



WILD NEWS

Prince William Wildflower Society

A Chapter of the Virginia Native Plant Society

Number 2018-03

May-June 2018

Thursday, May 3, 2018, 7:30 p.m.

PWWS Membership Meeting

Bethel Lutheran Church, Manassas, Va.

"The Humane Gardener: Nurturing a Home Habitat for Wildlife" with Nancy Lawson



Why do we call some insects "beneficial" while others are "pests"? Why are some plants considered "desirable" while others are "weeds"? In this myth-busting talk, learn how common growing methods divide the natural world into false dichotomies and perpetuate misperceptions about the wild species living among us. Discover practical ways to put humane gardening philosophies into action by protecting wildlife nurseries, eliminating unintended hazards, nurturing plants that provide food and shelter, and humanely resolving conflicts with mammals and other commonly misunderstood creatures.

Nancy Lawson is the author of *The Humane Gardener: Nurturing a Backyard Habitat for Wildlife* and a columnist for *All Animals* magazine.

A frequent speaker on garden ecology, she founded Humane Gardener, an outreach initiative dedicated to animal-friendly landscaping methods. Lawson's book and wildlife habitat have been featured in *The New York Times*, *The Washington Post*, *Oprah Magazine*, and other media outlets. She previously led the creative teams behind the award-winning magazines of The Humane Society of the United States.

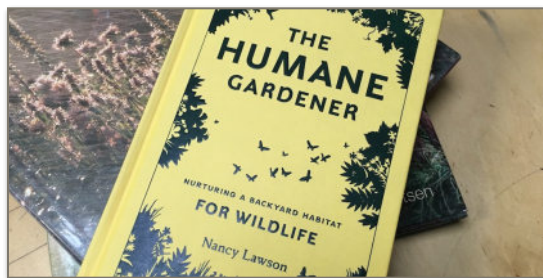
President's Corner

Spring is upon us! Is April really the cruelest month? Wide swings in temperatures are normal in our Virginia springs, 90 degrees one day then 50 degrees a few days later. Let's hope that May brings steady temperatures and good weather for our annual plant sale, our *major* fundraiser, on May 12. Support the sale by donating plants or your time (or both!) and inviting friends and family to patronize the sale.

The Bluebell Festival at Merrimac Farm on April 8 was a fabulous, though chilly, affair. Hundreds of people came out on a bright, sunny day to view bluebells that were just a week away from their magnificent peak. We sold 50 baby bluebells from my garden at the PWWS table. (We will have more for sale on May 12!) From engaging environmental exhibits to art to music to food, the festival had something for all. I thank all who set up and staffed our PWWS table: Brigitte Hartke, Harry Glasgow, Beverly Houston, Joyce Andrew, Dee Brown, Glen Macdonald, and Marlies Smith.

That same week Marion Lobstein and I staffed a table at a STEAM (Science, Tech, Engineering, Arts, and Math) event at T. Clay Woods Elementary School next to Patriot High School in Nokesville. The multipurpose room was abuzz with the enthusiasm of children's voices. We had children identifying parts of a plant with our Velcro labels on a large poster board. Many students and younger siblings enjoyed coloring a Virginia Bluebell with a sample from my garden as their model. Thank you, Marion, for being there!

Speaking of Marion, she led a successful Stone Bridge walk for about a dozen participants at Manassas National Battlefield Park on April 12. We had not scheduled this walk in time to make it into the last issue of *Wild News*, but with a Facebook post and some emails, we managed to get the word out. I used Facebook to publicize a last minute walk that I led at Conway Robinson Memorial State Park on March 30 for seven participants. On that early date we were rewarded with early treasures such as hepatica, bloodroot, toothwort, rue anemone, and spring beauty. With weather so variable and my schedule so packed, I plan to schedule more walks with just a couple of days notice. Watch our Facebook page or ask me for an emailed notice.



Our May 3 meeting features the Humane Gardener, Nancy Lawson. Nancy gardens with the creatures in mind and even authored the book, *The Human Gardener*, copies of which she should have for sale at the meeting. I had the pleasure of hearing her presentation at a meeting of the Potowmack Chapter. However, I will miss this meeting because I will be down in the far southwestern corner of Virginia for a tour of The Cedars Natural Area Preserve with Virginia's Natural Heritage staff. The Cedars is in Lee County and has unique, biodiverse habitats. A few years ago, the VNPS raised money

for additional land acquisition to connect some of the existing parcels of the preserve. I'll take lots of photos and report on what I see there.

Savor the spring and visit some parks and natural areas in our midst.

~ Nancy

Prince William Wildflower Society Membership Meeting Minutes

**Thursday, March 1, 2018 7:30 p.m.
Bethel Evangelical Lutheran Church**

President Nancy Vehrs welcomed all and thanked Brenda Hallam and Beverly Houston for bringing refreshments.

Announcements: PWWS meetings are now on the first Thursdays, and the next meeting will be Thursday, May 3, 2018.

The annual Bluebell Festival is at Merrimac Farm, Nokesville on Sunday, April 8, and a sign-up sheet was passed around for anyone who can work a 3-hour shift at the PWWS booth. A sign-up sheet was also available for the **PWWS Plant Sale on Saturday, May 12.** [Any questions, call Plant Sale chair Nancy Arrington at 703-368-8431. **Potted native plants are needed, as well as workers from 9 a.m. to Noon on May 12. This is our only fund raiser, so any potted native plants you can spare would be appreciated.**]

Program: Nancy V. introduced our speaker, Dr. Ashley Egan, research scientist and assistant curator at the National Museum of Natural History, Smithsonian Institution. Ashley's talk was entitled, *A Tale of Two Vines: the Far-Reaching and Few Between*. A native vine, the North American wild kidney bean (*Phaseolus polystachios*), is an important crop, but its range is in decline where Kudzu is advancing. Ashley reported on research she had conducted on the non-native kudzu vine, introduced into the United States 140 years ago. She traveled to many areas of Asia to find the different sources of kudzu, tracking these areas on graphs. Eradicating kudzu remains elusive and involves cutting the vines and applying herbicide on the ends of the cuts **for four years!**

Membership Meeting Minutes, continued:

Door prizes:

Ashley Egan – Hummingbird feeder

Nancy Arrington – Two Vines Wine, purchased and donated by Brigitte Hartke, in honor of the topic of our program.

Brenda Hallam – *Cutting Back*, a book

Jewelry – Brigitte Hartke

Jewelry – Jane Smith

Beverly Houston – *Piedmont Native Plants, a Guide for Landscapes and Gardens*

Those Present: Brigitte Hartke, Valerie Kenyon Gaffney, Muriel Devine, David Singman, Tom Attanaro, Val Neitzey, Janis Stone, Brenda Hallam, Beverly Houston, Nancy Arrington, Carol Thompson, Jeanne Fowler, Jane Smith, Karen Waltman, Dee Brown, Glen Macdonald. Nancy Vehrs, Harry Glasgow, Ashley Egan - speaker.

Karen Waltman, Secretary

PWWS is in need of a **webmaster**. If you would like to learn more about this volunteer position, please contact Nancy Vehrs at nvehrs1@yahoo.com or 703-368-2898.

Events

If you have missed the last few meetings, please note our NEW GENERAL MEETING NIGHT: PWWS meetings are now held on Thursdays. While we have been meeting on the third Monday for more than 30 years, Bethel Lutheran Church now needs the room for its own purposes *every* Monday night.

ADDITIONAL EVENTS: For events not scheduled at the time this issue went to press, please visit our Facebook Page: <https://www.facebook.com/Prince-William-Wildflower-Society-a-Virginia-Native-Plant-Society-Chapter-142292732540373/>

May

Don't miss PWWS's Plant Sale on Saturday, May 12, from 9 a.m. to 12 p.m.

For a list of other plant sale venues, visit the VNPS's website at this address:

<http://vnps.org/conservation/spring-2018-plant-sales/>

Saturday, May 5, 1 to 3 p.m.

Pond Exploration at Leopold's Preserve

Join BRMC's, biologist, **Michael Kieffer**, to explore the unique ecology of pond habitats at Leopold's Preserve. Free and open to the public. Meet at the Thoroughfare Road parking area in Haymarket.

Tuesday May 8, 7:30-9:00 p.m.

Green Spring Gardens

4603 Green Spring Road, Alexandria, VA

Dr. Robert K. Musil, "Exploring Nature in the Footsteps of Rachel Carson".

Dr. Musil will discuss his book, *"Rachel Carson and Her Sisters: Extraordinary Women Who Have Shaped America's Environment"*; and his explorations of nature throughout the Nation's Capital, which resulted in his latest book, *"Washington in Spring: A Nature Journal for a Changing Climate"*.

Prince William Alliance Upcoming Events

Saturday, May 12, 1 to 3 p.m.

Sunday, June 2, 1-3 p.m.

Butterfly Walk at Merrimac Farm

Stone House

15014 Deepwood Lane, Nokesville, Va.

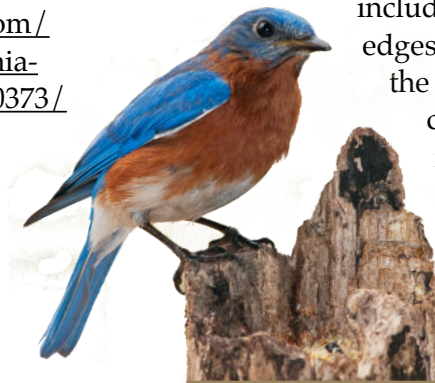
Learn how to Identify butterflies and habitat diversity, meet new friends and explore the great outdoors. Families welcome. RSVP appreciated to alliance@pwconserve.org

Sunday, May 27, 8 a.m.

Bird Walks at Merrimac Farm (address above)

We will look for birds and interesting plants as we travel through the uplands to the edge of the floodplain, covering a variety of habitats, including open fields and woodland edges. Everyone welcome. Dress for the weather, bring binoculars and cameras. For more info and RSVP, reply to PWCA, 703 499-4954 or alliance@pwconserve.org. For the bird list:

<http://www.pwconserve.org/wildlife/birds/lists/merrimacfarm.htm>



SAVE the DATES

Saturday, May 12, 9-12, PWWS Annual Native Plant Sale, Bethel Lutheran Church, Manassas
Thursday, July 11, 7:30-9:00, PWWS General Membership Meeting — There will be a talk given by
William Carromero, National Botanist with the U.S. Forest Service

SPRING WILDFLOWERS - UNDERGROUND STORAGE STRUCTURES

by Marion Lobstein, PWWS Botany Chair

The importance of underground storage structures (such as rhizomes, corms, bulbs, and tubers) to the life cycles of the spring wildflowers program cannot be overstated.

These structures are all modified underground stems: rhizomes - thickened horizontal underground stems, corms - swollen underground stems, bulbs - underground stems with fleshy leaves, and tubers - swollen tips of rhizomes. These specialized underground stems may not be attractive, but they play two important roles: (1) storage of energy for next spring's rapid development, and (2) asexual reproduction of next individual plants.

Most spring-blooming deciduous forest perennials have a low frequency of flowering and seedling establishment compared to annual or biennial species of disturbed ground or meadow areas. In most of these spring perennial species there is a strong dependence on vegetative (asexual) reproduction. Mayapple is an excellent example: forty percent of the energy of a Mayapple colony is invested into underground storage structures compared to eight percent investment in sexual reproduction. Such asexual reproduction allows the parent plant that is well adapted to its environment to invest most of its resources to continue at that site.

Sexual reproduction allows for genetic variation as well as provides a possible way to colonize new sites away from parent populations. The success of sexual reproduction may be slow and even risky: in many instances germination rates are low for seeds, and the seeds may lie dormant for several years; the seedlings may have strict microhabitat requirements for development, and/or it may be many years before a young plant becomes reproductively mature.

Vegetative reproduction, however, allows for continued development of an already established population — a genetically conservative but safe reproductive strategy.

Even though the deciduous forest has variations of temperature, light intensity, moisture, and nutrient-availability from season to season, this ecosystem still has predictable cycles on which established populations can rely compared to the greater variability of disturbed habitats where plants rely on sexual reproduction.
(photo: Marion Lobstein)



Corm on Dutchman's breeches

SPRING WILDFLOWERS - POLLINATION

Pollination among most deciduous forest spring wildflowers species is primarily accomplished by insects groups such as members of Hymenoptera (e.g. native bees including bumblebees and honey bees), Diptera (e.g. syrphid flies, carrion flies, and ground-walking flies), and Thysanoptera (such as thrips), and mushroom gnats.

Most of the spring-blooming species that are considered here share or compete for the same pool of pollinators (primarily bee, bumblebee, and syrphid flies species).

The plants compete for these pollinators by offering nectar and/or pollen rewards, using various shapes and colors, different smells, and/or staggered blooming times.

Neither bloodroot nor hepatica produce nectar but that are capable of self-pollination cross-pollination does not occur. Mayapple flowers compensate for a lack of nectar by offering a very generous pollen reward. The staggering of blooming dates is also important, especially in the same genera such as *Dicentra* where *D. cucullaria* (Dutchman's breeches) begins blooming two weeks or so before *D. canadensis* (squirrel corn).

A common shape of many spring flowers is that of a disk which attracts a range of pollinators. Other species have flower shapes specialized for only a single pollinator species: Dutchman's breeches are accessible to only queen bumblebees and wild columbine are specialized for hummingbirds.

Often color is an important factor in attracting pollinators: yellow and violet often reflect ultraviolet (UV) radiation while white and green do not. Pollination lines on petals are generally non-reflective so that they stand out between light-reflecting areas. In some species only parts of the flower structure are UV reflective such as the filaments of spring beauty, the petal tips of Dutchman's breeches and squirrel corn, and the outer side of the tepals in white trout lily. Also, what we see is not always what a bee sees. "Bee colors" are based on different combination of yellow, blue-green, blue and UV. "Bee violet" is 50% UV and 50% blue light.

In yellow flowers with UV reflection, the UV often dominates so that bees see pure UV.



Colors of flowers parts are determined by the presence of chlorophylls, carotenoids, xanthophylls, flavonoids, and anthocyanins in flower tissue. Bright UV patterns may be due to presence of one or more of these pigments.

In most white-flowered spring-blooming species, the petals contain flavonoids that absorb UV which may play a role in altering the flowers' appearance to attract pollinators. Different distribution of flavonoids may serve as nectar lines as well as protecting the flowers against UV radiation and herbivory. These factors are especially important in attracting bee and fly pollinators, since many of these plant species have generalized shapes and share pollinators. The flavonoids of bloodroot, Mayapple, spring beauty, Dutchman's breeches, squirrel corn spp, hepatica, (as well as dogwood spp, chickweed spp, Canada violet, and blue cohosh) are all similar. The flavonoids of large-flowered trillium and apple species are different. The white color may also result in the flowers standing out against a neutral or reflective background.



One point that should be emphasized regarding the sharing of pollinators by so many species is that most insect pollinators is that most individual insects are constant foragers. One researcher followed 109 foraging trips by bee species and found that with each insect 81% of its trips was to a single flower species.

Smell may also play a role in attracting pollinators.

Many of the species that are pollinated by bees have a sweet odor such as hepatica, twinleaf, toothwort, and squirrel corn. Other species have a musty or even carrion smell such as skunk cabbage, Jack-in-the-pulpit, wild ginger, and sessile trillium that attracts a different group of pollinators.

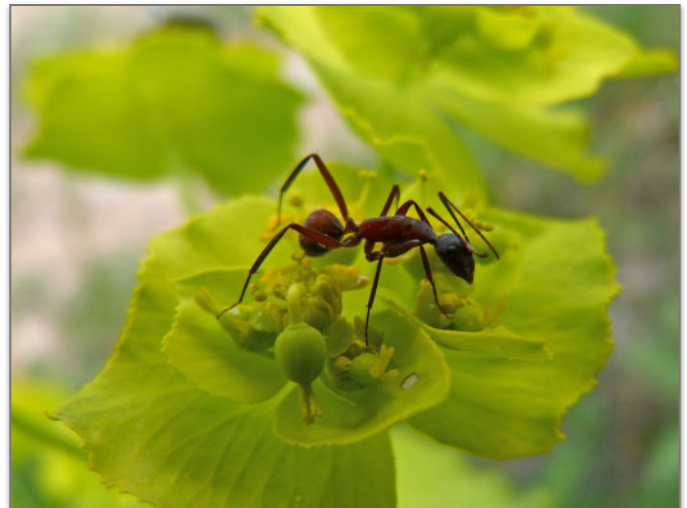
Temperature is another important factor in spring pollination. Only bumblebees can fly at 42 F while most other hymenopterans require a temperature well above 51 F. Fly species often become active at 56 F. This creates a delicate balance that must be struck by the earliest spring bloomers. (photos: Brigitte Hartke)

SPRING WILDFLOWERS - MYRMCOCHORY-SEED DISPERSAL BY ANTS

Seed and fruit dispersal is another problem faced by spring wildflowers of the deciduous woods. Many of these spring-blooming species have their fruits and/or seeds dispersed by animals as well as by wind or mechanical means. Many of the species that retain their leaves through the summer and have fleshy fruits that mature over the summer have those fruits eaten by animals and the seeds dispersed in the scats of these animals. Solomon's seal, false Solomon's seal, Jack-in-the-pulpit, and Mayapple are examples of "summer-green" species whose fruits are eaten and seed dispersed in the scats of various mammals, birds, and even box turtles in the case of Mayapple. The seeds of species dispersed by these animals may be dispersed away from parent plant populations and also receive nutrients from the scats in which they are deposited. However, up to 30% of the spring-blooming wildflowers in the deciduous forest have their seeds dispersed by ants, a phenomenon known as myrmecochory. Of the spring-blooming species included in this book, the majority (including hepatica, bloodroot, twinleaf, Dutchman's breeches, squirrel corn, wild ginger, trilliums, trout lilies, the violets, and spring beauty) are ant-dispersed. This phenomenon of myrmecochory was first recognized in the literature in 1897 by Charles Robertson. In scientific literature searches this author has done as well as from her personal observations reveal that there are more than 90 species in 25 families in the Northern Virginia area that employ this method of seed dispersal.



The seeds of ant-dispersed species have an elaiosome, a fleshy fat-filled body or structure on the seed surface. The seed coat is usually very hard in these species. The ants are thought to be attracted to the volatile diglycerides and triglycerides (forms of lipids or fats) given off by the elaiosomes. Ants then carry the seeds back towards their nest where they either chew off the elaiosome themselves or they may take it inside the nest to provide food for the emerging larvae. (*Bloodroot seeds and ant. Photos from Pixabay*)



Many seeds do not make it back to the nest, but may be taken far enough away from the parent plant to avoid competition for limited resources (the "parents" sending the "kids" away from home), and/or to minimize the chances of the whole seed being eaten and destroyed by rodents or other seed eaters. (When animals eat fleshy fruits, the seeds usually pass whole through the animals' digestive tract rather than individual seeds being chewed up.) Seeds taken to ant nests perhaps also benefit from the higher levels of nitrogen, phosphorus, and other nutrients that may have accumulated there. Some researchers have hypothesized that the removal of the elaiosome may stimulate germination, and limited research done by this author and Dr. Larry Rockwood at George Mason University support this idea for at least one species (bloodroot) that was tested.

In our area, most of the ant-dispersed species are spring-blooming deciduous forest species, but cultivated species such as daffodils, snowdrops, grape hyacinths, pansies, and even some rushes, sedges, and grasses have ant-dispersed seeds.

Native Azaleas in My Garden

Nancy Arrington, PWWS Plant Sale Chairman

Visitors to my garden during last spring's PWWS tour were very interested in the native azaleas with some folks saying they didn't even know such plants existed. I hope this article will give you enough information about these wonderful plants that you will be inspired to grow some in your own garden.

I moved to my present property in 1975 and immediately started establishing garden beds in the shade of the surrounding mature trees. From the beginning, I had an interest in growing wildflowers and native plants, which were available only from mail-order nurseries. Most of the large native azaleas in my garden came from Woodlanders in South Carolina.

In the early 1980s I started a small native plant nursery and purchased azaleas from wholesale growers in North Carolina and Alabama. I bought dozens of several different species at prices ranging from \$0.65-1.25 and planted them in beds over the septic field. I've continued to add plants and now have a total of 15 different species, selections, varieties and hybrids (some are crosses with deciduous European and Asian species).

Native azaleas are members of the Heath family (*Ericaceae*) along with rhododendrons and Asian azaleas. They are deciduous (lose their leaves in winter) and are taller than the Asian species with an open, tiered growth habit. Because the showy flowers have long tubes and are often fragrant, they are sometimes called honeysuckle azaleas or wild honeysuckles. Most bloom in the spring, but a couple of species bloom in late July and early August. In their native habitats they grow at the edge of the woods or on open mountaintops called balds.

Unlike the Asian species that grow and bloom in shade, natives need sun – the more sun, the more flowers according to one expert. The ones in my garden get about half a day of morning sun and are in dappled or bright shade the rest of the day. Other cultivation requirements depend to some extent on the individual species, but generally they need a slightly acidic, organic-rich soil that is moist, yet

drains well. I have found that ones that grow naturally in moist areas and need extra moisture in the garden will not grow well in poorly-drained soil. *(photos taken in Nancy's gardens, 2017, B. Hartke)*

Local nurseries such as Merrifield carry some native azaleas, and I've seen them at Southern States. Lowe's and Home Depot sometimes have the Asian and European hybrids. Several mail order nurseries, including Woodlanders and Rare Find, offer small, reasonably-priced plants.



Planting instructions are the same as those for other shrubs and small trees: Dig a hole that is the same depth as the root ball and twice its diameter. Adding compost and amendments to the planting hole is not normally recommended for shrubs, but I

add phosphate to help with root development. Over the years I have learned to ruthlessly loosen the roots of all nursery-grown shrubs and to discard most of the potting mix (mostly bark), which will encourage roots to grow out into the surrounding soil. Water well, mulch with 2-3" of shredded leaves or hardwood mulch. Continue to water for the next year to be sure the shallow roots stay moist and grow well.

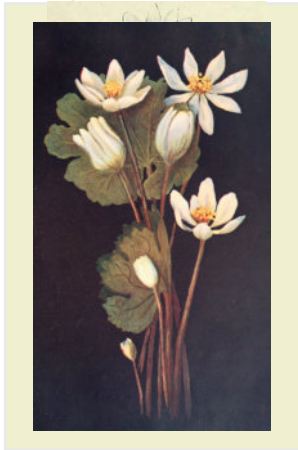
Native azaleas don't normally need fertilizer and will grow well with a yearly application of compost or leaf mold. You can prune young plants to shape them and encourage fullness, older ones to thin out excess growth, and you can regenerate old plants by pruning them back to six inches. However, their open, natural shape should be maintained. Always keep them mulched to retain moisture around the shallow roots. Once established, native azaleas are drought tolerant and have few pests or diseases. Yes, the deer eat them so you will have to employ whatever coping mechanisms work for you. And, be patient; most will eventually outgrow the deer's reach.

In a future article I will describe the different species that can be grown in our area and discuss their individual cultivation requirements.

Meantime, an excellent source of information is Don Hyatt's website, www.tjhsst.edu/~dhyatt/azaleas/. Don is a Northern Virginia expert who gave a program on native azaleas for our chapter a few years ago.

PRINCE WILLIAM WILDFLOWER SOCIETY

A Chapter of the Virginia Native Plant Society
P.O. Box 83, Manassas, Virginia 20108-0083



Next Meeting: Thursday, May 3, 2018, 7:30 p.m.

Nancy Lawson: "The Humane Gardener: Nurturing a Home Habitat for Wildlife"
Bethel Lutheran Church, Plantation Lane, Manassas, Virginia 20110



RECENT EVENTS have included the PWCA Merrimac Farm Bluebell Festival on April 8, which saw a variety of ably-led hikes. At right, the winner of the rain barrel was Pete Madsen, posing with artist James Gallagher. At left, photos from an April 12 very informative hike led by PWWS Botany Chair Marion Lobstein to find the wildflowers at the Stone Bridge, Manassas.

