



Woodend Restoration Project Summary

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We humans have radically altered the ecosystems where we live and work, especially in dense urban regions like Washington, DC. Even our parks and preserves are strongly impacted by the intense land use that surrounds them. If nature is to maintain a foothold in our neighborhoods, we will have to lend it a hand. Setting aside open space is a great start, but functioning ecosystems in urban areas will often need human intervention to maintain their health. Such intervention can sometimes seem ironic. For example, why would a nature sanctuary want to exclude deer? White-tailed deer were always part of the fauna of eastern deciduous forests. But they have never been as abundant as they are now. Without any predators, and with an abundance of the “edge habitat” they prefer in our suburbs, deer population numbers have skyrocketed. This has put our native plant communities, and the wildlife that depends on them, in great peril. Recognizing this, the Audubon Naturalist Society has constructed a deer fence at their Woodend Nature Sanctuary as a first step to restoring native plant communities.

Woodend is a 40-acre nature sanctuary 1.5 miles north of Washington, DC. Woodend welcomes up to 60,000 visitors each year. The history of the property echoes the ecological story of the larger landscape of metropolitan DC. With the arrival of Europeans, the land was converted from Native American hunting and fishing grounds to intensive agricultural production as a tobacco plantation. In the 1920s the Wells family acquired the property and hired renowned architect John Russell Pope to design their mansion and estate, now on the National Register of Historic Places. Mrs. Wells followed the horticultural trends of her time and planted exotic species such as Japanese maple. In 1967, she bequeathed the property to ANS. Over the past 50 years, ANS has protected all 40 acres inside the busy DC Beltway, using this urban oasis as a learning center for regional residents and as a field trip destination for thousands of area schoolchildren each year.

The dramatic increase in deer populations across the region has had a devastating effect on biodiversity and habitat quality at Woodend. An ecologically sustainable deer population density should not exceed

20 individuals per square mile for native plant communities to thrive.¹ At Woodend, we have observed up to 29 deer grazing on our 40-acre property, which is over 24 times the carrying capacity. Sadly, as in other natural areas across our region², the forest at Woodend is devoid of its natural herbaceous plant layer and its shrub layer is infested with non-native, invasive species like Asian (amur) honeysuckle, and invasive bamboo at the forest edge. Perhaps even more urgent, as our mature trees age and die, there are no tree seedlings to replace them. Likewise, excessive deer browsing in our meadows has caused the dominance of invasive European grasses over native plants. In addition to the depletion of native plants, the degradation has also caused the loss of ground-nesting and understory-adapted birds at Woodend such as the eastern towhee and the wood thrush, as well as myriad insect communities that support local food webs but require a lush forest understory to thrive. Herbaceous forest layers, currently absent at Woodend, are also important for preventing soil erosion, inhibiting invasive species and providing habitat for species like salamanders.

Excluding deer will result in a dramatic improvement at Woodend Nature Sanctuary, setting the ecosystem on a trajectory of recovery, so that it can be used to further our education and conservation mission. We anticipate that over three years, native biodiversity will increase, while the presence of non-native invasive plants will be greatly reduced. In turn, the restoration of native plant communities will foster the recovery of interrelated environmental systems, including soil health, groundwater recharge and native food webs, in the decade to come. We look forward to a diverse oak-hickory forest at Woodend with tree seedlings to ensure the forest of the future, blooming native spring flowers to support our pollinators, and a rich understory to provide habitat for the birds, salamanders and other species that are struggling to maintain their populations in the urban landscape of Washington, DC.

Small notes: *The inventories that we will conduct on habitats will provide baseline data on species of birds, amphibians, insects and plants at Woodend. The data will allow us to measure and chart the return of species once deer pressure is removed.*

We are hoping to see, among other species, a return of the understory-loving Eastern Towhee and Wood Thrushes, the native bird of the District of Columbia. We also hope to see a giant rise in the number of native butterfly species - just as our friends at Meadowlark Gardens saw butterfly diversity more than double from 21 to 56 species following their deer fence installation.

And did you know that five species of bats have been documented here at Woodend Sanctuary, because of our bio-diversity? Using mist-netting and bat detectors that pick up ultra-sonic sounds, University of Maryland biology students recorded: Big Brown Bat; Little Brown Bat; Tri-colored Bat; Eastern Red Bat; and Silver-haired Bat feeding over the meadows and forests of our protected habitat.

¹ Ristau, T.E. et al, 2012. Deer Can Be Too Many, Too Few, or Just Enough for Healthy Forests, U.S. Forest Service Northern Research Station, Research Review, No. 16.

² DiTommaso, Antonio, et al; "Deer Browsing Delays Succession by Altering Aboveground Vegetation and Belowground Seed Banks;" PLOS ONE, Volume 9, Issue 3, e91155, March 2014.