



**Department of  
Agriculture and Markets**



**Soil and Water  
Conservation  
Committee**

# **NYS Soil & Water Conservation Districts and Climate Change Action Through the CLCPA**

Kathy Hochul  
*Governor*

Richard A. Ball  
*Commissioner*

Dale Stein  
*Chair*

# Outline

- **Intro to the NYS Climate Leadership and Community Protection Act (CLCPA)**
- **Agriculture and Forestry Advisory Panel**
- **Recommended strategies for Climate Action Council Scoping Plan**
- **Environmental and community benefits**
- **Climate Resilient Farming Program**



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# Climate Leadership and Community Protection Act (CLCPA) – Overview

**Carbon neutral economy, mandating at least an 85% reduction in emissions below 1990 levels by 2050**

**40% reduction in emissions by 2030**

**100% zero-carbon electricity by 2040**

**70% renewable electricity by 2030**

**9,000 MW of offshore wind by 2035**

**6,000 MW of distributed solar by 2025**

**3,000 MW of energy storage by 2030**

**185 TBtu on-site energy savings by 2025**

**Commitments to climate justice and just transition**

[New York's Climate Leadership and Community Protection Act \(CLCPA\) \(ny.gov\)](https://www.nysenate.gov/legislation/bills/2023/CLCPA)

## **Advisory Panels**

- Agriculture and Forestry
- Land Use and Local Government
- Transportation
- Energy Efficiency and Housing
- Energy Intensive and Trade Exposed Industries
- Power Generation
- Waste Management

## **Working Groups**

- Just Transitions
- Climate Justice

# Agriculture and Forestry Advisory Panel

**Richard Ball, Chair, Commissioner NYS Department of Agriculture and Markets**

**Peter Innes, NYS Department of Environmental Conservation**

**Rafael Aponte, Rocky Acres Community Farm**

**Amanda Barber, Cortland County Soil and Water Conservation District**

**John Bartow, Empire State Forest Products Association**

**Michelle Brown, The Nature Conservancy**

**Tom Gerow, Wagner Lumber Company**

**Suzanne Hunt, HuntGreen LLC and Hunt Country Vineyard**

**Peter Lehner, EarthJustice**

**Samantha Levy, American Farmland Trust**

**Robert Malmshemer, SUNY Environmental Science and Forestry**

**Stephanie Morningstar, Northeast Farmers of Color Land Trust**

**John Noble, Noblehurst Farms**

**Julie Suarez, Cornell University**

**Ned Sullivan, Scenic Hudson**

**Donna Wadsworth, International Paper**

**Elizabeth Wolters, New York Farm Bureau**

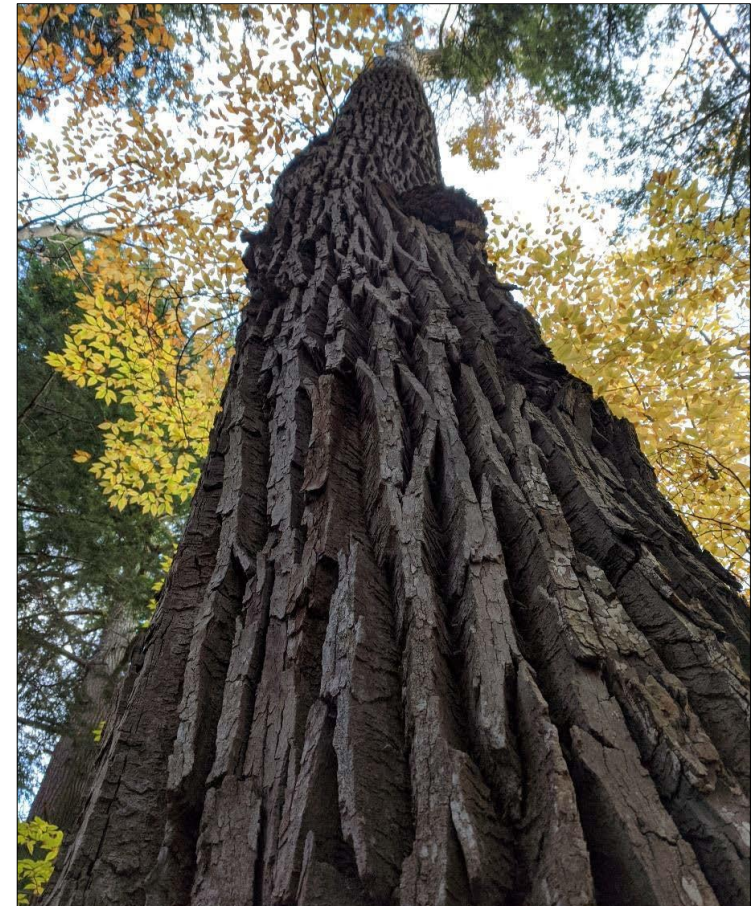
**Peter Woodbury, Cornell University**

**Nelson Villarrubia, Trees New York**



# AFAP Recommended Strategies - Key themes

- > Focus on methane and nitrous oxide reduction of farms and increasing carbon sequestration on farmland and forests.
  - > Some emission/sequestration sources require long-term strategies, e.g., it takes decades to develop additional tree cover and years to build soil carbon.
  - > For agriculture, emissions reductions strategies are designed to keep farm operations viable and minimize the potential for emissions leakage. Emission leakage occurs when businesses leave the state and take their emissions elsewhere outside of NY jurisdiction.
- 
- > Two key themes of the panel:
    - Agricultural Emissions Reductions
    - Carbon Sequestration in Forests and on Farms



# Agricultural Emission Reduction

- > **Nutrient Management** - Reduce nitrous oxide (N<sub>2</sub>O) emissions while achieving desired crop yield and quality through continued and expanded nutrient management planning and implementation on crop fields, hay fields, pastures, orchards, vineyards, and other agricultural lands receiving nutrients.





# Agricultural Emission Reduction

- > **Alternative Manure Management** - Reduce methane emissions by implementing practice systems specifically planned and designed for each farm, such as cover and flare systems, anaerobic digester systems, and other innovative systems that collect, capture and combust methane from manure storages or prevent methane production from manure storage.



Compost Facility



Manure Storage Flare



Manure Storage Cover



# Agricultural Emission Reduction

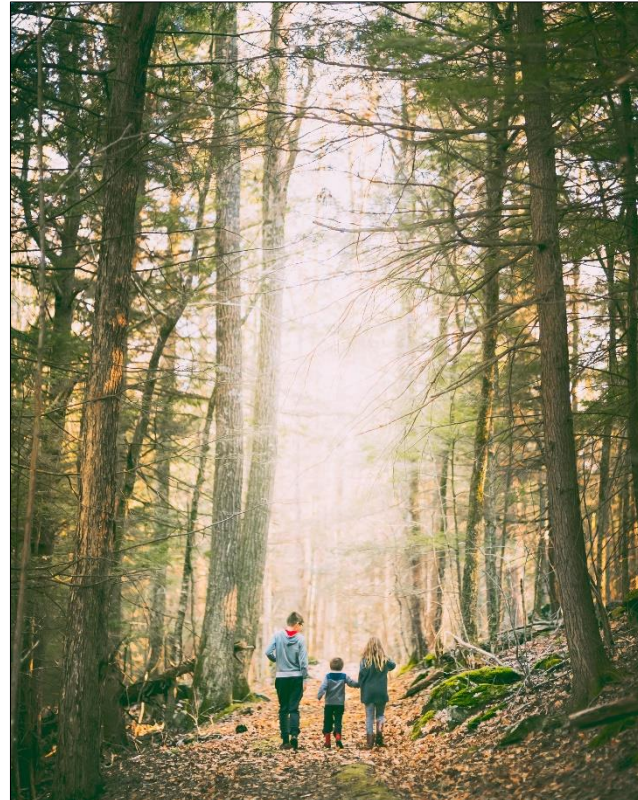
- > **Precision Feed Forage and Herd Management** - Reduce methane and nitrous oxide emissions while achieving desired ruminant growth and lactation goals. Strategy acknowledges that additional methane emission reduction may be realized from feed additives developed in the future.





# Carbon Sequestration in Forests and on Farms

- > **Avoided Conversion of Forest and Farmland** - Maintain and enhance the state's carbon stocks and carbon sequestration potential through avoided forest and farmland use conversion.
- > **Forest Carbon Mitigation** – Establish a mitigation framework for conversion of forest land to development.



# Carbon Sequestration in Forests and on Farms

- > **Soil Health** - Reduce net GHG emissions and increase carbon sequestration/storage and other environmental benefits through adoption of soil health management practices (e.g., cover/double crops, reduced tillage, perennial crop systems. Also referred to as Regenerative Agricultural Practices).



Soil Health Technical Assistance



Soil Sampling



Tillage Radish



Cover crops



# Carbon Sequestration in Forests and on Farms

- > **Agroforestry** - Adding trees into areas of agricultural production to reliably increase carbon sequestration and other environmental benefits.



Silvopasturing



Tree Planting



# Carbon Sequestration in Forests and on Farms

- > **Forest Management** - Increase carbon sequestration through improved, sustainable forest management practices. Secure forest regeneration, improving forest health and productivity, and restore degraded forests.
- > **Forest Carbon Market** – Create a New York carbon market that forest and farm landowners can participate in.





# Carbon Sequestration in Forests and on Farms

## > Reforestation/Afforestation

- Tree planting focusing on underutilized lands.
- Increase tree seedlings in existing forest lands that are understocked.



2002 prior to planting (left), same field fall 2020 (right) more than 1,600 trees and shrubs have been planted on a farm in Delaware County using plants purchased from the Soil and Water Conservation District's annual tree program.





# Carbon Sequestration in Forests and on Farms

- > **Urban Forestry – Planting** – Increase tree canopy cover in our urban/suburban areas through tree planting efforts on public and private lands. Dual benefits of reducing cooling costs associated with heat island effect and sequestering additional carbon.
- > **Urban Forestry - Maintenance** – Improve maintenance of urban trees to increase their longevity and provide for increase canopy cover through larger and older trees.





# Carbon Sequestration in Forests and on Farms

- > **Climate-focused Bioeconomy** - the portion of an economy that produces sustainable, renewable bio-based feedstocks, rather than fossil fuel-based feedstocks, to produce products that achieve the climate and social justice goals of the CLCPA.



Fiber packaging



Shutterstock



WoodWorks.org

# Benefits and impacts - Disadvantaged communities

- > Increasing research, planning, technical services and financial assistance improves access to programs and effective practices for all farmers and forest landowners. **These strategies will prioritize disadvantaged communities by placing emphasis on access to agricultural and forestry technical assistance and funding programs to historically underserved and disadvantaged community members.**
- > Improvements in food production capacity, resiliency and diversity have a **positive effect on disadvantaged communities.**
- > **Strategies will benefit rural economically disadvantaged communities**, including those in Environmental Justice (EJ) areas, by improving the forest-based economy and increasing job opportunities. Strategies allow lower to middle income landowners to hold on to their forest lands, maintain open space, keep forest as forest, and sustainably manage their lands.



# Benefits and impacts - Health and co-benefits

- > **Farm level projects that reduce GHG emissions and increase sequestration have many other co-benefits including increasing air and water quality, biodiversity, elevating local food production, diversifying farm incomes and increasing farm profitability.**
- > Numerous studies in the U.S. and around the world are exploring the health benefits of spending time outside in nature, green spaces, and, specifically, forests.
- > **Protected and well managed forests and farmland have the potential to maintain or improve local food production, community resiliency, water quality, air quality, storm/flood mitigation, outdoor recreation, public infrastructure protection, drought resiliency, wildlife habitat, scenic vistas/tourism, market diversification, economic development and employment.**
- > Agricultural and forest land protection captures carbon in the land base and prevents future emissions from vehicle use from prevented sprawl development.

# Climate Resilient Farming (CRF) Program



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# Investing in New York Agriculture's Climate Solutions



## RESEARCH & EDUCATION

- Carbon Farm Study – scientifically based assessment of opportunities and barriers to support climate mitigation and adaptation practices on working agricultural lands
- Hudson Valley Carbon Farming Pilot Project – pilot regenerative agricultural practice implementation with quantification of soil organic matter to measure sequestration potential



## NY SOIL HEALTH WORKING GROUP

- Farmer Survey of Soil Health Economics found 60% of farms using reduced tillage or cover crops reported increased resilience to drought and flooding within a short time of adoption.
- Cornell Soil Health laboratory database is being analyzed to identify specific soil health targets to couple with verification via soil testing

# Background and Goals

**The goal of Climate Resilient Farming is to reduce the impact of agriculture on climate change (mitigation) and to increase the resiliency of New York State farms in the face of a changing climate (adaptation).**



**Follows the NYS AEM Planning Framework**



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# Climate Resilient Farming Grant Program

- **Launched in 2015**
  - **\$12 million** awarded
  - **200 farms** assisted
  - **Estimated 320,000** metric tons of CO<sub>2</sub>e/yr. emissions reduction
- **Three tracks:**
  1. Methane Management through manure storage cover and flare systems
  1. On farm riparian, floodplain, and upland water management
  2. Healthy Soils NY



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# Track 1: Waste Storage Cover and Flare

## Why covers and flares?

- Agricultural waste storage cover and flare systems have the capacity to immediately impact both the GHG emissions from the farm and the farm's resiliency to major precipitation events.
- Eliminates millions gallons of clean rainwater from entering the manure storages, which mitigates water quality concerns especially during major precipitation events.
- Reduces emissions associated with spreading million gallons of rainwater annually
- Round 5 - **\$2** million awarded



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# Track 1: Case Study Dairy Manure Management System



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# Track 2: Riparian, Floodplain and Upland Water Management

## Why water management?

- Improved water management on farms through the implementation of conservation systems can significantly enhance a farm's resiliency to the impacts of climate change, including both drought and flood.
- Conservation systems, such as transferring land to perennial production or forest buffer, can also create beneficial carbon sinks.
- Round 5 - **\$1** million awarded





# Track 2: Floodplain Bench



Orange SWCD implemented a floodplain bench on the Wallkill River for flood control and riparian restoration. The floodplain bench has already alleviated flooding on adjacent cropland.



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# Track 2: Beneficial Electrification for Micro-Irrigation



Three-phase power was installed to replace the diesel generator powering the irrigation pumps and micro-irrigation system was installed to conserve water.



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# Track 3: Healthy Soils NY

## Why soil health?

- Improved soil health on farms can significantly enhance a farm's resiliency to the impacts of climate change.
- Soil health practices can also create carbon sinks, increase water holding capacity and improve recycling of nitrogen by crops, thereby mitigating GHG emissions.
- Round 5 - **\$1** million awarded



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# Track 3: Cover Crop Innovation



“Hi-boy”  
Interseeder  
planted  
7,200 acres  
mixed species  
cover crops  
on 10 farms  
in Schuyler &  
Chemung  
counties.



# Program Impact

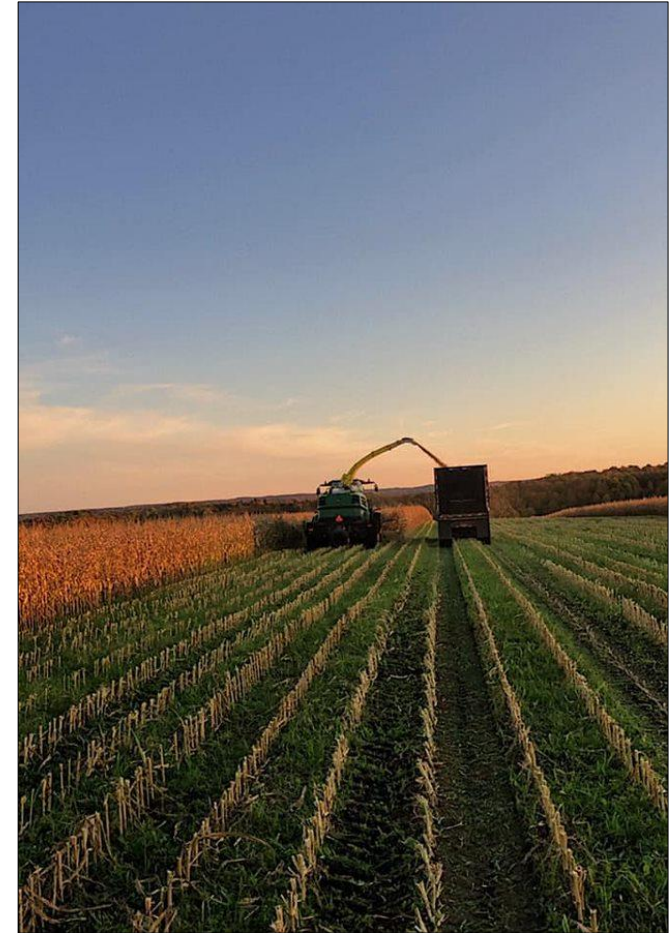
CRF Program Estimate of CO<sub>2</sub>e/Year Emission Reductions (2015-2020), derived from USDA's COMET Planner and IPCC calculation of methane per unit of livestock at 20-year GWP

CRF Program	Program Round Funding Level	Track 1 (Methane Management) Estimated CO <sub>2</sub> e/Year (MT) using 20-year GWP of x84	Track 2 (Water Management) Estimated CO <sub>2</sub> e/Year (MT)	Track 3 (Healthy Soils NY) Estimated CO <sub>2</sub> e/Year (MT)	Total Estimated CO <sub>2</sub> e/year (MT)
Round 1	\$1,400,000	48,087	40	73	48,200
Round 2	\$1,500,000	0	325	111	436
Round 3	\$2,800,000	19,665	192	981	20,838
Round 4	\$2,300,000	160,906	62	1,082	162,050
Round 5	\$4,000,000	87,298	1,058	1,191	89,547
Total:	\$12,000,000	315,956	1,677	3,438	321,071



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# Thank you



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