



Stewardship Workshop Summary and Resources

Reducing Invasives, Retaining our Trees

Duke Farms, Hillsborough
February 20, 2013

The Sustainable Raritan River Initiative has five areas of commitment for contributing to a better life in the 98 municipalities and 7 counties within the Raritan River watershed. This program addresses our commitment to Stewardship as outlined in our [2009 Action Plan](#) and further described in the [2009 Stewardship Report](#). For more information about the Sustainable Raritan River Initiative and how you can participate in this plan for improving our regional quality of life, visit our Website at www.raritan.rutgers.edu.¹

Program:

Welcome - Dr. Judy Shaw, Director, Sustainable Raritan River Initiative

Panel #1: *Trees Define Our Space* – how to best manage our public trees for aesthetic, ecological and economic values in light of storm risk

- Dr. Jason Grabosky, Rutgers University, Moderator
- Alec McCartney, State of New Jersey Community Forestry Program
- Stephen Schuckman, NJ Certified Tree Expert, Essex County

Panel #2: *Managing Invasive Species* – how to identify, reduce and manage invasive species (including deer) while protecting valuable native plants

- Dr. Rick Lathrop, Rutgers University, Moderator
- Heather Gracie, President, Gracie and Harrigan Consulting Foresters

¹ **Note on Contents:** We recognize that within the policy arena there are competing opinions on deer management, forestry management, invasive species control and what constitutes native or invasive species. To the best of our abilities, we have endeavored to provide a balanced range of sources to assist municipalities and landowners in determining the best solutions to their specific problems.

- Michael Van Clef, Ecological Solutions and NJISST
- Emile DeVito, New Jersey Conservation Foundation

Summary:

Judy Shaw opened the workshop with introductions and a thank you to Nora Wagner of Duke Farms for hosting the event. Nora noted Superstorm Sandy damage – they lost nearly 3000 trees in the core area, but it creates an opportunity to replace with native plants. Glad to offer this introduction to Duke Farms.

Judy then pointed out several key collaborators in the audience – from Sourlands Planning Council, Carolyn Katmann, very active in stewardship, has incentive programs, creating partnerships and partners from the New Jersey Water Supply Authority which is sponsoring the rainbarrel project along the Peters Brook.

The program opened with audience expectations, which included the following:

1. learning about grant applications
2. bamboo farm starting in Millstone and incentives/disincentives for farming
3. long-term forest restoration – especially as regards native transition species
4. estuary remediation and migratory animals
5. help identifying which species are native
6. source for native trees

Panel #1: Trees Define Our Space

[Dr. Jason Grabosky](#), Professor at Cook College, Rutgers University, and Chair of the USDA Forest Resource Advisory Council to the U.S. Secretary of Agriculture, introduced Alec McCartney, NJDEP Community Forestry Program.

Speaker 1: [Alec McCartney](#), Forester, [Community Forestry Program, NJDEP](#)

Alec McCartney discussed the grants available from NJDEP Forestry Program and acknowledged the Shade Tree Commissions' concerns for liability insurance. Forest Management Grants of \$3,000 are available and can be used to hire consultants to write plans. There are also some federal monies and maybe state monies.

Alec proposed a wide range of reasons why “trees are the answer.” His advice is as follows:

1. Create Management Plans. Management Plans are very important and describe where to plant now and where to plant later. How keep forests/trees healthy and in-bounds. Helps to view trees as asset and not liability.
 - Save utility costs
 - Purify the air
 - Protect roads - 2006 study, 40 years in Philly, cooler – less cracking of pavement, etc.
 - Trees and outdoor education – increases test scores – outdoor classrooms
 - Reduce crime by over 20% - most decreases related violent crimes

2. Hire a Good Forester. “Pay me now or pay me later” – more expensive to remove hazard trees in storm conditions than during non-emergency times of year.
3. Track the Value of Trees as a Resource. – Do an economic analysis of the benefits of trees to your community – as a means of presenting the justification to maintain budgets for maintenance and development of your local “green infrastructure.” Bernardsville did it years ago. In Haddonfield Township, there was a bet between the Shade Tree Commission and the Mayor that trees added more value than the ratables in terms of economic benefit to town – and Shade Tree Commission was right! Dr. David Novacs did study on canopy coverage and to get back 30% of canopy, would need to spend \$1500/year every year. For help in economic analysis of trees, use www.itreetools.org.
4. Do Storm Hazard Assessments. [Storm Hazard Assessments](#) are worth doing. Communities can get FEMA dollars for cleanup of storm damage if these are on file. They are an accurate snap shot of the cost of cleanup. Print them out in advance of storms so have copy handy to speed claims/funding.
5. Be Wary of Storm Chasers. Untrained people with a truck and “crew” may offer their services after a storm but can often do more damage if they don’t know how to properly trim damaged trees and may also take your money without doing any work. The [Arbor Day Foundation](#) has information to help avoid pitfalls of storm chasers.
6. Familiarize Yourself with FEMA’s Disaster Assistance Fact Sheet, DAP 9580.204. This fact sheet outlines resources/funding to help communities deal with hazardous trees, limbs, and stumps. This program is mostly targeted to street trees (as opposed to community forests) within 50 foot setback of roads in rural settings. One workshop participant indicated that FEMA also paid for damages along trails in their forest. Alec recommended towns write two applications for storm hazard assessments – one for street trees and one for trees along trails in forests – so they can be handled independently. Towns can use Department of Public Works quotes for removal and disposal calculations. Applications require pre-work in randomizing plots but both Alec and Jason offer assistance on how to efficiently do this.
7. Work With Foresters to Reduce Disease and Sign-up for Alerts from Rutgers and DEP. Haddonfield experienced a 40% canopy loss from bacterial leaf scorch of red oaks, which also affects black and scarlet oaks, with scarlet oaks the most severely damaged. Virginia creeper holds it too. Plant and pest advisory alerts are available through the Rutgers [New Jersey Agricultural Experiment Station](#), the [NJ Forest Service](#), and the USDA [Animal and Plant Health Inspection Service](#).
8. Improve Management Practices of Municipal Woodlands. Wood lots need management. [itree](#), has lots of information there. [No Net Loss](#) & Community

Forestry Program require good management. Can contact Rutgers Extension for Fact Sheet on [How to Hire a Tree Care Professional](#).

9. Participate in State Training Workshops. The [Shade Tree Federation](#) is a net-working group so you can learn from others experiences – recommend people join it.

Speaker 2: [Steven Schuckman](#), New Jersey Certified Tree Expert, Essex County

Steven Schuckman opened by describing a rainstorm in 2006 that in less than 15 minutes, caused over \$100k in damage to trees and property. Under common tree law, it is the responsibility of the party where the tree falls and not who owned it. Shade tree commissions need to work with residents on private tree management and resident responsibilities.

1. Educate on Value of Trees. After Sandy, many are concerned about limiting future damage so Shade Tree Commissions need to educate their communities on the issues and how to address this.
2. Adopt Better Management Practices. We need to promote best management practices. Public Awareness, Education and Involvement and the idea of “No Net Loss” – Consider alternatives; could have a program where if resident doesn’t want to replace tree on their property – they pay into tree fund. Steve recommends a mix of native and hardy street trees such as fringe tree, redbud, *Cornus mas*, serviceberry, hedge maple, some cherries, hornbeams (though they can be hard to find), hardy rubber tree, Katsura, American linden (slow grower), hackberry, yellowwood (salt sensitive). See the [Resources](#) Page at the end of this document for native plant lists.
3. Planting Conditions Are Key. Need to be aware of the planting environment for trees. Strips between sidewalks and curbs may have elevated soil pH from concrete or limestone in the sidewalks or curbing. Need to understand fall transplant hazards of not enough time for roots to settle in/transplant shock. Bare root stock popular in 90s – easy to plant but hard to come by – concerns for shelf life of bare root stock; gravel bed systems are gaining popularity. Ball and burlap requires more labor – heavy. Have municipal crews dig holes, plant and stake B&B trees (make sure to remove burlap/cage and twine). He recommends diversity, avoid or minimize use of exotics, and monitor for invasives.

Discussion:

A brief discussion followed the presentations and it was suggested that the shade tree commissions reach out to local high schools that are often looking for ways for their students to engage in community science projects; Advanced Biology or Environmental Science programs can do some of the engagement. Also, check out the [Native Plant Society of New Jersey](#) for information on native species. There was a call for Jason and Alec to do a workshop on how to get funding, budget and defend what STCs are doing.

It was also mentioned that trees are highly valuable in flood-prone communities for the amount of water they intercept.

Panel #2: Managing Invasive Species

Dr. Rick Lathrop, Director of the Grant F. Walton Center for Remote Sensing & special Analysis and Professor at Cook College, Rutgers, introduced the next panel to talk about managing invasive species.

Speaker 1: Heather Gracie, President, Gracie and Harrigan Consulting Foresters

Heather Gracie helps develop forest management plans – including baseline/inventory and then determines improvements. She addresses age, species, invasives, pests, how to restore, wildlife aspects/habitats and overall objectives in her plans.

1. Identify Invasives. Over the past 20-30 years, she has seen many newly emergent non-native species in the woods – growing in lower light conditions where they usually didn't thrive. She focused on these: Japanese angelica tree, Linden viburnum, Siebold viburnum, Oriental pythonia, Common and Glossy Buckthorn. (Refer to the [Resources](#) page at the end of this document for more information on Invasive Species.)
2. Reduce Invasives starting with Deer. The key to controlling invasives is early and rapid response. Japanese stiltgrass is very complicated to remove. Deer overpopulation exacerbates invasives problems because deer eat natives. Heather showed a picture of lesser celandine which easily spreads through water courses. She highlighted several management strategies for controlling invasives such as cutting off and bagging berries before birds can spread them around, and application of basal herbicides. See the [Resources](#) page for more information.
3. Deer Population Reduction is Key. Deer eat our native understory; there needs to be a strong deer management effort. Once an area is free of invasives, it has to be replanted – but if the deer aren't controlled, it will revert to invasives once the understory has been removed by the deer.
4. Learn About New Management Practices. She suggested consulting with the [NRCS New Jersey](#) to work on eradication, fencing, and maintenance as a unified approach to invasive species control.
5. Create a Plan and Organize Volunteers. Inventory assessments are key. Volunteers need to get out and identify plants and look for stem density. Common options for controlling invasives include mowing, plant removal, herbicides, and sometimes prescribed burns. The actions taken will depend on field habitat and available resources including lots of volunteers. She noted groups like the Boy Scouts will get involved if there are Eagle Scout Project opportunities.
6. Work Regionally with Neighbors. Getting invasives under control is a collaborative neighborhood approach that includes landowners and

stakeholders. Educational outreach, such as using interns and GPS to identify locations, is key.

7. Involve Farmers. The [NJ Forest Stewardship Program](#) – related to Farmland Assessment Program – refunds landowners up to 75% of the cost of new or revised Forest Management Plans. Plans can address imputed activities, invasive plants control, trail maintenance, etc.
8. Select Native Species. Native species will have stronger survival rates because they are adapted to local soil and climate conditions. In selecting replacement species –be mindful that many in the ornamental horticulture trade don't distinguish between natives and non-natives. See the [Resources](#) page for native species lists.

Speaker 2: [Michael Van Clef](#), Owner, Ecological Solutions, and Science Director, New Jersey Invasive Species Strike Team

Mike Van Clef from the New Jersey Invasive Species Strike Force spoke next.

1. What are we protecting and what is the point? Mike pointed out that invasives are a problem because we want to protect natives and that any efforts will be futile if we do not address the deer. Deer preferentially eat native plants, and natives can only compete with invasives if deer are controlled.
2. Get Educated through the Strike Team. Mike urged everyone to become involved with the [Strike Team](#). Can get help from Strike Team Field Stewards. Print off and use "[Do Not Plant List](#)" and "[Watch Lists](#)."
3. Map Your Space. A map feature on the Strike Team Website allows users to build an interactive Invasive Species Map. Information can then be downloaded to GPX, Excel, or KML for planning purposes.
4. Know the Invasives. The most threatening species are large shade tolerant shrubs and some aquatics:
 - Oriental phytonia
 - Common buckthorn
 - Siebold's viburnum
 - Butterfly bush
 - Japanese clematis
 - Callery pear
 - Hydrilla
 - Brazilian waterweed
 - Rock snot
 - Water chestnut
5. Use Controls Cautiously. To use foliar spray properly, the applicator *must* be licensed. One example is *Japanese angelica*. For that, don't cut, but use basal bark sprays on trunk being careful to keep the spray off background plants and away from water/wetlands.
6. Adopt Accepted New Management Practices. To control stiltgrass (which is difficult) requires restoration of at least two layers of canopy in woodlands. This will create deep shade. Stiltgrass cannot survive in the lower level of light.

Speaker 3: [Emile DeVito](#), Manager of Science and Stewardship, New Jersey Conservation Foundation

Emile DeVito spoke about the loss of species from the loss of habitat.

1. [Sensitive Bird Populations Rely on Our Woodlands](#). Emile cited warbler migrations that were once limited to places like the Princeton Woods, but now trees are everywhere so these birds are dispersed. He added a little jab at feeding birds in urban areas as good for Cooper's Hawks, but not critical to the survival of most common species of birds.
2. [Improve Bird Habitat in Your Woodlands](#). For native bird food and habitat he recommended Serviceberry – especially in areas that are losing oaks – it is a much smaller tree, so not a replacement – but it offers three seasons of landscape interest (spring/blossoms, summer/berries, fall/colorful foliage). He also mentioned *Nyssa sylvatica*, Hackberry, Willow oak (which is also susceptible to bacterial leaf scorch and shows damage but doesn't usually succumb to it), Hornbeam, and American sycamore, which attracts gnat for warblers. He illustrated the need to focus on special habitat with the case of Bull Island State Park. Bull Island is a habitat area for a specific subspecies of yellow throated warblers. This subspecies is not ranked as an endangered or threatened species, so the one area where they found suitable habitat in NJ is not protected. The entire stand of sycamores on Bull Island that provide food and shelter for the warblers may be cut down because of a tragic accident involving the death of a camper from a falling tree.

He pointed out that diversity of trees in urban and suburban settings will provide habitat for plenty of animals but will not necessarily provide sufficient habitat to sustain and expand populations for threatened bird species. And so he encouraged us to pay attention to how to enrich that habitat as we move forward.

3. [Protect Your Forests from Deer](#). When there are small forests that can be fenced, fence them. Edison Light State Park – forest on soil never farmed – always wood lot. If you go to places that have never been plowed, invasive species populations are not as bad as areas that have been plowed. It is good to return post-agricultural soil to wood lot –if it can't be fenced, engage the support of neighbors to help cull the deer herd. [Historical land surveys from 1870 and 1880](#) identified older woodlands.
4. [Habitat: Bird Versus Deer](#). Emile voiced concerned about bird populations and recent conversations to raise deer populations in the Pine Barrens and Highlands. He mentioned that Bill Zipse from NJDEP did a study of red-headed woodpecker habitat and the concern for long-term decline in oak regeneration because of deer browsing. The Fish and Game Council focus needs to encompass biodiversity. Vulnerable species like Atlantic White Cedar need to be protected.

5. Soils Need Attention. He also emphasized the need to restore soils. When floodplains are restored, the soils need to be restored so the soil has the ability to drain properly and help reduce runoff. He also addressed soil compaction issues that discourage proper drainage and affect the overall ecology of a forest.

Resources

Native Plants

Plant Conservation Alliance, <http://www.nps.gov/plants/index.htm>.

The Native Plant Society of New Jersey, <http://www.npsnj.org/index.html>

The Native Plant Society of New Jersey, *Nurseries with Natives*,
http://www.npsnj.org/plant_lists/Nurseries%20with%20Natives.pdf.

United States Department of Agriculture, Natural Resources Conservation Service, Plant Database, <http://plants.usda.gov/java/>.

United States Fish and Wildlife Service, *Native Plants for Wildlife Habitat and Conservation Landscaping*, <http://www.nps.gov/plants/pubs/chesapeake/>.

Invasive Species and Diseases

Center for Invasive Species and Ecosystem Health, Biological Control of Invasive Plants in the Eastern United States, <http://www.invasive.org/eastern/biocontrol/>.

New Jersey Department of Environmental Protection, New Jersey Forest Service, *Forest Health in New Jersey*,
http://www.state.nj.us/dep/parksandforests/forest/njfs_forest_health.html.

New Jersey Department of Environmental Protection, New Jersey Invasive Species Council, *New Jersey Strategic Management Plan for Invasive Species*,
<http://www.nj.gov/dep/njisc/docs/Final%20NJ%20Strategic%20Management%20Plan%20for%20Invasive%20Species%2011.09.pdf>.

New Jersey Invasive Species Strike Team, *Do Not Plant List*,
<http://www.njisst.org/files/DoNotPlantList.pdf>.

New Jersey Invasive Species Strike Team, <http://www.njisst.org/index.htm>.

New Jersey Invasive Species Strike Team, *Target Species Spotlight*, <http://www.njisst.org/target-species-spotlight.asp>.

Plant Conservation Alliance's Alien Plant Working Group, *Least Wanted: Alien Plant Invaders of Natural Areas*. www.nps.gov/plants/alien/factmain.htm.

Rutgers, The State University of New Jersey, New Jersey Agricultural Experiment Station, *Plant and Pest Advisory*, <http://plant-pest-advisory.rutgers.edu/>.

Southeast Exotic Pest Plant Council, *Invasive Plant Manual*, www.se-eppc.org/manual/.

United States Department of Agriculture, Animal and Plant Health Inspection Station,
<http://www.aphis.usda.gov/>.

United States Department of Agriculture, Forest Service, Eastern Forest Environmental
Assessment Center, <http://www.forestthreats.org/>.

United States Department of Agriculture, Natural Resources Conservation Service, New Jersey
Website, <http://www.nj.nrcs.usda.gov/>.

Deer Management

Deer in Balance, <http://deerinbalance.org/>.

New Jersey Deer Management Assistance Program, NJ Division of Fish and Wildlife,
<http://www.state.nj.us/dep/fgw/dmap.htm>

New Jersey Department of Environmental Protection, Division of Fish and Wildlife, *White-tailed
Deer in New Jersey*, <http://www.state.nj.us/dep/fgw/deer.htm>.

New Jersey Department of Environmental Protection, Division of Fish and Wildlife, *Community
Based Deer Management Manual for Municipalities*,
http://www.state.nj.us/dep/fgw/pdf/cbdmp_manual.pdf

United States Forest Service, Northeast Area, Forest Health Protection – Invasive Plants,
http://na.fs.fed.us/fhp/invasive_plants/weeds.

Forests

i-Tree, United States Department of Agriculture, Forest Service,
<http://www.itreetools.org/index.php>

Million Trees New York City, <http://www.milliontreesnyc.org/html/about/about.shtml>.

National Woodland Owners Association. <http://www.woodlandowners.org/mission.aspx>.

New Jersey Department of Environmental Protection, Division of Parks and Forestry, Community
Forestry, *New Jersey's No Net Loss Reforestation Act*,
http://www.nj.gov/dep/parksandforests/forest/community/No_Net_Loss.htm.

New Jersey Department of Environmental Protection, Division of Parks and Forestry, Private
Lands, Forest Stewardship Program,
http://www.state.nj.us/dep/parksandforests/forest/stw_inc_prog.html.

New Jersey Department of Environmental Protection, Division of Parks and Forestry, Community
Forestry Program, Information for Municipalities,
[http://www.state.nj.us/dep/parksandforests/forest/community/Information for Munic
ipalities.html](http://www.state.nj.us/dep/parksandforests/forest/community/Information_for_Municipalities.html).

New Jersey Forestry Association, <http://www.njforestry.org/>.

New Jersey Shade Tree Federation, www.njstf.org/.

New Jersey Tree Foundation, www.newjerseytreefoundation.org.

New York State Department of Environmental Conservation, Urban and Community Forestry
Website, <http://www.dec.ny.gov/lands/4957.html>.

- Philadelphia Water Department, Trees and Stormwater (vast site!),
[http://www.phillywatersheds.org/whats in it for you/residents/trees](http://www.phillywatersheds.org/whats%20in%20it%20for%20you/residents/trees).
- Rutgers, The State University of New Jersey, New Jersey Agricultural Experiment Station. Fact sheets, bulletins, and courses on forestry management.
<http://njaes.rutgers.edu/environment/>.
- Rutgers, The State University of New Jersey, New Jersey Agricultural Experiment Station. *How to Hire a Tree Care Professional*,
<http://ocean.njaes.rutgers.edu/garden/documents/HowtoHireaTreeCareProfessional.pdf>.
- Society of American Foresters, Landowners and Public, <http://www.eforester.org/lp/index.cfm>.
- United States Department of Agriculture, Forest Service, State and Private Forestry, Urban and Community Forestry Program, <http://www.fs.fed.us/ucf/>.
- United States Department of Agriculture, Forest Service, State and Private Forestry, Urban and Community Forestry Program, *Piedmont Community Tree Guide: Benefits, Costs, and Strategic Planning, December 2005*,
[http://www.fs.fed.us/psw/programs/uesd/uep/products/2/cufr_647 Piedmont%20Tree%20Guide.pdf](http://www.fs.fed.us/psw/programs/uesd/uep/products/2/cufr_647_Piedmont%20Tree%20Guide.pdf).
- United States Department of Agriculture, Forest Service, State and Private Forestry, Urban and Community Forestry Program, <http://www.fs.fed.us/ucf/>.
- United States Department of Agriculture, Forest Service, State and Private Forestry, Urban and Community Forestry Program, *Piedmont Community Tree Guide: Benefits, Costs, and Strategic Planning, December 2005*,
[http://www.fs.fed.us/psw/programs/uesd/uep/products/2/cufr_647 Piedmont%20Tree%20Guide.pdf](http://www.fs.fed.us/psw/programs/uesd/uep/products/2/cufr_647_Piedmont%20Tree%20Guide.pdf).

Other Resources

- Arbor Day Foundation, <http://www.arborday.org/index.cfm>
- Federal Emergency Management Act, Documenting and Validating Hazardous Trees, Limbs and Stumps,
<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=5482>
- Federal Emergency Management Act, Public Assistance Debris Management Guide,
<http://www.fema.gov/pdf/government/grant/pa/demagde.pdf>
- New Jersey Department of Environmental Protection, Division of Water Supply and Geoscience, *Historical Topographic Manuscript Maps of C.C. Vermeule Around 1870-1887*,
<http://www.state.nj.us/dep/njgs/enviroed/vermeulemaps.htm>
- Rutgers, The State University of New Jersey, Edward J. Bloustein School for Planning and Public Policy, Sustainable Raritan River Initiative, *Stewardship of the Raritan River Report, November 2009*, http://www.raritan.rutgers.edu/agenda/Raritan_Stewardship.pdf.
- Rutgers, The State University of New Jersey, Edward J. Bloustein School for Planning and Public Policy, Sustainable Raritan River Initiative, *Reclaiming the Raritan: a Restoration and Sustainable Reuse Plan. The Sustainable Raritan River Initiative Action Plan, December 2009*, <http://www.raritan.rutgers.edu/agenda/finalplan.pdf>.

United States Department of Agriculture, Forest Service, State and Private Forestry, Urban and Community Forestry Program, *Piedmont Community Tree Guide: Benefits, Costs, and Strategic Planning, December 2005*,
http://www.fs.fed.us/psw/programs/uesd/uep/products/2/cufr_647_Piedmont%20Tree%20Guide.pdf.

United States Department of Agriculture, National Agroforestry Center,
<http://nac.unl.edu/index.htm#about>.

United States Department of Agriculture, Natural Resources Conservation Service, United States Department of Agriculture, Forest Service, State and Private Forestry, Urban and Community Forestry Program, <http://www.fs.fed.us/ucf/>.

For More Information

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Photo sources: Bernardsville-Bedminster Patch, Joan Ehrenfeld, Metuchen Shade Tree Commission

