

Talk descriptions

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(All talks are in digital format. I can provide a digital projector and laptop if I have advance notice.)

Ecology and Horticulture

“Native Plants in Context: ecology, diversity, and interconnection” (Power point 1 ¾ hr but could be shortened to 1 hour)

No plant is an island: each exists in a context and community of trees and toads, rocks and rotifers, birds and bugs. Like human communities, this network of individual needs is supported by complex communication and mutualisms that we hardly understand. This lecture uses the analogy of human communities to explain the importance of relationships in the natural world and answers the age old lament “why is gardening such @#*&@^ hard work while presenting a more sustainable (not to mention back-friendly way to garden and live on this small planet.

“Sugar, Sex, and Poison: Shocking Plant Secrets Caught on Camera” (Power point 1 hour)

As we all know, plants are at the base of both the human and non-human food chain. Everything eats them directly or indirectly, which may or may not be a good thing as far as plants are concerned. Because they do not move around, it is easy to forget that plants are not helpless. They have evolved an incredible arsenal of chemicals, camouflage, spines, hairs, and waxes to discourage herbivores. On the other hand, they spend a huge amount of their energy on pollen, nectar, edible fruits, and sugary root exudates designed to attract and nourish animals, insects, fungi and bacteria so they can perform services such as pollination, seed dispersal, defense, and nutrient acquisition. It is a carefully balanced natural economy and community based on the products of photosynthesis that is amazing in its complexity and efficiency. Strengthening this natural economy through sound horticultural and agricultural practices is in essence what the organic movement is all about. In this talk, Bill Cullina will show how this world of pollen, poisons, pigments, pheromones, sugars and sex translates to sound organic practices we all can benefit from.

Unraveling and re-raveling the Web of Life

(Power point 1 hr)

It is natural for us to think of time in terms of our own life spans, and if we grant things that live and die over longer intervals an air of permanence it is certainly understandable. A Douglas fir that has lived 1000 years is incomprehensibly old to us, so to then think of the land itself as having a life span as well is nearly impossible. In geological time, 1000 years is roughly equivalent to 10 minutes in the life span of a person. In this sort of relative time, it has been about two years since the age of the dinosaurs and about two hours since the last Wisconsin glaciers retreated north. If we could only view the earth with some sort of super time-lapse photography for a few minutes, geological time would be understandable as the powerful dance of continents, mountains, ice and water, where forests ebb and flow like waves on a beach and ancient trees are mere momentary bubbles in the changing surf. Species are always in a state of flux, advancing and receding, evolving and disappearing, their presence in any one place only transitory. Even the land itself is constantly moving, shifting, and recombining. What perspective can a geological view bring regarding vexing questions like rarity, extinction and the thorny concept of *native*?

“Why You Can’t Buy a Forest in a Can:

Managing and Restoring Diversity in our Woodlands and Gardens”

(Power point 1 ¼ hr)

Eastern North America is blessed with some remarkable forests; forests that have suffered from 400 years of logging, plowing, pollution, and invasive pests. As our human population grows, so does pressure on our remaining forested lands, and we as individuals, communities, and nations need to act now curb their continuing degradation, for the sake of the trees and all that depend on them, including ourselves. It would be nice to think that you could just scatter a handful of seeds around in a degraded forest and come back a few years later to find the understory teeming with wildflowers, birds, and insects. Of course, nothings is that simple, but in this talk Bill Cullina will look at what makes our eastern forests special and what we can do in our own backyards and communities to restore the diversity our woodlands

(combines forest ecology, conservation, and propagation)

“Going Organic at Coastal Maine Botanical Gardens”

(Power point 1 hr)

Two years ago, we decided to convert to organic practices at the Coastal Maine Botanical Gardens. Many on the staff were skeptical that we could maintain a high standard of care with a limited budget and staff if we went this route, but we felt it was vital that we try. Luckily the experiment has been an overwhelming success: the plants are far healthier, pollinators more diverse, visitors happier, and costs have remained the same or even decreased. The switch has not been without challenges, however, and in this lecture I will discuss candidly what has worked and what has not when Coastal Maine Botanical Gardens “went organic.”

Photography

“Digital Macro Flower and Insect Photography for the Beginner”

(Power point 1 hr)

Close-up photography has the ability to reveal details about the natural world invisible to the naked eye, but for many people, mastering digital macro photography can be baffling and frustrating. In this talk geared for novice and intermediate photographers, Bill Cullina will explain the basics of digital photography as it relates to close up work with plants and their pollinators in a clear and non-technical way. He will cover equipment from point-and-shoot cameras to high-end DSLRS, tripods, lenses, filters and lighting then delve camera settings and tricks for getting professional-quality pictures on a non-professional budget. (A longer workshop version of this talk is described under the workshop section of this document).

Native Woody Plants

“What the Heck’s Gonna Grow There?!?: Native Trees, Shrubs and Vines for Challenging Situations.”

(Power point 1 hr)

It is one thing to *want* to use native plants in the landscape and yet another to know *what* to plant where – especially in difficult sites like dry shade, poor, sandy soil, wetlands, etc. In this talk, Bill Cullina will explore some of the best native shrubs, trees and vines for these and other challenging situations with one eye on their ecological appropriateness and the other on their aesthetic allure.

What do You Mean I’m Not a Perennial!?! - Native Shrubs and Small Trees for Perennial Companionship

(Power point 1 hour)

Most folks are familiar with the concept of the mixed border - perennials, annuals, shrubs and evergreens blended together in a seamless composition with year-round. It sounds good in theory, but transplanting this concept into a real garden is more difficult than it seems. Not all woody plants mix well with perennials and annuals for several reasons, including differing soil and fertilization needs, incompatible growth habits, aggressive root systems, or fear of crowds. This said, there are a number of native shrubs and small trees that mix wonderfully with herbaceous perennials and annuals. Many can even be cut back every year or two just like their non-woody neighbors to control their size and promote flowering and vigorous growth. In this talk, Bill Cullina will profile his favorite fifty "natural mixers," focusing native woody plants that bring, form, texture, color and wildlife to the perennial garden.

“Remarkable Rhododendrons and their Magnificent Friends”

(Power Point 1 hour)

Though almost every landscape in the Eastern US contains at least a few rhododendrons, laurels, or azaleas. Acidic, forested soils and moderate, moist climate make much of the

Eastern US perfect for many, many members of the heath family (Ericaceae), and we have one of the most diverse assemblages of species anywhere in North America. In this in depth talk, Bill Cullina will showcase all of the eastern species from *Arctostaphylos* to *Zenobia*, detailing their ecology, form, cultivation, and landscape uses.

"Homage to Wood."

(Power point 1 hr)

"Native trees, shrubs, and vines are not only beautiful and versatile, they are cornerstones of local ecosystems, offering food and shelter for a host of birds, mammals, and insects. In this presentation, Bill Cullina will profile some of the fabulous native trees appropriate for smaller spaces, with an emphasis on species that are easy to grow and provide interest through the season."

Native woody and herbaceous plants

"50 (OK, fifty-nine, but who's counting) Great Natives for the Northeast"

(Power point 1 hr)

(Think of this talk as a native plant buffet with something for everyone.)

You don't need to look to China or England to find beautiful, functional, enduring plants trees, shrubs, and perennials for our northeastern gardens. From the coastal plain to the Appalachian chain, the eastern US is home to a bewildering variety of native plants that bring with them grace, hardiness, and an adaptability to our climate and soils unmatched by most exotics. In this talk I will profile 50 or so of my favorite native wildflowers, ferns, trees, shrubs, and vines for gardens in the Northeast.

(I have done this as a 2 hr talk with 100+ plants)

"50 (OK, fifty-nine, but who's counting) Great Natives for the Southeast"

(Power point 1 ¼ hr)

Same organization but with emphasis on species appropriate for the Mid-Atlantic south.

"Made in Maine: indigenous plants Downeast"

(Power point 1 hr)

Maine is a land of extremes; from the wave battered, rocky coast to the cold, boreal forests and lakes near the Canadian border. Its natural beauty is due in no small part to the wonderful mix of tough, beautiful native plants that give the region its distinctive character. Come see what makes Maine and northern New England unique and special and learn how to bring a bit of its beauty into your own garden or landscape.

Perennials (wildflowers, ferns, grasses, mosses)

"Understanding Perennials – A Users Guide"

Powerpoint (1 hour)

Whether we live in the forest or the desert, the windswept coast or the landlocked heartland, we are surrounded by plants. We eat them, we build things from them, burn them, mow them, admire them; but do we understand them? There is certainly a plethora of scientific literature which seeks to unravel this mysterious kingdom of green, but unless you have an advanced degree in botany, plant physiology, reproductive biology and the like, most of this information is incomprehensible at best or unavailable at worst. In this talk, we'll take a voyage through the world of plants (and perennials in particular), and in a commonsense way, answer some of those questions we all have wondered about but have been afraid to ask.

“The Botany of Design”
(Power point 1.25 hrs)

Using his latest book, *Understanding Perennials* as a starting point, Bill Cullina tackles the thorny subject of garden design in a completely different way. In this fun and information filled talk he explores such things as the reasons for big leaves, variegation, red foliage and flowers and ways to create more satisfying designs without breaking the budget. He looks at life beyond the color wheel, the importance of healthy soil and reveals some of his best horticultural secrets while weaving together aesthetics, psychology, botany, and ecology into a fascinating one hour ride. It is a talk that beginning gardeners as well as seasoned pros will both learn from and enjoy.

“From Emerald Carpet to Amber Wave: serene and sensuous plants for the garden”
(Power point 1 hr)

Ferns and grasses are the canvas on which nature paints its portraits. Whether it is a lush forest floor, boggy carpet, or rustling prairie, these plants are there, weaving in and around and knitting together their chosen tapestry with a soft, tangible grace that is so subtle that it is overpowering when you really, truly stop and see. Stripping away names and associations, gardens and landscapes are fusions of form, color, and texture. The three act in concert to create spaces, moods, and aesthetic impressions. Though we tend to focus on color, it is form and texture that really create spaces and give them tone and mood. In a sense, color is candy for the eye, while texture and form are the starch and protein - richer, more complex, and enduring. In this one hour tour, William Cullina, NEWFS Director of Horticultural Research and author of the newly published *Native Ferns, Moss, and Grasses* will introduce you to some of his favorite texturally rich and visually delectable native ferns, grasses, and sedges.

“What the Heck’s Gonna Grow There?!?: Native Perennials for Challenging Locations”
(Power point 1 hr)

There is a myth that native plants will grow anywhere, which we all know is decidedly untrue. However, there are plenty of native species adapted to very harsh conditions, such as waterlogged or dry, infertile soils, deep shade, salt spray or heavy deer pressure. In this talk, Bill Cullina will present a selection of rugged yet beautiful native herbaceous perennials adapted to these sorts of challenging locations.

“Beyond the Green Carpet” (Native Grasses)
(Power point 1 hr)

A Garden without grasses is like a face without eyebrows. They provide the texture, movement, and drama that gives a place its personality and expressiveness. In this talk I will profile many, many wondrous native grasses, sedges, and rushes to enliven and enrich both sunny and shady sites.

“Beyond Black-eyed Susan’s and Border Phlox: Exceptional Native Perennials for Creative Gardening”
(Power point 1 hr)

Though gardening with native plants has truly come of age in this country, the nursery industry has barely begun to tap the amazing diversity within our flora. You don’t need to travel to Tibet to find plants that will thrill the eye and feed the soul. In this program, Bill Cullina will profile some of the outstanding native perennials yet to be discovered by the gardening public

“It’s easy Being Green in the Kingdom of Moss “
(Power point 1 hr)

I often wonder if I was a moss in my former life. I have an affinity for the misty dampness of rainy weather – what the Irish call a soft day. It is just the kind of weather that brings the mosses back to life. Gardening with mosses is both similar to and very unlike gardening with vascular plants, and just as rewarding. Mosses are everywhere, once you start looking, and the easiest approach is to encourage and enhance what you already have, rather than buying or collecting moss from other places. There are mosses that grow in the cracks of sidewalks, others at home at the edge of the pond, still others nestled under the grass in the lawn. Some thrive in the sun on the tops of mountains and others relish the darkest depths of a deep piney woods. Learn about the tricks and techniques for establishing your own kingdom of moss, as well as the likes and dislikes of a dozen easy and common species

“Tremble, Bloom, and a Slow Fade to Brown”
(Power point 1 hr)

Gardening is not just about flowers. It is also celebration of revolution: cycles of growth and death, changing moods, seasons, the interplay of light. With this in mind, my talk will focus on underused native perennials with enduring interest through the year. Plants that provide structure and temporal drama – be it their emerging leaves, flowers, fruits, or dramatic exit will be featured.

“Understanding Trilliums”
(Power point 1 hr)

It is difficult to explain the allure of trilliums, but they are one of our most beloved and cherished groups of wildflowers. Trilliums are an ancient tribe, tracing their lineage back to

the great temperate forests that stretched around the globe 60 million years ago, and they possess a certain grace and refinement coupled with a patient, unhurried way of life that comes only with age. There are 48 species in the world, and of these a full 75% occur only in the forests of eastern North America and especially in the southeastern US. I will take you on a tour of the genus *Trillium*, focusing first on the evolution, distribution, and ecology of the plants and then delving into the eastern species with all their individual wants and eccentricities, illustrating each with beautiful images of these highly photogenic woodlanders.

**“While Dinosaurs and Minators Have Come and Gone, Fern Continue Quietly On”
(Power point 1 hr)**

Ferns are ancient plants, but they don't live in the past. Ferns are fabulous creatures that have learned over the years how to survive and thrive in a great variety of habitats from swamps to rocky cliffs, and mountain tops deserts. They bring unmatched grace and quiet beauty to gardens in the sun and the shade. In this talk I profile 50 native ferns, clubmosses and horsetails – their needs, wants, and habits. Their tale is one of survival, sex, and celebration. You will never look at ferns the same way again.

**“Woodland Wildflowers – Jewels of the Forest”
(Power point 1 hr)**

Our woodland wildflowers are both captivating and mysterious, loved and misunderstood. There are no plants more beautiful than Lady-slippers, Oconee bells, trilliums, bloodroot, and hepatica, yet these slow-growing plants are far too rare in gardens. What is it that makes these plants so special, and especially fragile, and how can we establish some in our own gardens?

Orchids

**Understanding Orchids
(Power point 1 hr)**

Orchids are the most diverse, mysterious, and exotic plants in the world. Their popularity as house plants has surged in recent years as advances in nursery production have made them inexpensive and widely available. Drawing from his award-winning *Understanding Orchids*, Bill will explore the fascinating, challenging, and deeply rewarding world of orchids. You will never see them the same way again

**Understanding Lady-slippers
(PowerPoint, 1 hr)**

Lady-slipper orchids are at once the most loved and most misunderstood of wildflowers. Their complex biology, seductive beauty, and increasing rarity make them the subject of frequent questions such as “Are they impossible to grow?” “Are they parasites?” and “Can I transplant one?” This talk delves into the fascinating and complicated world of *Cypripediums* to provide the answers to everything the audience ever wanted to know about these amazing wildflowers. (can be combined with the workshop listed below with sufficient notice)

Propagation

“Stinking Benjamin, Green Dragons, and a Dwarf Hairy Beard-tongue: Secrets and Myths of Native Plant Propagation from Seed”

(Power point 1 hr)

Raising your own plants from seed is like deciding to brew your own beer or knit your own sweaters – it is a commitment to immerse yourself completely in something you feel passionately about. When I collect and clean seeds, sow them and nurture the young plants to adulthood, they are old friends by the time they find a place in my garden. They are like the kids next door who I have watched grow up – and that fosters a connection that can't be had by merely purchasing a plant at your local purveyor. I think you learn a great deal about a plant's needs and habits along the way, and as a bonus, you can grace your garden with all manner of interesting things. Yes – raising plants from seeds is cheap, and it inevitably leaves you with extras to share with friends. It is one of the most profoundly satisfying things I can think of to spend my time doing. Granted, growing woodland wildflowers or native trees does require some patience, but is not difficult if you understand some basic aspects of their biology.

Starting from seed also gives you access to an incredible diversity of species available from specialty nurseries, collecting forays, and plant society seed exchanges and your own back yard. Many rare unusual plants are often only available as seed, and other wonderful natives are too “wild” to attract the attention of commercial growers. Most of all, though, it's just plain fun, and once you wade *through* the flood of confusing technical language and well meaning but misguided information out there, it is pretty easy as well. So come, enjoy the talk, and lets get propagating!

“Why You Can't Buy a Forest in a Can: Managing and Restoring Diversity in our Woodlands and Gardens”

(Power point 1 ¼ hr)

Eastern North America is blessed with some remarkable forests; forests that have suffered from 400 years of logging, plowing, pollution, and invasive pests. As our human population grows, so does pressure on our remaining forested lands, and we as individuals, communities, and nations need to act now curb their continuing degradation, for the sake of the trees and all that depend on them, including ourselves. It would be nice to think that you could just scatter a handful of seeds around in a degraded forest and come back a few years later to find the understory teeming with wildflowers, birds, and insects. Of course, nothings is that simple, but in this talk Bill Cullina will look at what makes our eastern forests special and what we can do in our own backyards and communities to restore the diversity our woodlands

(combines forest ecology, conservation, and propagation)

“Beyond the Surface: soil physics, biology, and chemistry demystified”

(Power point 1 hr)

The focus of this talk is the wonderful world of soil physics, more specifically the interaction of water, air, temperature, and soil components. WE tend to ignore what we can't see, and thus horticulturists give short shrift to soils and soil health. Soil is everything, though, as far as plants are concerned, and a basic understanding of soils as they relate to

horticulture is vital to a well-rounded green industry professional. I will cover everything from mycorrhizae and other soil organisms to fertilization, soil structure, pH, and how they all interact to produce healthy or unhealthy plants. You will never look at dirt the same way again.

Workshops:

I regularly teach a propagation workshops and one focusing specifically on native Cypripediums (Lady-slipper Orchids), and the other on Wildflower Propagation

Digital Macro Flower and Insect Photography for the Beginner (workshop)”

Close-up photography has the ability to reveal details about the natural world invisible to the naked eye, but for many people, mastering digital macro photography can be baffling and frustrating. In this workshop geared for novice and intermediate photographers, Bill Cullina will explain the basics of digital photography as it relates to close up work with plants and their pollinators in a clear and non-technical way. He will cover equipment from point-and-shoot cameras to high-end DSLRS, tripods, lenses, filters and lighting then delve camera settings and tricks for getting professional-quality pictures on a non-professional budget. After a break, the class will spend two hours photographing in the garden then come inside for Bill to demonstrate post-processing and archiving techniques with student images using software such as Adobe Lightroom and Photoshop.

5 hours –best if we can do it early morning or late in the afternoon so people can take advantage of the better light

Growing Wildflowers from seed;

Duration 5 hours with a ½ hour lunch break

This workshop is usually held in the fall, when seeds are ripening and the time for sowing draws nigh. We begin with an overview of seed development, seed collection, cleaning and storage aimed at encouraging participants to begin collecting and processing their own seeds. Live samples, a projection microscope, and/or slides as well as handouts are included Depending on the facilities, an optional ½ hour walk outdoors helps reinforce the morning lecture. After a lunch break, the afternoon lecture focuses on seed dormancy and germination, especially the unique strategies and obstacles necessary to germinate difficulty genera such as trillium. The lecture is followed by a hands on demonstration of seed cleaning and sowing techniques. Again depending on facilities, participants may then have the opportunity to practice these techniques themselves and go home with a collection of seeds and seedlings.

Propagating Native plants from Cuttings and Divisions:

Duration 4 hours with a ½ hour lunch break.

This workshop is usually held in spring and early summer, when many species can be propagated from cuttings or division. As with the seed propagation workshop, lecture is reinforced with demonstration and then participants will have the opportunity to try their hand at various techniques. In the introductory lecture, I also try to demystify soil mixes, containers, and fertilization as they relate to propagation and production.

Understanding and Growing Lady-slippers:

Duration 3 hours

Aimed at the more experienced gardener who wishes to learn more about these remarkable plants, this spring workshop uses slides and live specimens to delve in to the rarefied world of orchids and the Lady-slippers in particular. Ecology (including seed germination, habitat preferences, pollination biology), propagation, and cultivation are covered in this 2 ½ hour workshop. I usually include a 40.00 materials fee so that participants can bring home a mature showy or large yellow lady-slipper as well as a young seedling to experiment with. (Plants provided by the New England Wild Flower Society Nursery and subject to availability)