Press Release 8/1/2008

Cacapon Institute Receives Grant

Cacapon Institute (CI) has received a $48,683 grant from the National Fish and Wildlife Foundation Chesapeake Bay Small Watershed Grants Program. The project is titled: "Failure is Not an Option: Investigating a Cost-Effective Approach to Reducing Deer Damage in Reforestation Programs."

Thousands of miles of riparian (riverside) trees are being planted across the Chesapeake Bay watershed to improve water quality and restore ecosystem functions in our rivers and streams. Where deer are over-abundant, these plantings all too often fail. After documenting severe damage from deer browsing at two WV Potomac Tributary Strategy riparian demonstration plantings, Cacapon Institute (CI) decided to do something about it.

"This project began out of sheer frustration as much as anything," said Neil Gillies, CI's Director. "One of the two demonstration sites had been planted back in 1995, the trees died, it was planted again, but the trees died again. The Tributary Team replanted it in 2005, this time with tree tubes to protect the trees, and here it was failing once more. As the title of our NFWF proposal says, failure is simply not an option. At the end of the day, it is not the number of trees planted but the number of trees we grow that will restore our forests and protect our waters."

With a small grant from WVDEP, CI began a pilot study in 2007 to test a low cost, electric fence approach to excluding deer from tree plantings. The fence design uses a double perimeter of a single electrified wire around each study plot, constructed using temporary fencing materials and a solar charger. Results from June 2007 through June 2008 were very encouraging, indicating that when the fence is properly installed and energized, protection within fenced areas is nearly 100%. The installed cost for the fence is slightly lower than the cost of tree tubes for an acre planting, with the cost: benefit ratio improving more as the size of the planting area increases.

The new, three-year funding from the National Fish and Wildlife Foundation (NFWF) will allow CI to expand the pilot experiment to protect 6,000 linear feet of riparian forest buffer plantings and two acres of upland forest. This project will measure the relative success of fenced and unfenced sites and identify strategic approaches to restoration plantings in areas of high deer density – as in much of the Potomac Highlands. The project seeks to provide valuable scientific data and outreach materials to NGOs and communities across the Chesapeake Bay watershed involved in riparian forest buffer plantings, with the goal to ensure that these restoration investments achieve maximum pollutant reduction and habitat benefits.

The upland forest part of this project has two components: forest restoration and a study of forest hydrology. The restoration part will assess how well CI's fence design works at excluding deer in a forested upland setting. It will measure natural recruitment of valuable native hardwood and other plant species, increase in overall species diversity, and changes to the soil structure of the forest floor. If the results are good, CI will prepare a downloadable "how-to" landowner's guide

to preserving and restoring forested lands in support of Forestry for the Bay's 99,000 private landowners program.

The forest hydrology component of this project started with an observation that has been on the minds of many Potomac Highlands residents: our local streams seem to dry up more rapidly, and rise and fall more quickly, than they did in the past. That kind of stream behavior is typical of urban and suburban areas, not in regions with forest on more than 70% of the lands with well under 5% of the land area developed.

CI believes that overabundant deer may be one of the causes. This is why.

"The dense vegetation layer, presence of tree seedlings, forbs, shrubs, and wildflowers," notes WV Consulting Forester David Warner, "even the accumulation of fallen leaves that forms much of the litter layer on the forest floor, has largely disappeared (in this area) over the past 25 years." CI suspects the cause of diminishing leaf litter is excessive browsing by deer that reduces woody stem density on the forest floor, which results in less of the "roughness" that holds leaves in place -- and allows leaves to blow away or wash off the hillsides. The role that a thick bed of decaying leaves, and good forest soil structure generally, plays in slowing runoff, storing moisture, and cycling nutrients may be diminished as a result. Drier hillsides, more runoff, and less infiltration in turn lead to less groundwater recharge, drought stressed forests, and flashier streams that dry up easily.

The NFWF grant will allow CI to begin a long-term study to determine if exclusion of deer from sections of forest leads, over time, to an increase in leaf litter retention, restoration of a healthy forest soil structure, and an increase in retained moisture.

CI's Director Neil Gillies recently gave a presentation on the riparian fencing study at the American Water Resources Association's premier national conference on riparian issues in Virginia Beach, VA. The talk resulted in partnerships that will expand the fence experiment into Pennsylvania, Maryland, and Virginia, as well as more sites in West Virginia. CI is looking for WV cooperators on this project who have, or will soon have, a riparian tree planting on their land and will make their site available for study, and will help install and maintain the fence.

If the experiment proves successful, CI's cost-effective fencing method will be used to increase success of riparian plantings and allow natural forest regeneration in high deer density areas.

Cacapon Institute is a non profit organization with a mission to protect rivers and watersheds using science and education from the Cacapon to the Potomac to the Chesapeake Bay. More information about CI is available at www.cacaponinstitute.org. More information on this project is available at http://www.cacaponinstitute.org/WVPTS/deerfence.htm

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