

A Fact Sheet and Action Items for **Stormwater and Us**



Rainfall is a fact of life in Washington. Stormwater is rainfall that falls through a haze of urban and agricultural pollutants along its way to a water way—including fertilizers, pesticides, pet waste, trash, combustion products, oil and other leaky vehicle fluids, and even sediments.

A new hydrologic environment is created when stormwater has no place to go. Stormwater that is retained in open spaces or swales, for example, can

contribute to the restoration of the natural hydrologic balance and help mitigate development impacts.

This fact sheet explores the environmental challenges of stormwater. It is intended to create awareness of the hydrologic effects of stormwater and contaminants in stormwater discharges, and encourage actions to mitigate impacts on stormwater. By the year 2020, it is estimated that 2.7 million more people will live in Washington. That is equivalent to 5 new Seattles or 14 new Spokanes. Currently, more than 30,000 stream miles are blocked to salmon and 70 percent of the estuarine wetlands in Puget Sound have disappeared. To preserve the pleasure of our presence in the natural and built environment, we want to join together to find and enact creative ways to reduce the pressure of our impact on the natural systems we enjoy and depend upon. We all are part of the stormwater pollution problem and we must be part of the solution.

**STORMWATER FACT**



**Impervious surfaces such as pavement and rooftops generate 9 times more runoff than a woodland area the same size.**

**STORMWATER FACT**



**Heavy metals come from "natural" sources such as minerals, rocks, vegetation, and salt. Heavy metals found in stormwater can come from car and truck exhaust, worn tires, brake linings, weathered car paint, and rust.**

A Fact Sheet and Action Items for **Stormwater and Us**



**The Stormwater Fact Sheet and Action Items** is about stormwater and its impact on the environment. It explains how individual and collective choices can make a difference.

It considers the unique qualities and relationships that make stormwater both an important and a challenging problem.

It explains that runoff from streets and transportation corridors can pollute rivers and streams from the flakes of metal off vehicles, particles of vehicle exhaust, bits of tires, and brake linings.

This fact sheet explores the need to change our thinking and actions to address the challenges stormwater presents for us.

It addresses the fact that choices to protect the environment need to be guided by plans that limit runoff and reduce pollutant loadings. Making these choices can be difficult when they impact other quality of life considerations, such as a desire for more roadways and impervious surfaces like parking lots.

**PROPERLY CARED FOR, NATURE** provides many important resources—minerals, timber, and clear, clean water to name a few. Excessive use of our environment can result in diminished enjoyment of our natural resources.

As development occurs, it is important to use and enjoy our resources without damaging them. By controlling the volume of stormwater discharge and keeping pollutants within acceptable levels, development can occur in such a way as

to not damage our waterways. While much progress has already been made in accomplishing this goal, more can be accomplished. This fact sheet will help us understand specific actions, that if undertaken, will help maintain balance between nature and development.

# A Fact Sheet and Action Items for Stormwater and Us



## Development Impacts Natural Hydrologic Flow

When rain falls on trees and bushes, most of it soaks into the ground, is taken up by plants, or slowly finds its way to groundwater, streams, rivers, or the marine environment, often reaching them in weeks or months after it has fallen.

However, when rain falls on impervious surfaces like compacted soil, from roadways, parking lots, pavement, and buildings, a new hydrologic environment is created because the rain cannot soak in. Instead, it quickly moves across rooftops, streets, and parking lots, picking up pollutants as it travels. It reaches rivers and streams within minutes or hours, rapidly increasing flows and washing out streambeds, stream bugs, fish eggs, and little fish.

The rapidly moving water also can actually undercut root systems, erode stream banks, and sweep away the large areas of wood that provide shelter and food sources for animals living in the stream.

Sediments washed into the stream can damage fish gills and smother fish eggs. Chemicals that wash into the stream can poison fish and the bugs they eat. High levels of oils and metals can also poison fish and wildlife. They can harm people too, as well as increase the cost for treating contamination.

## Stormwater Pollutants: Sources and Impacts

A stormwater pollutant is any substance in rainwater runoff that can harm fish and other aquatic life. Contaminants such as vehicle fluids, asbestos linings from brakes, fertilizer, and pet waste wash from impervious surfaces into storm drains. These toxic substances then travel upward by accumulating in the food chain, in

the sediments of aquatic lands, and eventually, on to other species (such as birds) and even humans.

Stormwater can have varying degrees of impact, as in the case of temporary closures of private and public shellfish tracts for harvesting due to a high accumulation of contaminants, or when caution is recommended for water enjoyment activities at public recreational areas.

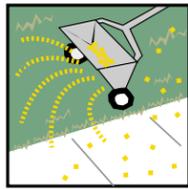
Stormwater also pollutes by changing the pattern of stream flow peaks and lows.

### STORMWATER FACT:

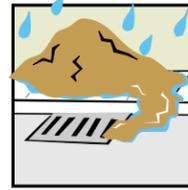


Of the 1,200 species listed nationally as threatened or endangered by the Endangered Species Act, 50 percent depend on rivers and streams. What gets into streams and rivers from stormwater and other pollution sources has an impact on aquatic life.

## WAYS URBAN ACTIVITIES CREATE STORMWATER PROBLEMS



Using pesticides and fertilizers can create serious problems when they wash away into water bodies.



When dirt is unprotected during construction, large amounts wash away and fill catch basins and streams.

## Making a Difference: Everyone can help

Keeping pollutants out of streams is a task that requires new ways of thinking. It involves some steps that are small and some that may be perceived as big changes. This action agenda reflects the need for us to explore and learn more about the way natural cycles are affected by our choices. Whether participating with others or understanding the impact of individual decisions, you can make a difference.

### 1 Individual Actions:

- Recycle your oil and antifreeze.
- Fix automotive lubricant leaks.
- Wash your car at a car wash.
- Save your roof runoff in cisterns for summer watering.
- Keep all waste, including leaves, out of storm drains—don't litter or dump.
- Be informed. Know what pollutants are in stormwater.
- Clean up after your pet. Throw pet waste into your garbage, or better yet, flush it down the toilet.
- Use porous materials for surfacing.
- Avoid using pesticides and fertilizers—consider mulching your lawn.
- Join local watershed groups.
- Volunteer to restore riparian areas.

- Understand and support actions by the state, cities, counties, and districts to address stormwater problems.
- Share this flyer with others.

### 2 Actions for the State, Cities, Counties, and Districts:

- Sponsor household hazardous waste collection days.
- Adopt appropriate streambank buffers
- Promote stormwater education programs.
- Sponsor "Dump No Waste" stenciling.
- Reduce regulatory requirements for impervious surfaces.
- Minimize clearing and grading.
- Require stormwater controls at construction sites.
- Upgrade roads to include swales and other stormwater pollution techniques, especially where a high degree of erosion exists.
- Increase street sweeping with particular attention to very small particles and take advantage of advancement in sweeping technology.
- Adopt and enforce erosion control laws.
- Retrofit road drainage systems to reduce the amount of runoff.

### STORMWATER FACT:



Pesticides found in stormwater include chemicals we buy at home and garden, hardware, and feed stores. Many of these substances linger in the environment. (DDT, banned in 1972, is still polluting streams and sediments in Washington.)

### 3 Actions for Businesses, Industry, and Institutions:

- Plant native trees, shrubs, and low-water groundcovers.
- Use porous materials for surfacing.
- Limit the amount of land disturbance and impervious acres.
- Install stormwater treatment Best Management Practices in parking lots to allow runoff to soak into the soil.
- Ensure that dissolved metals from roofs, buildings, etc. don't get into groundwater and waterways.
- Volunteer to adopt a stream segment in your area or volunteer to stencil storm drains near your business, industry, or institution.
- Be conscientious about taking care of your byproducts.
- Encourage employees to be stormwater friendly at work and home.
- Support local watershed planning and protection efforts.

### STORMWATER FACT:



Rain washes pet waste and its bacteria into storm drains and then pollutes our waterways.