

POTOWMACK NEWS

Volume 26. No.4

Potowmack Chapter of the Virginia Native Plant Society

July/August 2008

LOVE “BUGS” (AS IN: APPRECIATE INSECTS AND OTHER INVERTEBRATES)

We in VNPS know that plants are the basis of all animal life, but invertebrates are what Harvard biologist, E. O. Wilson, has called the "little things that run the world," because of their number, variety and influence on larger organisms and even entire ecosystems. Insects are the most diverse group of organisms on Earth. About 900 thousand different kinds of living insects are known to science, which represents about 80 percent of all the species of living things. Insects outnumber plant species (about 250,000 species). And experts say many more are not yet known to science. Conservative estimates suggest that about 2 million insects are not yet scientifically described, but some estimates extend to 30 million including the canopies of the tropical forests of the world. Furthermore, their total biomass is huge. The Smithsonian Institution estimates that there are some 10 quintillion (10,000,000,000,000,000,000) individual insects alive at any given time.

The amazing diversity and biomass of invertebrates reflect their enormous ecological impact. Invertebrates are



Beetles are the most diverse group of insects, with millions of species worldwide. Some are highly adapted to feeding on flowers, such as this soldier beetle (very common in mid to late summer).

a part of nearly every food chain, either directly, as food for other insects, fishes, amphibians, reptiles, birds, mammals, and other arthropods, or indirectly, as agents in the endless recycling of nutrients in the soil. Insects, worms, and mites are extremely important in helping microbes break down dung and dead plant and animal matter. Ninety-nine percent of human and animal

waste is thought to be decomposed by invertebrates. The perpetuation of food webs is often dependent on critical

species performing essential services such as plant pollination or seed dispersal. Most of the pollination of both human food crops and all other plants come from invertebrates, especially native bees. In the United States, some ninety agricultural crops are cross-pollinated by insects.

Some invertebrates are "keystone species," playing a vital role in maintaining biotic communities. **Pollinators are considered keystone species**, as their presence in an ecosystem ensures the continued reproduction and survival of plants, and in turn the other wildlife relying on these plants. More than 75% of flowering plants depend on animal pollinators. Many plants are endangered because of diminished pollination. In fact, most natural ecosystems would collapse without animal pollinators. **(See excerpts from the National Academy of Sciences Report on the Status of Pollinators in North America on page 3.)**

There are scores of examples of how invertebrates benefit ecosystems and humans as natural biological control, food (such as lobster and shrimp and the many insects consumed by different cultures), and as potential cures for human disease. **Without insects, most of the terrestrial life forms on this planet would quickly disappear.**

In the United States, the number of described species is approximately 91,000. The un-described species of insects in the United States, however, is estimated at some 73,000. The largest numbers of described species in the U.S. fall into four insect Orders: Coleoptera (beetles) at 23,700, Diptera (flies) at 19,600, Hymenoptera (ants, bees, wasps) at 17,500, and Lepidoptera (moths and butterflies) at 11,500. **(Continued on page 3)**



Many bee species are solitary, that is, they don't form colonies like those of honey bees. This is a halictid (sweat) bee. Some species like this one are metallic green or blue.

“Plants and invertebrates are the silent majority which feed the entire planet, stabilize the soil and make all life possible.” Kiernan Suckling, Center for Biological Diversity.

A MESSAGE FROM OUR PRESIDENT

The whirlwind called spring is behind us; now it's time to take a deep breath and enjoy the slow days of summer. We had a very successful plant sale in May, well-attended native plant walks in April and excellent chapter programs in the first half of the year. A brief respite is in order before September arrives and the fall whirlwind begins. Our chapter is hosting the VNPS State Annual meeting this year on September 12-14th. That will be followed by our Fall Native Plant Sale on the 27th. Our own chapter annual meeting will be on the evening of October 9th and our last program of the year will be on November 13th. Then, we'll be planning for 2009, keeping our chapter active and raising awareness of our local flora. Stay in touch by joining the chapter listserve and please contact me if you'd like to get more involved by helping out on the chapter board.

Thanks.

Marianne Mooney

**One Planet – Ours! Sustainability for the 22nd Century
U.S. Botanic Garden May 24 – October 13, 2008**

The U. S. Botanic Garden summer exhibition will focus on sustainability - not only how it applies to gardens and the landscape, but also how each of us and our communities can live for tomorrow, as well as for today. 'One Planet - Ours! Sustainability for the 22nd Century' will showcase garden displays on the Conservatory Terrace and interpretive and sculptural displays in the National Garden and Bartholdi Park. 'One Planet - Ours!' will feature government agencies, non-governmental organizations, and individuals who are leading efforts toward sustainable lifestyles. Included are the United Nations Environment Programme (UNEP), U.S. Department of Energy, American Horticultural Society, U.S. Environmental Protection Agency, Longwood Gardens, National Wildlife Federation, and many more. Tying it all together will be "Cool Globes," an exhibit of more than 40 sculptures of "whole-earth" solutions to the problems of living unsustainably.

REPORT ON THE CHAPTER PLANT SALE

The Spring plant sale by the Potowmack Chapter was a success for many reasons. The day was beautiful, attracting many visitors to Green Spring Gardens affording us the opportunity to talk to many VNPS members and others seeking the right native plants for their landscape. Fortunately, we had many varieties of plants to offer our customers thanks to the help we had from our dedicated volunteers. Our propagation bed volunteers began work the first week in April potting up plants and weeding the beds after a warmer-than-usual-winter. All their hard work paid off as the garden beds looked terrific. Many thanks to our volunteers and board members who helped at the sale: Lura Alsalam, Laura Beaty, Tiana Campfiord, Margaret Chatham, Roberta Day, Dusty Dukes, Alan Ford, Eleanor Kask, Mary Ann Lawler, Marianne Mooney, BJ Opfer, Mary Pockman, Lesa and Paul Schmidt, Sally Sieracki, and Bob Yacovissi.

We are grateful to the many individuals who donated a great variety of plants for the sale. Earth Sangha continues to supply the chapter with trees and shrubs grown from locally collected seeds. This year we featured one of the many plants donated by them--Silky Dogwood, or *Cornus amomum*. This adaptable plant was well received and is now adding beauty and biodiversity to many gardens in our region. Our thanks to Earth Sangha for its donations as well as to individuals who shared natives from their own properties, including Margaret Chatham, Mary Ann Lawler, Tiana Campfiord, Laura Beaty, and those anonymous donors who neglected to leave their names with their donated plants. Thanks also to Mehr Bros. Flowers of McLean for donating hundreds of planting pots for us to reuse for potting up our own plants. Special thank to Elaine Squeri for the time-consuming job of turning last year's seed crop into informative seed packets for the sale. Finally, thanks to all who supported the sale by purchasing plants. Profits from the sale fund the many educational programs and native plant walks that are offered by the Potowmack Chapter. Our Fall Native Plant Sale is scheduled for September 27th. We hope to see you there.

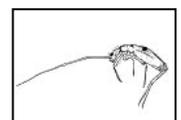
Laura Beaty, Propagation Chair

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(All numbers should include the 703 area code, unless otherwise noted.)
Potowmack News is published 6 times per year, in January, March, May, July, September, and November. The deadline for submissions is the 15th day of the month prior to publication. Call Mary Ann Lawler for more information or e-mail her at malawler@aol.com.



LOVE BUGS (Continued from page 1)



Scientists have conducted some studies involving the numbers of individual insects in a given area. In North Carolina, they calculated from soil samples to a depth of 5 inches approximately 124 million animals per acre, of which 90 million were mites, 28 million were **springtails**, and 4.5 million were other insects. A similar study in Pennsylvania yielded figures of 425 million animals per acre, with 209 million mites, 119 million springtails, and 11 million other arthropods. Even specific insect species have been found to be quite numerous, with calculations of from 3 to 25 million per acre for wireworms (larvae of click beetles).



A typical house and garden may support more than eighty species of **spiders**, of the close to 4,000 species in the U.S. Arachnids include not only spiders, but mites, ticks, and scorpions. Most are very efficient predators, performing an important ecological service by eating large numbers of insects.

Widespread threats to invertebrate biodiversity, such as habitat loss, introduced species, and pollution, are rapidly driving many invertebrate species to the edge of extinction. Despite their importance, these poorly described and misunderstood animals are largely absent from the majority of conservation planning and biodiversity management strategies.

What can you do to support invertebrate conservation? Foremost, educate yourself and others about pollinators and other insects. (See page 5 for some excellent classes.) Don't use pesticides. Plant a diversity of natives on your property—the greater diversity of plants, the greater diversity of insects. Leave some leaf litter and fallen branches. Make smart consumer choices in foods, energy, water use, and product buying habits. (For some ideas go to:

<http://cbc.amnh.org/center/programs/wycd.html>). Support the Xerces Society (www.xerces.org), the Washington Area Butterfly Club (<http://users.sitestar.net/butterfly/>), and other organizations helping to preserve biodiversity.

[Editor's note: Much of this information was gleaned from the Xerces Society, The Smithsonian Institution's National Museum of Natural History, and the U.S. Fish and Wildlife Service.]

STATUS OF WILD POLLINATORS IN NORTH AMERICA (Excerpts from the National Academy of Sciences Report)

Pollinators are vital to agriculture....Pollination by animals also is essential for maintaining the structure and function of a wide range of natural communities in North America.

Long-term population trends for several wild bee species (**notably bumble bees**), and some butterflies, bats and hummingbirds are demonstrably downward. For most pollinator species, however, the paucity of long-term population data and the incomplete knowledge of even basic taxonomy and ecology make definitive assessment of status exceedingly difficult.

Improving Population Assessments

Most insect pollinators in natural and agricultural systems are not well characterized, taxonomically or ecologically, in part because of the lack of monitoring programs and in part because of a shortage of taxonomic resources. Although suggestive evidence of decline, extirpation, or extinction exists for some species, documentation of population changes is available for very few.

Recommendation: To address the taxonomic impediment to assessing pollinator status, the U.S. Department of Agriculture's (USDA) Agricultural Research Service (ARS) should expand basic research on the systematics of pollinators and on the development of rapid identification tools.

Determining the Causes of Population Declines

The causes of decline among wild pollinators vary by species and are generally difficult to assign....One possible cause of decline in native bumble bees appears to be introduced parasites carried by bumble bees imported from Europe for greenhouse pollination. These bees frequently harbor disease organisms and their escape from greenhouses can lead to pathogen spillover into native species. Disease, notably chalkbrood (caused by the fungal pathogen, *Ascosphaera aggregata*), also has harmed populations of the alfalfa leafcutting bee, *Megachile rotundata*, in the United States.

Recommendation: To prevent pathogen spillover to wild populations, APHIS should require that any commercially produced bumble bee colony shipped within the United States be certified as disease-free. **For some wild species, competition with exotic pollinators (including the honey bee, *A. mellifera*, which is not native to North America) has led to population declines.** Declines in many pollinator groups are associated with habitat loss, fragmentation, and deterioration, although data are often inadequate to demonstrate causation unambiguously. **Changes in the temporal patterns and spatial relationships of pollinators and plants (as their ranges and distributions change) that result from global climate change can lead to a decline in interactions between flowers and pollinators.** Disruption of migratory routes is evident in hummingbirds, nectar-feeding bats, and some butterflies.

(Continued on page 4)



STATUS OF WILD POLLINATORS (Continued from page 3) **Identifying the Consequences of Pollinator Population Declines**



One consequence of pollinator decline may be an increased vulnerability of some plant species to extinction, although consequences are difficult to define in nonagricultural systems. In the event of declining pollinator populations, some plant populations that are dependent on affected pollinators for reproduction could become more vulnerable to an extinction vortex—the interacting factors that serve to progressively reduce small populations—because of the demographic and genetic consequences of small population size. The effects of pollinator decline on rare plant species or on those with small populations should be given special attention.

Recommendation: **The U.S. Geological Survey, the Fish and Wildlife Service, and other agencies responsible for natural resource protection should establish discovery surveys for pollinators of rare, threatened, and endangered plant species.** Long-term, systematic monitoring is necessary for unambiguous documentation of trends in species abundance and richness. Such monitoring allows detection of relationships

between changes in pollinator communities and the putative causes of change. Those relationships must be understood to assist development of plans to mitigate harm or to manage species sustainably. Pollinator-monitoring programs in Europe (for example, the Survey of Wild Bees in Belgium and France and the European Union’s project, Assessing Large-Scale Risks for Biodiversity with Tested Methods, ALARM) have effectively documented declines in pollinator abundance, but there is no comparable U.S. program. The lack of historical baselines with which contemporary survey data can be compared makes it difficult to assess pollinator status or to determine the causes of documented declines. However, the ALARM project showed that such baselines could be established by mining museum specimens for historical data.

A skipper butterfly (Sachem skipper) feeding on mountain mint.

Recommendation: The federal government should establish a network of long-term pollinator-monitoring projects that use standardized protocols and joint data-gathering interpretation in collaboration with Canada and Mexico. A rapid, one-time assessment of the current status of wild pollinators in North America to establish a baseline for long-term monitoring is a laudable initial goal.

Steps Toward Conservation of Pollinator Species

Effective conservation or restoration of pollinator populations requires comprehensive knowledge of their biology. Current knowledge is insufficient to inform conservation and management programs.

Recommendation: The National Science Foundation and USDA should recognize pollination as a crosscutting theme in their competitive grant programs and work together to integrate research that ranges from the genomics of honey bees and the systematics and ecology of wild pollinators to the **effects of global climate change on pollinator-plant interactions.**

[Note: for a complete copy of the report or to read the summary go to: <http://dels.nas.edu/pollinators/>]

Download a copy of “**Pollinators in Natural Areas—A Primer on Habitat Management**” from <http://www.xerces.org/>. This primer provides a summary of how land managers can protect and provide habitat for bees, butterflies and other pollinators. It also provides a series of recommendations for how land managers can adjust their use of these management actions to benefit pollinators.

FAIRFAX COUNTY’S INVASIVE MANAGEMENT AREA (IMA) PROGRAM

The IMA (Invasive Management Area) program is a volunteer based project that is working towards habitat restoration. Help us remove invasive plants, learn new species of invasive plants, and work outside!

Sun. July 6, 10:00 - 12:30 pm Marie Butler Leven Preserve in McLean For more information, contact Alan Ford: 703.732.5291; email: amford@acm.org

Mon. July 7, 10:00 -12:00 pm Laurel Hills IMA site workday

July 26, 10:00 – 12:00 pm, Pohick Stream Valley workday

Sun. Aug. 10, 10:00 - 12:30 pm Marie Butler Leven Preserve in McLean email: amford@acm.org

Sun. Aug. 24, 10:00 - 12:30 pm Marie Butler Leven Preserve in McLean, email: amford@acm.org

August 30, 10:00 – 12:00 pm, Pohick Stream Valley workday

For more information: Katherine.Frederick@fairfaxcounty.gov or call 703 324 8681.

LOCAL EVENTS AND LEARNING OPPORTUNITIES:

Weds. June 25 to Aug 27. 7 to 9pm classes with Field trips **July 12, Aug. 2, and Aug 23. Insect life.** (two NATH credits) Leader Don Messersmith. Learn to identify insects and discover their roles in the balance of nature. Classes at Woodend Sanctuary. Audubon Naturalist Society. \$345 tuition. For information or to register call: 301-652-9188 x16 or visit: <http://www.audubonnaturalist.org/> for a registration form.

Fridays. July 4 – Aug. 29 Butterfly and Dragonfly Surveys at Occoquan Regional Park, Meadowood, the Metz Wetlands, and Occoquan Bay NWR. Experience the summer magic of some of our region’s most beautiful creatures by

joining the experienced Audubon Society of Northern Virginia team of naturalists documenting the occurrence and abundance of these fascinating creatures. For details, contact Jim Waggener, 703-567-3555.

Weds. July 9 to July 30 7 to 9pm classes with Field trips **July 19 and 26** **Summer Wildflower Identification**. (one NATH credit) Leader Melanie Choukas-Bradley From milkweeds to mallows summer presents a diverse array of wildflowers for study of plant family and ways to identify different species at Woodend. Audubon Naturalist Society. \$245 tuition. For information or to register call: 301-652-9188 x16 or visit: <http://www.audubonnaturalist.org/> for a registration form.

Thurs. July 10 7:30-9:30pm and Sat July 12 2-9pm **Natural History of Beetles** Leader **Warren. Steiner, Jr., of The Smithsonian Institution**. Beetles comprise the most diverse group of insects. An introduction to the natural history and classification on Thursday at Woodend Sanctuary and field trip to aquatic field, and forest habitats including nocturnal beetle activity after dinner. Audubon Naturalist Society. Non-members \$52. For information or to register call: 301-652-9188 x16 or visit: <http://www.audubonnaturalist.org/> for a registration form.



Sun. July 20 **The Buzz on Bees and Wasps** 8:30 to 11am Leader **Cliff Fairweather and Cathy Strager**. From solitary parasitic wasps to the highly social honey bee; from potter wasps to carpenter bees, these related insects form a critically important part of the natural world. After a short indoor lecture at Woodend we'll spend our time outdoors combing Woodend for wasps and bees, identifying and observing their habits. Audubon Naturalist Society. Non-members \$23. For information or to register call: 301-652-9188 x16 or visit: <http://www.audubonnaturalist.org/> for a registration form.

Sunday, July 27 **An introduction to Insects**. 10am to noon. Get to know a critical part of nature—insects. We'll search for insects at the Rust Nature Sanctuary in Leesburg, VA, to learn how to identify them and how they help make the natural world work. Free. Call 703-737-0021 for more information. Go to <http://www.audubonnaturalist.org/> and click on Rust Sanctuary.

Friday Aug 1 7:30 to 11pm **How to get Moths to Land on Your Bedsheets at Night**. Leader David Adamski. Discover why moths constitute about 90 percent of all the Lepidoptera on the planet. After sunset we'll identify the oths that are attracted to the blacklight set-up at Woodend Sanctuary. Audubon Naturalist Society. Non-members \$26.50. For information or to register call: 301-652-9188 x16 or visit: <http://www.audubonnaturalist.org/> for a registration form.

Thurs. Aug. 7, 7:30-9:30pm and Sat. Aug 9 full day field trip **Ferns and Fern Allies** Leader **Cris Fleming**. Many ferns and fern relatives such as clubmosses, horsetails, and quillworts occur in eastern woodlands. Learn to identify local ferns with a program on Thursday at Woodend Sanctuary. Saturday's field trip will be to Turkey Run Park in Virginia where over 26 species of ferns and fern allies can be found. Audubon Naturalist Society. Non-members \$52. For information or to register call: 301-652-9188 x16 or visit: <http://www.audubonnaturalist.org/> for a registration form.

Sat. Aug 16. Hike To Scotts Run 8-11AM. Adults and teens 16 years and up. Venture out with a naturalist to this nature preserve full of unique microhabitats. We'll wander through hemlock stands and pass a waterfall on this 2.7 mile trail. Be sure to bring plenty of water, wear good shoes, and bring a snack. For information: 703-228-6535. Free. Registration required. Meet us at the West parking lot, I-495 to VA 193 (exit 44); VA 193 west 0.3 mi to East parking lot (on right with sign), continue a little farther on VA 193 to West lot. Program # 644503A Long Branch Nature Center

FALLS CHURCH INVASIVE PLANT REMOVAL TASK FORCE Upcoming 2008 Events:

We do not have any events scheduled for July and August. We are resuming our events in September.

Jeremy Edwards, Senior Urban Forester, Urban Forestry Division, City of Falls Church

ARLINGTON'S RiP PROJECT

It is with heartfelt thanks and sadness that we will no longer be announcing Second Saturdays at Bluemont Park. After four years of diligent work, its stalwart leader, **John Huennekens**, is moving from Arlington. But he has encouraged us to continue his wonderful work and promises to do so himself.

Other RIP events have not been scheduled as we go to press, but we will send any further information through our listserv. Meanwhile, if you have any questions, contact Jenn Truong at jtruong@vt.edu or 703-228-7636.

INVASIVES CONTROL WORK PARTIES AT TURKEY RUN PARK ALONG THE POTOMAC

Help work with The Nature Conservancy to help control invasive plant species on National Park Service lands in the Potomac Gorge at Turkey Run Park off the GW Memorial Parkway. Wear work gloves and boots or sturdy shoes, and bring water, snacks, and hand saws or loppers if you have them. Our schedule for July and August is: **July 10 10-1; July 19, 10-1; Aug 16, 10-1** Check on meeting location with Alan Ford: 703.732.5291; email: amford@acm.org

**THE POTOWMACK CHAPTER WILL HOST THIS YEAR'S
VNPS ANNUAL MEETING SEPTEMBER 12, 13, AND 14**

The 2008 VNPS Annual Meeting will focus on the diversity of plant communities along our national river, the Potomac. The Potowmack Chapter lies in the fall line region, where the Piedmont meets the Coastal Plain. Despite our area's urbanization, spectacular local and national parks line the river and protect dramatic falls, fascinating geologic features, meadows, bogs, and marshes - all along a surprisingly short section of the river. During the weekend, we've lined up a variety of field trips to some outstanding natural areas, gardens, and herbariums. On Friday evening, enjoy a dessert reception followed by a presentation. Saturday night features the annual meeting, a buffet dinner, and our keynote speaker. We hope you will join us. Look for a registration brochure in the mail.

Chapter Events Calendar

Aug 14 Board Meeting
Green Spring Gardens
7:30 pm



**Potowmack Chapter
Virginia Native Plant Society
P.O. Box 5311
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