

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

