

In This Issue

- 2 Association News
 3 Congratulations New CNPs
 3 Welcome New Members
 3 U of D News
 5 The Myth of the Messy, Weak, Native Plant
 7 Rain Garden Demonstration
 9 Creating a Native Plant Container Garden
 11 Ideas, Design and Native Plants
 12 Using an Air Spade to Bare-root Large Trees
 13 Backyard Wildlife Habitats
 18 *Baptisia australis* - 2010 Perennial Plant of the Year
 19 Why You Should Be a Leader
 21 Cyrtomium - Production and Care
 22 Sustainability, Stormwater and the Landscape
 28 The Power of Networking
 30 Listen Up!
 31 Busy is Not Always Good
 32 Research Briefs
 40 Pesticides/IPM
 41 Publications
 42 Calendar

Board of Directors

Executive Director	Valann Budischak	888-448-1203
Past President	Wendy Rezac	734-2060
President	Joe Wick	653-9000
Vice-President	Dan Bailey	376-9113
Treasurer	Aaron Jackson	858-7841
New Castle County Rep	Debbie Mulholland	328-3716
Kent County Rep	Rexene Ornauer	734-2060
Sussex County Rep	John Wiest	629-8799
Directors-at- Large	Bruce Paulish	653-9336
	Jay Windsor	875-2457
	Norm Hedrick	284-9677
	Evan Wrede	734-2060
	Tom Taylor	831-2160
Board Support Members	Susan Barton	831-1375
	Tracy Wooten	856-7303
	Jeff Brothers	698-4500

Editor: Susan Barton, Extension Specialist, University of Delaware

The DNLA Newsletter is produced with the assistance of University of Delaware Cooperative Extension.

ASSOCIATION NEWS
Valann Budischak
Executive Director, D.N.L.A.

This is unbelievable! The green industry just doesn't seem to get a break. We plowed our way through the winter; a mixed blessing for many of our members. Now we're dealing with the lackluster economy and a DRY, very DRY, HOT summer. Hang in there. We will prevail!

The Summer Turf & Nursery Expo is just around the corner – Thursday, August 19th. Remember, this event rotates between Sussex and New Castle County. This year's event will be held at East Coast Garden Center in Millsboro. Treat yourself to a much deserved day of education and camaraderie.

NEW & IMPROVED TOP 10 REASONS TO ATTEND THE DNLA SUMMER TURF & NURSERY EXPO

1. You deserve it!
2. It's a great opportunity to take a much-needed breather from the blur of the summer.
3. Visit with exhibitors – see their products and new equipment. You may not have had time to go to their place of business. Now they're coming to you.
4. Try the equipment. That's why our exhibitors bring it.
5. Visit with industry friends.
6. Great speakers and hands-on topics are a great way to learn.
7. East Coast Garden Center is a great facility. Come see for yourself.
8. Obtain a couple of pesticide credits and a nutrient management credit.
9. If you're going to sweat anyway, you might as well have fun doing it.
10. WEVE GOT GOOD FOOD!

Topics for this year's event are as follows:

Tropicals that Pack a Punch

Incorporating tropicals into the residential or commercial landscape can pack that extra punch for your customers while adding dollars to your business.

Dan Benarcik, Chanticleer

Container Combinations

Plants that play well together in great-looking containers.

*Valery Cordrey Karen Fox, Katie Ditmer
East Coast Garden Center*

Let's Build a Rain Garden!

Learn the "how-to's" from Delaware's pro and visit East Coast's rain garden

Lyle Jones, DNREC

Great Landscapes Using Dynamic (Pest/Disease Resistant)

Plants – Garden Center Walking Tour

Take a guided stroll through the garden center and be introduced to plants that make great additions to the landscape.

Susan Barton, University of Delaware

An Introduction to Vertical Gardening

You've heard about green roofs. How about green walls?

Michael Coraggio, EcoWalls, LLC

Registration forms have been mailed and are also available on our website

www.dnlaonline.org Please join us for this fun-filled day. It's guaranteed to be a good time!

Hope you're remembering to keep the Landscape Awards in mind throughout the summer. Applications will be mailed in the beginning of September. The deadline for entries is September 28th. We encourage any/every member to submit an entry!

Congratulations New CNPs:

Sue Jernberg
Sposato Landscape Co.
Landscape Specialist

Wayne Jester
Sposato Landscape Co.
Landscape Specialist

Welcome New Members:

New Castle Lawn & Landscaping of Delaware

Jerry Alexander
3 Banff Court
Bear, DE 19701
(302) 547-1279

Outdoor Design Group

Rich Crouse
P.O. Box 670
Bear, DE 19701
(302) 834-8032

Priority Services

Nick Del Duco
1280 Porter Road
Bear, DE 19701
(302) 918-3070

Rain Designs

Bernie Henry
P.O. Box 575
Dover, DE 19903
(302) 344-3334

U of D NEWS **Susan Barton, Extension Specialist**

Sustainable Landscaping at UD. About 50 people learned saw firsthand how the University of Delaware is implementing sustainable landscape practices on campus and in research projects on Friday, June 19. The day began with some background information on how the industry can use this current hot topic to market their businesses. Growers were encouraged to expand the plants they grow to include native species, plants for green roofs, bioswale plants etc. Many sustainable practices focus on using plants rather than engineered solutions for landscape problems, such as stormwater management. That's good news for the green industry! This new trend also helps growers focus on a specialty. Gone are the days when large growers can be everything to everyone. It is better to get really good at growing and **MARKETING** one type of plant.

Sustainability offers opportunities for landscapes as well. For a long time, the standard default landscape in public and private settings has been vast expanses of cool season lawn. While lawn is an important landscape feature and useful for traffic flow, recreation and as a carpet to set off the rest of the landscape, it supports very little biodiversity and in some cases can be replaced by better functioning ecosystems, such as meadows, woody old fields or forests. These landscapes cannot just be allowed to "be let go." That will result in ugly thickets of invasive plants that do not support the biodiversity we were aiming for in the first place. If we replace large expanses of mown turf with managed ecosystems, someone will have to manage them. The green industry can provide that service. In fact, professionals in the green industry can market themselves as land managers much better than most. In the same way it required trained professionals to implement IPM in place of calendar cover

sprays; it will require trained professionals to manage diverse landscapes in place of unskilled grass cutters who cut the lawn weekly. Traditional management is based on repetitive actions that happen on a weekly or calendar basis. Progressive landscape management requires the manager to evaluate each site and make decisions about when management actions are required. Of course, there are general guidelines for when meadows should be mowed and invasive plants controlled. But, these guidelines must be adapted for each site and for each year. Meadow mowing should be more frequent (2-4 times/year) in a wet year vs. a dry growing season, for example.

This change in the way we landscape won't happen overnight. It will require a concerted effort on the part of the nursery and landscape industry, the public garden community, university educators, garden writers and others. When gardeners and homeowners start to see landscapes comprised of something other than foundation plants and lawns, they will become more familiar with the aesthetic. Familiarity will result in more requests for this type of landscaping and landscape management. By developing an expertise now, landscapers can be ahead of the curve and ready to provide those services when they are requested.

There are a number of marketing or promotional programs currently available promoting good landscape plants. American Beauties Native Plants (<http://www.abnativeplants.com/>) was developed by several nurseries and is sponsored in conjunction with the National Wildlife Federation. The Plants for a Livable Delaware program provides a series of booklets--Plants for a Livable Delaware, Controlling Backyard Invaders and Livable Plants for the Home Landscape--(<http://ag.udel.edu/extension/horticulture/index.htm>) for distribution to the gardening public.

There are lots of good resources to help nursery and landscape industry professional focus on a specialty in sustainability.

The Sustainable Sites Initiative (<http://www.sustainablesites.org/>) is an interdisciplinary effort by the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center at The University of Texas at Austin and the United States Botanic Garden to create voluntary national guidelines and performance benchmarks for sustainable land design, construction and maintenance practices.

The Sustainable Landscapes page on the University of Delaware Botanic Gardens website (<http://ag.udel.edu/udbg/sl/>) has lots of good information and links to many more fact sheets.

A new virtual tour of UD Sustainable Landscapes is posted on the main UD Sustainability webpage (<http://www.udel.edu/sustainability/doing/landscaping/index.html>). Rebecca Pineo's latest effort allows you to see sixteen different sustainable sites without leaving the comfort of your computer chair. But, there is also a map to help you find the sites and see sustainability in action.

Finally, Valann Budischak has been working hard to implement the specialty crops research project. We are working with three nurseries (The Sterling Nursery, Forest View Nursery and the UDBG Container Nursery) to evaluate underused native plants in various production systems. The same plants have been planted in three landscapes to evaluate adaptability and consumer perception. All plants were installed this spring and Val has been taking data monthly.

THE MYTH OF THE MESSY, WEAK NATIVE PLANT

Steve Windhager, PhD

**Director of Landscape Restoration and the
Sustainable Sites Initiative
Lady Bird Johnson Wildflower Center**

Headed into work several years ago, I found myself following a group of visiting members from the Houston Garden Club into the Lady Bird John Wildflower Center. As they passed along the front entry walk and into the courtyard, I heard many exclamations over the architecture, the beauty of the Center, and interest in specific plant species. I continued following the group to better understand how they experienced the Center's native plant gardens. We passed the Hill Country Stream, a meadow, then a small woodland garden, and finally entered into our demonstration gardens when I heard the visitors' remark, "Oh, HERE are the gardens." In my mind, they had spent the last fifteen minutes walking through gardened spaces. But these spaces, at least to this audience, were not perceived as being part of a horticultural landscape. I believe that most appreciated the beauty of what they had seen, but because the style of gardening was so unlike what they were familiar with, they could not recognize spaces with a naturalistic design style as anything other than wild.

Over the years I have thought a lot about that experiences and how we native plant enthusiasts try to promote native plant use in horticulture. Big and large, because many of us come to our love of native plants from a passion for wild spaces, our garden designs tend to resemble nature. Many wonderful botanic gardens around North American have done the same, developing prairie, woodland and wetland gardens while continuing to rely on plants from other parts of the world for more formal gardens. In this way, I believe we native plant enthusiasts have been our own worst enemies. This naturalistic style

has become so associated with native plants that many people feel natives will not work in other design styles, as if the plants that come from the local environment are less appropriate to a more formal style than those from southeastern Asia. Partly because of that, native plants have remained a niche market, with minimal expansion into the general horticultural trade.

The bias against native plants extends to claims about performance, weed resistance, and hardiness that are not based on reality, but instead on the history of how we have used these species. Much native plant use has focused on long-lived perennial species of native grasses that are often quite slow to establish. Therefore, many assume that all native plants are slow to establish. Similarly, because plantings of some species are easily invaded by non-native weeds, many assume that all native plants are uncompetitive weakling, ill-suited to harsh environments. Our research on roadsides calls both of these myths into question.

When we asked our Department of Transportation why they used non-native plants to revegetate roadsides, they told us that the native plants grew too slowly. We took this as a challenge and compared their standard revegetation seed mix to a mixture of native grass species that were all commercially available and to another mix that included commercially available species as well as a number of native grasses not yet commercially available. The commercially available native seed mix had 150% greater vegetative cover than the standard mix at 30, 60 and 90 days. The native mix that included species not yet commercially available had 450% greater vegetative cover. Clearly, you use the right native species, you can get quick cover.

Similarly, when the Texas bluebonnet (*Lupinus texensis*) was being overrun by a non-native

mustard (*Rapistrum rugosum*) on our roadsides, we tested whether competition could do what herbicide could not. While herbicides were effective at controlling *Rapistrum* in the short term, the native wildflowers were also affected. Also, the non-native mustard can quickly become herbicide resistant, requiring frequent shifts in chemical use to control it. We noticed that where the native wildflower, Indian blanket (*Gaillardia pulchella*) occurred, there was no problem with the non-native mustard, and there continued to be good populations of bluebonnets. We over-seeded areas with high populations of the mustard with Indian blanket and were able to reduce mustard biomass and seed set without adversely affecting native species.

We also looked at native plants in another challenging environment: green roofs with only four inches of growing media. While many green roofs feature non-native sedum species, we wanted to try native plants in this difficult environment. Our initial efforts failed because we selected the wrong type of plants. Since we wanted plants that could endure the hot and dry periods on green roofs, we initially selected extremely drought-tolerance plants, and with the first rainfall and the development of prolonged saturated soil conditions, many species rotted out. When we tried this again, we put native species from ephemeral creek environments (of which there are a lot in Texas), and we had high levels of success.

And yet despite the statistics, despite what I feel is rather compelling evidence, native plants remain in the minority because they are still perceived to be “mess.” Although visitors often leave the Wildflower Center with the impression that it is a beautiful place, too many think that the beauty, and the native plants that made it beautiful, would be inappropriate in their home landscape because of the naturalistic design style.

But this assumption that native plants can only be used in naturalistic designs is utterly false. Issue Four of *The Public Garden* from 2009 profiles a number of native gardens at public gardens throughout the country. The Homeowner Inspiration Gardens at the Wildflower Center incorporate a classic formal garde and a traditional residential yard using Texas natives, and we are in the process of redeveloping and adding new gardens featuring a variety of design styles.

And studies have shown that you can have high-quality wildlife habitat in gardens of many styles. It doesn't have to look like habitat. Douglas Tallamy from the University of Delaware has shown that native plants used in a typical suburban landscape have greater wildlife use—by both insect and bird species—than do similar landscapes composed of non-native plants.

Recently we worked on a prairie restoration project as part of the redevelopment of a former airport in Austin, and the homeowners became so excited about it that they wanted to use these same native species in their landscapes. We showed them how to do this in a way that would fit in with the suburban character of the development. In parkland areas we created large swaths of single species displays, so that each species made a more powerful statement, but the garden as a whole still contained over thirty species. Using large swaths of a single species in this way actually makes it easier for pollinators to find the plants. These plants are also still building soil, sequestering carbon, and often providing habitat or food sources for a wide range of wildlife. The homeowner's association loved it, and now it is pretty common to see a variety of native plants arranged in formal beds in the front yards of many of the homes. While one yard might only include four or five species, this multiplied on the scale of a residential block can result in

much higher levels of diversity. The individual homeowner gardens are part of the larger prairie restoration project because their plants are exchanging pollen, providing nectar sources and generally expanding the populations of the prairie species.

These examples make the case that native plants complement any type of garden design. The challenge for us as horticulturists and designers is to break free of the traditional myths surrounding native plants and to use them in novel and exciting ways in our gardens, so that we can inspire others to do the same. Gardening is still an activity primarily inspired by beauty, and the public garden community (as well as the nursery and landscape industry) can lead the way in showing how native plants make beautiful gardens regardless of design style. And they provide conservation-friendly beauty and a regional sense of place without contributing to invasive species problems.

Contact Steve Windhager at
steve@wildflower.org

Reprinted from *The Public Garden*, Issue 4,
2009.

RAIN GARDEN DEMONSTRATION PROVIDES VALUABLE EDUCATION Kevin Tungesvick, Restoration Ecologist Spence Restoration

In spring of 2008, the Hamilton County Soil and Water Conservation District (SWCD) began a dual purpose rain garden project at the Hamilton County Fairgrounds in Central Indiana. The rain garden was designed to accept additional storm water from the impermeable surface of a new barn's roof and served as part of a new backyard education program to promote native plantings and storm water management techniques. To accommodate the water from 10,500 square feet of roof area resulting from a 1-inch rain event, a depression measuring 20 feet wide, 50 feet long and 18 inches deep was excavated. After tilling the soil, the area was planted with the following mix of native grasses, sedges, and wildflowers:

Nodding wild onion (*Allium cernuum*)
Marsh milkweed (*Asclepias incarnata*)
Blue False Indigo (*Baptisia australis*)
White Turtlehead (*Chelone glabra*)
Pink Turtlehead (*Chelone oblique*)
Purple Coneflower (*Echinacea purpurea*)
Bottle Gentian (*Gentiana andrewsii*)
Autumn Sneezeweed (*Helenium autumnale*)
Blue Flag (*Iris virginica shrevei*)
Dense Blazing Star (*Liatris spicata*)
Cardinal Flower (*Lobelia cardinalis*)
Great Blue Lobelia (*Lobelia siphilitica*)
Smooth Beardtongue (*Penstemon calycosus*)
Floxglove Beardtongue (*Penstemon digitalis*)
Mountain Mint (*Pycnanthemum virginianum*)
Black-Eyed Susan (*Rudbeckia fulgida speciosa*)
Riddell's Goldenrod (*Solidago riddellii*)
Wrinkled Goldenrod (*Solidago rugosa*)
Golden Alexanders (*Zizia aurea*)
Yellow Fox Sedge (*Carex annectans xanthocarpa*)
Crested Sedge (*Carex cristatella*)
Frank's Sedge (*Carex franki*)

Lance-fruited Oval Sedge (*Carex scoparia*)
Fox sedge (*Carex vulpinoidea*)
Prairie Dropseed (*Sporobolus heterolepis*)

Plants were purchased in 2 3/8" wide by 3 3/4" deep open bottomed pots that had been inoculated with beneficial mycorrhizal fungi at the nursery to aid in establishment in the disturbed soil profile of the rain garden. They were installed in two different planting zones. The most wet-tolerant species were installed in the bottom of the basin, while the slopes and lip of the basin were planted with species that require better drainage. Central Indiana typically receives 39 inches of rain per year, with the wettest months occurring from April through July—so there were times when the bottom of the basin would be inundated or saturated for periods up to several weeks.

This planting occurred in mid-May, 2008 by five SWCD staff member, taking them nearly a full day to install nearly 1,000 plants. They used a 2.75-inch planting auger powered by a drill to excavate holes for each plug. A 2-inch layer of shredded hardwood mulch was applied to the entire planting area. Shredded hardwood is the best organic mulch for use in bio-retention as it has the least tendency to float. Downspouts from the one side of the nearby barn were routed through 4-inch flexible drainage tile into the rain garden while downspouts on the other side entered to garden through a swale. The following spring, medium-sized stones were placed in the garden at the two locations where water entered, as several storm events had begun to cause erosion.

Plants were installed as mixed communities within the two zones. The grasses and sedges were spread throughout to help provide benefits such as erosion control and soil cover. Installing plants as a mixed community was important to this project for a number of reasons:

- Mimics the stability of a natural community resulting in lower maintenance (*Editor's note: see previous article for a slightly opposing view to this bullet*)
- If one or two species turn out to be poorly adapted to the site, their demise would not lead to large bare areas as would happen with monocultural sweeps.

Plants were irrigated for a couple weeks following planting. Heavy rain in June, 2008 eliminated the need for further irrigation and the garden has not been irrigated since that initial establishment period. The large area of the barn roof provides a thorough soaking even in a light rain, but it also drains completely in less than 24-hours after a typical rain event. Most of the plants were fully mature during the second growing season in 2009. Nearly all the wildflower species flowered prolifically, attracting butterflies and providing color throughout the growing season.

The next step was to use this garden successfully for public outreach:

- SWCD held an education field day at the rain garden.
- Spence Restoration Nursery has featured the garden in each of the past two years as part of their annual tour for land planning professionals titled "Native Plant Communities in the Commercial Landscape."
- Homeowners visit the garden when they attend events at the Fairgrounds.
- The garden has been advertised widely in Hamilton County as a publicly accessible demonstration project.
- Educational signage was installed by the SWCD to help establish the site as a demonstration area.
 - Three signs describe the rain garden's purpose, function, and benefits.

- Five more signs have photos and details of each plant species in the garden.
- The signs are all-weather and full-color.
- The garden has been included in a list of demonstration rain gardens open to the public that was compiled for Backyard Conservation, a newsletter published by the Hoosier Heartland RC&D, an organization promoting conservation in the Indianapolis metropolitan area.

For more information, contact Kevin Tunesvick, at Spence Restoration (765)286-7154 or Kevin@spencenursery.com.

Excerpted from *Land and Water*, March/April 2010.

CREATING A NATIVE PLANT CONTAINER GARDEN

Shawn Overstreet

Nine years ago, Rancho Santa Ana Botanic Garden (RSABG) renovated a dated home demonstration garden. The clay soil was infested with fungal pathogens and few plants survived more than a few years before having to be replaced. The Home Demonstration Garden is RSABG's most popular rental facility for special events and weddings and must continue to serve that function. The Garden chose to reinvent the space as the California Native Plant Container Garden. Since opening to the public in 2006, it has been both a horticultural success and a hit with the public.

A concern with the infested soil, combined with the RSABG's explicit mission to promote California native plants, led naturally to the concept of a native plant container garden. The open space of a container garden would also nicely accommodate its continued use as a facility to host special events. The container garden provided:

- a place to display plants that were otherwise too small, too rare, or too delicate to be planted out on the grounds amongst the rest of the living collection.
- an area to showcase the research being done by the faculty and their doctoral students in the Research Department.
- an opportunity to broaden the audience of people to whom growing native plants might appeal to seniors and those living apartments and condominiums who may have previously dismissed native plants as inappropriate for their situations.

Occupying approximately a quarter of an acre, the Container Garden currently consists of a sixty-six taxa in fifty-nine containers. Container shapes vary considerably, but average around fifteen gallons in size. The garden's bold

structural design elements and proximity to a major pathway combine to make it one of the most popular destinations for visitors. It consists of several “rooms” that create a feeling of intimacy while still leaving much of the footprint available for table or chair setup for special occasions. The space inspired a local floral designer to create two permanent arrangements of gnarled grape trunks that now welcome visitors. An unintended consequence of the smaller, more formal design dictated by the use of containers is that the garden has become a welcome counterpoint to the larger naturalistic plantings that predominate elsewhere at the Botanic Garden.

The Container Garden presents an obvious opportunity to educate visitors about how to grow native plants in pots. RSABG offers the community regular classes on native plant container gardening as well as a special class on making your own “hypertufa” trough containers out of perlite, peat moss, and cement. Every single species counts building soil, sequestering carbon, and often providing habitat or food sources for a wide range of wildlife. It is now pretty common to see a variety of native plants arranged in formal beds in the front yards of many of the nearby homes. While one yard might only include four or five species, this multiplied on the scale of a residential block can result in much higher levels of diversity. This garden helps make the case that native plants complement any type of garden design. The challenge is to break free of the traditional myths surrounding native plants and use them in novel and exciting ways to inspire others.

Excerpted from *The Public Garden*, Issue 4, 2009.

IDEAS, DESIGN, AND NATIVE PLANTS

A. Scott LaFleur

“It is so beautiful here. I wish I could use these plants in my yard, but.....” Comments like this were at one time common at Garden in the Woods, a native plant botanic garden in Framingham, Massachusetts, owned and operated by the New England Wild Flower Society. The Garden, among the first and considered one of the best native plant gardens in the country, was founded by Will Curtis in 1932 to “bring all the wildflowers and ferns hardy in this latitude and establish them in natural environments where they can be easily reached and enjoyed by the interested public.” His goal was to have “their likes and dislikes discovered and the knowledge so gained eventually passed on in an effort to curb the wholesale destruction of our most beautiful natives. This is to be my contribution to conservation.” Using the diverse glacial terrain of the garden, he recreated habitats and displayed native plants in the conditions they favor in the wild. His approach drew accolades and fervent supporters, but did not build a clear bridge to the needs of the suburban/urban homeowner.

As Garden in the Woods approached its seventy-fifth anniversary, it was time for change. Enter W. Gary Smith, a landscape architect and environmental artist who agreed to collaborate on an anniversary exhibit, “Art Goes Wild: Innovation with Native Plants.” The premise was to break new ground in how native plants are used and viewed, and in the process break the old idea of them as messy, wild, and unfit for the designed landscape. The exhibit yielded some truly amazing horticultural and environmental art displays. From floating gardens to flying saucer gardens and a subtle serpentine log sculpture, they presented native plants in a completely different light. The biggest and longest-lasting impact of the exhibit

emerged from Gary's idea to create a negative space using a turf grass alternative. This enabled us to encourage the destruction and reduction of lawns and highlight the benefits of using native groundcovers. An Idea Garden centered on a *Carex pennsylvanica* "lawn," showcases innovative uses of native plants in a designed setting and complements the naturalistic plantings for which Garden in the Woods is known. The Idea Garden is rooted in traditional New England values-it has a well-kept, tidy appearance; it is a colorful and seasonally interesting garden that is not too flashy; it is frugal; and it is eco-friendly. Traditional cobblestone edging made from New Hampshire granite defines the bed lines and creates a sense of formality. A fenced patio overlooking the sedge lawn provides a sense of home and family. Benches and chairs are arranged with containers of native plants to facilitate conversation and provide a respite for visitors. The patio is the setting for innovative container gardening alternatives, such as pitcher plants in hanging garden baskets. With differing shapes, sizes, and colors of foliage and blossoms, native plants work beautifully in patio pots. Container gardening with native plants also presents opportunities for creating mini-habitats and for growing plants people might not be ready to see in their yards. The Pennsylvania sedge lawn offers an alternative to grass and gives the area texture and beauty without the need for chemical fertilizers, excessive water, and constant care. This lawn elicits most of the comments-visitors either love it or hate it, but it does make them aware of the far-reaching environmental impacts of turf grass. The Idea Garden borders are populated with native plants that offer changing seasonal color, texture, and shapes. The design intent was to create bold patches of color and texture with repeating elements, such as the *Betula alleghaniensis* and *Ilex opaca* hedge. This beautiful landscape is also a functioning ecosystem, providing food and habitat for insects, birds, and other animals.

Here the plants are staked and primed and fussed over more than in any other part of the Garden. This tidy and arranged planting resonates with homeowners and makes them feel more at ease with using native plants not only for beauty, but also as part of a functioning ecosystem. The green roof on one cottage in the Idea Garden is a dynamic alternative to asphalt roofing. It provides a great way to reduce impervious surfaces, create more insect and bird-friendly habitat, and get people thinking about the environmental impacts of buildings on the landscape. The green roof also functions as a testing ground for what native plants can be grown in such extreme conditions. Woven through the Idea Garden are many interesting concepts and ideas. The living or composting fence is an idea Gary Smith brought to us from a friend in Texas. Using leaves to create a fence and shredding leaves to use as our mulch are easy and environmentally sound, yet both practices take many visitors completely by surprise. The impact of the Idea Garden is evidenced by comments of visitors, which changed from "I wish I could do this" to "I can do this at home." The concept of using native plants in a home designed landscape is also fostering in people a deeper understanding about why it is important to conserve our native flora. Visitors see how what they do in their personal ecosystem can have an effect on the wider world-another concrete example of "think globally and act locally." The Idea Garden enriches Will Curtis's dream of passing on the love of native flora "in an effort to comb the wholesale destruction of our most beautiful natives" and is one of the New England Wild Flower Society's many contributions to conservation,

Excerpted from *The Public Garden*, Issue 4, 2009.

Scott La Fleur can be reached at slafleur@newenglandwildorg.

USING AN AIR SPADE TO BARE-ROOT LARGE TREES

**Dr. Tom Fernandez, Associate Professor
Department of Horticulture
Michigan State University**

There has been renewed interest in transplanting large bare-root trees since one of the original roots system is usually harvested, staking is often unnecessary, ease of handling lighter trees without a soil ball, easy identification of trunk flare for replanting at the proper depth, and post-transplant performance is often better. Of course, there are drawbacks as well: increased postharvest care is necessary to keep roots moist, long term storage is difficult, and improper soil removal can cause more damage to roots than other harvest techniques. Even so, it is a technique to consider in general, but especially for unusual situations where tree spades and other equipment can't be used and the plant is valuable.

The air spade is a relatively new tool that can be used for, among other uses, bare-root harvesting of nursery stock. The air spade is a tube with a trigger and a special nozzle that is attached by a hose to an air compressor to provide a jet of high velocity air to remove soil from the root system of trees without damaging the roots. For Tom Fernandez's nursery management class, the MSU staff moved a weeping white pine (*Pinus strobus* 'Pendula') that had been planted in 1980. The structure of the tree would not allow a traditional tree spade to be used since its main branches extended primarily to one side of the trunk. It would not have been possible to center even a 90-inch spade around the trunk without removing most of the branches.

The tree was dug on September 22, 24 and 25 during three class labs. It took a total of about 6 hours to dig, but that included explaining the procedure to the class and letting students use

the air spade. In between lab sections, the exposed roots were covered with moist burlap to prevent desiccation. Most of the roots were exposed after about 2 ½ hours of digging. Several large "sinker" roots that mainly provided anchorage were cut but most of the root system was harvested. The air spade was used to trace horizontal roots quite a distance from the trunk to harvest as many roots as possible. Once all the roots were exposed, the trunk was wrapped in burlap for protection and the roots were covered with moist burlap until it was time to lift. The final process included removing the burlap and then using a fork lift on a front end loader to lift the tree and carry it to an open bed truck for transport. The tree was secured and covered with a tarp to prevent wind damage. Roots were recovered with moist burlap for the move. The tree was planted in about an hour using the air spade to move soil into good contact with the roots.

Excerpted from *The Michigan Landscape*TM,
January/February 2010.

BACKYARD WILDLIFE HABITATS
Greg Eaton, Department of Horticulture,
Virginia Tech
Barbara Wright, Department of
Horticulture, Virginia Tech

The area where an organism lives and meets its basic needs for food, water, cover, and space to survive is called its habitat. Each species of wildlife has different habitat requirements.

As residential and commercial development by humans continues to expand, wildlife habitats in the affected areas are altered and may become unable to support the needs of species that previously occupied those areas. Alternatively, species that are better adapted to metropolitan conditions may increase their presence and abundance as a direct result of this development. The actions we take on our own properties can have a significant effect on the various species that share this habitat with us. One way we can enhance the natural features we have in our yards, neighborhoods, towns, and cities would be to create enjoyable and environmentally friendly backyard habitats.

Beauty and Increased Property Values: Many plants, shrubs, and trees that benefit wildlife also are attractive to people. Having a variety of plants adds interest to your yard and helps protect against drastic changes caused by insect pests and plant diseases. The beauty and health of your yard add to the value of your real estate.

Value for Wildlife: Each species has different requirements so you need to provide diversity in your habitat if you hope to attract a variety of species. Further, wildlife will fare better where habitats provide most of the food, water, and cover they require in one area, minimizing the amount of travel they need to do.

Environmental Benefits: Well managed backyard habitats can save energy, protect the

soil, and improve water and air quality. Vegetation reduces the temperature extremes of heat often associated with urban areas, and when plants are located appropriately they can help cool our homes during the summer and reduce heat loss in the winter. Trees and other plants hold soils in place during rain and wind, reducing the amount of sediment and contaminants that enter water bodies. Plants improve air quality by filtering particulates and removing carbon dioxide from the air, replacing it with oxygen. Plants enhance our privacy and reduce dust and noise from road traffic. These effects are especially noticeable in developed areas. Plants make towns and cities more comfortable and pleasant places to live, for humans and wildlife.

Insect Control: Many species of wildlife, especially birds, eat insects. This is a great way to deal with annoying pests! Depending upon the species of wildlife you attract to your habitat, you may reduce the need to use certain harmful chemicals.

Habitat for Humans: Creating your own backyard habitat brings nature into your home range, offering opportunities to learn, enjoy, and pursue hobbies like bird watching, drawing, and photography right in your backyard.

Low Maintenance: For easier maintenance of your wildlife habitat landscapes consider using native plants. Native plants are adapted to local weather and soil conditions, they better resist local insects and diseases, and they provide foods that are familiar and timed to the life cycles of the animals in the region. Using native plants also reduces the potential for introducing invasive exotics that can cause serious problems to existing native populations. As invasive non-native plants spread, they may crowd out and compete with natives, causing some wildlife to lose their preferred food sources.

Functional and diverse habitats on your property are very likely to attract the animals you desire. However, it also is likely that you will attract species that you did not anticipate. Without careful planning or management some of these species may become pests. Very often, property owners will encounter snakes that have been attracted to the new abundance of insects or small mammals that have prospered in your new habitat. Other predators (e.g., hawks, owls, foxes, coyotes) may respond to and take advantage of prey populations that have increased in abundance and density. Free-roaming species, like raccoons, opossums, or skunks, may find your yard very attractive due to the food resources it now provides or the cover it affords. They also may find the garbage can, the open garage or storage shed, or the space below your deck to be an attractive resource, too. Herbivores like deer and rabbits may cause significant feeding damage to plantings if you do not take precautions. All wildlife species are protected or regulated by statute; they cannot simply be eliminated on a whim if you find a particular species to be objectionable.

Careful planning can reduce potential problem species, but increasing habitat diversity increases the probability of unexpected consequences. While this may be a part of the allure of backyard habitats, you should be prepared to deal with unexpected problems in a responsible way.

To help prevent unwanted animal attention to your house, yard, and garden keep those areas tidy. Keep brush or woodpiles away from the house or garden. Don't leave pet food or garbage outside and keep areas under houses and porches cleared and sealed when possible.

The Four Basic Wildlife Needs: Food, Water, Cover, and Space

Food: Each species has its own nutritional needs, which may change from one season to another and with the age or reproductive status of the animal. Well-planned plantings in a backyard habitat can provide a variety of foods, such as fruits and berries, grains and seeds, nuts and acorns, browse (the twigs and buds of shrubs and trees), and forage (grassed and legumes). Flowering plants provide nectar as well as seeds and fruits. Some plants have greater value because they hold their seed or fruit well into the fall or winter when other food sources already are depleted. Insects and other invertebrates, attracted to flowers, shrubs, and trees, also provide food for wildlife.

Water: Water is essential to all forms of life. Protect and enhance water sources. If you lack readily available water sources, you might create an artificial pond or use birdbaths. Many species of wildlife obtain the water they need directly from the food they eat, but a good drink of clean water is always welcome. Birdbaths should be no more than three inches deep and have a rough, sloping bottom to provide good footing. Heated birdbaths provide water when most other sources are frozen. Ponds should have shallow edges so that small animals can drink without danger of falling in and drowning.

Cover: Trees, shrubs, grasses, and flowering plants provide shelter or cover for wildlife, as do rock piles, brush piles, cavities in trees, and birdhouses. Wildlife use cover to protect themselves from the elements, to hide from predators, and to rest or sleep. They also use cover for nests, dens, and rearing their young. Cover also helps animals maintain temperature and conserve energy reserves by offering protection against cold winter winds and inclement weather, as well as providing cool shade during hot summer months.

Space: Many species of wildlife are territorial, which means they will defend an area that contains the food, water, and cover resources they need. Species that are not territorial simply live in a resource-rich area that allows them to perform their daily functions and successfully find food, water, and cover without overt competition. The amount of space needed for a territory or home range varies with the species, the quality of the habitat, the number of other competitors, and the time of year. Have you noticed that many birds are solitary or paired in summer and flock together in winter? Keep in mind that the territories and home ranges may include, but often extend beyond, your yard.

Why are you doing this and what do you really want to achieve?

It is very important to think carefully about what you want in your yard, in terms of wildlife and other uses or values, before you undertake any on-the-ground actions. What are your goals? Do you want to focus on just a few species or attract as many species as possible? What species have you already seen in your yard? What species are present in other parts of your community that might be enticed to your property? Keep in mind that you will be managing the habitat, not the wildlife species themselves. Do you want increased privacy, exciting views of gardens or flowering trees from your windows, a protective windbreak against cold north winds or shade for south-facing windows during summer? Make a list of your specific goals for your habitat and then prioritize them. Recognize that you can create suitable habitat for wildlife while achieving a landscape that also meets your needs. Make a master plan and then implement it in phases as finances and time allow.

Take Inventory.

Make a sketch map of your yard and draw in all the physical features (e.g., buildings, septic tanks and fields, power lines, driveways). Then, locate the existing plants, trees, hedges, and

other vegetation you wish to keep. It is not necessary to remove existing plantings, start with what you have and add other materials. Include on your map important features of neighboring lands, such as a pond, a stand of big white pine trees, or a rock wall. Remember, habitat is not confined by your property lines, so you should think as wildlife do and see the opportunities that exist nearby. Add other helpful information, such as soil and light conditions (wet, dry, shady, and sunny areas) to your map. Identify soil types and find out if there are nutrient deficiencies (consider having a soil test performed through your county Extension office).

Principles of a Backyard Habitat

Form and Function: When choosing plants to use in your yard, consider the function or role they will play as well as the form or appearance they offer. Will this plant provide food or shelter? Will it add diversity to the habitat? Since you may have limits on what you can plant because of the size of your yard or the cost of plant materials, try to select plants that fulfill more than one habitat function.

Plant Diversity: Diversity or variety promotes a healthy landscape and attracts a more diverse wildlife community. Keep in mind that habitat diversity includes both species and structural diversity of the plants that form habitat, as well as a variety of nonliving materials. The presence of many plant species makes it less likely that insects or disease will cause severe problems. Having a variety of trees, shrubs, perennial and annual flowers, and grasses in your yard also may attract a more varied wildlife community. With careful planning, a diverse plant community can provide a wide selection of food and cover options for wildlife, as well as reward you with a year-round variety of aesthetically pleasing views as the plants flower or fruit at different times.

Ecotone is the zone of transition from one habitat to another. The wider the zone and the greater the diversity of plant species and vertical structure, the more diversity there will be in the species of wildlife attracted to the site.

The shape and size of different plants combine to create horizontal and vertical structure in your landscape. You can think of horizontal, or lateral, structure in terms of edges, those places where one habitat type meets another (e.g., where a lawn abuts a stand of trees). You can increase lateral diversity by widening the ecotone, the zone of transition between habitat types. For example, you could plant small shrubs such as sweet pepperbush, tall shrubs such as serviceberry, and small trees such as crabapple on the edge between a lawn and a line of trees. You can widen the ecotone in a flower garden by planting species of increasing heights. This can be accomplished by having low-growing plants, such as sedum and marigolds, in front of medium-height plants, such as columbine and liatris, with tall plants, such as phlox and yarrow, located behind. You can increase vertical diversity in your landscape by adding more layers of vegetation between the ground and the treetops. Wildlife species that feed, nest, or find shelter at different levels will be better able to meet their needs. You can enhance vertical diversity as already described above, or by planting specific species of varying heights and growth habits in arrangements that are appealing to you. Of course, use plants appropriate to the size of your yard.

Diversity of nonliving materials: There is more to wildlife habitat diversity than living plants. Standing or fallen dead trees provide potential cavities, food, and perches. Brush piles, rock piles, and stone walls provide hiding, nesting, and feeding sites. Sources of grit and loose soil (for dust baths) are important to birds as aids to digestion and hygiene. Buildings

provide nest sites and perches, as well as places for butterflies and moths to hibernate. Nest and winter roosting boxes can be erected to supplement natural cavities, and feeders add to the food supply. Water, in any form, is essential.

Providing food and cover year round requires a variety of trees, shrubs, and other plants. It is important to think about the needs of the wildlife species you hope to attract during each season. A sufficient quantity of high-quality food during fall, winter, and early spring is critical to the survival of resident, as well as migrating, species. Energy needs of wildlife also are high during late spring and summer due to the demands of reproduction. Adequate and well-placed cover is necessary year round for nest sites, shelter from weather, escape from predators, and roosting. Conifers, trees with cavities, and brush and rock piles provide winter shelter.

Natural Wild Design, allowing ready access to food, water, and cover, is an advantage in creating the backyard habitat. Curves and clusters are visually appealing to us, and often will be more useful to wildlife than linear or solitary plantings. Sources of food, cover, and water need to be located near each other. Feeders located too far away from protective cover either will not be used or will increase the risk of mortality to users from exposure to adverse weather or predation. By planting several offset rows of conifers, you can create an energy efficient break against prevailing winds. On the inside of the windbreak, a protected area will be created for feeders or plants that bear berries or other fruits. When placing nest boxes, locate them to meet the needs of the species for which the nest box is intended rather than what looks attractive to you.

Predation: To offer protection for birds, all feeders and birdbaths should be located at least 15 feet away from shrubby cover because cats

often use this cover to ambush birds using these facilities. However, feeders should be placed no more than 30 to 40 feet from some form of cover to provide sanctuary from aerial predators.

Windows: Because large windows can reflect an image of the sky and adjacent vegetation, songbirds sometimes fly into them, resulting in serious or fatal injury. To prevent such crashes, do not place bird feeders adjacent to windows. Or, try placing a cutout silhouette of a flying falcon or a mobile of pinecones in front of the window or attach parallel strings across the window.

Nest Boxes: House sparrows and starlings are exotic birds that compete with native songbirds and will sometimes kill native birds in skirmishes to control a nest box. When you buy or make nest boxes choose ones designed specifically for the species you want to attract. Removing all perches from any nest box will reduce the risk of predation or invasion by these exotic species. Recommendations for placement are often species-specific. Seek guidance from birdhouse vendors or www.birds.cornell.edu/birdhouse/bhbasics/placement.html#Where.

Sanitation: Keep bird feeders, nest boxes, and birdbaths clean. The transmission of disease associated with contaminated bird feeders is a serious problem and can contribute to death among songbirds. Food can become contaminated with mold or fungus when it is not stored properly or when it remains too long in a feeder. The surfaces of feeders and birdbaths can support viruses and other diseases left behind by an infected bird; diseases can then be spread to uninfected individuals every time they use that feeder. Sick birds often look unkempt, are less alert or less active, feed less often, and are reluctant to fly away.

Take these steps to prevent disease before birds become sick:

- At least once a week, rake up waste food, husks, and other accumulated material below feeders on the ground.
- Avoid crowding birds by providing multiple feeders, spaced apart rather than clustered together.
- Use feeders that don't have sharp points or edges. Bacteria and viruses on contaminated surfaces can infect healthy birds through even small scratches.
- Clean and disinfect feeders at least once every two weeks, and more often if you observe sick birds. Remove all food remaining in the feeder, wash it thoroughly with warm soapy water, rinse with clean water, and then immerse the feeder for two or three minutes in a solution of one part liquid chlorine household bleach to nine parts warm water. Remove and allow the feeder to air dry before refilling.
- Do not dispense food that smells musty, is wet, looks moldy, or has fungus growing on it. Discard any food that has had any contact with rodents.
- Disinfect the storage container and food scoop that may have come in contact with spoiled food.
- Every day, rinse birdbaths and replace the water. Twice a week scrub them with a plastic bristle brush and mild dish detergent, and rinse thoroughly before refilling. Once every two weeks, after scrubbing the bath, fill it with a 10-percent bleach solution and let it stand for three minutes. Rinse well with clean water and air dry before refilling with water.
- Tell your neighbors who feed birds about these precautions. Birds move among feeders and spread diseases as they go.

Nectar Feeders: The nectar dispensed in artificial feeders can ferment in as little as two or three days. Drinking fermented nectar can cause enlarged livers in hummingbirds and orioles. Purchase only feeders that come apart easily so that you can scrub and disinfect all surfaces every two days as described above. Be sure to thoroughly rinse the feeder after it has been immersed in the bleach-water solution. Plant a diversity of nectar-rich plants to supply natural nectar to wildlife.

Suet: Do not offer suet year-round. Sun-warmed suet can become rancid and lead to infection and potential loss of facial feathers. It also mats the feathers, reducing their insulating and waterproofing ability. Provide suet only from late October through April or May, or when outdoor temperature warms noticeably.

Chemical Fertilizers and pesticides: Many common house and yard chemicals present dangers to wildlife and humans. Birds can mistake common granular formulations as grit and unknowingly consume a lethal dose. Predators may then consume prey that has been exposed to chemicals. Use chemicals, only as directed. Even then, many formulations can still be lethal to wildlife. Choose plant species that are resistant to diseases and pests or let wildlife perform your insect control. Wherever possible, be tolerant of some insect damage. Use mulch, composted leaves, or other organic matter to add nutrients to the soil and help strengthen a plant ability to ward off diseases.

Excerpted from VA Tech Extension Pub: 426-070 and reprinted from *VNLA Newsletter*, March/April 2010.

Baptisia australis
**THE PERENNIAL PLANT
ASSOCIATION'S 2010 PERENNIAL
PLANT OF THE YEAR™**

Baptisia, pronounced bap-TEEZ-ee-uh aw-STRAH-lis, carries the common names blue false indigo, wild indigo, and baptisia. Less commonly occurring names are indigo weed, rattleweed, and rattlebrush. This Eastern United States native is member of the Fabaceae family (formerly Leguminosae). The name of the genus, Baptisia, is derived from the Ancient Greek word, bapto, meaning to dip (dye) or immerse, while the specific epithet, australis, is Latin for southern.

Blue false indigo grows three to four feet tall and three to four feet wide in an upright habit. This exceptional perennial grows across a wide range of zones and is one of the most adaptable native species. Often, when first planted, Baptisia has only several stems and appears sparse. However, the clump goes from a slow start to really flourishing within three years, when it reaches full size. Because Baptisia clumps expand to a diameter of approximately four feet with a shrub-like habit, these dimensions should be considered when plants are placed in the landscape. It grows best in full sun, but can survive partial shade. If the plant is grown in shade, staking may be in order to prevent flopping. It is drought tolerate, once established. This perennial has a tap root and should be placed in a permanent location. Some clumps are 20 years old and have not been divided. This low-maintenance quality is another attractive feature.

Newly emerging shoots produce violet-blue, lupine like flowers in erect 10-to 12-inch racemes atop flower stems extending well above the foliage mound of clover-like, trifoliolate, bluish-green leaves. The spring flowers re present for three to four weeks. The flowers give

way to inflated seed pods which turn charcoal black when ripe, and are considered ornamental by flower arrangers. The dried seeds in the pods rattle in the autumn breezes, creating a nice sound effect. In earlier times the pods were popularly used by children as rattles. The common name, blue false indigo, refers to the use of this perennial by early Americans as a dye, albeit an inferior one, similar to the true indigo (genus *Indigofera* of the West Indies).

Baptisia australis is an excellent plant to anchor the back of the border. It is also valuable for cottage gardens, native plant gardens, and native area of prairies and meadows. It is best as a specimen or planted in small groups. Blue false indigo can be used with bulbs and other spring flowering perennials to make interesting combinations. Various *Heuchera* selections can create a skirt with leaf colors either echoing or contrasting the flower color. The purple blue range of *Amsonia* selections also make nice neighbors. *Baptisia* is a true American beauty that attracts a number of butterfly species to the garden.

There are no serious insect or disease problems. Taller plants may need support, particularly when grown in partial shade. A desirable attribute of blue false indigo is that it is seldom damaged by deer browsing. *Baptisia* is listed as containing several alkaloids having a bitter taste making the plant unpalatable to browsing.

Baptisia australis is seed propagated. Like many other legumes, it has a hard seed coat. Seeds must be scarified when germination occurs in an artificial setting. Seedlings may be transplanted when small; however, dividing large clumps is not advisable due to the tap root structure of this perennial.

WHY YOU SHOULD BE A LEADER Bill Cook, Human Resources Associates

One of the great examples of leadership came from John F. Kennedy's inaugural speech in 1961. Although JFK was a charismatic leader, he did have some weaknesses and made some unpopular decisions. But on that cold January day, he made the call to put a man on the moon and return him to earth by the end of the decade.

Kennedy didn't try to solve all of the country's technical, political, and financial problems in advance. He did, however, create the vision, the challenge, and the timetable. He then gave to those who could do it the power and the means to get it done and got out of their way. That's leadership.

Being a leader is one issue, the next question is whether anyone wants to be led by you. Leaders can't get anything done without followers to carry out their direction. Followers are hard to find except by leaders who know how to capture people's hearts, minds, and spirits. So how do you do that?

Leaders need vision, energy, authority, and strategic direction. But inspirational leaders need something more. Robert Goffee and Garth Jones after 25 years of research and theory testing on thousands of executives, recommend the following four qualities.

1. Be human, reveal your weaknesses
2. Be intuitive, become a sensor
3. Practice tough empathy
4. Dare to be different

Be human, reveal your weaknesses. When leaders reveal their weaknesses, they show us who they are, warts and all. This may mean they're irritable on Monday mornings or somewhat disorganized or even shy. Admitting such weaknesses helps establish trust, and, in

some ways, imparts confidence. Trying to establish perfection at everything tells folks there's little need to help you with anything. It's a signal that you can do it yourself.

Consider the experience of a senior executive who has a medical condition that regularly produces physical shaking. He agreed to give a major presentation at a global management consultancy. The otherwise highly critical audience greeted this courageous display of weakness with a standing ovation. By giving this talk, he had dared to say, "I am just like you, imperfect." Sharing this imperfection is so effective because it underscores a person's authenticity. But, do not expose a weakness that is critical for your job and if your revealed weakness is not perceived as genuine, you'll open yourself to ridicule and even scorn.

Be intuitive, become a sensor. Inspirational leaders rely heavily on their intuition. Intuition is your experience talking to you. Collecting signals and striving to understand the values and goals of others will give you the sense of knowing what's going on without having everything spelled out.

One successful leader pointed out that as a young man he worked as a tour guide. "There was no salary, only tips," he recalls. He developed the intuitiveness to identify which groups and which individuals would produce the best tips. Then he focused on which techniques in his work produced even better earnings. This skill, once developed, helped lead him to his current CEO position.

Great sensors can sense unexpressed feelings, judge whether relationships are working or not, and understand the "hot buttons" that can motivate individuals. Be careful not to contaminate your intuitive signals with your own motives, however. If your desire for a specific outcome is so strong that it clouds your

ability to cleanly perceive unfiltered signals, you may end up with a distorted message.

Practice tough empathy. Real leaders empathize fiercely with the people they lead and they care intensely about the work their employees do. The true empathy of inspirational leaders is not the soft indulging style that's centered primarily on employees' personal issues. Real leaders manage through a unique approach called tough empathy—giving people what they need, not what they want. For example, the Marine Corps specializes in tough empathy. Recruits are pushed to be the best they can be with the motto "grow or go." This is not callous disregard for the personal problems an individual may have in the performance of his or her job. Instead it is a concerted focus on the organization's vision and goals, the team and the development of future leaders.

At its best, tough empathy balances respect for the individual and for the task at hand. When a business is in survival mode, leaders draw the best and more from their people. Executives who are more focused on being admired and making friends often fail everybody. CEO, Neil Fitzgerald stood by his employees at Unilever even when they developed a new detergent that failed dramatically because it destroyed clothes while cleaning them. Supporting his troops was "the popular place to be." Fitzgerald says now "I should have been looking out for the customer." Stopping the process even though it would have cost some people their jobs was the right thing to do. Now they're almost all gone.

Caring for people does not always mean giving in to their wishes and keeping everything as comfortable as possible. People want and expect more from their leader. They want someone who cares passionately about the people and the work, and they want to be part of a successful team.

Dare to be different. Another quality of inspirational leaders is that leaders capitalize on what's unique about them. In fact, research shows that this might be the single most important quality of the four. Many leaders often don't know what that unique trait is, but when they identify it, the best leaders don't hide it—they emphasize it. This not only identifies and highlights who they are, but signals a separateness that also distinguishes leaders.

Your difference may be a creative imagination, an ability to speak well, or an expertise in something (even if it is not job related). Whatever it is, find out what sets you apart and makes you an individual. Let it be an identifier for you. One leader found that being just a little aloof and private separated her from the crowd. She was not Machiavellian in her manner. She was an accomplished leader and her people took great pride in being on her team. Leadership is not a popularity contest. But, don't overdo this. Some may find that their separateness becomes so pronounced they've lost touch with their followers, and that's fatal.

Leadership in action. Goffee and Jones have determined that all four of these qualities are necessary for inspirational leadership, but they cannot be used mechanically. They must become or already be a part of whom and what you are. That's why "recipe books" on leadership so seldom work. The qualities do not become part of the individual. No one can become a leader by just aping another leader. The challenge is to be yourself but with more skill, and that's not all that easy.

Contact Bill Cook, (703)897-8511 or hrahtl@consultthra.com

Excerpted from the *VNLA Newsletter*, November/December 2009.

CYRTOMIUM – PRODUCTION AND CARE

Tom Blessington, David Clement and Kevin Williams
Central MD Research and Education Center
University of Maryland

Holly fern (*Cyrtomium falcatum*) is native to Africa, Asia, and the Pacific islands. It is an upright fern forming a rounded mount up to 2' high and 3' wide. Glossy, dark green fronds grow on slender arching stems. Individual frond sections resemble holly leaves. It is evergreen only in frost free areas but hardy in zones 6-11. Holly fern prefers partial to full shade, but tolerates more sun than most ferns. It prefers well-drained, acidic media and thrives with occasional fertilization.

Propagate by division in spring or summer. Plant newly divided sections slightly deeper than the original plant. It can be grown from spores sown on damp peat moss in late winter. Germination occurs at 68-70°F.

Holly fern gets scale, which feed on plant sap and produce honeydew. Subsequently, black sooty mold grows on the honeydew. Therefore, inspect plants before purchase.

Holly fern makes an attractive ground cover around large trees. It is often used as a houseplant and can be used as a background green in flower arrangements. The cultivar 'Rochfordii' has especially glossy dark green fronds.

Excerpted from *Free State*, Winter 2009.

SUSTAINABILITY, STORM WATER AND THE LANDSCAPE

**Elise Tripp Senior Environmental Scientist
Fishbeck, Thompson, Carr & Huber
Grand Rapids, MI
Robert E. Schuzki
Department of Horticulture
Michigan State University**

Water is the most thoroughly discussed subject in current sustainability literature. Leadership in Energy and Environmental Design (LEED), Sustainable Sites Initiative (SSI) and Low Impact Development (LID) all place a significant emphasis on defining acceptable approaches for managing this vital resource. The reason for this ardent attention is understandable: vast regions of the United States are grappling with drought; available water is often contaminated; and many urban areas utilize water in volumes that far exceed local supply. Irrefutably, water is essential for life and our world contains a limited quantity of it. Therefore, sustainable water management practices provide a form of cultural and ecological life insurance.

The Natural Model

A useful starting point for developing sound water management practices is by examining how water moves in nature and how landscape elements impact this movement. IN the natural world, water continuously moves from the atmosphere to lands surfaces to water bodies, and back to the atmosphere. This perpetual cycling, known as the hydrologic cycle, contains five means of water conveyance:

- Precipitation – water falling to the ground as rain, dew, snow or ice and intercepted by leaves
- Infiltration – water soaks into the soil
- Evapotranspiration – Water absorbed by plant roots eventually released back to the atmosphere in the form of water

vapor (transpiration) plus that which evaporates from leaves

- Direct runoff – precipitation supplied faster than water can infiltrate so it flows overland, making its way into drainageways and storm sewers
- Groundwater recharge/baseflow – infiltrated water that supports water bodies such as streams, wetlands and lakes. It is also utilized as a source of drinking water, employed in industrial operations, and used for irrigation.

The relative quantities of water that infiltrate, runoff, evaporate or transpire depend on the character of the landscape—its landforms, soils, and vegetation. Plant community composition and structure determine how much water evaporates and transpires, while slope, soil texture, and soil structure influence infiltration and run off rates. Slope, soil characteristics and depth to groundwater also determine the extent and character of the site's watershed.

A watershed is an area of land that contributes runoff to a particular point in a waterway. Hydrologists examine watersheds at a variety of scales. At a small scale, they may calculate the impact that storm water will have upon the first stream that receives discharge from a developed site. Such a stream is known as a receiving stream and the area that drains to it is called a catchment. A larger scale investigation may evaluate land use and hydrologic inputs occurring in an association of catchments (also known as a subwatershed) located upgradient of the convergence of two streams. Finally, a watershed investigation may examine the entire drainage area for a larger river into which many creeks and streams discharge. Such a watershed may encompass many counties or entire states.

Impacts of Landscape Development

Landscape development alters the natural

hydrologic cycle and hydrologic regimes present on a site. Hydrologic regimes reflect the site's typical soil wetness, and are influenced by slope, soil texture, soil structure, and depth to groundwater. Hydrologic regimes observed in nature are the product of climate interacting with site geology and vegetation over a long period of times. As a result, native vegetation is adapted to the typical moisture levels present on the undisturbed landscape.

Development introduces impervious surfaces such as roofs and paving, which impede infiltration and contribute to runoff. It directs storm water into underground sewer pipes. The pipe's smooth interior surface offers less resistance to the flowing water, resulting in faster, higher energy flow and more rapid drainage. Development also changes surface topography, which increases areas that produce runoff and also results in more rapid drainage. Reduced infiltration due to impervious surfaces starves groundwater supply. This, in turn, depresses water levels in groundwater-fed bodies of water and limits a source of water for human use. It may impact native vegetation by drying out site soil and changing the hydrologic regime. Note the changes in where water goes as impervious surfaces increase.

Table 5.1 Changes in Stormwater Hydrology with Increased Impervious Surfaces

% impervious	ET	Shallow Infiltration	Deep Infiltration	Run off
0 (Natural Ground Surface)	40%	25%	25%	10%
10-20 (Rural Residential)	38%	21%	21%	20%
35-50 (Suburban)	35%	20%	15%	30%
74-100 (Urban)	30%	10%	5%	55%

As overall site permeability decreases due to development, and evapotranspiration decreases due to the removal of vegetation, the total volume of water discharged through surface runoff increased proportionally. Landscape development typically results in the following:

- Increased runoff volume and peak runoff rate
- Increased flow frequency and duration in receiving streams
- Reduced infiltration, resulting in reduced groundwater recharge
- Modification of flow patterns
- Shorter time for flood levels to peak in the receiving stream
- Loss of storage (less storm water retention)

These alterations affect soil stability, water quality, and plant communities onsite and within down gradient drainageways. Rainfall events result in flashy flow that introduces a large volume of water to drainageways during a short period of time. The energy of the larger discharge volume overwhelms natural drainageways, resulting in downstream erosion, sedimentation, and disrupted habitats. Periods of high flow are also more numerous than occurred in predevelopment conditions. Erosion introduces suspended and dissolved solids into storm water, thus degrading water quality. It also disrupts plant communities by undermining and uprooting vegetation. On the other hand, sedimentation deposits soil, filling in shallow waterways and wetlands, burying plants, and altering downstream hydrologic regimes.

Catchments and subwatersheds are strongly influenced by increases in impervious cover during site development. Small streams located within the subwatershed (known as headwater streams) are especially sensitive to high energy, flashy discharge that results from impervious sites, resulting in stream bank degradation.

Research has shown that the amount of impervious cover in a subwatershed can be used to project the current and future quality of many headwater streams.

Urban and industrial development contributes a variety of contaminants to storm water. The most polluted segment of storm water is the first flush, the first ½ inch of water that runs off a site. Runoff from developed landscapes may be contaminated with sediment, organic matter, hazardous chemicals (cyanide, sodium, chloride, sulfate, petroleum products) fertilizers (nitrogen and phosphorus), and metals (zinc, lead, copper, cadmium, chromium, nickel, manganese). In addition, hot pavement heats up storm water, resulting in thermal pollution that impairs sensitive habitat, such as cold-water fisheries. Impaired water quality results in loss of physical and biological function, symptoms of an unsustainable landscape.

Sustainable Approaches to Storm Water Management

A goal of sustainable water management is to control the off-site discharge of storm water in order to minimize deleterious impacts to headwater streams. Ideally, the volume of runoff should equal the amount that would occur in the drainage area's predevelopment state, and the rate of discharge should also mimic the predevelopment state. To achieve this, the designer must control runoff volume, peak runoff rate, the frequency and duration of flow, and water quality.

In order to achieve effective storm water control, the designer must first determine predevelopment stream flow levels, based upon historic rainfall and flow data. This data includes rainfall amount, intensity, and duration. The designer then generates a hydrograph that illustrates diagrammatically the changes in stream flow over time and during a storm event.

As a site is developed and topography and land surfaces change, the site's hydrograph will adjust to reflect the corresponding changes in storm water discharge. Hydrologic modeling predicts these changes and allows the formulation of hydrographs that illustrate various development approaches. Comparing hydrographs from the predevelopment condition with post development scenarios provides a basis for selecting the least disruptive and most sustainable storm water management approach.

Hydrologic models can be used to determine the amount of storm water retention and/or detention required to control runoff volume and peak discharge rate. The designer develops a hydrologic model that incorporates the frequency of storm events of various magnitudes. The largest storms occur less frequently (such as every 50 or 100 years) and cause the most significant damage when they take place.

However, modelers often base their calculations upon the magnitude of storms likely to occur within a two-year period, because these storms occur frequently enough and with enough force to significantly impact receiving channels through erosion and sedimentation.

Modeling is based upon site specific data, including land cover type, percentage of and connectivity of impervious areas, soil type and texture, and predevelopment soil moisture conditions. Some type of storm water modeling is typically completed for any type of development project. However, the complexity of the modeling approach depends upon a variety of factors, including the size and complexity of the affected landscape, the goals of the development project, and the amount of money available for storm water analysis.

Based upon the results of storm water modeling, hydrologists select appropriate detention,

retention, and/or infiltration techniques to meet site requirements. Site design seeks to maximize on-site retention and infiltration for the volume of water received during storms likely to occur in a two-year period. A typical approach is to develop a storm water train—an intentional design that directs storm water from impervious surfaces through a defined drainage route that may mimic natural drainage patterns. The storm water train implements small scale, storm water management techniques known as Integrated Management Practices (IMPs) or Best Management Practices (BMPs). These include:

- Bioretention facilities – such as rain gardens, constructed wetlands, and green roofs
- Filter and buffer strips and other multifunctional landscape areas
- Grasses swales, bioretention swales and wet swales
- Infiltration trenches
- Cisterns and rain barrels

These features slow the rate of flow, encourage infiltration, maximize evapotranspiration, and provide temporary storage. Additional engineering controls modulate stream flow, such as flattening slopes, increasing flow path, increasing sheet flow, and increasing roughness within the drainageway. In addition, limiting the use of sidewalks, reducing road length and width, and utilizing permeable paving limits the extent of impervious surfaces.

An additional consideration for sustainable storm water management is to minimize the level of contamination in discharged storm water. Storm water retention and infiltration allow soil to filter out contaminants and transform some of them into harmless substances through microbial transformation. Low impact development approaches also attempt to prevent pollutants from entering storm water by modifying human activities.

Designing for Water

The storm water train incorporated two or more BMPs in series into site landscape design. These techniques are most effective in treating the first flush (first ½ inch) of storm water. The BMPs employ four major categories of storm water management techniques.

- Techniques that prevent storm water from running off surfaces.
- Retention techniques that store run-off for infiltration or evaporation.
- Detention facilities that temporarily store run-off and then release it at a measured rate.
- Conveyance techniques that transport water from where it falls to where it is retained or detained.

The following list summarizes 17 BMPs that treat storm water. For additional information consult

The United States Environmental Protection Agency (www.epa.gov/owow/nps/lid)
The Storm Water Manager's Resource Center (www.stormwatercenter.net)
The Low Impact Development Center, which maintains a LID Urban Design Tools website (www.lid-stormwater.net/index/html)

1. **Constructed wetlands** – constructed shallow water-filled basins planted with emergent vegetation.
Benefits – Remove pollutants, reduce peak runoff rates and stabilize flow to streams and natural wetlands.
Strategies - On sloping terrain, arrange in series on terraces.
2. **Detention ponds** – basins that temporarily store runoff and eventually release it to surface water.
Benefits - Slow discharge rate. Allow suspended sediment to settle out before

water is released.

Strategies - A conventional approach—may breed mosquitoes.

3. **Dry wells** – subsurface storage facility containing aggregate. Connected to building downspout.

Benefits – Stores and infiltrates runoff from rooftops.

Strategies – Also known as a seepage pit, French drain, or Dutch drain.

4. **Green roofs** – Roofing systems containing living vegetation.

Benefits – Reduce the amount of roof runoff from small to medium storms and the rate of runoff flow.

Strategies – Tray systems or a built up series of layers. Extensive (shallow roofing zone) or intensive (deeper rooting zone with larger plants).

5. **Infiltration basins** – shallow impoundment that stores runoff until it gradually infiltrates through soil to groundwater.

Benefits – Soil removes pollutants. Groundwater recharge..

Strategies – Requires naturally permeable soil. May become clogged over time.

6. **Infiltration berms and retention grading** – linear berms constructed on hillside contours to intercept and slow storm water flow.

Benefits – Create a barrier to flow; retain flow for volume control, and divert flow.

Strategies – Uses topography to manage runoff flow and prevent erosion. May use with other BMPs.

7. **Infiltration trenches** – excavated trench that receives runoff; is 3 to 12 feet deep and backfilled with a stone aggregate. May contain a perforated pipe.

Benefits – Groundwater infiltration conveyance. Not appropriate if runoff is contaminated.

Strategies – Used where space is limited. In colder climates, is not effective if surface icing occurs.

8. **Outlet controls** – a structural control that distributes storm water flow over a stabilized vegetated surface.

Benefits – Promotes infiltration and improves water quality.

Strategies – Used in conjunction with other storm water BMPs. Many different types: concrete, earthen berms, level perforated pipes, and landscape timbers.

9. **Planter boxes** – raised or at grade planters at base of building.

Benefits – intercept and store rainwater.

10. **Porous pavement** – hard surfaces that allow infiltration of rainwater..

Benefits – Decreases volume of runoff entering storm sewer or streams.

Strategies – Porous asphalt and concrete, pavers, vegetated geogrid.

11. **Rain barrels/reuse** – medium-sized containers connected directly to downspouts.

Benefits – Rainwater collected directly from roof surfaces and used in non-drinkable.

12. **Rain Gardens/Bioretenion** – planted, shallow depressions that receive surface drainage and encourage infiltration.

Benefits – Capture first flush of storm water. Improves water quality.

Strategies – Native soil replaced with free draining material. Underdrain in clay soil.

13. **Rainwater harvesting** – large containers and cisterns that receive runoff from roofs and other surfaces.

Benefits – Reduces total runoff through storage.

Strategies – Cisterns may be underground.

14. **Retention ponds** – impermeable basins that permanently retain water.

Benefits – A final element in the storm water chain. Stores runoff and removes pollutants.

Strategies – May have an overflow into a wetland.

15. **Subsurface infiltration** – vegetated, highly pervious soil media underlain by a subsurface storage reservoir.

Benefits – Provides temporary storage and infiltration of runoff.

Strategies – Reservoir may consist of uniformly graded aggregate or pre-manufactured structural storage unit.

16. **Vegetated filter strips** – gently sloping vegetated areas.

Benefits – Slows runoff flow velocity and encourages infiltration.

Strategies – Receive runoff from impervious surfaces.

17. **Vegetated swales** – vegetated channels and linear depressions. Direct runoff into detention or retention ponds or rain gardens.

Benefits – Slows runoff flow velocity and encourages infiltration.

Strategies – Hold water temporarily. Check dams installed periodically along length; slow water flow.

Plants are a key component contributing to the effectiveness of these BMPs. Both native and non-native plants serve functions of reducing flow velocities, increasing deposition and infiltration, and providing nutrient uptake and organic matter pollutant transportation. Every plant contributes to these ecosystem services with combinations of woody and herbaceous plants typically found in landscape compositions providing a complementing mixture of leaves, stems and rooting characteristics.

Leaves maintain water quality through intercepting rain. By absorbing the energy of raindrops, precipitation reaches the ground more slowly, allowing for greater infiltration and less overland flow. Leaves also absorb and assimilate gaseous pollutants. Root systems anchor the plant, absorb water and nutrients, serve as a storage organ for food resources and synthesize hormones and other secondary plant products that serve the upper portion of the plant. Root systems are important for erosion control. Taprooted plants have the ability to penetrate soil depth, but often lack the network of lateral roots that hold soils together. Fibrous, spreading roots hold soil in place and modify its

structure, further improving infiltration and preventing erosion. Fibrous roots also tend to transplant well and have the ability to extend their reach into surrounding soils for water and nutrients. Stoloniferous and rhizomatous plants have the potential to develop a dense network of vegetation for stabilizing and strengthening soils. Select plants for stormwater management with multiple stems, dense foliage and fibrous root biomass will enhance the benefits received and success in addressing the desired environmental objectives.

In summary, sustainable landscape design addresses water inputs, water outputs, and water quality. The sustainable landscape strives to manage storm water as a valuable resource that is essential for maintaining biological function. It engineers that landscape to maintain and improve water quality, rather than degrade it. Finally, it acknowledges that site development inevitably changes the landscape's hydrologic balance, and it strives to implement measures that mitigate these effects.

Excerpted from *The Michigan Landscape*, March/April 2010.

THE POWER OF NETWORKING

Jim Paluch

Everyone has heard the age old adage, "It's not what you know; it's who you know."

Although this statement is often presented with negative undertones, alluding to the fact that the person did not earn the success themselves, it rings of truth: no one reaches high levels of success without the help of others. Harvey Mackay wrote the following statement in his book, *Dig Your Well Before You're Thirsty*, "If I had to name a single characteristic shared by all truly successful people I've met over a lifetime, I'd say it is the ability to create and nurture a network of contacts.." Learning to utilize the expertise, connections and friendly assistance of others has been a key factor in reaching goals throughout recorded history. The weaknesses of any individual can be strengthened by a group of comrades.

Nobody Said It Is Easy

You've just completed a hectic day complete with piles of paperwork, interoffice conflicts, a heated phone conversation with a client, and whatever junk food you could grab for lunch. There is nothing you would enjoy more than a quiet, relaxing evening at home, and you're headed in the opposite direction to invest a few hours with a professional organization and reap the benefits of a "power networking" session. Yes, it's true, regardless of the benefits of mingling with people, making contacts and putting yourself in the right place at the right time; it is sometimes the last thing you would choose to do.

For a privileged few, meeting people is a fun, natural, easygoing process. For most of us, however, stepping into a room full of people that we've never met and striking up several intelligent, interesting conversations at best a challenge and sometimes just plain work. Networking takes enthusiasm, energy, and effort, and even if you don't make a life-

changing connection, you'll usually learn something about people or yourself in each experience. If you enjoy the challenge you will reap the benefits of networking.

Appreciate yourself. You have one chance to make a first impression, so be aware of your appearance. Remember, when you feel good about the way you look, confidence and poise will follow.

Sincerely appreciate people. The greatest single factor in determining your success in networking is your sincere appreciation of the other people in the room. If you are looking for the good in others and approaching every conversation with interest and care, you'll be amazed at the people you'll meet.

Truly listen. Ask open-ended questions that will encourage the other person to talk, and then carefully listen and retain the information. Be alert to recognize likes, dislikes, areas of interest, details about their family, etc., which will give you more to talk about now and in your follow-up conversations.

Follow up and keep in touch. The most important step in developing a working network of names to continually draw from is the follow up. Even after you've developed a friendship or a working relationship, it's important to send a note or make a quick call every two or three months.

Challenge yourself... join at least one professional organization and attend their regular meetings. Be selective in your choice and be sure you are gathering with a group connected with your industry.

Become dedicated to one committee within an organization. Remember, you can meet people and help your community through civic groups, school-related groups, or other worthwhile

charitable organizations.

Role Play...take the fear out of networking by role playing possible scenarios in your team meetings or with a friend.

Determine Objectives...evaluate your personal or company objectives: Is it for personal growth, company image, public relations with current clients, lead generation and future business or community service? This awareness going in will help you accomplish your objectives.

For one week, be aware of open-ended and close-ended questions Practice asking questions that promote conversations as opposed to those that can be answered in one or two words. Use what you learn as you approach networking.

Mom: "How was your day?"
Son: "OK."

replaced by:

Mom: "Tell me about your science test"
Son: "It was tough. There were six essays and I only finished five of them."

Joe: "How was your vacation?"
Mary: "Oh, it was great, thanks."

replaced by:

Joe: "What were your impressions of the Grand Canyon?"
Mary: "I'll tell you, it was the most breathtaking sight I've ever experienced. We planned to spend a few hours there and ended up taking two days to hike to the bottom."

Dos and DON'Ts of Networking Quotes

"No matter how smart you are, no matter how talented, you can't do it alone." -*Harvey Mackay*

There are two quick ways to disaster: taking nobody's advice and taking everybody's advice." -*John Maxwell*

"He that won't be counseled can't be helped." -*Benjamin Franklin*

NETWORKING DOS AND DON'TS

Phillip J. Stella

Dos

- Do remember networking isn't selling-it's building relationships that are mutually beneficial.
- Do understand personality styles -treat people the way they want to be treated.
- Do begin every conversation with a question -listen and learn from what you hear.
- Do carry enough business cards.
- Do write on the back of any card you receive where you met and what you want to remember.
- Do realize networking improves with practice.

Don'ts

- Don't be late to a meeting-get there early.
- Don't sit by someone you know-sit by strangers.
- Don't sit by an aisle, empty seat or in the back row surround yourself with people.
- Don't do all the talking -the best conversationalists say the least.
- Don't use inappropriate humor.
- Don't become comfortable and monopolize one person's evening after 5 to 10 minutes, move on.

Excerpted from *VNLA Newsletter*, March/April 2010.

LISTEN UP!

Nancy Friedman, The Telephone Doctor

Do we really LISTEN? Do we really HEAR what people are saying? Below are some ideas to help those who are having trouble being a good listener. In truth, some of us aren't good listeners. What do some people do that others don't in order to be a good listener? If you're going to ask great questions, then you need to listen to the answers you're going to get. There is a difference between hearing and listening. Hearing is physical and listening is mental. It's pretty simple. Take a TV commercial. We normally hear it, but do we always listen to it? Probably not. Especially if it's about something we're not particularly interested in for ourselves or even others. There were plenty of holiday commercials that I "heard" on TV, but I didn't really listen to them, because they didn't interest me. Getting the picture?

Ok, heads up. Here are six easy steps to becoming a better listener. There are more, for sure, but starting with these will help you a lot.

Decide to be a better listener. That's like an attitude. You can really decide to be a good listener. It's a decision. Will everything be of interest or value to you? Maybe not, but not listening might be dangerous. So make a mental decision to listen better to those you talk with, especially if you have asked them a question and they answer. You need to LISTEN to them.

Welcome the customer. We need to make the person feel welcomed. That in turn helps make you a much better listener. Be obviously friendly when you're talking with a customer. And it's got to be sincere. Most folks can tell when you're not. So bring a welcoming phrase to the table and use it to make the customer feel as though he's a long lost friend!

Concentrate. This is not the time for multi-tasking. You can't text and listen at the same time--one of these things will be in trouble. We simply cannot do two things well at once. Your concentration must be on the customer. Do nothing else but 'listen.'

Keep an open mind. There are some of us who think we know what the other person is going to say before they say it and so we interrupt or interject our comments before the customer can answer. That's not keeping an open mind. That's interrupting. Some of the time we're right and we do know what the person will say. But it's important to put your teeth in your tongue and not interrupt. By keeping an open mind you'll gain more information as well.

Give verbal feedback. Talking with someone and not acknowledging what they're talking about is very frustrating for them; especially on the phone, because we don't even have body language to check out. So a few "I see," "That's good," "OK," "Interesting," and a few words and phrases like that help the person feel as though you're listening and listening well. In person, you have the ability to nod and smile and they can SEE your expressions. However, on the phone, we need verbal feedback. And be careful we're not saying the same word over and over. Like OK, OK, OK, OK. That's boring to both of you.

Take notes as you talk. And yes, even in person. That's perfectly acceptable! Taking notes and letting the person know you are doing it is a sign of great interest. I do it all the time when I'm on the phone.. I tell the client, "I'm taking notes so we can refer to them later and so I don't forget what you're saying." No one has ever said, "Don't do that." Most say, "Good, that's super!" Taking notes so you can refer back is a big compliment. Don't forget to do it.

Email nancy@telephonedoctor.com

BUSY IS NOT ALWAYS GOOD.

Jeffrey Scott

Have you noticed how busy people are these days? People were busy last year, and now they are even busier today. But, busy is not always good. There are many different kinds of "busy". Just like the Eskimos have many different definitions for "snow", we need to differentiate between the different kinds of busy.

Busy/Focused - This means you are going after a goal, and strictly focused on executing that goal. It means your team knows what the goal is, and knows what the important priorities are for hitting the goal. This is good-busy if the team is working in lock step and everyone knows his or her role and goals in the business.

Busy/Productive - This means you are getting a lot done with your time. Perhaps you have a lot of clients to service, or a large backlog that you are working your way through. Or, it can mean you are following the 20-80 rule and you are doing the work that is most important, and delegating (or simply not doing) the rest. Busy/productive should show up on the bottom line and in the growth of your firm.

Busy/Proactive - This means you are getting "ahead" of issues. Either you are visiting customers or job sites, or prospecting for business, or meeting with your peer group, or talking to influential people in your community. When done right, this is good-busy and should make your firm more competitive.

Busy/Innovating - This means you are growing in a new direction, adding new services, and busy figuring them out and selling them. This means your team is trying out new methods for executing the work. It can also mean you are expanding into a new geographic area. Busy/innovating is good-busy because it will

drive your profits.

...But, busy is not always good, for example:

Busy/Reactive - This means you are busy responding to emails and phone calls and knocks on the door. You are reacting to the agendas of your customers, your suppliers, your subs, and your staff. It means you are not setting the agenda. It may mean your leadership is weak, and you are in a state of "followership".

Busy/Fire fighting - This means you have big complaints consuming your time, or big quality issues or contract completion issues. Your employees, customers or bankers are screaming, or other stakeholders in your business are screaming. You may have engaged in poor planning this winter and are now paying the price. This is related to busy-reactive and means you have a fundamental problem to address.

Busy/Changing directions constantly - This is "attention deficit disorder" busy. It is due to not following through on your plans, and constantly creating new plans and new directions. It can also mean you are easily distracted. You thrive on chaos and it keeps you busy.

Busy/Doing double work - This means your systems force you to do double or triple administrative work. This is the kind of busy work that consumes a department or whole company and stops it from growing easily.

Busy/Busy work - This may mean you have gone past the 20-80 rule, and you are simply working on too many projects, unfocused and without great results. You may need to 'get perspective' on what you are working on - on what is important right now. You may also need a break to recharge. Either way, refocus and get back on track.

Excerpted from *VNLA Newsletter*, March/April

Research Briefs

Propagation

Rooting of *Spigelia marilandica* cuttings.

Percentage rooting of *S. marilandica* cuttings is affected by IBA concentration, bottom heat, location of stock plants (field or greenhouse), and the type of cutting (terminal or subterminal). The greatest rooting percentage for winter cuttings from greenhouse-grown stock plants occurred with bottom heat and 3000 or 6000 ppm IBA applied as a solution dip to the bottom 1 inch of the cutting. Using 6000 ppm IBA would result in unnecessary cost. For summer collected cuttings, application of 3000 ppm IBA failed to increase rooting percentage of cuttings from greenhouse-grown stock plants, but increased rooting percentage of cuttings from field-grown stock plants when applied as a solution dip or solution submersion. Terminal cuttings had more than double the rooting percentage of subterminal cuttings from greenhouse-grown stock plants, but cutting type had no effect on rooting percentage of cuttings from field-grown stock plants. (W.G. Pill and B.Goldberger)

Excerpted from J. Environ. Hort. 28(1):53-57, March 2010

Enhancing germination of New Jersey tea.

New Jersey tea (*Ceanothus americanus*) is an attractive, compact woody shrub is found in high-quality prairie remnants throughout the tallgrass prairie region. It is difficult to propagate and developing a protocol to increase the uniformity of seed germination would allow for more widespread horticultural cultivation of this stress-resistant, nitrogen-fixing species. While cold-moist stratification alone did not elicit relatively high levels of germination, daily cycles of an 18-h photoperiod plus cold-moist stratification induced levels of germination that

were higher than seeds only cold-moist stratified. Cold-moist stratification, whether in darkness or supplemented with light radiation, should be used with boiling water or acid scarification to induce seed germination of new jersey tea for use in managed or natural landscapes. Also, given the relatively low rate of mean daily germination, which is a measure used to determine the uniformity of seed germination, in all treatments, sufficient numbers of seeds should be collected to endure target seedling numbers are reached. (J.R. Stewart and I. McGary)

Excerpted from HortTechnology, 20(3), June 2010.

Vegetative propagation of *Rhodendron flammeum*. Vegetative propagation is a viable approach for mass production of *R. flammeum* and protocols have been developed for both rooting stem cuttings and mound layering. Treating softwood stem cutting of *R. flammeum* with 10,000 ppm K-IBA produced the highest number of rooted cuttings with the largest root systems. Hedging stock plants improved the rooting percentage of semi-hardwood cuttings and also improved the size of the root systems of rooted softwood and semi-hardwood cuttings. Utilizing higher concentrations of auxin with softwood cuttings may improve vegetative propagation and increase the number of plants available commercially.2 (J.R. Jones, A.V. LeBude and T.G. Ranney)

Excerpted from J. of Environ. Hort., 28(2):69-73, June 2010

Container Production

Effect of container type on root form and growth of red maple. The study evaluated the impact of 8 containers (#3 grown for 7 mos) on root morphology and growth of red maple. Caliper and height were affected only

marginally by container type. Circling and descending roots were the most common defects on root systems in all container types. Smooth-sided black plastic containers were associated with the most defects. The seven other containers tested reduced circling and descending roots to varying degrees. Defects were common on the cooler north and east periphery of root balls, rarely on the south and west, presumably due to high container wall and substrate temperature from direct sun exposure. No one container type stood out as unique in reducing root defects. Mechanical root pruning may be needed to reduce defects to an acceptable level. (E.F. Gilman, C. Harchick and M. Paz)

Excerpted from J. Environ. Hort. 28(1):1-7, March 2010

Root ball shaving improves root systems on seven tree species in containers. Trees grown in containers develop root systems that are different from trees grown by other nursery production methods. Instead of spreading to their natural distance, roots on shade trees are deflected up, down, or around by container walls and this can affect how roots grow out into the forest and landscape soil. Root systems on trees planted from containers often have more constricted, circling, and kinked roots that can lead to instability compared to naturally generated trees. Naturally generated seedlings also had greater sinker root development emerging from horizontal lateral roots, and this can provide increased stability. Root systems can be improved with chemical and mechanical treatments. In this study, shaving off all the roots from the periphery of a #3 container prior to shifting to the #15 container dramatically reduced occurrence of circling and descending roots in the finished nursery stock. Roots were shaved from the outer 1 inch of the root ball with a sharp blade. A reduction in circling roots and an increase in straight roots should lead to

more stable and longer lived trees in the landscape. (E.F. Gilman, M. Paz and C. Harchick)

Excerpted from J. Environ. Hort. 28(1):13-18, March 2010

Zein-based bioplastic containers. Zein is a protein made from corn that has been used to make bioplastic containers for use as alternatives to conventional, petroleum-based plastics. This is the first evaluation of plant growth in zein containers and the first examination of the possibility of transplanting plants with zein containers intact. Large influxes of N and altered pH and EC are associated with inhibition of root and shoot growth. Adjustments to sidewall thickness, use of larger containers with a greater substrate:zein ratio, blending zein with other feedstocks, and use of coating on sidewalls are all possible strategies to overcome root inhibition. These strategies may also help provide a modes release of N and an appropriate rate of container degradation for plant production and landscape establishment. (M.S. Helgeson, W.R. Graves, D. Grewell and G. Srinivasan)

Excerpted from J. of Environ. Hort., 28(2):74-80, June 2010

Performance of plants in alternative organic growing media. Growing media composed of locally available compost and biosolids supported the growth of annual (vinca), perennial (verbena) and woody ornamental (shantung maple) plants as well as or better than a traditional pine bark/peat moss growing medium. Cottonseed hulls were not suitable for use in a growing medium, although evidence suggested they would become suitable after a period of aging. Inclusion of expanded shale in the various growing media produced variable results on plant growth when added to growing media that lacked optimum drainage and

aeration. This was true of growing media that contained decomposed organic materials such as municipal yard waste compost. Other growing media that already contained coarse ingredients, such as pinebark, performed better without the addition of expanded shale. In general, combining expanded shade with locally obtainable organic ingredients such as biosolids or municipal yard waste compost can create growing media that perform as well or better than traditional pine bark plus peat moss-based growing media. (J.J. Sloan, R.I Cabrera, P.A.Y. Ampim, S.A. George and W.A. Mackay)

Excerpted from HortTechnology 20(3):594-602, June 2010

Analysis of fresh mushroom compost in PA. Thirty samples from commercial mushroom farms in southeastern PA. Fresh mushroom compost had an average pH of 6.6, with an average C:N ratio of 13:1. Organic matter content averaged 25.86% (wet weight), 146.73 lb/cubic yard (wet volume) or 60.97% (dry weight). For the primary macronutrients average total nitrogen content averaged 1.12 % (wet weight), 6.40 lb/ cubic yard (wet volume) or 2.65% (dry weight), phosphorus measured 0.29% (wet weight), 1.67 lb/cubic yard (wet volume) or 0.69% (dry weight), and potassium was 1.04% (wet weight), 5.89 lb/cubic yard (wet volume) or 2/44% (dry weight). Average soluble salt content was 13.30 mmho/cm (wet weight basis). However, on a per acre basis, the calculated sodium absorption ratio of 0.38 was considered very low. The average bulk density of fresh mushroom compost was 574.73 lb/cubic yard (wet volume basis), and 91% of the material measured $\leq 3/8$ inch in diameter as determined on a wet weight basis. Overall, fresh mushroom compost is suitable as a natural organic fertilizer and soil amendment for agriculture and horticulture. (M.A. Fidanza, D.L. Sanford, D.M. Beyer and D.J. Aurentz)

Excerpted from HortTechnology, 20(2):449-453, April 2010

Ground parboiled fresh rice hulls used as a horticultural substrate. Fresh parboiled rice hulls ground in a hammer mill and screened through a 1.18-mm screen and collected in a 0.18-mm screen (RH3) were evaluated as a full or partial replacement for sphagnum peat. Incorporation of RH3 as a partial replacement of peat resulted in less predictable results in physical properties than when RH3 was used as a complete peat replacement. Regardless of the amount or type of aggregate, all substrates had physical properties within acceptable range for greenhouse crops. (J.S. Buck and M.R. Evans)

Excerpted from HortScience, 45(5):643-649, April 2010

Spent tea grinds as a substrate component of nursery crop production. The commercial tea production industry in the U.S. has grown tremendously over the past 20 years and produces a waste material called spent tea grinds (STG) that has potential as a substitute for pine bark (PB) in nursery crop production. In a study with crape myrtle, nandina, loropetalum, and two azalea cultivars substrates containing up to 50% STG by volume produced similar plant growth to those grown in 100% PB. (A.E. Wells, J.L. Sibley, C.H. Gilliam and W.A. Dozier, Jr.)

Excerpted from J. Environ. Hort. 28(2):103-106, June 2010.

Composted poultry litter (CPL) as a substrate amendment for Wholetree (WT), clean chip residual (CCR) and pinebark (PB) for container grown woody nursery crops. Five woody species tested in this study (azalea, boxwood Japanese holly, loropetalum, and ternstroemia) can be grown in WT and CCR substrates 6:1 by vol.) with CPL. Use of CPL

in WT and CCR substrates could provide an alternative to traditional PB and peat based combinations in container production while providing poultry producers an environmentally sound means of waste disposal. (S.C. Marble, C.H. Gilliam, J.L. Sibley G.B. Fain, H. A. Torbert, T.V. Gallagher and J. W. Olive)

Excerpted from J. Environ. Hort. 28(2):107-116, June 2010.

Gravimetric irrigation as a technique to reduce water use in container production. Irrigating *Cotoneaster dammeri* 'Skogholm' using a gravimetric irrigation technique produced an equivalent plant compared to the cotoneaster produced with a leaching fraction applied cyclically. There was less leaching and these results cannot be obtained by grower-monitoring alone without significant labor cost. The gravimetric technique is ideal because it requires no calibration and no special skills to setup or operate. In addition, it directly measures the quantity of water lost since the last irrigation thus requiring no data interpretation. (A.E. Prehn, J.S. Owen, Jr., S.L. Warren, T.E. Bilderback, J.P. Albano)

Excerpted from J. Environ. Hort. 28(2):117-123, June 2010.

Greenhouse Production

Growth hormones (GA and BA) prevent ABA induced leaf chlorosis in pansy and viola. Abscisic acid (s-ABA) effectively reduces water loss and allows a variety of species to survive temporary periods of drought stress, but can also lead to leaf chlorosis. Applications of 5 or 10 mg/L benzyladenine (BA) and gibberellic acid (GA₄₊₇) as a mixture before a drench or spray application of s-ABA prevented leaf chlorosis. (N.L. Waterland, J. J. Finer and M. L. Jones)

Excerpted from HortScience, 45(6):925-933, June 2010.

Promoting flowering in long day plants with a rotating high pressure sodium (HPS) lamp.

Long day (LD) plants (plants in which flowering is promoted under periods of darkness less than a species specific critical duration) can be forced to flower during the spring by providing artificial light. A new system for LD lighting was developed and patented by the U.S. Department of Agriculture Forest Service and then commercially licensed in 2001 to Hydrofarm, Inc., Petaluma, CA. A stationary HPS lamp with an oscillating aluminum parabolic reflector that rotates 180° can be mounted above a crop to provide an intermittent beam of light over the growing area. Seedlings of *Campanula carpatica* ‘Pearl Deep Blue’, *Coreopsis grandiflora* ‘Early Sunrise’, *Petunia xhybrida* “Easy Wave Coral Reef” and *Rudbeckia hirta* ‘Cinnamon Bicolor’ were used in this study. A rotating HPS lamp operated continuously during a 4-h night interval (NI) was effective at promoting flower induction in these LD species and consumed less energy compared with incandescent lamps operated continuously. However, when the maximum NI light intensity received from a rotating HPS lamp was less than 2.4 $\mu\text{mol}/\text{m}^2/\text{s}$, flowering was either delayed or # of flowers was reduced in some species compared with plants under higher NI light intensities. Flowering uniformity in a population of plants grown under rotating HPS would be acceptable for commercial production as long as the light intensity is above this value. Additional rotating HPS lamps would be necessary if the coverage of the growing area was not adequate. (M.G. Blanchard and E.S. Runkle)

Excerpted from HortScience 45(2):236-241, February 2010

Soil moisture sensor-controlled irrigation

system used to measure growth and water use of Petunia. More efficient irrigation practices are needed in ornamental plant production to reduce the amount of water used for production as well as runoff of fertilizers and pesticides. The soil moisture sensor-based irrigation control system was able to maintain the substrate volumetric water content close to the threshold. Results show that it is possible to automatically irrigate plants with the use of soil moisture sensors, and this approach to irrigation may have applications in controlling the growth of ornamental plants. (M.W. Van Iersel, S.Dover, J.G. Kang, S.E. Burnett)

Excerpted from HortScience 45(2):277-282, February 2010

Controlling height of ‘Nellie White’ Easter lily with paclobutrazol pre-plant bulb dips.

Dipping easter lily bulbs in paclobutrazol solutions can be an effective strategy for reducing stem elongation without negatively impacting days to flower or flower bud numbers for commercially grown easter lily. (C.J. Currey and R.G. Lopez)

Excerpted from HortTechnology, 20(2):357-360, April 2010.

A protocol for preparing preserved flowers with natural color and texture. A protocol for the preparation of preserved flowers retaining natural color and texture of ‘Moondust Velvet Blue’ carnations (*Dianthus caryophyllus*) was developed. This three-step process consists of soaking flowers in ethyl alcohol, then soaking them in polypropylene glycol, followed by a rinse with ethyl alcohol. Some kinds of flowers processed in this manner retained their natural color and texture for at least 6 months. This protocol is applicable to 13 kinds of flowers among 30 kinds tested and adds a new dimension to postharvest techniques for cut flowers. (H. Ito, T. Hayashi, M. Hashimoto, K.,

Miyagawa, S. Nakamura, Y. Mizuta, S. Yazawa)

Excerpted from HortTechnology, 20(2):445-448, April 2010

Landscape

Green roof plant responses to different substrate types and depths under various drought conditions. The two stonecrops (*Sedum album*, white stonecrop and *Sedum sexangulare*, tasteless stonecrop) performed well under most conditions, although tasteless stonecrop was stunted by early drought. Ice plant (*Delosperm nubigenum*) only grew well when provided with water. When subjected to any drought, the herbaceous perennials (*Dianthus deltoides*, maiden pink and *Petrorhagia saxifraga*, saxifrage pink) had the fewest survivors in the expanded shale. Saxifrage pink flowered profusely wherever it survived. The study plants were most affected by substrate depth, except for maiden pink, which responded solely to drought. When subjected to early drought conditions, the herbaceous perennials did not survive in 30 mm of either substrate, or in 60 mm of expanded shale. Although the stonecrops performed well in 60 mm of substrate when subjected to drought, their performance was superior in the expanded clay compared with shale. Early drought appeared to be more harmful to plant survival and performance than late drought. The three most resilient species studied, saxifrage pink, white stonecrop, and tasteless stonecrop always produced more shoot biomass with increasing substrate depth, regardless of water availability. (C.E. Thuring, R.D. Berghage, and D.J. Beattie)

Excerpted from HortTechnology, 20(2):395-401, April 2010.

Green roof substrates amended with compost

and hydrogel. Compost and/or hydrogel (polyacrylamide-based) amendments affected physiochemical properties following incorporation into slate-based green roof substrates, resulting in greater initial plant growth, and that these amendments may have practical applications for improving growing conditions on green roofs. (M.W. Olszewski, M.H. Holmes and C.A. Young)

Excerpted from HortTechnology, 20(2):438-444., April 2010

Turf

Moss control on creeping bentgrass golf greens. Moss can be effectively suppressed on greens using spot application of sodium bicarbonate and reduced moss encroachment is possible with higher mowing heights. Broadcast applications of chlorothalonil were also effective in suppressing moss on creeping bentgrass greens. (M.M. Kennelly, T.C. Todd, D.M. Settle and J.D. Fry)

Excerpted from HortScience, 45(5):654-659, April 2010

Roughstalk bluegrass control in creeping bentgrass. Roughstalk bluegrass (RGB; *Poa trivialis*) is a problem in creeping bentgrass (CBG) fairways due to its poor drought and heat tolerance, which causes fairway thinning. The most effective herbicide treatments for RGB control were bispyribac-sodium (BYS) at 56 or 74 g/ha a.i. applied four times or sulfosulfuron (SULFO) at 27 g/ha a.i. applied three times. Although these herbicides control RGB and will allow CBG already present in the treated areas to spread, interseeding with CBG will improve long-term RGB control and speed conversion to CBG. Furthermore, SYS and SULFO appeared to be more effective in the first 2 years of the study when seasonal heat stress was greater, which appeared to improve long-term RGB

control and promoted CBG establishment. (J.M Rutledge, D.E. Morton, D.V. Weisenberger and Z.J. Reicher)

Excerpted from HortScience 45(2):283-287, February 2010

Application of herbicides to spring and fall seeded creeping bentgrass (CBG). Timing of herbicide application relative to seeding of CBG was studied. Bispyribac-sodium (BYS) could be applied to spring-seeded CBG as early as 7 days after emergence (DAE) but sulfosulfuron (SULFO) was safest on spring-seeded CBG 28 DAE. Fall-seeded CBG was generally less sensitive to BYS and SULFO, but SULFO still required at least 14 DAE at low rates and 21 DAE at higher rates. Roughstalk bluegrass control was not dependent on application timing, thus SULFO or BYS can be applied 28 DAE to minimize CBG loss. (J.M Rutledge, D.V. Weisenberger and Z.J. Reicher)

Excerpted from HortScience 45(2):283-287, February 2010

Seeded bermuda grass tolerance to athletic field wear. Many athletic field managers use Bermudagrass based on its quality characteristics and production of rhizomes and stolons that allow it to spread naturally and provide a superior playing surface when properly managed. Newer, seeded cultivars exhibit excellent quality and have become popular alternatives to vegetatively propagated cultivars. Applications of the growth regulator, trinexapac-ethyl (TE) at label rates and frequencies resulted in generally higher tolerance to simulated traffic compared to non-treated TE controls. The positive effects of TE applications were exacerbated in 2004 with higher soil moisture and when damage to the turf was more severe. Under drier conditions, effects were less, but still usually significant. Additionally applications of TE improved

turfgrass quality with few exceptions among the cultivars evaluated. Cultivars varied in their tolerance to simulated traffic with ‘Princess 77’ and ‘Riviera’ showing the best wear tolerance. (D.W. Willimas, P.B. Burrus and K. L. Cropper)

Excerpted from HortTechnology 20(3):533-538, June 2010

Effects of plant growth regulators on traffic tolerance of ‘Riviera’ bermudagrass. Bermudagrasses are becoming more commonly used on athletic fields in the transition zone because they offer increased recuperative potential and heat tolerance compared with other turfgrass species. These results suggest that TE (trinexapac-ethyl) may be better suited than other PGRs for use on ‘Riviera’ bermudagrass athletic fields before the initiation of traffic stress. (J.T. Brosnan, A.W. Thoms, G.K. Breeden and J. C. Sorochan)

Excerpted from HortScience, 45(6):966-970, June 2010.

Weed Control

Control of star-of-bethlehem in cool-season turf. Turfgrass managers can apply sulfentrazone to provide POST control of star-of-bethlehem in cool-season turf. Similar to what has been reported for other weed species, the inclusion of bromoxynil with topramezone and mesotrione significantly increases the level of star-of-bethlehem control. (J.T. Brosnan, G.R. Armel, W.E. Klingeman, G.K. Breeden, J.J. Vargas and P.C Flanagan)

Excerpted from HortTechnology, 20(2):315-318, April 2010.

Control of smooth crabgrass. The wettable powder and water based formulations of dithiopyr can be used to effectively control smooth crabgrass at the pre-emergence (PRE) or

one- to two-leaf (1LF) stages of growth, but quinclorac should be selected over dithiopyr for control of tillering smooth crabgrass plants. Turfgrass managers should implement smooth crabgrass control measures at PREad 1LF timings, because erratic responses can be observed with both dithiopyr and quinclorac applications to smooth crabgrass after tillering. (J.T. Brosnan, G.K. Breeden and P.E. McCullough)

Excerpted from HortScience, 45(6):961-965, June 2010.

Herbicide efficacy with alternative substrates in container production. Alternative substrates derived from forest products have recently been tested as container media for nursery production. This research showed that some of these substrates actually control spotted spurge (test weed used in the study) with commonly used preemergents (Rout and Ronstar 2G) better than when plants are grown in traditional pine bark based media. Pine wood chips hammer milled to pass through 0.48 cm and 0.64 cm screens, whole pine tree chipped and whole pine tree chipped to pass through 0.48 cm screen and composted poultry litter were the alternative substrates tested. When pine bark was mixed with alternative media the spotted spurge incidence went up. (D.R. Cochran, C.H. Gilliam, G. Wehtje, G.B. Fain, R. D. Wright and C.R. Boyer)

Excerpted from J. Environ. Hort. 28(1):19-26, March 2010

Control of butterfly bush with postemergence herbicides. Butterfly bush is classified as invasive in several parts of the United States. In Oregon, invasive populations have been documented along roadsides, abandoned industrial sites, reforestation areas, and riparian areas. Results from this research document the effectiveness of Roundup (glyphosate plus

surfactant), Aquamaser (glyphosate), Garlon (triclopyr) and Arsenal (imazapyr) for controlling butterfly bush applied as either a spray or cut-stump application. All applications were made in September, and herbicides were applied at the maximum labeled rates. Roundup and Aquamaster generally provided more rapid control than Garlon or Arsenal. Cut-stump applications also provided more rapid control than spray applications. Despite modest differences in control among herbicide types and application methods, all treatments provided 100% butterfly bush control when plants were evaluated the following spring. Because all treatments were ultimately equally effective, specific site conditions should dictate herbicide selection and application method. (J. Atland and J. Ream)

Excerpted from J. Environ. Hort. 28(1):48-52, March 2010

Marketing

The appeal of biodegradable packaging to floral consumers. On average, consumers like rice hull pots the most followed by straw pots. Seven market segments and corresponding consumer profiles emerged: “rice hull likers,” “straw likers,” “price conscious,” “environmentally conscious,” “carbon sensitive,” “non-discriminating.” When merchandising strategies for biodegradable containers, industry firms need to be consistent with their message, communicating information about biodegradable containers across all media, including web sites, catalogs, consumer advertising, and store shelves. Additionally, the value proposition of these products has to be clear and devoid of greenwashing (the misrepresentation of product attributes). Consumers have demonstrated a reluctance to purchase low-quality products, even if they do have green attributes. They must perform as well or better than non-green competing

products. (C.R. Hall, B.L. Campbell, B.K. Behe, C. Yue, R.G. Lopez, J.H. Dennis)

Excerpted from HortScience, 45(5):643-649, April 2010

Barriers to adopting sustainable floriculture certification. Growers are very aware of sustainability and feel it is important to the environment, because many have adopted sustainable practices in their operations. However, when taking the next step to become certified as a sustainable floriculture grower, growers have very little knowledge about U.S. certification programs and the majority is not interested in certification. The perception of sustainable practices as risky and that adoption of sustainable practices will not generate profits for the operation negatively impacted growers' certification interest. However, objective industry research in regard to certification and profitability potential would increase certification interest. Growers who do not have cash and carry end consumers are less likely to be interested in certification programs. It appears that the lack of knowledge about certification and lack of incentive to adopt underlie these barriers. If end consumers are unaware of the availability of certified sustainable floriculture products and are not demanding the products there is no reason for growers to offer them. Growers desire objective industry research as to how certification could increase their profitability and need to know if consumers are willing to pay more for sustainable production practices. (T.J. Hall, R.G. Lopez, M.I. Marshall and J. H. Dennis)

Excerpted from HortScience, 45(5):778-783, May 2010.

New Plants

'Blue Suede™': A southern highbush blueberry for the home gardener. 'Blue

Suede™' is an early-ripening *Vaccinium* hybrid that produces an abundance of light blue fruit and berries are generally large and have good flavor. The plant is vigorous and has attractive deep red fall color. It is estimated to perform well in USDA hardiness zones 6a through 9a. The fruit-ripening period is protracted—excellent for home gardeners who want to harvest over a longer period of time, but not as good for commercial production. The cultivar has been exclusively licensed to McCorkle Nursery and will be sold under the trade name 'Blue Suede™', which will be introduced as part of their Gardener's Confidence® Collection (www.GardenersConfidence.com) in late 2010 or early 2011. Propagation rights are controlled by University of Georgia Research Foundation, Technology Commercialization Office, GSRC Boyd Bldg, Athens, GA 30602-7411. (www.ovpr.uga.edu/tco/). (D.S. NeSmith, M.K. Ehlenfeldt)

Excerpted from HortScience 45(2):302-303, February 2010

Six new gerbera cultivars for marketing flowering plants in large containers. UFGE 4141, UGGE 7014, UFGE 7015, UFGE 7023, UFGE 7032 and UFGE 7034 produced high-quality plants and bright-colored flowers. They came into flowering earlier and produced more flowers than the control. UFGE 7015 showed a high level of resistance to powdery mildew, and the rest of the UFGE gerberas also showed improved resistance to powdery mildew compared with control cultivars. Plant patents will be sought and assigned to the University of Florida. Propagation and production will be licensed by the Florida Foundation Seed Producers. (Z. Deng and B.K. Harbaugh)

Excerpted from HortScience, 45(6):971-974, June 2010.

Pesticides/IPM

Pesticide Certification and Training Update
You know the old saying; “Change is constant”. Well the latest change coming to the pesticide certification and training program in Delaware is the movement of the pesticide applicator training manuals from the University of Delaware Cooperative Extension offices in the three counties to the Delaware Department of Agriculture office near Camden. This relocation of manuals centralizes all of the initial pesticide certification and training activities to the regulatory agency responsible for the program. The classroom training that was developed and conducted for many years, prior to administering the certification exams has been discontinued in favor of on-line training. All of the presentations that were conducted in the classroom have been placed on a University of Delaware web site and will soon be moved to the Delaware Department of Agriculture web site. The new format will allow pesticide applicators to access the training on their own schedule.

Recertification training will continue to be conducted by the University of Delaware Cooperative Extension Service specialists and agents, trade associations, consultants and vendors in the pesticide industry. Programs that have been approved for recertification credits can be found on the DDA Pesticide Section web site at:

<http://www.kellysolutions.com/de/Applicators/Courses/courseindex.htm>.

If you have any questions, please contact Larry Towle at the Delaware Department of Agriculture by email at Larry.Towle@state.de.us , or by phone at 302-698-4569.

NEW FEDERAL IMPORT QUARANTINE FOR AESCULUS SPECIES.

If you are a nursery grower who imports plants from Europe, here’s some important news for you. USDA APHIS PPQ has issued an order, effective January 25, 2010, prohibiting the importation of all plants in the genus *Aesculus* (horsechestnuts and their relatives) from all countries except Canada. This action is intended to prevent the introduction and spread of a new bacterial plant pathogen, *Pseudomonas syringae* pv *aesculi*, into the US. The disease is currently spreading rapidly through the Netherlands and Great Britain, where *Aesculus* species are commonly used as street trees. A survey conducted in 2007 estimated that up to 49% of *Aesculus* trees in the United Kingdom maybe affected. The bacterium causes bleeding cankers, usually starting at the base of the trunk and moving upward into branches. Infected trees develop dieback in the branches, and may be killed within a few years if the cankers girdle the trunk. Trees of all ages are susceptible – some younger trees may die within 3-5 years of first symptom development. The symptoms look like those caused by a number of *Phytophthora* species, and it was only recently that the actual pathogen was found to be a bacterium. While there are numerous pathovars of *Pseudomonas syringae* that cause plant diseases in the US, this strain has not yet been found here. The import quarantine pertains to plants for planting, but does not prohibit importation of *Aesculus* seed, as the disease is not known to be seed borne. The United Kingdom Forestry Commission has posted great photos and information on this new disease on their website: <http://www.forestresearch.gov.uk/fr/INFD-6KYBGV>
For a copy of the complete Federal order, go to: http://www.aphis.usda.gov/import_export/plants/plant_imports/federal_order/downloads/da2010-02.pdf

Publications

The ABCs of Green Industry

Communications: access, brand and communicate,
<http://www.lulu.com/content/6083320>. The book's workbook style enables readers to acquire knowledge of the basic who, what, when, where, why, how and benefits of contributing to niche markets as well as required communication formats. Author – Sylvia Hockus Wright.

iPhone TankMix calculator.

<http://itunes.apple.com/us/app/tankmix/id348144450?mt=8>

DuPont Crop Protection provides this free “app” available via iTunes that will allow you to calculate:

- Product/tank,
- Product/area,
- Water (finished spray volume/area, and
- % v/% v

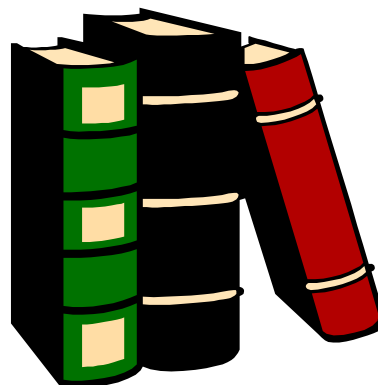
You can set the units you want (most common sense ones are available). DuPont calls it a “TankMix Calculator” –but it doesn't give tank mix information or directions. It does, however, using label directions, calculate how much of one product mix/use for you. There is a link to the iTunes store on the DuPont CP home page: http://www2.dupont.com/Production_Agriculture/en_US/cpp_html. That link takes you to a fact sheet and a link to the iTunes store. You can find the app by searching for “crop protection.”

Garden Pilot™ iPhone® App

The Garden Pilot™ iPhone app, powered by 10-20 Media, Inc, announces the release of version 2.0 that now includes ‘Branded Plant Collections’ and also announces the new Veggies and Herbs app called GardenPilot™ Lite. This release features branded plant collections such as Proven Winner, Hort Couture, Plants That Work, All America Selection Winners, Knock Out Roses, Southern Living Collection, Easy Elegance Rose Collection, Gardener's Confidence Collection, Anthony Tesselaar Collection, Tropicanna Tropicals, Flower Carpet Roses, Terra Nova Nurseries Collection, Savvy Succulents and Plant Select Collection.

Watch the YouTube video of the Garden Pilot iPhone app ‘Branded Collection’ search in action.

Retailers interested in being found through the GardenPilot™ web and iPhone apps should contact their preferred plant broker: McHutchison Horticultural Distributors, Eason Horticultural Resources or Fred C. Gloeckner and Company, or contact 10-20 Media directly. 888-999-5133 or www.10-20Media.com.



Calendar

July 18 – 24 – Perennial Plant Symposium & Trade Show, Portland, OR, 614-771-8431, ppa@perennialplant.org

July 22 – Penn State Flower Field Day, Penn State Research and Extension Center, Landisville, PA, Contact Penn State Cooperative Extension in Dauphin County, 717-921-8803.

July 23-28 – 86th Annual ISA Conference & Trade Show, Chicago, Contact www.isa-arbor.com

July 31, August 21, September 25 – Meadow Studies, Mount Cuba Center, Mount Cuba, DE. Instructor, Dave Korbonits will share his 20 years of experience in meadow gardening. 10:30 AM – 12:30 PM, Contact Mount Cuba Center.

August 3-5 – PANTS – Greater Philadelphia Expo Center, Oaks, PA, 800-898-3411, www.plna.com

August 3, 5, 9 and 10 - PA Pesticide Short Course, West Chester East High School, West Chester, PA, Room 107, 9 AM – 3:30 PM Contact Nancy Bosold, 610-378-1327.

August 11 & 12 – Penn State Turfgrass Field Days, Valentine Research Farm, University Park, PA, Contact Dr. Peter Landschoot, 814-863-1017

August 11 -14 - National Christmas Tree Association Annual Convention & Trade Show, Winston Salem, NC, 636-449-500, www.christmastree.org2010.cfm

August 19 – **Summer Landscape Expo**. East Coast Garden Center, Millsboro, DE, 8:15 AM – 4:30 PM Includes 5 great workshops, a hearty lunch and a closing social hour. Contact Valann Budischak (610-274-2166).

August 19th - Biosolutions for Biopollutions - The Mid-Atlantic Exotic Pest Plant Council workshop will be held in Fort Indiantown Gap, Annville Pennsylvania. Come learn about the latest in biocontrols available for some of our most common invasive species pests including Japanese Knotweed, Mile-a-minute and Tree-of-Heaven. Full Agenda and mail-in Registration available, www.ma-epcc.org (online registration/pay pal coming soon). A nominal fee for the workshop includes MA-EPPC membership and subscription to Wildland Weeds (<http://www.fleppc.org/publications/Papers.htm>).

August 23 – Pest and Disease Walk for Green Industry

Professionals, Delaware Valley College, Doylestown, PA, 8 AM – 12 PM. Contact Lawn Care Association of PA, 888-577-6801, info @lawncareof pa.org

September 2 – Chester County Landscape Update, Review the past season's pest problems and pick up a few timely core and category pesticide credits, Chester County Government Services Center, West Chester, PA, 1-4 PM, Contact Cheryl Bjornson, 610-696-3500.

September 8 & 9 – VNLA Annual Field Day & Summer Tour, HRARECS, Virginia Beach, VA, Contact 80-476-0055, www.vnla.org/filedday.htm.

September 9 – Montgomery County Landscape Update, Review the past season's pest problems and pick up a few timely core and category pesticide credits, Montgomery County 4-H Center, Colledgeville, PA, Contact Nancy Bosold, 610-378-1327.

September 10-13 – American Society of Landscape Architects Annual Meeting, Washington, DC Convention Center, 888-999-2752, www.asla.org

September 13 – Berks County Landscape Update, Review the past season's pest problems and pick up a few timely core and category pesticide credits, Berks County Agricultural Center, Leesport (Bern Twp), PA, 12:30 – 3:15 PM, Contact Andy Beck, 570-622-4225.

September 14 – Industrial and Right-of-Way Weed Meeting, Williamson Restaurant, Horsham, PA, Contact Scott Guiser, 215-345-3283.

September 15 & 16 – Community Tree Management Institute, America on Wheels Museum, 5 North Front Street, Allentown, PA, 8:30 AM – 4:30 PM. Contact Vincent Cotrone, 717-333-7440 or vcj1@psu.edu or Julianne Schieffer, 610-489-4315 or jxs51@psu.edu

September 21 – Lehigh County Landscape Update, Review the past season's pest problems and pick up a few timely core and category pesticide credits, Schnecksville Fire Company Pavillion, Schnecksville, PA, 4:00-9:00 PM, Contact Emelie Swackhamer, 610-391-9840.

September 21 – Bucks County Landscape Update, Review the past season's pest problems and pick up a few timely core and category pesticide credits, Neshaminy Manor Center, Doylestown, PA, 1:00 – 4:00 PM, Contact Scott Guiser, 215-345-3283.

October 4-8 – Tree Climbing School, Chadds Ford, PA, Contact Cheryl Bjornson, 610-696-3500.

October 5- Nov. 9 (Tuesdays) – Grounds School, Montgomery County 4-H Center, Contact Scott Guiser, 215-345-3283.

October 27-30 – Green Industry Conference (GIC), Kentucky Expo Center, Louisville, KY, 800-395-2522, info@landcarentwork.org

November 17 – Turf and Ornamentals Workshop, Hockessin, DE. Contact Valann Budischak,(610-274-2166).

December 17 – MD Pest Management Conference, Howard Comm College, Columbia, MD, Contact Suzanne Klick, 301-596-9413.

January 5-7 – MANTS, Baltimore Convention Center, Baltimore, MD, www.mants.com

January 26-27 – Delaware Horticulture Industry Expo, Modern Maturity Center, Dover, DE, Contact Valann Budischak (610-274-2166).

