



25 Wetlands and Runoff

Since wetlands are typically the lowest area on the landscape, they often receive runoff from surrounding land. Several of the key programs that address such pollution are discussed in this fact sheet.

Runoff (sometimes called "stormwater" or "nonpoint source pollution") is caused by rainfall or snow melt moving over and through the ground. Runoff carries natural and manmade pollutants into low areas such as wetlands, lakes, streams, and eventually into ground water. In addition, atmospheric deposition and hydrological modifications can contribute pollutants to runoff as well as directly into surface water. The quality of U.S. wetlands and other water resources is related to the quality of the environment contributing to these waters. However, programs have historically focused on single goals or small sets of goals. These programs have succeeded in identifying and controlling, to some degree, the larger point sources of pollution. EPA has expanded its focus to use an approach that addresses the interconnections between water resources and the land, air, and water environment surrounding the resources.

Untreated Runoff Impacts to Wetlands

Untreated runoff from agricultural land, urban areas, and other sources is a leading cause of water quality impairment. Siltation; pollutants; excess nutrients; and changes to water flows, such as more frequent inundation, and increased turbidity, are responsible for most of the impacts to wetlands from runoff.

Impacts to wetlands have resulted in consequences such as changed species composition, increased pollutant

loadings (e.g., heavy metals), and replacement of complex wetland systems with less desired open water. Modifications of wetlands associated with some runoff management practices have resulted in significant impacts to wetlands. Some impacts have been particularly tragic, such as in Kesterson and Stillwater Wildlife Refuges, where untreated, contaminated runoff resulted in mortality and deformities of wildlife populations, particularly fish and migratory birds.

Current Status

EPA has developed technical information that landowners can use to protect the many functions of wetlands, including water quality improvement. An issue paper highlighting the impacts of stormwater on wetlands, entitled *Natural Wetlands and Urban Stormwater: Potential Impacts and Management*, is available through the EPA Wetlands Information Hotline (contractor operated). Other information that can be obtained includes a guide describing best management practices to pretreat stormwater runoff before it enters a natural wetland (in press). Additional materials on wetlands protection and restoration for nonpoint source benefits will be developed to assist in implementation of the wetlands and riparian areas chapter in the CZARA Management Measures Guidance (see box on page 2). EPA will continue to work to address potential opportunities and conflicts regarding wetlands and programs addressing runoff.



To Use or Not To Use Wetlands for Treatment?

Because wetlands have a natural water quality improvement function, there has been a tremendous amount of interest in using wetlands to treat runoff from urban areas, agricultural lands, and other pollutant sources. However, the critical question is, "What can wetlands safely handle before they are contaminated or their functions degraded?" There are significant opportunities to protect and restore wetlands and riparian areas as one part of programs addressing runoff. While wetlands do provide valuable water quality protection for downstream rivers, lakes, and estuaries, the quality of the wetlands, as waters of the United States, should also be protected.

Decisions that might route runoff into wetlands, either inadvertently or by design, should be carefully evaluated, and adequate wetlands protection should be provided, including avoidance of the wetlands, use of best management practices (BMPs), and monitoring to observe how well the BMPs work.

For additional information regarding the Section 319 program or the CZARA guidance, contact the EPA Nonpoint Source Control Branch at (202) 260-7100.

For additional information about the Section 402 stormwater program, contact the Stormwater Hotline at (703) 821-4823.

EPA Programs that Address Runoff

Clean Water Act Section 402(p)

Section 402(p) requires stormwater permits for four major classes of stormwater discharges: (1) discharges for which a permit has been issued under Section 402 before the date of the enactment of this subsection; (2) discharges associated with industrial activity; (3) discharges from a municipal separate stormwater sewer system serving an incorporated or unincorporated, urbanized population greater than 100,000; and (4) discharges that contribute to a violation of a water quality standard or are significant contributors of pollutants to waters of the United States. This program has issued guidance for preparation of permit applications for regulated municipal and industrial stormwater discharges. In addition, it stresses the use of best management practices (BMPs) to minimize or eliminate the contribution of pollutants to stormwater discharges to waters of the United States, including wetlands.

Clean Water Act Section 319

Section 319 established a national program to control nonpoint sources of pollution. The program stresses a watershed-based approach to nonpoint source management which can include protection or restoration of wetlands and riparian areas to reduce nonpoint source pollution. EPA has funded a number of these projects under Section 319(h).

Coastal Zone Act Reauthorization Amendments of 1990 (CZARA)

Under Section 6217 of CZARA, EPA and the National Oceanic Atmospheric Administration (NOAA) have developed guidance specifying management measures for nonpoint source pollution affecting coastal waters. Included in the guidance (released in January 1993) is a chapter on protection and restoration of wetlands and riparian areas, and use of vegetated treatment systems for nonpoint source control. Coastal States are now developing programs to implement the management measures in coastal areas.

