

We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

[Privacy Policy](#)

› [Cookie Settings](#)

✓ [Accept Cookies](#)

CLIMATE  CENTRAL

SUSTAINABILITY

Is Bike Sharing Really Climate Friendly?

Estimating how bike sharing keeps CO₂ out of the atmosphere is complicated because every bike-sharing program works differently and collects data differently

.....
By Bobby Magill, Climate Central on August 19, 2014

In Oklahoma, where bike sharing began, they're called Tulsa Townies. In New York, they're CitiBikes. In Denver, bike sharing is called B-Cycle. In Washington, D.C., the program is Capital Bikeshare.

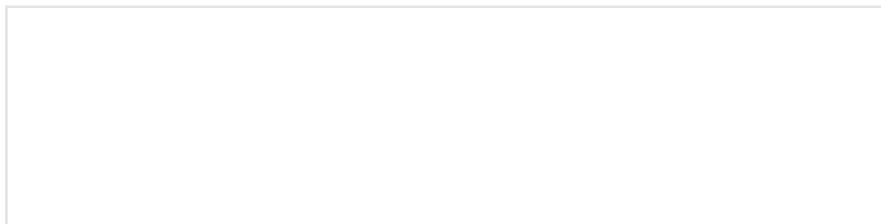
We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

[Privacy Policy](#)

› [Cookie Settings](#)

✓ Accept Cookies

Several things are nearly certain about these bike-sharing programs and the more than 25 others across the country: Since 2007 when the first program began in Tulsa, nobody has ever died on a bike-share bike, a statistical oddity to be sure.



ADVERTISEMENT

And, as more than 23 million trips on these bikes have been taken in that time, all of that pedaling has been great for the climate because each mile someone rides on a bike-share bike instead of driving a car means about 1 pound of carbon dioxide is kept out of the atmosphere, said Susan Shaheen, co-director of the Transportation Sustainability Research Center at the University of California-Berkeley.

But how many people have traded their car for a bike-share bike? That's where the certainty ends about how bike-sharing programs benefit the climate.

We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

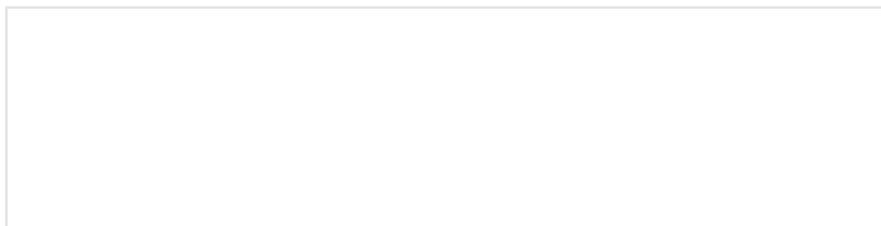
[Privacy Policy](#)

› [Cookie Settings](#)

✓ [Accept Cookies](#)

system also has residual benefits that could reduce CO₂ emissions that may not be factored into calculating bike-sharing's carbon footprint.

For example, bike sharing could lead to more people using public transit, and then possibly renting a bike to get to work, instead of driving a car for the entire trip, she said.



ADVERTISEMENT

Nobody knows for sure how many people have decided to rent a bike-share bike instead of driving a car, and there's no industry standard for how to measure the CO₂ emissions that have been avoided by people taking trips on one of those bikes.

We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

[Privacy Policy](#)

› [Cookie Settings](#)

✓ [Accept Cookies](#)

A 2012 [University of British Columbia study](#) focusing on the climate benefits of bike sharing in Vancouver says numerous factors play into how effective a bike-share system is at reducing emissions. Those include the size of the area the program serves, regional weather, and helmet-wearing requirements.

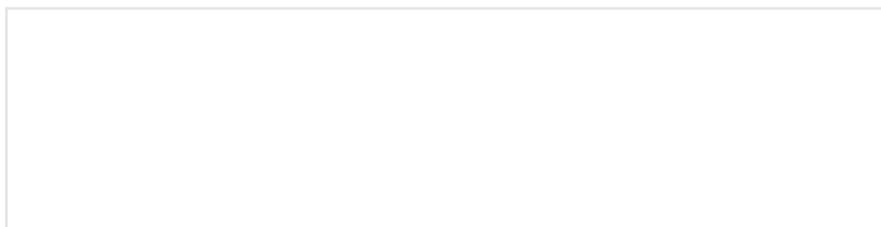


Sign up for *Scientific American's* free newsletters.

[Sign Up](#)

So in Vancouver, where it rains often and riders are required to wear helmets, fewer people may want to rent a bike on a regular basis. But in New York City, where it's sunnier and where helmets aren't required for adults, a greater percentage of people may be interested in renting a CitiBike.

In other words, every city is different.



ADVERTISEMENT

We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

[Privacy Policy](#)

› [Cookie Settings](#)

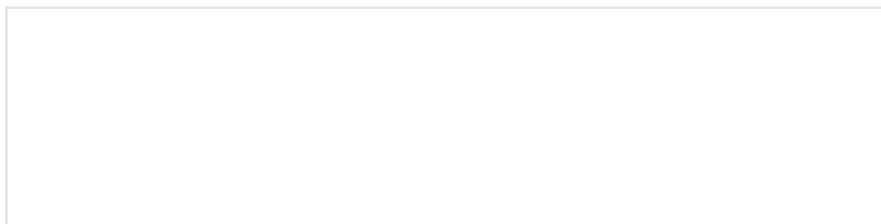
✓ Accept Cookies

assistant professor of urban affairs at Virginia Tech and co-author of “[City Cycling](#),” a book published by the Massachusetts Institute of Technology Press on urban cycling and bike-share programs.

Not every system collects CO₂ emissions data, but so far researchers have found that for nearly all bike-share systems, the switch from cars to bikes is less than 20 percent, Buehler said.

Bike-share systems that estimate how many CO₂ emissions or car trips they’ve helped to prevent report larger numbers.

Data from [Nice Ride Minnesota](#), the bike-sharing program in Minneapolis and St. Paul, show that in 2011, about 53 percent of the program’s riders use a car less often as a result of using the program. That trend for the program will be shown to have continued in 2013 when a new Mineta Transportation Institute report on bike sharing is published soon, Shaheen said.



We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

[Privacy Policy](#)

› [Cookie Settings](#)

✓ Accept Cookies

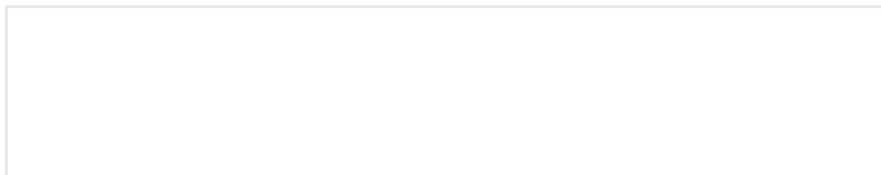
in Denver and more than 20 other cities across the country, says that on all of its systems combined, 2.1 million bike trips covering 4.5 million miles have been made on its bicycles since 2010, all of which have offset more than 2,948 metric tons of CO₂ emissions and saved more than 330,000 gallons of gasoline, B-Cycle spokeswoman Marina Marich said.

Those offset CO₂ emissions represent a tiny fraction of the total emissions from many major cities. Los Angeles, for example, emitted

50.3 million metric tons of CO₂ in 2007.

Bohnenkamp said there is interest among bike-share program officials to start a trade association that would standardize how data is collected and how each bike-share system's climate and other benefits are estimated and reported.

Perhaps the biggest way bike sharing helps the climate is that it's a "gateway drug" to all forms of cycling, Buehler said.



We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

[Privacy Policy](#)

› [Cookie Settings](#)

✓ [Accept Cookies](#)

“They’ve made cycling the cool thing to do,” Buehler said. “Bike share itself is a big advertisement for cycling.”

You May Also Like

[What Climate Change in the Rockies Means for its Water](#)

[California Has Hottest Start to Year While Midwest Chills](#)

[87 Cities, 4 Scenarios and 1 Really Hot Future](#)

[Keystone XL Will Spike Oil Demand and CO₂, Study Says](#)

This article is reproduced with permission from [Climate Central](#).

The article was first published on August 18, 2014.

ABOUT THE AUTHOR(S)

Bobby Magill

Recent Articles

[Court Scuttles Rule Cutting Potent Greenhouse Gas](#)

[Desert Basins May Hold Missing Carbon Sinks](#)

[U.S. Reports a Major Milestone in Wind and Solar Power](#)

We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

[Privacy Policy](#)

> [Cookie Settings](#)

✓ [Accept Cookies](#)

Wildfire Burns across (Formerly) Icy Greenland

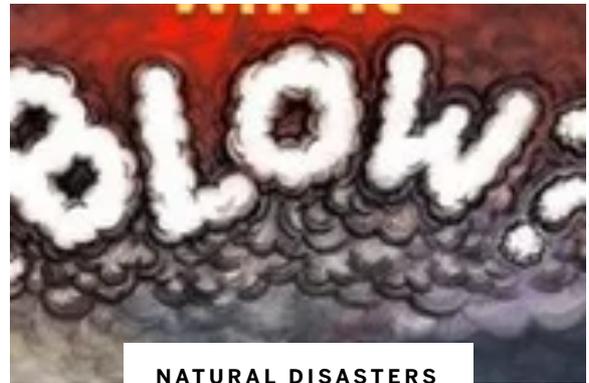
LATEST NEWS



COGNITION

Are Intellectuals Suffering a Crisis of Meaning?

13 hours ago — Scott Barry Kaufman



NATURAL DISASTERS

Mount Saint Helens Volcano Detectives: Activate!

16 hours ago — Dana Hunter

We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

[Privacy Policy](#)

> [Cookie Settings](#)

✓ [Accept Cookies](#)

Are Cyborg Warriors a Good Idea?

17 hours ago — John Horgan

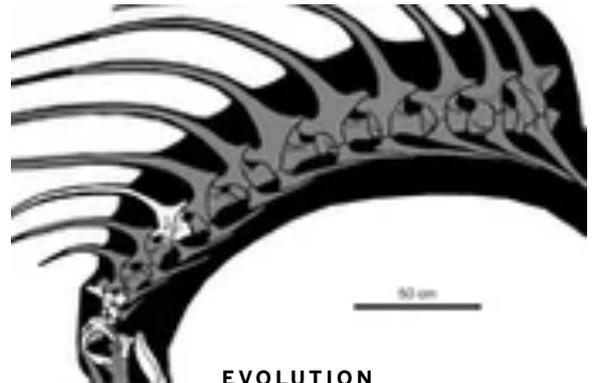


The Case for Transmissible Alzheimer's Grows

February 9, 2019 — Jennifer Frazer

The Coldest Place on Earth

19 hours ago — Caleb A. Scharf



New Spiky Dinosaur Discovered in Patagonia

February 9, 2019 — Brian Switek

We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

[Privacy Policy](#)

[› Cookie Settings](#)

Accept Cookies

Expertise. Insights. Illumination.

Discover world-changing science. Explore our digital archive back to 1845, including articles by more than 150 Nobel Prize winners.

Subscribe Now!



We use cookies to personalize content and ads, to provide social media features and to analyze our traffic. We also share information about your use of our site with our social media, advertising and analytics partners.

[Privacy Policy](#)

› [Cookie Settings](#)

✓ [Accept Cookies](#)

[Store](#)

[About](#)

[Press Room](#)

[More](#)

Scientific American is part of Springer Nature, which owns or has commercial relations with thousands of scientific publications (many of them can be found at www.springernature.com/us). Scientific American maintains a strict policy of editorial independence in reporting developments in science to our readers.

© 2019 SCIENTIFIC AMERICAN, A DIVISION OF SPRINGER NATURE AMERICA, INC.

ALL RIGHTS RESERVED.