



Getting There Greener

The Guide to Your Lower-Carbon Vacation



Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

Getting There Greener

While the idea of “green” vacations has attracted recent attention, most information focuses on what to do when you get to your destination, not on how to get there. No definitive source has been available to guide travelers toward the greenest travel option—trains, planes, automobiles, or motor coach (a.k.a. buses)—for their particular vacation.

The Union of Concerned Scientists (UCS) has turned its analytical eye toward the environmental impact of domestic vacation travel, where global warming pollution can add up quickly. The results of our analysis may surprise you.

One Vacation Can Be Worse Than Commuting for a Year

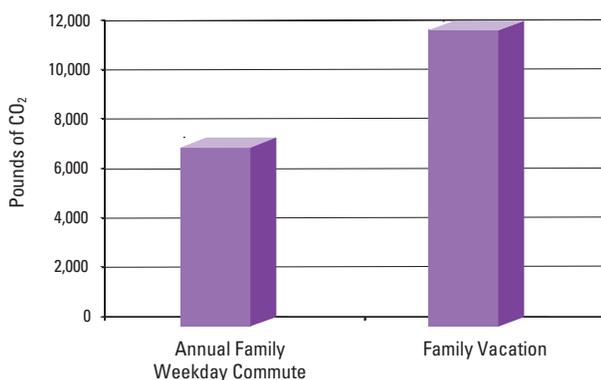


Meet “the Elsens,” our representative family of four from the suburbs of Chicago. They’ve been trying to minimize their impact on the environment, especially when it comes to their commute. Dad drives a Chevy Malibu for his 10-mile round-trip travel to and from work. Mom

recently switched from a Ford Explorer to a more efficient Ford Escape for her daily 25 miles of travel, which includes driving round-trip to work and carpooling the kids to and from after-school activities.

This year, with the holidays coming up, the Elsens decided to pull out all the stops for their first trip to Disney World and use frequent-flyer miles to travel first class. The chart below shows the resulting carbon footprint:

Elsen Family Commute vs. First-Class Vacation



Note: The comparison assumes that the Elsens’ Chevy Malibu gets 25 miles per gallon, their two-wheel-drive Ford Escape gets 23 mpg, and the family takes four first-class round-trip flights from Chicago to Orlando via Houston. Weekday commuting represents 35 percent of the Elsens’ average annual automobile travel.

Yes, you’re reading that right—the Elsens’ one vacation splurge produces more than one and a half times the global warming pollution created by their *whole year* of commuting. These stats are a sobering reminder that our carbon footprint is not merely a product of our daily habits, but of our vacation habits as well.

Fortunately, a number of travel options are greener than those the Elsens selected. This new guide gives Americans the tools they need to make sure they’re *getting there greener*.

Your Guide to a Greener Vacation

How are you traveling? Where are you going? Who’s tagging along?

To create *Getting There Greener*, UCS performed the first comprehensive analysis—peer-reviewed by experts—of the highest-carbon and lowest-carbon options for vacation travel. (For more on how we approached our analysis, see page 7, or read our full-length report at www.ucsusa.org/gettingtheregreener.)

In our analysis, three key factors determine the environmental impact of your travel: (1) the type of vehicle you are taking; (2) the distance you are traveling; and (3) the number of people traveling with you. Based on these factors, this guide can tell you how environmentally sound—or perhaps unsound—your travel plans are.

Of course, Americans’ travel is not a matter of absolutes, as different regions have access to different transportation options. As you plan your journey, the tables to the right can help you evaluate each mode for solo, couple, or family travel. What you find might surprise you, as **your best travel bet can shift significantly depending on the distance you travel and the size of your party.**



Vacation Traveler Carbon Guide

The tables below list travel options from best to worst. Try to avoid those in red!

Best Travel Options: Solo Traveler

	100 miles	500 miles	1,000+ miles
Best	● Take motor coach	● Take motor coach	● Take motor coach
	● Take train	● Take train	● Fly economy
	● Fly economy	● Fly economy	● Take train
	● Drive typical car	● Drive typical car	● Fly first class
Worst	● Drive typical SUV	● Fly first class	● Drive typical car
	● Fly first class	● Drive typical SUV	● Drive typical SUV

Best Travel Options: Two Travelers

	100 miles	500 miles	1,000+ miles
Best	● Take motor coach	● Take motor coach	● Take motor coach
	● Take train	● Take train	● Fly economy
	● Drive typical car	● Drive typical car	● Take train
	● Drive typical SUV	● Fly economy	● Drive typical car
Worst	● Fly economy	● Drive typical SUV	● Drive typical SUV
	● Fly first class	● Fly first class	● Fly first class

Best Travel Options: Family of Four

	100 miles	500 miles	1,000+ miles
Best	● Take motor coach	● Take motor coach	● Take motor coach
	● Drive typical car	● Drive typical car	● Drive typical car
	● Drive typical SUV	● Drive typical SUV	● Drive typical SUV
	● Take train	● Take train	● Fly economy
Worst	● Fly economy	● Fly economy	● Take train
	● Fly first class	● Fly first class	● Fly first class

Notes: The red designation is a subjective assessment based on the distribution of total CO₂ emissions across modes. The analysis assumes typical car and typical SUV fuel economies of 23 mpg and 18 mpg, respectively. Train emissions reflect an average of electric and diesel operations. The analysis assumes turboprop use for 100-mile flights, regional jet use for 500-mile flights, and narrow-body jets for 1,000-mile flights, based on information from the Federal Aviation Administration. We assume that all flights are nonstop. For more on the emissions factors we used, and the magnitude emitted by each mode, see the full *Getting There Greener* report at www.ucsusa.org/gettingtheregreener.

Top Five Rules of Thumb for Green Travel

The tables on page 3 can give travelers an easy way to compare travel options to fit their needs. However, our *Getting There Greener* analysis also enabled us to create “rules of thumb” to help guide your initial travel choices, and to help you reduce your carbon footprint once you have made those choices. Let’s start with the top travel tips, and then look more closely at each travel mode:

Motor coaches and trains are a carbon bargain.

Whether traveling with a family, with a partner, or alone, those seeking a carbon bargain should seriously consider rail and motor coach travel. Intercity bus options have been on the upswing, as numerous regional carriers now provide coaches with very comfortable seats. And Amtrak offers everything from high-speed rail service in the Northeast to “auto trains” that enable long-distance travel without the wear and tear on your car. From a carbon perspective, motor coaches and trains are among your lowest-emission options, especially on shorter (less than 500-mile) trips. Moreover, because motor coaches and trains are often underused, they may offer what amounts to a carbon “free ride.”

Big SUVs and first-class flights usually have the largest carbon footprints.

Driving alone, driving inefficient SUVs (with or without other people), and flying first class are the most polluting ways to go. To keep your vacation’s carbon footprint down, consider other options.

For couples and solo travelers, a nonstop coach flight almost always beats an average car.

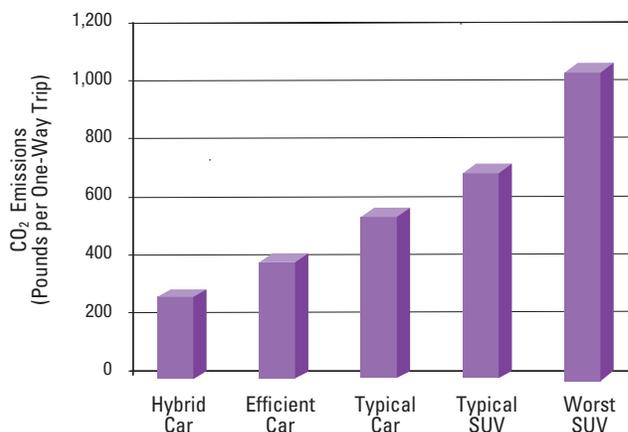
Carbon from cars and trucks adds up, especially when those vehicles travel long distances and are only partially occupied. If you’re traveling alone or with one other person, you’re usually better off flying direct in coach than getting behind the wheel of a passenger vehicle. This is especially true for trips of more than 500 miles.

To significantly reduce your carbon footprint behind the wheel, drive or rent a more efficient car.

If you don’t own a fuel-efficient vehicle, think about renting one when driving on longer trips. The carbon emissions from a large, inefficient SUV are nearly

four times those of a high-mpg hybrid like the Toyota Prius. If hybrids are not available, look into efficient conventional cars, which can ease the environmental harm while cutting your gas bill. Many car rental agencies now offer both hybrids and efficient conventional vehicles. Take advantage of them, and take some wear and tear off your car.

Carbon Emissions Depend on the Auto You Drive:
Couple Traveling 500 Miles



Note: This analysis assumes a 46-miles-per-gallon hybrid car, a 32-mpg efficient car, a 23-mpg typical car, an 18-mpg typical SUV, and a 12-mpg worst SUV.

Avoid traveling during peak periods.

Congestion has a noticeable effect on your fuel consumption and carbon footprint. When a car or SUV is stuck in traffic, its fuel consumption rate can be *double* the rate it gets at steady cruising speeds. So think about getting a GPS unit for your car that can alert you to traffic hot spots in real time and suggest ways to avoid them. (Some sell for as little as \$150.) And think about changing your vacation schedule to avoid peak travel periods that keep you stuck in traffic.

Now that you’ve decided whether to fly, drive, or take a train or motor coach, consider the following additional rules of thumb from our analysis of each travel mode, to shave your emissions even further.



Vacation Carbon Tips: Air Travel

Class matters—save money and save carbon.

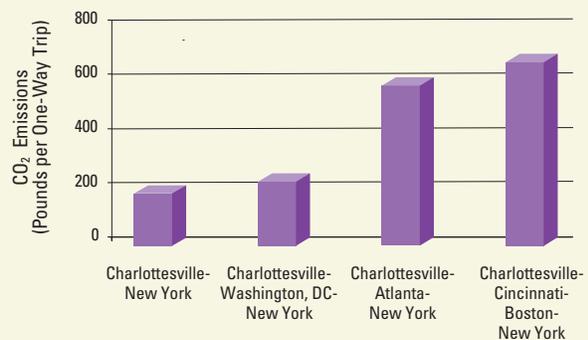
When choosing seats, avoid first class. Because a first-class seat takes twice the space of an economy seat, a first-class traveler on domestic flights is responsible for twice as much carbon as someone flying coach.*

Don't stop. Choose nonstop flights over connecting flights, especially for shorter trips. Because takeoff, landing, and ground operations produce a lot of carbon, a 1,000-mile nonstop flight from New York City to Orlando could save nearly 35 percent compared with a two-connection flight down the eastern seaboard.

If you must stop, fly straight. Travel websites and agents can show you exactly how many miles your flight will cover. If you can't get a nonstop flight, fly the most direct route possible to save carbon.

More seats = less carbon. Make the market work. Choose airlines with all-economy seating when possible, as they have smaller per-passenger carbon footprints.

Carbon Emissions Depend on the Route You Take: Flying from Charlottesville, VA, to New York City



Note: This analysis is based on actual routes and the type of aircraft used on each, whether turboprop, regional jet, or narrow-body jet.

* Coach seats with more legroom—sometimes called “economy plus”—are responsible for an average of 20 percent more carbon than standard coach seats.

Vacation Carbon Tips: Automobile Travel

Solo and couples vacationing? Keep it in the garage. Single travelers driving a typical car leave a large per-passenger footprint, while couples fare only a little better. Unless you're driving a vehicle that gets more than 45 mpg, look for other options, such as the bus, train, or even plane (economy seating, of course).

Keep the family road-trip tradition alive. If you're planning on bringing the grandparents or the kids along for the ride, your per-person carbon footprint shrinks accordingly. This makes cars—especially efficient cars—a low-carbon option for larger groups traveling together.

Be car smart. How you pack, how you drive, and how you maintain your vehicle can save significant carbon and cash.

Congestion guzzles excess gas. Select travel times carefully and consider routes that allow you to avoid getting stuck in rush-hour traffic—especially if your trip takes you through congested areas.



Vacation Carbon Tips: Rail Travel

 **Ride the rails in the Northeast to cut carbon and congestion.**

The Northeast Corridor is Amtrak's most highly developed segment, so you have more options, including high-speed Acela express trains between Washington, DC, and Boston. Because they run on electricity, Northeast trains are an even cleaner option.

 **Even outside the Northeast, an Amtrak station might be closer than you think.**

Check out your rail options even if you don't live near a train station. Amtrak's ThruWay bus service connects most cities to rail stations.



 **No rental required when training.** Unlike most airports, train stations are often right in city centers, so you don't have to hail a taxi or rent a car to get downtown, saving pollution as well as time. Amtrak also offers an "auto train" option that allows passengers to ride the train while bringing their cars along for the ride.

Take Me Out to the Ballgame

Here is one example of a chance to cut carbon emissions by taking the train. Vacationers traveling to Major League Baseball stadiums will find that many are located near train stations:



City	Miles from airport	Miles from train station
Coors Field (Denver)	25.0	0.4
Dodger Stadium (Los Angeles)	20.0	1.8
Minute Maid Park (Houston)	18.6	1.1
Busch Stadium (St. Louis)	14.9	0.8
Camden Yards (Baltimore)	9.7	2.5



Vacation Carbon Tips: Motor Coach Travel

- Motor coaches leave carbon in the dust.** A couple boarding a motor coach will cut their carbon nearly in half compared with driving even a hybrid car. And if they take the motor coach rather than flying, they will cut their emissions by 55 to 75 percent, depending on the distance they travel.
- Group tours = low carbon.** Interstate tour-bus travel has seen a major expansion over the past decade. So think about that group trip in a new, green way.
- Not your daddy's Greyhound.** Today many companies have ditched their older buses and

offer plush new coaches with everything from seat-back video to satellite radio to wireless Internet connections.

- Search and ye shall find.** You can jump-start your low-carbon vacation with an Internet search. Bus travel—unlike air and rail travel—does not have a centralized reservations website such as Orbitz, Expedia, Travelocity, or amtrak.com, but here are a few addresses to you get started: www.gotobus.com, www.greyhound.com, www.peterpanbus.com, www.trainways.com/schedules.asp. Happy trails!

Where you decide to go and how you get there is entirely up to you. It's your vacation. But prepped with rules of thumb and information about the carbon footprint of your travel options, perhaps next time you will *get there greener!*



How We Created *Getting There Greener*

Our analysis is based on energy consumption, ridership (passenger-miles), and CO₂ emissions for each mode of travel. We obtained that information from a number of government and commercial sources for the most recent year available, usually 2004–2005.

We then used standard metrics to convert energy consumption to CO₂ emissions, then divided by ridership to arrive at average pounds of CO₂ emitted per passenger-mile traveled in each mode.

Finally, we added upstream CO₂ emissions—those associated with extracting, refining, and transporting a given fuel—to yield total pounds of CO₂ emitted per passenger-mile traveled in each mode. We estimated per-trip emissions by multiplying the latter number by distance traveled.

The full text of this report is available online at www.ucsusa.org/gettingtheregreener.

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In *Getting There Greener*, the Union of Concerned Scientists presents the first comprehensive analysis—peer-reviewed by experts—of the highest-carbon and lowest-carbon options for vacation travel.

This analysis shows that three key factors determine the environmental impact of your travel: (1) the type of vehicle you are taking; (2) the distance you are traveling; and (3) the number of people traveling with you. Based on these factors, this guide can tell you how environmentally sound (or perhaps unsound) your travel plans are.

Where you decide to go and how you get there is entirely up to you. It's your vacation. But with our rules of thumb and the information we provide about the carbon footprint of your travel options, you'll have the tools you need to *get there greener!*



The Union of Concerned Scientists is the leading science-based nonprofit organization working for a healthy environment and a safer world.



Union of
Concerned
Scientists

National Headquarters

Two Brattle Square
Cambridge, MA 02238-9105
Phone: (617) 547-5552
Fax: (617) 864-9405

Washington, DC, Office

1825 K St. NW, Suite 800
Washington, DC 20006-1232
Phone: (202) 223-6133
Fax: (202) 223-6162

West Coast Office

2397 Shattuck Ave., Suite 203
Berkeley, CA 94704-1567
Phone: (510) 843-1872
Fax: (510) 843-3785