

# New York State Climate Leadership and Community Protection Act

September 16, 2020

Meeting 1 Agriculture and Forestry Advisory Panel



**Climate Action  
Council**

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

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

**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**

# Delivering the CLCPA



# Advisory Panels and Working Groups

## Six Advisory Panels:

- > Sectors: Transportation, Agriculture/Forestry, Land Use/Local Government, Power Generation, Housing/Energy Efficiency, Energy Intensive/Trade Exposed Industries.
- > Chaired by Climate Action Council Commissioner or designee.
- > Advisory Panel to determine scope of work, within the emissions sector.

## Just Transition Working Group:

- > Co-Chaired by Commissioner of Labor and President & CEO of NYSERDA; includes Commissioner of Housing and Community Renewal and Chair of the Public Service Commission.
- > Scope of work includes jobs report, workforce training needs, power plant site reuse opportunities.

## Climate Justice Working Group

- > First meeting on August 14, 2020

# Adopt a Scoping Plan

## Directions to the Council

- > Adopt a Scoping Plan of recommendations for achieving GHG limits
- > Recommend measures to achieve the GHG limits, including carbon neutral economy
- > Evaluate the costs and benefits, both economic and non-economic and including co-benefits, of the measures for reducing GHGs
- > Identify measures to maximize reductions of both GHGs and co-pollutants in disadvantaged communities

## Process

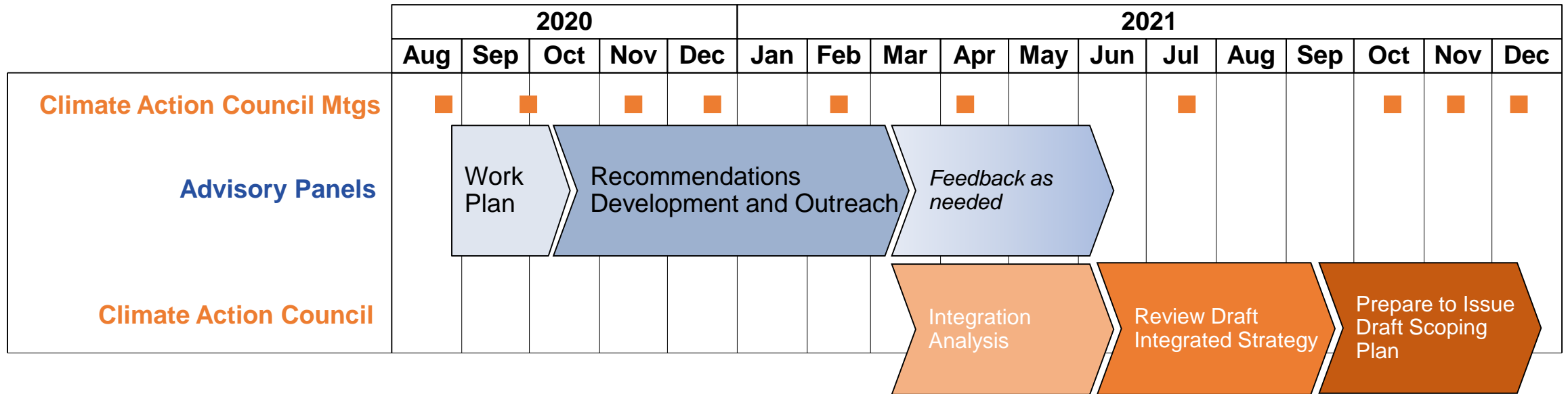
- > Receive recommendations from Advisory Panels, Just Transition Working Group
- > Consult with Climate Justice Working Group and Environmental Justice Advisory Group
- > Hold 6 public comment hearings on the draft Scoping Plan
- > Update every 5 years

# Scoping Plan Contents

## **At a minimum, contains measures for:**

- > Performance-based standards for GHG sources
- > Reducing electricity sector emissions, advancing achievement of the clean energy requirements
- > Limiting use of synthetic GHGs
- > Land-use and transportation planning
- > Reducing energy use in existing residential or commercial buildings
- > Achieving long-term carbon sequestration
- > Promoting best management practices in land use
- > Aiding in the transition of the state workforce to the clean energy economy
- > Limiting emission leakage

# Timeline to Draft Scoping Plan



# Considerations for the Advisory Panel

This Advisory Panel has a unique charge.

- > Negative emissions (carbon sequestration) can only happen here.
  - Your charge encompasses both emission reductions and enhanced carbon storage.
- > The benefits of sustainable land management go beyond carbon.
  - The co-benefits include many vital ecosystem services – that people really value.
  - Being resilient to climate change means maintaining these services.
- > Agriculture and Forestry are critical industries.
  - Not only should NY avoid ‘leakage’, but enhance local food and fiber production to support the economy – and to lower the “embedded emissions” of the products we consume.
  - Sustainable land management happens *in partnership* with private landowners.



# CLCPA Emission Reduction Requirements

The Scoping Plan must address:

- > 40% reduction in GHG emissions by 2030, from 1990 levels
- > 85% reduction in GHG emissions by 2050, from 1990 levels
- > 100% emission reduction – or net zero emissions – by 2050

These requirements cover the *entire* economy.

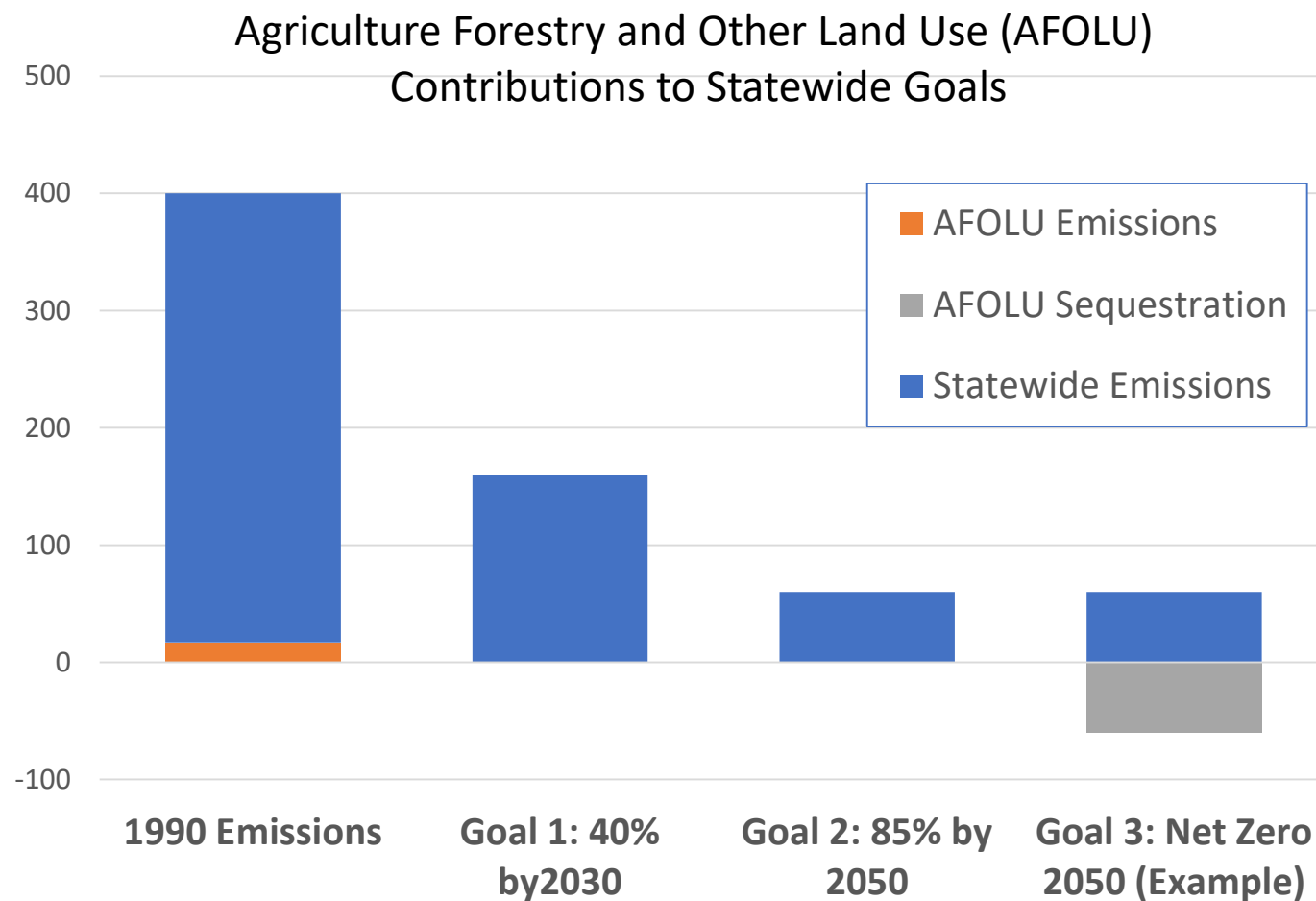
How do these relate to Agriculture and Forestry?

# CLCPA Emission Reduction Requirements

The emission requirements are statewide, with contributions from across all parts of the economy.

Your recommendations should:

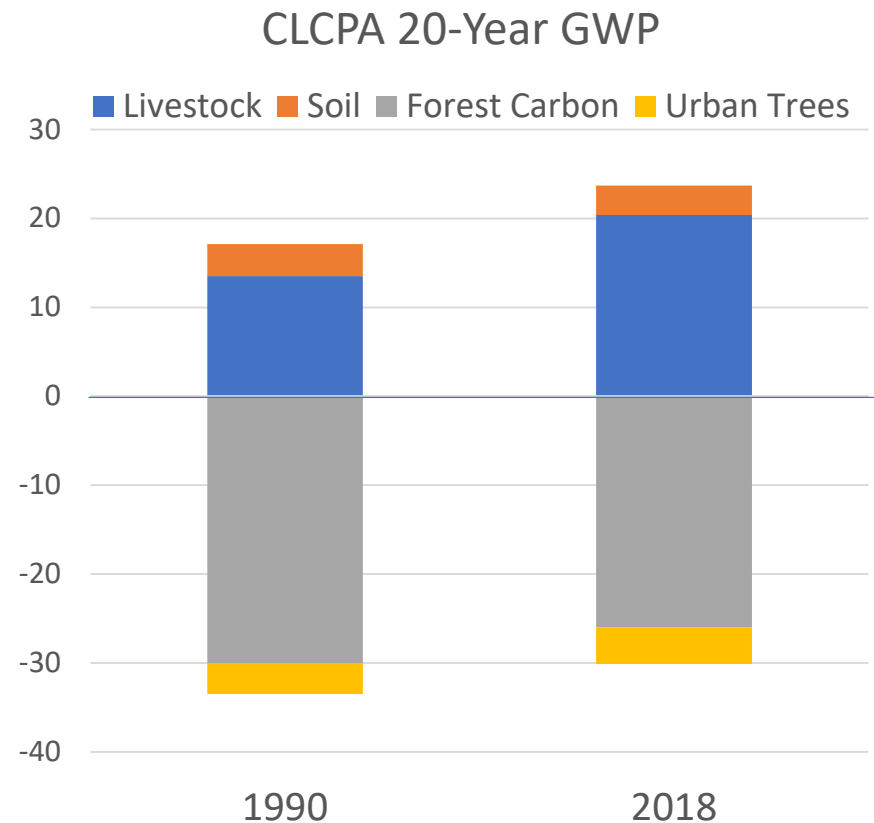
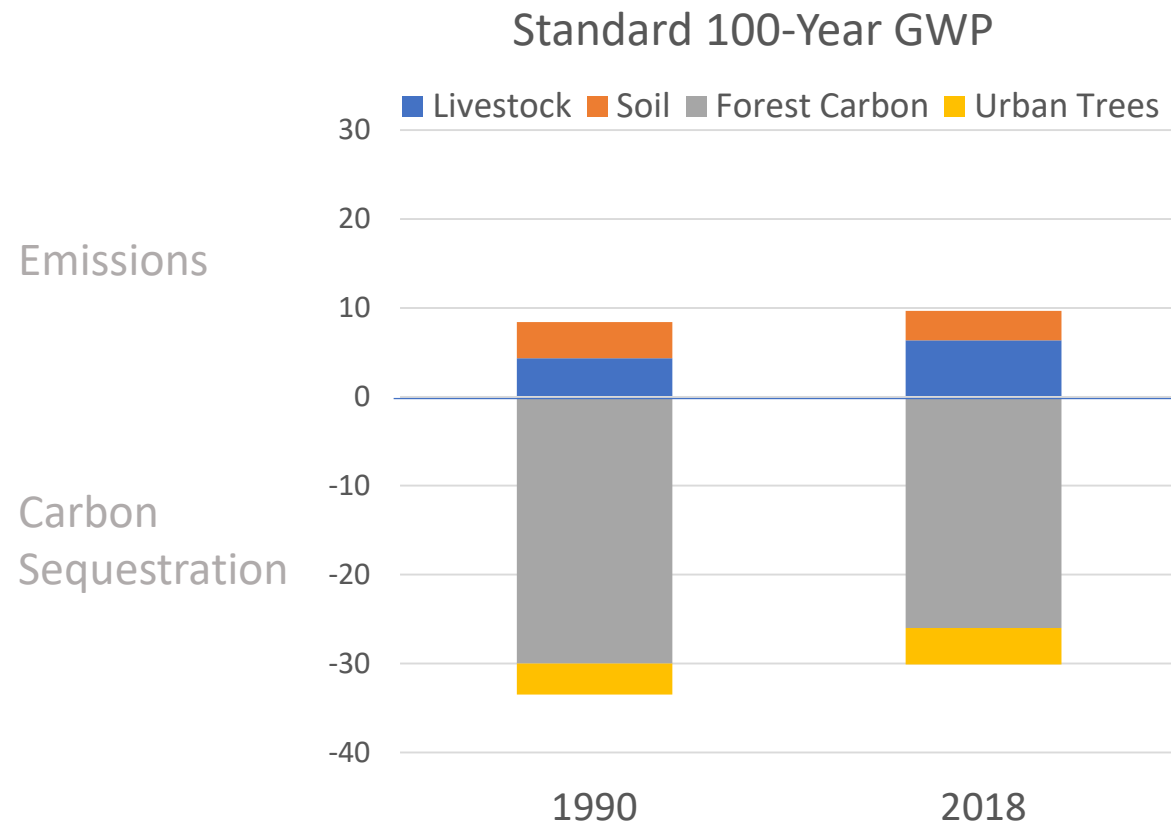
- > Maximize emission reductions.
- > Enhance carbon sequestration. This will be used to address unavoidable emissions across the whole economy.



Values are approximate

# AFOLU Trends Since 1990

> Two key takeaways: 1) Emissions have changed and 2) The CLCPA highlights methane.



# Sources of Emissions and Sequestration

Below are some relevant emission categories. These may be useful to guide policy discussions.

1. Livestock Management
  - Includes animal feeding (enteric fermentation) and manure storage.
2. Soil Management
  - Includes fertilizer use and cropland nutrient management
3. Land Use and Management
  - Includes changes in carbon stocks due to land conversions and management on those lands.
  - Land types include: forest land, cropland, grassland, wetlands, and settlement lands.
  - Can include urban forests, riparian buffers, etc.
4. Harvested Wood Products
5. Energy
  - Although not a part of AFOLU, energy use and biofuel fuel production are relevant here as well.



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# **Agriculture and Forestry Advisory Panel Charge and Workplan**

**Deputy Commissioner David Valesky, Department of  
Agriculture and Markets**

**Andrew M. Cuomo**  
*Governor*

**Richard A. Ball**  
*Commissioner*

# Advisory Panel Work Product

## Each advisory panel is expected to:

- Identify a range of emissions reductions, consistent with analysis and in consultation with the CAC, for the sector which contributes to meeting the statewide emission limits.
- Present a list of recommendations for emissions reducing policies, programs or actions, for consideration by the Climate Action Council for inclusion in the Scoping Plan.
  - Recommendations should identify the estimated scale of impact, knowable costs to achieve, ease of deployment or commercial availability, potential co-benefits to emissions reduction, advancement of climate justice outcomes, and impacts to businesses.
  - Recommendations may be informed by quantitative analysis or qualitative assessment.
- Recommendations should be sector-based.
  - The panels should not rely on economy-wide policies to achieve emission reduction goals but can recommend that the Council consider economy-wide policies if needed to advance certain sector-specific policies.
  - Cross-sector recommendations should be advanced only after consultation with the appropriate panels.
  - Recommendations should include climate adaptation and resilience considerations.



# Agriculture and Forestry Advisory Panel from CAC Meeting 6/24/2020

## Develop sector-specific strategies to increase annual sequestration from 22.5 MMT to 25.5-32.5 MMT by 2050

**Scope may include:** reducing emissions from agriculture and forestry operations; developing sustainable biofuels; and carbon sequestration measures in land management practices

- Strategies to consider:
  - forest and agricultural best management practices for carbon sequestration
  - increasing sequestration by supporting markets for the use of wood for building materials and other uses
  - support forest growth and sequestration through increased access to low grade markets
  - development of bioenergy and methods to accurately measure net emissions
  - non-regulatory methods for reducing greenhouse gas emissions from livestock operations
  - creating opportunities for renewable natural gas development that align with organic waste management
- Cross-sectoral collaboration: Power Generation and Transportation on bioenergy/biofuels; Land Use and Local Government on natural and working lands
- CAC member suggestions (6/24): none



# Advisory Panel Process Support

## Each advisory panel will be supported by:

- Access to consulting firm Energy and Environmental Economics (“E3”) to provide economic and technology assumptions, understanding of market development as based on literature research, some quantitative analysis of higher impact recommendations.
- A working group comprising staff from contributing state agencies or authorities to assist with research and less-detailed analytical work.
- Completed state technology or market studies and other research resources as available.
- Where initiated, current state agency technical analysis or market development assessments that may serve as a foundation for recommendations or as reference material for development of recommendations.
- Meeting facilitation services, to assist with scheduling meetings, keep records, etc.





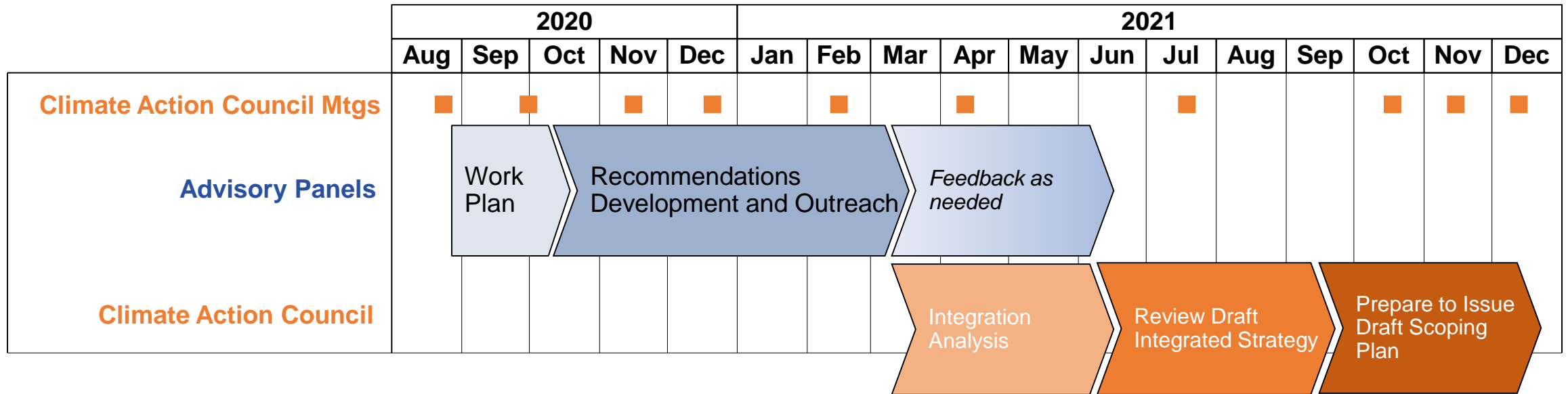
# Advisory Panel Consultation

## Each advisory panel shall:

- Meet at least once a month and provide regular updates to the Council on the advancement of its work.
  - Present (oral or written) progress reports at Council meetings and solicit feedback.
  - Provide final recommendations in accordance with the Scoping Plan development schedule.
- Consult with the Climate Justice and Just Transition working groups to inform its recommendations for the Climate Action Council.
- Seek public input to inform the development of recommendations to the Council for consideration.
  - Panels may seek input from selected expertise in a subject area, as determined necessary by the members.
  - Panels shall, during the next six months, hold at least one forum to receive broad-based public input.
  - Provide transparency by making meetings open to public viewing or/and publishing minutes of deliberations.
- Make available information regarding advisory panel public meetings and comment opportunities on the [climate.ny.gov](https://climate.ny.gov) webpage.



# Timeline to Develop Draft Scoping Plan



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# State of the Sector

## Agriculture

Brian Steinmuller, Assistant Director

Division of Land and Water Resources/NYS Soil & Water Conservation Committee

Andrew M. Cuomo  
*Governor*

Richard A. Ball  
*Commissioner*

# Outline

- **Agriculture in New York State**
- **Potential pathways and actions for agriculture to help achieve the CLCPA goals**
- **Current conservation efforts and programs in New York State**
- **Challenge question: Where do we go from here? Advisory Panel Recommendations for actions**



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# Agriculture in NYS

Overview	2017 National Agricultural Statistics (NY)
Number of farms	33,438
Land in farms (acres)	6,886,171
Average size of farm (acres)	205
Total (\$) Market value of products sold	\$5,369,212,000
Total farm production expenses	\$4,325,357,000
Net cash income	\$1,433,656,000



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# Agriculture in NYS

Land in Farms by Use (acres)	2017 National Agricultural Statistics (NY)
Cropland*	4,291,388
Pastureland	580,146
Woodland	1,450,284
Other	544,353

Top Crops in Acres	2017 National Agricultural Statistics (NY)
Forage (hay/haylage), all	1,811,565
Corn for grain	524,481
Corn for silage or greenchop	515,376
Soybeans for beans	282,453
Vegetables harvested, all	124,859



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# **NYS Climate Leadership and Community Protection Act – Agriculture and Forestry**

**Farmland Protection – Reduce the rate of land use conversions to other forms of carbon intensive development**

- **Communitywide farmland protection planning**
- **Implementation of those plans through farmland conservation easements**



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# NYS Climate Leadership and Community Protection Act – Agriculture and Forestry

## Livestock Management – Methane reduction

- **Enteric Fermentation – Mitigation through continual improvements in feed management**
- **Manure Management (Storage) – Mitigation through covering and flaring manure in liquid manure storage units, thus capturing the methane and combusting to CO<sub>2</sub>, greatly reducing the GWP**



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# **NYS Climate Leadership and Community Protection Act – Agriculture and Forestry**

## **Soil Health and Crop Nutrient Management – Increase carbon stock in soils and reduce nitrous oxide emissions**

- **Increase adoption of soil health management practices (e.g. cover crops, reduced tillage, diverse crop rotations, intensive rotational grazing)**
- **Increase nutrient management plan development and implementation to make more efficient use of fertilizers**



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# **NYS Climate Leadership and Community Protection Act – Agriculture and Forestry**

**Forest Management on farmland – Coordinated approach to increase public and private sector technical assistance and program resources to improve carbon storage in well managed and new forests**

- Increase development and implementation of forest management plans on private lands to maximize sequestration potential**
- Reforestation/afforestation of underutilized and former agricultural lands to create additional and verifiable carbon sinks**



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# Farmland Protection Planning and Implementation

## Farmland Protection – Reduce the rate of land use conversions to other forms of carbon intensive development

- Through the State's Farmland Protection Implementation Grant Program – over 75,000 acres of New York farmland have been preserved through completed conservation easement projects on nearly 300 farms.



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# Agricultural Environmental Management (AEM) Framework

## Core Concepts

- Voluntary, incentive-based
- Environmental management and farm viability
- Science-based
- Locally-led & delivered
  - Farmers
  - **Soil and Water Conservation Districts**
  - Natural Resources Conservation Service
  - Cornell Cooperative Extension
  - Farm Service Agency
  - Agri-Business
  - Watershed Groups
  - Environmental Organizations
- Prioritized on watershed and natural resource needs, local AEM Strategic Plans, and associated Action Plans
- **Focused on farmers advancing through the AEM Tiers**
- Customized farm by farm
- Confidential
- Promotes teamwork
- Coordinates assistance
- **Adaptive to future priorities**



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# Soil and Water Conservation Districts

Soil and Water Conservation Districts are natural resource entities who implement conservation programs at the county level

- 58 Districts in New York State
- Authorized under State Law
- Non-regulatory
- Implementation-based
- Partnership-driven
- Watershed Focused



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# Ag Non-Point Source Water Pollution Program

## Program Goal

- Water quality protection
- Reduce and/or prevent the non-point source contribution from agricultural activities in watersheds across the State
- Utilize AEM Framework and Soil and Water Conservation Districts to implement the program



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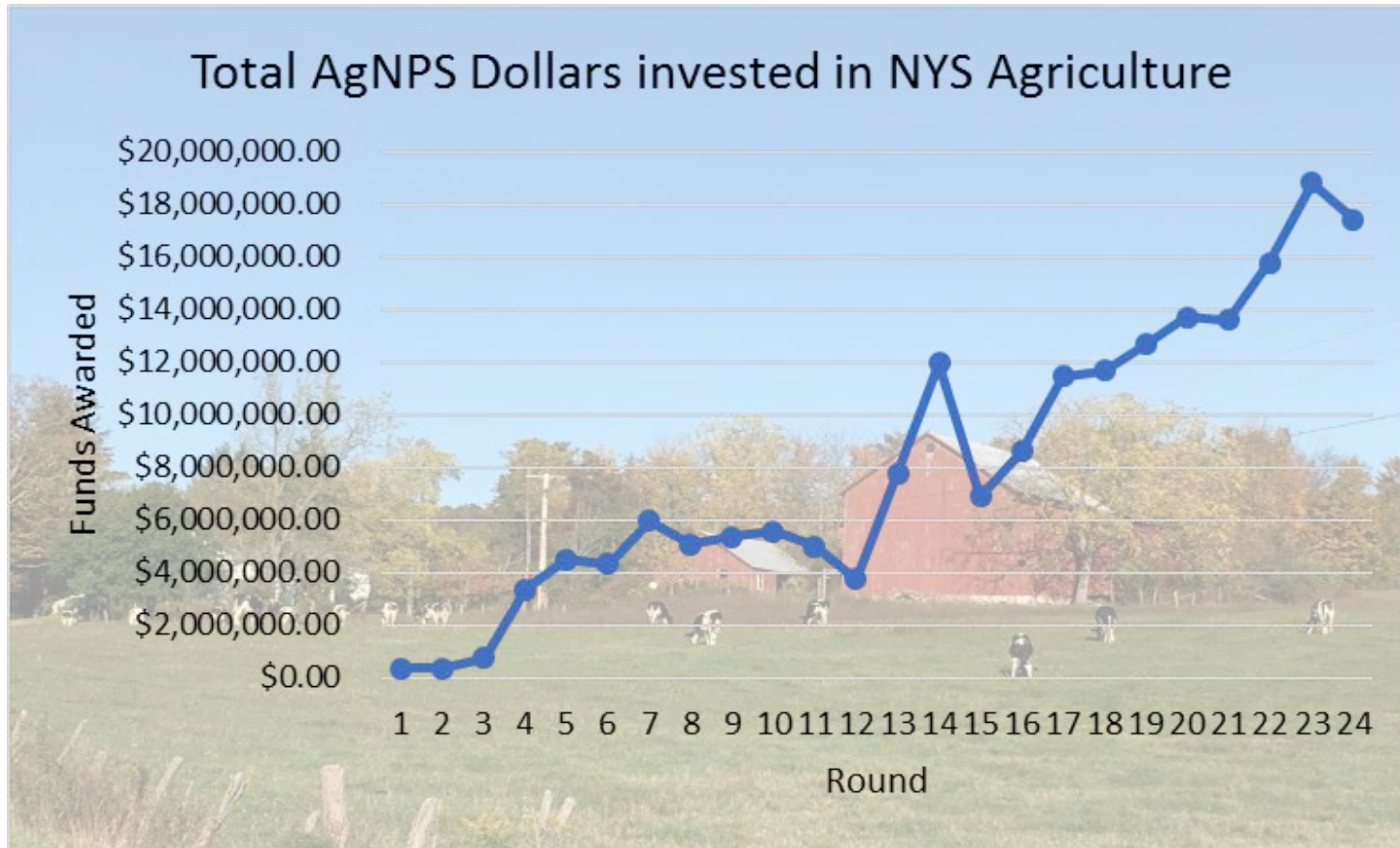
# Ag Non-Point Source Program

- Structural Practice Systems
  - Nutrient Management Structural - manure storage and transfer systems
  - Silage Leachate Treatment Systems
  - Stream Crossings and Streambank Stabilization
- **Vegetative Practices**
  - Soil Health Management Practice Systems - cover crops, reduced tillage practices
  - Riparian Buffer Systems



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# Ag Non-Point Source Program



- AgNPS program was created in 1993
- First Round of AgNPS was awarded in 1994
  - \$340,000.00
- \$16.3 million was awarded in Round 25
- Approximately, \$210 million has been awarded for AgNPS projects



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# Climate Resilient Farming (CRF) Program

**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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# Investing in New York Agriculture's Climate Solutions



## RESEARCH & PILOTS

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



## APPLIED RESEARCH AND OUTREACH

- NY Soil Health Program is administered by Cornell University and funded through the Climate Resilient Farming (CRF) Program
- This project focuses on research, information, education, and outreach to the farming and policymaking communities.

# Climate Resilient Farming Grant Program

- **Launched in 2015**
  - \$8 million awarded
  - 121 farms
  - 231,000 metric tons of CO<sub>2</sub>e/yr. estimated emissions reduction
- **Three tracks:**
  1. Manure storage cover and flare systems
  2. Riparian, floodplain, and upland water water management
  3. Healthy Soils NY



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# Track 1: Waste Storage Cover and Flare

## **Agriculture: Methane Reduction Plan - May 2017**

- Agricultural methane emissions are primarily generated from manure management and enteric fermentation (animal digestion)
- DEC will work with AGM, SWCC, and NYSERDA, along with stakeholders and experts, to implement actions in three areas: farm management practices, monitoring and reporting of these practices, and through soil carbon sequestration on farms.



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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 of 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.

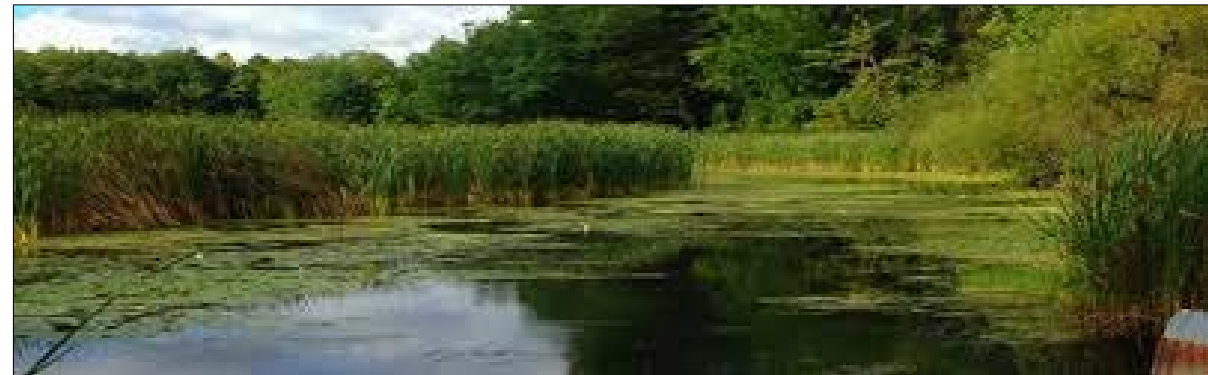


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# Track 2: Riparian, Floodplain and Upland Water Management

## 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.



# 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.



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# Track 3: Healthy Soils NY

## Healthy Soils NY Initiatives

- Sets eligibility criteria including reimbursement using a per acre rate
- Cost-share through multiple programs AgNPS, CRF, AEM, targeted watershed cost-share in Eastern Finger Lakes & Hudson Valley
- Promotion through field signs, soil health workshops and demonstrations
- Quantification thru [COMET-Planner](#) & soil health testing



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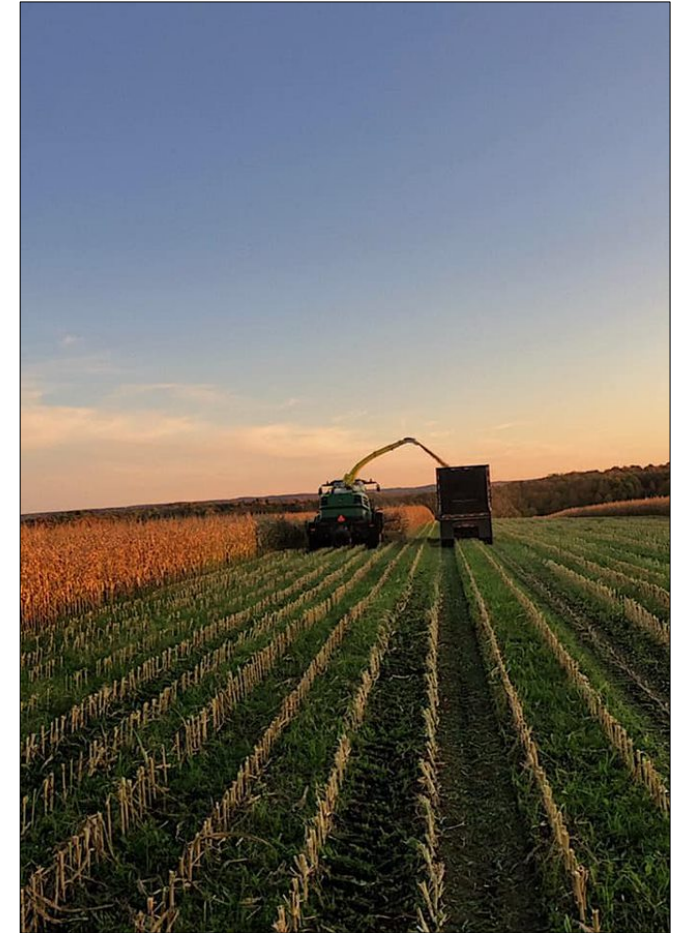
# **Where do we go from here?**

## **Advisory Panel Recommendations for Further Action**



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# Thank you



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# **State of the Forest Sector**

## **Agriculture and Forestry Advisory Panel**

# Forests of New York

**New York Forested Acres by Ownership and Status\***

Owner class	Timberland	All reserved forest land	All forest land
All Federal Lands	109,306	39,390	148,696
State	1,062,173	3,021,620	4,083,794
County and municipal	561,085	135,052	696,137
Private	13,652,193	0	13,677,940
Total	15,400,403	3,196,062	18,622,212

\*US Forest Service FIA Data for New York, 2019



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# Forests of New York

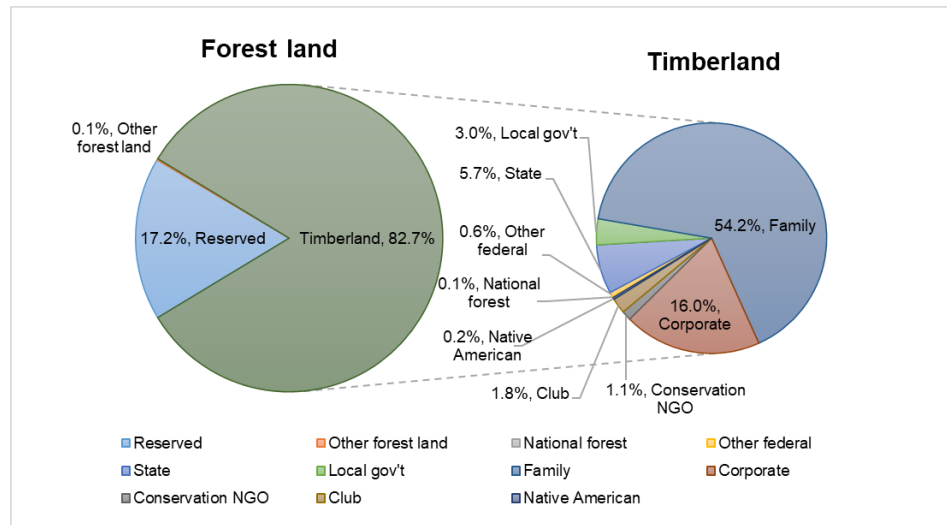


Figure 1.--Proportion of forest land by land use and ownership class, New York, 2019.

- Timberland is classified by the Forest Service as forest land not reserved from harvesting or forest management
- Timberland provides an opportunity for additionality through improved forestry practices for carbon management
- Family owned forests make up the majority of timberland acres in New York

# Forests of New York

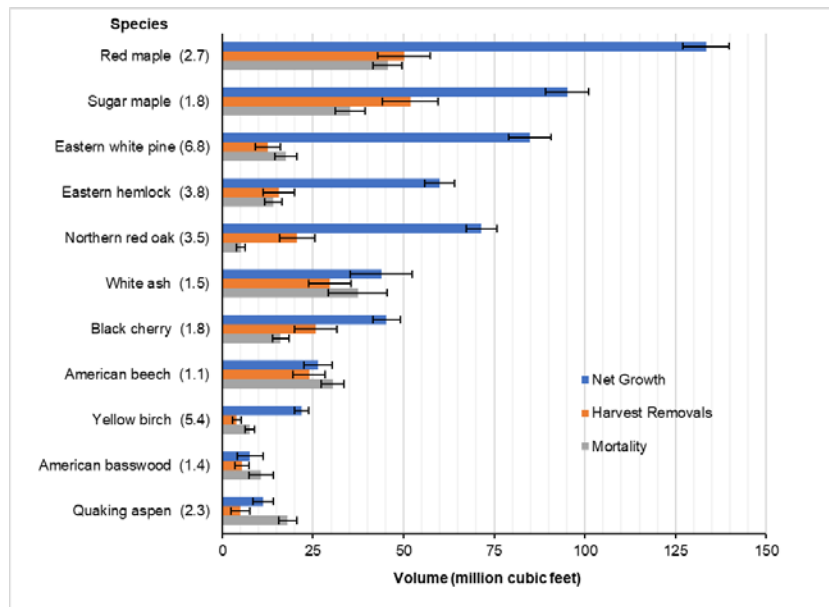


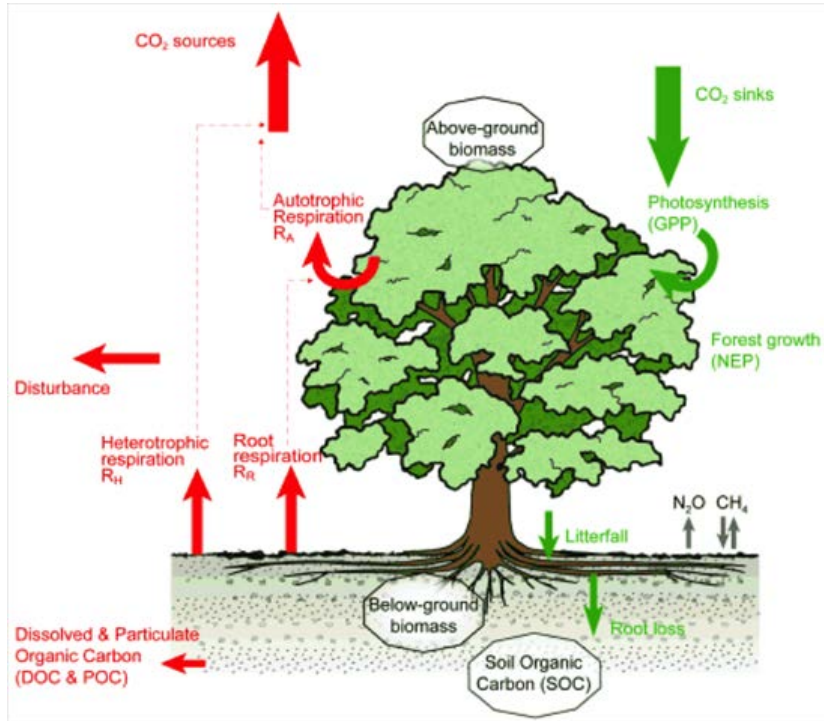
Figure 2.--Average annual net growth, removals, and mortality volume on timberland, with growth to harvest removals ratio (G:R) in parentheses, for species with at least 2 percent of timberland net volume, New York, 2019.

- New York is growing 2.6 trees for every 1 tree that is harvested. This is the Growth Removal Ratio (G:R)
- Forest land estimate of 18.62 million acres is 1.6% lower than 2014 (18.93 million)
- Despite loss of land base, net volume of live trees increased 4.5% over 2014 to 43.6 billion ft<sup>3</sup>
- Annual net growth on timberland is 2.1%
- No species with at least 2% of total net volume has a G:R below 1.0



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# Forest Carbon



- Forests are a carbon sink, meaning they sequester CO<sub>2</sub> in the atmosphere and store it as aboveground biomass, below ground biomass and in the soil.
- In NY, forests provide for the only existing, large scale mechanism for removing CO<sub>2</sub> from the atmosphere
- Manipulating aboveground biomass(trees) is what forestry does.

# Forest Carbon

The forest C pool has gradually increased over time from about 1,802 MMt C in 1990 to 1,976 MMt C in 2018.

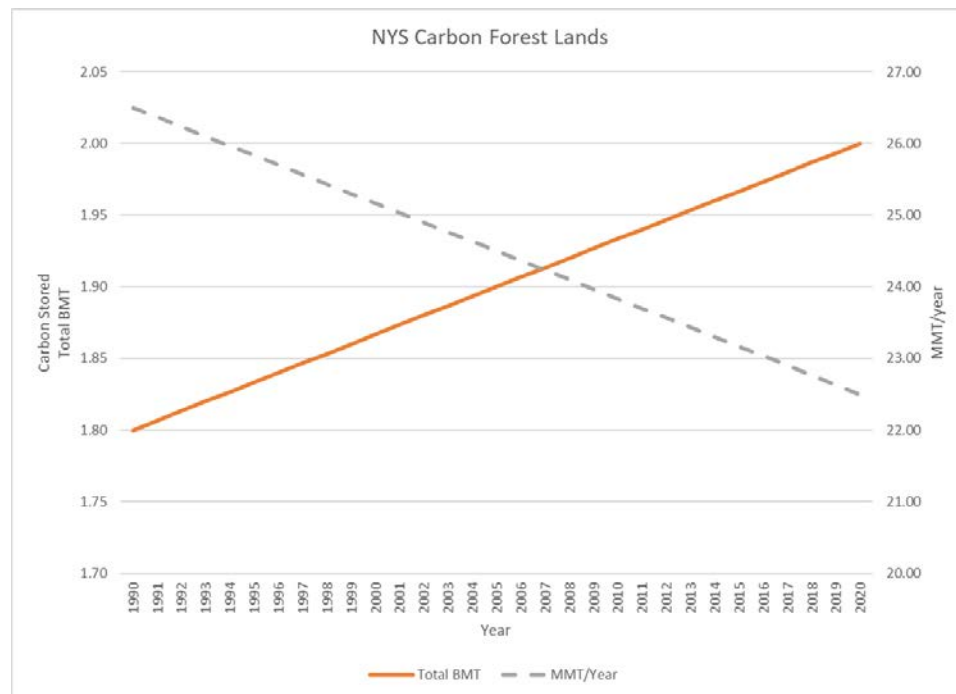
The strength of the C sink, or the rate of net CO<sub>2</sub> removal or flux per year from the atmosphere by growing vegetation, has decreased slowly but steadily at the statewide level since 1990.

Aboveground biomass (trees) explains most of the overall change

Diminishing rate can be explained through forest loss, forest age, regeneration failure, etc

Forestry can be used to manipulate the aboveground biomass within the forest pool

Can improved forestry practices also increase the rate of sequestration per year and overall size of the forest carbon pool in New York?





# Countless Benefits of Forests to New Yorkers

- 
- Flood Control
  - Erosion Control
  - Cultural and Traditional Use
  - Food source
  - Physical and Mental Health
  - Aesthetic enjoyment
  - Artistic inspiration

- Clean Air
- Clean Water
- Home for Native Plants and Wildlife
- Forest Products: Economic and Environmental
- Recreation



# Current DEC Forest and Tree Management Programs in NY

- Private Lands
  - Forest Stewardship Program
  - Forest Tax Law (480a)
  - Environmental Quality Incentives Program(EQIP)
  - Regenerate NY?
- State Forest Management
  - Timber Sales Program
  - Third Party Green Certification
- Urban and Community Forestry
  - Urban Forestry Grant Program
  - Technical Assistance
- Other Programs
  - Buffer in a Bag
  - Trees for Tribs



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# Current DEC Programs to Protect Forestland and Avoid Conversion

## Land Conservation

- Acquisition – fee and conservation easement
  - State – DEC and State Parks
  - Private – land trust
- Funding
  - State
    - EPF – State Acquisition, Municipal Parks, Farmland Protection – CEs for Land Trusts, Community Forest
    - Bond Act
  - Federal
    - Forest Legacy, Community Forest, Pittman Robertson, etc.

## Tax incentives

- Conservation Easement Tax Credit (NYS)
- Land Donation Tax Credit (federal)
- Forest Tax Law (NYS)



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# Private Forest Ownership in New York

- 74% of New York's forests are privately owned
- Nearly 700,000 landowners own 13.6 Million Acres (National Woodland Owner Survey, 2018)
- 9.3 Million Acres of private forests with 10 acres or more
- 187,000 private landowners with 10 acres or more.
- ~1.7 million acres covered by current forest stewardship plans and forest tax law plans
- Only 25% of surveyed private landowners in NYS have used a forester for a harvest
- To impact New York's carbon future, we must address private forest management in New York



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# Forest Stewardship Program

In partnership with USFS, DEC staff provides advice and technical assistance to New York's forest landowners free of charge



- Built on relationships/partnerships between DEC and landowners
- Often first step towards forest stewardship
- Stewardship plan model
- Voluntary
- USFS modernization efforts
- In 2019, DEC and Consultants produced 322 stewardship plans covering 71,000 acres
- Impact on the ground?



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# Forest Tax Law, RPTL 480a

## Number of Certifications and Acres under 480a, 2018

	<i>Number of Certifications</i>	<i>Certified Acres</i>
Region 3	1124	186,771
Region 4	985	148,731
Region 5	712	569,092
Region 6	213	244,038
Region 7	422	53,508
Region 8	395	50,592
Region 9	<u>151</u>	<u>21,424</u>
<b>TOTAL</b>	<b>4,002</b>	<b>1,274,157</b>

Enacted in 1974.

Local Real Property Tax Abatement for following DEC approved forestry plan written by a consulting forester

Acre by acre certification of eligibility and compliance

Primary purpose is to grow timber

Low participation rate because of high acres eligibility threshold, stringent requirements and penalties.

Does participation in Forest Tax Law=Greater Forest Carbon Sequestration?



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## CLCPA: An opportunity for New York's Forest Sector

- New York's forests could sequester between -21 MMt CO<sub>2</sub> e to -31 MMt CO<sub>2</sub> e per year according to Pathways report
- Increase effectiveness of the NY forest sector to sequester and store carbon through:
  - Avoided Conversion
  - Improved Forestry Practices
  - Afforestation or Reforestation
  - Harvested Wood Products



## Improved Forestry Practices

- Use silviculture to build more carbon into forest stands through professional forest management by extending rotations, increasing forest health (wood quality) and securing forest regeneration
- Maintaining or increasing carbon sequestration and storage levels through 2050 means securing forest regeneration now
- Protecting soil productivity through reduced compaction using BMP's





# Afforestation or Reforestation

- Increasing the number of forested acres through planting and the amount of carbon sequestered on those acres
- Marginal shrublands that have stagnated could be rehabilitated to grow trees
- Open areas and buffers
- Areas that have been devastated by insects or disease
- Example: Planting stands that have been killed by the Emerald Ash Borer but have high densities of deer and invasive species and little desirable forest regeneration.
- Maintenance of planted areas is essential to success



## Harvested Wood Products

- In New York, the forest and wood products industries are currently directly responsible for nearly 40,000 well-paying jobs and more than \$13 billion of economic output, and are indirectly responsible for another 53,000 jobs and nearly \$10 billion of economic activity
- In 2018, over 573 MMBF of logs were processed through New York mills which primarily went to the production of solid wood products
- In 2018, nearly 2.1 million green tons of pulpwood and chips were processed in New York
- Wood products and biochemicals provide a carbon substitution benefit when replacing products with larger carbon footprints
  - Future Mass Timber, Cross Laminated Timber products to replace concrete or steel infrastructure
  - Promoting traditional wood products to maintain supply chains and existing capacity
  - Bioplastics and biofuels to replace petroleum-based products



# Challenges

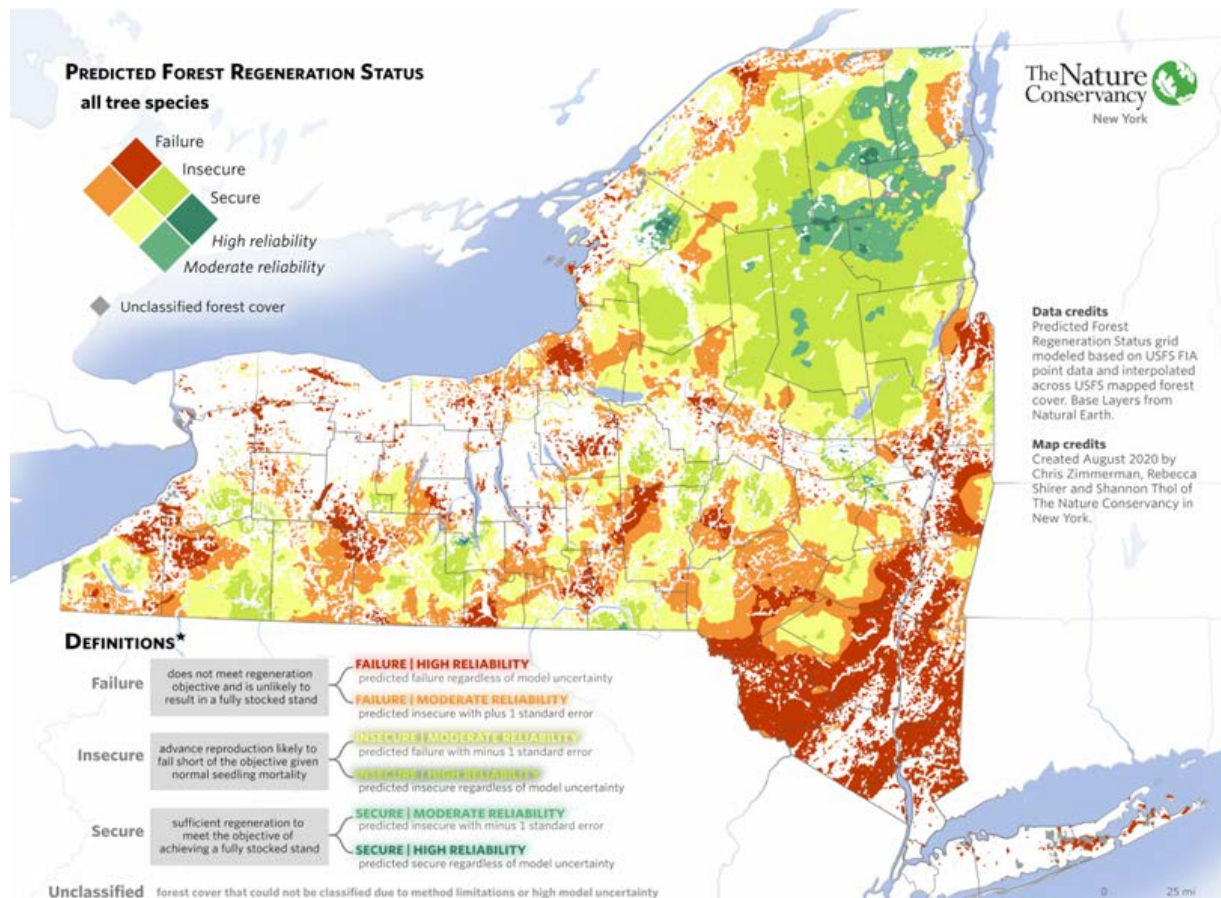
Forest regeneration is struggling in many parts of the state due to deer, competing vegetation issues, poor or nonexistent forest management and forest fragmentation.

Unprecedented forest health challenges due to invasive forest pests and diseases

Sound forest management is more expensive now compared to the past

Resources to get forestry programs to 13 million acres of forest land and nearly 700,000 landowners

No Markets, No Stewardship



## Moving Forward

- New York needs professional foresters managing our forests for carbon.
- The right mix of programs, incentives and regulation for the Forest Sector to meet CLCPA targets.
- Forestry friendly policies that support NY forest product markets and sound forest management (Example: Stronger Right to Practice Forestry Act)
- Outreach efforts will be needed to broaden appeal outside of the Forestry Sector “choir”



## Policy Questions

- How to bring more forest product markets and sustain existing ones in New York?
- What programs, incentives and regulations will make New York forests healthier and grow more vigorously so they can sequester more carbon and support the forest industry?
- Increase the number of private acres under professional forest management. How much do we need to reach CLCPA goals?
- What type of forest carbon management program will work for private landowners to enroll in high numbers and will be manageable for staff? Public Private partnerships could be the answer.
- What type of carbon credit markets for forest carbon will exist in New York? How can we facilitate their development?
- What types of reforms do we need for our existing programs to meet carbon goals





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