

# Fwd: Climate Forward: The cooling problem

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From: **The New York Times** <[nytdirect@nytimes.com](mailto:nytdirect@nytimes.com)>

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So in heavy severe drought do we look for places that are degraded and built to put solar AND keep the vital cooling forests, water holding forests, cloud and precipitation enabling forests OR do we let Con Edison deforest, uproot all life on FearingHil, Destroy the watershed, LESSEN severly needed plant and soil held water for animanls and plants and wells and RAISE the ambient temperature by 5-7 degrees F, making nights also warmer, when that is when we all need to restore our body functions in a cooler environment.

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**By Somini Sengupta**

Global Correspondent, Climate

In Singapore, vertical gardens, trees and foliage help to reduce heat. Wallace Woon/EPA, via Shutterstock

## The cooling problem

Air-conditioners are a lifesaver — and a culprit. Yes, they are vital in times of deadly heat. But they're also an important source of greenhouse gases and a prime example of how global warming is unfair.

In today's newsletter, I'll explain why it's crucial to improve cooling and how we can do it. Many fixes are already within reach.

One [2019 research paper](#) estimated that between 1.8 to 4.1 billion people may need air-conditioning to avoid heat-related stresses under current conditions but do not yet have access. In Africa, where more than half the population lives in a hot climate, [only 5.6 percent have an air-conditioner](#).

There are also [almost 1 billion](#) people worldwide who don't have electricity at all. So, no fans either.

As Radhika Khosla, co-director of the Future of Cooling program at the University of Oxford, told me, "equity is a central issue to the future of cooling."

Meanwhile, those of us who can afford air-conditioners are using them much more on these intensely hot days. That's sharply raising demand for electricity.

Air-conditioners have other problems. They spew hot air outside, making the surrounding area hotter. And, they use dirty refrigerants. Cooling is one of the [fastest growing sources](#) of greenhouse gas emissions, destined to grow especially fast in developing countries.

There are ways to improve cooling and make it more fair. They would not only make heat waves less oppressive, they could even make our communities more livable.

## **Build better**

There are many ways, old and new, to reduce or eliminate altogether the need for air-conditioning inside buildings. Architects and urban planners are trying many of these things already.

A museum in Rio de Janeiro draws in water from a nearby bay for cooling. Similarly, but at a bigger scale, Toronto's downtown core has a cooling system that [uses cool lake water](#) to absorb heat from city buildings. A [hospital in rural Bangladesh](#) uses courtyards and canals to create a cooling microclimate. [Architects in Singapore](#), the air conditioning capital of Southeast Asia, are angling buildings in ways that allow wind to flow through city blocks and using vertical gardens to cool high-end hotels and office buildings.

And then, there's paint. [Researchers are competing](#) to develop [white paint](#) that reflects nearly all sunlight. The ones in use now still [absorb around 15 percent of sunlight](#) and the heat that comes with it.

Efforts to cool city neighborhoods aren't always immediately popular. In Paris, a plan to cool the area around the Eiffel Tower is facing fierce opposition because it means knocking down trees, as my colleague [Constant Méheut wrote](#).

Now more than ever, energy-saving innovations are needed. The Toronto cooling system saves enough electricity to power a town of 25,000 through a year, while the Rio museum's cooling system consumes 50 percent less energy than a conventional one. In fact, a recent United Nations [report](#) estimates that a global, coordinated effort to make cooling more sustainable and efficient could avoid eight years' worth of global emissions, based on 2018 levels, over four decades.

### **Make air-conditioners better**

The Rocky Mountain Institute, a research group whose Colorado-based office [generates more energy](#) than it consumes, runs a [competition to spur innovations](#) in cooling. The two companies that won last year, Daikin and Gree, developed air-conditioners that use much less energy.

Why doesn't every company do that? Electricity standards don't require it yet, explained Iain Campbell, a cooling expert at the Rocky Mountain Institute, . Plus, it's more expensive upfront. The prototypes developed by the two companies were two to three times pricier, Campbell said. "But over 10 years, using these machines would cost you half," he added. They would simply use less electricity.

The average efficiency of air-conditioners sold in the market now, Khosla said, is typically one-third of the most efficient technology available.

The other way to make air-conditioners better is to make them less dirty.

Some hydrofluorocarbons that are used in most air-conditioners, known as R134a or R404a, are like greenhouse gases on steroids. They warm up the Earth's atmosphere much more than, say, carbon dioxide. So, as more people buy air-conditioners, Khosla points out, "a new source of global temperature rise is essentially being introduced."

Alternative refrigerants are out there, according to the [European Commission](#), which has its own regulations to reduce the climate impact of air-conditioners.

To scale up adoption globally, governments will need to urge their use, in order to protect the health of their people.

**Related:** The war in Ukraine upended energy markets. Then, extreme heat increased demand for electricity. Now, [wealthy countries are scrambling to secure power](#).

**Tips:** We've got suggestions on [how to lower your electricity bill](#).

**From NYT Cooking:** Recipes that [won't heat up your kitchen](#).

**A Climate Team classic:** Take this [quiz on the most effective climate solutions](#).

A MESSAGE FROM SOUTHERN ENVIRONMENTAL LAW CENTER

## Solutions start in the South

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## Essential news from The Times

A photo from March shows Lone Rock Beach, Utah, on Lake Powell, a reservoir on the Colorado River. Rings on the rock formation indicate usual water level. Justin Sullivan/Getty Images

**'Unthinkable' water cuts:** The federal government has told states along the Colorado River to take urgent conservation measures to ensure [dams can keep generating power](#).

**Delay as the new denial:** Most Republicans no longer deny the existence of climate change. Instead, citing risks to the economy, they [delay solutions](#).

**Amazing birds, bigger threats:** A study found that the most fascinating birds on the planet are the most vulnerable to extinction because of their [unusual adaptations](#).

**Help for butterflies:** A leading wildlife monitor has classified migratory monarch butterflies as endangered. Researchers say [the public can help give them a boost](#).

**Rethinking cities:** Experts say this summer shows how cities in northern Europe, where historically cold has been a bigger threat than heat, need to [adapt to remain livable](#).

**Extreme weather stops the music:** Pearl Jam canceled a show in Vienna after heat, dust and wildfire smoke around a concert in Paris [injured the throat of the group's singer](#).

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## A Times virtual event on fashion and climate

Join Vanessa Friedman, our chief fashion critic, on July 28 as she explores how popular culture and the influencer economy might shift the industry toward responsible fashion. You can [reserve a spot for free](#).

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## From the Opinion section

**A 500-year-old tree tells its story:** See how the trunk of an ancient Douglas fir reveals a [timeline of deluge and drought](#) in the American Southwest.

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## From outside The Times

- A new analysis shows that most major carbon-emitting nations still [aren't on track to reach their climate pledges](#), The Associated Press reported.
- A study covered by Bloomberg Law found that a climate pact among Northeastern states has cut emissions but also left communities of color

[vulnerable to air pollution.](#)

- More than 200 people have died of hunger amid a prolonged drought in northeastern Uganda, [Reuters reported.](#)
- The Guardian reported on celebrities using [private jets for very short trips](#), sometimes saving only a few minutes compared with taking a car.
- Researchers interviewed by Mongabay developed a DNA test that can help law enforcement catch people [illegally trading precious red coral.](#)
- From the BBC: Students in Britain have submitted a bill to Parliament to amend the country's Education Act to "[reflect the climate emergency.](#)"

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President Biden on Wednesday at Brayton Point, a former coal-fired power plant in Somerset, Mass., that is being converted to make wind power components. Doug Mills/The New York Times

## Before you go: What a climate emergency means

As tens of millions of Americans swelter under a heat wave, President Biden is considering whether to invoke special powers to address climate change. A formal emergency declaration would allow the president to curtail oil and gas drilling and would free up funds to support renewable energy projects, among other things. But some experts say it would be an overreach of executive power and a dangerous precedent. Here are [four key points](#).

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**Thanks for reading. We'll be back on Friday.**

Manuela Andreoni, Claire O'Neill and Douglas Alteen contributed to Climate Forward. You can see and share [the website version here](#).

Reach us at [climateforward@nytimes.com](mailto:climateforward@nytimes.com). We read every message, and reply to many!

### ***Correction***

The July 15 Climate Forward newsletter misstated the global rank of the United States in per capita emissions. [According to the World Bank](#), the United States

falls in 11th place worldwide, not first place. (The top emitter per capita is Qatar.)

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