

## 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
<b>SOIL LOSSES DURING HEAVY RAINS</b>	<ul style="list-style-type: none"> <li>• Sloped field</li> <li>• Bare soil</li> <li>• Disturbed soil</li> <li>• Compacted soil</li> </ul>	<ul style="list-style-type: none"> <li>• Crop rotation that increases vegetative cover</li> <li>• Cash and cover crop varieties to close canopy quickly</li> <li>• Residue management implements</li> <li>• Conservation tillage</li> <li>• Laser-leveling where appropriate</li> <li>• Contour cultivation, strip cropping or prairie strips to break up the slope</li> <li>• Sediment and erosion control structures</li> </ul>
<b>NUTRIENT LOSSES FROM RUNOFF OR LEACHING</b>	<ul style="list-style-type: none"> <li>• Rapid nutrient infiltration through soil profile</li> <li>• Soil texture and structure, low soil permeability, low soil organic matter</li> <li>• Incorrect nutrient application rate, timing or placement</li> <li>• Tile drainage</li> <li>• Lack of vegetative cover</li> <li>• High soil loss</li> </ul>	<ul style="list-style-type: none"> <li>• 4R Nutrient Stewardship</li> <li>• Edge-of-field practices for runoff</li> <li>• Tile drainage runoff capture</li> <li>• Nitrogen stabilizers</li> <li>• Variable rate technology</li> <li>• Foliar application</li> <li>• Nutrient-scavenging cover crops</li> <li>• Nutrient management plan</li> <li>• Continuous cover</li> <li>• Reduced tillage</li> </ul>
<b>CROP PROTECTANTS WASHED AWAY</b>	<ul style="list-style-type: none"> <li>• Incorrect formulation</li> <li>• Imprecise application</li> </ul>	<ul style="list-style-type: none"> <li>• Pest scouting</li> <li>• Biological pest management</li> <li>• Pathology testing</li> <li>• Irrigation management</li> <li>• Precision application</li> <li>• Variety selection</li> <li>• Pesticide formulation and adjuvants</li> </ul>
<b>IRRIGATION WATER RUNOFF OR LEACHING BELOW CROP ROOTS</b>	<ul style="list-style-type: none"> <li>• Application rate outpaced by soil infiltration</li> <li>• Soil compaction</li> <li>• Bare soil</li> <li>• Low organic matter</li> <li>• Tile drainage water discharge directly into groundwater</li> </ul>	<ul style="list-style-type: none"> <li>• Low-output irrigation delivery systems</li> <li>• Precision technology</li> <li>• Scheduling software</li> <li>• Weather monitoring</li> <li>• Polyacrylamide ditch treatment</li> <li>• End-of-pipe treatment</li> <li>• Drainage water management system</li> </ul>

## 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](http://www.fieldtomarket.org/platform).



Want to learn more about opportunities to steward biodiversity on your farm? Contact MicroSource to learn more.

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