



Hudson River Estuary Program

Climate Change in the Hudson Valley

The climate of the Hudson Valley is changing. Climate scientists have documented actual and expected changes in our regional climate and how these changes will affect natural and human communities in our region.

Why is the climate changing?

As the sun warms the Earth, the Earth radiates heat. Certain gases, called greenhouse gases (GHGs), trap some of this heat in the lower atmosphere. Some human activities, like burning fossil fuels, release GHGs into the atmosphere and intensify the greenhouse effect, warming the earth. This warming, called global warming, is affecting long-term weather patterns, or climates, around the world and in the Hudson Valley.



Climate change is increasing the risk of flooding in shoreline communities (C. Bowser)

How much has the climate changed in our region?

- New York State's average temperature has gone up nearly 2°F in 30 years.
- Winter average temperatures have warmed even faster, 5°F in 30 years.
- Bloom dates of many plant species are 4-8 days earlier on average than they were in the early 1970s.
- Average rainfall is increasing, and days with snow cover are decreasing.
- Sea level in New York Harbor is 15 inches higher today than it was in 1850.

What kinds of changes can we expect in the future in the Hudson Valley?

- Shorter, warmer winters and longer, hotter summers will affect local farmers and winter recreation, and may increase diseases carried by insect populations as they shift northward.
- Rising sea levels and strong storms will cause localized floods and threaten shoreline infrastructure and development.
- Rising summer air temperatures will increase pollution-related asthma and heat exhaustion, especially in urban areas.
- Invasive species and nuisance plants will thrive under elevated atmospheric CO₂ levels.



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How can we respond to climate change?

The severity of climate change we see will depend on energy choices we make today and over the next decade. The Hudson River Estuary Program is working with NYSDEC's Climate Change Office and regional partners to help communities understand the sources and projected impacts of climate change and to coordinate regional responses.



*Wetlands help absorb floodwaters
(C.Bowser)*

How can local governments reduce greenhouse gas emissions?

- Organize a global warming task force and complete a greenhouse gas emissions inventory. For more information: ICLEI Local Governments for Sustainability (<http://www.iclei-usa.org/programs/climate>) and The Climate Registry (www.theclimaterestry.org)
- Reduce greenhouse gas emissions and save money by improving the energy efficiency of municipal buildings and operations
- Install solar, wind or other renewable energy technologies in power facilities
- Add hybrid and more fuel-efficient vehicles to government fleet
- Reduce solid waste through recycling programs

How can local governments adapt to a changing climate?

- Identify potential impacts (e.g., increased risk of flooding)
- Develop emergency management teams and improve emergency communication
- Keep development out of flood-prone areas
- Manage stormwater to reduce flooding and find alternatives to paved surfaces
- Conserve wetlands and forests that absorb floodwaters and recharge groundwater

What can I do to help?

- Reduce greenhouse gas emissions and save money by improving energy efficiency
- Walk, bike or carpool to work or on errands
- Buy Energy Star appliances
- Support green power. Check your utility's website for more information
- Get involved in your local government! Organize a community presentation or event on climate change

How can I learn more about climate change in the Hudson Valley?

Visit the Hudson River Estuary Program web site at: <http://www.dec.ny.gov/lands/39786.html>

Or contact:

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