Environmental Bulletin

National Aeronautics and Space Administration

NASA

Tree Care is Stream Care!

Trees help slow stormwater

Trees perform a number of important ecological functions. In addition to producing oxygen, food, habitat, and shade, trees are an excellent source of stormwater control! Mature trees are capable of intercepting over 1,000 gallons of rainwater each year. Their foliage and bark reduce runoff by diverting rainfall. Their leafy canopies reduce the force of rainwater hitting the soil, which aids in reducing soil erosion.

Riparian buffers, the vegetated areas that surround waterways, are vital to protecting streams from the impact of stormwater pollution. Trees and shrubs that grow in riparian buffers reduce erosion on embankments, slow the flow of stormwater runoff so that it can infiltrate into the ground, help control stormwater temperatures so it won't be harmful to fish or other aquatic life, and filter nutrients and other pollutants that are picked up as stormwater travels over surrounding hard surfaces.

Tree planting tips

If you plan to plant a tree this spring to reduce the effects of stormwater pollution, here are a few tips to ensure that the tree you plant will flourish!
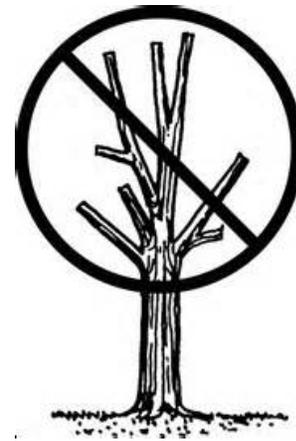
1. **Call before you dig** – Several days before planting, call the national Miss Utility 811 hotline to have the underground utilities located and marked. Utilities will typically be marked within 72 business hours.
2. **Pick the proper place -** Don't plant your tree under power lines, in sidewalk cutouts, or close to buildings or signs.

3. **Pick the proper tree –** Plant a native tree species that will fit and thrive in the places where they are planted. For a list of trees native to Maryland, see links referenced at the end of this bulletin.
4. **Handle with care** – Always lift the tree by the root ball; avoid the trunk or branches. Keep roots moist until planting.
5. **Dig a proper hole –** Dig two to five times wider than the diameter of the root ball with sloping sides to allow for proper root growth.
6. **Planting depth –** The trunk flare should sit slightly above ground level and the top-most roots should be buried one to two inches.
7. **Fill the hole –** Backfill the hole with the soil that was removed when the hole was first dug. Native or nearby soils should be used whenever possible, unless the soils are clay or excessively rocky. If amending soils, use no more than five percent organic matter and make sure that it is thoroughly mixed with the backfill soil. Fertilizer is not necessary. Tamp in soil gently to fill large air spaces.
8. **Mulch –** Allow one to two inch clearance between the trunk and the mulch. Mulch should be two to three inches deep. Once the tree is established, there's no need to mulch. You can leave the tree's fallen leaves in the autumn to keep the soil moist.

Experts agree: Don't top your trees!

To maintain your tree's ability to control stormwater runoff and protect its overall health, avoid tree topping whenever possible. Tree topping is the practice of removing whole tops of trees or large branches and/or trunks from the tops of trees. Tree topping is a common practice performed by utility companies and homeowners when trees have reached an undesirable height. While they believe that topping the tree will lessen the likelihood of falling branches during storm events, it is more likely to have the opposite effect. Tree topping cuts off the tree's leafy canopy and therefore a substantial portion of the tree's food-making potential. Once the canopy is removed, the weakened stubs are more prone to wind and storm breakage, insect damage, fungal decay, and sun damage.

For alternatives to tree topping, how trees help reduce stormwater pollution, and lists of native tree species, refer to the information linked below:

https://www.arborday.org/trees/stormwater.cfm
http://www.arborday.org/trees/righttreeandplace/
http://msa.maryland.gov/msa/mdmanual/01glance/html/trees.html#native
http://www.nps.gov/plants/pubs/chesapeake/pdf/chesapeakenatives.pdf
http://investfromthegroundup.org/why-topping-hurts-trees-plus-alternatives-to-topping-trees/