Soil Health Stewards

5 Years and 4+ Million Acres of Impact

American Farmland Trust
SAVING THE LAND THAT SUSTAINS US

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Participants of the October 2023 New England/New York/ New Jersey cohort attend an in-person Soil Health Stewards training where they toured various soil health assessment stations at Cedar Circle Farm in East Thetford, Vermont.

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Julie Fine, a Climate and Agriculture Senior Specialist on AFT's New England team, walks participants through a portion of NRCS' Soil Health Technical Note No. 450-06: Cropland In-Field Soil Health Assessment Guide.

PROGRAM BACKGROUND

Through the *Soil Health Stewards* (SHS) program, American Farmland Trust (AFT) engaged 127 land trusts and public Purchase of Agricultural Conservation Easement (PACE) programs to build their capacity to promote soil health on working farm and ranch lands. These 123 entities collectively steward nearly 5 million acres of permanently protected agricultural land and regularly interact with the owners and operators of this protected land, as well as with thousands of other farmers, ranchers, and landowners. The program's multi-pronged approach enabled participating entities to take tangible actions to increase their engagement with landowners and farm operators around soil health, with the intention to increase soil health practice adoption on land permanently protected through NRCS agricultural conservation easement programs.

Launched in 2021, the *Soil Health Stewards* program engaged six different cohorts of land trust and public PACE program staff in intensive multi-day trainings (five of the six trainings were virtual). Each entity received a $10,000 grant to support the development and implementation of a Soil Health Action Plan. The 239 staff members who participated in the program represented a diverse mix of practitioners, ranging from those involved in negotiating easement acquisitions and donations to those responsible for monitoring and stewardship, as well as managing directors and communications specialists. Each brought valuable insights to their cohort, helping each group brainstorm multiple ways that their agency or organization could support and encourage farmers, ranchers, and landowners to improve soil health.

The virtual trainings focused on the following topics: basics and benefits of improved soil health; barriers to and economics around soil health practice adoption; assessing soil health; effective communications strategies; connecting producers and landowners to soil health technical support and financial resources; and using easement deed terms, conservation and management plans, and easement stewardship to promote soil health on permanently protected farm and ranch lands.

Following each cohort's training, participants were given one month to develop and submit an agency or organizational Soil Health Stewards Action Plan. The Plan was intended as a multi-year roadmap of internal and external actions the agency or organization planned to take, from additional staff training and networking to soil health service providers, to engaging producers and landowners through field days and easement monitoring visits. Each cohort met twice during the year following the training to share updates on their plan's progress. AFT soil health, economics, and land protection teams participated in those follow-up meetings to answer questions and provide technical support.

Program participants received ongoing technical support from the National Agricultural Land Network and AFT soil health and economics staff. AFT developed a comprehensive toolkit designed specifically to help land protection practitioners build their knowledge of soil health, promote soil health through easements and easement stewardship, and engage producers and landowners in assessing their soil and connecting them to NRCS and other technical and financial resources. AFT also developed multiple tools and materials to help program participants understand and educate producers and landowners on the economics of soil health. At the conclusion of the program, participants participated in an evaluation in order for AFT to learn about impacts and outcomes. Findings are shared in the subsequent sections of this report.

Figure 1. Acreage Represented by Soil Health Stewards

During the application process for each cohort, entities were asked to provide information about their agricultural land protection portfolio. This table illustrates the total number of agricultural conservation easements held by members of each training cohort, including the number of easements enrolled through the federal Farm and Ranch Lands Protection Program (FRPP) and the Agricultural Conservation easement Program-Agricultural Land Easements (ACEP-ALE), and the total acreage of agricultural land under these easements.

TRAINING COHORTS	AG EASEMENTS	FRPP EASEMENTS	ACEP-ALE EASEMENTS	AG EASEMENT ACRES	LAND IN FEE ACRES
September 2021	11,269	782	93	1,246,590	1,248
April 2022	1,697	254	58	265,154	3,208
October 2022	269	89	16	50,503	3,624
April 2023	1,680	183	1004	1,338,127	15,485
October 2023	6,792	1,438	935	743,440	7,115
April 2024	6723	1035	805	2,209,773	11,984
Total	**24,481**	**3,407**	**2,106**	**4,827,951**	**30,680**
239 participants from 123 entities in 36 States					

EVALUATION APPROACH

Evaluation objectives

The evaluation had three objectives:

1. Assess how the SHS training and associated support enabled individual participants to gain new awareness and improved attitudes about linking soil health with agricultural land protection efforts
2. Understand the actions that participants took to further soil health efforts as outlined in their Soil Health Stewards Action Plans.
3. Assess institutional-level commitment to prioritize soil health in their acquisitions of agricultural conservation easements and to monitor soil health efforts and improvements on existing eased properties

Given the length of time between producer education and real-world practice adoption, AFT focused the evaluation on both how program participants engaged producers and the institutional changes entities made to incorporate soil health in their land protection efforts.

Evaluation deliverables

The evaluation approach was as follows:

1. Administered 243 pre- and post-training surveys measuring changes in awareness and attitudes regarding the assessment, stewardship, and integration of soil health objectives in current and future agricultural land protection work. Additionally, participants shared feedback via a survey on each day of the three-day trainings, which was used to directly inform training approaches from cohort to cohort.
2. Analyzed 123 Soil Health Stewards Action Plans representing work from 123 participating entities
3. Conducted in-depth interviews with 37 entities (total of 67 individuals) to dive deeper into individual and institutional level changes made as a result of participating in the *Soil Health Stewards* program

◀ *Soil compaction testers (also known as penetrometers) are tools used in soil health assessments to measure how compacted a particular patch of soil is. Compacted soil makes it more difficult for plant root systems to thrive. Each Soil Health Steward entity received their own penetrometer to use.*

▶ *Aaron Ristow, AFT Senior Agricultural Specialist, New York.*

INDIVIDUAL AND ORGANIZATIONAL CHANGE

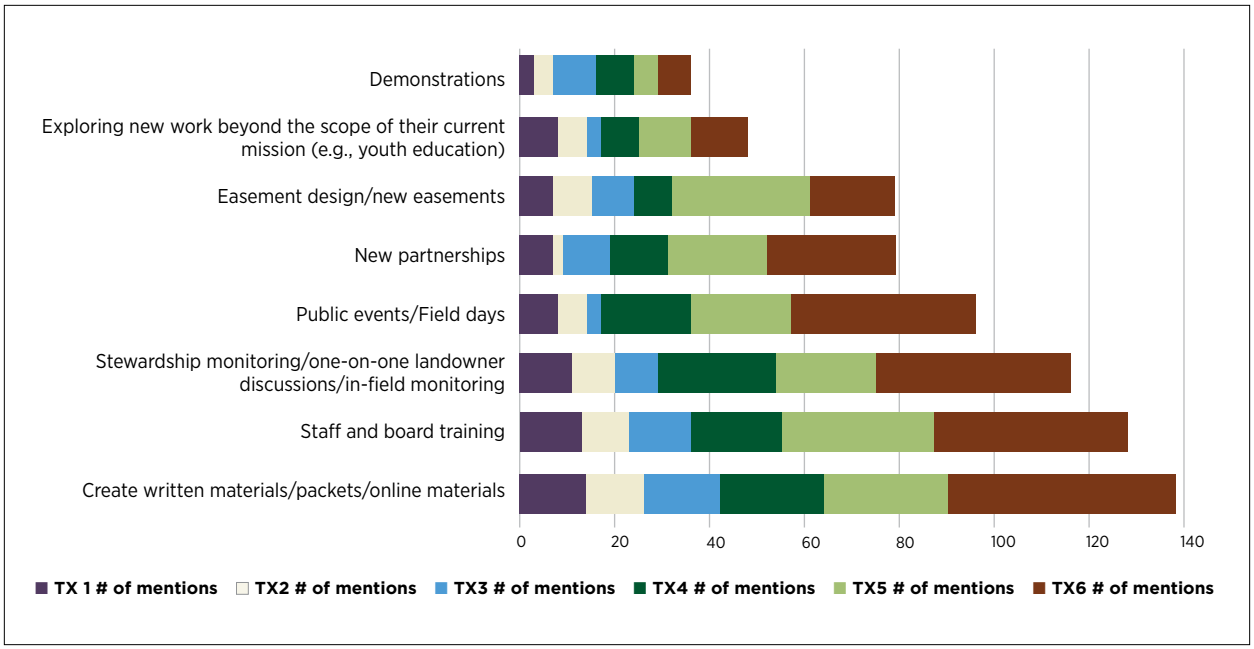
Soil Health Stewards Action Plans

Participating organizations submitted Soil Health Stewards Action Plans one month after their training and provided a progress report on implementation of their plan one year out from the training. Figure 2 illustrates a synthesis of the types of activities that were reported on from 123 action plans and the number of mentions for each activity received. For each activity that program participants reported, they were asked to provide an estimated number of staff, board members, landowners, and farmers reached, as well as a total number of acres reached and an estimate of which acres were federally protected.

> **[We have been posting] on social media, posting more about soil health, preparing a video series or getting video clips about soil health to share. I'm speaking with landowners about soil health. And then lastly, we proposed posting at least one workshop on soil health in connection with our local NRCS offices.**
>
> — INTERVIEWEE FROM TRAINING COHORT #2

Overall, based on a rough estimate provided by participants, over 260,000 staff, board members, farmers, and landowners were reached through Soil Health Stewards Action Plan outreach, educational events, and stewardship activities, representing over 6.5 million acres, including an estimated 300,000 acres of land protected through USDA easement programs. It is likely that counts may be duplicates, as they were reported based on discrete actions

Figure 2. Number of mentions of actions taken per training cohort (e.g., TX1-TX6)



that entities took, but nonetheless, the numbers overall reflect their projected reach regarding each of the actions they reported.

Across all entities, the three most common activities by participating organizations were (percentage of organizations taking action noted in parentheses):

- Creating written materials/packets/newsletters/online materials (76%)
- Staff and board member training (74%)
- Stewardship monitoring/one-on-one landowner outreach/in-field monitoring (73%)

> **"We're now able to have better conversations with our landowners and even others that we don't conserve the land of, but are just in our region, it helps us ask them more questions and engage better about their work and practices."**
>
> — SOIL HEALTH STEWARDS INTERVIEWEE

With the remaining activities ranked by percentage taking action:

- Hosting public events/field days/workshops (58%)
- Easement design/approach to new easements (52%)
- New partnerships (46%)
- Exploring new work beyond the scope of their current mission/focus (34%)
- Demonstrations of soil health principles on farms/ranches (20%)

Increases in confidence

An especially encouraging finding from the pre- and post-training survey analysis is the improvement in participants' confidence. On average, across all training cohorts, participants reported a 44% increase in a combined measure of "fairly" and "completely" confident categories (of a five-point Likert scale question). This suggests that many participants left the training with significantly more confidence than when they began. The three statements that showed the highest improvements in confidence, consistent across all trainings, included:

> **"I feel much more confident in communicating the value of this work and helping donors understand why our work to support farmers and other landowners is relevant to their everyday lives."**
>
> — SURVEY RESPONDENT FROM TRAINING #6

- Discussing the environmental benefits of soil health
- Defining what soil health is and how it can be assessed
- Knowing what to "look" for in the field when making a general soil health assessment

Changes to professional identity

Individuals participating in the Soil Health Stewards trainings experienced changes to their professional identities and how they now approach their work. They reported the following changes:

- New skills/resources enhancing their capacity and efficacy as professionals
- Improved engagement with farmers, ranchers, and landowners who own or operate permanently protected land

- New partnerships with landowners in research projects (including soil testing and new farming practices like rotational grazing)
- Personal professional development that includes a new focus on soil health as a key component to conservation efforts
- Taking more action to engage farmers and landowners in person and on farms to build trust and increase adoption of soil health practices

Participants described examples of these changes in the following direct quotes:

> **"It's not just [that] we go and monitor the easement and leave. We are stepping on that soil and that is a powerful opportunity to look holistically at what's going on, who the experts are that we can layer in to help make a conservation project have maximum impact. Every year we're able to come back and layer new things in."**

> **"I've built a lot more confidence to be able to go on a field walk with our landowners and have a more comprehensive toolset to talk with our landowners about. We never know what's going to get the landowners jazzed up—maybe it's the bird species, maybe it's tax credits. So, I feel I've had quite a revolution to think about the whole farm approach more holistically."**

> **"We're no longer just looking for issues with compliance, we're looking for opportunities. We're not just trying to catch them doing something wrong, we're looking for ways to support them, and that really changes the relationship dynamic."**

Organizational change

Organizations now consider soil health central to their mission. The SHS trainings resulted in organizations explicating incorporating soil health in the following ways:

- Making connections between soil health practices and other conservation goals (like water quality)
- Engaging new advisory boards
- Engaging with conservation stewardship staff specifically about soil health
- Including soil health as part of landowner outreach efforts
- Training other staff members about soil health
- Incorporating language and approaches about soil health into new conservation easements

These direct quotes illustrate some of these new considerations:

> **I think that this opportunity with AFT is a good moment in time for us to rethink how we do our agricultural conservation work, and in particular how we're approaching landowners at the outset."**

> **In our recent strategic planning, I think that changed because the soil health training, is we put more emphasis on the land trust being a resource for our landowners as a facilitator of making sure they're connecting to resources from NRCS or resources, those case studies that are available, . . . connecting to tools that they may or may not be already knowledgeable about . . . . So, we did it (during) strategic planning in January."**

> **Key message we've been focused on is that we're investing a lot of money in protecting these farms, so we need to also focus on protecting the soil health on those farms. It doesn't make a lot of sense to protect that land without also focusing on soil health."**

Organizations are also making inroads in new or improved partnerships and collaborations around soil health. This includes leveraging combined resources and using partnerships to better engage farmers and landowners in new soil health practices, improving watershed health, and using conservation easements as a tool to meet these goals. New and improved partnerships included: government agencies (including NRCS); Cooperative Extension; nonprofits; foundations; carbon brokers; educational farms; local commissions (conservation, planning); university researchers; and peer networks of local farmers. These direct quotes describe a few of these partnerships:

> **(We) developed a new relationship with five local producer-led watershed groups. And we have a soil health conference every year. Well, this is our second one. We had a really successful one last year, we kicked off. And then this year we're actually having an afternoon session on conservation easements at our already existing soil health workshop."**

> **Since the soil health (training), there has been a community built between NRCS, farmers, and our land trust."**

◀ *Cris Coffin, AFT's National Agricultural Land Network Director and Senion Policy Advisory, leads the October 2023 New England/New York/New Jersey cohort on a soil health assessment tour at Cedar Circle Farm.*

SOIL HEALTH ECONOMIC CASE STUDIES AND FARMERS GUIDES

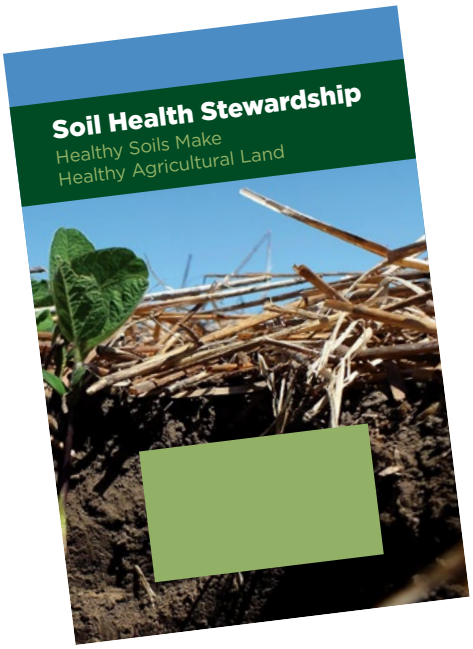
A discrete element of the project was the development of tools and materials to help program participants understand and educate producers and landowners on the economics of soil health. AFT developed multiple resources for land protection staff that highlight the economic costs and benefits of soil health practices. AFT continued its successful series of Soil Health Economic Case Studies, which highlighted the stories of farmers who have adopted soil health practices, the barriers they faced adopting those practices, and how they have overcome those hurdles. Within this project, AFT was able to develop its first case study featuring producers on permanently protected farmland. The B&R Farms case study features a Pennsylvania family farming land protected in part through the federal Farm and Ranch Lands Protection Program. Their story highlights the link they see between permanent farmland protection and soil health practices.

While AFT's case studies are an excellent source of information of the costs and benefits real farms have faced adopting soil health practices, they do not encapsulate the depth of the economic literature on soil health practices. To help land protection staff better communicate the economic impacts of soil health practices to their farmers, AFT developed the Farmer's Guide to Soil Health Economics series. These seven guides synthesize the economic literature on soil health practices and are written in an approachable tone appropriate for conservation professionals and farmers. The first three guides of the series focus on row crop production systems (e.g. corn, soybeans, and small grains), while the final four guides focus on beef grazing. The guides summarize current literature, provide key takeaways, and full references for the studies included.

After all six "Soil Health: Economic Benefits" training sessions, evaluation surveys were distributed with a 31% response rate. Below are a few takeaways.

- The majority (86%) of respondents said they had not possessed outreach and education materials on the economic effects of soil health practices before receiving the AFT-NRCS soil health economic case studies and farmers' guides.

- 97% of respondents said they agreed or strongly agreed that the training sessions provided helpful information about the economic benefits associated with soil health practices.
- The majority (73% and 78%, respectively) said they would use the economic resources in (a) one-on-one conversations with landowners and farmers or in (b) group-settings with landowners and farmers (e.g. a field day or a workshop).
- The majority (90% and 69%, respectively) said they would (a) encourage conservation professionals to use the soil health case studies and farmers' guides as outreach and education materials or (b) encourage conservation professionals to foster working relationships with their landowners and farmers.



Over 5,000 customizable 'Soil Health Stewardship' folders were filled and distributed by participants.

Left: Boots and Robin Hetherington with Morgan and Kevin Bond, all of B&R Farm located in Schuylkill County, PA. They worked with AFT's Water Team to generate a soil health economic case study using information from their farm. Right: B&R Farm's strawberry patch and corn field.

REFLECTION ON PROGRAM DESIGN AND TRAINING APPROACH

Training design is highly effective with opportunities for refinement

> **"This piece used to be an afterthought for us at best. That has completely changed.... We've put our stake in the ground that this [soil health] is what we're about now. If we're going to be preserving farms, we're going to be making sure they are the best they can be."**
>
> — LAND PROTECTION PRACTITIONER

> **"This was a comprehensive and well-planned out training. While I still have a lot to learn about soil health, the training did boost my knowledge and increased my confidence in talking about these issues."**
>
> — SURVEY RESPONDENT FROM TRAINING#5

Overall, the feedback on the training was very positive. Participants found value in the presenters, the farmer panels, the economic case studies, the network of other land trusts, and much more. Figure 3 presents the reflections associated with what participants reported worked well in the training and what additional resources would be most helpful going forward.

Bianca Mobius-Clune, AFT's Climate and Soil Health Director, demonstrates a 'slump test' measuring soil aggregate stability.

Figure 3. Participant reflections on the trainings.
Each reflection is accompanied by key descriptors and one descriptive quote.

KEY INTERVIEW REFLECTIONS	KEY DESCRIPTORS	DESCRIPTIVE QUOTE
Favorite resources from the training	Financial support; flexibility in implementation; ongoing conversations and network connectivity; resources on in-field soil health assessments; SHS toolkit and economic case studies; access to various science-based resource	"I really appreciate the toolkit.... It really went through some about the relationship between easements and soil health and how you work it in... you know, it's not an obvious thing of how you write an easement documentation that encourages soil health, and I thought there was some really good materials in there about that."
Suggested improvements to the course & resources offered	Desire for more hands-on and locally relevant training opportunities including practice with equipment; desire for more advanced-level training; more regionally/crop-specific case studies, case studies that are more specific to their context (e.g., nursery growers, or coastal issues, etc.); more materials targeted to land trusts, more opportunities to review and refresh what they learned	"I think maybe having one or two sessions that would be in person—actually seeing these demonstrations done live, would be helpful. And making connections about how to, you know, bring those back to your area."
Additional financial and technical resources needed	List of technical assistance providers to help with outreach on specific topics (e.g., silviculture); more capacity in their organizations for staff and time; access to equipment for trials and demonstrations (e.g., roller crimper or no-till drill); training on how to better liaise between farmers and government agencies; more access to grants to fund farmers and landowners; more funding resources for their organizations to advance the work	"If we had endless amounts of funding, we would hire staff to help us... because the time [or lack of time] thing is the biggest, at least for me."

LESSONS LEARNED

The *Soil Health Stewards* program for agricultural land protection practitioners was demonstrably effective in improving knowledge, increasing confidence, and enhancing land trust staff members' ability to connect soil health management with their existing roles. Perhaps more importantly, the training had a transformative effect on participating organizations, fostering a greater awareness and programmatic focus on linking soil health management with land conservation goals. This transformative approach, through a year-long engagement with participating entities, allowed deep learning and strategic action to be taken to improve soil health through greater engagement with producers and landowners, on both unprotected and protected land. Additionally, organizations and individuals were able to develop new partnerships and networks as well as further hone organizations' skills through staff and board training.

> **"Now I feel more confident knowing what I'm looking at and seeing some signs of opportunities for NRCS to be integrated and to sell that to the landowners as adding to the bundle of resources we can connect them to."**
>
> —SOIL HEALTH STEWARDS INTERVIEWEE

As part of our comprehensive evaluation efforts, we have identified some key lessons learned that can guide future work to integrate soil health promotion with agricultural land protection and easement stewardship:

- Virtual engagement allowed AFT to reach a much broader audience and enabled the team to have multiple touch points across the life of the project. Where possible, look for hybrid delivery modes that enable both in-person experiential and virtual engagement opportunities.
- The focus on organizational change delivered by professional development opportunities for individual staff/teams enabled individual staff to gain new skills/resources while emphasizing the powerful potential to influence organizational priorities.
- Participants were eager for as much site- and region-specific information as possible. There is a need for additional resources that are specific enough to translate to the relevant context. This enables participants to see the relevance in their region/community and can have a more lasting effect when doing outreach on soil health.
- Participants appreciated the flexibility of the funds and the access to technical assistance. Grant funds that allow organizations and agencies to choose how best to meet their specific needs and opportunities are invaluable, as are ongoing technical assistance and support that can help participating entities address changes in staff, programming, and resource availability.

Soil Health Stewards Graduate Organizations

Agricultural Stewardship Association, New York
Alaska Farmland Trust
Aquidneck Land Trust, Rhode Island
Athens Land Trust, Georgia
Beaufort County Open Land Trust, South Carolina
Bitter Root Land Trust, Montana
Black Family Land Trust, North Carolina
California Rangeland Trust
Cardinal Land Conservancy, Ohio
Carroll County, Georgia
Catawba Lands Conservancy, North Carolina
Cecil Land Trust, Maryland
Centre County Agricultural Land Preservation Board, Pennsylvania
Colorado Cattlemen's Agricultural Land Trust
Colorado Open Lands
Colorado West Land Trust
Columbia Land Conservancy, New York
Connecticut Department of Agriculture
Connecticut Farmland Trust
Dane County Land & Water Resources Department, Wisconsin
Drumlin Area Land Trust, Wisconsin
Eastern Shore Land Conservancy, Maryland
Eastern Sierra Land Trust, California
Essex County Greenbelt Association, Massachusetts
Fayette County Rural Land Management Board, Kentucky
Five Valleys Land Trust, Montana
Foothills Conservancy of North Carolina
Forterra NW, Washington
Genesee Land Trust, New York
Georgia-Alabama Land Trust
Groundswell Conservancy, Wisconsin
Hampshire County Farmland Protection Board, West Virginia
Hunterdon Land Trust, New Jersey
Iowa Natural Heritage Foundation
Jefferson Land Trust, Washington
Kane County, Illinois
Kentucky PACE Program
King County, Washington
Kinnickinnic River Land Trust, Wisconsin
Kittery Land Trust, Maine
Lake County Soil & Water Conservation District, Ohio
Lancaster County Agricultural Preserve Board, Pennsylvania
Lancaster Farmland Trust, Pennsylvania
Land Conservancy of Adams County, Pennsylvania
Land for Maine's Future Program and Maine Bureau of Agriculture, Food, and Rural Resources
Legacy Land Conservancy, Michigan
Lower Shore Land Trust, Maryland
Madison SWCD, Ohio
Maine Farmland Trust
Mainspring Conservation Trust, North Carolina
Maryland Department of Agriculture
Massachusetts Department of Agricultural Resources
Methow Conservancy, Washington
Mount Grace Land Conservation Trust, Massachusetts
NC Department of Agriculture and Consumer Services
Nebraska Land Trust
New Jersey Conservation Foundation
Northampton County Farmland Preservation, Pennsylvania
Northern California Regional Land Trust
Northern Prairies Land Trust, South Dakota
Northwest Connecticut Land Conservancy
Oconee Soil and Water Conservation District, South Carolina
Okanogan Land Trust, Washington
Orange County Land Trust, New York
Ozark Greenways, Missouri
Palmer Land Conservancy, Colorado
Pennsylvania Department of Agriculture Bureau of Farmland Preservation
Pines and Prairies Land Trust, Texas
RI Department of Environmental Management/Division of Agriculture and Forestry
Rio Grande Agricultural Land Trust, New Mexico
Saratoga PLAN, New York
Scenic Hudson, New York
Sonoma County Agriculture and Open Space District, California
South Kingstown Land Trust, Rhode Island
State of New Jersey, State Agriculture Development Committee
Suffolk County Soil and Water Conservation District, New York
Tall Pines Conservancy, Wisconsin
Taos Land Trust, New Mexico
Tecumseh Land Trust, Ohio
Teton Regional Land Trust, Idaho
Texas Land Conservancy
The Land Trust for Tennessee
The Piedmont Environmental Council, Virginia
Three Valley Conservation Trust, Ohio
Town of North Kingstown, Rhode Island
Town of Woodstock Agricultural Commission, Connecticut
Triangle Land Conservancy, North Carolina
Upper Valley Land Trust, New Hampshire
Utah Open Lands
Vermont Housing & Conservation Board
Washington Farmland Trust
Washtenaw County Parks & Rec, Michigan
Western Pennsylvania Conservancy
Westmoreland County Agricultural Land Preservation, Pennsylvania
Wood River Land Trust, Idaho
Wyoming Stock Growers Land Trust
Yolo Land Trust, California
York County Agricultural Land Preservation Board, Pennsylvania

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American Farmland Trust is the only national organization that takes a holistic approach to agriculture, focusing on protecting the land, promoting regenerative agricultural practices, and supporting farmers and ranchers. American Farmland Trust launched the national conservation agriculture movement and raises public awareness through our No Farms No Food® campaign. Since 1980, American Farmland Trust has supported hundreds of thousands of farmers and ranchers by working with partners to permanently protect nearly eight million acres of U.S. agricultural land and by advancing environmentally sound farming practices on millions more.

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Growing the capacity and momentum needed to elevate the cause of agricultural retention and protection across America.

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