THE CLEAN WATER ACT

ISSUE

Clean water is essential for the health of humans, wildlife, and plants. The Clean Water Act of 1972 aimed to restore and maintain the chemical, physical, and biological integrity of the waterways of the United States. The act outlined two priorities: eliminate harmful discharge of pollutants into waterways and improve water quality to make it both fishable and swimmable.

To accomplish these goals, the Clean Water Act authorizes the Environmental Protection Agency (EPA) to regulate activities that may pollute the nation's "navigable waters," also called the "waters of the United States." This definition casts a wide net for bodies of water that the federal government has authority to regulate under the act, including ponds, tributaries, and wetlands. Any action that discharges pollutants into these U.S. waters must be approved by a permit from the EPA.

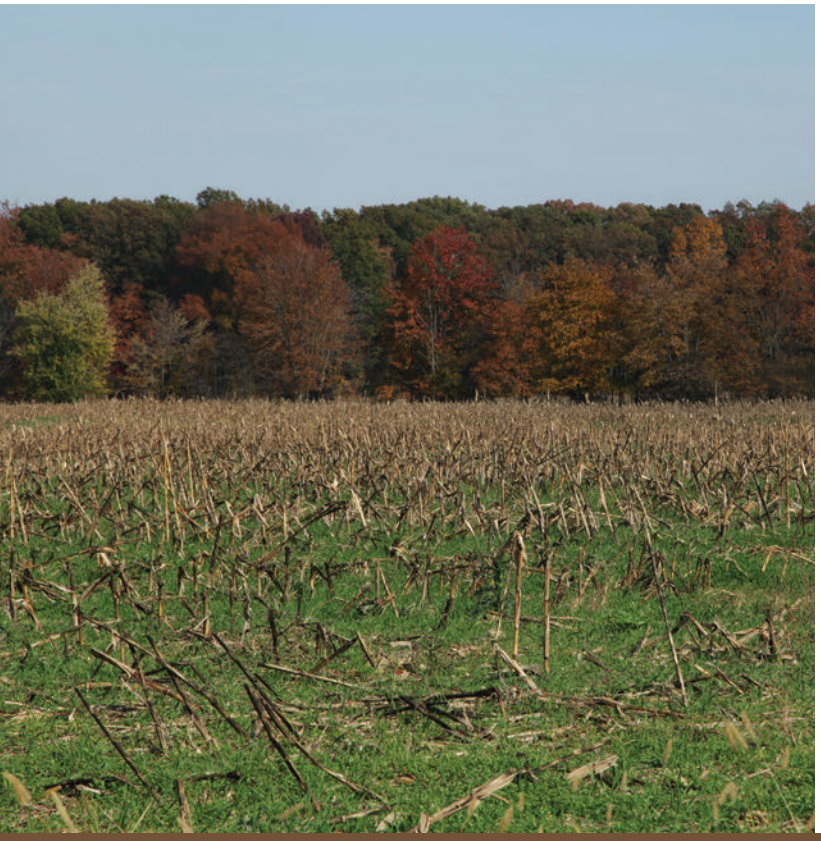
The Clean Water Act may have been passed with the intention of protecting waterways, but the command-and-control regulations prescribed by it fail to deliver clean water. In some cases, point sources, such as industrial facility pipes that discharge into rivers, operate within EPA-permitted levels, but rivers still end up polluted. In these instances, it's often uncontrolled discharge from non-point sources, such as fertilizers and insecticides from farms, that are the major sources of pollution. But paradoxically, the Clean Water Act can make it difficult for farmers to clean up their operations.[11] The act's wide-reaching, inflexible authority and strict permitting requirements create red tape for private conservation. For farmers, ranchers, and timber managers who heavily rely on water, this red tape can dissuade them from undertaking efforts to improve waterway health.

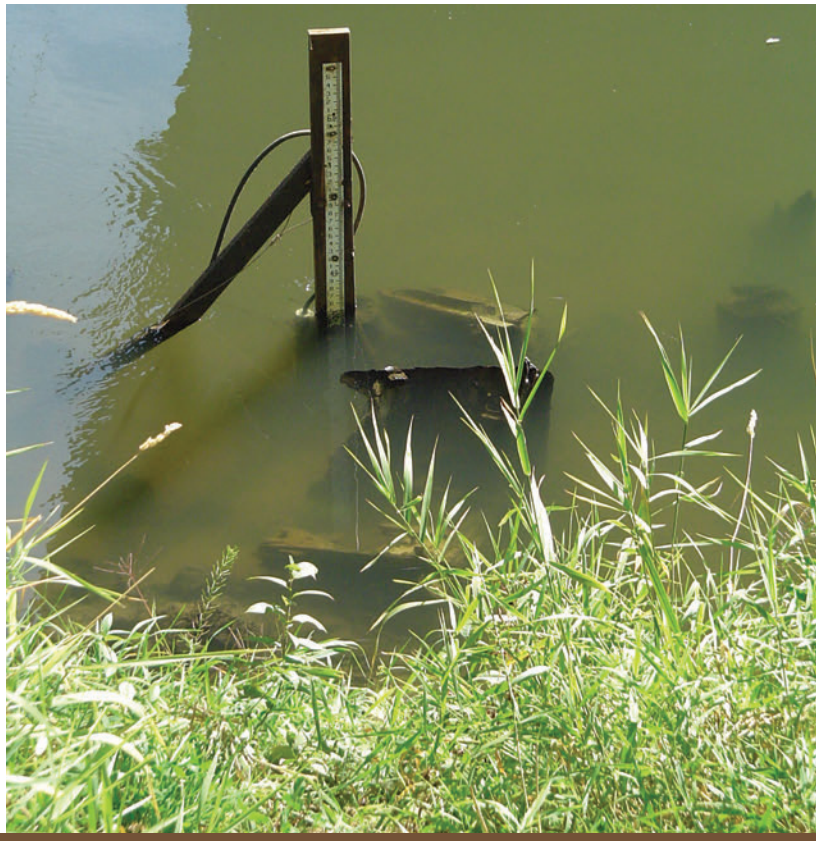
Take the example of wetlands. The government classifies wetlands as waters of the United States if they are adjacent or connected to navigable waters and their tributaries, making them subject to the Clean Water Act. Yet in an ecosystem as expansive as a wetland, it is difficult to know where federal regulatory authority ends and the need for private conservation efforts begin. Wetlands purify water, recharge groundwater, and provide wildlife habitat. By discouraging private conservation on certain wetlands, the Clean Water Act clearly has destructive, if unintended consequences.

The expansion of federal regulatory jurisdiction under the Clean Water Act also threatens to directly dampen private conservation efforts through its permitting requirements. The ban on the discharge of pollutants into waters without a permit includes "clean fill" material, such as dirt. So even the most well-intentioned conservation efforts may need federal permits to undertake ecological restoration on private lands if earth is moved near waterways or if streambeds are involved. For example, a rancher working to restore an irrigation ditch into a meandering trout stream would need to move streambanks and channel the surrounding dirt to achieve his goal. Moving this soil in and around the stream will send some dirt down the waterway, which can be considered a discharge of pollutants. In addition to being costly and time-consuming to acquire a permit for such an activity, failure to comply with these rules can bring criminal penalties.

Oregon farmer Bill Case learned about the need for Clean Water Act permits the hard way.[12] The North Santiam River runs through Case's 170-acre farm, where he grows corn and beans. In 2007, heavy rains eroded his black soil, adding sediment to the river. Case consulted an engineer and was told that

Photos: © Chesapeake Bay Program (left); © Tom Brandt (right)





No-till farming can reduce erosion and prevent runoff from reaching waterways (left). Sensors that monitor water quality make it easier to identify and measure pollution (right).

if he did not repair the river banks, he could lose 50 acres of his land in the next flood.

To protect his farm and keep more soil from eroding into the waterway, Case implemented a series of repairs under the guidance of the U.S. Army Corps of Engineers. His major project was building a retaining wall more than 40 feet from the river's edge. But Case failed to get a permit. He now faces potential fines of more than $100 million for his river-bank repairs made nearly a decade ago.

The EPA is suing Case because his repairs were made below the "ordinary high-water mark" of the river, meaning that the areas on which repairs were made included the "waters of the United States." Case's project, therefore, was technically subject to the permitting requirements of the Clean Water Act. The EPA lawsuit alleges that Case discharged fill materials into U.S. waters and harmed wetlands alongside the river by discharging rock and dredged material below the high-water mark. Case maintains that his actions prevented greater erosion into the river. Not only has the EPA levied a hefty fine, but it has also ordered Case to tear out his bank repairs and get a permit before rebuilding the wall.

As Case's story demonstrates, the Clean Water Act creates costly regulations for working lands and can even discourage landowners from engaging in land management projects that promote conservation. Obtaining requisite permits can be costly and time-consuming for owners of working lands, which can cause them to abandon projects that would restore environmental resources. In practice, the Clean Water Act often causes working landowners to leave things as they are rather than risk affecting waters of the United States by undertaking projects that would produce public environmental benefits.

REFORM

Rather than adding more regulation, markets in water quality would reward working-lands practices that reduce water pollution and clean up our waterways. Water-quality markets foster environmental stewardship of waterways and reduce pollution by connecting those who can supply clean water with those who demand it. The Environmental Protection Agency establishes standards for clean water and limits the amount of pollution that dischargers can release into water to achieve those standards. Pollution amounts are tracked, and dischargers are required to mitigate any excess damages. Water-quality trading is a market-based approach that allows permitted dischargers, such as power plants, to offset their pollution by purchasing nutrient-reduction credits from farmers who take steps to improve water quality. Credits are generated when landowners implement conservation practices that reduce soil erosion, runoff, or pollution. Water-quality trading can help keep water clean in a way that benefits landowners, communities, and the greater environment.

Many owners of working lands understand the impacts their actions have on water quality, and they are adopting practices that prevent runoff pollution. With a water-quality market, farmers could generate credits by altering crop harvests, stock rotations, fertilizer applications, and tilling practices, which can release significant amounts of sediment, phosphorus, and nitrogen. Voluntary water-quality trading can reward working landowners for the environmental benefits they create and encourage other landowners to do the same.

Improving practices on working lands can greatly reduce the negative effects of farming, ranching, and timber harvesting on water quality. No-till farming, where crops are grown each year without disturbing the soil through tillage or plowing, improves soil health and reduces erosion and runoff into waterways. In addition, planting cover crops to provide seasonal cover when soil would otherwise be bare significantly reduces erosion. Though these practices have not historically been widely adopted as part and parcel of land management, they are quickly gaining traction for their ability to enhance both harvests and water quality. In addition, when agricultural landowners are able to profit from changing their practices to reduce water pollution, they will be more likely to do so.

Markets can also promote working-lands practices that improve water quality by granting pollution credits that can be bought and sold. However, one of the difficulties in creating a water-quality market is how to determine who is responsible for what pollution and when, and the contributions of individual projects toward water-improvement goals. New innovations in technology to monitor water quality may make it easier and cheaper to track pollution, especially non-point-source pollution. Researchers are currently developing cheap, easy-to-use, credit card-sized sensors that can measure chemicals in water. These devices would allow for more frequent testing in more places throughout a waterway, making it easier to identify where pollution comes from.[13] Advancements in water-quality monitoring technology can help determine when and where quality improvement credits are due, improving markets.

Photo: © USFWS

Wetland-restoration projects benefit private landowners as well as the wider environment.