Natural & Working Lands Strategy Stakeholder Meeting:

Agricultural Lands

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NEW JERSEY DEPARTMENT OF AGRICULTURE

3/23/2023

Ground Rules

- Attendee microphones and cameras are off by default

- Questions or comments can be typed into the chat at any time

- Please limit your input to topics we are discussing today

- After each land type, we will address some questions from the chat and there will be time to raise your hand and speak – we will enable your microphone when you are called on

- All input will be considered, but there will not be a response to comments document

- If you are unable to comment today, please use the comment form at https://www.nj.gov/dep/climatechange/mitigation/nwls.html
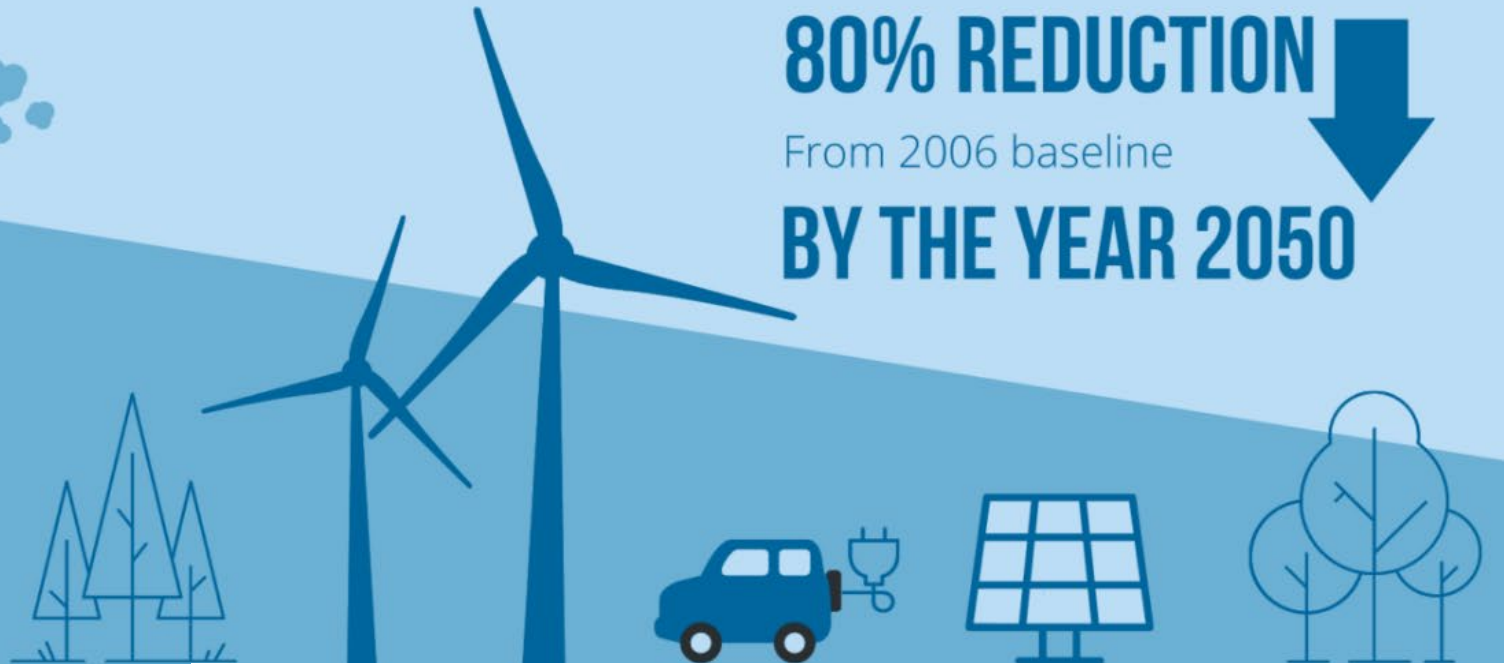
Agenda

- Introduction – Heather Genievich

- Background – Tony Rho

- NWLS Overview – Metthea Yepsen

- Timeline- Metthea

- How recommendations were developed - Metthea

- Overview of how agriculture sequesters carbon – Rachel DeFlumeri

- Major components of the strategy for agriculture – Rachel

- Questions for attendees - Heather

- Input from attendees - Heather and Rachel

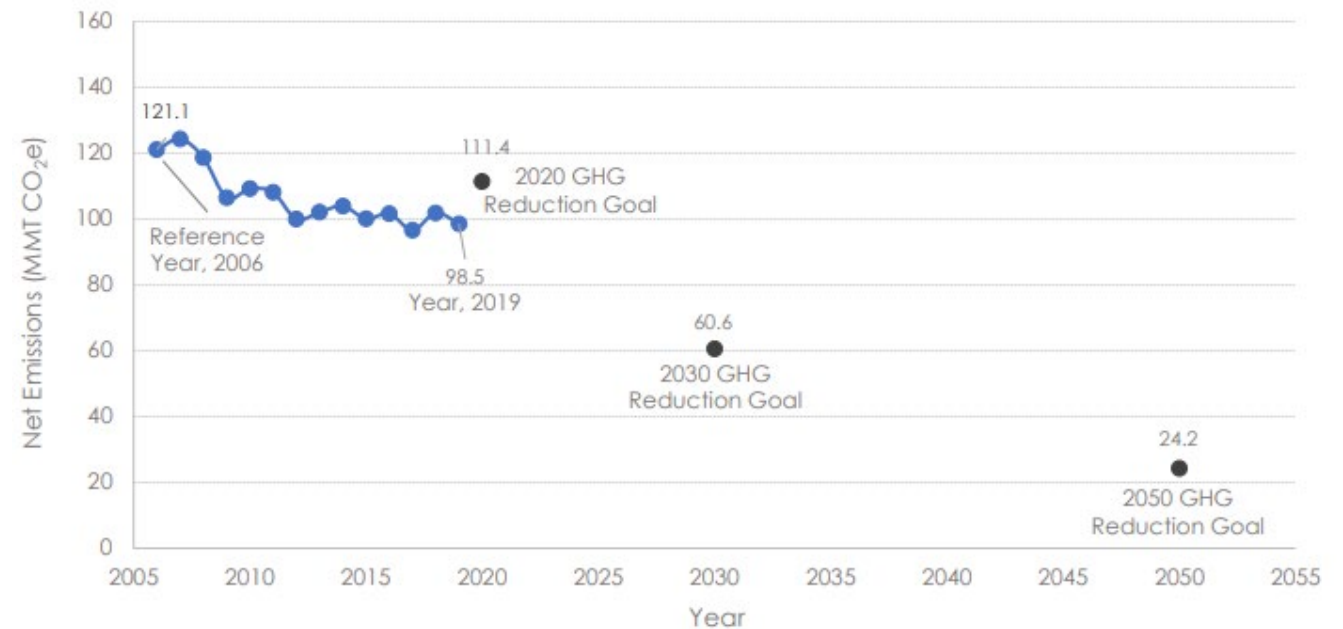- Reminder of timeline and ways to send comments - Heather
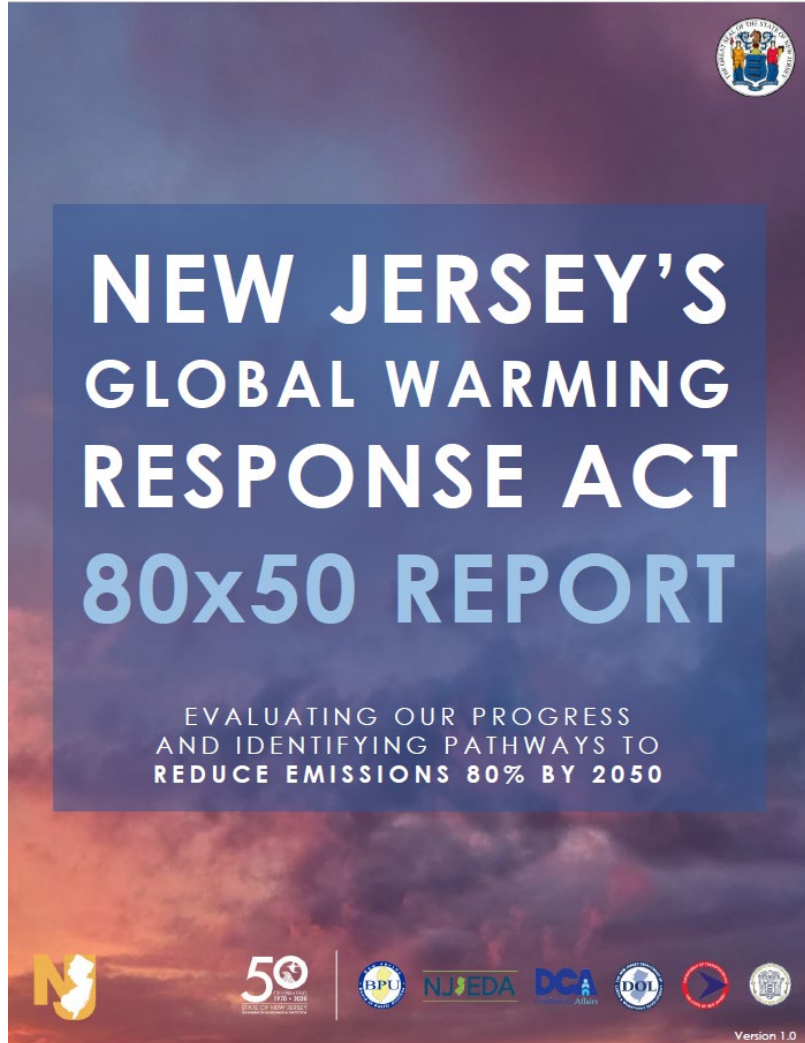
80% REDUCTION
From 2006 baseline
BY THE YEAR 2050

50% REDUCTION
From 2006 baseline
BY THE YEAR 2030

Greenhouse Gas Reduction Goals

121.1
Reference Year, 2006
111.4
2020 GHG Reduction Goal
98.5
Year, 2019
60.6
2030 GHG Reduction Goal
24.2
2050 GHG Reduction Goal
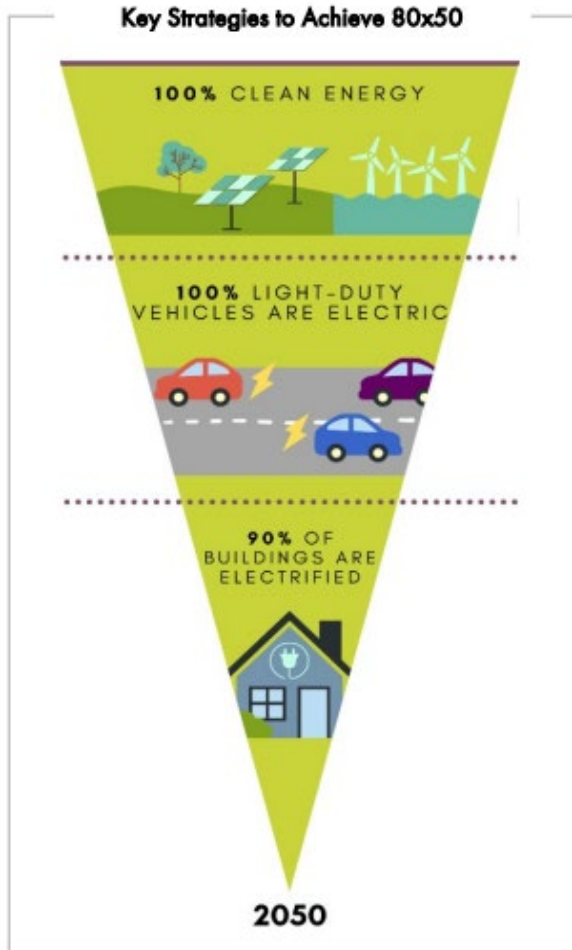
Net Emissions (MMT CO₂e)
Year

New Jersey's 80x50 Report

- Seven emission sectors are evaluated to determine how to achieve the 80x50 Goal.

- Each Sector Includes:
  - Business-as-Usual Projection.
  - Emissions Reduction Pathway Projections.
  - Specific legislative and administrative recommendations for achieving emissions reductions.

- Four electric demand scenarios are evaluated based on various levels of electrification throughout the state.
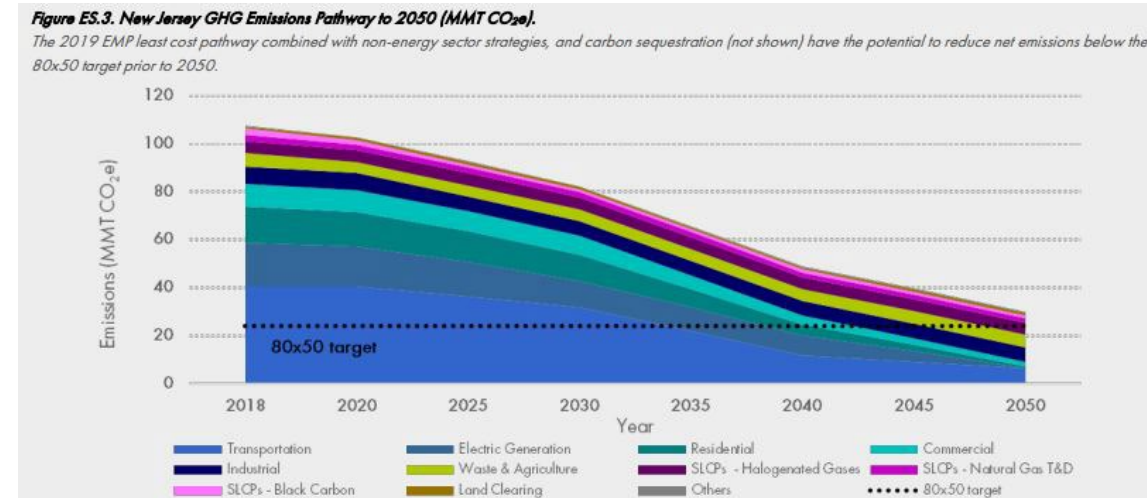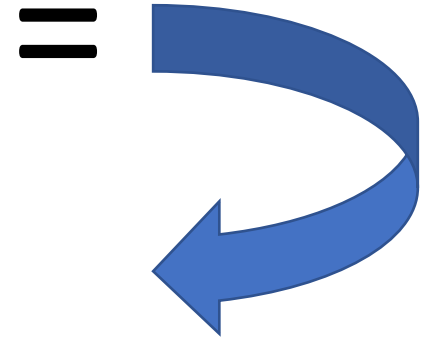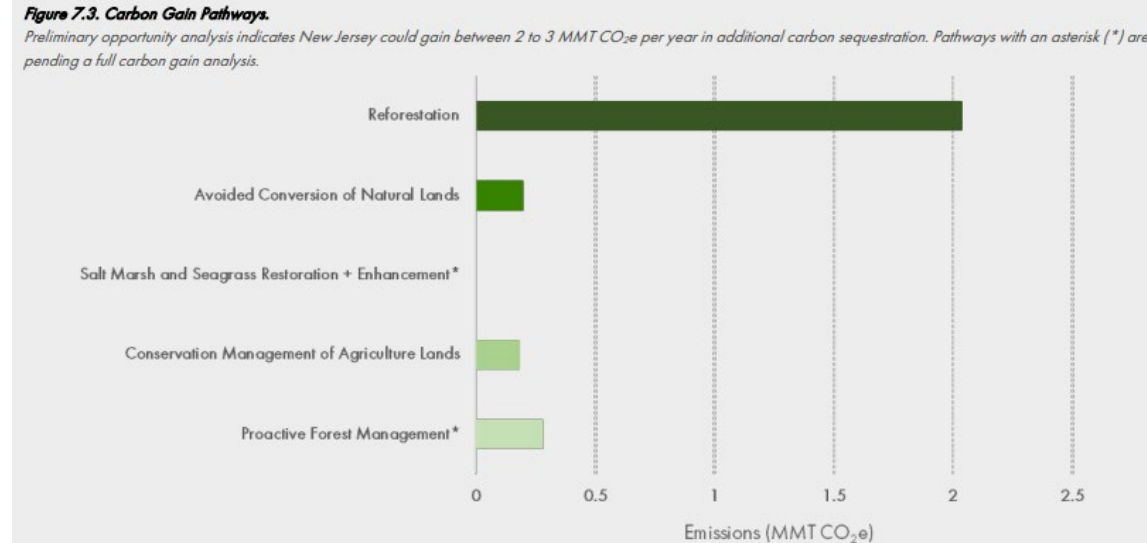
NJ Greenhouse Gas Reduction Pathways

CO2e Redux:

Key Strategies to Achieve 80x50

100% CLEAN ENERGY

100% LIGHT-DUTY VEHICLES ARE ELECTRIC

90% OF BUILDINGS ARE ELECTRIFIED

2050

+

CO2e Gains:

Figure 7.3. Carbon Gain Pathways.
Preliminary opportunity analysis indicates New Jersey could gain between 2 to 3 MMT CO_2e per year in additional carbon sequestration. Pathways with an asterisk (*) are pending a full carbon gain analysis.

- Reforestation
- Avoided Conversion of Natural Lands
- Salt Marsh and Seagrass Restoration + Enhancement*
- Conservation Management of Agriculture Lands
- Proactive Forest Management*

Emissions (MMT CO_2e)

Figure ES.3. New Jersey GHG Emissions Pathway to 2050 (MMT CO_2e).
The 2019 EMP least cost pathway combined with non-energy sector strategies, and carbon sequestration (not shown) have the potential to reduce net emissions below the 80x50 target prior to 2050.

80x50 target

Emissions (MMT CO_2e)

Year

Transportation · Electric Generation · Residential · Commercial · Industrial · Waste & Agriculture · SLCPs - Halogenated Gases · SLCPs - Natural Gas T&D · SLCPs - Black Carbon · Land Clearing · Others · 80x50 target
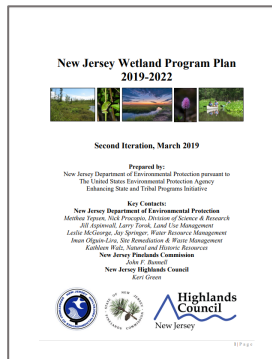
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NJ needs CO2 sequestration through NWL to meet state 2050 goals!

A Collaborative Call to Action

Scientific Report on
Climate Change

GWRA 80x50 Report

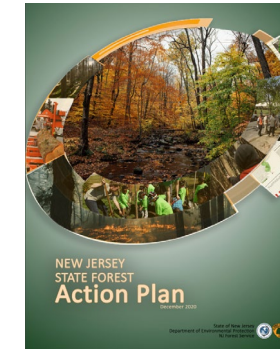New Jersey Wetland
Program Plan

New Jersey Forest
Action Plan

RGGI Strategic
Funding Plan

Climate Change
Resilience Strategy
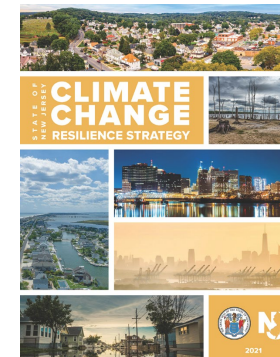
Carbon Sequestration Basics

Plants use CO_2 from the air and water from the soil to build carbohydrates (photosynthesis)

Solar energy

Plants absorb CO_2

Soil organisms release CO_2 through respiration

Plants exude carbon through their roots to feed soil organisms

CO2 from the atmosphere enters the soil through decomposing plant matter, root exudates, and the soil organisms that feed on them

Image from https://sustainability.colostate.edu/humannature/jocelyn-lavallee/

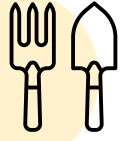# Land Types in the NWLS

Forests

Agriculture

Wetlands

Developed Lands

Aquatic Habitats

Milestones

NWLS Kickoff

Work on the strategy began in **May 2021**

Scoping Document
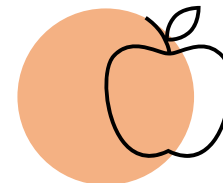
Scoping Document was released **December 2021**

Recommendation and Target Development

Stakeholdering

Four stakeholder meetings are set for the second half of **March 2023**

Final Strategy

Release final strategy in **third quarter of 2023**

How was the strategy developed?

- Reviewed other NWLS
- Honed the list for NJ
- Modeling and literature searches:
  - Carbon benefit
  - Cost
  - Scalability
- Recommendation selection
  - Who, what, where, when, why, how
  - Impediments
  - Environmental justice
  - Climate change
  - Other benefits to the ecosystem and people
- Targets
  - 2030 and 2050

Our questions for you:

1. What is missing from our draft list of targets?

2. Are there any targets that do not belong on these lists?

3. What are key obstacles to achieving these targets?

4. What financing mechanisms are available?
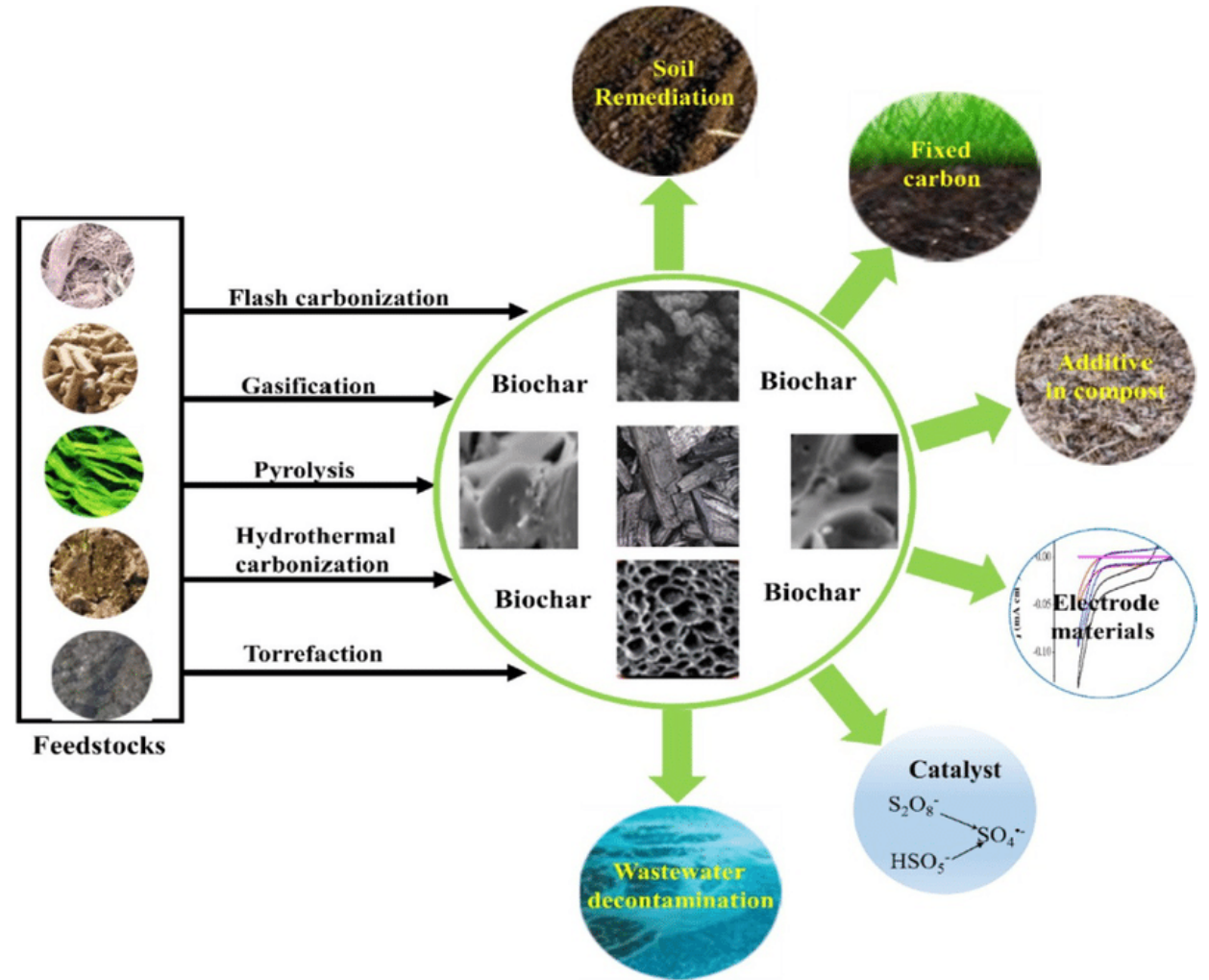
Agricultural Lands

- Agricultural croplands and grasslands in New Jersey cover 12% of the land area (543,000 acres)

- Agricultural lands can be carbon sources but improving soil health can convert them to carbon sinks

- Minimizing soil disturbance, where practical, to enhance soil microbial flora and fauna and is key

Draft Targets for Agricultural Lands – Management Practices

Recommendation Type	Target		2030	2050
Compost Cropland Harvested			**1% of land**	**3% of land**
	Apply compost to X acres each year	North	750	2400
		Central	1100	3300
		South	2300	7000
		TOTAL	**4150**	**12700**
Compost Cropland Pastured			**3% of land**	**8% of land**
	Apply compost to X acres each year	North	750	2400
		Central	1100	3300
		South	2300	7000
		TOTAL	**750**	**1950**
Compost Permanent Pasture			**3% of land**	**8% of land**
	Apply compost to X acres each year	North	**750**	**2000**
		Central	**950**	**2600**
		South	**700**	**1900**
		TOTAL	**2400**	**6500**

Biochar

Draft Targets for Agricultural Lands – Management Practices

Recommendation Type	Target		2030	2050
Cover Crops	Plant X acres of Harvested Cropland with cover crops (use of 2017 USDA NASS data)	North (baseline is 6%)	8% of land 5580	10% of land 6970
		Central (baseline is 9.8%)	12% of land 14540	15% of land 18175
		South (baseline is 21.3%)	23% of land 51100	25% of land 55540
		TOTAL	**71220**	**80685**
Livestock practices - Monitoring	Gather baseline data on "early adopters" of rotational grazing, pasture restoration and integration of native warm-season grasses		X	-
Livestock practices - Funding	Provide financial incentives for adoption of rotational grazing and pasture restoration by seeding native warm-season grasses		X	X
Livestock practices - Education	Provide education on rotational grazing and native warm season grasses through land grant institutions research effort		X	-
Livestock practices - Outreach	Conduct outreach for interested producers		X	-

Rotational Grazing
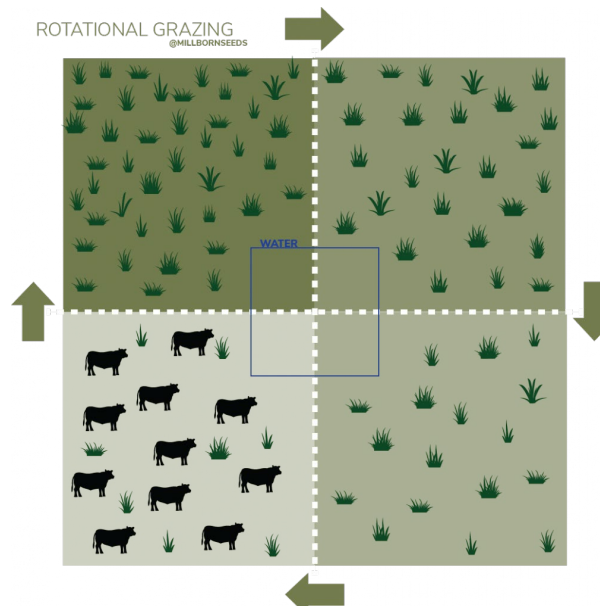
Draft Targets for Agricultural Lands – Management Practices

Recommendation Type	Target	2030	2050
Agro-Forestry	Facilitate research and development of commercial scaling of practices including alley cropping, riparian buffers, forest farming, silvo-pasture, and windbreaks and/or hedgerows	X	-
	Collaborate with NJ forest service on program development for alley cropping, riparian buffers, forest farming, silvo-pasture, and windbreaks and/or hedgerows	X	-
	Provide financial incentives to producers who implement alley cropping, riparian buffers, forest farming, silvo-pasture, and windbreaks and/or hedgerows.	-	X
Agro-Forestry - Research	Promote university research on alley cropping, riparian buffers, forest farming, silvo-pasture, and windbreaks and/or hedgerows.	X	-

Draft Targets for Agricultural Lands – Policy Recommendations

Recommendation Type	Target	2030	2050
Climate-Smart Practices	Develop Grower/Producer cooperatives	X	-
	Increase available Technical Service Providers for access to conservation assistance, and expedite funding allocations to producers	X	-
	Initiate state-specific breeding initiatives	-	X
	Enhance productivity of soils by incentivizing practices that increase soil health	X	-
	Identify funding sources to facilitate adoption of climate-smart practices including reduced tillage and keyline plowing, exclusionary fencing, diversified cropping rotations and comprehensive soil testing	X	X
Funding	Make incentives available for adoption of climate-smart practices	X	-
	Arrange insurance protection for farmers who change practices for the benefit of additional carbon sequestration	-	X

Our questions for you:

1. What is missing from our draft list of targets?

2. Are there any targets that do not belong on these lists?

3. What are key obstacles to achieving these targets?

4. What financing mechanisms are available?

What's next?

❑ Virtual stakeholder meeting from 2-4 pm
- March 28 – forests

❑ Comments on all draft targets are due <u>April 14</u>

❑ Final strategy to be released in 2023 Q3

https://www.nj.gov/dep/climatechange/mitigation/nwls.html

To review the list of targets:

https://www.nj.gov/dep/climatechange/mitigation/nwls.html

To submit comments after the meeting:

2021
Scoping Document Released

Spring 2023
Targeted Stakeholder Sessions

September 2023
Natural Working Lands Strategy Released

Register for a NWLS Webinar

In March 2023, the Department will host a set of targeted stakeholder sessions for the specific natural and working land types that will be the focus of our carbon capture and sequestration efforts. There will be four, topical webinars:

1. Aquatic Habitats, Tidal Wetlands, and Non-Tidal Wetlands
2. Developed Lands
3. Agricultural Lands
4. Forested Lands

The Department looks forward to your comments and participation in the stakeholder sessions to ensure NJ's Natural and Working Lands Strategy effectively assists in mitigating the effects of climate change. Register for each event below.

Aquatic Habitats, Tidal and Non-tidal Wetlands	Developed Lands	Agricultural Lands	Forested Lands
16	21	23	28
March 16 | 2:00-4:00PM	March 21 | 2:00-4:00PM	March 23 | 2:00-4:00PM	March 28 | 2:00-4:00PM
RSVP Here	RSVP Here	RSVP Here	RSVP Here

Comment on NJ's NWLS Stakeholder Sessions ＞

Questions?

https://www.nj.gov/dep/climatechange/mitigation/nwls.html

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