

Building Climate Resilience with State and Federal Farm Policy

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LEAD AUTHOR

Samantha Levy, Conservation and Climate Policy Manager

CONTRIBUTORS

This paper was prepared with substantial contributions from Emily Liss and Bonnie McGill and review and input from many staff at American Farmland Trust including Andrew Bahrenburg, Cris Coffin, Tim Fink, Chelsea Gazillo, Kara Heckert, Caitlin Joseph, Dani Madrone, Gabrielle McNally, and Ann Sorensen.

ABOUT AFT

Founded in 1980, American Farmland Trust (AFT) is the only national organization that takes a holistic approach to agriculture, focusing on the land itself, the agricultural practices used on that land, and the farmers and ranchers who do the work. AFT has extensive experience with Farm Bill advocacy and played a leading role in championing many of today's conservation programs. AFT also works in close partnership with the Natural Resources Conservation Service (NRCS) to help farmers adopt conservation practices across the nation.

ABOUT AFT'S FARM BILL PROCESS

To support the development of AFT's 2023 Farm Bill agenda, AFT held 16 regional workshops across the U.S. to hear from farmers and ranchers, service providers, farm and environmental groups, land trusts, state departments of agriculture, researchers, and more about opportunities for the next Farm Bill. In the 8 conservation and climate-focused workshops, attendees discussed their experiences with extreme weather and their challenges overcoming barriers to conservation practice adoption. These conversations also explored what could be done in the next Farm Bill to support increased, long-term adoption of conservation practices that will build resilience to, and address, climate change while also improving soil health, water quality, and profitability.

Using these conversations as a foundation, AFT created a series of whitepapers to make recommendations for the next Farm Bill. To see the rest of the whitepapers, and learn more about AFT's Farm Bill platform, please visit us at www.farmland.org/2023-farm-bill.

ACKNOWLEDGMENTS

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WALTON FAMILY
FOUNDATION



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Executive Summary

Climate change is already impacting U.S. farmers and ranchers, bringing greater unpredictability and more frequent extreme weather events that reduce revenue, increase disaster assistance costs, and threaten food security. During the winter of 2022, American Farmland Trust (AFT) held eight regional workshops to hear from farmers and ranchers about the challenges they are facing, and how the next Farm Bill could help to overcome them. The following white paper conveys personal stories from farmers and ranchers across the nation about how extreme weather is impacting their operations, explores pathways that would help them remain viable and build resilience,^a and details the barriers to increasing adoption of conservation practices as well as the numerous opportunities for state and federal policymakers to help farmers overcome them.

State and federal leaders and lawmakers across the nation have an important near-term opportunity to create policies and programs that will build farm and food system resilience while helping farmers and ranchers benefit from addressing climate change. In five subsequent white papers, AFT will make specific recommendations for how Congress and the United States Department of Agriculture (USDA) can tackle these and other challenges in the next Farm Bill by permanently protecting more farmland, improving farmland access for a new generation of producers, and by helping farmers adopt practices that build soil health, sequester carbon, and reduce greenhouse gas (GHG) emissions. Scientists have warned that our window of opportunity to address climate change will close within this decade—our very future depends on the choices we make *today*.

In order to achieve these goals, AFT recommends policymakers act to:

- Provide adequate and sustainable financial and technical assistance to support conservation practice adoption.
- Streamline state and federal conservation programs and build in more flexibility to increase farmer access.
- Target conservation program support to historically marginalized, small and mid-sized, and diversified producers.
- Increase collaboration with groups that can provide culturally-appropriate technical assistance.
- Develop and fund state programs that help farmers and ranchers increase adoption of soil health practices, and create a federal match for these innovative state programs in the next Farm Bill.
- Invest in revenue loss protection programs to support the economic viability of farms as producers transition to soil health practices.
- Encourage farmer conservation leadership by celebrating early adopters and supporting them in mentoring other producers.

^a Climate-Smart practices, as [defined by USDA-NRCS](#), are practices that reduce GHG emissions. In this paper, AFT also considers practices that help producers adapt to climate change to be “climate-smart.”

- Provide funding for other proven strategies that increase conservation practice adoption, like peer-to-peer networking, on-farm demonstration trials, and information sharing on the costs and benefits of practice adoption.
- Support community and cooperative models that help smaller-scale producers reduce the cost of implementing conservation practices.
- Help non-operating landowners support farmer-renter conservation activities.
- Protect farmland for future generations by increasing funding for the Agricultural Conservation Easement-Agricultural Land Easement program, and creating and funding state-level Purchase of Agricultural Conservation Easement programs.
- Prioritize and promote secure land access, including through low-interest loans, grants, and easement program funding, as well as affordability and affirmative farming covenants.
- Build financial incentives, such as ecosystem service markets and price premiums, for selling climate-smart products.
- Strengthen crop insurance by better incorporating risk-reducing conservation opportunities as well as removing barriers and perceptions that hinder adoption of conservation practices.

AFT works across the country to advance policies and programs that achieve the above goals. In additional whitepapers and policy materials, AFT will lay out detailed recommendations for the next Farm Bill to build on-farm and food-system resilience while helping producers mitigate and adapt to climate change. Implementing the actions recommended in AFT’s white papers will set the U.S. on the path to better supporting producers in addressing both immediate and future challenges. Brave and bold state, congressional, and presidential leadership, in collaboration with the farm and conservation community, will put us on a more sustainable path. We can, and must, work together without delay to ensure a resilient future for agriculture in the face of climate change.



Photo by Kevin Keenan, interseeded cover crop in New York

Introduction

Human activity has already warmed the planet approximately 1°C (or 1.8°F) above pre-industrial temperatures, causing a cascade of unpredictable, extreme, costly, and deadly events that are disrupting our everyday lives. A 2022 National Oceanic and Atmospheric Administration (NOAA) report found that in 2021, there were 20 weather or climate disaster events which brought a total of 688 deaths and losses exceeding \$1 billion *each*.¹

In an industry where success is governed by weather, the realities of the warming climate are all too real for our nation's farmers and ranchers. Producers across the nation are contending with multi-year droughts; unexpected floods; extended heatwaves; raging wildfires; new invasive species; and novel pests and diseases that disrupt their lives and livelihoods all while they work to keep their communities and families fed.² While extreme events make the headlines, rising temperatures and shifting rainfall patterns are putting crops and livestock under increased stress. Farmers and ranchers are already experiencing more consecutive dry days, hot nights, and extreme downpours,³ as well as fewer frost-free days. And the impacts are even greater for young and beginning farmers, small and mid-sized growers, historically marginalized producers,^b and low-income farmers who are less able to withstand unexpected challenges and loss.

As days above 90°F increase in frequency, research has found that even our best farmland will become less suitable for agricultural production, with rainfed corn and soy yields dropping 6% *every single day* that temperatures exceed 86°F.^{4, 5} According to American Farmland Trust's (AFT) [Farms Under Threat 2040 research](#), changing weather conditions will put much of our rainfed agricultural production at risk within the next two decades. The rising temperatures, shifting rainfall patterns, and increases in extreme weather events are creating a new norm of unpredictability and volatility, threatening farm viability and food production across America. These trends are especially pronounced in the west where much of the nation's fresh fruit and vegetables are grown. Without intervention, these changes put our very food security into question.

How Climate Change Is Impacting Farmers and Ranchers Today

To cope with these changes, farmers are shifting to new crops and crop varieties, adjusting planting times, spacing, water use, and nutrient and canopy management, and using more pesticides to counteract mounting pest pressure.^{6, 7} But succeeding in this unpredictable environment is difficult, and some of these strategies are likely to exacerbate other environmental challenges and become less effective if climate change accelerates. To learn more about what farmers and ranchers are experiencing on the ground and how it is

"The losses were traumatic. Climate change is getting so unpredictable, and really hard to farm with."

—SHERYL HAGEN-ZAKARISON
ZAKARISON PARTNERSHIP
PULLMAN, WASHINGTON

^b The term "historically marginalized producers" is used here to mean those that have been marginalized in society and from government support based on race and ethnicity, namely Black, Indigenous, and other producers of color (BIPOC). AFT uses this term to recognize that, though there are other producers marginalized in the U.S., racism in this country has perpetuated disadvantages for BIPOC producers and landowners, and that important systemic work and changes are needed to address these inequities.

impacting their operations and families, AFT held eight regional workshops during the winter of 2022. Below are some of the stories that were shared during these workshops as well as research and data to further contextualize the gravity of their experiences.

Heat, Drought, Fire, and Smoke

Heat and drought are already impacting farms and ranches. This was especially true for attendees of AFT’s California and Pacific Northwest workshops. Sheryl Hagen-Zakarison, who owns and manages a 600-acre grain and livestock operation in Pullman, WA, shared that **an unprecedented heatwave and drought reduced their harvest by 90% in 2021**—a traumatic loss. Berry growers also suffered substantial losses in 2021. Henry Bierlink, a former farmer and the executive director of the Washington Red Raspberry Commission, reported that **raspberry growers lost 30% of their crop** in 2021. Anne Schwartz of Blue Heron Farm in Rockport, WA, **lost 70% of their blueberry crop** after experiencing five days well over 110°F in June during a heat dome. These challenges were compounded by the recent loss of snowpack^c in the west. This important source of water declined by 23% on average (and much more in some areas) between 1955 to 2020,⁸ reducing the ability to withstand heat and drought for thousands of producers.



Berries wither on the branch at Blue Heron Farm in Washington during the 2021 Heat Dome.

These droughts and extended heatwaves are also contributing to more frequent and devastating fires in the West. Over the course of the last decade, California experienced 15 of its 20 most destructive wildfires on record.⁹ In 2020 alone, over 10 million acres—an area five times the size of Yellowstone National Park—burned, causing \$16.5 billion in direct damages alone, and representing a threefold increase over the average annual acres burned in the 1990s.^{10,11} Nationally, the four costliest fire seasons on record have occurred since 2018,¹² and related losses for farmers and ranchers are mounting. In line with the 2018 U.S. National Climate Assessment predictions that wildfires would reduce rangeland forage,¹³ three 4th and 5th generation women ranchers who attended AFT’s workshops shared that forage production for their beef cattle was suffering due to drought and wildfires. Fires are also impacting specialty crops, with the Sonoma County Winegrowers reporting **a 40% loss of wine grapes in 2020 (estimated at \$250 million in value)**^d to drought, fire, and smoke.

“What we’ve done in the past, if we have more years like [2021], aren’t going to work.”

—SARAH MCCLURE
WALLA WALLA ORGANICS
WALLA WALLA, WASHINGTON

c Reduced snowpack is becoming the new normal for farmers all over the country, some of whom reported starting the season at a water deficit and then experiencing both “wetter wets and drier dries” throughout the season, “especially when you don’t want them.”

d Numbers provided by the Sonoma County Winegrowers based on a grower survey and the 2020 crop report.

Flooding and Other Extreme Weather Events

While producers in AFT’s Midwest workshop also experienced extended heat and drought, many reported that increased extreme weather events and rainfall were their biggest challenges, causing damage and planting delays. Since 1895, spring and fall precipitation in the Missouri River basin has increased by 14% and is projected to continue to increase.¹⁴ Several years ago, the combination of an extremely wet fall, a freezing winter, and an early spring “bomb cyclone” which dropped several inches of rain and melted river ice overnight,¹⁵ resulted in the “Great Flood of 2019” along the Mississippi and Missouri Rivers. This was not only among the nation’s worst recorded floods, it was also the longest-lasting flood in a century.¹⁶ In total, flooding in 2019 cost nearly \$23 billion in disaster spending—almost half of national disaster spending that year.¹⁷ Nearly 20 million acres went unplanted that year, a 920% increase from 2018.¹⁸ The next year, a derecho^e hit the Midwest in August, dealing nearly \$13 billion in damages across the region with Iowa farmers losing \$490 million in crop value alone.^{19, 20}

According to NOAA, these kinds of extreme weather events have been increasing. The period between 2018–2022 saw an average of 17 extreme weather events per year, more than double the average of the last 40 years.²¹ **Attendees at AFT’s Midwest workshops shared that extreme weather events like these were posing significant threats to the long-term viability of their farms by damaging cropland, eroding soils, preventing spring planting, and threatening the viability of important industries, like tart cherries and other stone fruit production in Michigan.**



Extreme weather events and flooding are causing major financial losses—a hurricane in 2021 cost Larry Tse, a small-scale vegetable grower in the Black Dirt region of New York, \$70,000 in damage.

Producers in AFT’s Southeast, Mid-Atlantic, and Northeast workshops also reported flooding and an overabundance of water. Charles Hord, a farmer and Executive Director of the Tennessee Cattleman’s Association, has experienced extreme rain events with rivers often flooding his farm and surrounding areas. Other farmers in the Southeast and Mid-Atlantic reported deluges of rain and then none for weeks or months at a time, saying that annual rainfall totals have climbed to a record 50–70 inches, well above the historic average of 45. These big bursts of precipitation can prevent planting in the spring, ruin crops in the summer, and take precious soils, fencing, and other infrastructure with them. Keith Ohlinger of Porch View Farm—a livestock and tree farm in Maryland—has suffered a **derecho or tornado every year for the last 10 years**. Others have even lost land to frequent flooding. Wes Gillingham, a

e A derecho, also referred to as a “land hurricane,” is a widespread, long-lived wind storm that is associated with a band of rapidly moving showers or thunderstorms. Although a derecho can produce destruction similar to the strength of tornadoes, the damage typically is directed in one direction along a relatively straight swath. See: <https://www.weather.gov/lmk/derecho>

small-scale vegetable grower in New York’s Catskills, **had to abandon land because they experienced two 100-year floods and a 500-year flood in the span of five years.** It is important to note that none of the storms Wes experienced were classified as “mega-storms,” but instead were isolated thunderstorms. According to Wes, the field has flooded three times since they abandoned the land in 2006. Prior to that year, the field flooded only once...in 1943.

In addition to heat, drought, and fire, producers in the West *also* experienced isolated flooding and heavy snowfall events. In California, when heavy rains do come, as they did in January 2023, they can significantly erode soils, creating dangerous mudslides that damage or destroy property and, in some cases, cause loss of life. In June 2022, a mudslide closed 50 miles of California’s Highway 70 when intense rain fell in the Dixie Fire burn scar,²² highlighting the increased disruption, cost, and vulnerability from compounding extreme events. Flooding in November of 2021 in Washington state caused traumatic losses for dairies, and potato and berry growers who attended AFT’s workshops. Jay Gordon, a 7th generation dairy farmer, said that he has faced a **100-year flood^f every 7 years since the 1990s.** And Jane Reis, who farms along the banks of the Snoqualmie river in Washington, **had 7 floods in 3 months.** This has forced her and her team to spend weeks of time and labor—in short supply on the farm—taking down high tunnels, farm stands, educational tents, landscape fabric, drip lines, water pumps, hoses, trailers, and other equipment at the end of every season.

Liesl McWhorter of 21 Acres Farm in Washington state reported that a 70-year snow event late in the winter of 2021 caused their brand-new greenhouse to collapse, setting production back by four weeks and costing them nearly a quarter of their revenue that year.

Seasonal Changes and New Pests and Diseases

The timing of seasons that U.S. farmers have relied on for centuries is also changing. This is happening in ways that are difficult to adapt to, requiring producers to seek support to change not only what, how, and when they plant, but also how they use water. Midwest farmers shared that the window of spring days when temperature and moisture conditions are favorable for planting seems to narrow every year. AFT’s New England workshop took place during maple sugaring season, which one attendee noted was happening a full month earlier than it had 20 years ago. This observation is backed up by research showing that the sugaring season is not only coming



Mold growing on kale at Laughing Earth Farm in New York

^f 100-year or 70-year events are so called because they have traditionally only hit communities once within that time span. These events are now happening much more often, especially devastating to local communities as increased frequency reduces the ability to rebuild.



“Planting and harvesting dates have become erratic with the high to low temperatures causing crop loss as vegetables bolt.”

—LAURA COLLIGAN
CERTIFIED ORGANIC VEGETABLE FARMER
NEW YORK

much earlier than it used to, but that it is also shortening.²³ Tree fruit and berry growers who attended AFT’s Northeast workshops noted that they are now regularly experiencing early frosts in the fall, warmer weather in the winter, and late frosts in the spring—reducing yields and shortening their already limited growing season. In AFT’s Southeast workshops, farmers shared that temperature shifts are impacting the viability of sensitive and lucrative crops like strawberries.

Warmer temperatures, particularly in the winter, also mean that novel pests, pathogens, and weeds are expanding their ranges. The resulting crop and livestock losses are especially hard for small-scale growers to withstand. In AFT’s California workshop, many noted that new pests and diseases are causing crop losses, like the navel orangeworm which feeds on a variety of fruits and nuts and is the most damaging caterpillar

to pistachios. In New York, Zack Metzger who owns and operates Laughing Earth Farm, a small-scale diversified vegetable and livestock operation, noted increases in disease pressure, especially with warm and wet falls—conditions that support mold growth on crops and parasites in the mud. Such pests do not only impact crops. Larisa Jacobson, a New York farmer, shared that on top of increased flooding and diseases on their farm, she also suffered the migration of the blister beetle while farming in Massachusetts, which causes painful blisters on human skin after contact.

Lending and Crop Insurance

These mounting climate-related risks are also changing how lenders evaluate and underwrite loans. A 2022 survey of lending institutions found that 54% of U.S. lenders factored climate change into their decision-making process.²⁴ Extreme and unpredictable weather are also increasing the need for ad hoc disaster assistance and ballooning crop insurance indemnity payments, with greater increases expected in the future. A 2019 USDA Economic Research Service (ERS) report predicted that crop insurance program costs could increase by 10–37% within this century if producers do not adapt to the changing climate.²⁵ One example of this can be seen in the case of prevented planting claims.^g The annual average of these claims since 2007 has been 5.6 million acres, but in 2019 and 2020 these numbers jumped to historic heights at 19.6 and 10.2 million acres respectively.²⁶ As previously mentioned, producers are also seeking more aid from burning and smoke taint caused by wildfires. These losses have been compounded by the Federal Crop Insurance Program increasingly rejecting applications and raising premiums for fire insurance due to increased risk.^{27,28}

^g When farmers cannot plant a crop—generally due to excessively wet field conditions—they can make a prevented planting insurance claim.

Loss of Farmland

Many workshop attendees reported that water issues are straining their ability to maintain a viable farm operation. In the Mid-Atlantic workshop, Sarah Hirsh from University of Maryland Extension reported witnessing growers **losing land in real time to sea level rise and saltwater intrusion**. Farmers in other coastal states reported the same. Resulting migration inland from coastal areas is liable to increase land use competition and development pressure. Both the overabundance and lack of water can also force farmers to stop producing on their land. Wes Gillingham abandoned farmland in New York due to regular flooding while Christine Serrano, a diversified California farmer, **had to remove once-productive almond orchards from a floodplain that no longer floods**.

1969



2022



Christine's former almond orchard, removed due to lack of water

The Emotional Toll on Farmers and Ranchers

Many workshop attendees spoke movingly about how both the fear of loss, and the actual losses caused by the changing climate, wildfires, hurricanes, and other extreme events, have affected their lives and motivation to continue farming. This is especially poignant when considering that this is compounding the anxiety that farmers already experience from working in an unpredictable industry with tight margins. Dan Carr, a small-scale livestock farmer in Connecticut, shared that extreme weather events are exacting a heavy emotional toll—even at times **impacting his ability to make decisions on the farm**. Unfortunately, this is an increasing trend. In 2020, researchers found that of 120 Montana farmers and ranchers, nearly 75% reported moderate to high levels of anxiety regarding climate change and its effects on their operations.²⁹ Supporting farmers and ranchers in facing and overcoming this heavy toll is critical, as the number of Americans who are farming is already dwindling. In 1920, 30% of Americans were growing and raising food, livestock, and crops.³⁰ Today, only 1% of Americans are farming, and are doing so with greater challenges on less land.³¹

Supporting Farmers and Ranchers in Overcoming Climate Challenges

The world is defined by change, but major disruptions and losses like these are avoidable—if we act now. Farming and ranching have never been easy. However, climate unpredictability—with its agronomic, economic, and emotional tolls—is making it harder than ever for farms and ranches to remain viable, particularly for small and mid-sized operations. If we remain on the current high emissions course, global warming will accelerate, with its impacts

increasing in severity and frequency. But staying below 1.5°C (2.7°F) of warming by getting to global net-zero emissions by mid-century would substantially reduce the risks of increased and compounding extreme events.³² Scientists have determined that the sooner that action is taken to reduce emissions, the greater the benefits will be down the road—the same climate solutions implemented in the future will have a smaller effect than if they are taken today.

The U.S. needs successful farms and ranches in order to survive. It is clear that reducing societal emissions and supporting farmers and ranchers in both adapting to climate change and building resilience to its extremes, are critical near-term actions. **State and federal policymaking, including the 2023 Farm Bill, provides a critical near-term opportunity to help producers address climate change, and contribute to putting the U.S. on a path towards a 1.5°C world.**^h

The Critical Role of Farmers and Ranchers in the Climate Solution

The tools needed to alter our current GHG emissions course and support greater on-farm resilience to climate change are already well-known. Reducing societal GHG emissions in the near term to limit climate change and reduce extreme weather events will be critical. According to the 2018 IPCC report, to stay below 1.5°C (2.7°F) of warming, we must not only substantially reduce GHG emissions as quickly as possible, *but also use carbon dioxide removal measures such as enhancing the ability of natural and working lands to act as carbon sinks by drawing atmospheric carbon back into vegetation and soils.*³³ Decades of research demonstrates that many farmers are already using practices that sequester significant quantities of carbon in the soil. Many of these practices are also building resilience to extreme weather by improving soil health and supporting water quality. In fact, a recent report by *Moore et al.* estimated that 134 million metric tons (MMT) of CO₂ equivalents (CO₂e) per year have been, or continue to be, reduced from previous adoption of just a handful of conservation management practices, including converting some cropland to perennial vegetation as part of the Conservation Reserve Program (CRP).^{i,34,j,k}

State policymaking and the 2023 Farm Bill present timely opportunities to help farmers and ranchers:

1. Increase adoption of soil health practices—like reducing tillage, planting cover crops, intensively managing grazing, and diversifying crop rotations.

h Limiting warming to 1.5°C instead of 2°C would (1) reduce the number of people frequently exposed to extreme heatwaves by about 420 million, with about 65 million fewer people exposed to exceptional heatwaves, (2) significantly reduce the probability of drought and risks related to water availability in some regions, and (3) could prevent water scarcity for 184 to 270 million people by mid-century. For more information, see: <https://climate.nasa.gov/news/2865/a-degree-of-concern-why-global-temperatures-matter/>

i The practices included in this study are cover crops, conservation tillage, conservation crop rotation, mulching, strip-cropping, and nutrient management (replacing synthetic fertilizer with manure), plus perennial planting and term retirement through CRP.

j Because reporting for all practices used in the study have not been tallied prior to 2017 and because the reduction potential is not infinite, it is difficult to determine the cumulative effect of these practices. Regardless, farmers have been, and continue to work toward, reducing their climate footprint. With improved recordkeeping and modeling efforts, scientists will be better able to track impact.

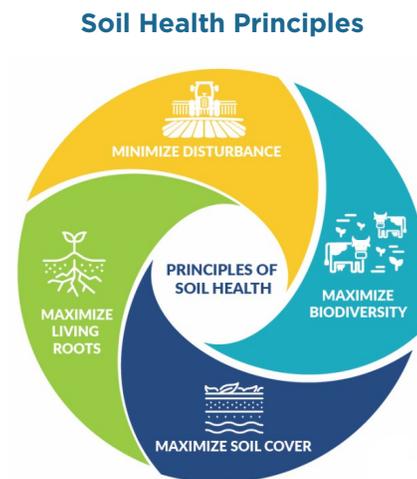
k For context, 134 million metric tons of CO₂ represents one year of emissions for 29 million cars according to the U.S. EPA, “Greenhouse Gas Equivalencies Calculator.” <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

2. Voluntarily reduce agricultural GHG emissions in “win-win” ways that will also improve on-farm efficiency and lower input costs.
3. Permanently protect their land from development to support smart growth and ensure the land base for future food production and carbon sequestration.

Helping Producers Improve Soil Health, Build Resilience, and Increase Carbon Sequestration

Helping farmers and ranchers adapt to climate change (e.g., through improved water management, planting new crop varieties) will take investment in proven solutions as well as innovations through research. One tried-and-true way to build resilience is by helping farmers adopt soil health management systems that minimize soil disturbance and maximize living roots, biodiversity, and soil cover. These practices have been shown to provide multiple co-benefits: improved farm profitability, increased soil fertility and carbon sequestration, reduced erosion, lowered pest and disease pressure, improved water quality, and increased resilience to droughts and floods.³⁵ **In other words, these practices simultaneously help mitigate and build resilience to climate change while providing economic, environmental, and societal co-benefits.**

AFT’s 2019 [soil health case studies](#) show how farmers can financially benefit from the adoption of soil health practices. For instance, eight out of the ten profiled row crop farmers attributed an increase in yield to their soil health practices, which were valued from \$14 to \$151 per acre. In addition, all ten of the row crop farmers saw positive returns on investment, ranging from 7% to 343%.³⁶ **Improved soil health can also reduce the costs of the crop insurance program.** Using 17 years of corn yield data from 754 U.S. counties, *Kane et. al* (2021) revealed that counties with higher soil organic matter are associated with greater yields and lower rates of crop insurance payouts during drought years. This same study found that under severe drought, a 1% increase in soil organic matter translated into a yield boost of 33 bushels per acre as well as a 30–40% reduction in crop insurance payouts under drought conditions.³⁷ This is also the case when projecting into the future. **A recent ERS report predicted that if adaptation practices—such as those that improve soil health—are adopted by producers, indemnity claims and crop insurance costs would increase by only 3–22% this century, a marked reduction compared to the 10–37% expected under a business-as-usual scenario.**³⁸



Source: USDA-NRCS

Farmers and ranchers are already adopting soil health practices, but currently available data makes it clear that they are not yet widespread. For example, as of the 2017 USDA census of agriculture, only 6% of annual harvested cropland acres were planted with cover crops.¹ While this is a 50% increase from 2012, and some states (e.g., Maryland) have much higher

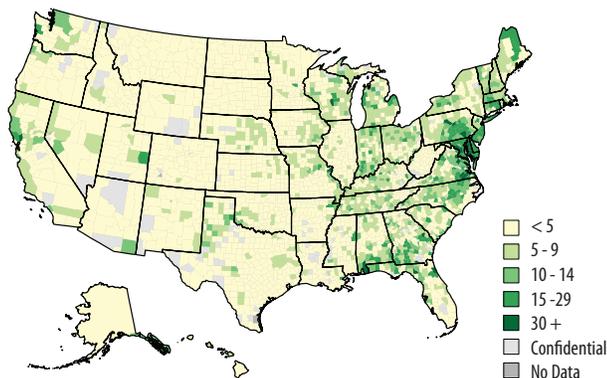
¹ This number is derived by dividing cover crop acres (2017 census of agriculture table 47) by total cropland minus land in orchards and land in forage (2017 census of agriculture table 1).

adoption rates, there is still tremendous room for growth for a practice that reduces erosion, improves soil health, increases yield, and more.³⁹ We know that greater adoption is possible because of the inspiring example of conservation tillage, another practice that offers agronomic, environmental, and economic benefits. As a result of decades of coordinated support between governments, producers, researchers, service providers, and private industry, as of 2017, farmers were practicing conservation tillage on two-thirds of potential acres, thus reducing disturbance of the soil, decreasing soil carbon release, and enhancing healthy soil ecosystems.⁴⁰

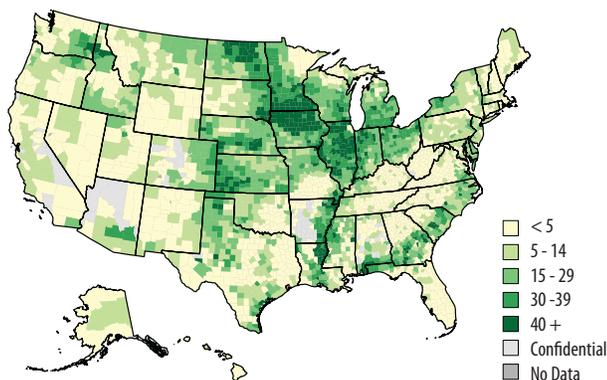
According to USDA's Natural Resources Conservation Service (NRCS), combining soil health practices together into holistic systems is the most effective way to build climate resilience and soil health.⁴¹ Currently, there is insufficient data to know how widespread the adoption of soil health practices are, let alone whether, and how, they are being stacked. Even so, some producers are recognizing that diversifying rotations^m can also diversify their revenue streams while improving resilience to environmental stressors and enhancing biodiversity, pollination, pest control, nutrient cycling, soil fertility, and water regulation without sacrificing crop yields.⁴² One 2015 study showed that in hot and dry years, diversification of corn-soy rotations coupled with reduced tillage increased yields by 7% and 22% for corn and soy respectively.⁴³

^m For example, by intercropping (also referred to as double cropping) or incorporating livestock or agroforestry into cropping systems.

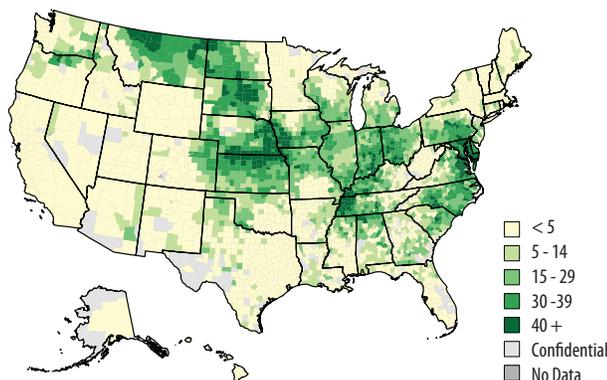
Cover Crop Acres as Percent of Total Cropland Acres, by County, 2017



Reduced Tillage Acres as Percent of Total Cropland Acres, by County, 2017



No Till Acres as Percent of Total Cropland Acres, by County, 2017

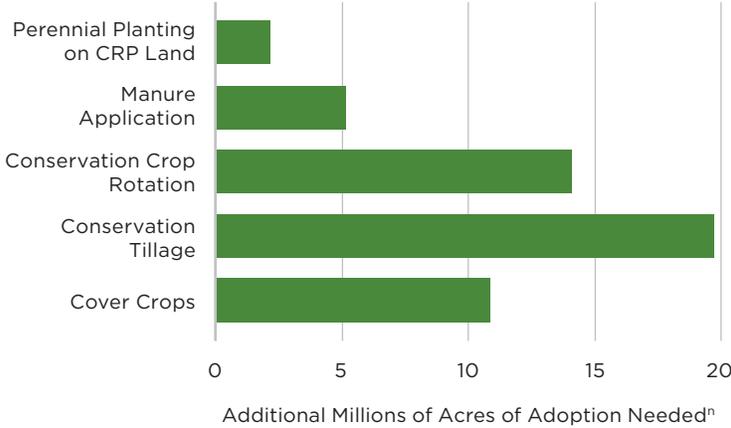


Source: USDA NASS 2017 Census of Agriculture
Land Use Practices highlights

Adopting practices that improve soil health on pasturelands and rangelands can make them more resilient while improving animal health and reducing GHG emissions. In well-managed, mature pasturelands (over 25 years old), farmers have a limited potential to sequester additional carbon because carbon levels are typically near the soil's saturation point. However, in pastures that have not been managed intensively, adopting practices that increase plant biomass production (e.g., liming, optimal fertilization, pasture renovation, improved grazing management) has been shown to increase soil carbon sequestration and build resilience.^{44,45} Decades of research have demonstrated that managing rangeland soils can have significant short- and long-term effects on the quality and quantity of water available for rangeland vegetation.⁴⁶ In addition, the soils and vegetation on rangelands represent large stores of carbon and can be managed to enhance that uptake. It has been estimated that U.S. grazing lands can sequester between 29 and 80 million tons of carbon per year or between 2% to 5% of national emissions.⁴⁷ Ranchers can use management practices such as improved grazing, burning, controlling woody plant encroachment, adding nitrogen via fertilization and inter-seeding of nitrogen-fixing legumes, as well as restoring degraded rangelands to improve soil carbon sequestration.⁴⁸

If farmers and ranchers adopted more of these practices in the future, it could have a meaningful climate impact. AFT research shows that if cover crops and no-till/strip-till were adopted on all potential acres in the U.S., farmers could reduce emissions by 246 MMT CO₂e per year.⁴⁹ This is equivalent to removing 53 million passenger cars from U.S. roadways every year.⁵⁰ A more achievable scenario with 15% adoption of cover crops and 25% of acres currently in intensive tillage being converted to no-till/reduced tillage in the Corn Belt and Southeast regions still shows significant climate benefits, reducing emissions by 97.1 CO₂e per year.⁵¹ *Moore et. al.*'s study also investigated an **achievable, yet accelerated scenario of increased soil health practice adoption and perennial planting on CRP acres. They found this could reduce and/or sequester an additional 118.5 MMT of CO₂e annually on cropland.**⁵² This could nearly double farmer's current contributions to climate mitigation while also improving soil health, water quality, and resilience across the country.

Achieving an Additional 118.5 mmt of CO₂e of Reduction and Carbon Sequestration on Cropland in 10 Years



ⁿ Mulching and Stripcropping also contribute a small amount toward this goal.

Technical and financial assistance to help producers adopt these practices is already available through many state programs as well as federal programs authorized by the Farm Bill. However, more can be done to build resilience and climate mitigation with increased resources and additional focus on helping producers adopt these and other climate-smart practices through publicly funded programs.

Reducing On-Farm GHG Emissions While Bolstering Profitability

The practices discussed above focus on improving soil health to build farm viability, soil fertility, soil carbon, and resilience to extreme weather. But to slow the effects of a changing climate and its devastating impacts on farmers and ranchers, policymakers must also work to reduce GHG emissions, especially from the energy and transportation sectors. And while the agriculture sector only accounts for 11% of national GHG emissions,⁵³ mostly through nitrous oxide from soil management and methane from livestock production,^o there are important near-term opportunities to help farmers and ranchers reduce these emissions while improving their profitability. Two examples are improved feed management efficiency and by helping producers adopt precision nutrient management (e.g., the 4 Rs).^p Improved nitrogen application in particular reduces nitrous oxide emissions, improves water quality, and has some of the greatest synergies with cutting costs (especially with the current high costs of synthetic nitrogen fertilizer). Studies indicate that farmers could improve nitrogen-use efficiency on the majority of U.S. corn acres, which could reduce nitrous oxide emissions from corn by 20–80%.^{54,55} **Similar to the case of soil health practices described above, technical and financial support for feed and nutrient management strategies is already available and can be augmented through current state and federal programs.**

Infrastructure improvements can also help farmers and ranchers reduce on-farm emissions. Although precision agriculture technology and renewable energy systems to power the farm can have high upfront costs, these investments reduce costs and permanently reduce GHG emissions—paying off for farmers and society in the long run. For instance, precision agriculture can reduce field passes, saving both fuel and time. **Improving energy efficiency and installing renewable energy systems can offset or reduce on-farm energy use and pay off in as little as ten years, particularly with the assistance of Farm Bill programs like the USDA Renewable Energy for America Program (REAP), and with other tax credits and incentives.**^q

o Nitrous Oxide and Methane are 298 and 25 times more potent than CO₂, respectively, over a 100-year period. There is global recognition that some of the greatest gains in climate mitigation can come from near-term reduction of emissions of these short-lived climate pollutants that make up the bulk of GHG emissions from the agricultural sector. <https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-chapter2-1.pdf>

p The 4Rs stand for right source, right rate, right time, and right place. They serve to guide farmers to the management practices that help keep nutrients on and in the field. Implementation of the 4Rs helps to align the economic, environmental, and social components of nutrient management.

q This pathway is addressing the generation of renewable energy for on-farm use, not the increasingly common practice of developers signing leases with producers to host solar or wind facilities to generate energy for the grid. To meet net-zero climate goals, solar energy generation is set to expand significantly, converting 10 million acres or more to this new use by 2050. AFT research reveals that 83% of this new solar development is likely to take place on farmland. While this may provide economic opportunities for some farmer landowners, it could weaken farm viability during buildout if not done right. There is great need for smart solar processes and policies that strengthen farm communities and protect farmland and soil health during this solar buildout. For more information, on policies and programs to ensure a smart solar buildout, please visit <https://farmland.org/solar/>

Next-generation manure-handling upgrades like anaerobic digesters, separating liquid and solid waste, and installing cover and flare retrofits on manure lagoons can significantly reduce methane emissions—a critical near-term strategy to slow climate change. These investments can also reduce odor and nutrient runoff during flood events and improve water quality and neighbor relations. **Farm Bill programs and state programs alike are available to provide cost share and support to help farmers invest in these infrastructure projects that will verifiably reduce methane emissions.**

Finally, it is critical to continue supporting innovation by investing in research through Farm Bill and state programs, like identifying and approving new feed additives that will reduce enteric methane emissions from ruminants. Biochar could also provide a promising pathway to permanently sequester carbon with greater investment in research and implementation. When sustainably sourced, biochar has been shown to stabilize carbon in soils while also producing heat energy.

Helping More Farmers and Ranchers Permanently Protect Their Land from Development

Protecting our agricultural land base from development is also critical to addressing climate change. Agricultural soils and vegetation hold carbon, stored through photosynthesis, but many farmers face pressure to convert their land out of agricultural uses. Permanent protection can help to ensure that farmland remains available long into the future not just for food production, but also to serve as a carbon sink. Furthermore, the loss of land uniquely suited for agriculture can push production to marginal lands which may require additional inputs, such as synthetic nitrogen fertilizer, to achieve the same level of output.

In addition, farmland protection can also avoid future emissions. According to the EPA, the transportation sector accounts for 27% of U.S. emissions—the highest sectoral share of national emissions.⁵⁶ One major source of these emissions is personal vehicle use, which significantly increases when people live far from where they work or recreate, such as in areas of low-density development. According to AFT's [Farms Under Threat: The State of the States](#) report, 11 million acres of agricultural land were converted to, or fragmented by, development, due to low-density residential development.⁵⁷

AFT's [Farms Under Threat 2040](#) report estimates that an additional 18–24 million acres of farmland and ranchland will be converted within the next two decades—more than one million acres annually.⁵⁸ This is land that, if converted to developed uses, could further increase transportation emissions. And this analysis does not factor in new development pressure on farmland (e.g., from solar energy), nor the increasing age of farmers, which AFT predicts will accelerate farmland conversion. Permanently protecting farmland can combat these trends while contributing to food security, farmland affordability and intergenerational transition, and farm viability. By protecting land from development, federal, state, and local governments can encourage smart-growth and infill development, which leads to less driving and fewer emissions.

One notable example of a state investing in permanent farmland protection through a climate lens is California, which took an innovative approach to protect farmland and implement smart growth plans that promote higher density development through its [Sustainable Agricultural Lands Conservation Program](#). Funded with cap-and-trade revenue, which by law must reduce GHG emissions, according to the California Department of Agriculture and Forestry, between 2016 and

2019^r California dedicated over \$123 million to protect more than 90,000 acres of farmland, which the state calculates will avoid an estimated 39.5 million metric tons of CO₂e from vehicle miles traveled over the next 30 years.⁵⁹

To address farmland loss, local, state, and the federal government alike have invested in planning as well as farmland protection and access programs and policies. At the federal level, NRCS currently invests in permanent farmland protection through its [Agricultural Conservation Easement Program-Agricultural Land Easement \(ACEP-ALE\) program](#) which is authorized by the Farm Bill. As of January 2022, 28 states had active state-level Purchase of Agricultural Conservation Easement (PACE) programs.⁶⁰ There are also many other policies beyond permanent easements that can be implemented to protect farmland. An inventory of such policies can be found in [AFT's Farms Under Threat: The State of the States](#) report.

Barriers to Long-Term Conservation Practice Adoption

Despite the wide range of benefits, soil health and other climate-smart practices remain underutilized. The barriers to voluntary conservation are complex, vary widely, and can range from structural to cultural challenges. A literature review of qualitative research from the last twenty years⁶¹ exploring the barriers to conservation practice adoption and management changes found the main challenges to be:

- Cost of implementing new practices, in both time and money
- Risk of revenue loss, both perceived and real
- Lack of technical knowledge
- Lack of access to the right equipment
- Lack of community support
- Insecure land tenure hindering investment with high start-up costs and a longer-term payoff
- Structural barriers, such as the perceived or actual inability to retain critical crop insurance coverage while experimenting with conservation practices^s

This same review also found the main *motivators* for adopting conservation practices to be:

- On-farm benefits, like improved economics, increased soil health, and/or reduced erosion
- Presence of leadership and inspiration in the community and/or strong peer-to-peer support
- Availability of cost-share, technical assistance, and other financial incentives, as well as support in accessing them^t
- Environmental goals of farmers and ranchers
- In the case of farmers renting land, supportive non-operating landowners who encourage them to adopt conservation practices

r The cap-and-trade program has also generated over \$40 million in investments into an innovative [healthy soils initiative](#).

s For example, according to a [2020 SARE survey](#), 31% of surveyed producers who do not use cover crops agreed with the statement “crop insurance rules make me nervous about trying cover crops on my farm.”

t Although the process of applying for government programs, their associated requirements, and program inflexibility was always discussed as a barrier.

All of these barriers and motivators also came up in discussions during AFT’s Farm Bill workshops. Cost was consistently ranked by participants as the number one barrier to adopting conservation practices, followed by risk, lack of support, the wrong support being available, and insecure land tenure.^u These barriers and how to overcome them are worth investigating more closely to help policymakers design programs that will increase necessary practice adoption in the near term.

Cost and Risk

Many farmers and ranchers at AFT’s workshops pointed out that farms often operate on thin margins, and so farm viability and return on investment rightly come first when considering whether to adopt conservation practices. As Liza Jane McCallister, a 4th generation Oregon rancher, said at AFT’s Pacific Northwest workshop, “if the ranch doesn’t stay in business, the conservation work can’t get done.” Farmers and ranchers

are sometimes referred to as “price takers,” not “price makers”—unlike other businesses, a farmer often cannot raise prices to make up for losses or increased costs. As such, their success depends not only on favorable weather and low input costs, but also on being offered good prices for their products. With these thin margins, producers must be strategic with their investments, and many are understandably unwilling to make changes that offer no guaranteed or immediate benefit.

Providing producers with financial assistance to cover the costs of practice adoption during the transition period until they are financially self-sustaining is critical.

Related to cost, both real and perceived risk of yield reduction were also identified as major factors in determining whether producers adopt new practices and systems. For instance, it often takes several years for the benefits of a practice to become evident. Although it is rare, poorly implemented or regionally-inappropriate practices can negatively impact yields. Small-scale growers reported having a particularly hard time weathering yield losses or finding the time to implement new practices. The changing climate can also make producers more wary of experimenting, painting conservation—the very thing that can build the resilience many growers need—as a riskier choice. For example, with continued uncertainty around water access, western producers had real questions about how conservation practices would impact access to water for cash crops. These very real challenges and fears underline the **need for more high-quality, one-on-one support—especially from experienced farmers**, to determine the practices that will align with financial goals, management systems, and the changing climate. Without such support, changes to the farm operation may seem too risky.

Another important way to minimize adoption risks is with **financial support to cover**

Time and available labor are major limiting factors on the farm. Dustin Madison, a producer from the Mid-Atlantic, shared that not having enough time holds them back from 100% conservation practice adoption, keeping them at a respectable 65%.

Unpredictability and water shortages out west are changing the conservation calculation for some producers. One producer in Boise, Idaho shared that their water ran out before they had a chance to water their cover crops.

^u This barrier was rated #1 by many of the small-scale farmers in attendance.

revenue losses during the transition to soil health systems and other climate-smart practices. Many public programs offer only short-term support, and those that provide financial compensation for revenue lost during the full 5–10 year transition period are few and far between.^v Increased availability of multi-year support or revenue loss protection during transition would be a game-changing way to remove the risk of experimentation, enabling producers to try new systems that could build greater resilience, carbon sequestration, GHG emissions reductions, and soil health into their operations.

Information, Technical Assistance, and Support

In addition to financial assistance, having adequate technical support to provide trustworthy, practical, evidence-based information on the risks, benefits, and best ways to incorporate climate-smart practices and systems into a farming operation is essential to reducing risk and increasing adoption. For instance, in order to successfully

use cover crops, a farmer must identify the right varieties and seeding rates as well as the right timing of planting and termination to ensure that the cover crop does not impact the cash crop.⁶² **AFT’s workshop attendees shared that they needed more reliable, long-term, one-on-one management support, and a community from which to learn in order to persist through the first few years of challenges that accompany**

One producer who attended AFT’s Pacific Northwest workshop shared that they have found great technical assistance and even emotional support for conservation practice adoption for many years from the organic farms that have surrounded their farm.

change. For example, research has suggested that farmers’ willingness to adopt cover crops can be negatively impacted if their community views the practice as undesirable because it falls outside of what has “always been done.”⁶³ But this can be counteracted by successful practice adoption by just a few farmer-leaders within a community.

Who delivers this information and support also matters. **Technical support is most effective when it comes from trusted messengers with a similar worldview, such as peers.**

Generally, producers prefer learning from other producers about the risks and benefits of conservation practice adoption. This is most effective when paired with information from experts, such as those at NRCS, conservation districts, cooperative extension, NGOs, agronomists, or certified crop advisors. **Supporting farmers as trusted messengers of evidence-based information through peer-to-peer networks could help get more widespread adaptive management on U.S. farmland.** In a recent, currently unpublished, survey of New England farmers, AFT found that more than 50% of respondents got their technical assistance and education directly from other farmers, and over a third identified a consultation with an experienced farmer as one of the most helpful forms of technical assistance. By way of contrast, only 20% of respondents reported receiving technical assistance and education from NRCS.

^v AFT ran the popular [BMP Challenge](#) in the early 2000s in the Great Lakes region which compensated farmers for any net financial losses due to the adoption of new practices. The Nature Conservancy is ramping up a similar program in Idaho. In the absence of these programs, federal programs like the new EQIP-Conservation Incentive Contracts as well as CSP and CRP, can provide longer term support and technical assistance to help producers test and master practices during the tricky transition period.

Public Program Gaps and Barriers

Both federal Farm Bill programs and state and local programs provide financial and technical assistance to help producers adopt conservation practices. But these programs often need more funding and staff to conduct additional outreach and meet the already high volume of requests for assistance. For example, NRCS's Environmental Quality Incentives Program (EQIP) program was only able to fund 31% of applications between 2010 and 2020.⁶⁴ Lack of adequate support was not the only challenge with these programs. Workshop attendees pointed out that the amount of time it takes to apply for public programs, and their inflexibility, can deter participation. Trouble accessing NRCS conservation programs was also reported by diversified growers, organic producers, and historically marginalized producers who attended AFT's workshops. **In a forthcoming white paper, AFT will detail recommendations to improve NRCS conservation programs so they equitably provide support to help producers adopt soil health practices long-term.**

Crop Insurance

The structure of other critical farm programs, such as crop insurance, can create barriers to conservation practice adoption. The Federal Crop Insurance Program covers 28% of the value of U.S. agricultural production, including more than 90% of planted acres for corn, soybeans, and cotton.⁶⁵ Historically, farmers have struggled to implement conservation practices on acres covered by crop insurance due to restrictive rules, such as rigid termination dates for cover crops. While efforts have been made to better enable risk-reducing conservation practices, many practices are perceived to be, or are in reality, incompatible with crop insurance. For instance, Sheryl Hagen-Zakarison, who attended AFT's Pacific Northwest workshop, experimented with intercropping with the support of a NRCS Conservation Stewardship Program (CSP) contract. In spite of this contract with NRCS, she lost crop insurance coverage due to the practice not being permitted by USDA Risk Management Agency's Good Farming Practice standards. In addition, the fact that most crop insurance products only cover single crops can disincentivize diversification and experimentation with conservation crop rotations, an important resilience-building practice. **Fortunately, there are numerous synergistic opportunities for reducing on-farm risk while mitigating and adapting to climate change within the crop insurance program in the 2023 Farm Bill, which will be detailed in AFT's forthcoming white paper.**

Land Tenure

It is also critical to increase secure land tenure and longer-term access to affordable land in order to improve adoption of conservation practices. Nationwide, 39% of farmland is rented with even higher percentages in some states.^{w, 66} A farmer-renter with a handshake deal or short-term lease has little to gain from dedicating capital, labor, and time to improving someone else's soil.⁶⁷ Many workshop participants shared that even with a passion for conservation, insecure land tenure made it very difficult to make long-term investments in conservation. Others painted an even darker picture, proposing that the incentives of short-term land tenure favor the greatest extraction possible.

Part of this challenge can be addressed by increasing opportunities for renters to buy land. But competition for land from developers, investment companies, wealthy landowners, and even renewable energy developers are driving up farmland prices across the country, making it more

w In Illinois, 60% of farmland is rented.

difficult for farmers—particularly under-resourced and historically marginalized farmers—to find affordable land. In California and across the West, this is further complicated by the fact that the land available to young, beginning, under-resourced, and small-scale growers generally has limited water rights.

One farmer-renter in AFT's Pacific Northwest workshop shared that they had moved their farm four times over the course of the past 11 years!

As more producers reach retirement and spur intergenerational transfer of farmland, there are important opportunities to invest in innovative strategies to make land affordable and accessible to a diverse new generation of farmers. Providing public funds to purchase agricultural conservation easements, such as through USDA's ACEP-ALE and state-level PACE programs, can make land more affordable. With robust funding for these programs and other policies that increase equitable access to affordable land, we can enable a diverse new generation of producers to build successful businesses and intergenerational wealth while opening further opportunities to them to increase conservation practice adoption. **In two forthcoming white papers, AFT will detail Farm Bill recommendations to increase land access and permanent farmland protection opportunities.**

Markets

Markets can play a direct role in supporting conservation practice adoption. Ecosystem services markets (e.g., carbon markets) can pay farmers for an environmental benefit derived from the adoption of conservation practices. Similarly, goods produced using climate-smart practices could be labeled as such and receive a price premium, similar to the Organic label, thereby incentivizing and covering the costs of practice adoption. And finally, for farmers to diversify the products they grow or raise, they need to know there will be markets available where they can sell their products. **Any actions taken to stimulate new market access for sustainably produced crops, create payments for ecosystem service markets, or implement climate-smart labels could increase conservation practice adoption.**

Policy Opportunities to Increase Conservation Practice Adoption

Given the barriers to conservation practice adoption as well as the opportunities and limitations of current programs, several critical strategies should be explored at the state level and in the next Farm Bill to help farmers adopt climate-smart practices and permanently protect more land. **AFT urges lawmakers and state and federal agencies to invest in programs and policies that equitably support producers in adopting conservation practices with particular emphasis on the farmer-leaders and change-makers who are experienced in and/or willing to pilot these solutions and help others in adopting new practices.** This can be accomplished by taking actions toward the following goals:

ENSURE PUBLIC PROGRAMS HELP PRODUCERS OVERCOME PRACTICE ADOPTION BARRIERS

- Provide adequate and sustainable federal financial and technical assistance in the Farm Bill for NRCS to help producers transition to climate-smart practices.

- Develop and fund state programs that help producers increase adoption of climate-smart practices as well as those that supplement and fill in gaps in NRCS programs.
- Provide federal matching funds for state and Tribal soil health programs to build up existing local programs, encourage policy innovation, and incentivize additional states to develop their own programs.

IMPROVE PROGRAM ACCESS AND EQUITABLE IMPLEMENTATION

- Streamline state and federal conservation programs and build in more flexibility so that program support meets producer needs with shorter application and contracting timelines.
- Increase collaboration with groups that can provide culturally appropriate technical assistance and facilitate farmer to farmer learning so that all producers have access to the information and support they need.
- Direct additional NRCS and state-level conservation program support to historically marginalized, small and mid-sized, and diversified producers to ensure equitable access to assistance. This includes providing per-acre payment rates suitable for small-acreage farms.
- Support community and cooperative models that help smaller-scale producers access equipment and wholesale pricing to reduce the cost of implementing conservation practices.

INCREASE SUCCESS RATES FOR LONG-TERM PRACTICE IMPLEMENTATION AND DE-RISK THE TRANSITION PERIOD

- Invest in revenue loss protection programs to protect farm and ranch viability during the years spent transitioning to climate-smart practices.
- Build financial incentives, such as ecosystem service markets and price premiums for selling climate-smart goods, to incentivize producers to adopt conservation practices.
- Encourage leadership by visibly celebrating early adopters and financially supporting them in mentoring other producers interested in new practices.
- Increase funding for other successful strategies, like on-farm demonstration trials, peer-to-peer networking, and information sharing on the costs and benefits of practice adoption.
- Strengthen crop insurance, a critical risk mitigation and farm viability tool for many producers, by better incorporating risk-reducing conservation opportunities into the program and removing structural barriers and perceptions that hinder practice adoption.
- Prioritize public program support for conservation practice adoption to permanently protected farm and rangeland to increase the chance that practices are adopted, and benefits are retained, long term.

ENABLE PRODUCERS TO MAKE LONG-TERM INVESTMENTS IN SOIL HEALTH

- Equip non-operating landowners to support farmer-renter conservation activities, such as by providing them with financial incentives or information on the benefits of practice adoption.^x
- Increase funding for ACEP-ALE, and create and fund state-level PACE programs.

x AFT's Women for the Land program provides an evidence-based model for this work. To learn more, visit <https://farmland.org/project/women-for-the-land/>

- Prioritize and promote secure land access, including through low-interest loans, grants, easement program funding, and affordability and affirmative farming covenants.

Conclusion and AFT Farm Bill White Papers

AFT works across the country to advance policies and programs that achieve the above practice adoption goals. Additionally, in forthcoming white papers and policy materials, AFT will lay out detailed recommendations for the next Farm Bill to build on-farm and food-system resilience while helping producers mitigate and adapt to climate change. These materials recommend:

1. Improvements to Farm Bill Conservation Title (Title II) programs that invest in working lands conservation practices to enable them to provide more equitable and streamlined assistance and support.
2. Improvements to Farm Bill Crop Insurance Title (Title XI) programs to better help farmers manage risk by integrating the resilience-building benefits of conservation actions.
3. Creation of a new federal matching grant program for state and Tribal soil health programs to bolster emerging locally-led approaches while incentivizing others to create their own.
4. Improvements to ACEP-ALE (Farm Bill Title II) to increase farmland protection and improve program function.
5. Support for farmland access and business technical assistance to support farm viability.

Implementing the actions recommended in AFT's white papers will set the U.S. on the path to better support producers in addressing immediate challenges as well as those of the future. Brave and bold state, congressional, and presidential leadership, in collaboration with the farm and conservation community, will put us on a more sustainable path. We can, and must, work together without delay to ensure a resilient future for agriculture in the face of climate change.



Photo by Jacob Gilley, rotational grazing in Virginia

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