

A publication of the VIRGINIA NATIVE PLANT SOCIETY
Conserving wild flowers and wild places

www.vnps.org

Ancient trees discovered in swamp forest

In late September of 2005, Virginia Natural Heritage Program (VNHP) ecologist Gary Fleming and retired Suffolk science teacher Byron Carmean were walking alongside a flooded slough that diverges from the Nottoway River near Courtland, Virginia. They had stopped at the now-defunct Cypress Bridge, one of M.L. Fernald's favorite collecting sites during the 1930s and 1940s as he worked on updating *Gray's Manual of Botany* to its eighth edition. As they walked up the slough eyeing the opposite shore, Carmean, a veteran big-tree hunter, spotted a massive water tupelo (*Nyssa aquatica*) that he thought would challenge the existing state champion. In fact, all of the tupelos and bald cypress (*Taxodium distichum*) lining both sides of the slough appeared to be quite old and relatively large. Unfortunately, it did not appear possible to cross the deep slough by foot, so the exploration ended quickly.

A few days later, Carmean returned with a canoe and discovered that old trees were not restricted to narrow bands along the slough, but covered an area of many acres. Moreover, the stand contained many trees of exceptional, even record, size and strange growth forms indicative of very old age. With the permission of the land owner, International Paper Corporation, Carmean and VNHP ecologists returned to the site several times to document the forest. The extent of the old forest was determined by walking the perimeter

of the stand and collecting spatial location data at key points with a Global Positioning System (GPS) unit. The interior of the stand was explored on foot and documented with field notes and GPS data. Complete quantitative structural, floristic, and environmental data were collected from a quarter-acre plot that was compositionally representative of the entire stand. In addition, circumference, height, and average crown spread were measured for the largest specimens of five tree species following protocols of the American Forests National Register of Big Trees (www.americanforests.org/resources/bigtrees/).

Based on these studies, it was determined that the old-age forest occupies a wide depression in the floodplain, covering approximately 37 acres. It is dominated by large water tupelo and more scattered large bald cypress, all with huge buttressed bases. Rising from the forest floor are thousands of bald cypress "knees," the largest of which exceed 10 feet in height. Throughout the stand,

Carolina ash (*Fraxinus caroliniana*) is the dominant understory tree, while medium-age overcup oak (*Quercus lyrata*), red maple (*Acer rubrum*), and American elm (*Ulmus americana*) are rooted on the tops of the tupelo and bald cypress buttresses, six to eight feet above the ground. Since these trees are not as flood tolerant as tupelo and bald cypress, the elevated perches allow them to survive by keeping much of their root mass above mean water level. Watermarks on
(See Record-breaking, page 6)



Bryon Carmean and Karen Patterson stand at the base of a national champion water tupelo at Cypress Bridge in Southampton County.

From the president

Meetings and anniversaries mark calendar

The 2006 Annual Meeting came and went, and we were pleased with a large turnout, reasonably good weather, a fun band and a lively meeting. The Frontier Culture Museum was a good location to gather, and I thank the staff for the hospitality to us. I also enjoyed a trip through the outdoor museum before the car ride home.

As announced on page four in the events section, the 2007 meeting will be hosted by the John Clayton Chapter in mid-September, and will be part of a year of activities commemorating European settlement of Virginia. This seems like an important date for us because it is the approximate date we use in deciding what plants are native to Virginia. Of course, this anniversary likely marks the beginning of the era of invasive plants and other organisms, although it took quite a while to become the onslaught it is today. We will also be trying to arrange our March 3 Annual Workshop around such themes as past ecosystems in the state and plant exchanges between continents.

Our organization turns 25 years old this year, and I hope to mark that anniversary as well. If you have information about VWPS or VNPS history tucked away, it is time to bring that to light. And remember, it is your society, and I like to hear your ideas about what we can do in the future to preserve and protect our native plants and habitat, and tell others about what we find so special.

*Meanwhile, in the upcoming year, we are arranging a trip to the Bruce Peninsula, and perhaps a few other outings. Look for more information in future **Bulletin** issues, contact the office for updates, or sign up for our list serve to get information on our activities.*

Your President, Sally Anderson

Workshop slated for March 3

Set aside time in your botanical schedule for the Virginia Native Plant Society's Annual Workshop. This year's event will be held on Saturday, March 3 at the Gottwald Science Center on the University of Richmond campus. The workshop will run from about 9 a.m. until 3 p.m. Details and registration information will be available in the next newsletter and will appear on the VNPS website at www.vnps.org. Over the years, the VNPS workshop has gained a reputation as an informative and educational day spent with fellow plant lovers. You won't want to miss this event.

Progress continues on Flora Project

Good news continues to roll in on the Flora of Virginia Project. Perhaps the most exciting is the announcement by Jerry McCarthy of the Virginia Environmental Endowment (VEE) of a grant of \$80,000 for the project. The VEE mission is to improve the quality of the environment by using its capital to encourage all sectors to work together to prevent pollution, conserve natural resources, and promote environmental literacy.

Joining co-authors Alan Weakley and Chris Ludwig as an author for the flora will be Johnny Townsend, a biologist for the Virginia Department of Conservation and Recreation and a VNPS Director-at-large.

Also, a memorandum of agreement has been drafted by the Flora of Virginia Project with Lewis Ginter Botanical Garden to formalize the relationship and the use of the herbarium located there.

Work continues on all fronts. The project is on track for a completed manuscript to be delivered to the University of Virginia Press in January of 2009.

VNPS Financial Statement Nov. 04 - Oct. 05

Income

Dues, membership	28,956.00
Donations	1,675.00
Fund Raising	12,243.83
Sponsored Events net	5,756.88
Sales, Merchandise	2,933.00
Interest income	575.28
Total income	52,139.99

Expenses

Newsletter	10,384.87
Botany	2,164.00
Publicity	66.14
Conservation	607.32
Fund Raising Letter	1,886.21
Insurance	1,702.00
Taxes/License	30.53
Dues/memberships	200.00
Administration	28,321.13
Net Income	-87.47

Total Assests	29,228.99
Current Liabilities	789.10

Caledon receives long-awaited VNPS registry listing

Caledon Natural Area, part of the Virginia Department of Conservation and Recreation's excellent system of state parks and natural area preserves, has been appreciated by fans of the bald eagle for some time. But Martha Shelkey, a VNPS member who lives near Caledon, appreciates it because of its many native plants and plant habitats. In fact, Martha learned to appreciate Caledon's plants so much that she nominated it as a VNPS Registry Site, preparing the proposal for registry with much supporting information and a collage of her color photos of Caledon flowers as the proposal cover. Martha based the proposal on her own knowledge of the native plants and plant habitats, aided in great measure by the floristic survey of Caledon done in 1984 by eminent field botanist Dr. Donna Ware of the College of William and Mary.

Martha completed the proposal in 1999. Then came the delays. The Registry Program lost its way for a while due to the unfortunate death of Bo Dale, the program's registry chair. There were other delays, including that of fall of 2005, when an award date was set but postponed due to an outbreak of influenza among participants.

But here is the good news. On Friday, September 15, 2006, at a brief but delightful ceremony on the lawn in front of the visitors center at Caledon, VNPS President Sally Anderson and Martha Shelkey pre-

sented the registry site plaque to Park Manager Nina Cox and Chief Ranger Sammy Zambon. The ceremony was one of many events of Caledon's annual Home School Day, a fair for those families interested in home schooling.

A number of the attendees watched the ceremony with interest. Chief Ranger Sammy Zambon explained that not only had Martha Shelkey prepared the proposal for the site registry, but had assisted Caledon as a volunteer, accumulating over 1,000 hours of service to the park. One of her accomplishments is the preparation of an impressive set of looseleaf notebooks on the flora of Caledon. These notebooks include Martha's color photos of each plant, with a written description of the plant and the area in which it is found. These notebooks are an invaluable resource for park staff and visitors when plant identity or location questions arise. Ask for and enjoy these notebooks when you visit Caledon.

President Sally Anderson then gave a description of the VNPS registry program, including the potential benefits to the sites that are registered. At Sally's invitation, Martha Shelkey spoke of her adventures at Caledon and her joy that the award was being made. Nina Cox expressed appreciation to VNPS and to Martha for the award, stating that the plaque would be prominently displayed in the Smoot House, which is the visitors center at Caledon.

Other attendees included

Anita Tuttle of the Virginia Division of Natural Heritage, who was formerly the chief ranger at Caledon; Ann Gorrell, membership chair at the VNPS Fredericksburg Area Chapter; Potowmack Chapter member John Dodge, also co-chair of the VNPS Registry Program; Kim Boshela, Caledon Park naturalist, who along with Sammy Zambon, helped with the arrangements for the ceremony; and last but certainly not least, Dave Shelkey, Martha's husband, who also has provided Caledon with over 1,000 volunteer hours.

John E. Dodge, co-chair VNPS Registry Program



VNPS President Sally Anderson, right, reads the Caledon registry plaque while, left to right, Nina Cox, Caledon park manager; Sammy Zambon, Caledon chief ranger; and Martha Shelkey, the VNPS member who prepared the site registry proposal, watch.

Annual meeting took VNPSers to a Virginia prairie

The Shenandoah Chapter lined up so many good field trips at the Annual Meeting that I am sure more than a few of us were wishing somehow to clone ourselves. I wanted to see some of the habitats in my backyard so I signed up for Chris Ludwig's field trips. Who better to tell us what we were seeing than this botanist for the Virginia Department

of Conservation and Recreation who is also the person in charge of the Virginia Flora Project?

Chris took us first to the Cowbane Prairie, near the South River (a headwater tributary of the Shenandoah). This prairie, he explained, helps take us back in time several centuries. The first settlers into the Shenandoah Valley described a place

of forests interspersed with tall grassland prairies. Yes, that's right, prairies right in the Shenandoah Valley. For thousands of years those grasslands had been kept open by grazing animals such as elk and buffalo and through periodic burning by the Native Americans.

Today only a few remnants of
(See Cowbane, page 8)

Mark your calendars

2007 Annual Meeting

The 2007 VNPS Annual Meeting will be hosted by the John Clayton Chapter on Friday and Saturday September 14-15. The VNPS board meeting will be on Sunday September 16.

Lobstein to speak

Make sure that you save the date of Saturday, February 17 if you want to hear Marion Lobstein talk about our plant friends. She is a featured speaker at the Mid-Atlantic Home and Flower Show being held at the Virginia Beach Convention Center. The theme for this year's show is "Dream Gardens." The convention center is located at 1000 19th Street in Virginia Beach. Visit www.vnps.org under South Hampton Roads Chapter for updates and look in the January chapter newsletter for detailed information.

Don't miss the 'Return to the Bruce'

From June 16 to 23, VNPS will take another trip to the Bruce Peninsula, a rich botanical area and United Nations Biosphere Reserve, located between Lake Huron and the beautiful Georgian Bay in Ontario, Canada. Our leader, botanist (and expert birder) Dr. Stanwyn Shetler, will receive assistance from Elaine Shetler and Sally Anderson. The trip includes a full week's stay at Wildwood Lodge on the lakeshore, where a daily breakfast, picnic lunch, and dinner are included. Guided, plant oriented trips are provided each day.

Participants should arrive on June 16 for dinner and a preview of the trip. We will carpool each day to see bogs and fens, rich woods, alvars (natural limestone pavements) and rocky lakeside habitats. A boat trip to Flowerpot Island, named after a rock formation on the shore, is included. The northern flora is rich in ferns, orchids and species of northern forests, as well as occasional western species. Birds are also plentiful. The walks are mostly short and easy, often on boardwalks, although a few longer walks are available. There is time for photography, and there are opportunities to explore in the vicinity of the lodge. The lodge also has a pool, games and puzzles, and a gift shop. Several small potteries are found in the area, and may be visited on your own.

For more information, contact Sally Anderson at 540-722-3072 or rccsca@visuallink.com. The cost will be \$875, which includes a \$50 donation to VNPS. Reservations and a deposit of \$200 are needed by January 10, 2007. Maps, plant lists and information will be provided at that time. Each person must provide his or her own transportation to the lodge, about one-and-a-half-days' drive. The trip may be cancelled if there are fewer than 12 reservations.

Native plant focus in the horticulture world part of course

Horticulture in our region with emphasis on a number of special focus topics is all part of the schedule at the 2007 Mid-Atlantic Horticulture Short Course to be held January 28 through February 2 at the Oceanfront Ramada Plaza Resort in Virginia Beach. This course is of particular interest to VNPSers because of the special one-day track for non-professionals, "Go Native," that will be held on February 1 at the Holiday Inn Sunspree Resort at Virginia Beach from 9 a.m. to 4 p.m. The entire symposium offers one to five-day programs featuring national and regional experts in the horticulture industry.

Tracks are broken down by green industry topics such as arboriculture, plant production, business, Spanish language and culture for landscape professionals, landscape architecture and design, landscape maintenance, hor-

ticulture (basic and advanced) and landscape crew manager programs.

Helping organize the native plant portion of the course on February 1 are members from VNPS's South Hampton Roads Chapter. The keynote speaker for the "Go Native" program will be Allan Armitage with a presentation called "Natives are for Mid-Atlantic Gardeners." He will also be available for a book signing. Other speakers and topics include Bonnie Appleton on native plants for the America's Anniversary Garden project; Nancy Hugo on Virginia's Remarkable Tree Project; Mike Andruczyk on native plants for rain gardens; Carol Heiser on wildlife gardens for your backyard; and top 20 native trees and shrubs by Norman Grose and Ed Bradley who authored the *Best Plants for Hampton Roads*.

Daily fees are \$65, and early

bird discounts are offered prior to January 14. For an additional \$15 fee, participants are invited to attend a hurricane preparedness program sponsored by the Hampton Roads Tree Care Association, in conjunction with Virginia Dominion Power. This program, "Remember Isabel - Don't Get Caught with Your Trees Down," will be held at the Oceanfront Ramada Plaza Resort on February 2, from 9 a.m. - 1 p.m.

Full program details and registration are available online at www.mahsc.org or by calling 757-523-4734.

The Mid-Atlantic Horticulture Short Course is produced by the Virginia Horticultural Foundation, a nonprofit organization that provides educational programs to assist and inform the general public and professionals in effective and efficient horticultural pursuits, landscaping, environmental concerns and general gardening activities.

Gaia conference

Warnings sounded for Planet Earth

The Virginia Native Plant Society and the Prince William Wildflower Society, along with George Mason University, Arlington County, numerous environmental organizations, companies involved in green infrastructure, and public open space entities, sponsored a two-day conference taking a look at the state of Planet Earth. The central theme of the conference was the “Gaia Theory,” which posits that the organic and inorganic components of Planet Earth have evolved together as a single living, self-regulating system that maintains conditions suitable for its own survival. (The theory is named after the Greek goddess Gaia.)

The symposium’s chief sponsor, the Northern Virginia Regional Park Authority, along with its principal organizer, Martin Ogle, managed to entice over 20 nationally-known leading scientists, environmental managers, and educators knowledgeable about the state of our biosphere and who are working on solutions to some of our most pressing problems.

Many of them presented graphic evidence of how our biosphere works and why it is rapidly changing as a re-

sult of human activity. Almost all of them focused on global warming as the most dire threat to the living earth.

Dr. Tyler Volk, who directs the Earth and Environmental Science program at New York University explained why the earth is not in chemical equilibrium. Plant life and the vast oceans absorb carbon dioxide and cool the planet, keeping it from becoming like Mars and Venus. However, human activity is causing the CO₂ to be out of balance.

Dr. Tom Lovejoy, president of the Heinz Center for Science, Economics and the Environment, stated that diversity is the single best measure of the health of our environment and that climate change is the ultimate distortion of a biological cycle. He said the increasing monthly carbon dioxide concentrations measured since 1958 from the Mauna Loa Observatory may become the most famous environmental graph in human history. He said the changes from these increases may not be linear or gradual: Glaciers are melting—all tropical glaciers will be gone in 10 to 15 years; plant bloom dates are earlier; birds are nesting earlier; wild-fires are increasing; butterfly ranges are shifting northward and up slope;

coral reefs are declining; polar bears and other species are declining.

Dr. Robert Correll, of the American Meteorological Society and Senior Research Fellow at Harvard, said that 1,500 scientists over a period of five years have formed a consensus on global warming and he presented graphic and dire findings of major changes taking place in Greenland, the Arctic, and the oceans and its fisheries. For example, oceans have become 30 percent more acidic making it harder for corals, plankton and tiny marine snails [called pteropods] to form body parts.

Dr. Lynn Margulis of the University of Massachusetts at Amherst, who along with James Lovelock was an original proponent of the Gaia Theory, spoke about the earth as a “system of organisms” which are tightly entangled and that extinctions weaken the structure. A video from Lovelock to the conferees said that the evidence is that the earth is ill with a “morbid fever” that could take 200,000 years to correct.

Dr. Donald Aitken, an expert on renewable energy, was the final speaker, who summed up the decline in bioproductivity and the warnings

(See Gaia, page 7)

Participants challenged to take action

The Virginia Native Plant Society and Prince William Wildflower Society were two of the many sponsors for the recent conference “The Gaia Theory: Model and Metaphor for the 21st Century.” The conference was held October 14 and 15 at the George Mason University Law Campus in Arlington. Participants from VNPS included Mary Ann Lawlor, Shirley and Cliff Gay, Martha Slover and myself.

The gathering featured many prominent scientists, scholars and activists (see related article). Most importantly it accomplished two things: it educated people about what the Gaia Theory posits and it emphasized the need to take action soon to counter the effects of hu-

man-influenced climate change and other environmental problems.

James Lovelock, the originator of the Gaia Theory was a scientist in NASA’s space program in the early 1960s working on methods of detecting life on other planets. Through the analysis of new data on the climates of Mars and Venus and discussions with peers, Lovelock came to realize that the atmosphere of the Earth could not be explained through abiotic processes. Lovelock was a devoted evolutionist. However he saw what Darwin could not 100 years earlier due to the state of scientific knowledge at the time: organisms are not simply shaped by their environment, but actually change their environment through

biological processes to make it more favorable for life.

In the early 1970s Lovelock met microbiologist Lynn Margulis. It was Margulis’ computations of microbial activity that allowed Lovelock to back up his hypothesis with data – Gaia was becoming a theory. Margulis was able to demonstrate that the bioproducts and levels of microbial activity created the modern atmosphere of Earth. Over time Lovelock, Margulis and other scientists have been able to show that it is the complex metabolic processes of organisms acting on a large scale that regulate the Earth’s biosphere – particularly the atmosphere and oceans.

(See Challenge, page 7)

Record-breaking trees found in Cypress Bridge

(Continued from page 1)

the buttresses indicate that most of the habitat is flooded to an average depth of about four feet for part of the year.

The density of very large individual trees at this site is striking; diameters-at-breast-height (DBH) exceeding five feet are common throughout. At least 12 individual swamp tupelos, and six individual bald cypress exceeding eight feet in diameter were measured. The largest individuals are between 10 and 12 feet in diameter. All of the large trees are hollow, which appears to be one of the principal reasons this forest has never been cut. Many large snags and fallen logs, as well as grotesque deformities in the buttresses and crowns of the overstory trees, suggest that the stand is very old. Although logistics precluded increment coring of the dominants, between 500 and 600 annual growth rings were counted on two three-foot diameter bald cypress logs in an adjacent, cut-over stand. This suggests that the larger trees at Cypress Bridge are much older, possibly exceeding 1,000 years in age. During surveys of the

site, six new national and state champion were documented (Table 1), an extraordinary number for such a small area.

The study team was fortunate that in October 2005, the habitat was almost completely drawn down after a very dry summer. An herbaceous flora dominated by annuals and fast-growing, short-lived perennials was well developed in patches of drier soil. The most numerous of these over the entire site were false pimpernel (*Lindernia dubia* var. *dubia*), Virginia cutgrass (*Leersia virginica*), horse-tail paspalum (*Paspalum fluitans*), and marsh fleabane (*Pluchea camphorata*). Species in this group are well adapted to habitats that are submerged for significant portions of the year, producing seed banks or water-tolerant rootstocks that sprout and grow rapidly to maturity during favorable periods of soil exposure. A somewhat different aggrega-

tion of annuals and perennials, including false nettle (*Boehmeria cylindrica*), greenfruit clearweed (*Pilea pumila*), Walter's St. Johns-wort (*Triadenum walteri*), swamp beggar-ticks (*Bidens discoidea*), and starved aster (*Symphyotrichum lateriflorum* var.

lateriflorum), were commonly rooted in moss on fallen logs and the sides of tupelo buttresses. However, the most abundant herbaceous vascular plant at the site was the epiphytic resurrection fern (*Pleopeltis polypodioides* ssp. *michauxiana*), which covers many of the high trunks and branches of the overstory trees. The only exotic plant found, albeit rarely, in this forest was Indian heliotrope (*Heliotropium indicum*).

Although similar bald cypress-tupelo swamps originally covered more than 40 million acres in the southeastern United States, only about 12,000 uncut acres remain today (Stahle et al. 2006). While the Cypress Bridge Forest is small in comparison to several other tracts of virgin swamp forest in the southeast, it is nonetheless significant, both for its concentration of champion trees and its potential for further study. The Virginia Department of Conservation and Recreation is currently negotiating to purchase the old-age forest and surrounding acreage for a new state natural area preserve. If this effort

(See Swamp, page 8)



Species	Circum.	DBH	Height	Avg.	Crown Spread	Points	Status
Bald Cypress	35 ft 6 in	11 ft 4 in	123 ft		64 ft	565	State Champion
Water Tupelo	31 ft 10 in	10 ft 2 in	85 ft		65 ft	483	Co-National Champion Co-State Champion
Water Tupelo	32 ft 2 in	10 ft 3 in	82 ft		43 ft	479	Co-National Champion Co-State Champion
Overcup Oak Swamp	19 ft 8 in	6 ft 3 in	101 ft		89 ft	358	Co-State Champion
Cottonwood	10 ft 9 in	3 ft 5 in	115 ft		33 ft	251	State Champion
Carolina Ash	5 ft 3 in	1 ft 8 in	80 ft		31 ft	151	National & State Champion

Table 1. National and state champion and co-champion trees documented in the Cypress Bridge Forest. Note that the water tupelo champions were bettered in 2006 by another Virginia tree located by Byron Carmean.

• Gaia

(Continued from page 5)

by the previous speakers. He discussed how humans can understand, adapt, and reverse the trends with the use of renewable energy resources, such as solar and wind power and biofuels. Germany is the leader in the use of solar energy; Japan subsidizes the development of solar technologies. We need to be on the forefront.

While there is no "silver bullet," to reverse the course of global warming and to protect Gaia, the Planet Earth, we

do need "silver buckshot" to use Dr. Lovejoy's rhetoric. The admonitions and recommendations of the presenters include the following. Our goals should be to embrace and practice sound science; form a global environmental ethic that includes all organisms; develop a new energy and climate agenda; revise our conservation strategies; limit greenhouse gases; increase natural connectivity to allow species to move as the climate changes; consume wisely and live sustainably by converting to the use of alternative forms of energy and the use

of renewable resources; foster a sense of wonder in our children in the presence of nature; promote legislative action and use of first amendment rights to speak up; re-examine our value system that has allowed us to change the balance of Earth's systems; engage people with value systems that focus on a holistic relationship with the natural world; and develop food production and land use practices that mimic natural systems, use fewer resources and re-connect consumers with producers.

Mary Ann Lawler, VNPS Director-at-large

• Challenge

(Continued from page 5)

During the recent Gaia conference, it was scientists such as Tyler Volk, Thomas Lovejoy and Robert Correll who brought home the point that human activities have significantly influenced or altered these biosphere regulating processes helping to bring about climate change and other effects.

It was a discussion during a session led by Dr. Eileen Crist of Virginia Tech that hit home to me one of the most important lessons. Participants were talking about the need for people to digest both the science pointing to Gaian theory and climate change and the implications. Dr. Crist said that in her ex-

perience the students are able to digest and understand the science and facts about human impacts and climate change in general. However, when faced with the effects of climate change, what impacts humans are having and what it might mean for the future, students shut down or tune out, and are not able to cope with those issues.

In hearing this I was reminded of the statement by author Bill McKibben in his book *The End of Nature*. McKibben said that we humans are able to ignore the impacts we have on the environment around us by simply avoiding the ugly parts and focusing on those that remain beautiful and natural. He said that the concept of wilderness unspoiled by hu-

mans, even if it is very limited or barely exists, is such a powerful concept in our minds and culture that we can become indifferent to the damage we cause.

I think McKibben's idea about our imbedded concept of the inexhaustible wilderness may be the same as Dr. Crist's description of students not being able to conceive of our impacts on the natural world and what that means for the future. It reminds me that we must digest the impersonal data about what is going on, but that to make changes in ourselves and the world around us, we must make a personal connection to nature and acknowledge our role and our interdependence.

Charles Smith, PWWS Chapter President

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 The deadline for the next issue is **January 15**.

• Cowbane

(Continued from page 3)

those prairies remain. They are special pockets of unique habitat, often containing plants and animals rare to Virginia, and often found in unlikely places. Luckily one such prairie is now permanently protected in Augusta County. It is found in a most unlikely spot – off of Rt. 340 next to several large industrial plants.

Once in the preserve you have several distinct habitats to explore within a 63-acre tract that was mostly a cornfield until a decade ago. The largest expanse of the property sweeps out in front and is a mixture of native grasses, sedges, and other plants such as goldenrod and mountain mint. If you go in September like our VNPS group did, you will see a yellow expanse of waist-high goldenrod interspersed with big bluestem, little bluestem, and Indian grass, much of which is over your head. With the help of periodic burning from the staff at DCR, the land has quickly reverted to a landscape that would have been familiar to Augusta's first settlers.

As you enter the preserve, if you hike to the left for a quarter mile or so you will find a half-acre fen that is the real reason why the state wanted

to acquire and protect this land. This prairie fen, or marsh, provides the perfect habitat for a number of rare plant species, the rarest of which is queen-of-the-prairie. This tiny marsh is one of only six places in Virginia known to have this July blooming plant with its spray of pink flowers. It is not found at all in any neighboring states, although it is more common in the Midwest.

Further beyond this small fen is a larger wetland that has deeper water and also boasts several rare plants. Both marshes are high in calcium and pH because of the limestone underlying the area.

A visit to the Cowbane Prairie Natural Area Preserve is special no matter what time of year because it offers a glimpse into the past ecology of the Valley. Remember to protect and

learn from such pockets of special habitat that can be anywhere, even in places surrounded by industrial development such as this.

The Cowbane Prairie Natural Area Preserve is open to hikers during the daylight hours. The gates are locked to vehicles, so park along Rt. 909. Then at the gates marked with a Department of Conservation and Recreation sign, walk a few yards beyond and turn right through the small graveled lot. The half-mile access trail is easily discernible beside a farm field and hedgerow. When visiting Cowbane, take plenty of bug spray and if you travel beyond the grassland prairie expect to get your feet and legs wet. Step carefully to protect the precious flora and fauna of this special place.

Nancy Sorrells
VNPS Bulletin editor

• Swamp

(Continued from page 6)

succeeds, it will protect a rare and enchanting remnant of undisturbed swamp, essentially unchanged in character since before European settlement.

Gary P. Fleming & Karen D. Patterson
VDCR, Division of Natural Heritage

References: Stahle, D.W., M.K. Cleaveland, R.D. Griffin, M.D. Spond, F.K. Fye, R.B. Culpepper, and D. Patton. 2006. "Decadal drought effects on endangered woodpecker habitat." *EOS: EOS, transactions, American Geophysical Union* Vol. 87, No. 12: 121-125.