PARTNERS IN STEWARDSHIP

KNOW THE ISSUE:
BIODIVERSITY

DID YOU KNOW?

There are approximately 3,500 species of bees native to North America. Of those, 98% are solitary and do not live in colonies.

https://www.beelab.umn.edu

DEMONSTRATE YOUR LEGACY OF STEWARDSHIP

Most producers understand that productive farming systems depend on biodiversity. Diverse pollinators and natural pest predators make cropping systems more resilient. Outdoor enthusiasts value the diverse wildlife living in the natural areas surrounding farms for hunting, fishing and enjoying nature with their families. We can help you manage both cultivated and uncultivated areas on your farm to support biodiversity and:

- **Increase Resilience**
  Healthy communities of beneficial insects can help mitigate the effects of unanticipated weather extremes and pest outbreaks.
- **Preserve the Natural Beauty of Your Farm**
  Your land is your legacy. Generations to come will appreciate your efforts to foster wildlife and protect the integrity of the natural environment.
- **Build and Maintain Trust in Agriculture**
  Few sustainability issues are as visible and understood by consumers as the preservation of wildlife habitat. As farmers and landowners work to build and maintain trust in agricultural production, it's important to demonstrate how working lands contribute to conserving healthy ecosystems.

UNDERSTAND YOUR FARM'S HABITAT POTENTIAL

Every farm, no matter where it is located, has the potential to provide wildlife habitat. Our agronomists will help you evaluate all areas of your land and develop a plan to manage cropland to support biodiversity without compromising yields, while also exploring opportunities to preserve existing habitat or restore natural areas. Together, we will consider:

- **Attributes of the Farm**
  The natural environment that surrounds the farm such as grasslands, forest or wetlands is a primary determinant of the potential for farmland to support biodiversity.
- **Proposed Changes in Land Use**
  Putting previously uncultivated land, particularly native landscapes, into production reduces the potential for quality habitat. Conversely, habitat improvements can be made by converting field edges into vegetated buffer strips managed for biodiversity.
- **Land Management Practices**
  Installing field borders provides forage and cover for breeding and nesting wildlife.
- **Crop Production Practices**
  Optimizing irrigation, nutrient and pest management strategies conserves and protects water quality and quantity.

EXPLORE SOLUTIONS TO MAKE EVERY ACRE ITS BEST

RISK	POTENTIAL CAUSES	SOLUTIONS TO CONSIDER
LOSS OF NATIVE HABITAT	• Putting previously uncultivated land into production • Loss of native vegetation • Invasive, non-native weeds around fields	• Federal, local or state conservation programs • Encourage native plants in uncultivated areas • Prairie strips • Alley cropping • Pest scouting for early detection • Biological pest management
CULTIVATED LAND PROVIDING LESS OPTIMAL HABITAT FOR WILDLIFE	• Bare soil • Disturbed soil • Plant varieties not suitable for forage	• Crop rotation • Variety selection • Cover crops • Residue management • Conservation tillage
DEPLETED AQUATIC SYSTEMS	• Surface water source drawn down by irrigation • Crop protectants and nutrients leaching into surface water	• Precision irrigation • Irrigation scheduling • Drainage water management • Bioreactor • Integrated pest management • Nutrient management plan • Edge-of-field practices

DOCUMENT AND DEMONSTRATE YOUR STEWARDSHIP

Now more than ever, producers must share how they are working to protect water, air, soil and habitat in order to build consumer trust in agriculture. You can demonstrate your commitment to biodiversity by documenting how your management efforts improve habitat potential using tools like the sustainability metrics of the Fieldprint® Platform, a pioneering assessment framework offered by Field to Market: The Alliance for Sustainable Agriculture.

Supported by commodity organizations, conservation groups, agribusiness, universities, and downstream brands and retailers alike, this industry-aligned tool helps you benchmark your sustainability performance and concretely demonstrate how your practices contribute to improved biodiversity outcomes. Learn more about the Fieldprint® Platform at **www.fieldtomarket.org/platform**.

PARTNERS IN STEWARDSHIP

KNOW THE ISSUE:
ENERGY USE

DID YOU KNOW?

Energy is often measured in British thermal units (BTUs). It takes one BTU to raise the temperature of one pound of water by 1° F. One gallon of diesel produces 137,452 BTUs.

IMPROVE YOUR BOTTOM LINE AND BUILD RESILIENCE

With razor-thin profit margins, saving money through greater efficiency is a must for every producer. Reducing energy use can lead to significant cost savings for your operation and help you remain competitive in a challenging economic climate. Moreover, reducing fuel usage is one of the easiest ways to decrease carbon dioxide emissions from your operation. Working together, we can help you:

- **Save Money**
  Improving your energy use efficiency is one of the fastest and easiest ways to improve your profitability.
- **Build Resilience in Your Operation**
  Reducing reliance on fossil fuels buffers your operation from the uncertainty of fluctuating availability and costs.
- **Demonstrate Your Stewardship**
  Learn to tell the story of how you farm with an eye toward the future.

UNCOVER AND REDUCE HIDDEN ENERGY COSTS

Not all the ways energy is used in crop production are obvious. We can help you understand the total amount of energy your operation uses to grow a crop, from pre-planting to first point of sale or delivery at the processing facility. Our team will work with you to identify solutions to reduce energy consumption and costs by considering:

- **Efficiency Gains**
  Explore ways to reduce energy use by focusing on high-energy input areas. Investigate opportunities to reduce energy inputs by changing practices or doing the same operation more efficiently.
- **Embedded Energy**
  Optimizing inputs can reduce energy use embedded in production of fertilizer and crop protectants.
- **Irrigation Management**
  Improve pump efficiency to reduce electricity or diesel consumption. More efficient irrigation pumping can also lead to increased water flow rates. And more timely irrigation and improved crop yield can result from assessment of in-field irrigation as part of this process.
- **Tillage Management**
  Moving from conventional-till to no-till methods can cut fuel costs by up to 67%*.

EXPLORE OPPORTUNITIES TO INCREASE EFFICIENCY

RISK	POTENTIAL CAUSES	SOLUTIONS TO CONSIDER
INEFFICIENT CROP PROTECTANT AND NUTRIENT APPLICATIONS	• Optimize crop nutrient uptake by following the principles of 4R nutrient stewardship • Improve efficacy of herbicide applications for weed management, for cover crop termination and to aid harvest	• Soil and foliar testing to tailor application rates of crop protectants or fertilizers • Nutrient management plan • Variable rate technology • Harvest aid and plant protectant formulations and adjuvants • Spot spraying • Automatic section control on sprayer
HIGH DIRECT ENERGY USED ON THE FARM	• Consolidate equipment passes across the field • Tighten up irrigation application efficiency	• Proper equipment sizing • Increase rows planted or fertilized per pass • Renewable energy sources for irrigation pumping • Irrigation scheduling technology • Soil moisture sensors
OVERDRYING OF GRAIN AND PEANUTS BEYOND THE OPTIMAL MOISTURE LEVEL FOR STORAGE AND HAULING	• Combine heat and air drying • Stir grain to avoid overdrying • Track crop dry-down to avoid high-moisture harvest	• Moisture and temperature sensors • Efficient dryers • Airflow systems • Balance planting and maturity groups across all your fields to stagger harvest operations

DOCUMENT AND DEMONSTRATE YOUR STEWARDSHIP

Now more than ever, it's crucial for producers to share their stories about how they are working to protect natural resources. Demonstrate your commitment to conserving energy by documenting how your management efforts deliver results using tools like the sustainability metrics of the Fieldprint® Platform, a pioneering assessment framework offered by Field to Market: The Alliance for Sustainable Agriculture.

Supported by commodity organizations, conservation groups, agribusiness, universities, and downstream brands and retailers alike, this industry-aligned tool helps you benchmark your sustainability performance and concretely demonstrate how you reduced energy use in your operation. Learn more about the Fieldprint® Platform at **www.fieldtomarket.org/platform**.

* https://www.usda.gov/media/blog/2017/11/30/saving-money-time-and-soil-economics-no-till-farming

PARTNERS IN STEWARDSHIP

KNOW THE ISSUE:
GREENHOUSE GASES

DID YOU KNOW?

The 4R's of nutrient stewardship and reducing energy use are keys to lowering GHG emissions.

SAVE MONEY AND KEEP COOL

Every farm is at the mercy of Mother Nature. Wetter springs, the growing severity of droughts and higher-volume downpours are a few examples of the rising volatility and variability that result from greenhouse gases (GHGs) trapping heat inside the Earth's atmosphere. A changing climate that brings warmer temperatures and less predictable weather patterns can extend insect, weed and disease pressure; increase plant heat stress; increase pressures from drought and erosion; and significantly change crop irrigation requirements. While a changing climate poses threats to agricultural productivity, continued innovation and use of advanced farming techniques can help you adapt and increase your resiliency in the face of increasingly unpredictable growing conditions. We can help you:

- **Increase Resilience to Weather Extremes**
  Learn how practices that build soil health by increasing soil carbon enhance water- and nutrient-holding capacity and can help crops withstand some of the effects of a changing climate.
- **Gain Through Efficiency**
  Small adjustments in your operation that reduce GHG emissions can also improve water quality, optimize fertilizer use and save you money on energy costs.
- **Tell Your Story**
  Learn how to document and demonstrate the steps you are taking to improve your farm's efficiency and environmental impacts.

UNDERSTAND AND MITIGATE YOUR RISK

No two farms are identical, and we realize there is no one-size-fits-all approach to adapting to a changing climate and reducing GHG emissions. Our staff will sit down with you and explore the potential sources of GHGs from your operation, such as:

- **Energy Use**
  Reducing energy use will directly lower carbon dioxide emissions.
- **Crop Residue Management**
  Using alternatives to burning crop residues when preparing a field for planting may produce less carbon dioxide.
- **Application of Nitrogen**
  Optimizing nitrogen fertilizer and manure applications can reduce volatilization into nitrous oxide, a GHG with 298 times the warming power of carbon dioxide.
- **Rice Field Management**
  Adjusting water, amendments and other practices in rice fields can significantly reduce the amount of methane released.

EXPLORE OPPORTUNITIES TO INCREASE EFFICIENCY

RISK	POTENTIAL CAUSES	SOLUTIONS TO CONSIDER
INCREASED CARBON DIOXIDE EMISSIONS FROM FOSSIL FUEL CONSUMPTION	• Field operations • Hauling • Irrigation pumping • Overdrying grain	• Fewer trips across the field • Precision irrigation management • Alternative energy sources like wind or solar
INCREASED NITROUS OXIDE EMISSIONS	• Nonoptimal fertilizer application rate, source, timing and/or placement	• 4R's of nutrient stewardship • Nitrogen stabilizers • Controlled-release fertilizers • Crop sensing • Variable rate technology • Adaptive management • Nutrient management planning • Rotation planning
INCREASED CARBON DIOXIDE EMISSIONS FROM FIELDS	• Burning crop residues • Rapid oxidation of soil organic matter	• Alternative residue management • Cover crops • Reduced tillage
EXCESS METHANE FROM RICE PRODUCTION	• Prolonged field flooding	• Alternative irrigation management • Best nutrient management practices

DOCUMENT AND DEMONSTRATE YOUR STEWARDSHIP

With so many sources of conflicting information available, it's hard for the public to know what to believe. Demonstrate your commitment to the future and to protecting natural resources by documenting how your management efforts deliver results using tools like the sustainability metrics of the Fieldprint® Platform, a pioneering assessment framework offered by Field to Market: The Alliance for Sustainable Agriculture.

Supported by commodity organizations, conservation groups, agribusiness, universities, and downstream brands and retailers alike, this industry-aligned tool helps you benchmark your sustainability performance and concretely demonstrate how you are lowering your operation's GHG emissions. Learn more about the Fieldprint® Platform at **www.fieldtomarket.org/platform**.

PARTNERS IN STEWARDSHIP

KNOW THE ISSUE:
IRRIGATION WATER USE

DID YOU KNOW?

Agriculture accounts for 80% of the fresh water consumed in the United States.

https://www.ers.usda.gov/topics/farm-practices-management/irrigation-water-use/

MAXIMIZE YOUR INVESTMENT AND PROTECT WATER SECURITY

Irrigation can significantly improve yields, and in some situations, agricultural production is impossible without it. However, irrigation can be expensive given rising costs associated with everything from purchasing the water itself to the energy for pumping and maintaining the equipment that applies it. If you live in an arid location or have ever experienced prolonged drought, you know we cannot afford to take this precious and limited resource for granted. Our agronomists can help understand how much water you are currently using and identify opportunities for greater efficiency to:

- **Reduce Input Costs**
  By tightening up your irrigation applications, you can cut water, pumping and equipment maintenance costs.
- **Protect Future Access**
  Water availability is already restricted for agricultural use in some parts of North America. Your efforts to conserve water now help ensure there will be enough affordable water to farm for generations to come.
- **Demonstrate Your Stewardship**
  Learn to tell the story of how you fine-tuned your practices to make the most of every drop applied to your crops.

UNDERSTAND AND MITIGATE YOUR RISK

Your irrigation needs are specific to your crops, your soil and your location. The actual amount of water to apply is determined by factors within and outside your direct control. For example, although you cannot feasibly change the texture of your soil, you can mitigate the impacts of soil texture by using management practices that improve water-holding capacity and infiltration. Our team can help you evaluate the factors that impact your farm's water use, including:

- **Crop Variety and Stage of Crop Development**
  The amount of water a crop requires at any given time is heavily dependent on the crop variety and the stage of development. For annual crops, water requirements are low at the start of the season and increase as the plant develops.
- **Weather Conditions**
  Warm temperatures, high wind speed, low relative humidity and high light intensity increase the amount of water required to take a crop from seed to harvest.
- **Physical and Chemical Soil Characteristics**
  The amount and frequency of needed irrigation applications are influenced by soil qualities such as water-holding capacity and infiltration.

EXPLORE SOLUTIONS TO MAKE EVERY ACRE ITS BEST

RISK	POTENTIAL CAUSES	SOLUTIONS TO CONSIDER
LOW WATER-HOLDING CAPACITY	• Low organic matter • Light or sandy soil	• Cover crops • Residue management • High irrigation frequency
POOR INFILTRATION	• Soil compaction • High soil salinity • Already saturated soil • Sloped field	• Field leveling • Reduced tillage • Scheduling software • Custom soil amendments
LOSS OF APPLIED WATER TO EVAPORATION OR RUNOFF	• Inefficient delivery method • Repeated soil disturbance • Bare soil	• Precision irrigation • Weather sensors • Flow meters • Reduced tillage
POOR UPTAKE BY CROPS	• Inappropriate crop variety • Soil salinity • Stressed or diseased crops	• Variety selection • Soil testing • Pest scouting and management • Custom amendments • Nutrient management
CROP WATER STRESS LEADING TO YIELD LOSS	• Inadequate irrigation applied • Too much irrigation applied	• Soil moisture sensors • Scheduling software

DOCUMENT AND DEMONSTRATE YOUR WATER STEWARDSHIP

With ever-expanding urbanization and competing demands on our finite supply of fresh water, the agricultural community must actively tell the story of responsible stewardship. You can demonstrate your commitment to conserving this important natural resource by showing how your management efforts deliver results using tools like the sustainability metrics of the Fieldprint® Platform, a pioneering assessment framework offered by Field to Market: The Alliance for Sustainable Agriculture.

Supported by commodity organizations, conservation groups, agribusiness, universities, and downstream brands and retailers alike, this industry-aligned tool helps you benchmark your sustainability performance and concretely demonstrate how your practices contribute to a secure water future. Learn more about the Fieldprint® Platform at **www.fieldtomarket.org/platform**.

PARTNERS IN STEWARDSHIP

KNOW THE ISSUE:
LAND USE

DID YOU KNOW?

The average value of an acre of U.S. farmland nearly tripled from 2000 to 2017.

https://www.nass.usda.gov/quickstats

PRESERVE YOUR LAND AND LEGACY

Your land is your legacy. Protecting your high-quality farmland is at the heart of sustainable agriculture. Efficient use of agricultural land is necessary for the financial stability of your farming business. And as the global population continues to grow and become more affluent, farmers are challenged with producing more food, fiber and fuel on less land with minimal environmental impact. Our agronomists can help you:

- **Protect Your Investment**
  Balancing yields with optimized inputs protects the value of your land and the soil, air and water around it.
- **Do More with Less**
  The best land for agricultural use is already under cultivation in the U.S. Expanding production into marginal lands requires more inputs to produce acceptable yields, thereby increasing production costs and cutting into profits.
- **Demonstrate Your Stewardship**
  Discover how to communicate the results of your practices and how they support an efficient and more sustainable agricultural system.

UNDERSTAND AND MITIGATE YOUR RISK

Our agronomists will help you evaluate the productivity of your fields and optimize yields without compromising the quality of the soil, water or air. Together we will determine:

- **Return on Investment**
  Monitor yields in every field to determine whether they are giving you a reasonable return on your seed and input investment.
- **Alternatives for Marginal Fields**
  Consider removing from production any fields or portions of fields that are underperforming and identifying alternative uses for that land.
- **Financial Assistance Programs**
  Investigate practices that could improve your productivity and profitability that would be eligible for financial assistance through the Natural Resource Conservation Service's Environmental Quality Incentive Program, Conservation Stewardship Program, or other local and regional funding opportunities.

EXPLORE SOLUTIONS TO MAKE EVERY ACRE ITS BEST

CHALLENGE	POSSIBLE CAUSES	SOLUTIONS TO CONSIDER
LOW YIELDS	• Variety selection • Pest and disease pressure • Water stress • Nutrient deficiency • Crop rotations • Weather patterns/climate changes • Planting depth and spacing	• Locally suited varieties • Rotation planning • Pathology testing • Tissue testing • Soil testing • Nutrient management • Irrigation technology • Drainage water management • Yield monitoring • Federal, state or local conservation programs • Digital agriculture solutions

DOCUMENT AND DEMONSTRATE YOUR LAND STEWARDSHIP

Sharing the story of your success and highlighting how agriculture is offering solutions to pressing environmental challenges are crucial. You can demonstrate your commitment to land stewardship by showing how your efforts deliver results using tools like the sustainability metrics of the Fieldprint® Platform, a pioneering assessment framework offered by Field to Market: The Alliance for Sustainable Agriculture.

Supported by commodity organizations, conservation groups, agribusiness, universities, and downstream brands and retailers alike, this industry-aligned tool helps you benchmark your sustainability performance and concretely demonstrate how your practices contribute to improved land use efficiency. Learn more about the Fieldprint® Platform at **www.fieldtomarket.org/platform**.

PARTNERS IN STEWARDSHIP

KNOW THE ISSUE:
SOIL CARBON

DID YOU KNOW?

By adding more carbon to the soil than is removed, farmers play a crucial role in reducing greenhouse gases and mitigating climate change.

GROW YOUR PRODUCTIVITY

You know the look, the feel and even the smell of rich, productive soil. Soil scientists confirm what farmers like you have always known: Adding carbon from organic matter to the soil is good for soil health*. Investments in increasing soil carbon secure the productivity and ultimately the profitability of your land for the long term. By building carbon in your fields, our agronomists can help you:

- **Optimize Nutrient and Water Applications**
  Adding organic matter to the soil improves water-holding capacity and infiltration while optimizing fertilizer needs and reducing the amount of irrigation needed to meet crop requirements.
- **Protect Air and Water Quality**
  Enhancing soil carbon can help slow the release of carbon dioxide to the atmosphere and prevent surface runoff from farm fields.
- **Demonstrate Your Stewardship**
  Learn how to document and tell the story of your commitment to soil health.

UNDERSTAND YOUR OPPORTUNITIES

The best suite of practices to build carbon in your fields will be unique to your operation. Our agronomists will walk your fields with you to customize a program that will boost soil health and productivity. We will investigate critical factors that add or remove carbon, such as:

- **Organic Matter**
  Carefully increasing crop residues, adjusting rotations, and managing cover crops and manure all contribute to increased soil carbon.
- **Field Operations**
  Tillage and other practices can stimulate decomposition or change the location of organic matter in the soil profile, resulting in loss of soil carbon by releasing carbon dioxide into the atmosphere.
- **Erosion**
  Soil carried away by water or wind takes soil carbon with it.

EXPLORE SOLUTIONS TO MAKE EVERY ACRE ITS BEST

OPPORTUNITY	POTENTIAL CAUSES	SOLUTIONS TO CONSIDER
ADD CARBON-RICH SOURCES OF ORGANIC MATTER TO THE SOIL	• Grow cover crops • Adjust cash crop rotation to include high-biomass varieties • Include manure in nutrient strategy	• Soil testing • Cover crop seed selection • Cover crop management • Cash crop variety selection • Manure application equipment
REDUCE LOSSES OF CARBON AS CARBON DIOXIDE BY MINIMIZING SOIL DISTURBANCE	• Use alternate strategies to tillage for weed management • Plant directly into stubble, or use strip tillage for seed bed prep • Manage crop residues to slow their decomposition	• Integrated weed management program • Tillage tools • Cover crop termination options • Residue management implements
PROTECT AGAINST SOIL EROSION	• Keep soil covered with cash crops, cover crops or crop residues throughout the year • Slow water runoff • Add wind barriers	• Rotation planning • Narrower plant spacing • Field leveling or terracing • Low-volume irrigation output • Irrigation scheduling • Hedgerow planting

DOCUMENT AND DEMONSTRATE YOUR COMMITMENT TO SOIL HEALTH

Share the story of your farm's journey to build soil health with your customers, community and landlords. You can document the results of your efforts to preserve and enhance soil carbon using tools like the sustainability metrics of the Fieldprint® Platform, a pioneering assessment framework offered by Field to Market: The Alliance for Sustainable Agriculture.

Supported by commodity organizations, conservation groups, agribusiness, universities, and downstream brands and retailers alike, this industry-aligned tool helps you benchmark your sustainability performance and concretely demonstrate how your practices contribute to improved soil carbon outcomes. Learn more about the Fieldprint® Platform at **www.fieldtomarket.org/platform**.

*Funderburg, E. 2001. "What Does Organic Matter Do in Soil? Available from www.noble.org/news/publications/.

PARTNERS IN STEWARDSHIP

KNOW THE ISSUE:
SOIL CONSERVATION

DID YOU KNOW?

Spread over one acre, five tons of soil is the thickness of a dime, and one tablespoon of soil has more than seven billion microbes living within it.

SAFEGUARD YOUR INVESTMENT AND NATURAL RESOURCES

Losing soil is losing money because your crops depend on deep, healthy soil. When soil leaves the farm due to wind or water erosion, it takes valuable inputs with it, including nutrients, crop protectants, organic matter, irrigation water, and the associated investment of financial and energy resources, reducing soil productivity for every future crop. Soil erosion not only affects your bottom line, but it also has broader impacts on your surrounding community. Keeping soil in your field where it belongs saves municipalities and water utilities millions of dollars in dredging costs. During drought and in arid regions, soil conservation practices like no-till can contribute to better water infiltration and storage. Moreover, practices that reduce soil wind erosion can lead to better air quality, which is good for everyone. Our agronomists can help you:

- **Protect Your Investment**
  Hold on to your soil and the water, nutrients and crop protectants the soil contains.
- **Ensure Your Freedom to Operate**
  Voluntary leadership to protect water and air quality now can avoid new regulations in the future.
- **Demonstrate Your Stewardship**
  We can help you tell the story of how your farming practices conserve soil.

UNDERSTAND AND MITIGATE YOUR RISK

The potential for soil erosion is unique to each situation. Our agronomists will help you analyze the factors that may lead to soil losses on your farm, such as:

- **Field Characteristics**
  Soil erosion is more likely in fields with fine soil and steeper and longer slopes that aren't protected from the wind by trees or other barriers.
- **Soil Disturbance**
  No-till, strip-till and the use of less-aggressive tillage tools contribute to increased soil aggregate stability, cause less soil disturbance and leave more residue on the soil surface.
- **Vegetative Cover**
  Soil covered by cash crops, cover crops or crop residues are less likely to be lost to erosion than is bare soil. Living plant roots hold soil in place and help build stable soil aggregates.

EXPLORE SOLUTIONS TO MAKE EVERY ACRE ITS BEST

RISK	POTENTIAL CAUSES	SOLUTIONS TO CONSIDER
SOIL WASHED AWAY BY PRECIPITATION OR IRRIGATION	• Disturbed soil • Bare soil • Steep slope	• No-till or strip-till • Weather forecasting • Residue management • Cover crops • Crop spacing • Land leveling or terracing
WIND EROSION OF SOIL	• Low soil moisture • Fine soil • Disturbed soil • Bare soil • Lack of wind barriers	• Soil moisture sensing • Conservation tillage • Weather forecasting • Residue management • Cover crops • Crop spacing • Hedgerow planting for windbreaks • Crop rotation, including small grains and/or forage crops

DOCUMENT AND DEMONSTRATE YOUR WATER STEWARDSHIP

You are the best person to tell the story about how the agricultural community is doing its part to protect natural resources. You can demonstrate your commitment to protecting soil, water and air by showing how your management efforts deliver results using tools like the sustainability metrics of the Fieldprint® Platform, a pioneering assessment framework offered by Field to Market: The Alliance for Sustainable Agriculture.

Supported by commodity organizations, conservation groups, agribusiness, universities, and downstream brands and retailers alike, this industry-aligned tool helps you benchmark your sustainability performance and concretely demonstrate how your practices contribute to improved soil conservation outcomes. Learn more about the Fieldprint® Platform at **www.fieldtomarket.org/platform**.

PARTNERS IN STEWARDSHIP

KNOW THE ISSUE:
WATER QUALITY

DID YOU KNOW?

Groundwater supplies approximately 50% of all Americans and 95% of people living in agricultural communities with drinking water.

https://water.usgs.gov/edu/pesticidesgw.htm

PROTECT YOUR INVESTMENT AND LOCAL WATERWAYS

Keeping sediment and nutrients on farm fields is a top priority for any farmer. Field runoff can wash away these crucial resources, negatively impacting biodiversity, local waterways and farm productivity. Structural and edge-of-field practices can offer a last line of defense—trapping and treating water before it leaves the field while also helping protect surrounding natural resources. We can help you:

- **Protect Your Investment**
  Keep those valuable inputs in your fields. And if your yields depend on irrigation, we'll help you keep every drop where your crop roots can reach it.
- **Ensure Your Freedom to Operate**
  Your efforts to protect water quality now might prevent new regulations in the future.
- **Demonstrate Your Stewardship**
  Learn how to translate the water quality benefits of your farming practices to show how you protect the water your family and community drink and enjoy for recreation.

UNDERSTAND AND MITIGATE YOUR RISK

We understand that there is no single approach that will work for every crop in every field. Our agronomists will help you identify potential soil and crop input escape routes and customize a program that keeps them right where you need them—in the field. Together, we will determine the potential impacts of the water leaving your farm, by exploring factors such as:

- **Physical Characteristics of the Field**
  Runoff is more likely to occur in fields on steeper slopes and with soils that are fine, compacted, disturbed, bare or low in organic matter. Tile drainage provides a direct route for nutrient-rich water to reach local waterways, drinking water–supply lakes and downstream fisheries.
- **Soil Disturbance**
  Greater tillage intensity increases the likelihood soil will move off the field in runoff and reduces the water-holding capacity of the soil.
- **Optimizing Nutrient, Crop Protectant and Irrigation Inputs**
  Reduce input runoff and leaching with 4R Nutrient Stewardship, precision application of protectants and irrigation to maximize uptake by plants and retention in the soil.
- **Edge-of-Field Practices**
  A number of conservation practices, like buffer strips, grassed waterways, tailwater recovery systems and sediment basins, can help mitigate risk by capturing nutrients and sediment before they leave the farm. Tile drainage treatment practices can reduce discharge of water flows and nutrient loads directly into waterways.

EXPLORE SOLUTIONS TO MAKE EVERY ACRE ITS BEST

RISK	POTENTIAL CAUSES	SOLUTIONS TO CONSIDER
SOIL LOSSES DURING HEAVY RAINS	• Sloped field • Bare soil • Disturbed soil • Compacted soil	• Crop rotation that increases vegetative cover • Cash and cover crop varieties to close canopy quickly • Residue management implements • Conservation tillage • Laser-leveling where appropriate • Contour cultivation, strip cropping or prairie strips to break up the slope • Sediment and erosion control structures
NUTRIENT LOSSES FROM RUNOFF OR LEACHING	• Rapid nutrient infiltration through soil profile • Soil texture and structure, low soil permeability, low soil organic matter • Incorrect nutrient application rate, timing or placement • Tile drainage • Lack of vegetative cover • High soil loss	• 4R Nutrient Stewardship • Edge-of-field practices for runoff • Tile drainage runoff capture • Nitrogen stabilizers • Variable rate technology • Foliar application • Nutrient-scavenging cover crops • Nutrient management plan • Continuous cover • Reduced tillage
CROP PROTECTANTS WASHED AWAY	• Incorrect formulation • Imprecise application	• Pest scouting • Biological pest management • Pathology testing • Irrigation management • Precision application • Variety selection • Pesticide formulation and adjuvants
IRRIGATION WATER RUNOFF OR LEACHING BELOW CROP ROOTS	• Application rate outpaced by soil infiltration • Soil compaction • Bare soil • Low organic matter • Tile drainage water discharge directly into groundwater	• Low-output irrigation delivery systems • Precision technology • Scheduling software • Weather monitoring • Polyacrylamide ditch treatment • End-of-pipe treatment • Drainage water management system

DOCUMENT AND DEMONSTRATE YOUR WATER STEWARDSHIP

In today's headline-driven culture, the agriculture industry must share how it is contributing solutions to pressing challenges facing society. You can demonstrate your commitment to water stewardship by showing how your efforts deliver results using tools like the sustainability metrics of the Fieldprint® Platform, a pioneering assessment framework offered by Field to Market: The Alliance for Sustainable Agriculture.

Supported by commodity organizations, conservation groups, agribusiness, universities, and downstream brands and retailers alike, this industry-aligned tool helps you benchmark your sustainability performance and concretely demonstrate how your practices contribute to improved water quality outcomes. Learn more about the Fieldprint® Platform at **www.fieldtomarket.org/platform**.