

HOW TO ESTABLISH AND MAINTAIN A RIPARIAN BUFFER

The photos below show steep, eroded banks composed of old alluvium on a tributary of Pimmit Run. Such areas are often highly erodible. In such instances, the wider the stream buffer provided the better. A wide buffer allows the stream to shift gradually over time. If native plant species are established, their root systems can stabilize soils, slow erosion, compete with non-native plant species and provide significant wildlife habitat benefits.



Charles Smith, Fairfax County's leading expert on stream restoration, offers the following advice about planting the stream buffer and Resource Protection Area (RPA):

- The wider the buffer the better it will be for both the stream and the property owner. Streams naturally migrate. Wider buffers provide greater plant biomass and associated root systems which slow and control stream bank movement and erosion as well providing for better habitat and water quality outcomes.
- Mowing within the buffer should stop right away to promote the establishment of plants and deeper rooting systems.
- Plantings should be composed entirely of species native to Fairfax County as indicated in the [Digital Atlas of Virginia Flora](#). Species should be selected from Fairfax County's [Recommended Tree and Shrub Species for Reforestation of Resource Protection Areas](#).
- Recommended planting densities are given in Fairfax County's Public Facilities Manual, [Table 12.13B](#).
- Newly planted tree and shrub seedlings and saplings should be protected from deer until they are large enough to withstand deer browse, using 4' tall tube protectors or wire fences installed around each seedling.
- The vegetated buffer should be planted in layers:
 - Woody shrub plant species should be planted about 5 feet back from the top of the bank. Recommended native shrub species include smooth alder (*Alnus serrulata*), silky dogwood (*Cornus amomum*), elderberry (*Sambucus canadensis*), southern arrowwood viburnum (*Viburnum dentatum*), swamp rose (*Rosa palustris*), winterberry holly (*Ilex verticillate*) and American hazelnut (*Corylus americana*)
 - Woody overstory plant species should be planted about 10 feet or more back from the top of the bank. Native woody overstory plant species recommended for the condition observed in the photos include river birch (*Betula nigra*), American sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), black willow (*Salix nigra*), eastern cottonwood (*Populus deltoides*), willow oak (*Quercus phellos*) and pin oak (*Quercus palustris*).
 - The woody plant species will need to be protected over several years from deer browse and competition from non-native invasive plant species (see below).
 - Maryland Cooperative Extension Service has published informative [fact sheets on riparian systems](#), including a [Fact Sheet on Riparian Buffer Management](#).
- Control of non-native plant species is highly recommended for the long term health of the stream buffer. In the conditions observed in the photos above, the property owner may wish to consider use of a Virginia certified pesticide applicator using water safe formulations of chemicals appropriate for the target species and applied at the right times of year to control the species. In general, non-woody invasive plant species such as Japanese knotweed may require several applications of a product such as Rodeo or Aquaneet (at concentrations recommended on the product labels) from plant emergence through the period including plant flowering. Woody invasives such as porcelain berry may require several applications of a product such as Garlon 3A (at concentrations recommended on the product labels) from plant emergence through the period including plant flowering. Control of invasive plant species should persist over multiple years to both reduce the abundance and vigor of invasive species and to provide relief from competition for native plant species.

The following local resources in Fairfax County can help property owners plan, select plantings, and fund a riparian buffer restoration that will help protect water quality and their property, while creating wildlife habitat and enhancing the beauty of the riparian area.

- The [Northern Virginia Soil and Water Conservation District](#) provides consultation on erosion problems. Their [Community Assistance Program](#) helps fund individual or community projects to improve water quality and protect properties from erosion. SWCD also conducts an annual seedling sale which is an excellent (and very affordable) source for native tree and shrub seedlings.
- Although there are many local sources of native plants, the primary one is native plant nursery [Earth Sangha](#), which also conducts restoration plantings and can advise property owners. Earth Sangha provides Plant Grants.
- [Plant NOVA Natives](#) provides comprehensive information about [local native plant sales and nurseries](#), as well as recommendations for [native riparian plants](#).
- The [Audubon at Home program](#) advises homeowners on native plants to attract and support wildlife, and certifies properties as Wildlife Sanctuaries. You can [request a visit](#) from an Audubon at Home Ambassador to advise on native plantings appropriate for your yard.