

Let's not throw out the forest out with the stormwater project

By Barbara Southworth

Tim Wheeler's article, *Stream restoration tactics challenged*, (*Bay Journal*, October) spotlights some of the growing body of published research and citizen resistance faulting the specious application of stormwater management schemes that gut suburban stream habitats in mature forest, reducing them to engineered landscapes with diminished ecological function.

Purported to lessen sedimentation and the nitrogen and phosphorus pollution that contribute to water quality decline, MS4 (short for Municipal Separate Storm Sewer System) programs require urbanized localities to gain pollution control credits for managing stormwater discharge. However, as the *Bay Journal* reported, as "states and localities scramble to meet their obligation for restoring the Bay's water quality" by achieving regulatory requirements to reduce stormwater pollution, localities often rely on the most ruinous options offered by Dave Rosgen's so-called Natural Channel Design system.

Engineering small stream courses, such as the Virginia sites featured in the recent article, that never had flood plains to begin with (according to former Hollin Hills resident and internationally recognized fluvial geomorphologist John Field) indicates that localities and the stream restoration industry fail to properly assess, weigh or protect the full range of ecosystem services provided by the old-age forests they destroy in a contrary application of Clean Water regulations.

Such ecosystem services include cooling stream and air temperatures, storing carbon, filtering pollution, recharging groundwater, enhancing property values, managing storm water and, importantly, supporting natural systems and food webs — not to mention the connections with natural forests that people value and seek out.

Diverse relationships among soil, water, native plants, insects and animals create complexity and stability that is impossible to fully engineer, and they take generational time scales to develop.

Alarmed about "stream restoration" projects contrived with scant regard for the biological wealth they squander, citizen groups are fighting to alert the public and



Rod Simmons, a botanist and outspoken critic of some stream restoration methods, stands in an unnamed tributary of Paul Spring Branch, one of two in the Hollin Hills neighborhood of Fairfax County, VA, that are slated for restoration. (Timothy B. Wheeler)

save cherished forests. We urge regulators, local officials and the stormwater industry to respect existing forest integrity, rethink stormwater management, and access robust systems biology based on actual site measurements and monitoring, not models using inappropriate and inflated reference values from distant and unlike watersheds.

Actual test results from the Hollin Hills stream sites slated for destruction reveal low to very low phosphorus and nitrogen, according to independent testing, as opposed to surprisingly high figures used by Fairfax County, VA. Will sediment transport (or non-existent pollution) decrease once the small headwater stream valley is laid bare, save for seedlings and saplings of a greatly reduced number of species than currently exists there?

Both parks in Hollin Hills are significantly more diverse and higher quality than what has been represented by Fairfax County. Currently, 87 native plant species are found in Goodman Park and 74 in Brickelmaier Park, documented by ecologist Rod Simmons working independently, that weren't discovered by Fairfax County. The number of species proposed for planting is far less, only 15% and 25% respectively of the number found in the parks, some do not exist in the parks. Invasive species have been shown to proliferate after such plantings.

The discrepancy between the plant

communities found in the Hollin Hills parks and the proposed plant list for revegetating the parks cannot be addressed by quantity alone, despite, as reported, the project manager's claim that "plans call for replanting more trees and shrubs than are being removed." As Mr. Wheeler's article indicates, the woodlands' massive oaks and their plant and animal community live in relationships developed over many decades.

Moreover, trees designated as "saved" trees on county plans will surely suffer root zone damage and later death, despite inadequate mitigation efforts, such as root-pruning up to 50% of the arc around the tree up to the trunk, because their proximity to paving and heavy equipment puts them smack in the danger zone.

Contrary to Fairfax County's assessment, the parks do, in fact, shelter forest interior-dwelling bird species, including migrating warblers and wood thrushes. Further fragmenting remaining forest habitat does these catastrophically declining birds no favors.

Among other significant critiques of drastically altering existing streams is the apparent violation of Clean Water regulations prohibiting changing one type of waterway to a different type, as obviously seems the case when forested stream habitat is converted to stormwater sewer conveyance; its form and function are distinct from the original.

To date, the U.S. Army Corps of Engineers has ignored a request to supply information about permitting this variance.

Rosgen's Natural Channel Design methods are not the only way to think about streams. But for all the controversy they have generated, they do include less invasive options, typically not considered when bulldozers and engineers are the tools of the trade dominating stream management plans. Option 4, Stabilize Channel in Place, includes softer, habitat-sparing bio-engineering methods. Think wood to reinforce the existing channel and much smaller equipment, not requiring engineering a new channel from scratch, nor constructing 12-foot-wide roads to clear and grade land and handle imported soils and 1- to 2-ton boulders.

Landscape management practices should not degrade local ecosystems and the co-evolved associations that are their glue, especially in the name of enhancing Chesapeake Bay water quality.

More sustainable development, regulatory and lifestyle approaches are needed to solve the problem of stormwater runoff from impervious surfaces in developed areas, not degrading headwater stream habitat for little Bay benefit. ■

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