



A Brief Introduction to Climate Change

Climate change. Global warming. The greenhouse effect. Greenhouse gases.

Each of us has heard the terms. What exactly do they mean? What impact do these issues have on our health and the environment? Let's start with some common definitions.

Weather is what happens at a particular moment. Climate is the long-term average of an area's weather. For example, the weather on a winter day in Buffalo, NY could be sunny and mild, but the average winter weather – the climate – in Buffalo is cold and snowy.



Climate change refers to any significant change in measures of climate (e.g., temperature, precipitation and wind) lasting for an extended period (decades or longer). Global warming refers to an average increase in the Earth's temperature, which, in turn, causes changes in climate.

The term climate change often is used interchangeably with the term global warming, but according to the National Academy of Sciences the term climate change is preferred because it helps convey that there are other changes in addition to rising temperatures.

Continued on the back

Things You Can Do to Reduce Greenhouse Gas Emissions

Here are some simple steps that you can take at any time to reduce your personal and household greenhouse gas emissions. And just as important, many of these same things will also reduce the emissions that contribute to the formation of ground-level ozone, particulate matter 2.5 and other air pollutants.

- Use compact fluorescent light bulbs.
- Avoid using the clothes dryer by hanging clothes outside to dry.
- Limit hot showers to 5 minutes or less.
- Turn off computers, monitors and printers when not in use.
- Choose washable items over disposable ones.
- Compost yard trimmings and food scraps.
- Drive fuel-efficient vehicles.
- Reduce. Reuse. Recycle.
- Drive at or slightly below the speed limit and accelerate and stop smoothly.
- Bicycle, walk, carpool and use public transit when possible.
- Track your vehicle's average gas mileage and maintain your car, including keeping the tires properly inflated.
- Don't start your vehicle until you're ready to drive and turn off the engine while waiting for even short periods.

The greenhouse effect is a natural phenomenon that helps regulate the Earth's temperature. Greenhouse gases (e.g., carbon dioxide, methane and nitrous oxide) trap heat from the sun that otherwise would escape into space. The greenhouse effect is important. Without this natural occurrence, temperatures would be about 60 degrees Fahrenheit lower than they are now and life, as we know it, would not be possible.

There is scientific consensus on the greenhouse effect. There also is scientific consensus that human activities, primarily the burning of fossil fuels and cutting down trees as well as population growth, have enhanced the natural greenhouse effect causing the Earth's average temperature to rise.

It is important to note that climate change has occurred naturally throughout the Earth's history. The current warming trend, however, is of particular significance because it is most likely caused by human activities that have added a significant amount of greenhouse gases to the atmosphere.

As discussed earlier, at one time all climate changes occurred naturally. But since the Industrial Revolution, which was marked by the general introduction of power-driven machinery, human activity has added a significant amount of greenhouse gases to the atmosphere. Since the Industrial Revolution, which began in the late 18th

century, the need for energy to run machines has steadily increased.

So, what's the issue? A warmer Earth may lead to changes in rainfall patterns, a rise in sea level and a wide range of other impacts. Overall, climate change affects people, plants and animals. It may seem hard to believe that what people do can change the Earth's climate. But many scientists think that human activities that send greenhouse gases into the air are making the planet warmer.

Each of us contributes to greenhouse gas emissions whether we know it or not by driving a car, turning on a light, watching television, using a microwave oven and turning on the air conditioning. To perform many of these everyday functions, we need electricity. Electricity comes from power plants. Most power plants use coal and oil to make electricity. Burning coal and oil creates greenhouse gases.

Most scientists agree that climate change is a significant problem. But there are little things each of us can do to make a difference and reduce the amount of greenhouse gases that we put into the atmosphere. See the box on the front for more information.

For more information on climate change, visit www.epa.gov/climatechange/.



Office of Solid Waste
Reduction & Recycling
1-800-768-7348 ● www.scdhec.gov/recycle

DHEC's Office of Solid Waste Reduction and Recycling FYIs provide general information on environmental topics. Readers are encouraged to reproduce this material. For more information about solid waste issues, please call **1-800-768-7348** or visit our Web site at www.scdhec.gov/recycle. Please send written correspondence to: DHEC's Office of Solid Waste Reduction and Recycling, 2600 Bull Street, Columbia, SC 29201.