



The Policy & Practice of Stream 'Restoration'

Maryland General Assembly
House Bill 942 - Wetlands and Waterways Program
- Authorizations for Stream Restoration Projects

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Rod Simmons

On behalf of the Maryland Native Plant Society

“Wrong Approach for Stream Restoration” [Letter to Editor]

The biggest problem with the so-called natural channel design approach to stream "restoration" in the greater Washington, D.C. region is that it is planned and implemented in completely the wrong places: small order, interior forested, upper headwater streams and wetlands. Natural channel design (Rosgen method) is mainly applicable to large order streams and rivers, especially the kinds one finds in the American west. Applying it to small order, upper headwater stream channels of our area is a misuse of the methodology, a misunderstanding of eastern Fall Zone hydrology and stream geomorphology, a sure recipe for failure, a mismanagement of public funds by inappropriately targeting sediment-control projects in places with low levels of the very nutrients for which funding is based, and an unacceptable loss of irreplaceable native forest, wildlife, and landscape memory...

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Does aquatic wildlife matter? Amphibians, juvenile box turtles, crayfish and other aquatic macroinvertebrates, and fishes like the Eastern Blacknose Dace are particularly healthy and abundant in many upper headwater streams and wetlands. However, most such fauna are intolerant of wholesale disturbance to their habitats caused by stream construction, i.e., “root wad” and streamside forest above, and will perish. Many cannot repopulate sites because they no longer occur upstream or downstream.

March 2012 NCD project along Winkler Run at the Winkler Botanical Preserve, City of Alexandria, Virginia.



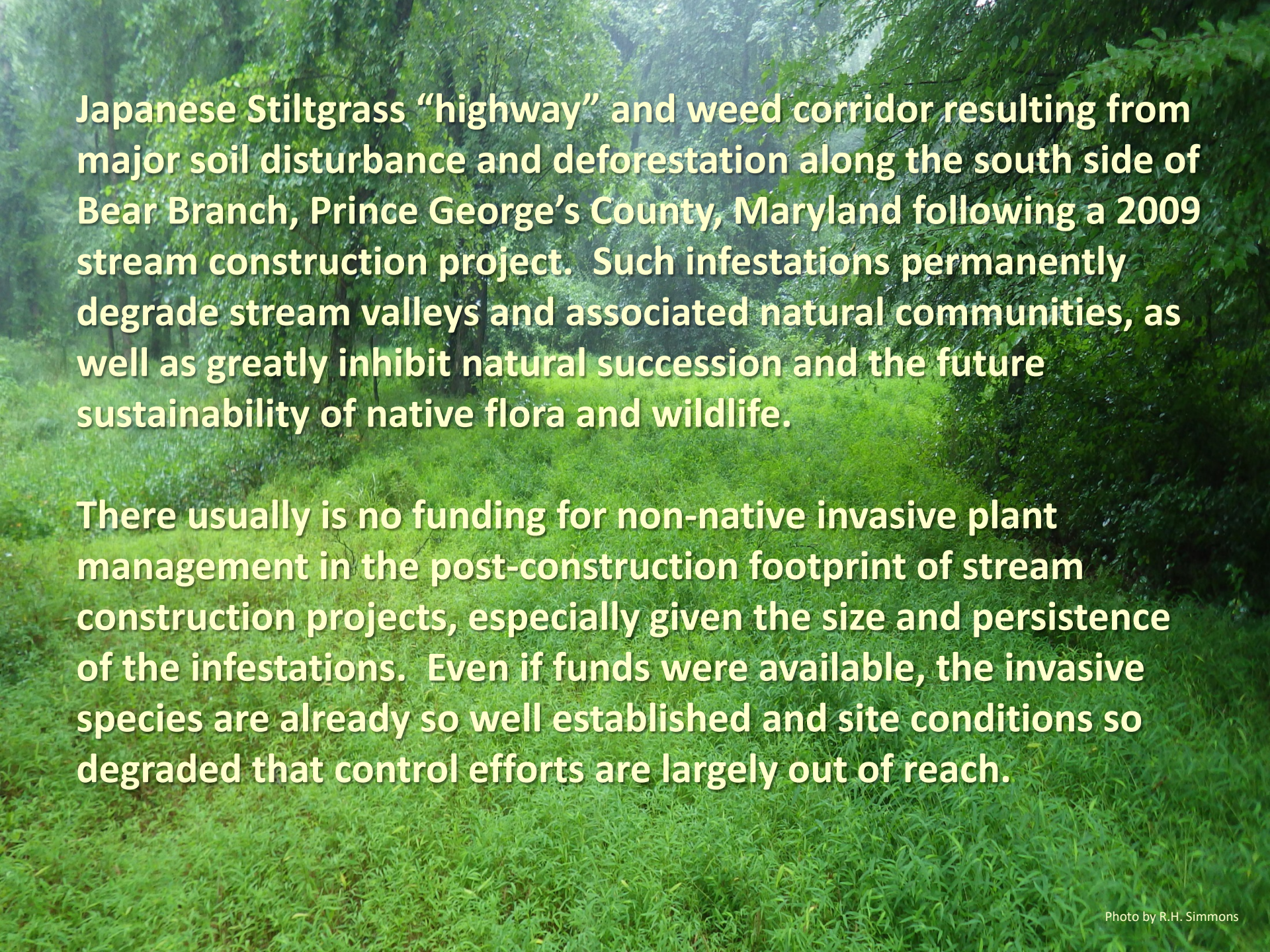
Photo by R.H. Simmons

The same site in July 2017 completely engulfed in Japanese Stiltgrass (*Microstegium vimineum*) and other non-native invasive weeds.



Photo by R.H. Simmons

Stream construction projects are major vectors for the growth and spread of non-native invasive plants that completely engulf sites following major soil disturbance.

A photograph of a forest path. The path is heavily overgrown with a dense carpet of Japanese Stiltgrass, which is a bright green, upright grass. The surrounding trees are lush and green, with sunlight filtering through the canopy, creating a dappled light effect on the ground. The overall scene depicts a natural area that has been significantly altered by human activity, specifically stream construction.

Japanese Stiltgrass “highway” and weed corridor resulting from major soil disturbance and deforestation along the south side of Bear Branch, Prince George’s County, Maryland following a 2009 stream construction project. Such infestations permanently degrade stream valleys and associated natural communities, as well as greatly inhibit natural succession and the future sustainability of native flora and wildlife.

There usually is no funding for non-native invasive plant management in the post-construction footprint of stream construction projects, especially given the size and persistence of the infestations. Even if funds were available, the invasive species are already so well established and site conditions so degraded that control efforts are largely out of reach.

Best practice recommendations to help ensure the preservation and future sustainability of forested stream valleys

Hold central the overarching concept of Do No Harm and for keeping sites natural and causing as little disturbance as possible.

It is critical that all irreplaceable natural resources affected by a stream construction project be thoroughly assessed and considered as necessary environmental review prior to construction. The environmental concerns need to be properly quantified and considered to enable effective resource protection.

All stream “restoration” projects in stream valley forests, where they are typically implemented, are not ecological restoration best practices. They are construction projects for the purpose of converting forested stream valleys and groundwater seepage wetlands into stormwater management facilities.

Adopt the policy that disallows the construction of highly destructive, misapplied stream construction and stormwater management projects in small order, interior forested, upper headwater stream valleys.

It is essential that impervious surface stormwater runoff be effectively controlled before reaching storm drains. Bioretention cells, bioswales, and dry basins are the most effective infrastructure for achieving this.

The careful and *selective* armoring of stream banks and channels with wood, log jams, and snags that mimic natural processes are proven best practice recommendations for stabilizing and helping to restore eroded stream channels. Often, the No Build Option is the best alternative.

Be vigilant in controlling non-native invasive plants along waterways. It is also critical to acquire some funding for large-scale projects to accomplish work out of reach of staff and volunteers.



Thank you!