A Tale of Two Trees-The “Country” Tree and the “City” Tree

You may be familiar with the story of the “City Mouse” and the “Country Mouse,” one of the ancient Greek “*Aesop’s Fables.”* In this story, the country mouse flees back to his quiet life in the woods, to get away from his cousin’s “hard” life in the city. Well, city trees face similar problems but are not able to escape. Urban trees live a “hard” life, surrounded by hard impervious surfaces and urban infrastructure that impact their root systems, and other conditions that don’t have to be endured by their country cousins that live in forested natural rural habitats.

Removal of permanent vegetation such as trees, shrubs, and grasses, by urbanization, increases the amount of runoff into streams and lakes. This rapidly moving runoff creates flooding and transports high levels of sediments, attached pollutants, and dissolved contaminants into our surface waters. Increased runoff also causes streambank erosion, which results in degraded aquatic habitats and the accelerated deposition of sediments into rivers, lakes, and reservoirs. When rain moves rapidly off the land there is no time for recharging soil moisture or maintaining ground water levels.

Urban trees are capable of “hard work” in restoring and providing many important ecological services if they are selected, planted, and maintained properly. Here are some of these services.

- **Non-Point Source Pollution**: Trees, along with shrubs and grasses planted in bio-swales, wetlands, and forested riparian buffers can filter out pollutants as they slow and capture runoff.

- **Stormwater Management:** Conventional stormwater pipes just move the problem downstream, but the re-establishment of natural vegetation throughout a watershed will reduce the amount of stormwater runoff. For example:
  A Northern Red Oak tree with a dbh (diameter at breast height) of 30 inches located in Cuyahoga Falls, can reduce runoff by 3,030 gallons annually.
  To find out how much stormwater your favorite tree can soak up you can use the “I-Tree” calculator available at:
  http://www.treebenefits.com/calculator/ReturnValues.cfm?climatezone=Midwest.

- **Streambank & Steep Slope Stability:** While sod and ground cover hold topsoil in place, tree roots penetrate deeply and spread out, anchoring large blocks of soil. Densely planted trees and shrubs on fragile soils and slopes that are prone to erosion, work to keep foot traffic, bicycles, and motor vehicles from damaging these slopes.

In the current trend of community development we must all realize that what is done by one resident or business can affect the whole community and watershed. The cumulative effects of many individual actions can have significant impact on the overall landscape. We need to understand the value and benefits of urban trees and incorporate them into our personal and community plans so that they have the ability to function properly and provide the maximum stormwater quality and other environmental improvements.

Trees clean the air and water, give protection from the wind, create green space for recreational and educational opportunities, and improve the view from our homes. Tree canopy in urban areas lowers the temperature of the concrete surfaces which would otherwise be heated up by the direct sunlight, and keeps the city scape cooler on a hot day. Trees along streams cool the water, provide food for aquatic organisms, provide food, shelter and travel corridors for wildlife, add structure to the stream channel and stabilize stream banks and steep slopes. It is up to us to incorporate urban trees into our lives so that they can perform their functions and accomplish their "hard" work. For more information on trees and water quality, you may contact your county's Soil and Water Conservation District, (SWCD) or OSU Extension office. You may also contact your local community to see if there is a community arborist available to assist you. Other sources include, Ohio Department of Natural Resources, Division of Forestry, http://www.ohiodnr.com/Default.aspx?alias=www.ohiodnr.com/forestry, the Ohio State University Extension, http://ohioline.osu.edu/for-fact/index.html, the Natural Resource Conservation Service, http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/forestry/, and the U.S. Forest Service, http://www.fs.fed.us/.

Sources include:
United States Department of Agriculture (USDA) National Agroforestry Center
United States Forestry Service
Natural Resource Conservation Service (NRCS)