

NEW YORK STATE  
**Conservationist**

SPRING 2009

for  
**KIDS!**

CLIMATE  
CHANGE



You're holding

# NEW YORK STATE Conservationist

for  
Kids!

In this issue of *Conservationist for Kids* we'll learn about climate change, including how it affects you and New York State, and what you can do about it. There's a lot more to say than we can fit in these pages, so take a look at some of the books we suggest on page 3 to learn more. You'll find most of them in your local library.

Pssst...

**Do you recognize me?**

Be a page-number kid and share a photo of yourself and your friends enjoying the outdoors. Send us an e-mail or letter. We'll send you the details about what's required for us to print your photo or post it on our website.

**Contact us at**  
**Conservationist for Kids**  
625 Broadway, 2nd Floor  
Albany, NY 12233-4500  
**or e-mail us at**  
cforkids@gw.dec.state.ny.us

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Visit  
[www.dec.ny.gov](http://www.dec.ny.gov)  
There are links to lots of  
information for kids interested  
in the environment.





# Earth's Changing Climate

**E**arth's climate changes naturally. It was very warm in the days of the dinosaurs and the last ice age was only 15,000 years ago. But today, our climate is changing faster than ever before in human history. Scientists believe that people are responsible.



## Weather

Weather refers to the conditions of the air and atmosphere at a specific time: how warm or cold, wet or dry, clear or stormy it is.

## Climate

Climate refers to long term trends in temperature and precipitation. It describes the average weather of a place over many years.

## Climate Change

**Climate change** refers to changes in the climate over a period of 30 or more years. **Global warming** means an increase in the average temperature of the planet.

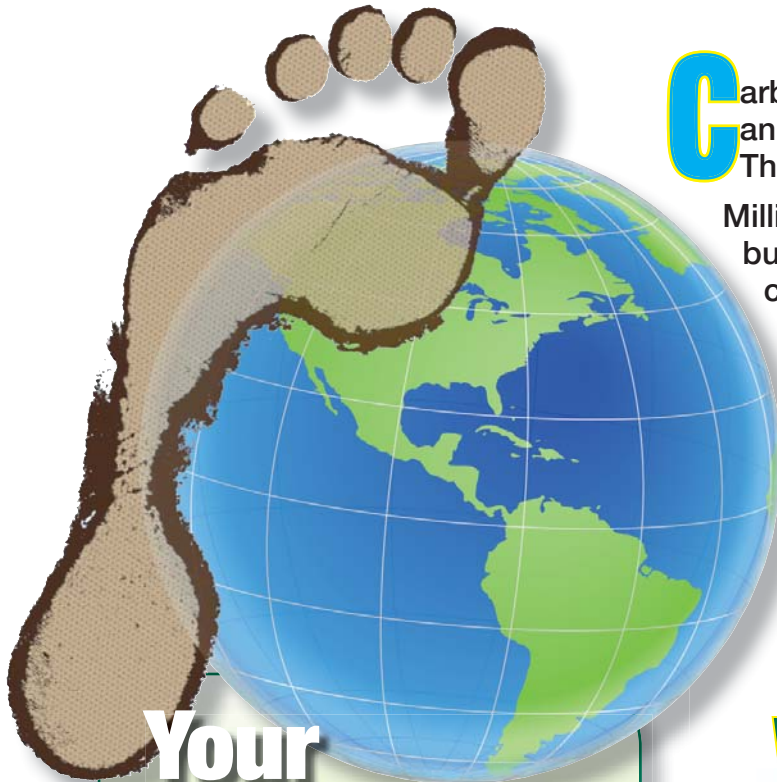


**Q:** What do **POLAR BEARS & NEW YORK STATE** have in common?

**A:** They're both affected by **CLIMATE CHANGE!**

**Y**ou've heard about climate change and global warming... about the polar ice sheets melting and polar bears losing their habitat? That would be like you losing your house, and your neighborhood, and finding it harder to get food.





**C**arbon is in every living thing. When plants and animals die, decomposers break them down. The carbon is released as carbon dioxide.

Millions of years ago, some plants became buried. They didn't decompose, so the carbon in them was never released. After many years they turned into the coal, oil, and natural gas we know today as fossil fuels.

Every time fossil fuels are burned to provide energy to get things moving (fuel for the car), to make things work (produce electricity), or to heat our homes, the carbon in them is released.

## Your Carbon Footprint

is a measure of the greenhouse gas from your daily energy use.

Reduce your energy use and shrink your carbon footprint.

## What happens to carbon dioxide from burning fossil fuels?



It goes into Earth's atmosphere, where carbon dioxide naturally exists already. It can stay there for a very long time—a thousand years—before it is taken up and used by plants in photosynthesis. We're adding carbon dioxide faster than it is being used, so the amount of carbon dioxide in Earth's atmosphere is increasing. The result is a changing climate.



We all need carbon!

### It's an element in every living thing.

Rocks and minerals made of fossilized animals and plants have carbon in them.  
There's carbon in the foods we eat.  
And there's carbon in you, too!

### For more information

*The Down-to-Earth Guide to Global Warming* by Laurie David and Cambria Gordon (Orchard Books, Scholastic Inc., New York, 2007)

*The Everything Kids' Environment Book* by Sheri Amsel (Adams Media, Avon, Massachusetts, 2007)

*50 Simple Things Kids Can Do to Save the Earth* by The Earthworks Group (Scholastic Inc., New York, 1990)

*Journey for the Planet: a Kid's Five Week Adventure to Create an Earth-friendly Life* by David Gershon (Empowerment Institute, Woodstock, NY, 2007)

*The Live Earth Global Warming Survival Handbook* by David de Rothschild (Rodale Books, New York, 2007)



# Earth's Changing Climate

It's possible that in New York State by the end of this century only the Adirondack High Peaks will have snow on the ground for more than a month in winter. In the Finger Lakes and Great Lakes, longer, hotter summers may cause more evaporation, so the water levels may drop. In the Hudson Valley, New York City and Long Island, the shoreline will change as melting polar ice sheets contribute to rising sea levels.

Changes in our climate will be more dramatic in future decades.

Energy from the sun reaches the Earth. Some of the energy is reflected back into space. Some passes through Earth's atmosphere and warms the surface of the planet. Warmth from the surface radiates back into the atmosphere where greenhouse gases trap the heat.

Incoming solar radiation warms the Earth's surface.

## The GREENHOUSE EFFECT

is what keeps our planet warm enough to support life. Greenhouse gases in Earth's atmosphere, including carbon dioxide, act like an insulating blanket. They hold heat and the atmosphere warms.

Heat emitted from Earth's surface warms the atmosphere.

More greenhouse gas in the atmosphere (like carbon dioxide) means more heat energy is trapped. Heat in the atmosphere powers the Earth's weather and climate.

Scientists believe New York will have a warmer climate with:

- Longer, hotter summers
- Shorter winters with less snow cover
- Dry spells several weeks long (drought)
- Periodic extreme rains and storms
- Rising sea levels
- Changes to plant and animal populations



Some solar radiation is reflected by Earth and its atmosphere.

ATMOSPHERE



# What YOU Can Do

Some of the things we can each do to help limit climate change are very simple.

What are you already doing?



Use compact fluorescent light bulbs (CFLs).



Turn off the TV and play outside.



Ride your bike or walk instead of driving for short trips.



Take a shower, rather than a bath. Keep it short and warm, not hot, to really make a difference.

Set the thermostat no higher than 68 deg.F when you're heating, and no lower than 78 deg.F when you're cooling.



Pack lunch in a cloth bag using refillable containers, rather than single-serving packages. Don't forget your cloth napkin!



If we each conserve energy and use fewer fossil fuels every day, we can limit changes to our climate. It's time to get in the habit of thinking about the energy we use and using it more wisely.



# About Climate Change

A lot of little things add up to big savings for the planet.

**Plant a tree. It stores carbon as it grows.**



What  
else  
could  
you  
do?



**Play games that don't need batteries or electric power.**

**Take the bus or subway instead of the car for longer trips.**



**Skip the clothes dryer and hang your laundry to dry.**

**Use a power strip or unplug devices to stop them from drawing energy when they're in "standby" mode (especially computers, TVs and battery chargers).**



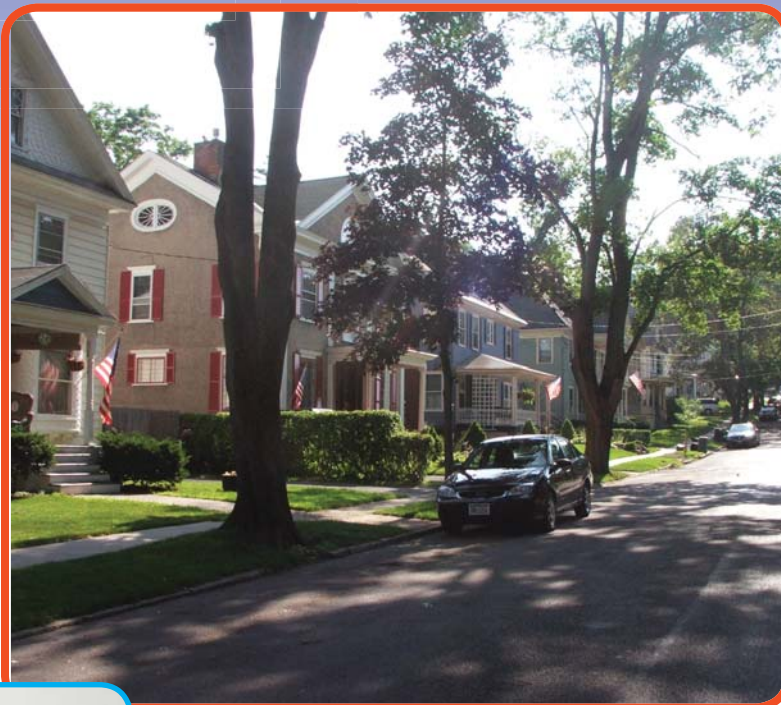
**Turn lights off when you leave a room.**

# The **OUTSIDE** Page Ideas for Exploring Outdoors!

## A World of **Carbon**

Take a friend and go for a walk outdoors. Take a deep breath. Remember the carbon dioxide in the atmosphere? It's in the air you breathe. The trees and other plants need it for photosynthesis; it helps them grow. While they are growing, they are storing carbon, locking it out of the atmosphere.

Where else is carbon stored? It's in the plants and in anything made from plants: the wood in buildings, decomposing leaves and branches on the ground, and in the soil. See page 3 for some hints.



## Make Your Own **Litterless Lunch Kit**

Instead of a throwaway lunch, pack everything in containers you can clean and reuse each day. Consider what you like for lunch and choose containers to suit your needs. You'll use fewer resources and send less to the landfill, and you'll save money because you can buy food in bulk, rather than expensive single-serving packets.

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David A. Paterson, Governor of New York State

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