ADKINS ARBORETUM

NATIVE SEED

THE MISSION OF ADKINS ARBORETUM IS TO PROMOTE THE APPRECIATION AND CONSERVATION OF THE NATIVE PLANTS OF THE DELMARVA PENINSULA.

The Arboretum of the Delmarva Peninsula

Volume 14, Number 3, Fall 2009

CONTENTS

PROGRAM LISTING INSERT

Understanding Wood

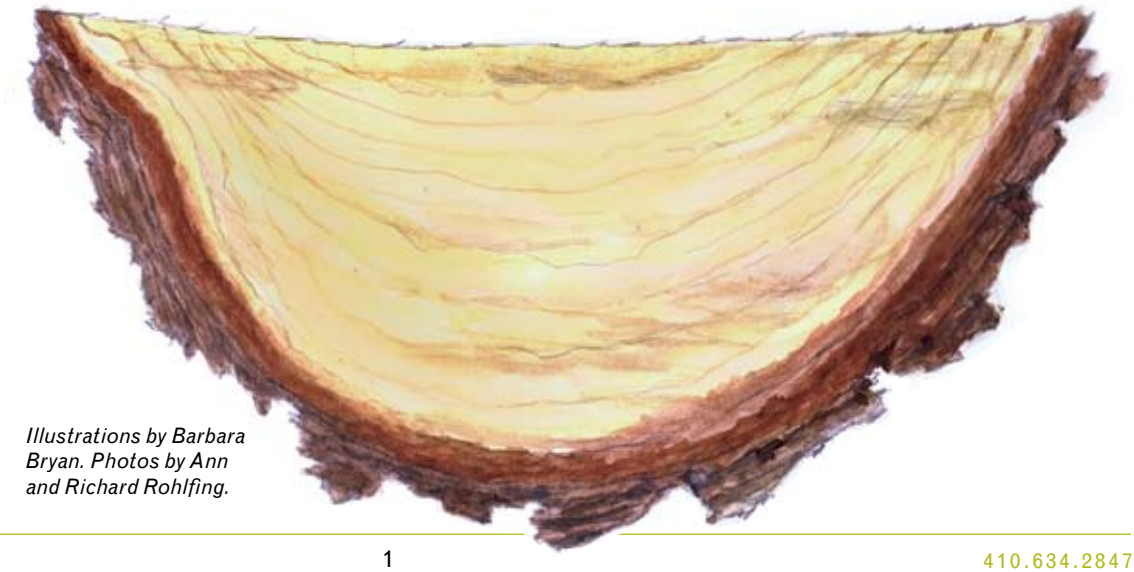
By Sylvan Kaufman, Science Advisor

When I was little, I spent a lot of time in my dad's workshop playing with scraps of wood. He built most of the house himself using heartwood pine salvaged from a barn for the floors, cypress for the siding, red cedar to line the closets, and oak for benches. I never thought then about why certain woods are used for certain applications. Now that I have my own house and a lot of wood furniture, I have learned much more about the structure of wood and why certain woods are used for particular purposes.

You can tell a lot about wood by looking at a smooth surface where the wood's "grain" is visible. The grain is formed by the size and arrangement of cells in the tree, the location of branches (knots), deformities in the tree (burls, lightning scars), and sometimes by diseases. The size and arrangement of the cells fundamentally influence the wood's possible uses. Whether you build houses or furniture or turn wood bowls, understanding the different characteristics of wood will influence how you make something.

If you cut across the trunk of a tree, you see the tree's growth rings. In most temperate trees, there are lighter colored earlywood rings and darker latewood rings formed during the growing season. Generally, earlywood is not as hard as latewood because the cells that make up earlywood are wider and have thinner cell walls.

The timber and woodworking industries call conifers like pine and hemlock "softwoods" and flowering trees like maple and oak "hardwoods." Not all softwoods are really soft. Bald cypress and Douglas fir, for instance, are harder than tulip (yellow poplar) or American basswood. Conifer wood has fewer cell types than hardwoods and consists mainly of "tracheid" cells. These cells are long and narrow. The tracheids in earlywood are often larger in diameter and serve to conduct fluids through the tree. In latewood the tracheids are narrower and have thicker walls that serve as physical support for the tree. In some conifer trees, like white pine, there is not much difference between the early- and latewood, and so items made of white pine do not show much contrasting grain. Yellow pine (loblolly, slash, longleaf, or shortleaf), on the other hand, has very distinct grain due to the difference in the tracheid widths. *(continued on page 3)*



Illustrations by Barbara Bryan. Photos by Ann and Richard Rohlfing.

Adkins Arboretum is operated by the not-for-profit Adkins Arboretum, Ltd. under a 50-year lease from the Maryland Department of Natural Resources.

The Arboretum's mission is to promote the conservation and appreciation of plants native to the Delmarva Peninsula.

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12610 Eveland Road
P.O. Box 100
Ridgely, MD 21660
410-634-2847
410-634-2878 (fax)

info@adkinsarboretum.org
www.adkinsarboretum.org

HOURS
10 a.m. to 4 p.m. daily except Thanksgiving and Christmas

ADMISSION
$3 for adults
$1 for students ages 6–18
free to children 5 and under.
Admission is free for members.

Dear Members and Friends:

To the question "Are we out of the weeds?" the honest answer is "No." But considering the Arboretum's native plant mission, to some staying in the weeds is what Adkins Arboretum is all about. For the Arboretum, an arboretum with a mission of teaching about native plants, the question has two meanings in these times of economic downturn. Regarding the economy, the Arboretum Board and staff are working hard to "stay out of the weeds."

When the Arboretum Trustees adopted the 2009 operating budget in January, they made a difficult decision to trim staff, publications, and advertising. This was done without cancelling programs or events, with the overarching commitment to keep the Arboretum's doors open every day. The Board was determined to maintain the Arboretum's services to its members and the general public at their current level and quality. That goal has been achieved.

What remains uncertain is whether the income goals for the year will be achieved. Next month you will receive the annual fall fundraising appeal. In addition to your annual membership renewal, the Arboretum makes one appeal to you each year for financial support. Please consider what it means to our community to have an arboretum that promotes conservation and serves as a model for sustainable living, and give generously to support the Arboretum. ***It is a unique place where all ages learn to be stewards of the environment. Not a book, not a cause, not a video, not a webinar, not a virtual experience. Adkins Arboretum is a place. A place that you can see, feel, smell, and traverse, where you can take in all the seasons and dimensions of the natural world and experience the real, the authentic, the native.***

There is strong evidence that the cultural institutions a community supports are critical to a community's ability to attract a vibrant, creative, tolerant, diverse, and educated citizenry. But it is also true that it takes successful, curious, dedicated, thoughtful individuals to sustain a cultural institution like Adkins Arboretum. We are proud to count you among our special and generous supporters. In 2010, Adkins Arboretum will celebrate 30 years. I hope you will help the Arboretum enter its 30th year financially secure and growing.

The uninformed may accuse the Arboretum of harboring weeds—poison ivy, greenbrier, broomsedge, Virginia creeper, and poke weed—but the informed gardener and nature lover know the beautiful bounty of native plants and the wildlife and healthy waterways and air they support: the sweet fragrance of blooming native azalea in the spring, white drifts of viburnum, chokeberry, and elderberry in summer, and the warm glow of golds, garnets, reds, and glossy burgundies of black gum, sweet gum, maple, and sumac foliage in fall.

To the question "Are you out of the weeds?" the honest answer is "Yes and no."

Thank you for all you do to help the Arboretum stay "out of the weeds." Your support is critical and appreciated.

Best wishes,

Ellie Altman, Executive Director

(Wood continued from page 1)

When a woodworker applies stain to a board with distinct early- and latewood, often the earlywood holds the stain better and appears darker because it has wider tracheid cells. Softwoods are often used to make paper because of fibrous tracheid cells in the wood. Pine is also used for framing houses in the eastern U.S. because of its fast growth and abundance. Pine, spruce, larch, and Douglas fir contain resin canals, passageways lined with cells that exude resin into the channels. Wood must be kiln dried to above 175°F to set resin, but sometimes small yellowish dots of resin will still bleed through a painted carving or board.

Hardwoods evolved later than conifers, and the cells became much more specialized. For instance, the large diameter, thin-walled "vessel elements" formed to conduct sap through the tree. Often the vessel elements are wide enough to be seen as pores in wood. Fiber cells, in contrast, are very small diameter, thick-walled cells that contribute strength to wood. The arrangement of vessels and fiber cells in hardwood trees gives many of these trees a particular look and function as wood. In oak, ash, elm, chestnut, and catalpa, the largest pores concentrate in rings that give the wood a distinct grain. Basket makers often use ash because it is easy to separate the wood into strips along the ring of vessels. The vessels of maple, birch, and tulip trees, on the other hand, are distributed evenly throughout the wood. The vessels are often narrow, giving them a more even-looking grain. Ray cells run perpendicular to the other cells to bring sap from the cambium layer under the bark into the center of the tree and can be quite distinct in red oak, beech, and sycamore.

The cells affect not only the wood's appearance, but also its structural properties. Perhaps the most common wooden objects in a house are cabinets. Cabinet doors are often made of solid wood, even if the rest of the cabinet is not. The cabinet doors in my kitchen have a simple frame around boards that are glued together edge to edge. This may seem simple enough, but a lot of thought goes into how those doors are constructed. When a living tree is cut, its cells contain large quantities of sap and water. Much of that water is lost as the wood dries, but some water will remain bound in the cell walls. As the relative humidity of the atmosphere changes, the amount of water held in the cells changes, causing the wood to shrink and swell. This is why bureau drawers stick in the summer in an un-air conditioned house and why cracks appear between boards of a wood floor in the dry heat of winter. Different woods swell and shrink by different amounts. If the panels of the cabinet doors are cherry, they will shrink less than doors made of hickory. Homeowners like cherry for its rich appearance and relatively even grain, and woodworkers like it because it shrinks and swells relatively little and is easy to work with.

For applications where strength is key, woodworkers often use a very hard wood such as sugar maple, ash, or hickory. Gym floors and rolling pins are often made of sugar maple, and tool handles of hickory or ash. Baseball bats are traditionally made of ash, with the maker's mark placed on the weakest plane of the bat so that hitters will hit the ball along the strongest plane of the wood. Wood strength is measured by the wood's ability to resist stress, whether through compression, expansion, or shearing. In nature the difference in these forces is seen when an ice storm adds weight to a branch or winds bend trunks or whip branches about in a storm. Knowing about the relative strength of wood helps to determine the design of a chair or the distance between joists under a floor. The legs of a chair

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The Arboretum welcomes and gratefully acknowledges its new members.

Maryland Nursery and Landscape Association
Ms. Jenny Aley
Mr. and Mrs. R. Michael Andrew
Ms. Elizabeth Baer
Ms. F. Anne Benintende
Mr. and Mrs. C. Timothy Bessent
Mr. Ralph Biddlecomb
Mr. and Mrs. Eric Birenbaum
Mrs. Rachel Bozorth
Mr. Michael Brogan and Ms. Meagan Howell
Ms. Kara Browne Crissey
Ms. Lora Bryner
Ms. Annmarie Buckley
Mr. Nick Burgess
Mr. James Carmen
Mr. Robert T. Carter
Mrs. Linda Childs
Mr. and Mrs. Manson Chisholm
Ms. Sarah Clark
Mr. and Mrs. Charlie Conklin
Mr. and Mrs. Wesley Conley
Ms. Beverly Connolly
Ms. Kathy Cook
Ms. Eliz Cox
Mr. and Mrs. Ralph DeMarco
Ms. Patricia L. Deptula
Rev. and Mrs. John J. Desaulniers
Ms. Tracy Detrich
Ms. Elaine Dickinson
Ms. Claudia Donegan
Ms. Elizabeth Faron
Ms. Elinor Farquhar
Ms. Kelly Feil
Mr. and Mrs. Howard S. Freedlander
Ms. Kelsey Frey
Ms. Sarah Fulton
Mr. and Mrs. Julius Gaal
Ms. Lisa M. Ghezzi
Ms. Billie Gibson
Ms. G. Giles
Ms. Robin Gill
Ms. Joyce Godfrey
Ms. Cynthia F. Golding
Mr. Don Grace and Ms. Nancy Smith
Ms. Marilyn Grossman
Mr. Charles Work and Ms. Veronica Haggart
Mr. and Mrs. Randy Hale
Mr. and Mrs. Richard Hall
Ms. Liz Hammond
Ms. Paula Hanks
Mr. and Mrs. Stuart Hansen
Ms. Crystal Hanson
Ms. Kim Hawkins
Mr. and Mrs. Keith Hensley
Mrs. Gigi Hershey
Ms. Dotty Hessinger
Mr. and Mrs. David Hill
Ms. Judith Hinniker
Ms. Cindy Hogan

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Leave the Cleanup for Spring: Fall is for Planting and Providing for Wildlife

By Sue Wyndham
Land Stewardship Coordinator

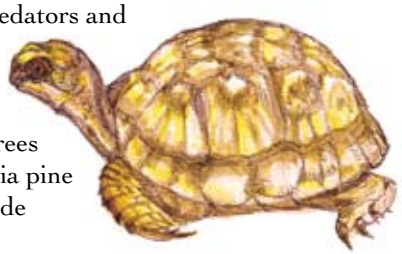
As summer gives way to fall, many property owners begin the task of cleaning up the garden. Preparation for winter typically entails removing brown foliage from plants that are going dormant, and eliminating fallen leaf litter from planting beds and lawns. If garden cleanup is not your thing, however, take heart. There is good reason to put it off until spring. From a wildlife perspective, fall gardens stripped of spent flower stems and dormant stalks mean fewer opportunities for birds and other wildlife to find shelter or food—basic necessities for survival, especially in the face of encroaching cold weather. Instead of removing valuable resources that enable butterflies, birds, and other animals to prepare for migration or winter, use this time to enhance the plantings on your property—fill in empty spaces, expand your native gardens, and support wildlife in the process.

The Arboretum's fall plant sale is the perfect time to enhance your property with ornamental native plants that benefit wildlife. Improving a property's aesthetics through gardening is a highly creative activity that holds for its artist great potential for connecting to the natural world. Just as plants are thoughtfully selected according to appearance, habit, and environmental needs, so too can they be selected for attracting or supporting wildlife. In *The New Gardening for Wildlife* (Whitecap Books, 2000), Bill Merilees states that

[t]he enjoyment of wildlife, like the enjoyment of art, music or literature, is a creative act. While it can be a matter of passive exposure, it may be enriched many times through active involvement. Through our windows, the world and its wildlife may be fascinating or dull, thrilling or frightening, ugly or beautiful according to our own personal perspective. For people who wish to improve their gardens for wildlife, the quality of their experience will depend first on what they "sow" or develop and second on their ability to observe and interpret what they see.

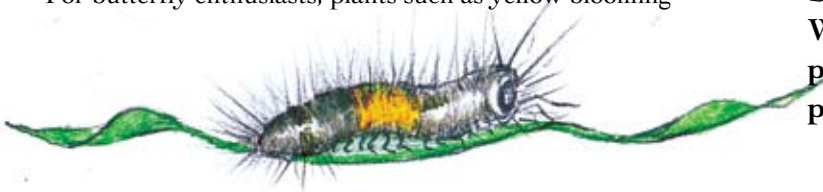
If what you want to "sow" and eventually see on your property are birds, butterflies, turtles, frogs, and other types of wildlife, select plants that will support these animals' ability to survive. For butterfly enthusiasts, plants such as yellow blooming goldenrod species *(Solidago caesia* and *Solidago sempervirens)* are a fantastic addition to the autumn garden. These perennial plants provide a colorful display of gold tones late in the growing season, and entice interesting and varying insects such as bees, moths, and butterflies into the home landscape. Species of *Eupatorium*, which bloom late summer through early fall and include flower colors ranging from white to pink to lavender, are another great option for attracting pollinators. These plants are available in a variety of sizes, providing options for small or large garden areas. The blue-flowering blue mist flower *(Eupatorium coelestinum)* reaches only 2', but lavender-flowering Joe-pye weed *(Eupatorium fistulosum)* can reach upwards of 5' in height. The colorful New England and New York asters *(Aster nova angliae* and *Aster novi-belgii)* also attract pollinators with their fall flowers. These late-blooming perennials add soft shades of blues and pinks to the fall landscape and garden while providing valuable nectar for bees, butterflies, and other pollinating species.

To attract birds and small mammals, consider adding evergreen shrubs or trees that provide year-round seasonal interest to the garden palette while also supplying wildlife with a winter food source and escape cover from predators and freezing winds. Plantings that include species like bayberry *(Morella cerifera* and *Morella pensylvanica*), eastern red cedar trees *(Juniperus virginiana)*, and Virginia pine trees *(Pinus virginiana)* will provide small birds with protection from predatory birds, and provide shelter from thermal stress, a condition similar to wind chill in humans. The beautiful cedar waxwing, a brightly colored songbird, is partial to the cedar tree's blue berries. Being privy to seeing this pretty bird's yellow belly and charming pirate mask as it visits your cedar planting is just one of the many wonderful benefits of gardening with native plants.



Nothing is more gratifying after a day's hard work in the garden than the knowledge that your property is not only more attractive, but is also serving local wildlife. This year, don't spend the gorgeous fall days on the drudgery of garden cleanup, but instead use the time for planting and relaxing in the company of some winged, feathered, and furry friends.

These and many other native plants will be available at the Arboretum's fall plant sale. The members-only sale is Friday, September 11. The sale is open to members and the general public on Saturday, September 12. Plan to join Arboretum staff on Wednesday, September 9 for an introduction to the plants available at the fall sale and to explore other plant choices for wildlife gardens.



Feeder Watch

By Margie Steffens, Volunteer Docent

A bike ride around my neighborhood indicates the presence of bird feeders at many households. Some are filled with mixed seed, some are empty, and some appear abandoned, with a buildup of dark residue at the bottom. Some are filled with sunflower seed, and at one of these I see a beautiful goldfinch.

We love for birds to come to our yards. Do you feed birds using feeders? I do. I like to see birds up close. Most people think they are helping birds by providing food in bird feeders, but the truth is, unless ice covers the ground and completely locks up the environment, birds find food in nature, where they live and raise their young. Bird feeders allow people to see birds up close. They are for people, not for birds.

Birds can get along without people. But we, apparently, cannot get along without birds, and that is a good thing. We love seeing birds on our feeders. When colorful goldfinch, cardinals, chickadees, nuthatches, and rose breasted grosbeak frequent our feeders, we want a closer look. Feeders are wonderful for homebound persons. They make excellent teaching tools, and are a great device for sparking an interest in birds in young people. Sometimes feeders can create a future naturalist, but make no mistake; the birds that come to feeders are opportunists. They make their rounds and take what they find available, but they don't need our offerings. They will find food for themselves.

Some scientists feel we should not feed birds at all. However, if you are among those who enjoy attracting birds to your yard, do consider the following points (*Birdwatcher's Digest*, Jan/Feb, March/April 2009):

- Dirty feeders harbor bacteria and can cause disease among birds.
- Old seed in feeders result in mold and mildew, which can cause digestive problems.
- Diseased, deformed, or dead birds near the feeder may be due to bad food.
- Predators, including hawks, brown-headed cowbirds, and house sparrows, are frequent visitors that can cause a nuisance for birds.
- Undesirable animals such as raccoons, rabbits, squirrel, deer, and even bear are known to visit feeders.
- Feeders too close to a house or plate glass windows can startle birds and cause them to fly into windows.
- Suet can spoil in warm weather. Studies in Oregon have shown gout on bluebird feet, and deformity in chickadee beaks thought to be caused by spoiled suet.
- Mealworm feeding is artificial and unnecessary.
- Spoiled nectar solution may cause illness in hummingbirds.
- Bird droppings left under feeders can cause disease.

Despite the dangers listed, you still might want to use feeders. The following steps can alleviate the problems of bird-feeding.

- Clean feeders frequently. Take down feeders as they appear dirty or moldy, wash them, and dry in the sun. Don't put seed in wet feeders. Put out only the amount of seed birds will consume in one day.
- If diseased or dead birds are spied on feeders or in the yard, take feeders down and clean thoroughly before hanging again.
- When predators appear, take down feeders for a few days.
- If collisions with the house occur, move feeders around the yard and place hawk silhouettes on plate glass windows.
- Remove feeders daily to deter undesirable animals.
- Change nectar solution often—every other day in hot weather.
- Clean up droppings under feeders and move feeders to a new location.

- Provide water in bird baths, and be sure to clean baths often.
- Use native plants* to create a habitat of nectar-, fruit-, and berry-producing plants, and plant grasses that provide seed. Leave grasses and other vegetation in your yard in winter. Allow leaves to stay on the ground for ground-feeding birds.

As I look around my small garden, I am amazed at the transformation this year's rains have caused. Five-foot-tall turtlehead *(Chelone)* grows next to the serviceberry tree *(Amelanchier canadensis)*. A blast of orange milkweed *(Asclepias tormentosa)* is already host to butterflies. I delight in watching the goldfinch use the flat heads of the tall coneflower *(Echincea purpurea)* as landing pads, and extract the seeds with their beaks. I would much rather see them on a native plant than on a feeder. After all, what better way to feed birds than by providing a smorgasbord of native vegetation? But if you must use feeders, think of them as little dining tables for birds. Set them with your best hardware and clean up after them when the meal is finished. Then you can be sure you are not hurting the beautiful birds we love.

**Native plants are for sale at the Arboretum throughout the growing season.*

(continued from page 3)

Ms. Karen Holland
Mr. Steve Hopkins
Mr. Rusty McKay and
Ms. Debbie Howard
Mr. and Mrs. Jay Jakab
Mr. and Mrs. Timothy Jerzyk
Mr. Chuck Jewell
Mr. Barney Johnson
Mr. Fred Kaiser and
Ms. Mary Lou Troy
Ms. Annette Kassa
Mr. and Mrs. Bill Keswick
Mr. and Mrs. Jack Krut
Mr. Richard Lange
Ms. Cecilia Laurin
Mr. Mark Lewandowski
Ms. Cindy Licata
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Ms. Jaime Mansfield
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Ms. Kate McGee and
Ms. Nancy Clark
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Mr. and Mrs. Kirk Ross
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Ms. Susan Russell
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Mr. and Mrs. John T.
Shannahan, Jr.
Ms. Candace Shattuck
Ms. Louise Shearer
Ms. Marie B. Simpkins
Ms. Susan Skelton
Ms. Cindy Smith
Ms. Dona Sorce

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Education Opportunities Abound for Summer Interns

Mikaela Boley and Elizabeth (Liz) Barton are this year's summer interns.

A shared interest in horticulture led Elizabeth (Liz) Barton and Mikaela Boley to the Arboretum's wetland, woodland, and meadows. For this year's interns, a summer at the Arboretum is the perfect opportunity to make connections between native plants, land use, and conservation.

A University of Delaware senior, Liz is studying landscape horticulture with minors in wildlife conservation and French. Mikaela is a rising senior at University of Minnesota-Twin Cities, and is studying environmental horticulture with a focus on landscape design.

Liz and Mikaela began work in June and quickly jumped into nearly all aspects of the Arboretum's operation, from staffing the front desk and learning about visitor services to maintaining the grounds, assisting with programs, and learning about the day-to-day workings of a nonprofit organization. In addition, each is working on an individual internship project.

Liz has created a new format for plant sale signs and is working to update existing signs. She also is conducting research for the initiative to implement green practices at the native plant nursery. "Working on the signs has really been educational," she says. "I'm learning more information about plants that I'm familiar with, and drawing on this information on a daily basis." Mikaela is focusing on wetland conservation, maintenance of woody plants, and invasive plant removal, and is also learning to help design gardens. "It's been eye opening for me to visit the East Coast and learn about the native plants of the coastal plain," she relates. In addition, the interns collaborate on cataloguing and locating via GPS all plant identification signs on the grounds.

Both Liz and Mikaela cite the Arboretum's staff, volunteers, and setting as reasons for enjoying their internship. "It's a very peaceful place to be," says Liz. "I love walking in over the bridge in the morning. Even when it's hectic, you can take a few steps and find peace and beauty." Mikaela says her internship has been "a great learning experience, especially as someone from a different location. It's been wonderful to come here and experience the habitats of the Chesapeake Bay region."

After completing her undergraduate degree, Liz hopes to enter a graduate school program in public horticulture. She ultimately plans to work in ornamental plant research and development on a public garden level. Mikaela plans to pursue a master's degree in landscape architecture. She hopes to mainstream sustainable landscapes in both residential and urban settings.

The Arboretum wishes Liz and Mikaela great success in their future endeavors.

Fall Soup 'n Walks

Nature, Nurture, and Nutrition

Saturdays, September 19, October 17, and November 21
11 a.m.–1:30 p.m.

Fee: $18 members, $20 general public
Pre-registration required.

Call 410-634-2847, ext. 0 to register.

September 19

Birds and Butterflies in the Meadow

Milkweed, black-eyed Susan, goldenrod, Maryland golden aster, purple love grass, pearly everlasting, Indian grass, big bluestem

MENU

Couscous with chickpeas and carrots

Wheat flaxseed bread with black bean spread

Pumpkin pie

October 17

Fall Colors That Dazzle the Senses and the Appetite

Tulip tree, sweet gum, sassafras, beech, tupelo, sumac, hickory, and pawpaw

MENU

Butternut squash and sweet potato bisque

Colorful chopped vegetable salad

Rye walnut bars with fresh mozzarella

Lemon apple tart bars

November 21

Berries, Nuts, and Seeds

Dogwood, hibiscus, partridge berry, oak, juniper, tulip tree, verbena, ironwood, strawberry bush, hickory, and beech

MENU

Sixteen-bean soup

Orange walnut salad with citrus vinaigrette

Anadama oatmeal bread with Cheddar cheese

Fresh fruit crisp

Discover birds and butterflies among meadow grasses and flowers, fall color in the forest, and berries, nuts, and seeds that signify winter on the horizon. After a guided walk with a docent naturalist, enjoy a delicious and nutritious lunch followed by a brief lesson about the meal's nutritional value. Copies of recipes are provided.

Special Soup 'n Walk programs may be scheduled for groups of 15 or more. Contact Ginna Tiernan, Adult Program Coordinator, at 410-634-2847, ext. 27 or gtiernan@adkinsarboretum.org.

(Wood continued from page 3)

may be tapered at the base because the strength of wood when compressed parallel to the grain is extremely strong, generally more than 3,000 pounds per square inch (psi). In contrast, wood has considerably less resilience when force is applied perpendicular to the grain. A woman weighing 120 pounds putting her weight on a shoe with a ½" x ½" heel will exert 480 pounds per square inch on a floor board, enough to dent softer woods like eastern white pine. Woods commonly used for flooring, like oak or maple, can withstand more than 1,200 psi perpendicular to the grain.

But enough about physics. Many of us simply admire wood for its beautiful and varying appearances. Woodworkers and sculptors often use burls, the big growths that form on the trunks or branches of some trees, because of the unusual grain found in them. Burls form when the tree undergoes environmental stress or is attacked by a fungus or insects. The tree isolates the infected area and the cells grow irregularly around it. Maple is noted for many different figures. Curly or tiger maple has a wavy figure that forms because of unusual longitudinal cell structure. Small swirls in the grain produce bird's eye maple figure. Spalted maple has light and dark areas outlined in black lines formed when the tree is affected by rot. Sweet gum can develop a lovely multi-toned figure in the heartwood due to deposits of pigment. And remember when knotty pine paneling was all the rage? The knots in the pine were formed where branches attached to the trunk of the tree.

Whether you are a woodworker, a wood admirer, or a naturalist, learning about the characteristics of wood can help you identify what tree a wood came from, how it might be used, and why wood objects are designed in certain ways. Many of the examples (and the title) cited in this article are from Bruce Hoadley's excellent book *Understanding Wood*, published by Taunton Press. For more on historic uses of wood and tree ecology, I recommend *Red Oaks and Black Birches* by Rebecca Rupp, published by Garden Way Publishing.

(continued from page 6)

Mrs. Nancy Spicer
Ms. Sandy C. Staples
Ms. Jo Ann Staples
Ms. Marianne Starr
Mrs. Linda Steen
Ms. Sigrid Stiles
Mr. and Mrs. Robert Strauss
Ms. Mary Sutphin
Mr. and Mrs. John R. Thielke
Ms. Sarah Toman
Mr. Edward Trimble
Ms. Lynne Tudor
Mr. Jonathan Vadnais
Mrs. Lorraine Vom Saal
Mr. Peter Schroeder and Ms. Kaitlin Waldrip
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Ms. Caroline Weiss
Ms. Nancy Weiss
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Ms. Judy Werner
Ms. Ingeborg Westfall
Ms. Barbara Williams
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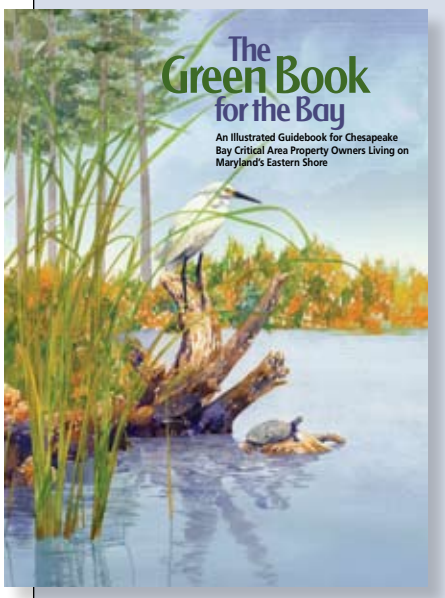
Ms. Leslie Wilson
Ms. Ann Wing
Mr. and Mrs. Maynard Woodworth
Ms. Esther Woodworth
Ms. Barbara Wyckoff
Ms. Susan Wyndham
Mr. and Mrs. Harvey C. Zuckerman

From the Bookshelves

By Carol Jelich, Arboretum Librarian and Maryland Master Gardener

The Green Book for the Bay: An Illustrated Guidebook for Chesapeake Bay Critical Area Property Owners Living on Maryland's Eastern Shore. Adkins Arboretum Native Seed Publishing, 2008.



Every action taken within the Chesapeake Bay watershed affects the health of the Bay. Hard surfaces speed fertilizers, pesticides, and eroding soil into the Bay and its streams and rivers, to the detriment of both water quality and wildlife. But actions can also impact the Bay positively, such as employing the protective landscaping practices described in *The Green Book for the Bay*.

Property owners in the Critical Area have a unique opportunity to be stewards of the Bay and the diverse plants and wildlife that live in and around it. In Maryland, the Critical Area includes all property 1,000 feet landward from the mean high water line of the Chesapeake Bay and Atlantic Coastal Bays, all tidal tributaries, and tidal wetlands. The state passed the Chesapeake Bay Critical Area Protection Act in 1984, and comprehensive amend-ments were passed in 2008. The law provides guidance for conserving natural features in the Critical Area, with the goal of preserving the health of the Bay and its rich resources while also allowing for people to use and enjoy their property.

Critical Area law is complex, and Bay-friendly landscape practices are diverse. *The Green Book for the Bay* is a guide to both. The book is aimed primarily at Critical Area property owners in the Mid-Shore counties of Caroline, Kent, Queen Anne's, and Talbot, though most of the recommended practices are relevant for property owners throughout the 64,000-square-mile Chesapeake Bay watershed.

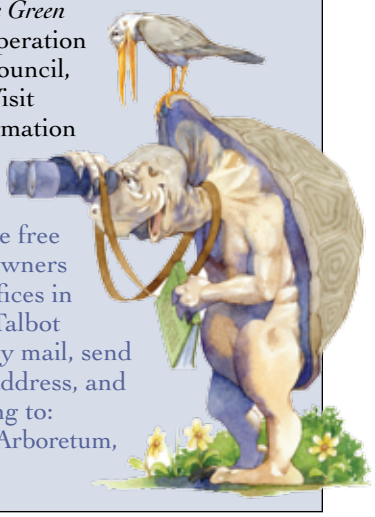
Critical Area law is unique in that state law is implemented at the county and municipal levels. Each jurisdiction has its own statutes and regulations, which are based on state regulations but may be stricter. Since regulations vary by jurisdiction, *The Green Book* encourages property owners to make the county planning office the "First Stop" before making any changes to their property. County staff can help landowners determine what part of the property is in the Critical Area, and what activities are covered by regulations.

The Green Book is designed for ease of use, and includes an overview of rules, regulations, and guidance. A list of 13 Frequently Asked Questions is included, with answers to such questions as "Can I alter the plantings on my property?"; "How can I prevent or repair shoreline erosion?"; and "How can I repair storm damage to my property?"

The chapter detailing the "Top 10 Practices for Your Critical Area Property" includes living shorelines; establishing a healthy buffer between the land and the water; landscaping around the house; trees and woodlands; meadows, grasses, and wetlands; integrated pest management; invasive plants; stormwater management; landscaping for wildlife; and access to the waterfront. Several case studies of Critical Area property owners illustrate the landscaping principles detailed in the book.

In addition to beautiful color photographs and illustrations, there are two helpful tables. One table documents good, better, and best landscaping practices that offer a range of stewardship opportunities. A second table identifies common invasive plants that can damage natural areas, and tells how to control them. A list of important terms and a comprehensive resource section round out this helpful guidebook.

The Arboretum's mission to promote the appreciation and conservation of native plants harmonizes well with best landscaping practices for Critical Area properties, which promote the use of native plants. *The Green Book for the Bay* was produced in cooperation with the Shore Land Stewardship Council, an initiative of Adkins Arboretum. Visit www.firststopforthebay.org for information about the Council and the ***First Stop*** campaign.



Copies of *The Green Book* are available free of charge to Critical Area property owners at the Arboretum and at planning offices in Caroline, Kent, Queen Anne's, and Talbot counties. To receive *The Green Book* by mail, send your name, e-mail address, mailing address, and $5 per copy for shipping and handling to: The Green Book for the Bay, Adkins Arboretum, P.O. Box 100, Ridgely, MD 21660.

Teach. interpret. plant. enjoy!

VOLUNTEER OPPORTUNITIES

Visitor's Center Receptionist
Help staff the Visitor's Center and greet and orient visitors.

Data Entry Administrative Assistant
Assist staff with data entry and administrative tasks. Training is provided.

Education Programs for Children
Help teach children about native plants and the environment.

Education Programs for Adults
Develop and teach courses about native plants and gardening techniques.

Special Events
Volunteer to help at the Fall Native Plant Sale, Magic in the Meadow, Halloween Haunted Hayride, Fall Family Festival, and Holiday Greens Sale.

Community Outreach
Promote the Arboretum's mission at community events.

Nursery Work Crew
Join the nursery work crew on Tuesdays and learn about plant propagation and care in preparation for the Arboretum's annual plant sales.

Weed Warriors
Work with the Land Stewardship Coordinator to manage and remove noxious invasive plants that threaten the survival of the Delmarva Peninsula's native flora.

Grounds Work Crew
Help maintain the woodland and meadow paths and assist with other maintenance projects.

Membership Promotion Team
Join a team of volunteers to promote the benefits of Arboretum membership.

Individual Volunteer Projects
Propose your own volunteer project. Ongoing projects include maintaining bluebird habitat and teaching the public about native plants and sustainable horticultural and gardening practices.

For more information, including volunteer schedules, contact Ginna Tiernan, Adult Program Coordinator, at 410-634-2847, ext. 27 or at gtiernan@adkinsarboretum.org.

Application forms can also be obtained at the front desk or downloaded at www.adkinsarboretum.org.

Why Go Native? Volunteer Training

September 17 and 24, October 1, 8, 15, and 22, 10 a.m.–2:30 p.m.

Learn about the Arboretum's conservation and stewardship mission in this six-week basic training program open to prospective and current Arboretum volunteers. Discover the ecology and history of the Arboretum grounds; examine the intricacies of the region's geology, soils, and plant communities; and practice basic plant identification skills. Arboretum staff, docents, and area experts will lead the sessions.

Space is limited, so register early. Following the training, participants are encouraged to contribute 40 volunteer hours to the Arboretum in 2010. Materials fee: $30.

Native Plant Lore

Nature's Impact on the Underground Railroad

By Leslie Orndoff, Volunteer Writer

"Steal away, steal away…" You hear the soulful song telling you it's time to embark on your journey. It's a journey on which your life depends; it's a journey you may not survive.

You move only at night, following the North Star. You are more fortunate than others. You are traveling from Caroline County and, as such, you have fewer miles to reach Delaware. You know once you reach Delaware, you are still at risk for capture, but the chance is greatly diminished. You must maneuver around and through tributaries that surround and traverse the Eastern Shore. You find yourself walking in water that laps at your chin. Darkness surrounds you, offering a false sense of safety and cover on a long, treacherous passage. Your ears are always pricked, alert to the sounds of hound dogs searching for your scent. You move breathlessly, knowing if you are caught the punishment for escape will be severe. You hide in marshes, in the thick of trees, anywhere you can to evade the aggressive search party that will take you back to servitude in shackles. You search the skies to show you the way. You pray for your life, for the life you hope to reach, a life of freedom. This is a journey on the Underground Railroad.

The Underground Railroad was a network of secret passages that created a pathway to freedom for freedom seekers. Sections of this vast network ran through both Dorchester and Caroline counties and can still be travelled today. At times, slaves traveling the Underground Railroad relied on the water passages that surround and run through the Eastern Shore. It is said that the rivers created guideways for escapees. For example, a group of slaves that rendezvoused with Harriet Tubman at Caroline County's Poplar Neck would have not been able to reach this meeting point without rowing across the Choptank River.[1]

[1] *A Brief Overview of the Impact of the Chesapeake Bay on the Conduct of the Underground Railroad* by J.O.K. Walsh, President of the Caroline County Historical Society

Harriet Tubman, known also as Moses, was the Underground's most famous agent. She is said to have led some 300 slaves to freedom during her tenure. Born in Dorchester County, she was a remarkable woman who demonstrated at a young age her unwillingness to simply accept her subservient fate. She risked her life to lead men, women, and children to freedom, a path she once took herself. Her knowledge of the land, landscape, and her ability to read the stars were vital to ensure a successful escape. Knowing which plants were edible and which could be used medicinally or for cover was essential to survival on the long, treacherous passage. Many of the plants the slaves used, subsisted on, and struggled against can still be found today.

The path to the free North was made difficult not only by the persistent pursuit of the search parties, but by obstacles provided by Mother Nature herself. The seed pods of the sweet gum tree, commonly found in Eastern Shore forests, littered the ground in such amounts that they created a sort of bed of nails on which the slaves had to tread. The lucky ones had loose rags to bind their feet. The majority had to suffer the pain of each step while walking atop the bed of spiny, prickly burrs. It is an ironic twist that the sweet gum itself most likely cradled and comforted them as babies. It was common practice for slaves to hollow out the trunk of the sweet gum to fashion baby cradles. The cradle was affectionately called "the gum" for generations of slave children. The sweet gum is also known to have therapeutic properties, treating ailments like skin irritations and dysentery. It has lovely bright green, star-shaped leaves that emit an aromatic fragrance. It is as prevalent today as it was then.

Finding food was a vital part of survival on the Underground Railroad. Slaves would almost certainly have encountered fruit-bearing trees along their passage. Trees like the pawpaw and the persimmon provided a welcome treat to weary travelers. The pawpaw bears papaya-like fruit that most likely sustained the slaves during the fall. The tree can still be

found today and is a favorite among organic gardeners because it has virtually no pests and requires no pesticides. The persimmon tree yields fruit through much of the winter. It would have been an important source of food for those escaping in snowy months.

Sassafras, *Sassafras albidum*

If the fruit of the pawpaw or the persimmon were unavailable, slaves would search out alternatives. Then, as now, sassafras trees were plentiful along the route in both Caroline and Dorchester counties. Cultivated leaves from the sassafras tree made tea and root beer, both prevalent drinks in early America. It has also been shown that the leaves provided fuel for the slaves on their arduous journey. Said one traveler on the Underground, *"I ran; but did not know what way to go, and took into the pines. Now, after I had done this, I began to study what to eat…I continued there for four-days without any food except sassafras leaves, and I found water."*

The Underground Railroad ushered hundreds, possibly thousands, of people to freedom during its time. It is an important part of our shared American history, and one that should not be forgotten or devalued. Many states and counties have made efforts to preserve safe houses and areas of land known to have been travelled. Many sites on the Eastern Shore are dedicated to the Railroad, and soon routes that were known to have been part of the Railroad will be preserved as Tubman National Byways. Slavery is a mark on our national heritage, but the Underground Railroad stands as testament to people's courage and perseverance in the face of adversity.

The Arboretum will continue to explore nature's role in the story of the Underground Railroad on the Eastern Shore with lectures, research, and interpretation.

ADKINS ARBORETUM

MEMBERSHIP FORM

By becoming a member of the Arboretum, you are making a significant contribution to the conservation of the Delmarva Peninsula's natural heritage. For your convenience, you may join online at www.adkinsarboretum.org/support_the_arboretum/index.html

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plant {local}

What potential does a piece of land hold for enhanced beauty, function, and value to the local water systems, wildlife, and the people who own, manage, or enjoy it?

Whether the restoration of agricultural fields into wetlands teeming with wildlife or the addition of an ornamental native plant garden to attract birds and butterflies—*Plant Local* can provide recommendations and project oversight to make your property's potential a reality.

In partnership with Chesapeake Wildlife Heritage (CWH), a nonprofit organization restoring wildlife habitat, *Plant Local* is an initiative of the Arboretum's Land Stewardship Institute, providing consultation, design, installation, and maintenance services for restoration and land enhancement projects. Through applied ecological design, the Arboretum and CWH are promoting greater community awareness of the role native vegetation and land stewardship play in improving and preserving the health of the Chesapeake Bay.

Call today to schedule a consultation, and discover ways that your property can play an active role in enhancing the Bay watershed.

Adkins Arboretum
P.O. Box 100
12610 Eveland Road
Ridgely, MD 21660
410-634-2847, ext. 24
www.adkinsarboretum.org

Chesapeake Wildlife Heritage
P.O. Box 1745
46 Pennsylvania Avenue
Easton, MD 21601
410-822-5100
www.cheswildlife.org

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