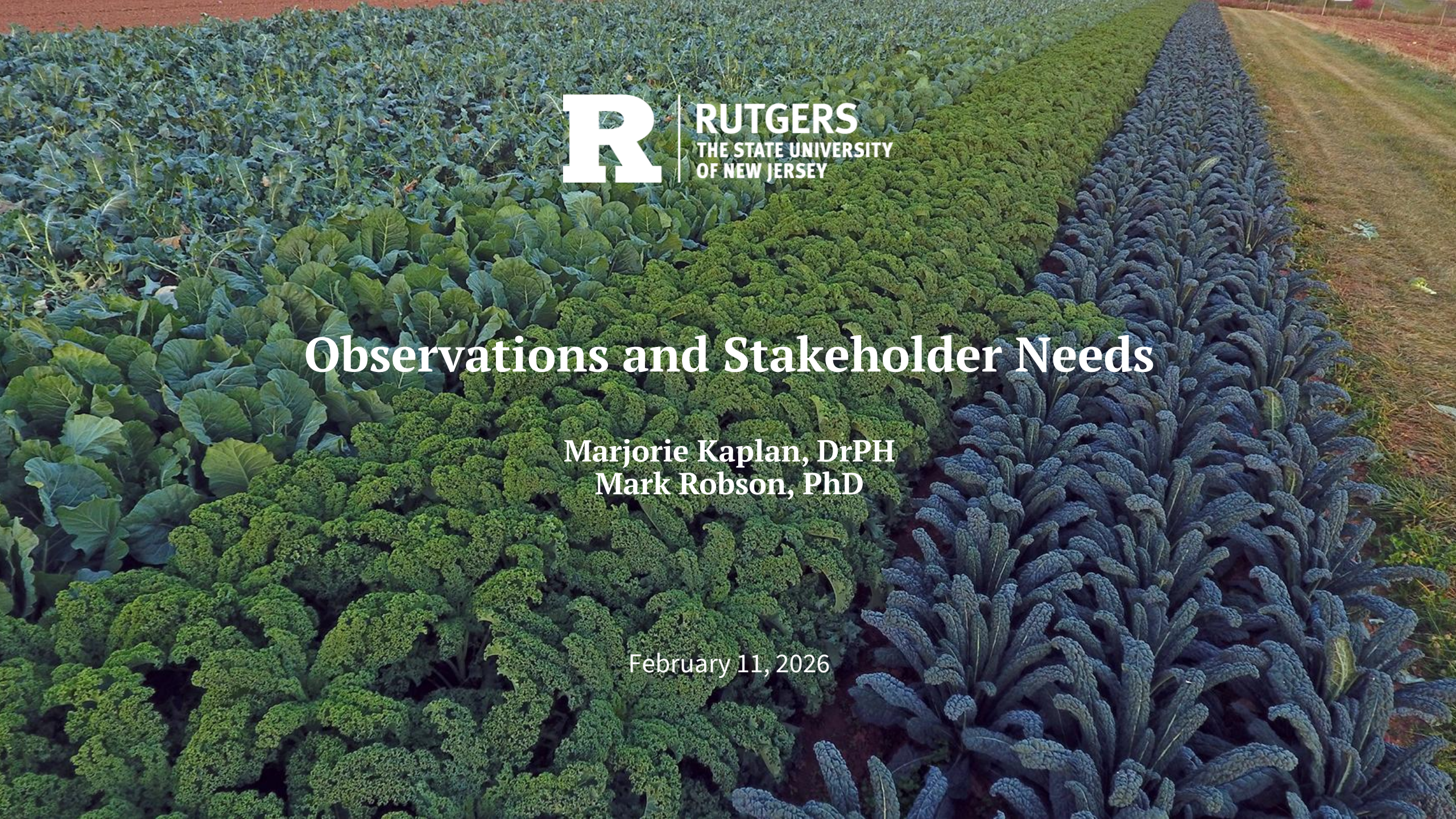

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Observations and Stakeholder Needs

Marjorie Kaplan, DrPH
Mark Robson, PhD

February 11, 2026

Sources

- 2013 Survey of Rutgers Extension Scientists
- 2014 NJ Climate Change Alliance Stakeholder Engagement Report: Agriculture
- 2024 NJ Agricultural Summit Report
- 2025 NJ Organic and Regenerative Farm Owner Survey Report
- 2026 Pre-workshop Survey of Rutgers Extension Scientists & Workshop Participants


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NJ Climate Adaptation Alliance

Stakeholder Engagement Report: Agriculture

Climate Change Preparedness in New Jersey

February 2014

Prepared for the New Jersey Climate Adaptation Alliance by
Marjorie B. Kaplan, Dr.P.H. Associate Director, Rutgers Climate Institute
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Raimy Cheyne, Edward J. Bloustein School of Planning and Public Policy, Rutgers University.

Please cite this report as: New Jersey Climate Adaptation Alliance (NJCAA). 2014. *Stakeholder Engagement Report: Agriculture. Climate Change Preparedness in New Jersey.* Edited by Marjorie B. Kaplan, Mark Robson and Raimy Cheyne. New Brunswick, New Jersey: Rutgers University.

New Jersey Agricultural Climate Summit Report

Letter from the Planning Committee

It is with much gratitude to those who volunteered their time to this process that we present this report.

On April 10, 2024, Duke Farms, a center for the Doris Duke Foundation, in partnership with the New Jersey Agricultural Experiment Station, the New Jersey Climate Change Alliance, and the New Jersey Farm Bureau, convened a diverse group of over 60 stakeholders to explore the potential for New Jersey's natural and working agricultural lands to accelerate climate change mitigation (including emissions reduction, adaptation and resilience). The day-long Climate Summit fostered dynamic discussions on the challenges and opportunities in leveraging these lands to enhance ecosystem services, support farm viability, and contribute to the state's climate goals. Participants engaged in panel discussions, keynote presentations, and interactive breakout sessions, sharing experiences and perspectives to lay the groundwork for future collaboration and policy development in advancing nature-based climate solutions across New Jersey's agricultural landscape.

Our goal in bringing this group of New Jersey farmers, non-profit organizations, researchers and influential leaders together was to **identify common ground** and **focus on solutions**. We

1

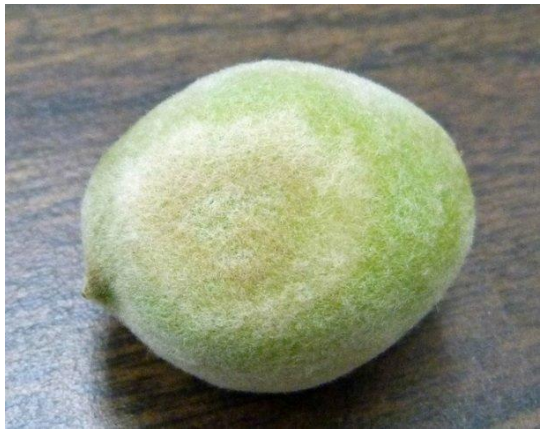
2013 Observations from Rutgers Extension Scientists

- More southern insect species to expand their range northward.
  - Southern pine beetle into southern NJ and fire ants moving into VA and MD.
  - As plant ranges move northward from the south or restrict their range to more northern climes the insects that feed on them expand or restrict their ranges.

- *Warmer springs resulted in our peaches being about 3 weeks ahead of schedule in their phenological development. Coincident with this early season, we had record high levels of both peach rusty spot and peach blossom blight, two diseases that occur early in the growing season.*

- *Definitely seeing certain disease problems like dollar spot showing up earlier in the year and persisting several weeks to a month or more later in the year.*

- *We have seen the occurrence of several new diseases over the 5 yrs that now are very common in the northern tier of the US such as brown ring patch of annual bluegrass turf.*



Peach Rusty Spot

Peach Blossom Blight

2013 Observations from Rutgers Extension Scientists (continued)

- *We have identified species of Rhizoctonia (the cause of brown patch disease) in NJ over the last few years that previously have only been found in the SE US. I believe this can be attributed to hotter summers and more mild spring and fall weather.*

- Sporadic reports on weeds (e.g., green kyllinga, dallisgrass) appearing in NJ that are common in the southeastern USA, but this is not widespread in NJ.

- Re-appearance of tomato pinworm. *This was a problem occasionally in the 70's when we imported many of our tomato transplants from Ga. and Fla. Once we grew our own, it ceased to be much of an issue. Three years ago it popped up in a high tunnel in Morris Co. Since then, I've had it in several high tunnels and last year, it was in a field of tomatoes in Somerset Co. All of these guys get their plants locally or grow their own.*

- *The northward expansion of beet armyworm. This pest, which is a gulf coast resident, pops up in south Jersey along the Bayshore at destructive levels (on pepper mostly) about 1 in 3 years. We've had it in Warren County for the past two summers and it's riddled pepper plantings. Not so hard to manage, but you have to know what it is, because many insecticides do not work.*

Grass with Brown Patch Disease
Photo: Sabrina Tirpak, Rutgers PDL

Stakeholder Concerns (2014 + 2024)

- Increased flooding and increased severity of flooding
- Soil erosion
- Flooding leads to infrastructure failure, barriers to field entrances access and barriers to market
- More and longer droughts
- Reduced water availability/increased water demand
- Extreme weather
- Crop damage/stress/loss
- Reduced crop yield
- Increased occurrence/spread of pathogens, pests, vector-borne diseases
- Sea level rise (saltwater intrusion, exacerbated storm and flooding, tidal wetland loss)
- Ocean acidification
- Higher marine water temperatures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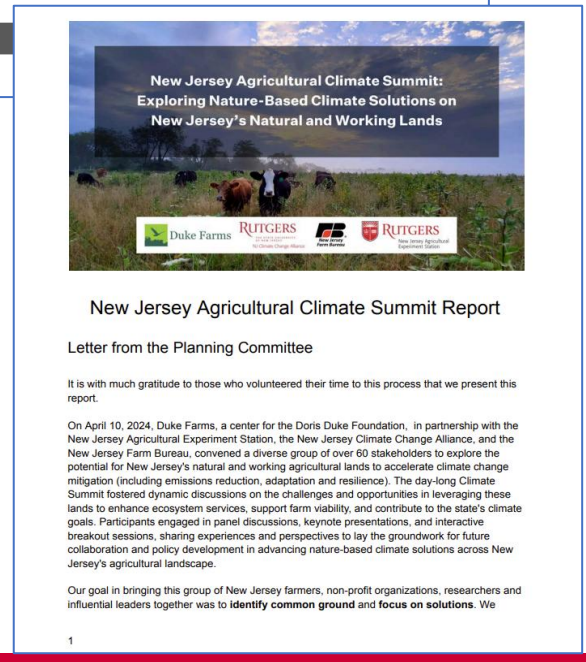

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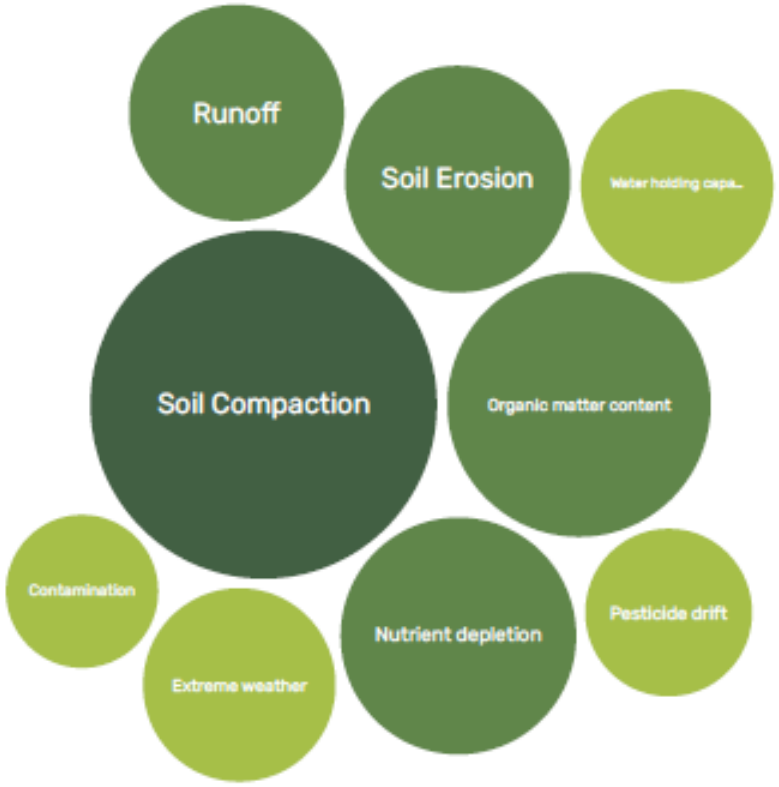
2025 NJ Organic & Regenerative Farm Owner Survey Report

Key Findings:

- The cost of farmland is the largest barrier for our farmers
- Many of these farmers concentrate on enterprises that have a low cost of entry, and support for diversification may unlock additional market demand
- Direct sales to individual customers are overwhelmingly how these farmers sell their products
- **Extreme weather is a major concern**
- A higher chance of profitability is linked to being a business sized to employ and manage 11-20 people, indicating the need for business and management skills.
- Lower profitability farms report less engagement with support services, suggesting that improved outreach and support could have a significant impact.

2025 NJ Organic & Regenerative Farm Owner Survey Report

Soil health concerns and ratings



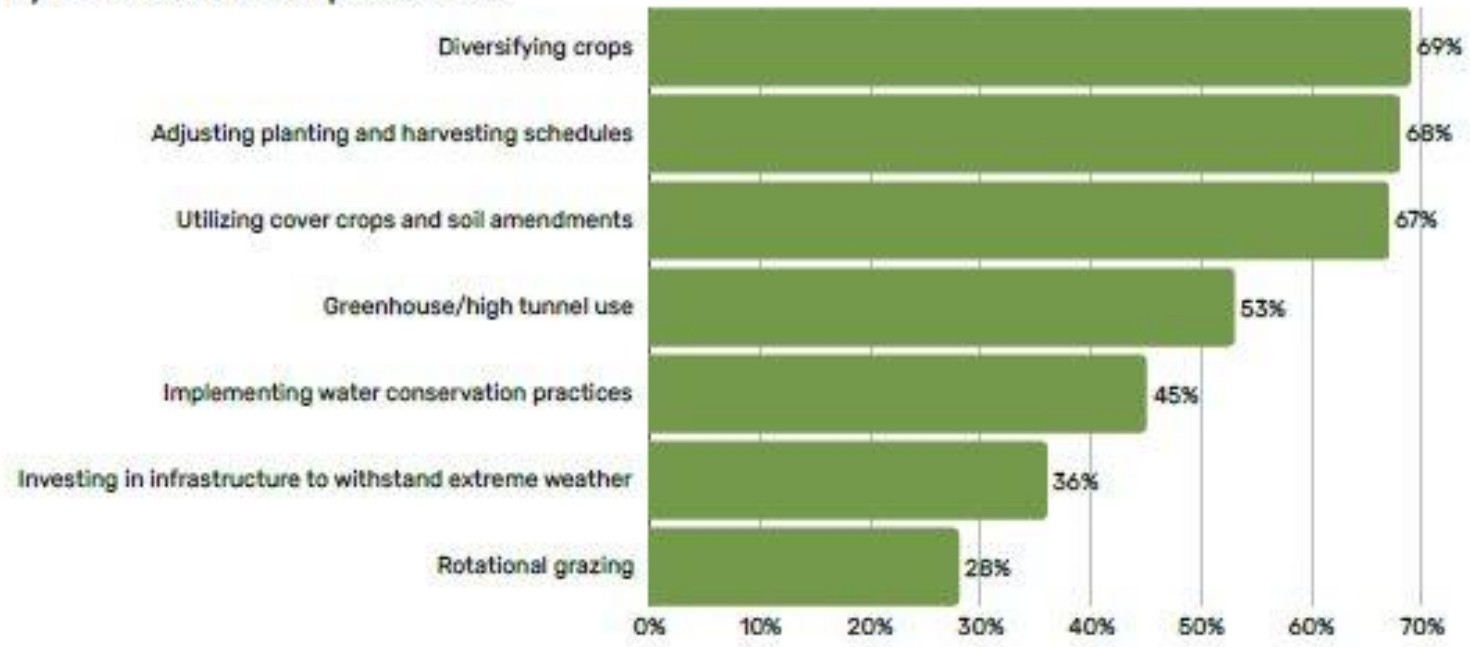
When asked to rank the top primary soil health concerns, these received the highest ratings.

1. Soil compaction
2. Organic matter content
3. Nutrition depletion
4. Soil erosion
5. Runoff
6. Water holding capacity
7. Extreme weather
8. Pesticide drift
9. Contamination

2025 NJ Organic & Regenerative Farm Owner Survey Report

What strategies are currently used to adapt to climate change

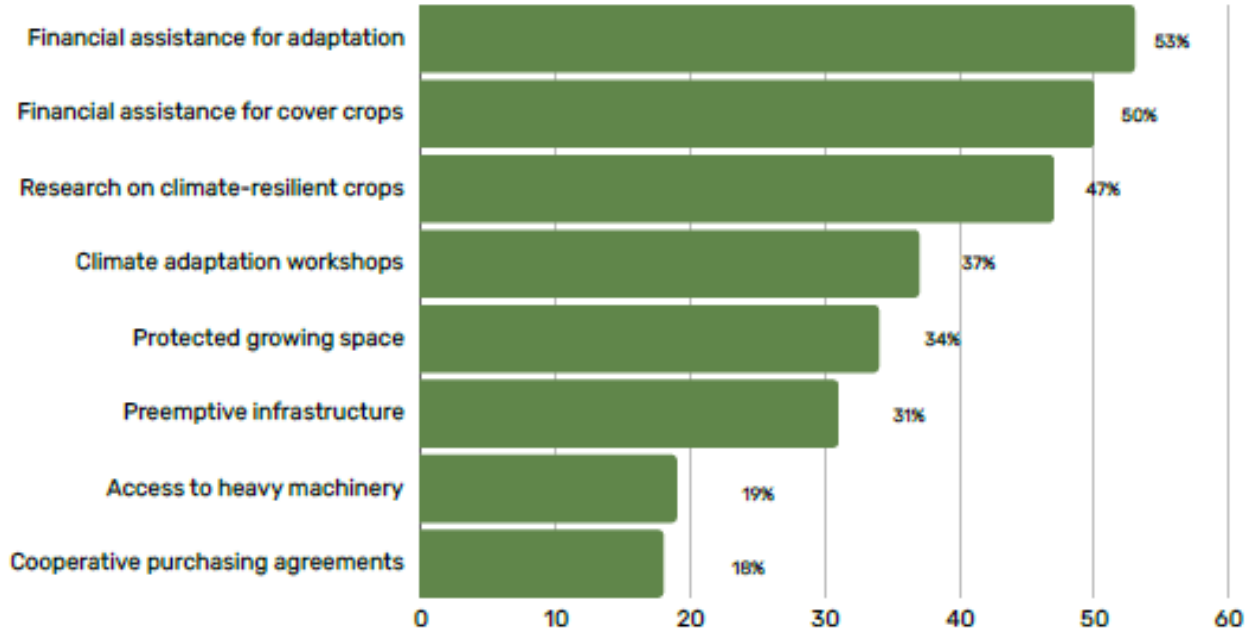
In response to these soil health concerns, farmers are taking a proactive approach to adaptation. The most widely utilized strategies are crop diversification, adjusting planting and harvesting schedules to meet new climate realities, and the use of cover crops and soil amendments, each of which was selected by over 60% of respondents.



2025 NJ Organic & Regenerative Farm Owner Survey Report

What additional resources would help manage climate-related risks?

In recognition that extreme weather is correlated with reduced yields and profits, we wish to place emphasis on the strategies that our farmers place value in to adapt to the reality of a changing climate. Assistance for the financial burden of adaptation and cover crops rank highest, but these farmers are also asking for research on resilient crops and adaptation education.



2026 Observations from Rutgers Extension Scientists & Workshop Participants

- Increased pest pressure from spps traditionally culled by overwintering.
- Better conditions for invasives.
- Spring variability creates conditions for late season frosts after plants break dormancy
- Increased risk for pests and disease.
- *Our forestry work indicates that recovery from extreme storms appears to differ along the urban rural gradient in NJ forests: younger forests (found in more urban areas) consisting of early successional clonal species are able to recover better, while older forests, especially in Oak-dominated areas are not able to recover as well.*
- Severe drought episodes are stressing out native trees and plants in developed landscapes, facilitating greater instances of pest and disease outbreaks.
- *It can be a challenge, plan and have a multifaceted approach to effectively manage.*
- *Working with farmers, even those who "don't believe" in climate change, the frequency and intensity of weather events such as drought and rainfalls have not only destroyed or decreased crop yields but also changed natural landscapes.*

2026 Observations from Rutgers Extension Scientists & Workshop Participants (continued)

- *Ten years ago many of our traditional farmers were calling climate change a hoax, but I think its a bit hard for them to continue to say that based on the changes that they have seen on their own farms. There is still huge variability in comfort levels with identifying their problems with human created changes to the environment. They are all looking for solutions regardless.*

- *We have found in the turfgrass side of things, new weeds that were not here 10/15 years back, without the a good hard winter, weeds dont tend to die, insects tend to make it over the winter. And one of the other things that seems to be happening, weather stays nicer deep into the year and spring seems to have move deeper into the new year.*

- *Dermo and MSX disease affect oysters, QPX affects hard clams and BSM affects bay scallops. Dermo and MSX have spread northward to Canada, but both seem to have attenuated locally to some degree. Other diseases appear to be increasing in concern, but may be related to the expansion of aquaculture as much as anything else. The human pathogen Vibrio vulnificus that can be carried by shellfish appears to be on the rise.*

Strategies and Innovations Among NJ Growers

- More use of technology (drone sprayers, robotic weed control)
- More use of data (from scouting, weather services, Extension) to make management decisions.
- Use of plant varieties resistant to specific diseases.
- Switching to heat/drought tolerant or salt tolerant crops.
- Use of shade cloths, drip line watering, water sensors.
- Protected growing thru high tunnels and greenhouses.
- Diversified crop plantings to continue to have a variety of crops to offer at market.
- Early or later plantings due to warmer days and impacts on crop ripening and climate impacts.
- Planting low growing crops in areas that have been less prone to flooding or ponding, planting higher off the ground crops in those areas.
- Intensive vegetable systems and utilization of advance crimping techniques to retain soil moisture.
- Diversification of farm businesses.

Strategies and Innovations Among NJ Growers (continued)

- Increased interest in well drilling to access ground water to increase resiliency during drought; (concern about what affect might this have on saltwater intrusion with sea level rise).
- Turfgrass managers and sod growers have now added warm season grasses to their inventory when in the past they only had cool season grasses; warm season grass also tolerates salt spray.
- Water less but more often, use preventive fungi spraying .
- Installing electric pumps and using solar to offset electric .
- For aquaculture, moving to deeper waters (but opportunities are limited); continued breeding of disease resistant lines against pathogens and increased vigilance of harvesting practices and safe handling.

Examples of Ongoing NJ Research

- Developing pest phenology (cranberry and blueberry) and plant phenology (blueberry) models to determine how key phenological stages may change in the future for long term horizon planting and varietal selection.
- Agrivoltaics.
- Developing disease prediction models and preventive diagnostic tools to provide early disease warnings for turfgrass managers.
- Forest growth and carbon stores along the urban rural gradient.
- Assessing pasture condition and estimating potential greenhouse gas emissions reductions across farms employing regenerative adaptive grazing techniques.
- Evaluating bell and non-bell peppers for resistance to Phytophthora capsici, bacterial leaf spot and anthracnose fruit rot
- Rutgers Basil Breeding program continues its efforts to improve basil downy mildew, bacterial leaf spot, and Fusarium wilt resistance in sweet and other types of basil.
- Continued aquaculture breeding of disease resistant lines and incorporating heat stress into Rutgers aquaculture breeding programs.

Thank you!

Our contact information

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