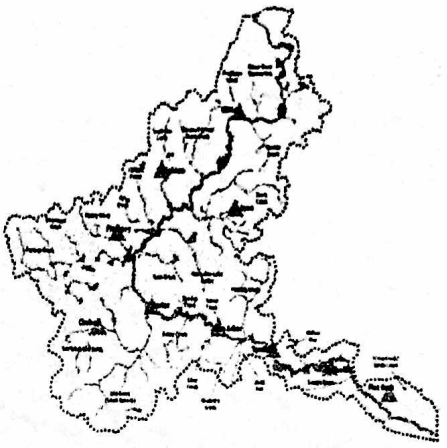
SPRAWL AND THE HURON RIVER



Sprawl ravages our rivers in many ways. It replaces undeveloped lands with roads, parking lots, sidewalks, rooftops, and other impervious surfaces that dramatically increase runoff flowing into rivers and streams. Even small increases in impervious surfaces - as little as ten percent - can have a significant impact on stream health. This increase in runoff alters the shape of streambeds, hastens erosion, carries toxins and excess sediment into our waterways, poisons aquatic plants and animals, and degrades important habitat. Water supply is also a problem that follows fringe development. Cities and towns, desperate for water to serve exploding populations, often pump water from nearby rivers faster than it can be replenished.

As the boundaries of our cities and towns push ever outward, people move too close to riverbanks and into floodplains, manhandling these fragile ecosystems in an attempt to control flooding and prevent erosion. According to the Federal Emergency Management Agency, poor planning and unwise development that destroys wetlands and open space is a principle cause for the increased incidence and severity of flooding in the United States. Floods are most frequent and loss of life and property the greatest in counties that have lost the most wetlands. Nationwide, floods killed 892 people from 1988 to 1997 at an average cost of $4.3 billion per year.

Development of the land can lead to dramatic changes to the way water is transported and stored. Under natural conditions, rainfall is either intercepted by vegetation or percolates slowly through the soil to receiving waters. In urbanizing areas, rainfall that once filtered slowly downhill becomes surface runoff. It flows across compacted earth and impervious man-made surfaces (asphalt, concrete, rooftops) and is channeled into storm drains. This disruption of the natural hydrologic cycle causes stormwater runoff to reach streams and rivers more quickly than these water bodies can absorb it. One effect is more frequent flooding events and lower than normal stream base flows.

Undisturbed forested lands generally have the highest capacity to absorb water and subsequently the lowest rates of stormwater runoff. In contrast, impervious surfaces have the highest runoff rates. The volume of stormwater that washes off a one-acre parking lots is about sixteen times greater than that of a comparable size meadow. For example, the runoff from the meadow during and after a one-inch rainstorm would fill a standard size office to the depth of two feet. If the meadow were paved, the runoff from the rainstorm would fill three entire offices from floor to ceiling.

HOW MUCH PAVEMENT IS TOO MUCH?

Once a watershed becomes covered by 12-15% impervious cover, its streams will experience degradation. As the percentage of impervious cover increases, degradation tends to increase accordingly. A typical single family home usually has at least 5,000 square feet of impervious surface associated with it, including rooftop, driveway, deck, sidewalk and frontage roadway. This means that streams will experience declines at residential densities of about one unit per acre.

(Source: American Rivers Network; 1000 Friends of Washington)