

"Make a habit of two things — to help, or at least to do no harm." -Hippocrates

Today as the whole world is beginning the gradual lean toward green, we borrow this quote from Hippocrates. When it comes to selecting which plants to introduce into the landscape, the simplest way to "do no harm" is to select native plants. The native plant theme was echoed throughout the ELA Conference and Eco-Marketplace in March. As we reflect on another successful Conference and provide a few highlights for your consideration and inspiration, the native plant thread is woven throughout this issue of the Ecological Landscaper.

NATIVE PLANTS OF THE NORTHEAST • Donald J. Leopold, Ph.D.

N ative Plants of the Northeast includes entries for nearly 700 species of native trees, shrubs, vines, ferns, grasses, and wildflowers from the northeastern quarter of the U.S. and eastern Canada, this book's comprehensive horticultural coverage is unsurpassed by any other single volume. The natural ranges of many of the plants discussed extend beyond the Northeast; the information on horticultural uses applies to any garden. Each plant description includes information about cultivation and propaga-

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tion, ranges, and hardiness. An appendix recommends particular plants for difficult situations, as well as attracting butterflies, hummingbirds, and other wildlife. Illustrated throughout with color photographs.

INTRODUCTION

Nearly all flowering plants (except artificially created hybrids) are "wildflowers" or "native" species somewhere in the world; but a plant species that naturally occurs somewhere is not necessarily native to that region. For example, when dame's rocket (Hesperis matronalis) blooms in moist, open areas throughout the Northeast each year, many people assume it is native, a species of phlox. However, dame's rocket is in the mustard family (four petals, versus five for phlox flowers) and is native to southern Europe and western Asia. Ox-eye daisy (Leucanthemum vulgare) is another example of a widely naturalized species (again from Europe) that many observers assume is native to this region. In fact, many European species that are naturalized in the eastern U.S. are substantial components of "wildflower" seed mixes. The term "wildflower" should be restricted to those species that are truly native to a specific region. "Native" means that as best as botanists can determine, a species naturally occurred in an area prior to European settlement. While species included in this book are indeed native to some portion of the Northeast, they are not necessarily native to every county, state, or province in this region.

If one wants to learn more about which plant species are native to a particular region in the U.S., and about their identification characteristics and ecological requirements, an excellent source of information is the USDA PLANTS Database Web site (www. plants. usda.gov). For many of the species listed here, county distribution maps are included, along with much additional information on the plants. State heritage programs (accessed through www.natureserve.org/index.htm) The Ecological Landscaper is published by the Ecological Landscaping Association (ELA). Subscriptions are a benefit of membership in ELA. For information about ELA, contact:



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also have important information about native plant species, especially those of most concern.

ECOLOGY OF NATURAL COMMUNITIES

A group of species (plants and animals) constrained to an array of physical, chemical, and biological factors is a natural community. Natural communities can be forested or open canopy (no trees above). Forested communities generally comprise distinct groups of tree, shrub, and herbaceous species, and are typically referred to by the dominant tree species of that community (e.g., oak-hickory forest). Some open canopy communities are cattail (Typha spp.) marshes and old fields dominated by asters (Aster spp.) and goldenrods (Solidago spp.). Natural communities are not necessarily diverse; for example, cattail marshes and aspen (Populus tremuloides and P. grandidentata) stands have few other plant species. But some natural communities, like the cove hardwood forests of the southern Appalachians, rival the composition, structure, and aesthetics of any garden. And natural communities generally are highly dynamic—within any year, as species grow, flower, produce seeds, and become dormant, and from one year to the next, as plants mature and die over time, and their space is colonized by new plants.

Growing native plants simply as a collection of individual plant species can be quite satisfactory. Throughout my garden I have many native fern and wildflower species that likely have never occurred naturally together. In some places, these species are mixed with ferns and wildflowers that are native, but to places like Japan; for example, growing next to my devil's bit (*Chamaelirium luteum*) is the Japanese beech fern (*Thelypteris decursive-pinnata*). Only a few of my most accomplished colleagues would notice this incongruity. Why

not plant a native fern, like marsh fern (*T. palustris*) alongside this rather rare native wildflower, especially because both native species would thrive under similar growing conditions? Actually this and many other native ferns are dispersed throughout my garden in other patches of native and nonnative plant species. Having limited space for the large number of plant species that I would like to grow, I add plants that I like (and eliminate others) no matter where they originate. As a conservation-oriented botanist, ecologist, and teacher, the mix of native and nonnative plants serves many professional and personal purposes. But what if one wants to create a natural community, and has the space or opportunity to at least plant the woody and herbaceous species that define the plant portion of a natural community? Proceeding to this next level of complexity, one must appreciate the regional and local factors that underlie natural communities.

At every specific point in the landscape, the combination of these factors result in the growing conditions for a plant. Some of these factors have such a profound effect on plant species distributions that they act as a coarse filter for species over very large geographical areas. Some of these largescale factors, like climate, are relatively stable between years but within a year make the pronounced change of seasons. Climate is the most important factor that determines if a species can survive, grow, mature, and reproduce on a site, once it has successfully reached that location. The boundaries of many natural communities are first constrained by climate variables, especially those related to temperature. Other climatic factors can be equally important; for example, the raised bogs of coastal Maine and farther north develop because precipitation amounts in this region are greater than hydrologic losses due to evapotranspiration, which

NATIVE PLANTS continued on pg. 4

INVASIVE SPECIES RECAP & RESOURCES

T ach type of environment is home L'to different plants and animals - so what is invasive in one area may not be a problem in another. A plant's invasiveness is largely a matter of location and climate. Invasive plants have been introduced from other countries and from other parts of the US and have rapidly spread throughout plant communities across the nation. Nationwide invasive plants damage natural areas; displace native plants and wildlife; can increase wildfire or flood danger; consume valuable water; degrade recreational opportunities; and destroy productive range and timber lands. During the past decade, awareness has been raised of the economic and ecological damage that is caused by invasive plants in the US.



Invasive Example: Lonicera japonica Japanese Honeysuckle

Most of the plants used in gardens and landscaping do not invade or harm natural areas. But a few vigorous species can – and do – escape from cultivation into open landscapes where they cause a variety of ecological problems. These plants lack natural herbivores and parasites to limit their population size and are quickly able to dominate their new habitats. Every state has been affected by invasive species, costing the United States billions of dollars annually in agricultural losses and control measures.

Common attributes of invasive species include rapid growth, short life-cycles (the ability to germinate, grow, flower, and produce seeds rapidly), and abundant seed production. These attributes allow these plants to displace native species and disrupt the normal functioning of ecosystems. Wildlife that depends on native plants for food and shelter are therefore adversely affected.

Across the United States, there are many resources for identifying and dealing with invasive plant species in your area:

The APHIS Federal Noxious Weed Program is designed to prevent the introduction into the United States of non-indigenous invasive plants and to prevent the spread of newly introduced invasive plants within the United States. Web address: www.aphis.usda.gov/plant_health/ plant_pest_info/weeds/index.shtml.

The National Invasive Species Information Center (NISIC) provides a broad range of invasive species information; covering federal, state, local, and international sources. Web address: www.invasivespeciesinfo.gov.

The Invasive Plant Atlas of New England (IPANE) has created a comprehensive online database of invasive and potentially invasive plants in New England to facilitate education and research and support informed conservation management. Web address: http://nbii-nin.ciesin.columbia. edu/ipane.

The New England Wild Flower Society has several resources at their website including links to State Invasive Plant lists and lists of alternative plants to replace invasives in the landscape. Web address: www.newfs. org/protect/invasive-plants

The New York Botanical Garden has created a Catalog of Invasive Plant Species in New York and surrounding areas. Web address: http://sciweb. nybg.org/science2/hcol/inva/index.asp

PlantRight is a California-based, voluntary program to prevent inva-



sive plant introductions in the horticultural community. Their database, Invasive Plants in Your Area, provides an interactive search for all regions in California. Web address: www. plantright.org/plants.

NATIVE PLANT RESOURCE FINDER

For more help finding native plants in your area, the PlantNative website, www. plantnative.com, is a great resource. This site hosts a Native Plants Nursery Finder which lists, by state, the nurseries that specialize in sales of native plants. They also provide a native plant organization finder so you can get involved with fellow enthusiasts. The PlantNative goal is to work with nursery owners, landscape professionals and consumers to increase public awareness of native plants and related landscaping practices and to increase both the supply of and demand for native plants.

is greatly affected, but not solely, by temperature. The geographical distribution of many species, and hence the natural communities they constitute, are controlled first by climate factors. While one has the least control on climatic factors, some plant species can be sited so they are less affected by cold, heat, etc. Extending a plant species into the next higher horticultural zone is often possible by placing that species near the foundation of a house, especially on the south side. But a broadleaf evergreen species that is otherwise cold hardy might be damaged growing at the same location.

The manifestations of climate at any point in time and space, or weather, can vary minimally to substantially, one day to the next. We make decisions about what to plant largely based on our understanding about the climate in an area. But weather, especially extremes in heat, drought, and cold, is the most humbling physical factor to which every gardener must eventually surrender.

Many large-scale factors change little over decades, centuries, and millennia. For example, although soils develop over thousands of years, the underlying surficial and bed-rock geology will not change until some catastrophic event (like plate tectonics, glaciation, or other paleoevents) occurs. The bedrock geology can directly influence soil (and water) pH, which is demonstrated so strongly in central New York by the large outcrops of limestone bedrock that provide ideal growing conditions for so many fern species, at least those that thrive under circumneutral conditions. Some of the forested natural areas near Syracuse have over two dozen fern species-some glued to the tops of the limestone blocks, others in deeply shaded nooks filled with rich, organic materials. Not far away from these uplands are calcareous wetlands (fens) that receive groundwater that

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has moved through this bedrock and glacial deposits enriched by high levels of calcium. These fens, which hold so many unusual plants and animals, and some plants very well known among gardeners, like the shrubby cinquefoil (*Potentilla fruticosa*), are a result primarily of the climate, bedrock geology, and surficial geology, which provide a unique hydrogeological setting in the landscape. It is important to understand these major factors locally before embarking on ambitious plans to create certain natural communities.

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Donald J. Leopold, Ph.D. has been studying native plants for nearly 30 years and shared his knowledge of native plants as a speaker at the 14th Annual ELA Conference.

Additional information can be found through the publisher, Timber Press, http:// timberpress.com.

INSPIRED WITH NEW KNOWLEDGE OF NATIVE Plants: Now What?

The case for using native plants has been made; you understand the advantages; and you are inspired to put this new knowledge into practice. The next steps to using native plants in an ecologically sensitive installation might come from a new book from the UNH Cooperative Extension: *Integrated Landscaping: Following Nature's Lead.* Although the book was written in the context of New Hampshire and Northeast landscapes, the principles and practical lessons are applicable throughout the country. Read on:

Integrated Landscaping: Following Nature's Lead

A new way of thinking about landscaping home grounds and public spaces

New Hampshire's rapid development over the past four decades has replaced natural plant and animal communities with landscapes that often appear as an afterthought, replicating the same few plants over and over again," says Mary Tebo, UNH Cooperative Extension's community forestry educator. "This cookie-cutter approach weakens natural communities, reduces plant and animal species diversity, degrades soils and water quality, and destroys the look and feel of the land that forms our sense of place. Another result of disturbance is proliferation of invasive plants that crowd out native plants and imperil endangered species. Invasives alone cover more than 100 million acres across the nation and cost U.S. taxpayers billions."

Looking to nature for guidance

"But what if we looked to New Hampshire's natural ecosystems for guidance? By following nature's lead we can create landscapes and gardens

- 4-

BRINGING NATURE HOME: HOW NATIVE PLANTS SUSTAIN WILDLIFE IN OUR GARDENS *by* DOUGLAS W. TALLAMY

Conservationists generally view urban and suburban developments as ecological wastelands, but Douglas W. Tallamy, Professor of Entomology and Wildlife Ecology at University of Delaware, makes a compelling case that urban and suburban gardeners can (and must) make a difference to the future of biodiversity of North American native plants and animals.

Tallamy is an expert on the interactions between plants and insects. In his very readable book, he explains the ecological connections among plants, insects, and wildlife such as insects that require native plants to complete their life histories, and birds and other wildlife that depend on these insects for life. Tallamy demystifies the complex interconnections that compel us to use native plants. He passionately and articulately arms readers with knowledge of insects, plants, and the food webs that tie them together to help readers become more effective at teaching, advocating, guiding, and growing their own gardens.

In the tradition of Sarah Stein's *Noah's Garden*, he makes the reader grieve for the sterility of the modern urban and suburban landscape and the vast deficiency of food sources for wild creatures, and creates a longing for the former abundance. He instills the reader with a commitment to do all he/she can to bring back that abundance by Bringing Nature Home. More about the book, its author and concepts can be found at Timber Press, http://timerberpress.com.

-Willa Nehlsen, biologist and gardener in South Deerfield, MA.





ELA Conference and Eco-Marketplace Highlights

March weather may have been bleak, but the climate inside the 14th Annual ELA Conference was most pleasant. Three days were filled with educational talks, keynote speeches, skill center demonstrations, exhibits, and plenty of networking. Here are a sampling of conference sessions and reflections on the conference.

RISK ASSESSMENT IN TREES

Presenter: Dr. Brian Kane, University of Massachusetts, Amherst

Dr. Kane presented a thorough lecture about hazard trees and their risk to people and property in the urban environment. He stated the following three components of a tree risk assessment plan.



Example of Tree Decay Activity

- Thoroughly monitor your tree for defects to properly evaluate the hazard tree in question.
- Diagnose the problem to properly identify the causal agents (environmental and/or biological) to determine the probability of failure particularly in relation to the size of the defective tree part or parts.
- Determine risk assessment which includes the value and occupancy rate of the target (property and/or human life) in question.

Dr. Kane reviewed research findings about common shade tree defects with accompanying percentages reflecting occurrence. In general, tree defects are located in stems about 23% of the time and are due to decay; branches with poor attachment including bark occur about 53%; dead branches occur 16%; and root decay occurs about 13% of the time. Dr. Kane stressed that these findings are a compilation of many studies and observations and should only be used as a guideline. Different tree species growing under various environmental conditions and sites may not show these defect percentages exactly.

There are many kinds of tree defects in risk assessment affecting stems, branches and roots. These defects, which all weaken the strength of the wood, include: decay organisms, various wood cracks, leaning trunks, girdling roots, cut or broken roots due to construction, and storms. Other defects include multiple trunks, stems and branches; improper wood healing, including the inclusion of bark which weakens wood; poor branch attachment; fungal and bacterial cankers; top-heavy branches; and the extension of dead wood.

Wood decay is primarily due to various fungal organisms and is the major culprit of tree failure, especially when concentric (center of tree) decay is greater than 70%. Dr. Kane stated that tree failure is more likely to occur when decay cavities are greater than 33% of the stem circumference. When trunks or stems are plagued by onesided decay, known as offset decay, greater than 50% tree failure is inevitable as compared to healthy trees of the same species.

Dr. Kane also spoke about sound wood thresholds as a guide to better risk assessment. In general, a tree should have one inch of sound wood for every six inches of diameter; one and a half inches of sound wood for 20% of open cavity and at least two inches of sound wood for trees with 30% of open cavity.

Poor branch attachment increases the risk of tree failure especially when the bark is present between branch and trunk. This situation creates poor holding capacity or attachment. This situation is particularly true for trees with co-dominant stems where the bark creates a wedge between the stems creating poor stem attachment threatening property and / or human life when failure eventually occurs.

Dr. Kane stressed that improper pruning techniques contribute to poor branch attachment and wounds that lead to decay. Therefore, learning about the proper care and maintenance of trees in the urban environment is essential for reducing the risk of tree failure.

• Bruce Wenning, ELA Board of Directors

RAIN GARDENS

Presenter: Michael Clark, P.E., CPESC, Weston & Sampson, Inc. Sarasota, FL

Michael presented an informative and well illustrated lecture on rain garden function, design and construction for small storms. He stated that rain gardens, in general, are designed and built to manage and reduce run-off into bodies of water. They help reduce the impact of pollutants, storm water and suspended solids, excess plant (fertilizer) nutrients, petroleum hydrocarbons, and many other water pollutants.

Several rain garden design considerations were presented and included the size of the surrounding watershed, ground water levels, and the bio-reten-



tion soil mix needed for proper support of growing plants in the rain garden. Michael stressed that rain gardens are "bio-filters" and treat water before it drains into natural water body systems. He emphasized that designers must be aware of all utility locations before they start any digging.

Michael has had success with his company's bio-retention soil mix which includes the following: two parts of coarse sand; one to two parts of topsoil or compost. This depends on the percent of organic matter content and particle size of topsoil component. He strongly suggests that soil should come from the surrounding site and such soil is a good source of soil microbes and other decomposing organisms. Other components are one part of shredded hardwood chips which serve as a long-term carbon source for decomposing soil organisms. Michael said that this or any other bio-retention soil mix must be tested to ensure adequate drainage and recommended modifying this mix as needed. He also stressed the minimum use of landscape fabrics in the rain garden design process. Lecture notes were not included in the Winter Conference book. E-mail Michael at ClarkM@wseinc.com to get lecture notes on this subject.

• Bruce Wenning, ELA Board of Directors

GLOBAL CLIMATE, LOCALE CLIMATE

Jerry Jenkins, biologist/ecologist/author

Respectful and informed dialogue might be a more apt description of Jerry Jenkins "presentation". In an artful way, he mingled observations from the audience with his well substantiated musings about changes in the global climate which impact his local region – upstate New York, specifically and New England generally. He wondered aloud, as the climate warms bringing Carolina winters to our region over the next century, what will it be like to live where steep roof lines are no longer



significant? Or, will Northern River Wetlands, miles of rare, open river corridor which depend on ice to maintain their qualities, lose the rare plants which now inhabit them and give way to the surrounding forest? Graphs and charts peppered his screen, embraced by long stretches of beautiful photographs of bogs, river corridors and forests. The difficult question of "what do I do with my carbon footprint" was analyzed with the assistance of Carbon Math data; how many tons of carbon per year am I responsible for and what have I done to reduce? Participants offered some solutions as well. One left the room with an impression of urgency and possibility of local change impacting the global condition.

- Allison Mooney, Mass Audubon Property Worker

IMPACT OF INVASIVES ON NATIVE PLANTS

Bernd Blossey, PhD, Cornell University

Prompted by deep-seated curiosity, Dr. Bernd Blossey aims to inform land management with thorough research, probing the relationships between invasive plants and food webs. Therefore, his presentation described three studies: the effect of purple loosestrife on growth of the American toad, the decomposition of plant material followed by the subsequent aquatic community, and the "front" of an invasion of garlic mustard in Pennsylvania forests and its impact on trillium and redback salamanders. Results sometimes confirmed fears while unforeseen influences explained other dynamics.

In wetlands, using field enclosures as well as defined plant areas, Blossey and his students examined the relationship between the toad tadpoles' growth and the supporting plant community. Rates of growth and maturation of the tadpoles were significantly reduced when loosestrife predominated. Analysis of loosestrife revealed that the percent of tannins per gram exceeds that of an oak leaf. The associated acidity changed the algal community hence altering the entire food web. The tadpoles, which eat the zooplankton and insects which, in turn, depend on algae, had less to eat when purple loosestrife was present.

A later examination of the influence of decomposing material from approximately 25 plants upon the presence of 20 amphipods employed measurements of decomposition rates, Carbon: Nitrogen ratios, pH, and oxygen levels among others. Comparing the amphipod populations between the plant materials revealed very specific interactions between primary producers and consumers. One amphipod might frequent the water from decomposing Plant A and be absent from the water holding Plant C, even though the plant material was the only difference between the evolution of the two communities. As happens in research, a question then arose as to the role of microbial feedback between these trophic levels. Nevertheless, the chemistry of the plant lays the foundation for the rest of the biotic community.

Finally, a study of the advance of garlic mustard into stands of native trillium led to some surprising insights. Though Blossey's team noticed that the size of native plants decreased somewhat when mingled with the invasive species, garlic mustard was not the primary driver of change in the forest: non-native earthworms were! These creatures depend on bacterial feeding while native plants in the forests rely on fungal and mychorrizal associations. Earthworms increased the decomposition and reduced the forest leaf litter. The loss of leaf litter leads to the loss of invertebrates, like the redback salamander, who can't reach adulthood without the native plants and small creatures which depend on the leaf litter to feed and grow. Furthermore, while not condemning garlic mustard, Blossey noted that earthworms seem to prepare the soil for non-native plants, as they are always found in association with each other. This is not the result the team had expected, but Blossey's aims for research to support smart management. Thus, open minds and clarity of interpretation guide the work.

Blossey is an ardent environmentalist, who wants definitive, rational information available for smart management. His findings illustrate the complexity of Nature's systems and remind all of the flexibility of mind which is needed to pursue goals of ecologically determined, effective management.

• Allison Mooney, Mass Audubon Property Worker

From the Conference:

"I learned a lot about subjects I wasn't that familiar with and am inspired to read/learn more."

"Extremely useful information"

"Was exposed to some very interesting and challenging ideas – I'd like to learn more..."

"I truly love being a part of the ELA conference – I always get inspired."

"Presentations were very well organized and presented."

"The presenter had a new way of speaking about and evaluating low impact development."

"I was inspired and reinvigorated by the conference. It is great to get together with so many likeminded professionals to exchange ideas."

As a land trust officer, this has been extremely helpful."

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that not only add beauty and increase property value, but that also protect soils, promote species diversity, reduce pollution, minimize energy and labor costs, recycle wastes, support the local economy, and look and feel as if they belong in New Hampshire. That's the approach we take in our new book, *Integrated Landscaping: Following Nature's Lead*," says Tebo.

"Integrated landscaping features multi-layered plant systems that grow and change over time. It proceeds holistically. Every step in integrated landscape, from initial conceptual design, to plant selection, establishment and ongoing maintenance, anticipates or loops back to connect with every other step."

Besides Tebo, the book's authors include landscape designer and permaculturist Lauren Chase-Rowell, geographer and low-impact living advocate Kate Hartnett, and professional artist and teaching naturalist Marilyn Wyzga. The idea for the book emerged after a conference where the four women discussed the need for information that would help landowners make environmentally sensitive decisions about landscaping when faced with challenging environments such as wet or drought-ridden areas or small, tight spaces. A grant from the N.H. State Conservation Committee (the "moose-plate" fund) got the book project underway.



Sanguinaria canadensis (Bloodroot)

A book anybody can use: homeowners, professional landscapers, municipal planners and community developers

"We've created a book anybody can pick up and create a beautiful, multifunctional landscape, whether their space is a postage-stamp garden, a parking lot island, a municipal park, or a large backyard," Tebo says.

"We invite readers to take a fresh look at their existing landscapes by asking questions such as: How does it follow nature's lead already? Does it keep soils covered? Are there any invasive species present? Are any plant layers missing? [Are there] plants that provide food or homes for wildlife? Can an individual tree or shrub become the foundation for a multilayered plant system?"

Lavishly illustrated, Integrated Landscaping features original photos, drawings, and sketches on almost every page to provide clear examples of the concepts presented. The book also incorporates 12 plant-system models that help landscapers and gardeners apply the concepts of layering and visualize how plants can work together in a variety of different low- and highstress settings.

Integrated Landscaping provides extensive plant selection charts and lists, worksheets for completing a comprehensive site inventory, plus appendices that offer more information on the many topics presented. For ordering information visit: http://extension. unh.edu/Pubs/Pubs.htm.

Integrated Landscaping: Following

Nature's Lead is a new publication for New Hampshire and other northeastern gardeners, landscapers, contractors, businesses and municipalities that want to create beautiful, functional landscapes based on natural ecosystems.

Integrated Landscaping: Following

Nature's Lead is a fully illustrated book. Photos, drawings, and sketches on almost every page provide clear examples of the concepts presented.



Cost is \$19.95, plus S&H, for a total of \$24. To order online, go to https://www. events.unh.edu/register.shtml?event_ id=2703 or \$24 check payable to: UNH Cooperative Extension and mail to:

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Saving Native Plants for our Future

The concept of saving seeds for future use goes back, way back. Ancient civilizations stored seeds in bountiful times for later food production. The reasons for saving seeds at this point in history reach far beyond the next food crop. All life on earth depends on plants, but despite their importance, plant species are disappearing at an alarming, and previously unprecedented rate. Contributing to this destruction is habitat loss, encroachment by invasive species, exploitation, and climate change.

Using the ancient seed bank models, and a growing concern for the loss of biodiversity, the Millennium Seed Bank (MSB) was started in 1974 as part of Britain's Royal Botanic Gardens. With participation from more than 100 organizations around the world, the MSB collection is currently in excess of 13,000 samples of live seeds - and growing. World-wide, seed banks provide an insurance policy against plant extinction from future climate change potential as well as the escalating impact of human activities. Saving seeds can ultimately save plants though research, restoration, and re-introduction projects.

In the United States, the Seeds of Success project is contributing to the seed saving mission initiated in Britain. One of the many regional seed saving efforts is the Atlantic Flora Project, established to save seeds from the Eastern Seaboard. The New England Wild Flower Society is working in conjunction with the North Carolina Botanical Garden and the New York City Native Plant Center to store and protect the native plants of New England. Excess seeds gathered (but not required for the seed bank) are used in the propagation work at Nasami Farm Native Plant Nursery, the native plant nursery and sanctuary of New England Wild Flower Society.



Going "Native" at Nasami Farm

The New England Wild Flower **L** Society is continuing to expand its exciting work with and commitment to native plants. The Society now owns and operates a native plant nursery and sanctuary, Nasami Farm and Nursery, in the Pioneer Valley community of Whately, Massachusetts. Formerly a thriving, privately owned retail/wholesale woody plant nursery, Nasami sits on 75 beautiful acres in the Connecticut River Valley. With this nursery, the Society is able to propagate native plants that are suited to the region and produce enough quantity to meet the ever increasing demand for native species. This new facility also provides the Society with new ways to collaborate with the region's nursery and landscaping industries.

Nasami sets itself apart from other nurseries in a number of ways. No other nursery operation in the northeast is focused solely on North American natives and in particular Northeast natives. Currently Nasami offers over 750 North American native species for landscape installation including perennials, trees, shrubs, vines, and ferns –many found exclusively through the Society.

With more than 108 years of conservation history, New England Wild Flower Society is fortunate to receive permits to collect seeds from many locations that are inaccessible to other operations. This reputation as a leader in native plant preservation opens opportunities to collect seeds on both public and private land. The seed collection effort is also enhanced through their relationship with the Millennium Seed Bank (see sidebar).

Landscaping professionals as well as homeowners can benefit from the work Nasami is doing in the area of local provenance. Provenance refers to the specific place from which a plant or seed originated. Plants of local provenance-those whose native origin is close to where they will be planted—are apt to be better adapted, and therefore perform better, than plants of more distant origin because temperature, precipitation, and other factors vary within each plant province. Growing plants that are not of local provenance can also affect the gene pool of a native species. The genetic makeup of a plant may vary from place to place. When a plant with non-local genetics is planted, it can mix with the local plants and alter the local gene pool in a way that decreases the plant's ability to survive in the area. Given a landscaper's need for restoration work, Nasami can be contracted to collect seed of local provenance for propagation and future re-introduction. For larger landscape installations, Nasami also offers volume discounts.



Trollius laxus: © New England Wild Flower Society/Dorothy S. Long

Ron Wik, Nasami Nursery Business Director, is very excited about their native plant offerings this season and suggests a few plants for consideration: Trollius laxus ssp. laxus: American globe-flower (spreading globe-flower, buttercup). To date, this endangered species is found in approximately 40 wild populations, most of them with fewer than 100 individuals, in eastern North America. Globeflower is a spring blooming perennial which grows to 12-20 inches tall and has 1 to 11/2 inch diameter, sweetly scented pale yellow or cream colored flowers blooming from April to June. The palmately lobed foliage is dark green and after blooming, the leaves

increase dramatically in size. Conservation activities and propagation at Nasami have finally made this endangered species readily available.



Epigaea repens: © New England Wild Flower Society/William Cullina

Epigaea repens, Trailing Arbutus (Mayflower): The Mayflower is in the Heath (*Ericaceae*) family and is a native of much of the eastern United States. It prefers acid soil in sandy or rocky woods where it grows to a height of 1-2 inches. Best known for their intensely sweet fragrance, the spring flowers are about ½ inch across and are pale pink or white. Wik believes that this year's crop of Mayflowers is the finest that the Society has ever produced.

Gaylussacia brachycera, Box Huckleberry: The box huckleberry is a dwarf evergreen shrub that forms large, solid-mat, self-sterile colonies about 1 foot in height. Box huckleberry is a long-lived perennial that belongs to the Heath Family (Ericaceae). Its glossy, leathery leaves persist yearround while other box varieties are deciduous. It has white or pinkish flowers that bloom from May to June. Fruits are similar to blueberries. New stems spread from the underground rhizomes at a rate of six inches a year. Believed to be a rare survivor of the Ice Age, one colony of this dainty evergreen plant in Pennsylvania has spread to nearly a mile and is believed

to be more than 12,000 years old. Wik indicates that Nasami has successfully propagated enough of this rare shrub to meet any and all demand.

In addition to the nursery, Nasami provides a sanctuary which includes: Mill River, Roaring Brook, Great Swamp, beaver meadows, and woodlands. Bordered by State-owned conservation land, Nasami provides an ideal setting for a future trail network through the beautiful natural areas beyond the nursery. Want a closer peek into Nasami's hidden treasures? Check out the Free Demos. Native plant experts share gardening tips and techniques at free demos on Sundays at 1 p.m. at Nasami Farm. These events are held rain or shine and no reservations are needed.

Upcoming free native plant demos include:

- May 11 EDIBLE NATIVE PLANTS: Nasami's Robin Silva discusses how to mix edible native perennials with vegetables and fruits.
- May 25 GROUNDCOVERS GO NATIVE: Nasami Director, Ron Wik, presents a wide selection of fascinating native choices for the garden.
- June 8 TOP NATIVE FERNS: Author, Elizabeth Farnsworth, presents a wide selection of native ferns.

For a complete listing of free demos, visit Nasami Farm's website, www. newfs.org/visit/nasami-farm.

New England Wild Flower Society offers the nation's largest native plant education program at locations across New England, including at Nasami. For course fees and required pre-registration, contact registrar@newenglandWILD.org or call 508-877-7630.

US FOREST SERVICE: Tree Owner's Manual

A common issue facing our urban forests is that trees are dying prematurely. Factors that contribute to tree failure are:

- Improper planting
- Lack of regular maintenance
- Inadequate protection during construction projects

To help remedy this issue, the U.S. Forest Service is creating a Tree Owner's Manual.

Like an automobiles owner's manual, this booklet includes a parts list, instructions for installation, tips for troubleshooting common issues, recommended service, and more. Cautions for safety and quality assurance are also included.

As a small, black-and-white booklet, the Tree Owner's Manual will be inexpensive to reproduce to hand out to customers. This reference should be used over the course of the tree's life.



Native Plants...

from North Creek Nurseries

Attendees at the ELA Conference and Eco-Marketplace had an opportunity to visit a source for exceptional native plant material located in the mid-Atlantic region, **North Creek Nurseries** from Landenberg, PA.



Porteranthus trifoliatus 'Pink Profusion' (Native Indian Physic)

Founded in 1988 by Dale Hendricks and Steve Castorani, North Creek is a propagation nursery that supplies starter plugs to wholesale and retail nurseries. North Creek produces a large selection of low maintenance native perennials, grasses and ferns with an emphasis on new varieties and Eastern North American natives and their cultivars. This wide selection is available in flats of plugs designed to be planted directly in the ground.



Dennstaedtia punctilobula (Hay Scented Fern)

These plugs are available in many sizes to meet the needs of the landscaping community including larger plug sizes that are used for restoration projects, highway departments, municipalities, and conservation societies.

Dale Hendricks is passionate about native plants and takes time to speak to organizations all over the East Coast about native plants in the landscape. He will be a featured presenter later this fall at the New England Greenhouse Conference.

The North Creek plant catalog and website provide extensive information on their perennials, grasses, ferns and shrubs and include helpful photographs. North Creek has built a reputation by providing beautiful plants and exceptional service to customers throughout North America. For more information about native plant availability visit: **North Creek Nurseries**, www.northcreeknurseries.com.



Lonicera sempervirens 'Major Wheeler' (Native Trumpet Honeysuckle)



from Sudbury Nurseries West

Located in the Pioneer Valley in Gill, Massachusetts, Glenn & Sabrina Cutting operate Sudbury Nurseries West. These third generation nursery growers offer high quality field grown and container nursery stock to the wholesale landscaping trade. Sudbury Nurseries West specializes in a broad variety of native species for landscaping, eco-restoration, and erosion control. Plant material is grown and propagated at their farm using the most local seed source possible.



Lindera benzoin (Spicebush)

Sudbury Nurseries West provides native plants in a wide range of sizes from plugs and small containers to larger containers and field-grown B&B and offers stock from conservation grade to ornamental quality.

Tim Mercer, former manager at New England Wetland Plants, Inc is responsible for developing the constantly expanding variety of native and wetland plant material. The goal of their native plant division is to provide competitively priced landscape quality, full/ well-branched plants with the highest quality root systems, propagated from local New England sources. If you missed them at the recent ELA Conference and Eco-Marketplace, visit **Sudbury Nurseries West**, www. sudburynurserieswest.com for more information.



Comptonia peregrine (Sweetfern)

BOOK REVIEW

NATIVE FERNS, MOSS, AND GRASSES, *by* WILLIAM CULLINA HOUGHTON MIFFLIN 2008

This is the third book in the award-winning native plant reference series by William Cullina, published by Houghton Mifflin. I was immediately drawn in by the depth of green photos on the cover of the book, though I wondered how anyone could cover ferns, moss,

and grasses in a single volume. The subtitle, From Emerald Carpet to Amber Wave: Serene and Sensuous Plants for the Garden, set the stage for the explanation. Cullina focuses on plants which have the most potential in the garden as well as those that are good candidates for native lawns, meadows, soil stabilization, and the like. He brings deserved attention to some fascinating species which are often looked at as merely background and describes them "as the canvas on which nature paints its portraits." The prose beneath the cover is both delightful



and informative. It is the type of book you can pick up briefly for immediate inspiration or linger with to fully experience the story of species such as: *Lycopodium clavatum* (Foxtail Clubmoss), *Matteuccia struthiopteris* (Ostrich Fern), and *Schizachyrium scoparium* (Little Bluestem).

The book begins with an explanation of native plants as well as invasive plants and goes on to describe plant hardiness, cultivation methods, and systems that support plant health. There is a separate section for Ferns, Moss, and Grasses; each including an anatomy of the plants, a resourceful guide including gardening and design, and a detailed encyclopedia of individual plant species. Within the encyclopedia entries, the section on Culture provides useful cultivation tips and wonderful descriptions of how the plants work best in the natural garden environment.

> The final section on Propagation demystifies the process of growing plants from spores, seeds, and cuttings and made me want to immediately begin collecting and planting. As with all his books, Cullina includes valuable resources for further study. There are colorful photos throughout the book and accompanying each entry, most taken by Cullina himself. The images help relay the author's description of gardens and landscapes as "fusions of form, color, and texture." Overall this is a pleasurable reference book rounding out an insightful series of native plant books.

William Cullina writes frequently and lectures widely on native plants and propagation. He is the director and propagator of the New England Wild flower Society's Garden in the Woods and Nasami Farm, the largest retail native-plant nursery in New England.

You can find this book and others by William Cullina at New England Wildflower Society www.newfs.org for more information visit www.houghtonmifflinbooks.com. For a schedule of Cullina's upcoming lectures and book signings, visit www.williamcullina.com.

- Review by Sandy Vorce



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WARNING: Fraud Targeting Landscape Firms

The Associated Landscape Contractors of Massachusetts (ALCM) has learned that an identity fraud scheme is targeting landscape firms across the United States. A firm receives a fax that says it is from the United States Department of Transportation and that the Department requires certain information in order to qualify the firm as a prospective contractor. A "financial information release form" is provided and the company is told they must fax the form in to qualify for contracts. This letter is not from the U.S. Department of Transportation.

If you have received such a letter you should immediately contact your bank. If you have already suffered a loss due to this scheme, please contact your local police immediately.

The Secret Service recommends extreme caution in all financial disclosure areas and recommends the following standard business practices:

- Keep a close eye on all reported activities in your bank account(s).
- Notify your bank that any additional lines of credit or wire transactions should be viewed with suspicion and must be directly cleared with your company's official agent.
- Never provide information that would give access to your bank accounts without fully confirming who is receiving that information.

Special thanks to ALCM and the members of the Nursery and Landscape Association Executives of North America for sharing this information.

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RECYCLE YOUR CELL PHONE. IT'S AN EASY CALL.

Plug-In To eCycling has teamed up with leading cell phone manufacturers, service providers, and retailers to encourage Americans to recycle their cell phones and accessories. There are many places and ways to recycle your cell phone.

Recycling all of the 100 million cell phones ready for end of life management in the US would save enough energy to power more than 194,000 US households with electricity for one year. EPA has targeted cell phone recycling because fewer than 20 percent of cell phones are recycled each year and most people do not know where to recycle them. Recycling cell phones results in significant environmental savings and can benefit those in need.

Cell phones and accessories are made from valuable resources such as precious metals, copper, and plastics - all of which require energy to extract and manufacture. Recycling cell phones reduces greenhouse gas emissions, keeps valuable material out of landfills and incinerators, and conserves natural resources. Recycling just a million cell phones reduces greenhouse gas emissions equal to taking 1,368 cars off the road for a year.

EPA has developed a series of eCycling podcasts including one specifically about cell phone recycling. Electronics recycling resources, including posters, public service announcements, and an electronics environmental benefits calculator, can also be found in the eCycling partner resources center. Go here for more information: www.epa.gov/ epaoswer/osw/conserve/plugin/cellphone/ index.htm.



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UMASS EXTENSION LANDSCAPE MESSAGE

For updates from the UMass Extension Landscape/Nursery/Urban Forestry Program, check out the LANDSCAPE MESSAGE. This website helps landscape, nursery and urban forestry professionals identify pests in the landscape, monitor their development, plan management strategies and create site-specific records for future management.

Each LANDSCAPE MESSAGE includes valuable information from sites throughout Massachusetts: growing degree day accumulation, soil temperature, precipitation amounts, and plant phenology. Detailed reports on the status of insects, diseases, and weeds of interest to landscape and turf managers are also featured in each edition.

For more information, go to: www. UMassGreenInfo.org

events _____



UMASS EXTENSION'S WALKABOUTS: SCOUTING FOR PESTS AND PROBLEMS OF WOODY ORNAMENTALS

May 28, 2008: Bridgewater State College, E. Bridgewater Insects and Weeds only, 5-7 p.m.

October 1, 2008: Arnold Arboretum, Jamaica Plain

Weeds and Tree & Shrub Diseases only, 4-6 p.m.

Learn how to put IPM practices to work efficiently. Join Extension specialists for a walk through the landscape for demonstrations of IPM tools and techniques, as well as a close look at some of the most common pest and cultural problems of woody ornamentals. Workshops held rain or shine.

Two Pesticide contact hours for categories 29, 36, and Applicators License available. Two ISA, 1 SAF, 1/2 MCA, 1 MCH, and 1 MCLP credits available.

Preregistration required as space is limited; the cost is \$50. For more information or a registration form, go to www.umassgreeninfo.org or contact the UMass Extension Landscape, Nursery and Urban Forestry Program at 413-545-0895 or eweeks@umext.umass.edu.

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WEED IDENTIFICATION WORKSHOPS FOR 2008, UMASS EXTENSION

Correct weed identification is an important first step in the development of an effective weed management program. Using a classroom presentation, potted weed herbarium and weed walk, UMass Extension Specialist Randy Prostak will help participants enhance their weed identification skills. Feel free to bring a weed or two to identify. Workshop held rain or shine (lunch not provided), 9 a.m. - 3 p.m.

Five pesticide contact hours available for categories 29, 36, 37, and Applicators License. MCLP and MCH credits will be offered.

Broadleaf Weeds (plus a few grassy weeds) July 30, 2008: Arnold Arboretum, Jamaica Plain

August 6, 2008: UMass Amherst

Grassy Weeds: a more in-depth look **August 27, 2008:** UMass Amherst

Cost is \$95/person (pre-registration is required, as space is limited). Registration is first-come, first-served through the mail or online. For more information, visit: www. UMassGreenInfo.org.

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4TH ANNUAL NORTHEAST PERMACULTURE (NEPC) SUMMER GATHERING 2008 JULY 11-13

Hosted by the Western Mass Permaculture Guild

Since January 2005, permaculture activists throughout the Northeast have been meeting and actively creating a network for mutually supporting each other and advancing permaculture solutions among the wider public in our area.

As permaculture designers we strive to recognize existing resources and create beneficial relationships between them. Farmers, teachers, designers, authors, researchers, extension agents, and other pc enthusiasts have all met face-to-face or otherwise communicated to collectively envision a complex symbiosis where we

share experiences, information, and resources, identify and meet each other's needs, and recognize and advance permaculture skills and ethics as a new cultural paradigm.

For more information visit: www. northeasternpermaculture.wikispaces.com.

CLIMATE CHANGE IN THE NORTHEAST: PREPARING FOR THE FUTURE – A WORKSHOP June 3-5

University of Massachusetts, Amherst

Focusing on oceans and forests, land and resource managers in New England and New York will develop a common understanding of natural and cultural resource issues and explore climate change management approaches in the Northeast. Upon completion, participants will be able to identify effective management approaches to climate change in the Northeast. The workshop will include; 1) Climate change impacts, i.e., sea-level rise, hydrologic cycle changes, temperature variability; 2) Forecast for the ecosystems, i.e., how the landscape will look; 3) Implications of these changes to management agencies. For more information, contact: Sarah Hines (shines@fs.fed. us) or Sheela Doshi (sdoshi@fs.fed.us) with any guestions.

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ELA members in California who are working to form a chapter in that state represented the organization at this year's

San Francisco Flower and Garden Show which was held in Daly City March 12-16, 2008. The Public Relations & Outreach Committee set up an ELA Booth and display. For the WATER theme, there was a mock house (one sided) with a gutter leading to a diverter and rain barrel. It had a rain garden planted with drought tolerant plants which were generously donated by local Nurseries. There was a display of permeable hardscape in the form of drivable grass serving as the driveway to the house. Also, there were examples of different mulches to use and lots of ELA literature for people to browse. Thanks to Anders Schmidt, Brian Ludwig-Cooper, Olin Anderson & Roxanne Evans for putting it all together. The group is planning a meeting this Summer to formally launch the chapter formation process. It is tentatively scheduled for June 27-29 in Santa Cruz and all members who wish to participate in elections and help establish this chapter should contact Stephanie Ludwig-Cooper (gaiacreations@shocking.com) for more information.

SAVE THE DATE! OCTOBER 14 – 17, 2008

35th Natural Areas Conference

Natural Areas Revival in Music City: Tuning into a changing climate and biological invasion

Conference website: www.naturalarea.org/08conference/

A joint conference of the

Natural Areas Association and the National Association of Exotic Pest Plant Councils

www.naturalarea.org Natural Areas Association | 115 NW Oregon Ave., Ste 28 | Bend | OR 97701



unclassifieds -

Well Water Connection, Inc. provides practical, cost-effective and environmentally conscious solutions to waterrelated problems experienced by green industry professionals and their clients. Our unique approach combines professional project management with water well, pump, filtration and stain removal services. For immediate service or more information, contact John Larsen at 978-640-6900 or jlarsen@wellwaterconnection.com.

Did you miss the ELA Conference?

2008 Conference Proceedings Booklets for Sale

Copies of the 2008 Conference Proceedings Booklet, which contains speaker handouts, are available for purchase for \$20 (includes postage and handling).

For booklet orders please send your check, made payable to Ecological Landscaping Association and send to:

1257 Worcester Rd., #262 Framingham, MA 01701

Please be sure to include your return address with your order.

Thank You for Your Ongoing Support!

The Ecological Landscaping Association would like to thank the following for their generous help in sustaining our mission through the Annual Appeal:

Rosalind Creasy Seth Berman Nina King Lavin Anders Schmidt ACCNP Soil Retention Products Camilla Worden Michael Ohly Ewing Landscapes & Gardens Jennifer Pettit Nancy Askin And thank you to our valued ELA supporters who wish to remain anonymous!

CAN YOU LEND A HAND?

ELA is searching for motivated, energetic individuals to become board members, committee members, and dedicated volunteers. Our past success and our ability to improve and expand ELA in the future depend on the support and involvement of many people.

Would you like to assist ELA in providing information on how to protect, preserve, and restore the environment? Do you have experience on a board or committee? Do you have a background in grant writing or fundraising? Public relations? Advertising? Event planning? Organizational leadership?

If you answered "YES" to any of

these questions, consider becoming more involved today and you can contribute to any of these ongoing projects:

- ELA Ecological Conference and Eco-Marketplace development and planning
- Roundtable Series
- The *Ecological Landscaper*, ELA's informative quarterly newsletter
- ELA's website content development: www.ecolandscaping.org
- Membership Recruitment
- ELA Publications
- Grant writing

For more information, contact ELA today: ela.info@comcast.net.



Please call our office for immediate service.

978-640-6900

www.WellWaterConnection.com