Cooperative Conservation: A Producer-Led Approach to Achieving Healthy Agricultural Landscapes

By Kristin Weeks Duncanson, Jim Moseley, and Fred Yoder

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This paper, developed by farmers deeply involved in the AGree process, is intended to stimulate thinking and discussion. Though it incorporates many insights gained through AGree deliberations, it does not represent official AGree positions. The views expressed here are those of the individual authors.
Foreword

AGree drives transformative change by connecting and challenging leaders from diverse communities to stimulate policy innovation and develop initiatives that address critical challenges facing the global food and agriculture system. AGree believes we must elevate food and agriculture policy as a national priority.

AGree’s work addresses four broad challenges facing the global food and agriculture system:

• Meet future demand for food;
• Conserve and enhance water, soil, and habitat;
• Improve nutrition and public health; and
• Strengthen farms and communities to improve livelihoods.

We have taken a deliberative, inclusive approach to develop a policy framework and ongoing, complementary initiatives to meet these challenges. To overcome traditional obstacles to change, we engage a broad array of stakeholders whose insights and commitment contribute to meaningful solutions. AGree’s work, building on our research to better understand problems and assess options, aims to stimulate creative ideas and encourage new perspectives while fostering the linkages key to catalyzing effective action.

Drawing on decades of farming experience, three Midwestern farmers chart a path forward for agricultural conservation through producer-led, cooperative watershed or landscape-scale efforts focused on achieving measurable agriculture and conservation outcomes. Their proposed approach, “Working Lands Conservation Cooperatives,” envisions groups of landowners and producers, supported by robust technical assistance, driving efforts at a watershed or landscape scale to identify and agree on locally-appropriate conservation performance benchmarks to which all landowners and producers in an area would hold themselves accountable as a group. The Cooperatives would test alternative approaches to meeting these benchmarks while also achieving production goals and assess the productivity and profitability of these practices over the long term. The Cooperatives would be accountable to state and federal agencies for ensuring agriculture’s active participation in efforts to meet state and federal environmental standards, and those who actively participate would receive safe harbor from regulatory action. The authors also provide case studies of successful conservation initiatives from across the country that exemplify components of their approach.

This publication is part of a series intended to broaden discussion and complement AGree’s consensus recommendations on policies and actions focused on food and agriculture. While the concepts presented in this paper have greatly enriched the deliberations of the AGree Co-Chairs and Advisors, the perspectives and positions do not represent consensus among them.

We hope you find this paper a helpful resource.

Deborah Atwood
Executive Director
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About the Authors

Kristin Weeks Duncanson is an owner and partner of Duncanson Growers, a diversified family farm in Southern Minnesota, former Director of the American Soybean Growers Association, and a member of the AGree Advisory Committee.

Jim Moseley is former Deputy Secretary of the U.S. Department of Agriculture, an Indiana farmer with 40 years of experience producing grain, vegetables, and hogs, and an AGree Co-Chair.

Fred Yoder is a fourth generation Ohio farmer, past President of the National Corn Growers Association, and an AGree Advisory Committee member.
Introduction: Achieving Healthy Agricultural Landscapes

Great strides have been made in American agriculture to align productivity, profitability, and environmental outcomes. New knowledge, technologies, and management practices have resulted in significant increases in yields alongside significant decreases in soil and nutrient loss. For years, many of us have been actively innovating to keep our soils healthy through conservation tillage, cover crops, attention to microbial life, and other techniques. We have been developing new drainage and water management technologies and strategies to retain moisture and nutrients for crops while reducing nutrient leaching and improving water quality. Farmers and ranchers are working with a wide range of partners to advance common goals, both through on-the-ground projects (see Box 1: Conservation Partnerships on the Ground) as well as national initiatives (see Box 2: Soil and Water Research and Education Partnerships). Pioneers in conservation continue to lead the way in aligning productivity, profitability, and natural resource conservation. It is a great American tradition of which we are very proud (see Box 3, Conservation Pioneers, for links to examples of conservation leaders).

And yet, though we have improved dramatically on the whole, we continue to lose far too much soil and far too many nutrients from our fields. In too many places, the health of our soils is declining as is the quality of our water.

Why? The latest management tools and up-to-date agronomic advice are not available to or affordable for all producers. Best practices are not universally known and adopted. Too often, we don’t have the data to tell us which specific fields under which management conditions are particularly vulnerable to nitrogen or phosphorus leaching. Those who operate these lands often are not aware of the vulnerability.

In a Nutshell

For American agriculture to succeed over the long term, we need to take a different approach to agricultural conservation. We must protect the long-term health of our lands and the communities, families, and enterprises that depend on the land for their livelihoods and way of life. We must move towards performance-based, cooperative, and adaptive approaches to management at multiple scales. We must support producers and landowners in taking the lead and provide the tools and knowledge necessary for success. We in agriculture need to hold one another accountable for good stewardship of our landscapes, and those who are actively participating in landscape conservation should have safe harbor from regulatory action.

Most importantly, we have come to recognize that we cannot adequately address these natural resource challenges as individual producers. The current approach to agricultural conservation is not enabling us to succeed in what we need to do: align productivity, profitability, and environmental quality at the field and watershed/landscape scale.

Achieving improved environmental outcomes while maintaining and enhancing productivity and profitability requires that we work together in our watersheds to understand the natural resource systems and how they respond to various agronomic practices and systems. We need to target structural practices to the places where they will add the greatest value for the least cost, and we must agree on what farmers and ranchers should expect of ourselves and our neighbors in terms of basic stewardship.
Box 1: Conservation Partnerships on the Ground

The following collaborative conservation efforts highlight many aspects of our proposed approach for establishing conservation cooperatives in local communities:

**Lime Creek Watershed Improvement Association**, located in Northeast Iowa, has used a community-based approach to engage local landowners to achieve a set of agreed-upon nutrient reduction goals. Forty-five percent of watershed residents are engaged in the program, with 23 percent using the Iowa Phosphorus Index, Corn Stalk Nitrate test, and Soil Conditioning Index to better understand soil health on their land and compare management scenarios. Participants are paid incentives for sustainable land stewardship as measured by improved index scores and reduced corn stalk nitrate. The Association has successfully improved environmental outcomes by leveraging incentives, harnessing data and metrics, and engaging the local community.

**Little Snake River Conservation District, Wyoming** has completed an array of watershed restoration projects in a highly variable and complex landscape where agriculture, livestock grazing, and recreation are the primary uses, and ownership is split between private and federal entities. A wide range of projects to improve water quality and restore and conserve habitat have been undertaken to address the needs of listed and candidate endangered species and to remove streams from EPA’s 303(d) list of impaired waterways. The District has been highly successful in conducting outreach, building trust with and a sense of ownership among landowners, engaging agencies, and securing project funds – all of which are critical ingredients to successful cooperative watershed projects.

**Nebraska’s Natural Resource Districts** are a unique system among U.S. conservation districts in that they are governed by locally elected boards, organized by river basins to improve watershed management, and have the ability to assess local property taxes to fund projects. They provide technical and cost-share assistance as well as local regulations where necessary to improve conservation and natural resource management across the state, including flood control, groundwater quantity and quality, soil erosion, and irrigation runoff. Self-funded, locally governed, and with jurisdictional boundaries that match resource management concerns, Nebraska’s Natural Resource Districts are models of effective conservation institutions.

**Yahara Pride Farms Conservation Board** is a voluntary, incentive-based coalition of Dane County, Wisconsin, landowners and producers, agronomists and technical advisors, recreational interests, and business leaders working to address phosphorous and sediment loading in the lakes in the Madison area and build a sustainability certification program. Partnering with NRCS, University of Wisconsin Extension, and the Clean Lakes Alliance and supported by private grants and member contributions, the Board has worked with local producers to improve their practices, engage in peer-to-peer learning, and leverage state and federal programs and technical assistance to gain the benefits of sustainability certification, including improved stewardship, expedited permitting from regulatory agencies, discounts from business partners, and brand recognition. Another ongoing project is the **Yahara Watershed Improvement Network** (WINs), a collaboration with the Madison Metropolitan Sewerage District (MMSD) to pilot an adaptive management approach to reducing nutrient runoff from non-point sources.
Box 1 (Continued):

**Indian Creek Watershed Project, Illinois** was established in 2009 to support area farmers working toward improved nutrient management and water quality. The Conservation Technology Information Center (CTIC), in collaboration with Illinois EPA, NRCS, and the Livingston County Soil and Water Conservation District, provides farmers with technical, informational, and financial support for conservation practices and technologies while also providing on-farm education and demonstration projects. Led by a steering committee headed by local producers, the project has garnered strong community support - 55 percent of local farms have enrolled. Partners in local government provide technical support through lake monitoring services, including regular data collection on sedimentation, fish habitat, nutrient loading, and other project concerns to help participants track progress and engage in adaptive management.

**Sand County Foundation’s Ag Incentives Program** provides financial support to farmers for experimenting with new nutrient management practices to improve water quality in Midwestern rivers and lakes and the Gulf of Mexico. The project measures the results of such efforts to ensure progress and adaptive management. Current projects include work on the Milwaukee River, Boone River, and Yahara Lakes.

**Sage Grouse Initiative** is a Natural Resources Conservation Service (NRCS)-led collaborative effort to bring ranchers, agencies, researchers, conservation organizations, and the private sector together to proactively conserve sage grouse and sage grouse habitat to prevent the species’ listing under the Endangered Species Act. Voluntary projects, such as conservation easements, new grazing systems, and invasive species and fence removal, are ongoing across 11 western states.

We are increasingly concerned about the erosion and nutrient pollution coming from agricultural landscapes because of what they mean for the long-term future of agriculture. First and foremost, we must protect the natural resources on which our livelihoods depend. That is our stewardship responsibility. We also must take heed of the general public’s increased concern about the environmental impacts of agriculture – for if these concerns are not met with leadership and action by us in agriculture, others may well take action that is not friendly toward agriculture.

Indeed, there is a growing drumbeat to regulate agricultural activities driven by the evidence that agriculture is a significant – though not the only – contributor to nutrient loading (see Box 4: Growing Pressure to Regulate Agriculture). We who are leaders in our agricultural communities need to take initiative to ensure that all producers and landowners are participating in reasonable conservation measures or we risk losing consumer and public support for farming activities and being subject to increased regulatory actions.

We need to work together as farmers and ranchers in our watersheds and landscapes. We need to partner with others along the supply chain – both our input suppliers and our customers – as well as the variety of organizations and agencies focused on conservation in agricultural landscapes and the environmental impact of agriculture on water, air, and habitat.

We believe that production agriculture must move towards cooperative conservation of working lands at multiple scales in order to secure the long-term health of our individual operations and our watersheds and landscapes. Our proposed approach is informed by the successes and challenges of agricultural conservation projects in our own communities and across the United States. We have highlighted in sidebars some of the successful projects that have most informed our thinking.

Local leadership: We propose that in agricultural watersheds/landscapes that groups of local landowners/producers be formed to cooperatively establish and advance long-term productivity and conservation goals for their watersheds through engagement and support of producers and landowners and guided by sound science. This group might be called a Working Lands Conservation Cooperative (WLCC) board or committee (if it functions under an existing board). In many places, an institution or group of institutions may already exist that could take on the WLCC mission, such as a conservation, watershed, drainage, or weed control district board. In other places, a new institution

Box 2: Soil and Water Research and Education Partnerships

The following are projects that incorporate many of the elements we are advancing in this paper, including an emphasis on the alignment of productivity, profitability, and stewardship; the importance of collaborative, cross-sector approaches; and farmer and rancher leadership and engagement:

Soil Health Partnership is a collaboration among National Corn Growers Association, Monsanto, and Walton Family Foundation, with support from environmental NGOs, academics, and USDA representatives. Over five years, the Partnership will work to test, measure, and publish findings on the productivity and environmental benefits of innovative soil management practices. Following report publication, the Partnership will support networking and technical assistance to help producers improve their soil health.

The Soil Renaissance is a collaborative initiative supported by the Farm Foundation and the Samuel Roberts Noble Foundation that seeks to make soil health a priority consideration in land management decisions. Representatives from agriculture, research, and policy communities are working on improving soil health measurement, economic valuation, research, and education.

Unlock the Secrets in the Soil is a USDA Natural Resources Conservation Service educational campaign designed to raise awareness about the benefits of healthy soils and the opportunities to take advantage of soil health management systems. Resources include soil health fact sheets and checklists; information on NRCS resources to assist landowners and producers in building healthy soils; and, testimonials from U.S. farmers discussing how maintaining healthy soils has increased their productivity, profitability, and sustainability.

On-Farm Network, sponsored by the Iowa Soybean Association, engages farmers to accelerate the use of precision agriculture tools and technology, including remote sensing, GPS, and yield monitors, to improve nutrient use efficiency. Growers work with agronomists on a range of research projects to determine the best combination of inputs and practices that enhance yields, nutrient management, profitability, and environmental stewardship.

Box 3: Conservation Pioneers

Examples of outstanding conservation leadership and innovation by landowners and producers include recipients of:

The Sand County Foundation’s Leopold Conservation Award.

The Environmental Stewardship Award sponsored by NRCS, National Cattlemen’s Beef Association, U.S. Fish and Wildlife Service, National Cattlemen’s Association, and Dow AgroSciences.

The Department of the Interior’s Partners in Conservation and Cooperative Conservation Awards.
Box 4: Growing Pressure to Regulate Agriculture

Growing public pressure to regulate non-point sources of water pollution, including agriculture, is largely the result of nutrient pollution, much of which comes from agriculture.

In Ohio, for instance, pressure is growing to reduce nutrient pollution to Lake Erie following a series of toxic algal blooms threatening Toledo’s drinking water supply. Because agricultural runoff plays a key role in causing these blooms, the state and federal government have begun to move toward tighter restrictions on agricultural nutrient application. Most recently, in June 2014, Ohio passed a law phasing in requirements for farmers to become certified through a state educational program on improved nutrient management before applying fertilizer. Implementation of Ohio’s State Nutrient Reduction Strategy to reduce excess nutrients causing the dead zone in the Gulf of Mexico as well as Total Maximum Daily Load (TMDL) restrictions affecting agriculture throughout the state are ongoing. Public health and environmental advocates, as well as a growing share of the public following recent drinking water shutoffs in Toledo, are calling for further action to prevent future drinking water impairments.

In Minnesota, too, pressure for action to reduce agricultural runoff is building. Voters in Minnesota demonstrated their strong support for improved water quality by passing a Legacy Amendment taxing themselves to support a state Clean Water Fund that generated over $339 million between 2009-2012 alone. Like Ohio, Minnesota is required to implement a State Nutrient Reduction Strategy to improve water quality in the Mississippi River basin and is administering TMDLs across the state to reduce the number of impaired local water bodies affected by agricultural runoff and other factors. Minnesota has adopted an ordinance requiring 50 foot buffers on all agricultural land along lakes and streams. The Minnesota Agricultural Water Quality Certification Program, a voluntary program to provide regulatory certainty to farmers engaged in certified conservation practices, is being developed. Despite these efforts, observers continue to call for further regulatory action to reduce agricultural runoff that contributes to water quality impairments.

California landowners and producers are among the more highly regulated in the country on many environmental issues. For instance, the state requires all potential nonpoint dischargers, including farmers and ranchers, to create plans specifying the best management practices they will implement to meet regional and state water quality goals as well as a timeline for implementation and a description of a monitoring program for groundwater as well as rivers and streams. Landowners may submit individual plans, but many choose to work with a group of similar dischargers to create a third-party plan that is developed and administered by outside representatives through institutions called water quality coalitions. These organizations take advantage of economies of scale for efficient planning, monitoring, and technical support.

In these states and around the country, there is increasing public concern about non-point sources of water pollution. Farmers and ranchers, many of whom are already doing good work to manage nutrients and reduce runoff, should step up and take the lead now to ensure agriculture is doing its part to address these concerns. Our WLCC approach will allow them to do just that.
might be needed. In addition to its work within the community of producers/landowners, the WLCC board/committee would serve as a focal point for the agricultural community to engage with other sectors and interests responsible for and/or concerned about environmental outcomes in working landscapes. Funding for the WLCC might be provided through a combination of producer/landowner self-assessments, state and federal grants and funding streams, and (perhaps even) other private sector funding streams.

**Baseline conservation performance and practice standards:** We propose that the WLCC leadership work with producers and owners of working lands to develop specific performance benchmarks (goals that include specific metrics and targets) at a watershed/landscape scale, as well as basic practice requirements and/or performance benchmarks (appropriate to the location, size, and scope of an operation) at a farm scale. These locally-established baseline conservation performance and practice standards would be designed to enhance the long-term productivity of agricultural landscapes, help meet basic environmental quality standards, and contribute to the profitability of farm operations and the long-term value of working lands. Baselines would be established, and the proposed performance and practice standards would be tested, refined, and over time become an expectation of producers in the watershed. At the individual landowner/producer scale, standards would contain performance benchmarks where measurement and monitoring are practical and economically feasible. Where they are not, evidence-based practice standards would be used. At the watershed/landscape scale, standards would be entirely outcome oriented and measurable. When edge of field and in-stream practices and infrastructure that go beyond the locally-established baseline standards are required to address resource concerns, the WLCC board would take responsibility for identifying where they should be undertaken to achieve the greatest effect for the watershed/landscape at least cost and for financing them, through a combination of financial self-assessment and partnerships/cost-share with public and private sector organizations.

**Technical resources:** WLCCs would need to employ significant technical resources to: measure baselines, monitor conditions, and track management practices; assist producers in developing integrated resource management plans; aggregate data, ensure its privacy, and assess the effectiveness of plans and practices; identify in-field and edge-of-field performance and/or practice standards and systems sufficient to meet performance goals; and, design landscape-scale conservation plans. Such assistance could be provided by conservation districts and universities in the area, federal and state agencies, private sector suppliers and advisors, and/or the WLCCs own hired experts. The WLCC board/committee would ensure that producers are engaged in the design and oversight of data gathering. We imagine that every 3 – 5 years boards would assess the effectiveness of their baseline conservation standards and off-field infrastructure in achieving performance outcomes and make adjustments as needed. State and federal programs could be tapped to provide financial resources to the WLCC and its members to cover all or part of the costs of measurement and monitoring at various scales.
**Framework of mutual accountability:** To be effective, WLCCs would need to be part of a framework of mutual accountability among producers, local boards, and federal/state agencies. Watershed/landscape conservation plans would be developed by the WLCC board, oriented to achieving both local conservation goals as well as state and federal environmental quality standards. The WLCC would in effect serve as a buffer between producers/landowners and federal and state regulators. In our vision, the WLCC would represent the agricultural sector in the watershed/landscape and would work with relevant state and federal agencies for ensuring producer/landowner participation in efforts to meet state and federal environmental standards. To the extent state or federal law now or in the future requires action by agriculture to meet environmental quality standards, we propose that the WLCC would be accountable to the relevant agencies for implementing a plan they approve as sufficient to make progress toward meeting state and federal standards. Agencies would, in turn, be accountable to producers and landowners for recognizing and supporting their efforts by granting to the board and all of its actively participating members safe harbor from additional regulatory action related to environmental outcomes addressed in the plan. Agencies should also be accountable for exercising their discretion in a manner that enables and supports the WLCC in achieving its mission. If producers/landowners choose not to fully participate in the WLCC program, they would not be protected from regulatory action. If the agronomic practices of such individuals prevent the broader community from achieving environmental quality goals, communities might consider some kind of informal or formal enforcement mechanism.

**The supply chain:** Growing interest in “sustainable sourcing” among major food brands, processors, and retailers creates opportunities to integrate company sustainability objectives with locally-led collaborative landscape management. Rather than focus only on a single company’s relationships with individual producers around sustainability metrics, certifications, and checklists, the WLCC-approach provides an opportunity for multiple buyers to work together and in partnership with producers/landowners in a landscape/watershed to achieve environmental outcomes at both

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**Box 5: Key Elements of the WLCC Approach**

**Strong local leadership by farmers/landowners, inclusion of all key stakeholders, and involvement across the supply chain.**

- **Performance-based, cooperative, and adaptive approach to management** of watersheds/landscapes.

- **A basic standard of on-farm care:** conservation performance and practice standards established by producers and technical experts locally that can reasonably be expected of landowners/producers in the area that are tested, assessed, and adapted over time.

- **Additional infrastructure and on-farm practices** necessary to achieve goals, funded by a combination of cost-share, community assessments, and grants.

- **Local conservation goals and plans aligned with local, state and federal goals and plans with regulatory certainty/safe harbor for participating producers/landowners.**

- **Recognition for farmer/landowner stewardship** in supply chain companies’ sustainable sourcing initiatives.

- **Robust technical and administrative support and monitoring infrastructure** to establish baselines, measure progress, and develop and implement effective strategies.

- **Coordination and collaboration with local districts and boards** (conservation, irrigation, drainage, weed control, etc.), as well as research, education, and extension resources.
the individual operation scale as well as the landscape scale. Ideally, WLCCs would have a single set of criteria and metrics for producers focused on continuous improvement that address local, state, federal, and supply chain sustainability goals, enabling a streamlined system adapted to local conditions that works well for producers.

The Path Forward

We are convinced that broad-based stewardship among producers through baseline conservation standards and jointly taking responsibility for additional practices and infrastructure necessary to achieve environmental outcomes will help position agriculture, both in fact and in perception, as a vital part of the solution to existing environmental quality challenges while ensuring the long-term economic sustainability of agriculture. We believe the time is ripe for a working lands cooperative conservation approach to take root more broadly and comprehensively. However, the institutional capacity for fully integrated watershed/landscape governance at multiple scales is not in place and will require significant realignment and integration of authorities and capacities. Skilled volunteer and professional leadership to effectively engage landowners/producers at the grassroots level must be developed. Much better data on both practices on the land and outcomes from field to large landscape scale as well as scientific analysis to understand their relationship is needed. Widespread implementation is a long-term prospect, requiring intensive efforts across the nation for the next ten to twenty years.

Given the inherent variability and complexity in both agricultural and natural systems, we have to work together, community by community, watershed by watershed, to ensure the health and vitality on our farms and ranches and across our landscapes. Taking this approach will bring divergent groups together, strengthen bonds, and build leadership— all of which benefit and enrich communities in numerous ways. Furthermore, we anticipate that over time, those watersheds and landscapes in which producers, landowners, and other stakeholders work together to improve conservation outcomes will develop a competitive advantage when marketing to the growing number of large purchasers who are concerned about the sustainability of their supply chains.

The future of agriculture in America is bright – if we conserve and enhance the soil, water, and habitat for the generations that follow us. To succeed, we must work together. We invite you to offer your suggestions about how the concepts we have presented can be improved, and how we can together make progress toward a new vision for agricultural conservation.

Endnotes


About AGree

AGree seeks to drive positive change in the food and agriculture system by connecting and challenging leaders from diverse communities to catalyze action and elevate food and agriculture policy as a national priority. AGree also recognizes the interconnected nature of agriculture policy globally and seeks to break down barriers and work across issue areas.

AGree is a collaborative initiative of nine of the world’s leading foundations, including the Ford Foundation, Bill & Melinda Gates Foundation, The David and Lucile Packard Foundation, W.K. Kellogg Foundation, The McKnight Foundation, Robert Wood Johnson Foundation, Rockefeller Foundation, Surdna Foundation, and The Walton Family Foundation, and will be a major force for comprehensive and lasting change.

Contact us:

1920 I Street, NW • Washington, DC 20036 • 202-354-6440