

Poor Stormwater Management



River Network Collection

One of the greatest problems we must address in our watersheds is stormwater pollution. Urban stormwater pollution carries sediment, oils, grease, petroleum byproducts, materials that wear off brakes and tires, asphalt, metals, pesticides and fertilizers from park and lawn management, and toxic contaminants from industrial facilities. Much of this pollution eventually ends up in the nearest water body.

Stormwater pollution is not only an urban problem. Residential and commercial development has led to polluted runoff problems in suburbs. Even in rural areas, stormwater carries sediment off dirt roads, pesticides and fertilizers off lawns, parks and agricultural land, and fluids and solvents from poorly maintained vehicles and machinery.

There is a high correlation between the area of impervious surface in a watershed and the adverse impacts on receiving waters. The more asphalt, the more pollution and the greater the volume of water discharged into the stream.

Pollutants carried into water bodies by stormwater have negative effects on many uses such as aquatic life, recreation and public water supplies. Sediment is known to be one of the pollutants causing the most damage in aquatic environments, for example, by carrying chemical substances into the water, clogging spawning and feeding areas, causing damage to fish gills, and leading to changes in fish communities.

Unnatural high flows, caused by runoff over increasing amounts of impervious surface, result in significant changes to hydrology and stream channels. These high flows scour the stream banks, remove vegetation (which leads to increased temperatures), carry away large debris critical for fish survival, and reduce the opportunity for groundwater recharge.

Long-term effects of poor stormwater management are very site specific and “are related to habitat degradation, deposition and accumulation of toxic sediments, or the inability of the aquatic organisms to adjust to repeated exposures to high concentrations of toxic materials or high flow rates.” (Pitt, Robert, Ph.D., “Effects of Stormwater Runoff from Development,” *River Voices*, vol.14, no.3)



Using the Clean Water Act

- **NPDES** — Many municipalities and industrial operations are required to obtain NPDES permits for stormwater pollution; construction sites of one acre or more must also have stormwater permits. Check with your state agency about the stormwater pollution permits in your watershed. (Chapter 2)
- **Antidegradation** — Before states can issue stormwater permits that will degrade water quality, an antidegradation analysis must be performed and subjected to public review. In this analysis, the state must examine whether all existing uses and all outstanding waters would be protected, and, to protect high quality waters, whether all alternatives are being considered with respect to their social and economic impact. (Chapter 1)
- **Water quality standards** — Identify the existing and designated uses downstream from municipal or industrial stormwater outfalls or construction sites. Which uses are most sensitive to stormwater pollution? To protect those uses, identify water quality criteria for sediment (total suspended solids), bacteria, heavy metals, petroleum byproducts (PAHs), pesticides, fertilizer, bioaccumulative toxic pollutants, habitat, streamflow and biology. Evaluate whether the criteria are stringent enough to protect existing and designated uses. (Chapter 1)
- **303(d)** — Do the waters downstream of municipal or industrial stormwater outfalls or construction sites in your watershed support uses and meet water quality criteria? If not, or if they are threatened by stormwater pollution, make sure they are on the 303(d) list for the appropriate pollutants, problems and threats. (Chapter 3)
- **TMDL** — Is there a TMDL scheduled or in progress in your watershed? Are poor stormwater management practices included as sources of the impairments? Have changes to the permits and the practices been included in the TMDL implementation plan? If not, encourage your agency to include them. (Chapter 3)
- **Section 319** — This section of the Clean Water Act authorizes money to the states for projects that address nonpoint source pollution. In recent years, 319 money has been available to some municipalities to develop their stormwater program. Ask your state water quality agency how to apply for a 319 grant to reduce stormwater problems in your watershed, especially to address sources that aren't covered by a NPDES permit. (Chapter 6)

- **State Revolving Fund** — Historically, SRF loans have been directed almost exclusively to sewage collection and treatment projects. Encourage your local and state officials to direct these funds to “non structural” stormwater management. (Chapter 7)

Using other laws (Chapter 10)

- **SDWA** (p. 183) — Is the surface water or groundwater downstream of stormwater outfalls or construction sites used or designated for drinking? If so, it is likely that human health concerns will provide leverage to ensure these stormwater problems are addressed. Identify the risks and talk to the agency in charge of developing the Source Water Assessment for your watershed. Be sure that the stormwater pollution risks to drinking water sources are included in the assessment and considered by your drinking water provider.
- **Local Land-Use Laws** — Check your state land-use laws and local ordinances. Look for zoning requirements in your watershed that may be encouraging development practices that harm water bodies and their uses by increasing the volume and toxicity of stormwater runoff (increased impervious surface, encouraging development of contaminated sites). Support growth planning that protects water resources.
- **ESA** (p. 186) — Are there threatened or endangered species in your watershed? If so, you have another tool for protecting against the damaging effects of stormwater pollution. The Endangered Species Act prohibits any activity that would result in harmful impacts to the species or its habitat.
- **RCRA** (p. 185) — This law regulates hazardous and non-hazardous waste cleanup and disposal. Are there hazardous or non-hazardous landfills, abandoned facilities, or waste sources in your watershed? Check to make sure RCRA procedures are being followed and that stormwater management programs and plans take these sites into consideration.
- **CERCLA** (p. 186) — Are there Superfund sites in your watershed? If so, make sure that any stormwater management programs and plans (municipal, industrial or construction) are coordinated with the cleanup plans.