Impacts of Urbanization

In developed areas where land is covered by houses, parking lots, roads, rainwater cannot be absorbed into the ground. Instead, rainwater becomes run-off and is forced to the closest drain-pipe. The resulting run-off is discharged to the nearest body of water and is not properly treated. In areas with increased urbanization, flash-flooding is more common. The increased velocity resulting from flash-flooding erodes stream banks.

Fallen tree from the bank of the Elk Creek.

The base flow (flow not attributed to runoff of precipitation or snowmelt) of streams in more developed areas is typically lower than that in rural areas. As a result, streams in more developed areas cannot support aquatic life. There is a direct relationship between impervious cover and stream health. As the percentage of impervious cover (roads, parking lots, sidewalks, or building roofs, etc.) increases, stream health decreases.

Streams in more developed areas suffer not only from increased flash-flood velocities and low base-flow velocities, but also from increased temperatures, pollutants, and loss of buffers. Typical pollutants found in more developed areas include sediments, nitrogen, phosphorus, oil, heavy metals (zinc, copper, and lead), and pesticides. Excess nutrients (nitrogen and phosphorus) accelerate the growth of algae. The increased growth of algae reduces the oxygen available in the stream, which affects the survival rate of aquatic life dependant on dissolved oxygen.

Where To Get Help **for impacts of urbanization information**

- Chesapeake Bay Foundation; **410-269-0481**; **http://www.chesapeakebay.net/issues/development**
- Center for Watershed Protection; **410-461-8323**; **http://www.cwp.org**
- Several slideshows and other information about the impacts of urbanization are available at the Stormwater Manager's Resource Center; **http://www.stormwatercenter.net**