Stream Restoration: At Woodend Sanctuary, and On Our Minds

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Stream restoration has been a hot topic around the Washington, DC region recently. While some projects are resounding successes supported by their community (such as this one in Davidsonville, MD), others have become much more controversial. At Audubon Naturalist Society, we are in the midst of a stream restoration project at our headquarters at Woodend Sanctuary. And as leaders in clean water advocacy, ANS fights for sound water management and land use policies in our region.

Below is information on how ANS is approaching the topic of stream restoration.

Clean Drinking Stream at Woodend Sanctuary

Before - steeply eroded banks, unstable trees, invasive species, history of extreme deer browse pressure, sediment pollution moving downstream, poor habitat quality.

During - construction of step-pools that will allow water to pool and settle, enhancing aquatic habitat, and slowing pollution downstream. We are using logs from cut trees as part of the restoration.

After - a finalized project using similar techniques. Our project will include extensive native tree and herbaceous plantings. *Photo: Biohabitats, Inc.*

The Nature for All Stream Restoration

The stream restoration at Woodend is stabilizing the banks of Woodend's ephemeral tributary that we call Clean Drinking Stream. Clean Drinking's stream channel had eroded into a 15-foot-deep canyon in some places. This erosion sent hundreds of pounds of sediment and pollutants downstream to Rock Creek, the Potomac and ultimately the Chesapeake Bay. As climate change brings increasingly intense storms to our region, we opted to stop the stream erosion before it got worse.

Even a carefully planned stream restoration like ours results in some tree loss, which is one of the more controversial aspects of stream restoration projects. Trees removed to install stream restoration structures are those directly along the stream banks, many of which have root systems severely undercut by bank erosion. Trees that are being removed are being put to good use on-site as part of log dams that slow water flow. Tree rootballs are being used to create in-stream habitat. The entire restoration area will be planted with 370 native trees, 800 native shrubs and nearly 10,000 native herbaceous plants.

Replanting gives us the opportunity to improve the health of our forest by adding a more a diverse assemblage of native tree species, understory shrubs and herbaceous ground layer plants that have high wildlife value. Overall, our stream restoration achieves major ecological improvement for habitat at Woodend. We have also placed 23 acres of forest at Woodend into a **permanent** conservation easement as part of the stream restoration project.

Stream Restoration Realities

It may take several years for aquatic organisms to return to the restored stream, and decades for planted trees to mature. But stream restoration projects, if done carefully and in the right place, can stabilize eroding banks, return habitat form and structure to stream beds and riparian buffers, allow fish passage where it had been blocked, and reduce sediment and nutrient pollution both nearby and downstream.

We believe responsible stream restoration should provide ecological benefit nearby and downstream (i.e. the Potomac River and Chesapeake Bay); ensure plant and animal communities are surveyed and protected to avoid harm to rare populations; and be tightly coupled with upstream stormwater projects (mostly green infrastructure) to reduce the whoosh of floodwaters into the stream during storms. At Woodend, we are installing raingardens, permeable pavement, and other stormwater management projects to reduce the "whoosh" into our stream. However, it is worth noting that it can be impossible to fully stabilize eroding stream banks with upstream projects, especially in cases like Woodend's where fine clay and silt deposits from past clearcutting and farming have created highly erodible banks.

We agree with the criticism that some stream restorations are not sited, planned and executed as carefully as the project at Woodend. We also know that some stream restoration practices sacrifice more trees than necessary. And we know that incentives for stream restoration to benefit the Chesapeake Bay sometimes lead to restoration projects on streams that are not as degraded as others. But we strongly disagree with calls to completely halt **all** stream restoration in our region.

Learn more about stream restoration in our region:

- Key to stream restoration success: location, location, location | Pollution & Solutions | bayjournal.com. The Bay Journal has written extensively about stream restoration and is an excellent, readable resource. Read more of their articles for free on their website.
- Urban Stream Restoration – Chesapeake Stormwater Network The Chesapeake Stormwater Network provides information and best practices to local governments on stream restoration. These are much more technical than the Bay Journal articles and include webinars with experts you can watch if interested.
- The Capitol Gazette, Baltimore Sun, and Washington Post have also all covered stream restoration successes and controversies over the last 4-5 years.