



Protecting Iowa's Water Quality: Point and Non-Point Sources of Pollution

Pollutants enter Iowa's waters via discharges from point sources such as factories or wastewater treatment plants and from other less-identifiable sources called non-point sources.

A wastewater treatment facility or a factory that will be discharging waste water into a stream must obtain a National Pollutant Discharge Elimination System (NPDES) permit from the Iowa Department of Natural Resources (DNR). A point source must be issued a permit that designates the maximum levels of pollutants that can be released into a water body. Some urban areas are now required to have NPDES permits for stormwater discharges.

Non-point sources are not issued a permit to discharge. Non-point sources include farm runoff and urban runoff. Farm runoff carries pollutants such as soil, pesticides, fertilizer and animal manure. Urban runoff carries pollutants picked up off yards, streets and parking lots. Non-point source pollution has harmful effects on drinking water, recreation, fisheries, wildlife and biological habitats.



*Water sampling.
Photo Credit: Tim
McCabe, USDA NRCS*

A third kind of water discharge comes from animal feeding operations (AFO). One form of AFO is an open feedlot where the animals, generally cattle, are raised outdoors in pens. The second form is called a concentrated animal feeding operation (CAFO) that consists of huge buildings where animals, such as hogs, poultry, etc., are housed. Open feedlots must have NPDES permits. Concentrated animal feeding operations are required to have a permit only if they discharge waste into a waterbody.

The Iowa Chapter supports the following policies for reducing point and non-point sources of water pollutants:

Point-Source Pollutant Policy Recommendations

- Municipalities maintaining wastewater treatment facilities so that they do not discharge untreated or partially treated sewage into surface waters.
- Keeping the public informed about sewage overflows and why they are happening.
- Upgrading wastewater treatment systems that are overtaxed, aged or decaying. The DNR must require that wastewater treatment systems with inadequate capacity transport their excess sewage to another treatment facility until they have built capacity. Repeated sewer bypasses, where untreated sewage is dumped into a stream following rainstorms, are a symptom of inadequate capacity, a serious public health concern and a water quality issue.

- The DNR's issuing strong NPDES permits that don't degrade water. The DNR must renew permits with new criteria before the current permit expires. Allowing facilities to operate with expired permits for over a decade, as happened with the Ames sewage treatment permit, is unacceptable.
- Increased monitoring of water quality. NPDES permit holders are required to file a monthly discharge monitoring report. The DNR needs to review these reports for discharges over the limits and aggressively work to ensure that the permit holder brings discharges back within the permitted limit. Permit holders that do not comply with their permit limits should be assessed significant fines and penalties.
- DNR's updating its water quality standards soon after the EPA has established the criteria or provided the guidance documents. Delaying for years is not appropriate.

Urban Non-point Pollutant Policy Recommendations

- Implementing education programs to encourage residents, businesses and local governments to plant swales around parking lots, develop rain gardens, use rain barrels and cisterns, install green roofs, plant trees and prairie plants, build detention and retention basins and install permeable pavement. These techniques hold water on the landscape longer and will serve to filter pollutants rather than allowing them to rush into water bodies.



Construction site after a storm. Drift fences were not constructed to hold the soil in place. Photo Credit: Lynn Betts, USDA NRCS

- Reminding urban residents that only snow and rain go down the storm drain.
- Monitoring construction sites to ensure that drift fences are installed to prevent soils from being swept into storm sewers and ditches.

Agriculture Non-point Pollutant Policy Recommendations

- Monitoring the use of stover in cellulosic ethanol production and the effects of the loss of stover on increased erosion and depletion of soil health. Stover, the residue left on the fields after the grain is harvested, includes stalks, leaves and roots; corn stalks, corn cobs and the remains of soybean plants. Crop residues are beneficial for water retention in the soil, serving as carbon storage and providing soil nutrients, plus they keep silt out of our water bodies. The Chapter supports developing standards and guidelines that reduce the effects of stover loss.



Bale of corn stover. Photo credit: Warren Gretz, National Renewable Energy Laboratory

- Preserving land through the Conservation Reserve Program (CRP). As the demand for ethanol has increased, land has been removed from the CRP program. The CRP lands are marginal lands that are idled from farming. Those lands have become habitat for ground-nesting birds. Also, when marginal lands are taken out of CRP and are farmed, those lands are more prone to erosion, which leads to silt, fertilizers and pesticides being deposited in water bodies and affecting water quality.
- Protecting streams with buffers that are not harvested. This is important to protect the streams from silt and to provide wildlife habitat. The Chapter also encourages farmers to adopt no-till farming which keeps silt out of water bodies and to adopt the use of cover crops which reduce the loss of soil and fertilizers.
- Using best management practices to stop agricultural runoff and to decrease the movement of pollutants to water.
- Assigning each watershed an appropriate standard for non-point discharges.
- Verifying progress made in reducing nutrient pollution through an on-going water monitoring program of Iowa's water bodies.
- Implementing the above policies accompanied by aggressive enforcement and stiff penalties for violations.



Stream buffer. Photo credit: Benjamin Curtis

Conclusion

Report a fish kill on a lake or stream to the Iowa Department of Natural Resources. Also report smelly water or discharges of material into a water body. The phone number is 515-281-5918.

By working together, we can reduce the amount of pollutants entering Iowa's waters that will lead to improved water quality.