

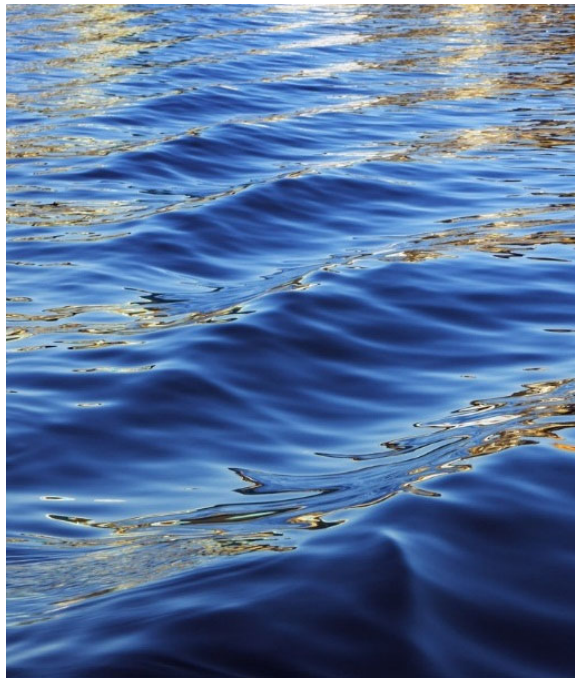
Regenerative Agriculture:

Executive Order Perspectives

for the Chesapeake Bay Program Agriculture Advisory Committee

Andy Bater · District 6 Director, Pennsylvania Farm Bureau
November 4, 2026





Sources: White House, Executive Order 14414; AFBF National Policies 2026; Penn State College of Agricultural Sciences; 2026 Penn State Regenerative Agriculture Summit report.

Andy's Farm, Switchgrass to Pollinators





Photo: Andy Bater.

About Andy

POLICY & LEADERSHIP

- **PA Farm Bureau** – State Board member
- **Past Member AFBF** – Technology Issues Advisory Committee
- **Past Member FCC** Precision Ag Task Force
- **Past USDA** FSA State Committee Member
- **Past US Dept. of Commerce** – Spectrum Management Advisory Committee
- **Penn State** – Dean's Leadership Council, College of Agricultural Sciences

ARTIFICIAL INTELLIGENCE WORK

- **Oxford, MIT Sloan, Purdue** – formal AI education, 2023–2025
- **Teach AI** workshops and webinars on AI in agriculture
- **Nittany AI Alliance** – Penn State deer-management project
- **Penn State** – Co-organizer, Futures of AI in Rural Education Project
- **Data Center Policy Worker** – PFB data center policy paper

WILDLIFE & RESILIENCE

- **PFB Wildlife & Fisheries Committee** – Chairman, "Wildlife Guy"
- **Wildlife Society – Wildlife Damage Management Conference** – Past Speaker
- **Prepare PA** – now working with Partners for a Resilient Pennsylvania
- **PA Food Policy Council** – Advisory Committee member
- **Urban Ag Work** – land access policy











Photos and affiliations: Andy Bater.

Andy's work this year: Largely AI & Data Centers

September 1, 2026
Data Centers in PA: Necessary Infrastructure, Difficult Tradeoffs

23-page policy paper

The ask

Pause development so lawmakers and communities can research impacts, and so farmland is better protected

Farm impacts

Transmission lines, eminent domain, soil compaction, drainage and noise, judged farm by farm

Rural communities

Small staffs and volunteers should not write data center policy for the first time while a proposal is already before them

The dissent: Marcellus Drilling News

Calls the Farm Bureau "one of the good guys" but says the moratorium is the 1% where it disagrees: "We think PFB is wrong on this one."

Common ground

Bater: the country "needs data centers." The pause is for a coherent framework, not a verdict against them.



A transmission line cuts through Quarter Pine Tree Farm in Smithfield, Pennsylvania, on April 8, 2026. (Liz Partsch photo)

Sources: Farm and Dairy, "Pennsylvania Farm Bureau calls for data center moratorium," Sept. 29, 2026; Marcellus Drilling News, Sept. 25, 2026.

AI was used to make this presentation

AI-assisted presentation

Artificial intelligence (AI) tools were used to help create this presentation.
Please check key facts, figures and quotes against the sources cited on each slide.

Past Chesapeake Bay work





Pennsylvania in the Balance conferences

Attended two of the Penn State-led conferences (2019 & 2022), hosted by the College of Agricultural Sciences, where farmers, agencies and researchers work on agriculture and Chesapeake Bay water quality.

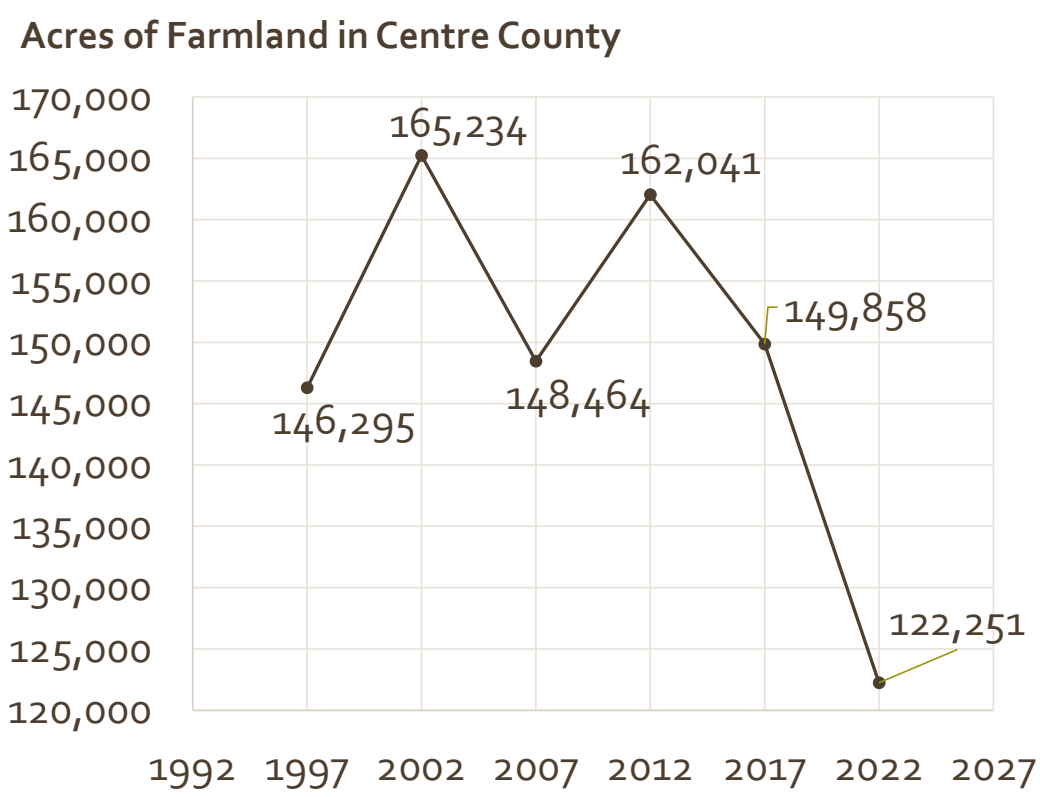
Agriculture Conservation Assistance Program (ACAP)

Advocated for ACAP, funded through the Clean Streams Fund.

Watershed Implementation Plan (WIP)

Worked on WIP efforts in Centre, Clinton and Lycoming Counties: Pennsylvania's plan to meet its Chesapeake Bay nutrient and sediment reduction goals.

Decreasing Land In Farms: Extremely Involved in Land Protection





Land protection discussions

Eminent domain, including transmission lines

Aquifer protection

Farmland preservation as acreage declines

Source: USDA, NASS, Quick Stats, https://quickstats.nass.usda.gov/data/printable/DF000762-F932-30D2-B4CF-E900157DoDoA
May 2026: 18% drop 2017–2022 — steepest in 25 yrs. Pennsylvania land in farms declined about 3%, compared with Centre County's 18.4%, between 2017 and 2022.. *2022 Census latest; next: 2027.*

Secretary Kennedy & MAHA



Secretary Kennedy speaks on National Ag Day at the USDA, March 24, 2026
Setting the stage for the Trump executive order on regenerative agriculture.



https://www.whitehouse.gov/presidential-actions/2026/06/advancing-regenerative-agriculture-and-strengthening-american-farm-resilience/

Executive Order 14414: the document and what it directs

Presidential Documents

Executive Order 14414 of June 25, 2026

Advancing Regenerative Agriculture and Strengthening American Farm Resilience

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered:

Section 1. Purpose and Policy.

... Therefore, it is the policy of the United States to promote continued advances in precision agriculture technologies; significantly increase Federal investment in regenerative agriculture practices, research, and education; and spur private-sector innovation in farm modernization by reducing red tape and strengthening public-private partnerships.

Signed June 25, 2026

Published June 30, 2026 in the Federal Register, 91 FR 39841 (Document 2026-13254)

EPA

Prioritizes alternatives to older active ingredients and reviews preharvest desiccation uses

USDA

Expands the reach of its regenerative pilot and partnerships

Research & technology

Pursues chemical-exposure research and alternative technologies; promotes precision agriculture

What it does not do by itself

Implementation remains subject to existing law and available appropriations. The directions do not guarantee a payment, approve an individual product, or establish a farm certification system.

Andy's question

What can a farmer do next, who will help, and what requirements apply?

Sources: Federal Register, 91 FR 39841 (Doc. 2026-13254); White House, EO 14414, June 25, 2026. Excerpt of Section 1 is verbatim; layout is illustrative.

What Andy is hearing from farmers, researchers and industry

AFBF on Regenerative Agriculture	California and MIT – High Tech	Penn State – Farmer-Directed Regenerative Ag Research
President Duvall, "Modern Agriculture Puts Soil Health First"	Visits in Salinas and Silicon Valley; microbes and agriculture at MIT	A day of research presentations and discussion of plans for the regenerative agriculture farm
Connects precision technology and crop-protection tools with soil stewardship	Can these approaches become useful, affordable tools on Pennsylvania farms?	Bioinoculants: which microbes work under which conditions, and in which combinations. "Biology requires ecology!" WHERE · WHEN · WITH WHOM
Recognizes roles for conventional and organic farms of different sizes	What would the equipment cost, what support exists, and what evidence would make a farmer comfortable trying it?	Living Proof: a farmer-governed foundation funding research carried out by Penn State

The lesson is locally relevant evidence, not a promise that any product or system works everywhere.

Sources: Andy Bater, visits and photographs; Living Proof Ag Research handout; AFBF President Zippy Duvall, "Modern Agriculture Puts Soil Health First."

Questions and observations from an informal farmer conversation.

Open questions

What is the federal definition of regenerative agriculture?

Does it, by definition, include animals?

What is its scalability?

Are genetically modified products accepted for use?

Soil biology

Organic matter, aggregate stability and water infiltration help build microbial activity (the soil food web)

Green manure alone does not build organic matter; the interaction of that matter and microbes does

Tillage destroys microbes

Live roots break up a plow pan more effectively than mechanical soil disruption

Practices and residues

Seed banks last a long time; no-till has a proven record of diminishing germination, and weed pressure falls over time

Manure top-applied through tall vegetation may be as good as mechanical incorporation

Atrazine half-life is 8 hours in no-till soils, better than tillage; chemicals don't last in "alive soils"

Mimicking "Mother Nature" rehabilitates soil contaminated by diesel fuel etc.

How do soil biology and management affect pesticide persistence?
When can living roots reduce compaction?
How do manure application methods compare for nutrient retention and water quality?
Which experiences transfer reliably between farms and regions?

Source: Notes from dinner conversation, 11/3/2026. See Gabe Brown's views, based on his farm and ranch in Bismarck, North Dakota.

Farm Bureau already has regenerative agriculture policy

POLICY 240 · SUSTAINABLE AGRICULTURE · PROVISION 3

"Regenerative agriculture should be defined as any production system that minimizes negative environmental impacts, maximizes production, promotes stewardship, increases profitability and the productivity of soil over time."

AFBF 2026 POLICY · SECTION 240.3.1

"We support voluntary regenerative agriculture initiatives, rather than mandatory programs."

Three public statements

Dec 10, 2025	**Farm Bureau Welcomes USDA Approach to Regenerative Agriculture** *Background; predates the June order*
Jun 30, 2026	**Farmers Appreciate EPA Approval of New Tools** *Shows AFBF's position on tools and regulation; not a blanket endorsement of the order*
Sep 30, 2026	**FACA supports USDA's expanded regenerative pilot: $650M EQIP, $350M CSP** *Food and Agriculture Climate Alliance statement, published by AFBF*

Sources: AFBF National Policies 2026, Policy 240 (Provision 3 and 240.3.1), p. 102; AFBF statements, Dec 10, 2025 and Jun 30, 2026; FACA statement published by AFBF, Sep 30, 2026.

AFBF President Zippy Duvall in his own words

1 What "regenerative" means

"Regenerative agriculture focuses on farm practices that promote soil health."

— Zippy Duvall, "Modern Agriculture Puts Soil Health First," The Zipline, AFBF, Apr 16, 2025

2 Every farm is different

"Both conventional and organic agriculture have a role in the regenerative agriculture discussion. Regenerative practices are not one-size-fits all either."

— Zippy Duvall, "Modern Agriculture Puts Soil Health First," The Zipline, AFBF, Apr 16, 2025

3 Voluntary programs

"Building on these efforts by leveraging existing voluntary and incentive-based programs to advance additional regenerative goals sounds like smart government to me, especially when farmers remain in the driver's seat."

— Zippy Duvall, AFBF press release, "Farm Bureau Welcomes USDA Approach to Regenerative Agriculture," Dec 10, 2025

4 Workable administration

"We are still digging into the details of the new initiative and look forward to learning more about how it will be administered to ensure it's effective and workable for farmers."

— Zippy Duvall, AFBF press release, "Farm Bureau Welcomes USDA Approach to Regenerative Agriculture," Dec 10, 2025

Sources: fb.org/the-zipline/modern-agriculture-puts-soil-health-first (Apr 16, 2025); AFBF press release, Dec 10, 2025 (fb.org newsroom, distributed via Public Technologies).

Food and Agriculture Climate Alliance (FACA)

2020

Launched as a coalition

Agricultural, food, forestry and environmental organizations working on shared federal policy recommendations

More than 90 members, by its own description

Founders	AFBF, National Farmers Union, National Council of Farmer Cooperatives, Environmental Defense Fund, The Nature Conservancy, NASDA, FMI and National Alliance of Forest Owners.
Farm Bureau ties	American Farm Bureau helped establish FACA. Pennsylvania Farm Bureau is also listed as a member.
Common ground	Voluntary, incentive-based, science-based approaches that improve agricultural resilience and create opportunities for producers of different sizes.

"A broad coalition that includes American Farm Bureau and Pennsylvania Farm Bureau."

FACA statements are coalition statements and evidence of shared positions, not provisions of AFBF's adopted policy book.

Sources: Food and Agriculture Climate Alliance, agclimatealliance.com (About, Members); FACA Joint Policy Recommendations, Nov 2020.

What else FACA has said on regenerative agriculture

1 Guiding principles

FACA's Steering Committee developed Regenerative Agriculture Guiding Principles in 2025: measurable soil health and ecosystem benefits; voluntary, science-based, incentive-driven; and economic viability for farms.

— FACA press release, Dec 11, 2025

2 Measurable outcomes

"The pilot's focus on measurable outcomes will help strengthen the confidence in the environmental benefits of longstanding conservation and regenerative practices."

— FACA press release, Dec 11, 2025

3 Practical for every producer

"We look forward to hearing more details about implementation of this new initiative to ensure it is practical and available for a wide variety of producers– livestock, row crop, and specialty crop alike."

— FACA press release, Dec 11, 2025

4 Year two of the pilot

FACA welcomed $650M for EQIP and $350M for CSP in fiscal 2027, locally led input on eligible practices, and more technical assistance options. It wants its Guiding Principles reflected throughout the program.

— FACA statement, Sep 30, 2026, published by AFBF

Sources: agclimatealliance.com/press-releases (Dec 11, 2025); fb.org news release, Sep 30, 2026. These are FACA coalition statements, not AFBF adopted policy.

How Will We Grow Food? From the lab to the farm



MIT panel "How Will We Grow Food?": moderator Cynthia Graber with researchers Mary Gehring, Darcy McRose and Benedetto Marelli.

California Perspectives



Grand Farm teams from North Dakota and Georgia at Reservoir Farms in Salinas, where workshop space meets working specialty-crop fields for testing equipment.



Walt Duflock at the Western Growers Center for Innovation & Technology in Salinas, describing pressures on California vegetable growers.


SAMI
SAMI

Living Proof Ag Research: the farmer-led research partner



living proof ag research

A PENNSYLVANIA NONPROFIT GOVERNED BY FARMERS

Does regenerative farming work?

Our farmers already have the proof.

Living Proof Ag Research funds farmer-led, field-scale research that turns proven regenerative practice into evidence everyone can use.

THE OPPORTUNITY

Turning what works into what's known.

Pennsylvania farmers have built regenerative operations that are resilient and profitable. But one farm's results don't automatically carry to the next.

To a neighbor ... it's a story.
To a lender ... it's a risk.
To a policymaker ... it's an anecdote.

The knowledge is genuine, but it stops at the fence line. **We exist to carry it past the fence so it can make a world of difference.**

WHO WE ARE

A nonprofit governed by Pennsylvania farmers.

Living Proof Ag Research is the public name of **The Pennsylvania Regenerative Agriculture Research Foundation**. We raise and direct funding for independent, farmer-led research.

OUR MISSION

To fund and guide farmer-driven research that turns proven regenerative practice into trusted, replicable evidence for Pennsylvania agriculture.

HOW IT WORKS **Farmers hold the evidence. The research makes it count.**

01 · FARMER BOARD	02 · FOUNDATION	03 · PENN STATE	04 · EVERYONE
Farmers set the questions.	**The Foundation funds the work.**	**Penn State runs the studies.**	**The findings are transferable.**

Get the full story at LivingProofAgResearch.com

LivingProofAgResearch.com

OUR MISSION

Fund and guide farmer-driven research that turns proven regenerative practice into trusted, replicable evidence for Pennsylvania agriculture.

1 · Farmer board	2 · Living Proof	3 · Penn State	4 · Everyone
Farmers set the questions.	Living Proof funds the work.	Penn State runs the studies.	Goal: findings that other farms can use.

Why it matters: one farm's results don't automatically carry to the next

To a neighbor it's a story. To a lender it's a risk. To a policymaker it's an anecdote.

Summit: Jim Hershey, Living Proof president, said farmers leading research builds credibility and keeps it relevant.

Sources: Living Proof Ag Research one-sheet; LivingProofAgResearch.com; 2026 Penn State Regenerative Agriculture Summit report.

Governed by Pennsylvania farmers

Joel Myers

CENTRE COUNTY
Retired agronomist, crop farmer

Jim Hershey

LANCASTER COUNTY
Crop farmer, poultry, hogs

Steve Groff

LANCASTER COUNTY
Vegetable farmer, hemp, sheep, educator

Andy Flinchbaugh

YORK COUNTY
Crop farmer; family orchard, farm market and agritourism

Ben Peckman

FRANKLIN COUNTY
Dairy farmer, small beef herd, specialty crops

Scotty Miller

LANCASTER COUNTY
Farm manager at Masonic Village, crops and beef

Steve Chapin

COLUMBIA COUNTY
Crop farmer, snap beans

Matt Ulmer

CENTRE COUNTY
Crop farmer, former dairy, equipment representative

Dave Johnson

LYCOMING COUNTY
Certified organic row crops, beef, hogs; seed cleaner and supplier

Nine-member board of farm owners and operators, supported by an advisory team of agricultural professionals · 2026 Board of Directors

Summit: The best research sites have farmer voices embedded in governance.— Jim Hershey

Sources: Living Proof Ag Research one-sheet, 2026 Board of Directors; 2026 Penn State Regenerative Agriculture Summit: Proceedings and Outcomes, October 12–13, 2026.

Penn State launches a Regenerative Agriculture Center

125 acres

Rockview, Centre County

College-managed land, in use for agricultural operations since 2011

Announced October 15, 2026

Living laboratory	Field-scale research, demonstrations and education for researchers, students, growers and industry. Complements smaller-plot experiments and on-farm trials.
Summit, Oct 12–13	More than 80 faculty, extension educators, producers, industry leaders, nonprofits, agencies, commodity groups and students helped shape the center's direction.
MOU with Living Proof	Framework for collaboration on research, education and Extension. An advisory committee of stakeholders and state agencies will include Living Proof members.
John Wallace, Director	Named Oct 30, 2026. Associate professor of weed science and extension specialist; lead PI on five USDA-funded research and extension projects ($4.2M).

"We envision the center as a national leader and convening hub for profitable and regenerative agriculture innovation, connecting science and practice to improve soil health, environmental outcomes, economic returns and ultimately farm viability."

Troy Ott, Dean, Penn State College of Agricultural Sciences

Summit participants named existing land and equipment, Extension reach, and Penn State's trusted, independent reputation as the Center's strongest assets.

Sources: Penn State College of Agricultural Sciences news releases, Oct 15 and Oct 30, 2026; 2026 Penn State Regenerative Agriculture Summit: Proceedings and Outcomes, October 12–13, 2026.

Summit highlights: Day 1 research, Day 2 vision

Day 1 · Oct 12

Research strengths and partnership lessons

Research showcase	Soil health and biological indicators, bioinoculants, weed management, fruit and vineyard systems, and a 16-year dairy cropping systems project.
Funding panel	Three partnership models, including CARAT, a $26M NRCS AMP project. Funders increasingly favor producer-driven research on farmer land.
Adoption panel	Farmers adopt practices when they see peers succeed. Demonstration farms and Extension move research into practice.

"All I did was learn."

Armen Kemanian, Penn State, on building trust with farmers

Day 2 · Oct 13

Vision: the Center in 2031

Nationally recognized leader	Known for long-term systems research, farmer-driven innovation and research-to-practice translation.
A trusted hub	Connects farmers, researchers, industry and communities.
Proof it works	Economically viable, environmentally beneficial farming systems, and students trained as the next leaders.

Participants pictured pollinator plots, grazing animals, tours, students on site and farmers adopting research-based solutions.

Most important impact: producer adoption, trained students, and positive environmental and economic outcomes.

Source: 2026 Penn State Regenerative Agriculture Summit: Proceedings and Outcomes, October 12–13, 2026

Summit takeaways (Days 1–2): farmer voice, trust, convener

Farmer voice and agency

Successful initiatives are farmer-led.

Farmers set research priorities and co-develop projects.

They are partners, not just demonstration sites.

Day 2: farmers adopting research solutions

Trust is the foundation

Trust grows when partners share values and goals and know each other's roles.

Researchers should present as learners, not experts.

Quick feedback to farmers reinforces it.

Day 2: a trusted hub for all partners

Independent convener

Free of commercial bias, Penn State can convene farmers, industry, commodity groups and policymakers.

Long-term research is its edge.

Extension is a core function.

Day 2: a nationally recognized leader

Source: 2026 Penn State Regenerative Agriculture Summit: Proceedings and Outcomes, October 12–13, 2026

How partnerships turn research into adoption

1 Start with a spark

CARAT, a USDA-funded dairy research and producer partnership, began with a measurable market need: N_2O and methane reductions. Ridge to Reefs began with a chance meeting at a conference.

2 Use technical assistance

Technical assistance builds trust by showing competence and commitment. Commodity boards and producer groups open doors to farmers.

3 Co-develop with farmers

Farmers help shape projects from the start. Francesco Di Gioia's soil disinfestation work grew from farmer questions.

4 Make the economics work

Farmers keep practices that work, fit their values and pay. Principles may not scale from small diverse farms to commodity grain.

Involve farmers from inception, not after results: producer adoption is the most important impact.

Source: 2026 Penn State Regenerative Agriculture Summit: Proceedings and Outcomes, October 12–13, 2026

Next steps for Penn State's Regenerative Agriculture Center

1 Launch baseline sampling

Set soil, water, biological and economic baselines with partners so long-term research can show change.

2 Build the advisory board

Include farmers, researchers, Extension, industry and community voices, with farmers holding 40–50% of seats.

3 Listen to Pennsylvania farmers

Hold listening sessions across farm types, regions and scales on priorities, barriers and partnership preferences.

4 Launch year-one projects

Start 3–5 farmer-engaged projects on farmer-identified questions, and plan visitor and education events.

Source: 2026 Penn State Regenerative Agriculture Summit: Proceedings and Outcomes, October 12–13, 2026

Andy's closing thoughts on regenerative agriculture

1 Make participation practical

A clear route from interest to implementation. Coordinate NRCS, conservation districts, state programs, Extension and advisers; let records serve more than one program where rules permit, without duplicate payment.

Summit: some farmers want texts, others calls or visits; ask them.

2 Address transition and ongoing costs

Establishment, equipment, labor, time and cash flow. Who bears the cost if a practice takes several seasons to perform? Reimbursement after the fact may not solve upfront financing; consider maintenance and replacement.

Summit: farmers see checkoff as a tax; funds must yield usable results.

3 Recognize experience and allow adaptation

Include farmers who already invested in stewardship, not only new adopters. Dairy, livestock, row-crop, specialty, organic and conventional. How can renters commit multiyear? No single set of practices for every farm.

Summit: every farm is unique; principles don't scale uniformly.

4 Measure results that matter to farm and Bay

A manageable mix of farm economics, soil indicators and water-quality evidence. Soil health is not automatically a measured nutrient or sediment reduction. Be clear on crediting, monitoring and who pays; protect farm data.

Summit: establish soil, water, biological, and economic baselines

Sources: AFBF National Policies 2026, Policies 237, 240 and 547; 2026 Penn State Regenerative Agriculture Summit report.

Final note: Andy's family history of conservation



ANDY'S FAMILY LEGACY

Andy's grandfather's copy, dated 12-12-45

EDWARD H. FAULKNER · PLOWMAN'S FOLLY (1943)

"The fact is that no one has ever advanced a scientific reason for plowing."

Faulkner's argument

- The moldboard plow buries vital organic matter too deep for young roots, breaks capillary moisture connections and creates a dry subsurface layer
- Faulkner blamed plowing for soil impoverishment, erosion, declining yields and vulnerability to drought and heavy rain

Impact & legacy

- Published during World War II, against the Great Depression and Dust Bowl devastation
- Initially dismissed or debated by agronomists; became a cultural flashpoint and foundational text for organic and conservation-minded growers

Where to read or buy: University of Oklahoma Press Catalog; full text on the Internet Archive's Plowman's Folly page.



Andy – 4th Gen Farmer & Yoga Instructor!

Questions/Discussion

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