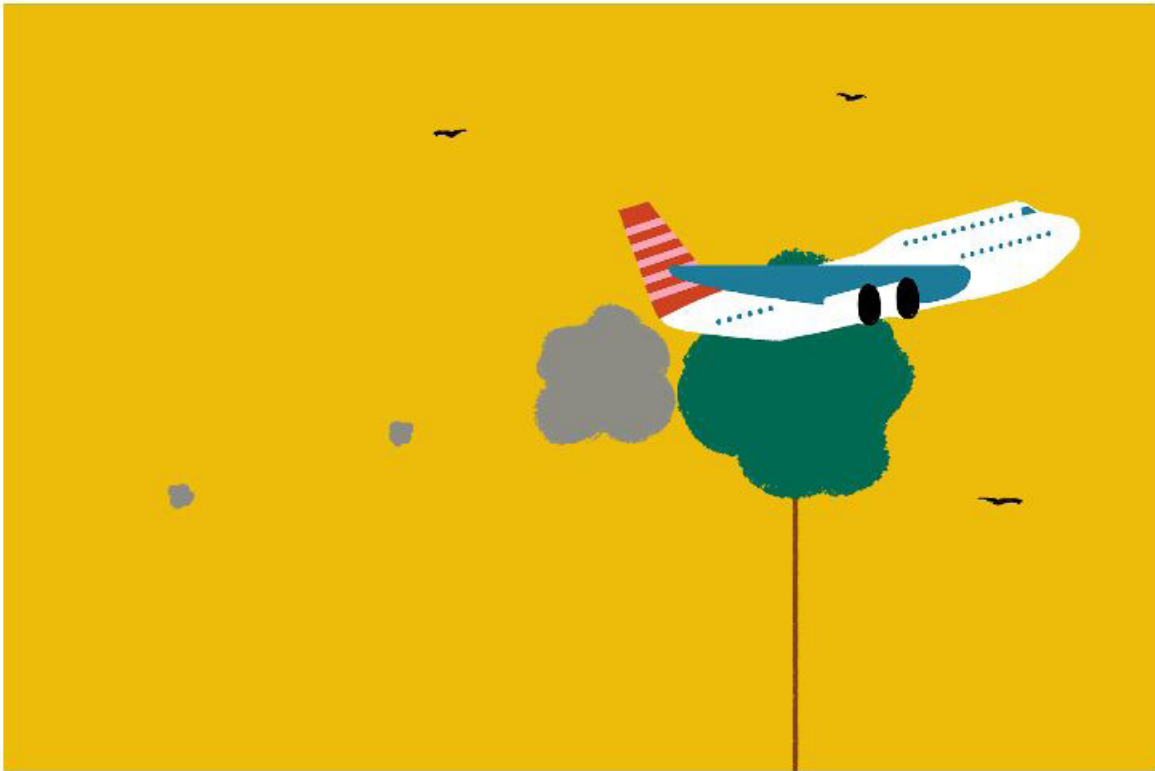


# Flying Is Bad for the Planet. You Can Help Make It Better.



Alec Doherty for The New York Times

By Tatiana Schlossberg | July 27, 2017

Take one round-trip flight between New York and California, and you've generated about 20 percent of the greenhouse gases that your car emits over an entire year.

If you are like many people, flying may be a large portion of your carbon footprint. Over all, the aviation industry accounts for 11 percent of all transportation-related emissions in the United States.

According to some estimates, about 20,000 planes are in use around the world, serving three billion passengers annually. By 2040, more than 50,000 planes could be in service, and they are expected to fly more often.

If you're flying, you're adding a significant amount of planet-warming gases to the atmosphere — there's no way around it. But there are some ways to make your airplane travel a little bit greener.

## First, fly less.

The most effective way to reduce your carbon footprint is to fly less often. If everyone took fewer flights, airline companies wouldn't burn as much jet fuel.

According to the World Bank, the average American generated about 16.4 metric tons of carbon dioxide in 2013; according to some calculations, a round-trip flight from New York to San Francisco emits about 0.9 metric tons of carbon dioxide per person. For an American, that represents about one-eighteenth of your carbon emissions for the year.

(For perspective, the global average was about five tons of carbon dioxide per person in 2013.)

Should you drive instead? The longer the distance, the more efficient flying becomes, because cruising requires less fuel than other stages of flight. So it's certainly better to fly cross-country than to drive solo. If you're taking a short trip, it may be better to drive.

Flying nonstop can help, too: The more times you take off, the more fuel you use. According to a 2010 report from NASA, about 25 percent of airplane emissions come from landing and taking off. That includes taxiing, which is the largest source of emissions in the landing-takeoff cycle.

Some research suggests that flying in warmer temperatures is less efficient, since hot air is thinner and makes it harder for planes to get enough lift to take off.

## If you fly, offset it.

When you buy carbon offsets, you pay to take planet-warming carbon dioxide out of the atmosphere in exchange for the greenhouse gases you put in. For example, you can put money toward replanting trees, which absorb carbon dioxide from the atmosphere.

You can buy offsets through some airlines — Delta, United and JetBlue, among others. But they don't necessarily make it easy during the booking process; some airlines offer offsets only on separate sustainability pages. You can also buy offsets through other organizations.

To offset the almost 0.9-metric-ton carbon footprint of a single passenger traveling on United from New York to San Francisco in July and back again, Sustainable Travel International, which runs United's offset program, offers two choices: Donate \$8.95 to a wind farm in Texas or donate \$10.75 to a forest conservation program in Peru.

There's some debate about the best way to offset — where and when tree-planting programs should occur for maximum effect, for example.

"Offsets can provide a useful way to help reduce your climate footprint," said Peter Miller, a scientist with the Natural Resources Defense Council. "But it's important to make sure that you're getting credible and actual real emissions reductions."

To make sure that an offset program really does what it says, it has to meet several criteria, including that it be verified by an independent third party. All of the programs used by the major airlines are verified by such groups to make sure they provide the carbon reduction effects that the companies claim.

## Fly coach.

According to a study from the World Bank, the emissions associated with flying in business class are about three times as great as flying in coach.

In business class and first class, seats are bigger, so fewer people are being moved by the same amount of fuel. The study estimates that a first-class seat could have a carbon footprint as much as nine times as big as an economy one.

At last, coach passengers have something to be happy about: smaller carbon footprints.

## Listen to the flight attendants.

Apparently, some of the rules about lowering and raising your window shades could help cut emissions.

When you land at a warm destination, flight attendants might ask you to shut your window shades, said Christine Boucher, a director of global environmental sustainability for Delta Air Lines.

The reason? It reduces the amount of fuel used to cool the aircraft when it's sitting at the gate, she said.

This won't do anything to counteract all the emissions the plane created while flying. But it's an example of how far airlines will go to save fuel when they can. That helps their bottom lines, but also the environment.

## Know your fuels.

Commercial airlines have been using biofuels in some passenger flights since 2011, mixed with conventional petroleum-based fuels in varying amounts. The biofuels, which can come from sources like natural oils, seaweed and agricultural waste, can help reduce planet-warming emissions from aviation.

Last year, United Airlines started using biofuels in all of its flights out of Los Angeles. The biofuel, made by a company called AltAir Fuels, is estimated to cut at least 60 percent of greenhouse gas emissions compared to regular jet fuel, according to United. (It cuts the emissions used to make the fuel as well as the emissions from burning it.)

Other companies and the American government are working to develop alternative biofuels to use in the airline industry. So far, however, a viable commercial market has not been developed.

In October, more than 190 countries agreed to reduce the carbon footprint of air travel through a combination of offsets and improvements in efficiency.

You can check the fuel efficiency of the airlines you fly. According to a report from the International Council on Clean Transportation, Alaska Airlines and Spirit Airlines were the most efficient domestic carriers in 2010. American Airlines and Allegiant Air were at the bottom of the list of the 15 largest airlines.