

Climate Change and Agriculture

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If you have been following the issues of climate change and associated extreme events, regardless of your position on the cause or magnitude of changes in weather and climate variations from historical trends and norms, you know that agriculture is considered both to have a role in accelerating climate change and potentially to be a major part of the solution.

It is generally accepted that modern agriculture, food processing, and distribution are all contributors to the greenhouse gases that are understood to be contributing to accelerating climate change. The World Future Council, one of many organizations working to address the issue, suggests that agriculture is directly responsible for 14% of total greenhouse gas emissions. Importantly, rural land use decisions and changes “have an even larger impact.” Globally, deforestation both for harvest and often for clearing for agriculture and development accounts for an additional 18% of carbon emissions. www.worldfuturecouncil.org/how-does-agriculture-contribute-to-climate-change/

State and Federal environmental and regulatory agencies are working to balance agricultural production and food supply goals with environmental protection and real threats to agricultural production, forest resources and rural economies with regional, state and national and global greenhouse gas reduction goals. These are overlapping goals since the risks of climate change include:

- More frequent and severe storms
- Rising average temperatures
- Extremes and shifts in precipitation patterns
- More floods and forest fires.

Cornell Cooperative Extension has responded to the need for better information and subject matter guidance both by supporting research on the topic and, with respect to agriculture, by organizing the “Cornell Climate Smart Farming” program. This voluntary



Erie County 
CLIMATE ACTION

July 9, 2020 was the 2nd hottest of any day in Buffalo

How can you help Erie County be more resilient to climate change? #ErieCountyClimateAction
erie.gov/climateaction/participate

initiative is intended to help farmers in New York and the Northeastern U.S. to:

- Increase agricultural productivity and farming incomes sustainably
- Reduce greenhouse gas emissions from agricultural production through adoption of best management practices, and increased energy efficiency and use of renewable energy
- Increased farm resiliency to extreme weather and climate variability through adoption of best management practices for climate change adaptation.

The program’s web page is: www.climatesmartfarming.org. The Extension team includes Elizabeth Buck, Vegetable Specialist with the Cornell Vegetable Program. While this is a regional team, Elizabeth is based out of the CCE Erie office. General questions to the team can be addressed to: climatesmartsolutions@gmail.com or directly to Elizabeth at: emb273@cornell.edu.

Locally, Erie County’s Department of Environment and Planning is leading the “Erie County Community Climate Change Task Force” as Erie County’s green initiative to develop an equity-centered Community Climate Action Plan to identify and promote actions to reduce greenhouse gas emissions and to help communities

CLIMATE CHANGE

It's happening. It's local.

What is Erie County doing about it? www.erie.gov/climateaction

What's the problem?

Increased greenhouse gases are warming our planet. This is significantly changing our climate here in Western New York, and individuals and communities experience climate change impacts differently.



How does a changing climate affect our region?

Although not always visible, the effects of climate change can be felt right here in Western New York. Changes in our climate are already bringing bigger storms to our area, dangerous heat waves, increased flooding, wind events, insect population and disease. These changes impact our jobs, our health and our beautiful environment.



Flooding

Increase in rainfall, snowmelt and average precipitation. Severe storms will intensify.



Increased Heat

Average temperature will increase 3-5 degrees Fahrenheit by the middle of the century. Warmer temperatures mean less ice coverage, resulting in more lake effect snow. Additionally, more frequent heat waves are expected.



Invasive Species & Vector Borne Disease

Mosquitos, ticks, lyme disease, and algal blooms will become worse as the climate warms.



adapt to the changing climate. See: <https://www.erie.gov/climateaction/>. In addition to developing the Climate Action Plan, the Task Force is developing resources to help build awareness and participation with the goal of achieving “equitable climate action for a healthy and resilient Erie County.”

The plan will directly address agriculture by identifying local contributions and impacts and in looking to the agricultural sector and associated land uses as part of practical solutions. CCE-Erie is participating in the Task Force and planning activities, both to help ensure that agriculture issues are considered and incorporated and to help promote the public outreach efforts.

Over the coming months and years, farms will be hearing much more about this topic including the likelihood of financial incentives and payments

associated with climate smart farming practices both to reduce emissions and for soil conservation efforts to continue erosion reduction and carbon sequestration efforts. ■

References:

- US Environmental Protection Agency, Agriculture and Climate: www.epa.gov/agriculture/agriculture-and-climate
- United States Department of Agriculture, Climate Solutions: www.usda.gov/topics/climate-solutions
- New York State Department of Environmental Conservation, Climate Change: www.dec.ny.gov/energy/44992.html
- Cornell Climate Smart Farming: www.climatesmartfarming.org
- Erie County Climate Action: www.erie.gov/climateaction
- World Future Council, Agriculture and Climate Change: www.worldfuturecouncil.org/how-does-agriculture-contribute-to-climate-change/