

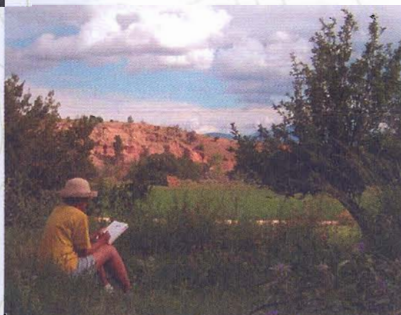
Highstead Arboretum

Spring 2006

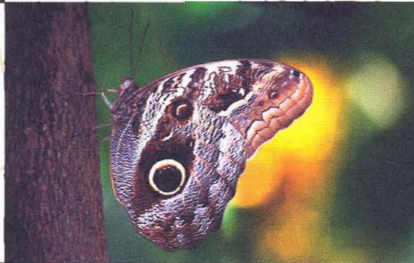
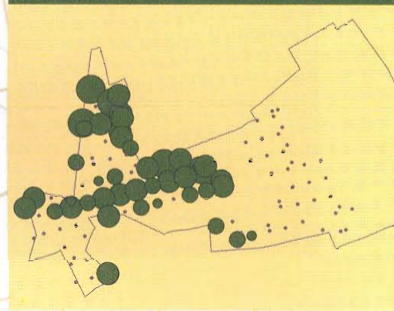
Elisabeth Dudley:
A Message to the Members
and Friends of Highstead

David Foster:
Highstead's Long-term Studies

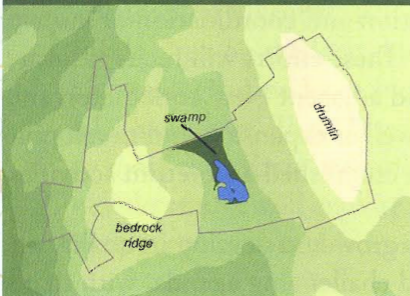
Margaret Shea:
Spring Programs 2006



Red Oak



Elevation



Spring 2006

A Message to the Members and Friends of Highstead



Elisabeth C. Dudley
Founder and
Chairman Emeritus

Twenty-five years ago, most of the Highstead acreage had been on the market for two years, complete with suggested subdivisions, awaiting new curators. I say “curators” because, in the finest sense, that is what we are when we take on property. We curate, care for, and influence what will happen to that property during our tenure and beyond.

As curators of the land comprising Highstead, my husband and I felt a need to conserve these beautiful, though not unique, Connecticut meadows and woodlands. Then, as now, it was so evident that pressures from increasing land values and a growing populace would only make this special place and the surrounding landscape more vulnerable in a climate of rapid development and a steadily deteriorating environment.

Our senior advisor, Dr. Peter Ashton, then Director of the Arnold Arboretum, assembled a team of extraordinary and accomplished young scientists and botanists, consisting of Peter Del Tredici of the Arnold Arboretum, Bill Brumback of Garden in the Woods, and David Foster, from the Harvard Forest, to serve as fellow advisors to this effort.

David Foster, Director of the Harvard Forest, is now Chairman of Highstead. It is a happy and fortunate circumstance to turn over this leadership role to David. The Board and I have complete confidence in and respect for his commitment and proven leadership qualities. He is a Connecticut native, immensely knowledgeable and accomplished, passionate in his dedication to the study of landscape history, past and present land use, scientific research, exchange of knowledge, communication and consolidation of effort to achieve the most effective and beneficial stewardship of the land in our time and for future generations.

The new directions for Highstead will include innovative programs to train and support conservation students and experts, disseminate information to land owners and the public, and assist the education and coordination of individuals and groups committed to woodland conservation. These efforts will focus at local (Southwestern Ct.), regional (Southern New England and adjacent New York State), and national levels. This will involve physical growth as well as expansion and development of personnel, and new programs that will build on established arboretum activities.

Highstead has continued to grow and develop in quality and its societal contributions. As we embark on a new and challenging agenda, with thanks to the efforts of many dedicated individuals over the past twenty-five years, a salute to Highstead and its future!

Elisabeth C. Dudley,
Founder and Chairman Emeritus

Highstead's Mission:

To inspire curiosity and build knowledge about plants and the wooded landscape in order to enhance life, preserve nature and advance sound stewardship practices.



Change is constant in the world. Evidence to support this statement emerges from countless studies in geology and ecology and has prompted global efforts to assess the human capacity to accelerate the pace of environmental change. But how do we develop the records to interpret past rates of change, anticipate future trajectories, and generate effective approaches for the conservation of nature?

Highstead's Long-term Studies:

Insights into the Problem of Invasive Exotic Plants



David R. Foster,
Director,
Harvard Forest

David Foster has been an advisor to Highstead since 1986. He is Chairman of Highstead Foundation.



Betsy Von Holle,
Research Associate,
Harvard Forest

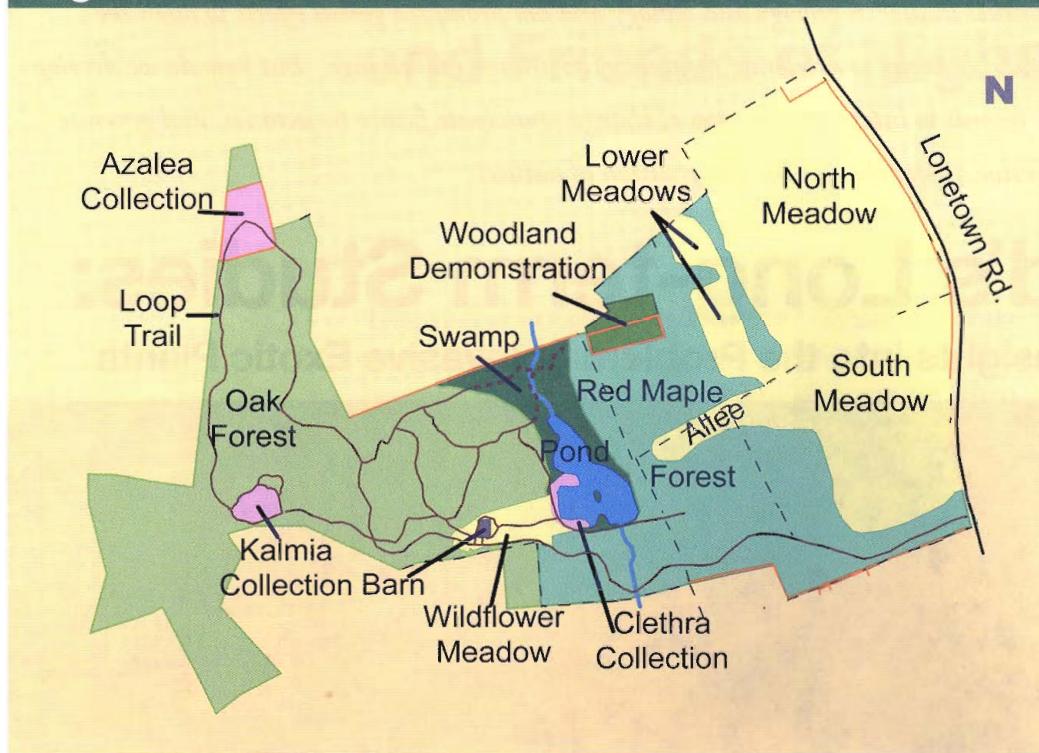
Betsy Von Holle is a AAAS Science and Technology Policy Fellow at the Environmental Protection Agency and a Research Associate at the Harvard Forest, Harvard University. She received her undergraduate degree from the University of California, at San Diego and her Ph.D. in Ecology and Evolutionary Biology from the University of Tennessee.

Highstead's Approach to Long-term Research

One great value of permanently protected landscapes like Highstead is the opportunity to develop long-term records of ecological change. There are two approaches that we are currently pursuing to study the dynamics of our varied landscape of forests, meadows, swamps, and streams. The first is an historical approach to reconstruct past changes in the environment, land and vegetation. This is an opportunistic exercise in which we use all available sources of information: documentary records such as deeds, journals, town histories, maps, and photographs; subtle clues on the land, like stonewalls, cellar holes, and the shapes and ages of trees; and geological evidence including fossil charcoal and pollen buried in wetlands or lake sediments. These historical studies seek primarily to relate the current conditions to more than three centuries of land use in southern New England. In future newsletters we will explore the techniques that we use and the intriguing insights that are emerging from this work.

A second approach involves repeated measurements of current conditions using the same methods over long periods of time. This simple technique has yielded some of the world's most important environmental time series including: records of the increase in the concentration of atmospheric CO₂; studies linking the decline of many migrant birds to tropical deforestation and temperate forest fragmentation;

Highstead



— road/trail - - - boardwalk
 - - - stone wall — fence

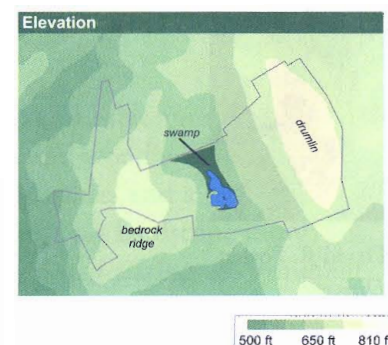
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and recent records of plant and animal population responses to climate warming. Such sustained measurements are invaluable, however, the required investment of time and resources limits the number of these lengthy records.

At Highstead, where there is a commitment to research and education, we set out to develop a framework for long-term studies that would serve many objectives: document future landscape changes, provide immediate answers to pressing scientific questions and management issues, and generate useful information for other scientists interested in working here. By addressing multiple objectives we sought to ensure that our measurements would be sustained and would grow in value over time.

The Framework for Assessing Long-term Forest Changes at Highstead

To address our multiple objectives we seized on a design that is simple and easily replicated, desirable attributes for any long-term study. To sample the landscape comprehensively we surveyed and permanently marked a 200-foot grid across Highstead. At each grid point we sampled the plants and environment to relate the vegetation to the soils, topography and history of the land. Future sampling will address many issues such as: changes in the health and abundance of plants with insect outbreaks and changes in the deer population or climate; contrasts in the growth rates of trees on different soils; and the impacts of disturbances such as ice storms or hurricanes. Meanwhile, the data from the array of grid points will provide indispensable background for studies by students and researchers interested in exploring particular groups of organisms such as birds, insects, small mammals, mosses, lichens and mushrooms.



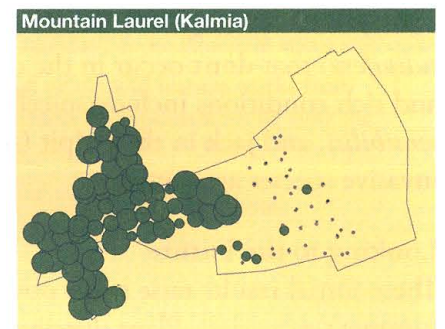
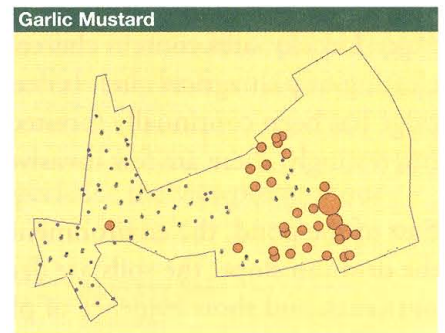
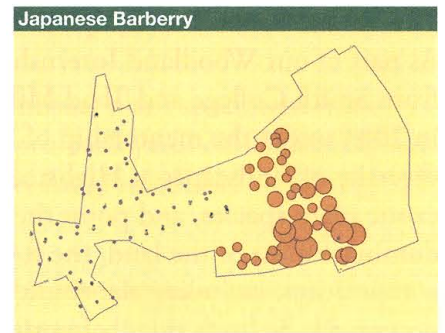
Woodland Interns: Bethany Burgee and Thad Miller.

We also conducted this study to address an immediate conservation issue: what factors control the distribution and abundance of the invasive exotic plants that are beginning to dominate many temperate forest ecosystems including Highstead?

Assessing the Distribution and Abundance of Invasive Exotic Plants

Exotic plants are an increasing concern to conservationists, natural resource managers and land owners because they can displace native species, alter habitat conditions, change ecosystem processes, and interfere with land management objectives. Good examples of these species in southern New England woodlands include: Japanese Barberry (*Berberis thunbergii*), Garlic Mustard (*Alliaria petiolata*), and Oriental Bittersweet (*Celastrus orbiculatus*). Despite considerable study of exotic plants, many questions remain unanswered regarding the factors that control their distribution. Most notably, there is uncertainty regarding the relative importance of environmental factors and human disturbance in rendering a landscape susceptible to the establishment and spread of these populations. For example, some studies suggest that productive sites support a higher density of aggressive exotics than less fertile soils; others suggest that areas exposed to disturbance, like suburban parks and forest edges are more susceptible to invasion; and a few studies with a historical perspective indicate that past land-use such as farming or logging may provide an explanation for modern problems with invasives.

Due to its diverse range of environments and forest types, abundance of exotic invasive species, and expanding base of information, Highstead presents an ideal location to examine the factors controlling the variation in invasive species. Highstead's landscape is formed by two parallel and contrasting hills: one a drumlin with moist, relatively rich soils and the other a bedrock ridge with dry, shallow and nutrient-poor soils. This setting is ideal for addressing many research questions. For example, if we document strong variation in the distribution of exotic species we can investigate which local factors are responsible. Meanwhile, the commitment to long-term studies allows us to follow changes in the abundance and distribution of these species with regard to various factors in the future.



percent cover
not present 1 > 50



Bethany and Thad collecting field data on the abundance of trees, shrubs and herbs in Highstead's forests.

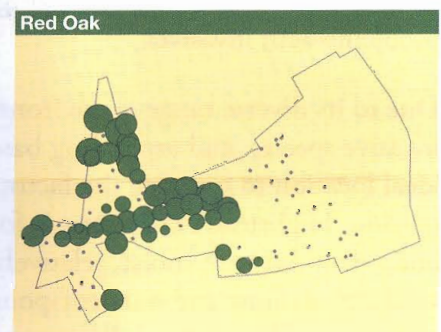
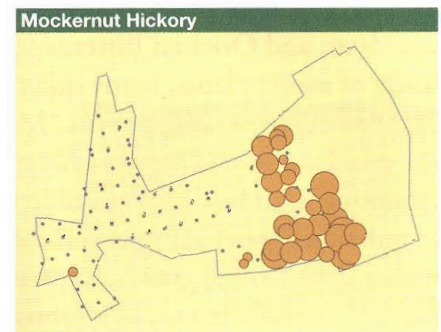
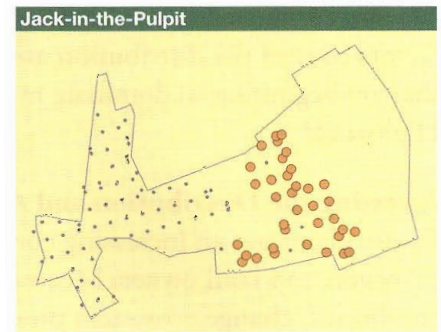
The Varied Forest Landscape at Highstead

As part of our Woodland Internship program two students, Bethany Burgee from Smith College and Thad Miller from Bethel College, sampled the forest in 2004 under the mentorship of Dr. Betsy Von Holle. The results reveal a great diversity of landscapes at Highstead, lend insights into the factors controlling exotic plant species, and point the direction for future study. Although trees dominate most of the land, the forests on either side of the pond are distinct in composition, including the abundance of exotics. To the west, dry oak forests occupy the bedrock ridge, oftentimes with a thick understory of mountain laurel. The plants, including herbs like Indian pipe and low shrubs like huckleberry, are characteristic of dry, acidic, and poor soils. The soils on these rugged, rocky sites contain charcoal from past fires, but exhibit no evidence of clearing or past agriculture. Indeed, our preliminary interpretation is that the ridge has been continually forested, but cut repeatedly for hundreds of years. Interestingly, there are few invasive exotic species in these rocky oak forests.

East of the pond, the environment and forests couldn't be more different. Across the drumlin slope, the soils are deep, moist, higher in pH, relatively rich in nutrients, and show evidence of plowing. Historical data confirm that these sites were cleared for agriculture and then reforested naturally in the past century. Red maple dominates the forests along with trees like mockernut hickory (*Carya tomentosa*), yellow birch (*Betula alleghaniensis*), and tulip tree (*Liriodendron tulipifera*) that don't occur in the oak forests. Other plant indicators of moist and rich conditions include spicebush (*Lindera benzoin*), sensitive fern (*Onoclea sensibilis*), and jack in the pulpit (*Arisaema triphyllum*). Meanwhile, exotic invasive species are rampant.

Looking to the Future

These initial results raise some obvious questions that motivate this coming summer's activities. Plant distributions clearly vary strongly with site conditions, especially soils. However, land-use history also co-varies with soils in a manner that confounds easy interpretations. Notably, the moist gentle terrain of the drumlin was cleared for agriculture, whereas the rocky ridge apparently remained forested. Consequently, interpreting the details of Highstead's land-use history, and the specific histories of these different forests emerge as major priorities that will yield much useful information. Meanwhile, our initial sampling focused exclusively on upland areas and avoided the swamp. Thus this summer we will complete our forest study by investigating the wetland. Finally, these new data and the permanent grid system at Highstead offer opportunities for other scientists and we are making plans to accommodate more colleagues in our efforts. It appears that our original plan of using long-term studies as a framework for diverse research and educational activities is beginning to display many different rewards.



percent abundance
not present 1 > 50

Spring Programs 2006

Visiting many arboreta is like a trip to a strange, exotic land – a chance to witness unusual plant specimens from around the globe. Visiting Highstead is like coming home – taking a walk in your own back yard. At Highstead, our challenge is to put the familiar in a new light, to keep us all from taking the everyday for granted, and to reinvigorate our love of Connecticut's natural landscape and native species.

Seeing from a new perspective – through someone else's eyes – is one way to keep our familiar surroundings fresh and interesting. This spring's programs at Highstead will offer you a chance to see our woodlands through the eyes of artists, scientists, historians, horticulturists, and foresters. These programs will offer you the chance to: witness how the dappled light seems to change the shape of leaves and flowers; look for clues to the past in the current composition and pattern of the forest; use a woodland as inspiration for creating a garden; and visualize the potential results of actively managing your woodland. Experiencing these different perspectives can help us form a closer connection to, and gain a deeper understanding of the natural world.

We all have a unique perspective to offer. I hope you will join us at Highstead to experience the viewpoint of our program leaders, and to share your own perspective with us!

Margaret Shea
Director

May 13- June 30

Art Exhibit: Bateman at Highstead

By appointment



Robert Bateman

Birgit Freyde Bateman

This exhibit of Robert Bateman's paintings and original prints will feature works from east coast private collections. Please call Highstead to make an appointment to view the show Monday – Friday, 9 am – 4 pm.

Artist's Lecture:

Thinking Like a Mountain: May 12, Friday

Fee: \$10 members; \$20 non-members

7:00 pm – 9:00 pm

Robert Bateman

This talk and slide show will include a spoonful of sugar and some medicine in the message. The sugar is Bateman's art – the medicine: a message that encourages us to change the perspective of our thinking, so we can make decisions from the point of view of the planet rather than from the point of view of instant gratification.

Artist's Reception: May 13, Saturday

Fee: Free

2:00 pm – 5:00 pm

Please join us for this reception, and an opportunity to meet Robert Bateman.

About the Artist

Robert Bateman has been both an artist and a naturalist since his childhood in Toronto, Ontario. His wildlife and wilderness paintings have been exhibited throughout Canada, the United States, and Great Britain and have received great critical acclaim. Robert and his wife Birgit currently reside in British Columbia.



Robert Bateman

May 20, Saturday

10:00 am – 12:00 pm and
2:00 pm – 4:00 pm

Tours of Highstead's Azalea Collection

Fee: Free for members; \$5 non-members

Margaret Shea, Director
Kathleen Kitka, Horticulturist

Highstead's Azalea collection should be at the height of its spring bloom! These tours will also explore the forest floor in search of wildflowers and orchids that will also be in flower.

Highstead Arboretum:

June 10, Saturday



Dave Pressler

Members' Day: Different Perspectives on Nature

Each of us sees nature through the lens of our own experience. This weekend will allow each of us to glimpse nature through the eyes of people with different experiences and perspectives: a historian, ecologist, gardener, and artist.

June 10, Saturday

10:30 am – 5:00 pm

Fee: Free for members; non-members \$25

Registration required.

You are welcome to attend all or any part of the day's events.

Human Settlement of the Redding Area: its impact on the natural landscape

10:30 am – 11:30 am

Charley Couch, Redding Town Historian

Charlie will reveal some of the forgotten secrets of Redding – with an eye towards the impact these historical events had on the ecology of the area.

Gardening with Mountain Laurel Workshop

12:00 pm – 12:30 pm

Carl Galanter, Horticulturist, Broken Arrow Nursery

This workshop will focus on landscaping with mountain laurel and recommended companion plants. Site selection, maintenance, and cultivar attributes will be discussed.

Plant Sale

9:00 am – 5:00 pm

Broken Arrow Nursery will be on site selling some hard to find mountain laurels as well as other native plants that make good companions for this shrub. (cash and checks only, please)

Lunch

12:00 pm – 12:30 pm

Bring a sack lunch and enjoy the beauty of the arboretum and the company of members and staff. Beverages provided.

Reading the Forested Landscape

1:00 pm – 5:00 pm

Tom Wessels, Professor

Antioch New England Graduate School

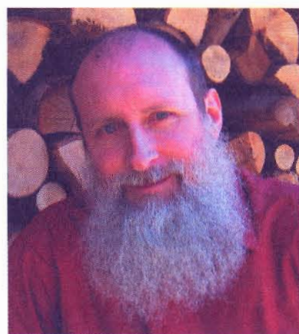
This slide presentation and tour through Highstead's woodlands will introduce people to approaches used to interpret a forest's history while wandering through it. Using evidence such as the shapes of trees, scars on their trunks, the pattern of decay in stumps, the construction of stone walls, and the lay of the land, it is possible to unravel complex stories etched into our forested landscape. This process could easily be called forest forensics, since it is quite similar to interpreting a crime scene.

About the Speaker

Tom Wessels is professor of Ecology and founding director of the Masters Degree Program in Conservation Biology in the Department of Environmental Studies at Antioch New England Graduate School in Keene, New Hampshire. He is the author of "Reading the Forested Landscape, A Natural History of New England".

June 10, Saturday

11:00 am - 4:00 pm



Tom Wessels

Spring Programs 2006

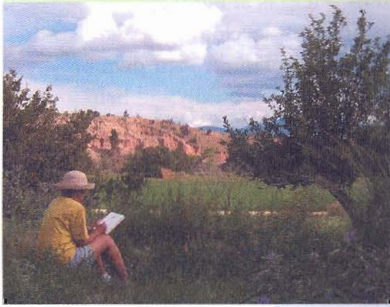


June 10, Saturday
11:00 am – 4:00 pm

Drawing Nature for the Complete Beginner
New Pond Farm, (203) 938-2117
Fee: \$85

Cynthia Padilla,
Botanical Artist

At New Pond Farm
Redding, CT



Learn the basics of drawing with other true beginners. To learn how to draw you must first learn how to see. Instruction will begin with observational skills and eye-hand coordination tips and techniques. Emerge with a sketchbook journal of studies, stumbles, and a few masterful drawings.

Art Exhibit: May 1 – June 11

Monday-Friday, 9-5

Cynthia Padilla, Botanical Artist, Instructor
New Pond Farm

In conjunction with the workshops, this exhibit will display sketches, studio drawings, small paintings, photos, and ephemera from the private sketchbook journals of Botanical Artist/Naturalist Illustrator Cynthia Padilla. Explore the inner pages of one artists' documentation of native flora and fauna, people and places encountered on her world travels.

June 11, Sunday
11:00 am – 4:00 pm

Documenting Nature in Color
Fee: \$85

Cynthia Padilla,
Botanical Artist

At Highstead Arboretum
Redding, CT



The focus of this workshop is color. Experience the joy of drawing native plants, flowers and nature forms in luminous, colored pencil. Highstead's mountain laurel collection will be the focus of inspiration for the workshop. Some time will be spent outdoors, weather permitting. Please bring a sketchbook and a sack lunch, and dress for limited outdoor conditions. All other art supplies and cold drinks will be provided.

About the Artist

Cynthia Padilla instructs workshops on botanical arts at universities, arboreta, and arts centers across North America. Her highly detailed renderings of plants and natural science subjects have been exhibited throughout the U.S. and Canada.

"Use what talents you possess, the woods would be very silent if only those birds that sang best sang." -Henry Van Dyke.

June 11, Sunday
10:00 am – 5:00 pm

Explore Highstead Arboretum
Fee: Free to members, \$5 non-members



Highstead's trails will be open to allow visitors to explore the arboretum and enjoy the mountain laurel collection - they should be in peak bloom.

Highstead Arboretum:

June 17, Saturday

9:00 am – 1:00 pm

Developing a Woodland Management Plan

Fee: free

Star Childs, Partner, EECOS

Larry Rousseau, Service Forester

CT Division of Forestry



Britt Freybe Bateman

The majority of Connecticut's woodlands are privately-owned – leaving the privilege and responsibility of their management with private citizens. Help is at hand for this daunting task! This workshop will lead you through the process of developing a Woodland Management Plan step by step. Whether you choose to develop a plan on your own or decide to hire a professional forester to assist you with a plan, this workshop will help prepare you for the process. The workshop will start with a classroom presentation and end with a visit to a nearby woodland.

About the speakers

Star Childs is Partner in EECOS, Inc. Environmental and Ecological Consultants. Star also serves as the President of the Great Mountain Forest Corporation which is now a private operating foundation that oversees the management and long term research into forest ecology and environmental services on 6,400 acres of private forest land in Norfolk and Canaan, Connecticut.

Larry Rousseau is a native of Connecticut. He has been employed by the Department of Environmental Protection as a forester for the last 28 years. His primary responsibility is to provide technical advice and guidance to private forest landowners and municipalities in the western third of Connecticut.

July 9 – August 31

Art Exhibit: CLOSE-UP!

Dave Pressler



Dave Pressler

This exhibit will feature a personal photographic view of predominantly native botanical subjects, *focusing* on intense, close-up images. Please call Highstead to make an appointment to view the show Monday – Friday, 9 am – 4 pm.

Artist's Reception: July 9, Sunday

2:00 pm – 5:00 pm

Fee: Free

Please join us for this reception, and an opportunity to meet the artist. Dave Pressler will speak about his work at 3 pm.

Artist's Walk: CLOSE-UP!

10:00 am – 12:00 pm

Learning to Look in Order to See: July 22, Saturday

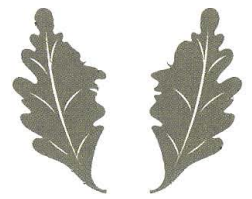
Fee: \$5 members; \$10 non-members

This casual walk through Highstead will explore texture and color of mosses, lichens, bark, and rocks. We will explore the effect of light on the structure of leaves and blossoms. Mr. Pressler poses the question, "What makes a person look at something, pause, and then take special notice?" Such *visual experiences speak their own language*, and prompt you say to yourself – "I never thought about it like that before!"

About the Artist

Dave Pressler holds a BFA in Fine Arts from Rhode Island School of Design and has studied at the Smithsonian Institute and Silvermine Guild Arts Center, where he is currently a Guild Member and a Trustee. Mr. Pressler has been a staff member of The American Museum of Natural History, New York; Field Museum, Chicago; and The Hudson River Museum, Westchester. His work has been exhibited throughout the northeast.

Spring Programs 2006



August 5, Saturday
10:00 am - 12:00 pm and
2:00 pm - 4:00 pm

**Tours of Highstead's Sweet
Pepperbush Collection**
Fee: Free for members; \$5 non-members

*Margaret Shea, Director
Kathleen Kitka, Horticulturist
Highstead Arboretum*



While August may not seem like the ideal time to hike in a swamp, the flowering and fragrance of our native sweet pepperbush is a rare and delightful treat that should not be missed. These tours will also include a visit to Highstead's collection of cultivated sweet pepperbush, where we will admire the range of beauty and form that make this native plant a welcome addition to almost any home landscape.

Registration/Reservations

To reserve your space please call 203.938.8809

Programs at a Glance

Date	Program title	Program Leader	Cost member	Cost non-member
May 12	Thinking Like a Mountain	Robert Bateman	\$10.00	\$20.00
May 13	Artist Reception: Bateman at Highstead	Robert Bateman	free	
May 20	Tour of the Azalea Collection 10-12	Margaret Shea	free	\$5.00
	Tour of the Azalea Collection 2-4	Kathleen Kitka	free	\$5.00
June 10	Members' Day		free	\$25.00
	Human Settlement of the Redding Area	Charlie Couch	included	
	Gardening with Mountain Laurel	Carl Galanter	included	
	Reading the Forested Landscape	Tom Wessels	included	
June 10	Drawing Nature for the Complete Beginner	Cindy Padilla	At New Pond Farm 203.938-2117	
June 11	Documenting Nature in Color	Cindy Padilla	\$85.00	
June 17	Developing a Woodland Management Plan	Star Childs Larry Rousseau	free	
July 9	Artist Reception: CLOSE-UP!	Dave Pressler	free	
July 22	Artist's Walk: Learning to Look in Order to See	Dave Pressler	\$5.00	\$10.00
August 5	Tour of the Sweet Pepperbush Collection 10-12	Margaret Shea	free	\$5.00
	Tour of the Sweet Pepperbush Collection 2-4	Kathleen Kitka	free	\$5.00

Highstead *Arboretum*

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P.O. Box 1097
Redding, CT 06875

203.938.8809

www.highsteadarboretum.org

