangladesh writes an open letter to the United States to offer sympathy and assistance regarding climate change

[Climate March draws thousands](#)

Tens of thousands of demonstrators, alarmed at what they see as a dangerous assault on the environment by the Trump administration, poured into the streets on Trump's 100th day in office to sound warnings both planetary and political about the Earth's warming climate.

[The Arctic as we knew it is almost certainly gone](#)

Those who doubt the power of human beings to change Earth's climate should look to the Arctic, and shiver. There is no need to pore over records of temperatures and atmospheric carbon-dioxide concentrations. The process is starkly visible in the shrinkage of the ice that covers the Arctic ocean. In the past 30 years, the minimum coverage of summer ice has fallen by half; its volume has fallen by three-quarters. On current trends, the Arctic ocean will be largely ice-free in summer by 2040.

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On current trends, the Arctic will be ice-free in summer by 2040; Getty Images.

CITIES

[Santiago's extreme summer](#)

It has been the summer of discontent in Chile. Never have so many natural catastrophes in a row hit this country at the end of the world. This time, the unprecedented woes have all been man-made.

[Guangzhou and flooding](#)

The rains brought torrents, pouring into basements and malls, the water swiftly rising a foot and a half. Tens of thousands lost their homes, and 53 square miles of nearby farmland were ruined. The cost of repairs topped \$100 million.

[US cities will lose and gain migrants with sea-level rise](#)

A study found that by making large swaths of the U.S. shoreline uninhabitable by the end of this century, sea level rise could reverberate far inland, too. In fact, every single U.S. state will be affected by climate change-induced sea level rise.

[Solutions: Oslo, London and Amsterdam lead push for greener transport: study](#)

Oslo, London and Amsterdam are leading a shift by major cities to eliminate greenhouse gas emissions from transport, helped by new technologies that will help to curb climate change and reduce air pollution.

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Commuters travel by tram in central Oslo, Norway, April 24, 2017. Picture taken April 24, 2017. REUTERS/Alister Doyle

[**Solutions: Electric cabs in London**](#)

London's new electric cabs are due to hit the streets in 2018 as part of a plan to help clear the city's air of pollutants linked to increased deaths and illnesses.

[**Solutions: Hangzhou's free bicycle service**](#)

In China the bicycle is making a comeback, and, at least if you live in Hangzhou in Zhejiang province, you don't even have to own one because the city will provide a bike for you to ride for free.



One of Hangzhou Bicycle Service's 3,600 bicycle stands. *Image: Paul Starkey/Ashden*

[**Solutions: Dubai, the world's most improbable green city**](#)

Dubai wants to go from making the largest ecological footprint per capita in 2006 to making the smallest carbon

[Solutions: Singapore creating more land](#)

Since Singapore became an independent nation 52 years ago, it has, through assiduous land reclamation, grown in size by almost a quarter: to 277 square miles from 224. By 2030, the government wants Singapore to measure nearly 300 square miles.

HEAT, DROUGHT & WILDFIRES

[Dead Sea indicates how serious future drought could be: study](#)

Far below the Dead Sea, between Israel, Jordan and Palestinian territory, researchers have found evidence of a drought that has no precedent in human experience.

[Solutions: Passive cooling for apartments in Australia](#)

One study used data from the 2009 January-February heatwave, the researchers modelled the performance of six apartment designs typical to Melbourne. The apartments were run without artificial cooling, to see "what happens from a health and safety perspective if the air conditioner breaks or the grid power goes out." All apartments failed the international "summer comfort" standards from the UK, France, Germany and the United States. The key message from the study is that cooling strategies should be applied together.

[Solutions: How to adapt to more frequent wildfires](#)

The researchers behind the new study, published today in *Proceedings of the National Academy of Sciences*, suggest that, instead of trying to fight every fire or thin vast areas in futile prevention efforts, the Forest Service should focus on protecting communities and limiting new development in fire-prone areas, while letting some fires — even large — burn, which will help Western landscapes adapt to climate change in the decades ahead.



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[Solutions: Saving water with a satellite-based map in Africa](#)

A new Google-powered online tool that uses satellite data to map water consumption in Africa and the Middle East aims to help farmers produce more crops with less water.

STORMS, FLOODING, AND SEA LEVEL

[Deadly mudslide in Colombia](#)

Flooding and mudslides in the Colombian city of Mocoa sent torrents of water and debris crashing onto houses in the early hours of Saturday morning, killing 254 people, injuring hundreds and sending terrified residents, some in their pajamas, scrambling to evacuate.

[Colombia's environment minister says 12 million at risk from floods](#)

Climate change has put nearly 12 million Colombians at risk from natural disasters like flooding and landslides, which could kill hundreds and cause serious infrastructure damage.

[Flooding in Peru](#)

Peru's worst floods in nearly a century have killed more than 70 people, left 70,000 homeless in nearly every province and damaged 130,000 structures, including ancient archaeological sites. The downpours inundated the country in the first half of March, then moved north over Colombia, causing a mudslide that killed hundreds.

[Solutions: Preparing Peru to be flood resistant](#)

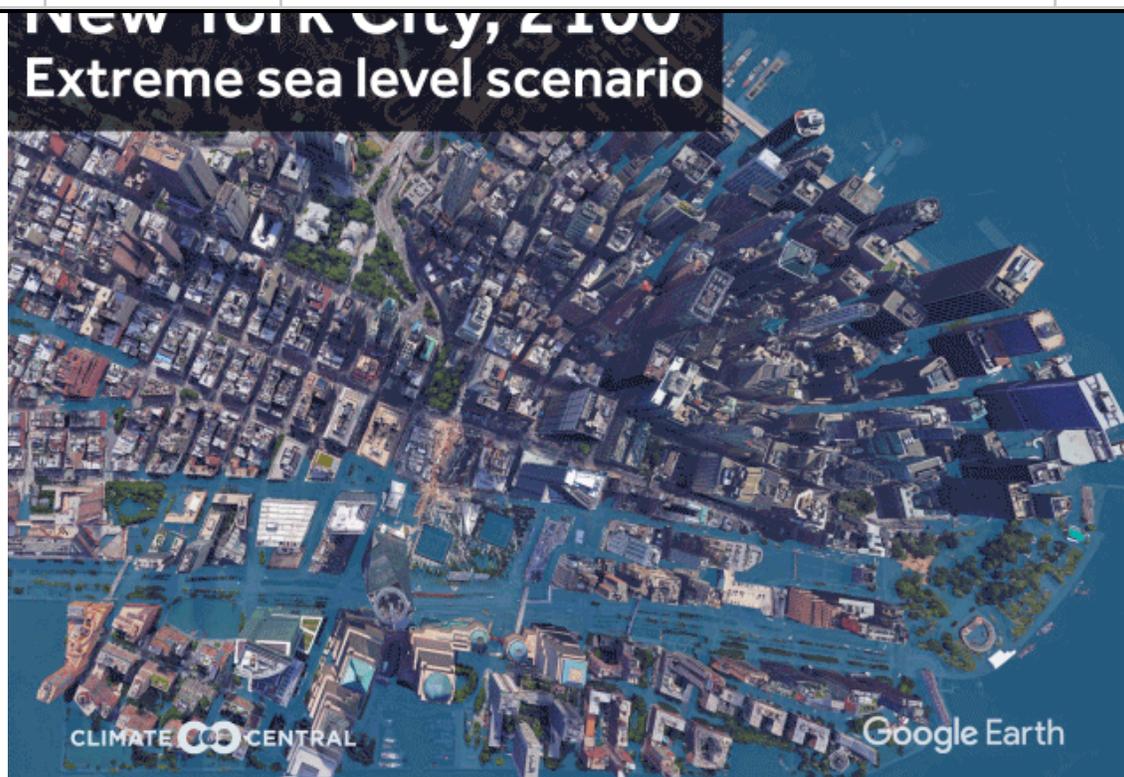
Jorge Nieto, Peru's defence minister, has been leading recovery efforts and deploying armed forces across the country saying cities and towns lacked basic flood defences, and that the 30-odd rivers which flow from the Andes to the Pacific would need to be channelled, particularly in urban areas. As Peru lurches between drought and floods, reservoirs should also be installed in the mountains.

[New study says sea-level rise in California could be catastrophic](#)

A state-commissioned report on climate change raises the stakes for fighting global warming, offering a clearer and, in some cases, more catastrophic picture of how much sea levels will rise in California.

[Climate central mapping of NOAA projected 2100 sea-level rise on US coasts](#)

The beginning of a collapse this century of sections of the Antarctic ice sheet would disproportionately inundate coasts circling the U.S. — the country that has done more than any other to pollute the climate.



Projections for an extreme sea level scenario for New York City under NOAA's new guidelines.

[South Florida's real estate](#)

Rising sea levels threaten property values in South Florida. If property values start to fall banks could stop writing 30-year mortgages for coastal homes, shrinking the pool of able buyers and sending prices lower still. Those properties make up a quarter of the city's tax base; if that revenue fell, the city would struggle to provide the services that make it such a desirable place to live, causing more sales and another drop in revenue.

[Flooding and homelessness in California](#)

The rains that lashed California this year have pulled this state out of a historic drought. But they also exposed the extent and agony of homeless people who have long made homes along the banks of the now-swollen rivers across California.

AIR POLLUTION

[Solutions: A smog-clearing bike: filter air by riding a bicycle – China and the Netherlands](#)

In Beijing, artist Daan Roosegaarde is beginning to imagine one potential solution: a bike that could pull in dirty air, filter it, and release clean air.

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The designer is pitching a collection of smog-sucking tech to polluted cities as a way to temporarily purify air while cities work on larger reforms. [Image: courtesy Studio Roosegaarde]

[**Solutions: Massachusetts carbon fee would save \\$3 billion in health costs: study**](#)

A state carbon fee aimed at decreasing pollution would save \$2.9 billion in health benefits and 340 lives between now and 2040, according to a new Harvard University study commissioned by environmental groups.

VECTORS

[**Climate change is impelling a universal redistribution of life on Earth**](#)

Mass migration of species to cooler climates has profound implications for society, pushing disease-carrying insects, crop pests and crucial pollinators into new areas, says international team of scientists.

[**Why mosquito problems will get worse**](#)

The unpredictable weather patterns stimulated by climate change affect infectious diseases, as well as chronic ones. Spikes in heat and humidity have less visible effects, too, changing the numbers and distribution of the insect intermediaries that carry diseases to people.

[**Monkeys and yellow fever in Brazil**](#)

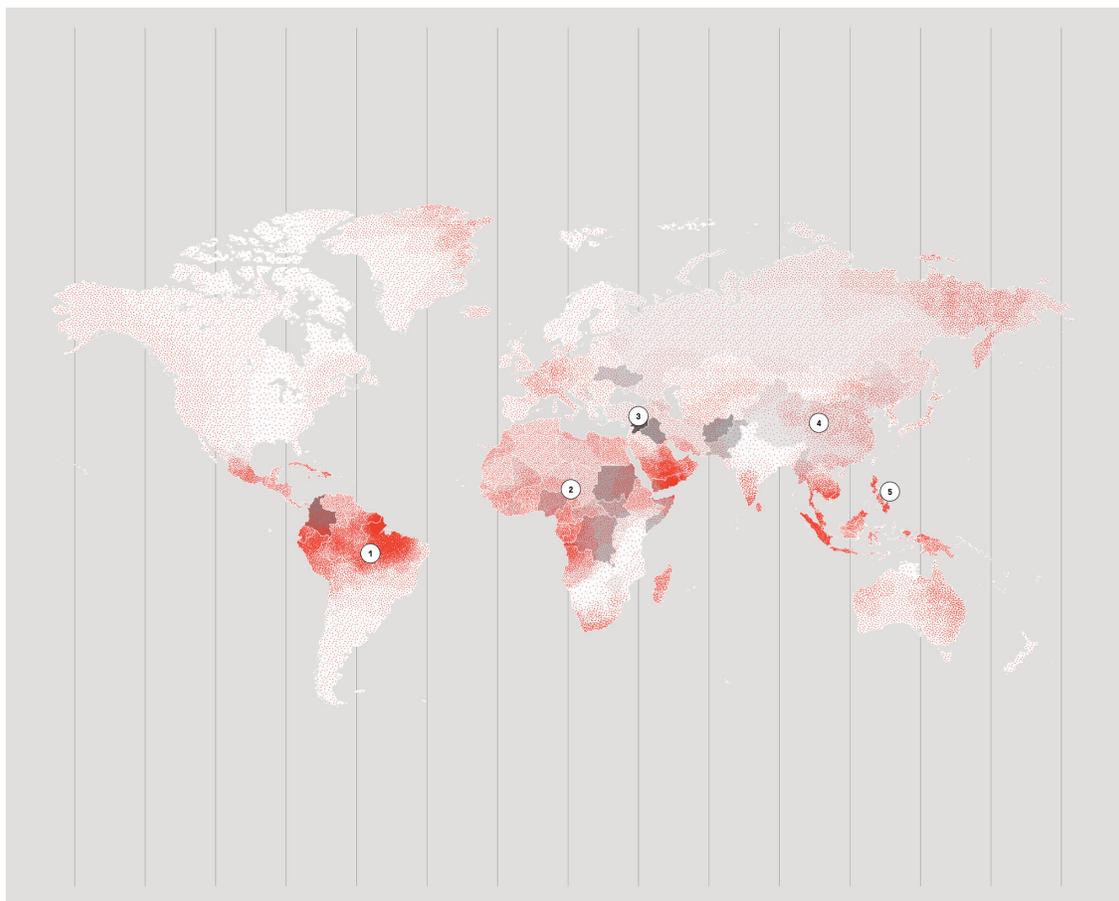
Scientists in Brazil believe that global warming and climate change have created conditions that favour the reproduction of the mosquitoes that transmit viruses such as yellow fever, now spreading through previously immune regions of Brazil. The yellow fever virus can be transmitted to humans and to monkeys, and thousands of monkeys – some from endangered species – have died in the last four months.

RELOCATION AND CONFLICT

[**A world view of possible climate migrants**](#)

Climate change is not equally felt across the globe, and neither are its longer term consequences. This map overlays human turmoil — represented here by United Nations data on nearly 64 million “persons of concern,”

climate refugees, so there is no formal reckoning of how many have left their homes because climate change has made their lives or livelihoods untenable.



MAP KEY

U.N. PERSONS OF CONCERN

Includes refugees, asylum seekers and internally displaced persons



CLIMATE CHANGE INDEX

Denser areas indicate greater temperature change, compared with a baseline average.



Illustration by La Tigre

1. Amazon Basin, 2. Lake Chad, 3. Syria, 4. China, 5. Philippines.

[Australia may receive more climate refugees](#)

Australia could be on the frontline of a new wave of “climate refugees” displaced by extreme weather events, droughts and rising seas, a US expert on the national security impacts of climate change has warned.

[Water and terrorism](#)

Climate change will fuel acts of terrorism and strengthen recruiting efforts by terrorist groups such as Islamic State and Boko Haram, a report commissioned by the German foreign office has found. Terrorist groups will

thinktank Adelphi.

CO-BENEFITS

[New bicycling legislation and funding is “gamechanger” in UK](#)

The new cycling and walking investment strategy is the first legislation of its kind to legally bind the government to long-term funding for cycling and walking provision.

SCIENCE

EXTREME HEAT

[Acclimatization to heat – Northeast Asian cities](#)

In 15 Northeast Asian cities, cold-related mortality remained roughly constant over decades and slightly increased in the late 2000s, with a larger increase for cardiorespiratory deaths. Heat-related mortality rates have decreased continuously over time, with more substantial decrease in earlier decades, for older populations and for cardiorespiratory deaths.

[Heat-stress illness in rural and urban areas – Illinois USA](#)

The highest rates of hospitalization for heat-stress illness (HSI) were seen in the most rural areas. The most common additional diagnoses of patients hospitalized with HSI were dehydration, electrolyte abnormalities, and acute renal disorders. The most rural and the most urbanized counties of Illinois had the largest increases in monthly hospitalization rates for HSI per unit increase in the average monthly maximum temperature.

[Solutions: Mapping to detect vulnerability to heatwaves – Western Australia](#)

Western Australia is exposed to increasing heatwave risk. Hospital admissions due to heat-related conditions and kidney diseases, and overall ED attendances, were sensitive indicators of heatwaves. Children aged 14 years or less and those aged 60 years or over were most vulnerable; females had more hospital admissions due to kidney diseases; males had more heat-related hospital admissions. This study produced a mapping tool which indicated geographic areas of vulnerable populations.

[Solutions: Developing an occupational heat stress index](#)

An occupational heat stress index should address four factors (air temperature, humidity, air velocity and heat radiation); available weather station data may serve this purpose however are limited in some measurements. This article reviews and highlights a number of heat stress indices, indicating their advantages and disadvantages as occupational heat stress indexes.

WATER-BORNE PATHOGENS

[Expanding harmful algal blooms – North Atlantic and North Pacific](#)

Sea-surface temperature records were used to evaluate growth rates of two algae that produce biotoxins harmful

across the North Pacific, although regions were identified across the Salish Sea and along the Alaskan coastline.

[**Solutions: Kits to detect harmful algal blooms – Ontario Canada**](#)

Harmful algal blooms caused by cyanobacteria can present a risk to the safety of drinking and recreational waters and beachfronts through the production of biotoxins. Commercial biotoxin (microcystin) test kits are now available. Testing of these kits suggests they are useful for screening and informed risk management decisions (e.g. beach closures).

SEA LEVEL RISE

[**Drinking water salinity and hypertension – Mekong Delta Vietnam**](#)

Drinking water in the Mekong Delta Region is highly vulnerable to sea water infiltration. Of the 13 provinces in the region seven are 'salinity exposed.' Multi-level logistic model combining both individual and ecological factors showed a 9% increase in risk (95% CI: 3-14%) of hypertension admission among individuals in 'salinity exposed' areas compared to those in non-exposed areas.

VECTOR BORNE

[**Dengue Transmission – Southeastern USA**](#)

Simulations suggest that dengue transmission at levels similar to those in San Juan, Puerto Rico is possible at several US locations during the summer months, particularly in southern Florida and Texas. Simulations that include climate change projections suggest that conditions may become suitable for virus transmission in a larger number of locations and for a longer period of time during each year.

[**Solutions: A malaria diagnosis app - Africa**](#)

Using blood samples and light microscopy, a new automated cellphone and tablet based application diagnoses malaria. Plasmodium falciparum species are identified in the ring stage of development. In proof of concept experiments, the accuracy of the system was 91%, providing a low-cost diagnostic tool accessible for health centers in remote communities, not depending on extensive malaria expertise or expensive diagnostic detection equipment.

AIR QUALITY

[**Review: Traffic-related air pollution and allergic disease**](#)

The link between traffic-related pollution (TRAP) and allergy continues to strengthen, in terms of supportive observational findings and mechanistic studies. Levels of TRAP across the world, particularly in Asia, continue to dramatically exceed acceptable levels, suggesting that the related adverse health consequences will accelerate. This could be counterbalanced by primary emission control and urban planning.

CO-BENEFITS

[**Structured review of health benefits from greenhouse gas reducing active transport and food choices**](#)

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active transport and low emission food delivery, plus community engagement were key factors.



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