

A publication of the VIRGINIA NATIVE PLANT SOCIETY

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Conserving wild flowers and wild places

Don't tidy up your winter landscape

As the growing season comes to an end, it's time for you to relax. Don't feel compelled to "tidy up" for the winter. All those standing stems and leaves and seedheads from the summer/fall flowering season provide habitat, food, shelter, and nesting materials for wildlife. "Cleaning" the flower beds removes important food and cover sources for migrating birds and over-wintering wildlife.

Herbaceous Plants. Stands of dead plant material retain moisture and stabilize ground temperature; the roots have aerated the soil and the stems, leaves and spent flower heads break the force of rain, and protect the ground surface from packing. Small birds can be seen scratching in the soft, open soil, feeding on worms, grubs, and insect egg cases.

Plantings of non-invasive ornamental grasses provide cover and seeds for a variety of wildlife species. Or, an unmowed area of lawn allows the meadow wildflowers and grasses to emerge, increasing the diversity of plants. Many of the plants we consider weeds produce flowers and seeds that are used by wildlife. Native wildflowers and grasses are particularly desirable
(See *Wildlife*, page 5)

Special Biological Areas need attention in new forest plan

All national forests must have a Land Management Plan, commonly called a Forest Plan. In the 1970s, Congress enacted laws that determine what goes into a Revised Forest Plan; clarifying regulations and policies were later issued by the Forest Service.

Work on the George Washington National Forest Revised Forest Plan is well underway and will provide the framework within which other project decisions can be made on a case-by-case and site-specific basis.

For areas of special habitat concern, please read the comments pulled together by the Southern Environmental Law Center from that agency's observations as well as those from the Wilderness Society, the Southern Appalachian Forest Coalition, the Virginia Wilderness Committee and Wild Virginia regarding the George Washington National Forest plan revision.

Special Biological Areas

There is a need for change to designate as Special Biological Areas (SBAs) all areas recommended for such designation by the Virginia Department of Conservation and Recreation, Natural Heritage Program (NHP). It is not clear from the discussion in the draft Compre-

hensive Evaluation Report (CER) whether the Forest Service adopted all the areas NHP recommended.

Even without this information, it is apparent that three areas, in addition to those proposed, should be designated as SBAs. The first concerns the several SBAs north of the Kelley Mountain Roadless Area. These SBAs protect the Shenandoah Valley sinkhole ponds. There is a need for change to expand the SBAs (or to designate a special area of some other kind) to protect the forest that surrounds and connects the ponds/SBAs. This would enable management of the entire area to be more consistent and comprehensive and would protect linkages between the ponds. This is the only opportunity on the National Forest to protect this type of habitat, and efforts to protect Valley sinkhole ponds on private land have been difficult, expensive, and at times impossible. There is precedent for this type of larger conservation area – the Shenandoah Crest SBA, which protects the Cow Knob Salamander and its habitat.

Second, an SBA is needed to protect wood turtles and their habitat in

(See *Forest plan*, page 4)

From the president

VNPS supporters deserve a round of applause

At our annual meeting recently, we elected our new board members for the coming term. The board will no doubt take on a slightly different character, although there will still be many familiar faces. Some chapter presidents will change as well. I would like to extend my appreciation to those who are currently serving VNPS, both at the state and chapter level. The dedication of those who attend our meetings and make our society function cannot be overestimated. So, to all of you, my deepest thanks. I'm also looking forward to the new year and working with our new board members.

The Potowmack Chapter and their President Marianne Mooney did a fine job with the meeting. I would like to say thanks to all who made this event happen. Our banquet and speaker were fantastic, and the field trips focusing on

the interaction of local geology and flora were interesting. The heat was a little bit of a surprise to all of us. I hope to have a little more coverage in the next newsletter.

Charles Darwin, in his *Narrative of the Surveying Voyages of Adventure and Beagle*, wrote "...a traveller should be a botanist, for in all views plants form the chief embellishment." Today we often say that plants from a region give a person a sense of place. I feel I've had the opportunity to see quite a few different places this year, and recognizing the components of the green background adds an interesting layer to my travels. I hope it has added something to your journeys too, and that we will all keep learning about our native plants together.

Your President, Sally Anderson

VNPSers explore Kansas prairie ecosystems



The VNPS group explores the prairie at the Konza Research Station. On the right is guide Valerie Wright. (Photo by Larry and Linda Wilcox)

The Virginia Native Plant Society-sponsored trip to the Kansas tallgrass prairie region was extremely interesting and satisfying. To begin with, it was completely different from all preconceptions that I had formed. I thought Kansas was flat—a tabletop; this region was rolling, grassy, rocky hills several hundred feet high, never very steep, but scenic in its vistas and panoramas. From the title of the trip, I really expected the grass to be tall. Actually, it was only about a foot to eighteen inches, having been burned a month earlier. This was fortunate because otherwise we would never have been able to find the numerous species

of herbaceous plants which grow in the grass. We would probably have lost a few of our group since they tended to dive right into the flora without regard to ticks and snakes. Thirdly, I was somewhat disappointed not to have seen a tornado (from about 20 miles away) as advertised on the evening news prior to our departure. The trip turned out to be much, much more than a botanical field trip. Set up and led by Larry and Linda Wilcox of Virginia Beach, it comprised a multi-faceted view of the entire area and ecosystem from several perspectives, each tied to the environment and the flora. Native prairie grasslands are the rarest and most threatened of all our ecosystems and are currently under intense scrutiny to determine how they work and how they can be restored and sustained. This area of Kansas, the Flint Hills, is unique in that it has very shallow rocky soil, underlaid with alternating layers of limestone and shale. It could not be farmed; breaking plows

defeat crop farming and breaking mowers deter haying; it could only be grazed. So most of the early settlers quickly moved further west. This fortunate situation is the reason that it exists today in a condition so near to its natural state—otherwise, the settlers would have transformed it beyond recognition.

Larry and Linda configured the trip to include six separate and distinctive venues, each presenting a different perspective on how the prairie ecosystem functions and why it is important to preserve it. The vegetation is dominated by four perennial, warm-season native grasses; big bluestem, little bluestem, Indiangrass, and switchgrass. The remainder is made up of hundreds of species of other grasses, composites, legumes, and forbs. Average annual precipitation is 33 inches with 75 percent falling during the growing season. The various groups did not always agree on the best mix of the various plants or how to achieve it. We were treated to each group's opinion and approach and it became apparent that no one currently knows the complete answer. This is an ongoing investigation with two main variables: burning and grazing. The issues are: how often to burn and how often and how heavily to graze. The objectives range from providing maximum plant diversity, represented as the key to

(See Kansas, page 8)

Gardening with natives is easier

A few years ago I stood next to a botanist from the Virginia Department of Conservation and Recreation. Together we visually surveyed a tract of land near the western slopes of the Blue Ridge. It was not your ideal garden spot: sandy, acidic soil, marshy in the spring, and bone dry by late summer. Yet the land was relatively lush, teeming with some of the rarest flora in Virginia such as the yellow Virginia sneezeweed that covered the ground as far as the eye could see.

Here in this inhospitable environment, I learned, was a snapshot of habitat as it existed before Europeans arrived in the New World bringing with them, by accident and on purpose, plant and animal immigrants that altered the landscape of Virginia. In many ways, those non-human immigrants, who arrived in Virginia starting in 1607, changed the commonwealth as much as the early settlers. Queen Anne's lace and chicory, for instance, are among those early hitchhikers as are later even less welcome invaders such as purple loosestrife, autumn olive, and tree of heaven. Those aliens, who arrived without their natural predators and thus with no checks and balances on their proliferation, often have free rein, squeezing out native plants and the animals that depend on them and drastically degrading the habitat around them.

Few if any invasives existed in the space where I stood with the botanist. The conditions were harsh enough and unique enough that immigrants, without an evolutionary strength borne over thousands of years, could not compete.

And that, then, is the beauty of Virginia's native plants. If you want a beautiful garden that is an ecologically sound wildlife habitat, comparatively low maintenance, and adaptable to unique or troublesome spots, then going native is a no-brainer.

Faye Lowry of the Upper James River Chapter could not agree more. A few years ago when she gave up her farmhouse for the convenience of downtown life in historic Lexington,

she knew that raking leaves and mowing a lawn, even a small one, would not be in the picture. So she opted for native – to date over 70 species thrive in her tiny town lot.

"Natives are easier and prettier. They are already acclimated to the area and are not as invasive," she explained. "I read an article about having a woodland garden in town and I decided to copy it."

Now tufts of spring ephemerals greet passersby along the front walk, while the oranges of native azaleas and the yellows of lady's slippers nod beside the walk to the back patio. Brilliant green arbor vitae form a living screen between her and a neighbor. A shady corner hosts ferns, and moss forms a carpet among mounds of green plants gathering energy for their summer bloom.

Her native experiment has even forged a friendship with the city public works department staff who supply her with as many leaves as she needs for mulching around her plants. Although she carefully planned her garden to be a mix of native perennials and shrubs, some members of her garden, such as the native mosses and ferns, simply knew an inviting place when they saw one and appeared when offered the right environment.



Faye Lowry stands next to a flame azalea in the side yard of her native garden located in the heart of a historic downtown district.



Katherine Smith shows off a cultivar of black locust, a Virginia native. (Photos by Nancy

Along the edges of the same town, a more suburban yard was the challenge faced by Peggy Dyson-Cobb who immediately began plotting the demise of her traditional lawn when she moved in a number of years ago. "The American style of watering and fertilizing so you can mow more just never really made sense to me," she explained. Now she has perennial sunflowers, black chokeberry, native petunias, blue eyed grass, cardinal flowers, and showy goldenrods. Instead of crown vetch or vinca as a ground cover, she encourages wild geraniums.

Dyson-Cobb, also in the Upper James Chapter, now celebrates the blooming of the native twinleaf and takes in the fragrance of the chokeberries that "smell just like honey" as well as the other aromas that "waft around me as I am weeding."

"Once I put them in," she says of the natives that she propagates by seed and cuttings, "I don't have to fool with them. They seem to deal really well with whatever the weather has to offer."

In fact, being able to work with Mother Nature, not battle her, is the real secret to gardening with natives. Take the fringe tree for instance. "The birds love the berries and I let the birds plant them for me!" she said.

Master Gardener and Upper James President Katherine Smith sees native plants as the answer to the endless variety of gardening situations that people encounter. On her own Rockbridge County farm, she encourages certain plants such as viburnum around the house, others such as hazelnuts and shrubby forms of dogwood

(See Return of the natives, page 6)

• Forest plan

(Continued from page 1)

the Paddy Run/Cove Run area. Wood turtles are a Virginia-listed Threatened species and are ranked by Nature Serve as S2 – Imperiled in the state. The Paddy Run/Cove Run area, where the wood turtle population is centered on two small watersheds composed almost entirely of National Forest land, represents the best opportunity for a viable population of wood turtles over the long term. The turtles' habitat on private land in Northern Virginia is under extreme pressure from development and their protection on private land cannot be ensured. The Paddy Run/Cove Run area represents the best opportunity to secure (or at least promote) the continued existence and sustainability of wood turtles through the protection of the turtles and their habitat.

The Draft CER states that a habitat management strategy is being developed by the Forest Service and the Virginia and West Virginia wildlife agencies and claims that “[t]he strategy will be used to provide information for the planning process.” The CER and the plan, however, do not reflect any information about wood turtles or any habitat management strategy and, in fact, provide no evidence of the required planning to ensure the sustainability of the wood turtle, a vital element of the GW's native diversity. (See NFMA, 16 U.S.C. § 1604(g)(3)(B) (provide for diversity of animal communities); 2008 NFMA Regulations, 36 C.F.R. § 219.10(b) (sustain ecological systems and support diversity of native animal species).)

Protection of wood turtles in a Paddy Run/Cove Run SBA is essential to provide for the continued existence of this species in the state of Virginia and the USFS Southern Region. In addition, the wood turtle should be a species of concern in the revised plan, since additional provisions beyond the general plan components are needed to provide appropriate ecological conditions for this species. (See 36 C.F.R. § 219.10(b)(2).)

Steven Krichbaum developed and proposed an SBA in the Paddy Run area for the wood turtles. That proposal was endorsed by the Virginia Division of Natural Heritage. There is a further need to extend the SBA beyond Paddy Run to

Cove Run, which also supports wood turtles. A small finger ridge at the VA/WV state line separates the two streams, with Paddy Run flowing into Cedar Creek and Cove Run flowing into West Virginia and Waites Run. The Forest Supervisor's response to Wild Virginia's October 2006 letter stated that the GW would consider the information in the plan revision. The draft CER and plan, however, reflect no such consideration.

We understand that wood turtles also have been found in other areas of the GW. These areas also should be considered for designation as SBAs. Further, the occurrence of wood turtles in these areas demonstrates the need to designate the turtle as a “species of concern” and to adopt specific additional provisions in the revised plan (i.e. standards) to protect them in areas of the GW that may not be designated SBAs.

Third, NHP recommended the Forest Service designate a Peters Mountain North SBA. This recommended SBA is described in the NHP report cited in the draft CER and linked to from that document. (See I.T. Wilson, VA DCR, DNH, *Biological Diversity Protection on the GWNF, First Supplement*, Natural Heritage Technical Report 00-10, Unpublished report submitted to the USDA Forest Service, at 74-75 (2000).)

This report explained that Peters Mountain North “encompasses an unusually large contiguous stand of old-growth oak-dominated forest. The old growth occurrence occupies approximately 3,600 acres on the crests and middle to upper side slopes of the northernmost ridge of Peters Mountain.” On April 2, 1996, Natural Heritage wrote to Ranger Snow describing the 3,600-acre area as “one of the largest known contiguous occurrences of Appalachian oak forest in old growth condition in Virginia and perhaps in all of the central Appalachians.”

NHP proposed a 4,051-acre SBA to include a buffer around the old growth and a rare mountain pond community which supports a large population of the federally endangered northeastern bulrush (*Scirpus ancistrochaetus*). “Logging or road construction would destroy the integrity of this unusually large stand of old-growth forest.” Yet the draft plan proposes to

allocate the entire NHP-recommended SBA to “general forest” suitable for timber production and harvest, road construction, wind energy development, and available for oil and gas leasing without surface protection. The area should be designated an SBA. The Snake Run Ridge area encompasses this SBA, another reason to protect the entirety of Snake Run Ridge as a special area.

Regarding the management of SBAs, SBAs are identified as unsuitable for timber production, timber harvesting and road construction. They should continue to be so identified. They also should be unsuitable for salvage harvesting, temporary road construction, and construction of wind generation sites. Any oil and gas leasing should be with “no surface occupancy.”

Compiled by the Southern Environmental Law Center
(www.southernenvironment.org)

What the plan is, and isn't

Just as important as what this Revised Forest Plan (FP) does are those things it does not do. Here are some differences. For complete information about the GW plan, including documentation and meeting schedules, and comment go to: (<http://www.fs.fed.us/r8/gwj/forestplan>).

Federally-listed Threatened and Endangered Species: The FP DOES provide desired conditions, objectives and guidelines to guide on-the-ground management of projects and activities. All of this is focused on allowing the forest to contribute to sustaining or providing habitat conditions for species listed for protection under the Endangered Species Act. The FP DOES NOT decide which species will be protected under the Endangered Species Act.

Timber Harvests: The FP DOES identify long-term sustained yield and DOES identify which lands are suitable for timber harvesting but DOES NOT identify individual areas that will be offered for sale. It DOES provide guidelines to determine where and how sales can occur but DOES NOT approve site-specific timber sales.

• Wildlife

(Continued from page 1)

for native birds and small mammals, as well as winter cover crops of clover, rye or timothy.

Frost and snow on standing plants is beautiful – one of the most important things to cultivate in your garden is your eye. Hydrangea and sedum remain upright over the winter and offer visual dimension to the garden landscape.

Nature has no off-season! Early blooming witch hazel and highbush blueberry will raise dull winter spirits.

Woody Plants. Fruit and nut-bearing trees like oaks, walnuts, sourwood and beech provide important winter food for resident birds. Their natural cavities are used for nesting and shelter by many wildlife species. Fruits that persist on the tree over the winter such as winterberry, hollies, and cedar are especially desirable. Shrubs like beauty berry, bayberry, and hearts-a-bustin' remain attractive to winter-

ing wildlife all season. It's important to place the food close to the cover to minimize the exposure of feeding wildlife to weather conditions and predation; these two factors account for more than 90 percent of winter mortality.

Tree fruit becomes sweeter during freeze and thaw. The fruit is available to provide resident wildlife species food in lean times during the winter and into early spring, and for returning migratory birds. If space is a limitation in your yard, consider winter food plants first. They are the most important because natural foods are scarce during this season.

Evergreens should occupy a significant portion of a wildlife habitat garden; dense shrub and evergreen (native red cedar) plantings provide valuable escape and roosting areas and shelter in rain, heat and harsh winter weather. In addition to providing critically needed winter cover, these woody areas provide important nesting and feeding areas for a wide variety of woodland songbirds. During all seasons, they are cover for escaping predators. They block wind for feeding areas and in summer, they are used as nesting sites. The sap, needles, twigs, buds and seeds, and insects that make their homes in evergreens, are food for wildlife. Cavities in the trees are often used for nesting, roosting and shelter.

Vines like poison ivy and greenbrier may be unfriendly to humans, but birds and small mammals love the berries – they are not allergic to the oils or bothered by the thorns! Virginia creeper is a native fruit bearing vine often naturalized by wild birds. It is an important food source to over 35 species of birds. Unfortunately it is a poison ivy look-a-like and is often destroyed for that reason.

Birds play an important part in planting a natural habitat. Natural scarification of seeds the birds have eaten occurs during digestion. The seeds are passed in excrement, landing where they will grow to produce fruit and nectar for the next generation. It is your choice to keep the new plants or treat them as weeds. You may transplant them once they have started growing if you don't like where the birds planted



Twinleaf seed pods
Illustration by
Nicky Staunton

them. American holly trees with evergreen leaves are particularly attractive to winter birds who will plant a varied garden beneath its branches.

Dead trees, brush piles. A “snag” is a dead or dying tree. Snags are like gold in the wildlife world, used as nesting sites, perching sites, as food sources and to establish territory. Brush piles provide nesting and den sites, and escape cover for many species of wildlife, including small mammals, birds, amphibians and reptiles. Piling the prunings from your yard in a secluded corner will create a brush pile that grows over the years.

And where are the butterflies and moths during the winter? Most have formed their cocoons high in native trees – the oaks, willows, hackberry, and maples. When pruning these woody species in February, the branches should go in a brush pile to permit development of the adult forms; burning or hauling dead woody plant material is a loss to native wildlife. Pollinators are weathering over in brush piles — don't burn! It's likely that praying mantis egg cases are overwintering there.

Diversity. A garden landscape with a wide variety of plant species, at varying heights, will meet the needs of wildlife that feed, nest or find shelter at different levels. And a mix of trees, shrubs, herbaceous plants and standing ground cover will reduce severe insect or disease problems.

Landscaping for wildlife is gardening at its very best!



Milkweed seed pods

Illustration by
Barbara Stewart

Book on plants of early America is a work of art

Just because something is beautiful doesn't mean it can't possess valuable scientific information as well. Such is the case with *Flowers and Herbs of Early America*, researched and written by Lawrence D. Griffith, and lavishly illustrated with Barbara Temple Lombardi's amazing color photographs. The oversize, full-color coffee table book is produced by the Colonial Williamsburg Foundation in association with Yale University Press. (300 pp., hardcover with dustjacket, ISBN 978-0-87935-238-7)

Griffith, the curator of plants for Colonial Williamsburg, incorporates his years of experience into the 56

plant essays that detail how these plants were cultivated and used in the gardens and homes of early colonists. More than 30 of the plant essays feature Old World introductions, many of which are now naturalized in Virginia. The rest of the plants are new world varieties and half of those, such as the sunflower, were in Virginia in 1607.

Each plant essay includes a period woodcut, a botanical information box, an essay meticulously documenting the research trail followed by Griffith, and of course, Lombardi's dazzling photographs. There could hardly be anyone not drawn to this

book--from historians and botanists seeking more information about Virginia's botanical heritage, to gardeners wishing to choose appropriate species for period gardens, to those who want to escape the stresses of the world by turning the pages of this beautiful book and soaking in the natural beauty presented inside.

The author is available for speaking engagements and book signings. If anyone knows of native plant society chapters, gardening clubs or historical societies that might be interested, contact Penna Rogers (public affairs, Colonial Williamsburg, 757-220-7702; PRogers@CWF.org),

• Return of the natives

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around water courses for the wildlife, and then native grasses like switchgrass in the pastures. Shade or sun, shale or clay, rich or poor soil, wet or dry, there is a native plant that has, over millennia, learned to adapt and thrive.

"I do an awful lot of my gardening by subtraction," she said with a laugh. After removing what shouldn't be there, such as multiflora rose, she often waits for the appropriate plants to reappear. If they don't then she brings in what should be there based on the unique conditions of that spot.

Finding the right species or cultivar is an "intellectual chase" she noted. Many of her plants have to be started by seed or cuttings because the commercial growers and nurseries have been slow to catch on to the commonsense of going native. These days, however, there are a growing number of nurseries that specialize in natives.

Natives can also be the answer in new housing situations that often create exposed banks that erode badly until groundcover is established. Landscapers of the past resorted to invasive groundcovers such as crown vetch or vinca to hold the soil in place but those plants created unbalanced habitats giving foothold to plants that quickly spread into and ruined other garden

spots. An alternative was to plant day lilies, also an immigrant species but one that offered nice bloom without the harmful invasive qualities. Unfortunately, in areas where deer are a problem, day lilies are tantamount to opening a deer salad bar.

Smith has a better way of dealing with those clay banks that frustrate gardeners in new housing developments. She recommends a variety of native mints (*pycnanthemum*), goldenrods, tall black-eyed Susans, deer grass, and Gro-Lo sumac, which is a cultivar of fragrant sumac that deer find distasteful. "You want something that perennializes and takes over and all of these plants do that. The goldenrods and mints will attract the beneficial insects such as butterflies and the scavenger wasps."

Because native gardens require little if any pesticides, the enhanced wildlife habitat is a further bonus. Especially the "beneficial insects" noted Smith. "If you are going more natural by never using Seven or Malathion again, then you are going to have to get help from Mother Nature. The small parasitic wasps, for instance, are good. One type goes against Mexican bean beetles. And so many of the adult forms of beneficial insects are nectar or pollen eaters that you have to keep flowers going during the time they are eating."

When the first settlers arrived in Jamestown in 1607 they found a lush and complex world of flora and fauna that had evolved over the eons before Old World met New. Those first explorers and colonists wrote enthusiastically about Virginia's almost endless variety.

Today's gardener can find much to like about going back to what had already been learned to thrive in the natural world long before 1607. None of the three native plant gardeners in this story can think of a single reason not to strive for the natural compatibility of Virginia's first plants. "I saw how well they did and how easy they are to manage in a landscape. Very few have insect or disease problems and the wildlife seems to really appreciate them," Smith says of the return of the natives.

Nancy Sorrells, VNPS Bulletin Editor

Giving credit

The last Bulletin contained an article about the unique ecology of the Potomac Gorge -- the site of the recent VNPS Annual Meeting. Mary Ann Lawler should have been credit for the fine article that she put together. Thanks Mary Ann for your hard work on the article and on the meeting.

• Kansas

(Continued from page 2)

prairie ecosystem sustainability, to producing the best beef at the cheapest price.

The group visited six prairie venues: **Overland Park Arboretum and Botanical Garden** where they are beginning to restore the grasslands which have grown up in scrubby trees such as eastern red cedar and osage orange; **Coblentz Prairie** that is being restored to a natural state from a grazing application and contained an extremely diverse inventory of plants; **National Tallgrass Prairie Preserve** an 11,000-acre preserve that exists because of a cooperative effort between the Nature Conservancy and the National Park Service and includes almost 400 species of plants, 150 species of birds, 31 species of mammals, and 39 types of reptiles and amphibians; **Mushrush Registered Red Angus Ranch** where we heard a discussion with the local extension agent and a rancher involved in Angus breeding and beef cattle grazing operations; **Grandview Ranch** that promotes a public understanding of the need to burn the native grasses and the **Konza Prairie Biological Station**, an 8,600 acre native tallgrass prairie field research facility operated by Kansas State University and the Nature Conservancy.

Ralph Will, John Clayton Chapter



The federally listed Mead's milkweed (*Asclepias meadii*) was the rarest plant seen by the VNPS group. This plant was named for its discoverer, Daniel Barnham Mead. (Photo by Larry and Linda Wilcox)

• Sneezeweed

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virginicum are associated with dolomite and limestone geologies that are subject to fluctuating water levels that vary from year to year (Van Alstine, 2000).

Helenium virginicum flowers from early July to October, with peak flowering occurring in late July to early August at most sites. The pollination biology of *H. virginicum* has not been studied in detail; however, the primary insect pollinators appear to be bees, wasps (Hymenoptera: Apidae, Halictidae, Sphecidae), butterflies (Lepidoptera: Hesperidae and Lycaenidae, among others), and hoverflies (Diptera: Syrphidae). Seasonal water fluctuation, particularly inundation, is probably a key factor af-

fecting recruitment and maintenance of *H. virginicum* populations.

Habitat modification is the primary threat to *H. virginicum*. Some of these modifications include residential development, filling of wetland habitats, and other disruptions of hydrology. Cattle grazing and mowing at moderate levels can be beneficial, however, overgrazing or poorly timed mowing could have long-term adverse effects.

The future needs for Virginia sneezeweed populations include surveys for new sites and monitoring of known sites. Collection and storage of seed from populations is needed in both Virginia and Missouri.

Information from the Center for Plant Conservation's website at: http://www.centerforplantconservation.org/ASP/CPC_ViewProfile.asp?CPCNum=2187#Distribution