

GHG 101: Act  
now!

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Greenhouse Gas Mitigation on Working Lands

# 5 Ways to Act Now!

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*The benefits of  
acting now!*

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Climate change is caused by everyone. This fact sheet provides an overview of the types of opportunities landowners have to help stabilize the climate for future generations.

## Imperative to Act

As a result of human activity climate change has been observed globally and will become more severe throughout the next several decades. Northeast U.S. agriculture is vulnerable to changing climate and market conditions, including:

- Crop responses to changes in temperature including frosts and heat waves
- More variable precipitation, including floods and droughts
- New and more severe pests and pathogens in response to warming
- Effects of warming on crop and livestock production (including meat, eggs, dairy)
- Energy price fluctuations with expected increased regulation of fossil CO<sub>2</sub> emissions

Acting now to reduce greenhouse gas (GHG) emissions will reduce these impacts in future years. As the old saying goes, an ounce of prevention is worth a pound of cure!

## Regulation of GHG Emissions

There are regulations on GHG emissions from the electric sector in 11 northeast states engaged in the Regional Greenhouse Gas Initiative (<https://www.rggi.org/> CT, DE, ME, MD, MA, NH, NJ, NY, RI, VT, VA, as of August 2021). However, there are no regulations of GHG emissions from agriculture and forestry. Following a tradition of farm and forest stewardship, there are many exciting yet practical ways for agriculture and forestry to reduce GHG emissions, and for government programs to assist in such stewardship.

## Goal

This fact sheet is an introductory overview to help farmers, conservationists, educators, and farm advisors navigate voluntary methods for reducing GHG emissions from a variety of practices across different types of working lands, other fact sheets are available that provide detailed information on specific topics. We focus on key opportunities that have substantial benefits in addition to climate mitigation, such as improved profitability and yield.

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**5 key strategies for  
reducing GHG**

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## 5 Ways Working Lands Can Reduce Greenhouse Gases



### REDUCE GHG by Increasing Efficiency: reduce nitrogen, feed, and fuel inputs

- Increased crop production efficiency can reduce emissions per amount harvested.
- Improved nitrogen use efficiency reduces costs, improves water quality and reduces emission of nitrous oxide, a potent GHG.
- Improved livestock feed efficiency reduces emissions per amount produced, reducing the number of acres needed to produce feed, and the amount of nitrogen used.
- Improved energy efficiency reduces use of fossil fuels and increases air quality.



### DESTROY METHANE

- Covering a manure storage so methane can be captured and flared.
- Separating solids and liquids, treating manure, and changing storage management can reduce methane production.
- Improving livestock feed efficiency and using certain feed additives reduces methane emissions.



### SEQUESTER CARBON: in living trees, long-lived wood products, and soils.

- Keep forests as forests; grow new forests on idle land.
- Practice sustainable forestry for long-lived wood products (store carbon in beautiful furniture, manage forests to grow new trees and sequester more.)
- When feasible, switch from annual to perennial crops to increase soil carbon.
- Add trees to agriculture, including rows among annual crops, streamside buffers, and in pastures (silvopasture).



### DISPLACE GHG-emitting materials

- Displace Fossil Fuels using renewable solar, wind, hydropower, and bio-energy.
- Keeping fossil fuels in the ground is the BEST carbon sequestration there is!
- Displace GHG-emitting materials like steel and concrete with long-lived wood products.



### CONSERVE

- Energy (reduce emissions, reduce acres required for solar and wind energy).
- Recycle materials to reduce life cycle emissions.
- Reduce food waste to reduce life cycle emissions, reduce acres required to make food, and reduce emissions from landfills.
- Leave forests as forest and manage them sustainably for wood products, carbon sequestration, wildlife habitat, water quality, and other benefits.

**To Learn More**, please visit: <http://blogs.cornell.edu/workinglands>

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### GHG & Working Lands

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