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THE CONTEXT

“Soil health is critical to our survival as a species.”
Bob Arnold, Arnold Farms, Chestertown, MD

Regenerative agriculture has captured the world’s imagination. Even in the midst of the triple crises of a pandemic, struggle for racial equity, and climate change, the potential for agricultural production to be a force for good – for a more resilient, just, and ecologically sustainable world – inspired powerful conversation, collaboration, and action throughout 2020.

Supply chain concerns brought into focus by the pandemic illustrated the significance of integrated regional agricultural production, while extreme weather events and the effects of climate change became more urgent nationwide. The tumultuous year made clear the potential for an expanded focus by regenerative farmers, researchers, and funders to contribute to equity and food security. The Million Acre Challenge seeks to further this goal by seeking solutions that benefit the soils, climate, and production systems that meet our critical food and fiber needs.
THE REGION

“Every kind of farm can take that next step towards their soil health no matter where they are.”

Amanda Cather, Plow and Stars Farm, Poolesville, MD

The Chesapeake region has been a leader in agricultural conservation for the past 30 years. The diversity of agricultural production across the area mirrors that of the country, including legacy dairy farms, diversified fruit and vegetable operations, large-scale row crop production, livestock farms, and a small and growing effort toward grain and legume production for human consumption. Agricultural practices now considered to be key to regeneration, including reduced tillage and cover cropping, are more widespread across the Chesapeake watershed than in other parts of the country. This is due not only to regulations and incentives designed to protect the health of the Chesapeake Bay, but also to the spirit and ingenuity of our region’s farmers. National organizations have set their sights on the Chesapeake as one of the next frontiers for regenerative agriculture in the United States.

Initiatives aimed at soil health and regenerative agriculture emerged across the region in 2020. In Pennsylvania and Virginia, soil health collaboratives formed with the help of focused funding from the National Fish and Wildlife Foundation. In Maryland, the Department of Agriculture, directed by innovative 2017 soil health legislation, engaged in new programming and began to move toward incentivizing healthy soils practices via its newly seated Soil Health Advisory Committee. Staff of the Million Acre Challenge and its founding partners developed strong relationships with leaders of all these initiatives, recognizing the importance of building alignment across the region on goals, objectives, and methods of measuring progress. At the same time, our place outside the traditional agricultural establishment affords us the flexibility to blaze a trail for producers and service providers by demonstrating and resourcing regenerative innovation that best meets farmers’ needs across major production systems.
The founding partner organizations of the Million Acre Challenge – the Chesapeake Bay Foundation, Fair Farms (a project of Waterkeepers Chesapeake), Future Harvest, the Hatcher Group, the Institute for Energy and Environmental Research, and the Institute for Local Self-Reliance (ILSR) – are building a transformative movement to advance regenerative agriculture for the future of Maryland’s soils and the region’s food supply.

In our first year, the Million Acre Challenge built the team, tools, messaging, and relationships needed to activate the Chesapeake region toward regeneration.

The time is right and the pieces are in place. We seek energetic engagement from a broad spectrum of Maryland stakeholders to continue the critical work we have begun to better equip farmers to manage their farms for healthier soils, enhanced water quality and biodiversity, increased profitability, and ultimately the transformation of agriculture in the Chesapeake region to a resilient, regenerative model for the country. We have taken first steps toward this ambitious goal by engaging farmers in on-the-ground soil health assessments that drive informed, adaptive management decisions; enrolling them in our unique, farmer-driven framework for catalyzing and sustaining progress; connecting them to resources, including critical peer-to-peer learning as well as financial and technical assistance; working with them to evaluate the financial impacts of regenerative management and communicate those impacts broadly; and enlisting regional and national partners to build capacity and ensure lasting change.

Enter the Million Acre Challenge

Soil is the basis of all civilization. If you have no soil, you have nothing.”

Richard Winters, Winters Farm, Kennedyville, MD
Our Mission and Vision

The Million Acre Challenge helps Maryland farmers build soil health, increase farm profitability, and improve water quality – while making farms resilient and active in the face of climate change. Our farmer-focused collaborative uses soil health science, economics, education, and incentives to achieve our mission.

Our vision is enhanced soil and ecosystem health and increased farm profitability on at least one million agricultural acres in Maryland, with significant progress and partnerships in the Chesapeake region, by 2030.

How We Work

Core Team: Members of our six founding partners steer the project, leveraging rich input from external partners and resource providers to ensure progress toward healthier soil throughout the state.

Working Groups: Cohorts of issue area experts deliver focused, strategic work products to promote regenerative production through five discrete areas of influence – Business Case, Farmer Engagement, Policy, Public Outreach, and Science.

Board of Soil Stewards (BOSS): Farmer advisors from across the state, representing a variety of production methods and farm sizes, apply deep knowledge and experience to ensure soil health resources are practical, effective, and successful.

Partners: Nonprofit organizations, government entities, and farm service providers from across the state and the region with aligned goals work alongside us to ensure farmers can access tools, resources, and information to make sustained changes on their farms.
During our first year, the Million Acre Challenge successfully positioned ourselves for continued growth and meaningful collaboration with farmers and other audiences interested in soil health. Specific highlights for each working group during 2020 are in the following pages.
Business Case

Throughout 2020, the Business Case working group conducted and analyzed research into the potential of regenerative agriculture to increase farm profitability.

- **Nationwide analysis** of the farm profitability potential of regenerative agriculture
- **Development of business case studies** of implementing regenerative practices on Maryland livestock and vegetable farms
- **Evaluation of alternative financing mechanisms** for transitioning to regenerative farming practices, including crop insurance reform, private investment funds, incentive programs, and innovative lending arrangements
- **Publication of report** documenting how dual use of land used for ground-mounted solar energy can increase farm profitability, farm economic resilience, and soil health

Farmer Engagement

The Farmer Engagement working group began the essential work of connecting farmers with the necessary resources – most importantly, other local farmers with expertise in regenerative agriculture – to learn more about soil health.

- **Comprehensive soil health programming** delivered at major agriculture events, including the Future Harvest conference and Field School and ILSR composting trainings
- **Virtual peer-to-peer learning** involved over 100 farmers (representing 14,000 acres of production) in panel discussions, breakout sessions with experts, lunch and learn sessions, and regional convenings
- **Collected data** from participating farmers on their current soil health practices, as well as their concerns regarding implementing further conservation measures
- **Engaged with Black and Indigenous People of Color (BIPOC) farmers** on practical ways the priorities of underserved farmers can be adequately addressed

“

It’s an impact that we feel the expense is worth it.”

Bob Arnold, Arnold Farms, Chestertown, MD

“It’s not equipment, it’s what’s between the two ears.”

Richard Winters, Winter Farms, Kennedyville, MD
Distribution of conservation practices used by farmers in five regions of Maryland, reported during Soil Health Hub meeting.

<table>
<thead>
<tr>
<th>Conservation practices</th>
<th>UPPER SHORE</th>
<th>LOWER SHORE</th>
<th>CENTRAL MD</th>
<th>SOUTHERN MD *8 FARMERS</th>
<th>WESTERN MD</th>
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<td>Cover crops</td>
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<td>Grazing cover crops</td>
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<td>Tillage reduction</td>
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<td>No-till</td>
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<td>Nutrient management</td>
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<td>Organic amendments</td>
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<td>Waste recycling</td>
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<td>Conservation crop rotation</td>
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<td>Integrated pest management</td>
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<td>Alley cropping</td>
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<td>Strip cropping</td>
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<td>Mulching</td>
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<td>Hedgerow planting</td>
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<td>Windbreak/shelterbelt</td>
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<td>Conservation cover</td>
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<td>Critical area planting</td>
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<td>Filter strip</td>
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<td>Grasped waterway</td>
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<td>Riparian forest buffer</td>
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<td>Riparian herbaceous buffer</td>
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<td>Contour buffer strip</td>
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<td>Contour farming</td>
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<td>Contour orchard</td>
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<td>Multi-story cropping</td>
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<td>Tree/shrub establishment</td>
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<td>Forage and biomass planting</td>
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<td>Forage harvest management</td>
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<td>Prescribed grazing</td>
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<td>Silvopasture establishment</td>
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<td>Drainage ditch</td>
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<td>Manure storage facility</td>
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<td>Stream exclusion fencing</td>
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<td>Wetland restoration</td>
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</table>
Perceived barriers to adoption of soil health practices, reported by farmers in five regions of Maryland during virtual Soil Health Hub meeting.

- Concern about the return on initial investment
- Not confident in the benefit to my operation
- Not enough technical information about the practices available
- Too much risk for my operation at this time
- Not enough time in my schedule to try a new practice
- Lack of access to equipment
- Not confident about the environmental benefit
- Risk of trying practices on rented land
- Concern about the ongoing cost of implementation
- Concern about interference with yields or other negative effects on cash crops
The only real failure is not [building soil health] at all, so you can do it in any small step.”

Dani Winters, Winters Farm, Kennedyville, MD

Policy

MAC’s Policy working group positioned the coalition to actively engage in advocacy for statewide regenerative agriculture policy.

- **Board of Soil Stewards (BOSS)** established as a conduit for farmers’ voices to be heard in the development of regenerative agriculture policy
- **Participated on the Maryland Soil Health Advisory Committee** to influence state policy and program recommendations
- **Analyzed national soil health tools and models** in collaboration with the National Healthy Soils Policy Network
- **Advocated for regenerative agriculture funding and programs** at the Maryland General Assembly of state legislators
- **Explored leading-edge ideas** with regional and national leaders in the National Healthy Soils Policy Network to promote soil health and regenerative agriculture through policy reform

Public Outreach

The Public Outreach working group created key assets to communicate the Million Acre Challenge’s mission to the wider public.

- **Project website and social media channels** launched
- **Regenerative agriculture benefits video** produced to convey the wide-ranging benefits of regenerative production to farmers and consumers
- **Consumer outreach** conducted to learn the potential for market drivers to influence regenerative production in the Chesapeake region
Science

In 2020, MAC’s Science working group developed innovative data collection tools and frameworks to capture our progress toward our million-acre goal.

- **Tiers of Regeneration framework** created and vetted by academics to help producers measure their progress toward soil health and promote participation.
- **Million Acre Challenge enrollment structure** created to track progress toward the million acre goal using the Tiers framework.
- **Pasa Soil Health Benchmarking Study** engaged 30 Maryland farms from three major production systems in this regional study, providing farmers with reliable data to influence on-farm decision making.

### Measuring Progress

#### Tiers of Regeneration

The Evolution of Farmer Soil Management

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<thead>
<tr>
<th>Tier</th>
<th>Description</th>
<th>TIER</th>
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<tbody>
<tr>
<td>01</td>
<td>Foundation</td>
<td>Farmer engagement and education</td>
</tr>
<tr>
<td>02</td>
<td>Restoration</td>
<td>Practice adoption, experimentation, and economic assessments</td>
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<tr>
<td>03</td>
<td>Transformation</td>
<td>Whole farm integration of practices and principles</td>
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</tbody>
</table>

- **Foundation**
  - Farmer engagement and education
- **Restoration**
  - Practice adoption, experimentation, and economic assessments
  - Soil health assessment
  - Continuing education
  - Peer-to-peer learning and mentoring
  - Soil health management plan
  - Practice implementation
- **Transformation**
  - Whole farm integration of practices and principles
  - Network building and mentorship
  - Financial fluency
  - Improved soil health indicators
  - Continued experimentation
  - Returns on investments
THE YEAR AHEAD

“Everything under the sun—insect, plant-wise—it’s going to be based and anchored by really healthy soil systems.”

Jordan Bethea, BLISS Meadows, Baltimore, MD

As we move into our second year, the Million Acre Challenge is committed to building on our progress to regenerate Maryland’s agricultural landscape. We will continue to research key issue areas to drive farmer decision-making, connect farmers with necessary resources, and educate wider audiences to build a powerful regional grassroots movement for soil health.

Ongoing research into farm profitability and soil health conditions is vital to understanding how regenerative agriculture can benefit farmers and the environment – and we have big goals for 2021. This year, we will enroll 150 farms in the Million Acre Challenge, conduct management surveys and collect data on changes in soil health on 45 farms, and develop case studies demonstrating transition costs and benefits for three major production systems in Maryland. Economic analyses of the farms of local soil health leaders will inform our business case for other farmers. Demonstration farms will showcase the stories of farmer innovators to illustrate soil health management systems at the whole farm scale.

Connecting farmers with key resources remains a top priority for the Million Acre Challenge. For 2021, we will engage at least 150 farmers in meaningful soil health learning through our Soil School, Organic Transitions Project, regional conferences, demonstration days, and workshops. We will continue to develop networking opportunities for local farmers to connect soil health leaders with the soil health curious for guidance and information exchange. Through our programming, we aim to inspire and motivate farmers – including conventional growers – throughout the state and Chesapeake watershed to explore regenerative farming opportunities and help them overcome financial, technical, and systemic barriers to become more profitable and resilient.
We will broaden our messaging to reach consumers, policymakers, and the media. Through our public messaging and programming, we will spark consumer demand for food, feed, fiber and fuel produced using regenerative practices, building an educated and engaged constituency prepared for mobilization in support of healthy soils policy. Throughout the year, we will connect with media outlets to tell the story of our vision for regenerative agriculture in Maryland, and develop our connections with local policymakers to develop a road map for healthy soils policy solution adoption.

We are committed to our mission of building one million acres of healthy soil in Maryland to transform the agricultural landscape. Our successes from 2020 encourage us to forge ahead enthusiastically into 2021—we hope you’ll join us.