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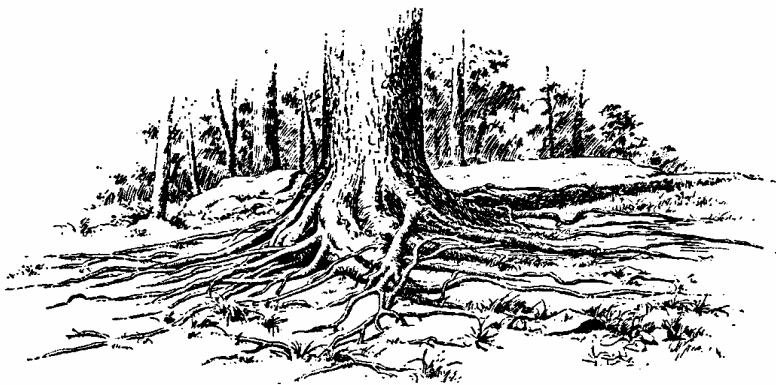
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Submissions for *Marilandica* are welcomed. Word documents are preferred but not necessary. If you wish to contribute articles or other material, or have questions or comments, contact Rod Simmons at marilandica@mdflora.org or mail to Meghan Tice at P.O. Box 25, Bowie, MD 20719.

On the cover: "Kindred Spirits," by Asher B. Durand, 1849.



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The Maryland Native
Plant Society

(MNPS) is a nonprofit organization that uses education, research, and community service to increase the awareness and appreciation of native plants and their habitats, leading to their conservation and restoration. Membership is open to all who are interested in Maryland's native plants and their habitats, preserving Maryland's natural heritage, increasing their knowledge of native plants, and helping to further the Society's mission.

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Native Plants of Maryland's Eastern Shore

By Janet L. Earickson

In late September, my sister Sandy Ward celebrated her birthday. Given the chance to have a party or choose any other way to celebrate, she enthusiastically opted to spend the day in a marsh, far away from the everyday concerns of teaching and parenting. So, I arranged for our friend and teacher Bill Sipple to lead us on a day-long excursion to the diverse wetland environs of Maryland's Eastern Shore. Our journey began in the roadside brackish marshes of Kent Island, then led onward to the forested floodplain and surrounding woods and fields of Tuckahoe Creek, and concluded in the unique isolated wetlands of the Delmarva potholes.

Early Fall Foliage in Maryland's Colorful Brackish Marshes

We set out on a beautiful, sunny morning—a pleasant 75°F with a cool breeze. Our first stop was at a roadside wetland along Exit 42 off of US50 on Kent Island. We went right to work, with Bill pointing out a number of plants, some new to us and some familiar.

The first new plant was a dogbane called Indian hemp (*Apocynum cannabinum*)¹, which has opposite leaves and resembles milkweed, but produces greenish-white flowers. Next was a comparison of two familiar plants: groundsel tree (*Baccharis halimifolia*) and marsh elder (*Iva frutescens*), both composites. The groundsel was in bloom with white flowers in small heads. We noted its alternate, toothed leaves with wedge-shaped bases, in contrast to the marsh elder's opposite, succulent leaves that were toothed along the entire edge. I had made this distinction while visiting Horsehead Wetlands Center earlier in the summer, but it was good to see the two plants side-by-side for an even better comparison. Groundsel tree and marsh elder are unique in that they are two of only three woody composites (the other being sea oxeye, *Borrchia frutescens*) that occur in this area (Sipple 1999).

Next we examined the common reed (*Phragmites australis*), noting its purplish inflorescence and its bluish leaves that Bill said we would compare later in the day to maidencane (*Panicum hemitomon*), a rare plant in Maryland that we would seek out at a

managed Delmarva pothole. After only several minutes of examining plants we realized that the mosquitoes along this water-filled roadside ditch were quite troublesome. Despite having used insect spray, we were being bitten about the face and neck.

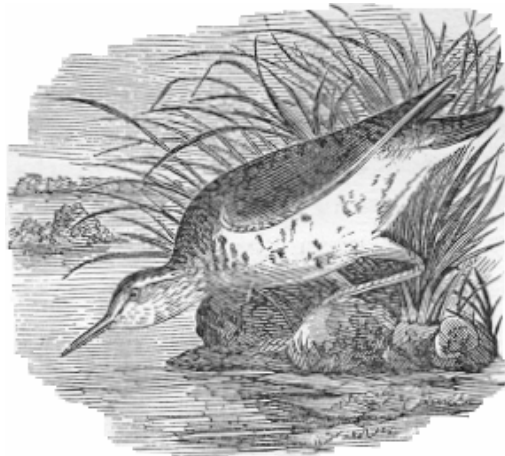
We moved along, swatting at the annoying insects that are all-too-common in Maryland's saltmarshes, and examined a plant that was no longer in bloom: the seashore mallow (*Kosteletzkya virginica*). Again, this was a familiar plant, as I had seen it flowering next to swamp rose mallow (*Hibiscus moscheutos*) at Horsehead the previous month. Both are obligate wetland plants (OBL), meaning that they almost always occur under natural conditions in wetlands (Reed 1988). The seashore mallow is similar to other mallows, but has smaller flowers and a leaf that is more distinctly lobed and heart-shaped at its base. All along the ditch we saw flowering seaside goldenrod (*Solidago sempervirens*), as well as a new plant, saltmarsh fleabane (*Pluchea odorata*), that had produced purplish flowers in small heads. This fleabane, which is also known as camphorweed, emitted a slight medicinal smell. We noted the tiny tubular flowers and small corolla of this composite, which provided an attractive view next to the golden-yellow inflorescence of the goldenrod.

Then Bill pointed out a new sedge, the slender flatsedge (*Cyperus filicinus*), which is commonly found growing along the higher edges of brackish tidal marshes. Nearby we spotted orach (*Atriplex patula*), a member of the Chenopodiaceae that has triangular leaves with scales underneath. This is a common plant of saltmarshes and waste places that also grows along the higher marsh edges, and I recalled having first seen it last year at the saltmarsh adjacent to Fort McHenry in Baltimore.

Sandy soon spotted a sedge and pointed it out to Bill, who remarked that it was Olney three-square (*Scirpus americanus*) and that it was growing in a rather unusual spot. This sedge has a more winged stem rather than triangular, and prefers the organic soil of a marsh, thus usually being found in the marsh proper rather than along the edge as it was here. It is an obligate wetland plant. We would later compare this sedge to the common three-square (*S. pungens*), which looks quite similar.

¹ Scientific nomenclature follows Gleason and Cronquist (1991).

Before leaving our first site, I inquired about a shrub that was growing on an elevated area behind the roadside ditch. Bill stepped across the ditch and clipped several leaves. He noted the winged midrib, stating that this was winged sumac (*Rhus copallinum*). I had seen this species in bloom previously, but had not examined its leaves, which certainly make it easy to distinguish. Sandy also inquired about a pine growing near the sumac, and Bill stated that it was likely loblolly pine (*Pinus taeda*) given its location on the Eastern Shore and its long needles in bundles of three. The loblolly's needles grow up to 10 inches, whereas pitch pine (*P. rigida*), another three-needle, long-leaved pine that occurs in this area, grows only to 5 inches (Petrides 1986).



Spotted Sandpiper

We got back in the car and drove a short distance to our second stop along Route 18. In the distance we could see a patch of plants in the marsh that appeared grayish-black in color. Sandy recognized this from her summer workshop with the Chesapeake Bay Foundation as black needlerush (*Juncus roemerianus*). This rush has a very sharp tip, which Sandy had experienced first-hand by walking through a patch of the waste-high rush at Bishop's Head in Dorchester County! Black needlerush occurs from Delaware south along the coast. As Bill walked out in the marsh to collect a specimen, Sandy and I examined plants along the roadside.

After Bill returned, we noted more orach and several grasses. The first grass was switchgrass (*Panicum virgatum*), which prefers moist, sandy soil. I recalled first having seen this grass along the edge of the saltmarsh at Chincoteague two years ago. Next was saltgrass (*Distichlis spicata*), which was new to me. Saltgrass is commonly found in saltmarshes and somewhat resembles Bermuda grass (*Cynodon* sp.).

At this location, it was mixed with saltmeadow cordgrass (*Spartina patens*), which I also recalled from Chincoteague. This plant is sometimes called saltmeadow hay (Silberhorn 1999). It is a long grass that lies over and resembles a hay meadow.

We crossed the highway near a power substation where we would have more room to examine the specimens that Bill had collected and not compete with traffic. He showed us a saltmarsh aster, *Aster tenuifolius*, a succulent, halophytic plant that we distinguished from the similar looking *A. subulatus* by noting its rhizome. *A. tenuifolius* is a perennial, whereas *A. subulatus* is an annual.

Next Sandy and I keyed out a non-native plant, ivy-leaved morning glory (*Ipomoea hederacea*), that she had found along the roadside. As we worked our way through the key and first came to an incorrect location, Bill noted that we should have chosen "vines" rather than "wildflowers" even though this plant is not woody; in Newcomb's key (Newcomb 1977), all vines are included in this category. He also gave us a valuable tip to help determine the number of regular flower parts when a specimen is incomplete: simply count the sepals!

After keying our specimen we examined common wax myrtle (*Myrica cerifera*), an evergreen that Sandy and I recalled from our trip to Blackwater two winters ago. Bill noted that this shrub is enjoyed by yellow-rumped warblers—also known as myrtle warblers because of their preference for the wax myrtle's waxy fruits—and Sandy pointed out its sweet-smelling leaves. This shrub is also sometimes referred to as southern bayberry (Reed 1988, USFWS 2001).

A little further along this side of the road we found Hercules' club (*Aralia spinosa*) in fruit, having produced black berries. At first glance it resembled pokeweed (*Phytolacca americana*), but upon spotting its woody, prickly stems there was no doubt as to its identity.

We found some common three-square which we compared to the Olney three-square, noting the solid triangular stem, and also that the spikelets were situated lower on the stem. This plant was found characteristically growing along the edge in a sandy, inorganic soil. Whereas Olney three-square is an obligate, common three-square is a facultative wetland plant, meaning that it is usually found in wetlands, but is occasionally found in non-wetlands (Reed 1988).

Sandy pointed out a small woody vine with palmately compound leaves that Bill remarked was Virginia creeper (*Parthenocissus quinquefolia*). Then he went on to note an herbaceous vine, climbing hempweed (*Mikania scandens*), which we had first seen at the Wooton Landing wetland restoration site in Anne Arundel County last summer.

Next we examined several more grasses. First was Indian goosegrass (*Eleusine indica*), a non-native which has sessile spikelets and is in the Chlorideae tribe along with saltmeadow cordgrass and Bermuda grass. The only other grass tribe with sessile spikelets is the Hordeae, which is distinguished because its spikelets are symmetrical rather than one-sided as in the Chlorideae. We noted that crabgrass (*Digitaria* sp.) resembles goosegrass, but its spikelets are dorsally compressed rather than laterally, and being in the Paniceae tribe, they are not sessile.

We found a *Setaria* sp., possibly yellow bristlegrass (*S. glauca*) or green bristlegrass (*S. viridis*), the difference being in the number of bristles; upon close examination, our specimen had 5 or 6. I inquired as to how we could tell that it was one of these species and not *S. faberi*, to which Bill replied that *S. faberi* is taller with a longer inflorescence that droops. We later checked on the identity of our specimen in Gleason and Cronquist (1991) and determined that it was *S. glauca*, a non-native annual with 4-12 bristles that is yellowish-orange in color. We also noted that *S. faberi* has only 1-3 bristles.

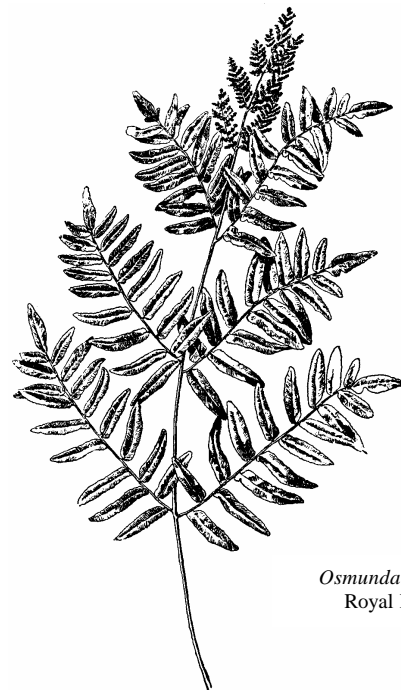
We crossed back to the side of the road where we had left the car, and spotted a quite tall grass, perhaps 4½ feet or more. This was Eastern gammagrass (*Tripsacum dactyloides*). Bill also pointed out two very similar paspalums: Florida paspalum (*Paspalum floridanum*), whose racemes were more erect, and field paspalum (*P. laeve*), whose racemes were more drooping.

Sandy and I then keyed out another flower that she had spotted, a small white morning glory (*Ipomoea lacunosa*). Bill noted the non-native multiflora rose (*Rosa multiflora*), stating that it could be distinguished from a native rose by the fringe of cilia around its stipules. He then keyed out a small specimen of a yellow mallow with a velvety stem. This was identified as velvet-leaf mallow (*Abutilon theophrasti*), also a non-native. We also spotted a nearby native spurge known as eyebane (*Euphorbia maculata*), a weedy, roadside plant with milky juice.

Before we could drive off to one last roadside stop, Sandy spotted a bright red patch of glasswort (*Salicornia europaea*) growing with seaside goldenrod and saltmeadow cordgrass, and producing a spectacular show of fall colors. Bill also noted another new sedge, marsh fimbry (*Fimbristylis castanea*), which had a pinecone-like, imbricated spikelet. Unlike *Scirpus*, this sedge has only basal leaves and achenes without bristles, since it has no perianth.

At our third and final stop along Route 18, we saw some rather large periwinkles (*Littorina irrorata*) along the stems of smooth cordgrass (*Spartina alterniflora*). Sandy and I had seen a similar site at Chancellor's Point in St. Mary's County two springs ago, but these periwinkles were much larger. Bill noted some nearby saltmarsh sand spurrey (*Spergularia marina*), a succulent with cylindrical, fleshy leaves. I recalled having seen sticky sand spurrey (*S. macrotheca*) in bloom last summer in California at the Morro Bay National Estuary.

It was now noon and we decided to move right along to our next stop at Tuckahoe. These first two hours of our day in the roadside brackish marshes had yielded 30 native species in 15 families. Satisfied with our progress, we now followed US50E to US301N, to Route 213S and turning left on Route 309S, then over to Route 404E and across Tuckahoe Creek, a tributary of the Choptank River. Bill explained that this route was somewhat of a shortcut. We turned on to Route 480E, then left on Eveland Road and followed it 2 miles to Adkins Arboretum.



Osmunda regalis
Royal Fern

TABLE 1. PLANTS OF BRACKISH ROADSIDE MARSH AND EDGES, KENT ISLAND, MD

<u>Scientific Name</u>	<u>Common Name</u>	<u>Indicator^(a)</u>
<u>Anacardiaceae</u>		
<i>Rhus copallinum</i>	Winged sumac	--
<u>Apocynaceae</u>		
<i>Apocynum cannabinum</i>	Indian hemp	FACU
<u>Araliaceae</u>		
<i>Aralia spinosa</i>	Hercules' club	FAC
<u>Asteraceae</u>		
<i>Aster tenuifolius</i>	Perennial saltmarsh aster	OBL
<i>Baccharis halimifolia</i>	Groundsel tree	FACW
<i>Iva frutescens</i>	Marsh elder	FACW+
<i>Mikania scandens</i>	Climbing hempweed	FACW+
<i>Pluchea odorata</i>	Saltmarsh fleabane	OBL
<i>Solidago sempervirens</i>	Seaside goldenrod	FACW
<u>Carophyllaceae</u>		
<i>Spergularia marina</i>	Saltmarsh sand spurrey	OBL
<u>Chenopodiaceae</u>		
<i>Atriplex patula</i>	Orach	FACW
<i>Salicornia europaea</i>	Glasswort	OBL
<u>Convolvulaceae</u>		
<i>Ipomoea hederacea</i>	Ivy-leaved morning glory ^(b)	FACU
<i>Ipomoea lacunosa</i>	Small white morning glory	FACW
<u>Cyperaceae</u>		
<i>Cyperus filicinus</i>	Slender flatsedge	OBL
<i>Fimbristylis castanea</i>	Marsh fimbry	OBL
<i>Scirpus americanus</i>	Olney three-square	OBL
<i>Scirpus pungens</i>	Common three-square	FACW+
<u>Euphorbiaceae</u>		
<i>Euphorbia maculata</i>	Spurge	FACU-
<u>Juncaceae</u>		
<i>Juncus roemerianus</i>	Black needlerush	OBL
<u>Malvaceae</u>		
<i>Abutilon theophrasti</i>	Velvet-leaf mallow ^(b)	--
<i>Kosteletzkya virginica</i>	Seashore mallow	OBL
<u>Myricaceae</u>		
<i>Myrica cerifera</i>	Common wax myrtle	FAC
<u>Pinaceae</u>		
<i>Pinus taeda</i>	Loblolly pine	FAC-
<u>Poaceae</u>		
<i>Distichlis spicata</i>	Saltgrass	FACW+
<i>Eleusine indica</i>	Indian goosegrass ^(b)	FACU-
<i>Panicum virgatum</i>	Switchgrass	FAC
<i>Paspalum floridanum</i>	Florida paspalum	FACW
<i>Paspalum laeve</i>	Field paspalum	FAC+
<i>Phragmites australis</i>	Common reed ^(b)	FACW
<i>Setaria glauca</i>	Yellow bristlegrass ^(b)	FAC
<i>Spartina alterniflora</i>	Smooth cordgrass	OBL
<i>Spartina patens</i>	Saltmeadow cordgrass	FACW+
<i>Tripsacum dactyloides</i>	Eastern gammagrass	FACW
<u>Rosaceae</u>		
<i>Rosa multiflora</i>	Multiflora rose ^(b)	FACU
<u>Vitaceae</u>		
<i>Parthenocissus quinquefolia</i>	Virginia creeper	FACU

KEY to TABLE 1

(a) From Reed (1988):

OBL (Obligate Wetland) – Occurs almost always (estimated probability >99%) under natural conditions in wetlands.

FACW (Facultative Wetland) – Usually occurs in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.

FAC (Facultative) – Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).

FACU (Facultative Upland) – Usually occurs in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).

UPL (Obligate Upland) – Occurs in wetlands in another region, but occurs almost always (estimated probability >99%) under natural conditions in non-wetlands in the region specified.

If a species does not occur in wetlands in any region, it is not on the *National List*.

A positive (+) or negative (-) sign is used to more specifically define the regional frequency of occurrence in wetlands. A positive sign (+) indicates a frequency toward the higher end of the category (more frequently found in wetlands), and a negative sign (-) indicates a frequency toward the lower end of the category (less frequently found in wetlands).

(b) Non-native.

In Search of a Rare Plant on the Forested Floodplain

After enjoying lunch beneath a water oak (*Quercus nigra*), we walked over to a nearby field filled with purpletop (*Tridens flavus*) where we examined several more plants, all composites. We keyed out camphorweed (*Heterotheca subaxillaris*), noting its stinking odor and clasping leaves along a hairy stem, and white heath aster (*Aster pilosus*), which also had a hairy stem. We compared the heath aster to the perennial saltmarsh aster we had seen earlier, *A. tenuifolius*. *A. pilosus* has spreading bracts, whereas *A. tenuifolius* does not. Lastly we looked at mugwort (*Artemisia vulgaris*), whose leaves were hairy and white underneath. I noted the sweet smell of this plant and that it was an invasive in the upland area near the Fort McHenry marsh in Baltimore. On a recent tour, the marsh's caretaker, Jim Peters, had tried to solicit volunteers to take home some of the pleasantly aromatic plant, but with no success.

From the field we walked over to the visitor center, passing a garden filled with purple lovegrass (*Eragrostis spectabilis*), red chokeberry (*Aronia arbutifolia*) in fruit, and Joe-pye weed (*Eupatorium*

sp.) in bloom. We crossed a bridge over a created wetland area, noting many familiar plants, including inkberry (*Ilex glabra*) bearing dark purplish fruits.

After passing through the visitor center, we started down a dirt path between some fields. We spotted the toothed, compound leaves of trumpet creeper (*Campsis radicans*), which was no longer flowering, and noted persimmon (*Diospyros virginiana*) with its reticulated venation; Bill pointed out that this tree could be identified in winter by its single, D-shaped bundle scar. As we entered the woods along the trail, we saw pokeweed, flowering dogwood (*Cornus florida*), and lamb's quarters (*Chenopodium album*), a weedy roadside plant. There was also a large stand of young pawpaw (*Asimina triloba*), a plant that has a rank smell. Bill noted that pawpaw is more common in the Piedmont than on the Coastal Plain, but can be found there, even along some rivers on the Eastern Shore.

Sandy noted an odd-looking leaf, which Bill stated was likely a hybrid oak, perhaps red oak with willow oak. He cautioned us never to try identifying trees by leaves found on the ground or on sucker shoots. Other trees that we saw included white oak (*Quercus alba*), willow oak (*Q. phellos*), northern red oak (*Q. rubra*), hickory (*Carya* sp.), and ironwood (*Carpinus caroliniana*). We noted the multiple narrow buds of the willow oak, and the papery leaves of the red oak, with their yellowish-white veins.

Next we came to some huckleberry (*Gaylussacia* sp.), which Bill pointed out could be distinguished from blueberry (*Vaccinium* sp.) by its reddish-brown twigs and resin dots on the leaves. To illustrate this point, we also examined a lowbush blueberry, the hillside blueberry (*V. pallidum*), which had green twigs and no resin dots; this is an upland plant. I asked how you could tell the difference between lowbush and highbush blueberry, and Bill stated what should have been obvious: the difference is in the height!

As we diverged from the dirt trail down a slope to the floodplain of Tuckahoe Creek, we noted oriental lady's thumb (*Polygonum cespitosum*), a smartweed that is very similar to spotted lady's thumb (*P. persicaria*), but easily distinguished from the latter because it lacks the characteristic dark spot on its leaves. Our descent of the slope produced a bumper crop of ferns, including cinnamon fern (*Osmunda cinnamomea*), a facultative wetland plant; royal fern (*O. regalis*), an obligate wetland plant; and netted

chain fern (*Woodwardia areolata*), a facultative wetland plant. We were obviously moving into a wetter environment. The netted chain fern closely resembles sensitive fern (*Onoclea sensibilis*), which I first mistook it to be; however, its pinnae are alternate rather than nearly opposite as in sensitive fern. Also, the sensitive fern has its sori on a separate fertile stalk, whereas the netted chain fern's sori are nearly rectangular and in rows on narrow fertile pinnae.

Bill noted a familiar sedge, the greater bladder sedge (*Carex intumescens*), easily distinguished by its large perigynia. He also pointed out witherod (*Viburnum nudum*), with its shiny leaves and naked terminal bud. Other familiar plants we identified along the floodplain included sweetbay magnolia (*Magnolia virginiana*), lizard's tail (*Saururus cernuus*), and common greenbrier (*Smilax rotundifolia*). Bill pointed out swamp white azalea (*Rhododendron viscosum*), which at first we mistook for swamp sweetbells (*Leucothoe racemosa*). We noted its gray stems and seemingly whorled leaves and stems (appearance only); then, having found the sweetbells nearby, noted that its stems and leaves were not whorled. Shrubs have never been my strong point, so these details proved quite helpful. Continuing along we encountered more familiar plants, including wood reed grass (*Cinna arundinacea*), winterberry holly (*Ilex verticillata*), the leaves and red fruit of Jack-in-the-pulpit (*Arisaema triphyllum*), the sweet-smelling spicebush (*Lindera benzoin*), and sphagnum moss, a clear wetland indicator.

We soon came to a patch of clearweed (*Pilea pumila*), a plant we had seen before on the Magothy River floodplain. This plant looks a lot like other members of the Urticaceae, but is easily distinguished by its translucent stem. At our location it was growing with spotted water hemlock (*Cicuta maculata*), which was no longer in bloom.

The purpose of our trek along this floodplain was to locate a rare plant, the deciduous holly (*Ilex decidua*). We came across blackhaw (*Viburnum prunifolium*), which Bill stated looks physiognomically a lot like deciduous holly. To distinguish the two, blackhaw has opposite branching, whereas deciduous holly has alternate branching.

We were now in a fairly wet, but not too sinky area. The canopy was filled with very tall, majestic green ash (*Fraxinus pennsylvanica*) that was swaying quite dramatically in the breeze, and overcup oak (*Quercus*

lyrata), which has very distinctive shreddy bark. Nearby was a white wetland aster, perhaps starved aster (*Aster lateriflorus*) or small white aster (*A. racemosus*); we noted that its stem was smooth, distinguishing it from the rough-stem upland aster, white heath aster (*A. pilosus*), we had seen earlier.

We came to a field of nettles that Bill readily warned us about. These were wood nettles (*Laportea canadensis*) and they were armed with stinging hairs. The leaves of this plant are alternate, rather than opposite as in other nettles. To distinguish it from false nettle (*Boehmeria cylindrica*), the wood nettle produces flowers along the top of the stem, whereas false nettle flowers along the stem. We carefully walked through the minefield of stinging plants, continuing along the floodplain toward Tuckahoe Creek, spotting sensitive fern along the way.

As we neared a flooded area, possibly a tributary to the creek, Bill spotted the deciduous holly, a facultative wetland plant, near the edge of the water on a small hummocky area. This plant is an S2 in Maryland, indicating that it is state rare with only 6 to 20 estimated occurrences. This species is actively tracked by the Wildlife and Heritage Division of the Maryland Department of Natural Resources (DNR) (DNR 2001).

Sandy scared two green frogs in the water, and Bill pointed out a nearby Virginia dayflower (*Commelina virginica*), no longer flowering. We then began our trek back to the trail, with Sandy finding the leaf of a swamp chestnut oak (*Quercus michauxii*) along the way. The leaf of this tree is not as long as that of chestnut oak (*Q. prinus*), and this tree tends to be found in wetter areas.

Once back on the dirt trail we began to hustle to our next site. The back of my right arm was beginning to itch, so I imagined that I was breaking out in a rash from sweating during our rapid hike. On our return trip between the upland fields we noted chestnut oak, southern red oak (*Q. falcata*), pin oak (*Q. palustris*), and Canada goldenrod (*Solidago canadensis*) in full bloom. I nearly stepped on a toad in the center of the road as we moved rapidly along. Our second site of the day had yielded more than 50 species in 29 families, including the state rare deciduous holly, several ferns, and a good variety of shrubs and trees, in particular, nine species of oak.

TABLE 2. PLANTS OF TUCKAHOE CREEK FLOODPLAIN AND SURROUNDING UPLAND FOREST AND FIELDS, TUCKAHOE, MD

<u>Scientific Name</u>	<u>Common Name</u>	<u>Indicator^(a)</u>
<u>Annonaceae</u>		
<i>Asimina triloba</i>	Pawpaw	FACU+
<u>Apiaceae</u>		
<i>Cicuta maculata</i>	Spotted water hemlock	OBL
<u>Aquifoliaceae</u>		
<i>Ilex decidua</i>	Deciduous holly ^(c)	FACW
<i>Ilex glabra</i>	Inkberry	FACW-
<i>Ilex verticillata</i>	Winterberry holly	FACW+
<u>Araceae</u>		
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	FACW-
<u>Asteraceae</u>		
<i>Artemisia vulgaris</i>	Mugwort ^(b)	--
<i>Aster pilosus</i>	White heath aster	--
<i>Aster</i> sp.	White aster	--
<i>Eupatorium</i> sp.	Joe-pye weed	--
<i>Heterotheca subaxillaris</i>	Camphorweed	--
<i>Solidago canadensis</i>	Canada goldenrod	FACU
<u>Betulaceae</u>		
<i>Carpinus caroliniana</i>	Ironwood	FAC
<u>Bignoniaceae</u>		
<i>Campsis radicans</i>	Trumpet creeper	FAC
<u>Blechnaceae</u>		
<i>Woodwardia areolata</i>	Netted chain fern	FACW+
<u>Caprifoliaceae</u>		
<i>Viburnum nudum</i>	Witherod	OBL
<i>Viburnum prunifolium</i>	Blackhaw	FACU
<u>Chenopodiaceae</u>		
<i>Chenopodium album</i>	Lamb's quarters ^(b)	FACU+
<u>Commelinaceae</u>		
<i>Commelina virginica</i>	Virginia dayflower	FACW
<u>Cornaceae</u>		
<i>Cornus florida</i>	Flowering dogwood	FACU-
<u>Cyperaceae</u>		
<i>Carex intumescens</i>	Greater bladder sedge	FACW+
<u>Ebenaceae</u>		
<i>Diospyros virginiana</i>	Persimmon	FAC-
<u>Ericaceae</u>		
<i>Gaylussacia</i> sp.	Huckleberry	--
<i>Leucothoe racemosa</i>	Swamp sweetbells	FACW
<i>Rhododendron viscosum</i>	Swamp azalea	OBL
<i>Vaccinium pallidum</i>	Hillside blueberry	--
<u>Fagaceae</u>		
<i>Quercus alba</i>	White oak	FACU-
<i>Quercus falcata</i>	Southern red oak	FACU-
<i>Quercus lyrata</i>	Overcup oak	OBL
<i>Quercus michauxii</i>	Swamp chestnut oak	FACW
<i>Quercus nigra</i>	Water oak	FAC
<i>Quercus palustris</i>	Pin oak	FACW
<i>Quercus phellos</i>	Willow oak	FAC+
<i>Quercus prinus</i>	Chestnut oak	--
<i>Quercus rubra</i>	Northern red oak	FACU-

<u>Scientific Name</u>	<u>Common Name</u>	<u>Indicator^(a)</u>
<u>Juglandaceae</u>		
<i>Carya</i> sp.	Hickory	--
<u>Lauraceae</u>		
<i>Lindera benzoin</i>	Spicebush	FACW-
<u>Magnoliaceae</u>		
<i>Magnolia virginiana</i>	Sweetbay magnolia	FACW+
<u>Oleaceae</u>		
<i>Fraxinus pennsylvanica</i>	Green ash	FACW
<u>Onocleaceae</u>		
<i>Onoclea sensibilis</i>	Sensitive fern	FACW
<u>Osmundaceae</u>		
<i>Osmunda cinnamomea</i>	Cinnamon fern	FACW
<i>Osmunda regalis</i>	Royal fern	OBL
<u>Phytolaccaceae</u>		
<i>Phytolacca americana</i>	Pokeweed	FACU+
<u>Poaceae</u>		
<i>Cinna arundinacea</i>	Woodreed grass	FACW+
<i>Eragrostis spectabilis</i>	Purple lovegrass	--
<i>Tridens flavus</i>	Purpletop	FACU*
<u>Polygonaceae</u>		
<i>Polygonum cespitosum</i>	Oriental lady's thumb ^(b)	FACU-
<u>Rosaceae</u>		
<i>Aronia arbutifolia</i>	Red chokeberry	FACW
<u>Saururaceae</u>		
<i>Saururus cernuus</i>	Lizard's tail	OBL
<u>Smilacaceae</u>		
<i>Smilax rotundifolia</i>	Common greenbrier	FAC
<u>Urticaceae</u>		
<i>Laportea canadensis</i>	Wood nettle	FACW
<i>Pilea pumila</i>	Clearweed	FACW

(a) From Reed (1988):

See Key to Table 1 for complete explanation of indicator status.

An asterisk (*) following an indicator identifies tentative assignments based on limited information from which to determine the indicator status.

(b) Non-native.

(c) S2 – State Rare; 6 to 20 estimated occurrences (DNR 2001).

Maryland's Unique, Isolated Wetlands— Delmarva Potholes

At 2:30 p.m. we departed towards a managed pothole near Tuckahoe. We turned left out of the park towards Cherry Lane. After 15 minutes of driving we arrived at the spot, a gated dirt road where we began a long, brisk walk. The forest was filled with loblolly, the dominant tree species, and we could hear the call of an angry bluejay.

Along the dirt road we came to an old homesite. The ground was overgrown with periwinkle (*Vinca minor*), and also contained ebony spleenwort (*Asplenium platyneuron*) and Asiatic dayflower (*Commelina communis*). After a brief pause we continued on, noting partridgeberry (*Mitchella*

repens) in fruit along the center of the dirt road. Bill pointed out that the leaves of many of the beech trees (*Fagus grandifolia*) were dying, speculating that perhaps it was because of the year's severe drought, but uncertain as to what this would mean for next year's trees.

While walking toward the pothole, Bill noted that these isolated wetlands were no longer protected under Section 404 of the Clean Water Act, thanks to a court case that had taken place in the Midwest—the Solid Waste Agency of Northern Cook County (SWANCC) vs. the U.S. Army Corps of Engineers. There is currently an ongoing debate as to how to deal with this issue and afford these unique wetland areas some protection.

As we neared the pothole we encountered an idle wood chipper and an area of girdled trees, one large loblolly, a number of red maples (*Acer rubrum*) and sweetgum (*Liquidambar styraciflua*), and some persimmons, demonstrating that this area is being actively managed. There was quite a bit of ground pine (*Lycopodium obscurum*) around the wooded edge of the open glade.

The pothole itself was very dry, and we could see fluted trunks and watermarks about knee-high on the trees surrounding the site. We observed turkey vultures circling overhead, as well as many dragonflies that Sandy remarked looked like small helicopters. In the pothole, we found buttonbush (*Cephalanthus occidentalis*), Canada rush (*Juncus canadensis*), woolgrass (*Scirpus cyperinus*), and fall panic grass (*Panicum dichotomiflorum*). Bill pointed out a new grass, warty panic grass (*P. verrucosum*). He also noted a new sedge, tall beaksedge (*Rhynchospora macrostachya*).

We then paused to confirm the identity of a rare plant, maidencane (*Panicum hemitomon*). This plant is an S3, meaning it is a Watch List species in Maryland. It is rare to uncommon with a typical occurrence of 21 to 100 in the state (DNR 2001). We noted the cilia on the sheath of the upper blades of this very tall grass, and compared it to the common reed, noting that its hue is much greener than the bluish-green *Phragmites*.

Bill took a soil sample and noted the greasy organic soil (muck), then silt that lay just below the hard, dry soil surface. This soil type, combined with the fact that all of the plants we observed in the pothole were either facultative wetland or obligate wetland plants, were the only signs that we were standing in a wetland area. We noted one last plant, a meadow beauty (*Rhexia* sp.), then made our way out of the pothole and back to the trail. The sun was strong overhead, and we worked up quite a sweat, with the rash on my arm still itching, as we walked briskly back to the car. Once there Sandy remarked that our excursion was like one of those guided tours where you see multiple countries in so many days, only we were seeing five counties in three hours (a bit of an exaggeration, but she made her point).

At 3:45 p.m. we departed for our final stop of the day: a pothole near Baltimore Corners. After 20 minutes or so of driving, we pulled off onto the shoulder of the road. We had visited this site nearly two years ago. We found a trail into the woods and

made it to the pothole with little difficulty, in contrast to our previous experience with a tangle of greenbriers. We were surrounded by sweetgum and holly (*Ilex opaca*).

Bill noted mermaid weed (*Proserpinaca palustris*) at the edge of the pothole, and also Eaton's panic grass (*Panicum spretum*). The *Panicum* appeared to be co-dominant with a rare plant, the reticulated nutrush (*Scleria reticularis*). This nutrush is an S2 in Maryland, again designating it as State Rare (DNR 2001). It was very plentiful at this site. Bill noted the nutrush's reticulated achene, and that it is an annual that only comes up when there is drawdown as at this site. This was a lucky find, a case of being in the right place at the right time. He also pointed out the white bony covering on this sedge's achene, which resembles a tiny golf ball.

Other plants that we observed at this pothole included warty panic grass, deergrass (*Rhexia virginica*) still flowering in a few spots, buttonbush, a patch of teal lovegrass (*Eragrostis hypnoides*), Canada rush, and a fringe of Walter's sedge (*Carex striata*) circling the depressional area. Along the edge Bill also noted more maidencane and a *Rhynchospora* sp. Sandy nearly walked into the large, formidable web of a brilliant, hairy orange spider in some sweetgum trees, before continuing along the edge of the pothole to a stand of Virginia chain fern (*Woodwardia virginica*). We examined this fern, which Bill pointed out has a distinctive black stipe that can be used to differentiate it from cinnamon fern. It is a rhizomatous fern with rectangular sori. Nearby were some persimmon trees, growing under normally well-ponded conditions, as they do in Delmarva potholes.



Belted Kingfisher

It was nearing 4:30 p.m., so we followed Bill out of the pothole to a field at the edge of the road. Here we identified a few more plants: pinweed (*Lechea* sp.), round-leaved boneset (*Eupatorium rotundifolium*), sweet everlasting (*Gnaphalium obtusifolium*), an exotic bushclover (*Lespedeza cuneata*), Canada goldenrod, deertongue grass (*Panicum clandestinum*), partridge pea (*Chamaecrista fasciculata*), and hyssop-leaved boneset (*Eupatorium hyssopifolium*). Then we headed back to the car, along the way spotting rough-leaved goldenrod (*Solidago rugosa*), beggarticks (*Bidens* sp.), Joe-pye weed, foxtail grass (*Setaria faberi*), black-eyed Susan (*Rudbeckia hirta*), and umbrella sedge (*Cyperus strigosus*).

Once again it had been a productive venture, covering 42 species in 19 families, including a good variety of grasses and sedges including the State Rare reticulated nutrush and Watch List species maidencane. At 5:40 p.m. Bill dropped us back at

our car and we headed home for the day, with Sandy declaring it was her best birthday ever.

While cleaning up later in the evening I discovered that I did not have a rash on my arm, but had brushed against one of the stinging nettles. I spent a good deal of time plucking 50 or so of the small stingers from the back of my arm, but all the while savoring the day's accomplishments. We had traversed Kent, Queen Anne's, and Caroline counties; exploring environments that ranged from brackish marsh to forested floodplain, to edge and upland fields and woods, to the unique isolated Delmarva potholes; examined 125 species in 49 families, including 20 grasses and 18 composites; and had been privileged to find three State-listed species — all-in-all, not bad for an 8-hour day in the field.

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TABLE 3. PLANTS OF THE DELMARVA POTHOLES AND SURROUNDING UPLANDS, QUEEN ANNE'S AND CAROLINE COUNTIES, MD

<u>Scientific Name</u>	<u>Common Name</u>	<u>Indicator^(a)</u>
<u>Aceraceae</u>		
<i>Acer rubrum</i>	Red maple	FAC
<u>Apocynaceae</u>		
<i>Vinca minor</i>	Periwinkle ^(b)	--
<u>Aquifoliaceae</u>		
<i>Ilex opaca</i>	American holly	FACU+
<u>Aspleniaceae</u>		
<i>Asplenium platyneuron</i>	Ebony spleenwort	FACU
<u>Asteraceae</u>		
<i>Bidens</i> sp.	Beggarticks	--
<i>Eupatorium hyssopifolium</i>	Hyssop-leaved boneset	--
<i>Eupatorium rotundifolium</i>	Round-leaved boneset	FAC-
<i>Eupatorium</i> sp.	Joe-pye weed	--
<i>Gnaphalium obtusifolium</i>	Sweet everlasting	--
<i>Rudbeckia hirta</i>	Black-eyed Susan	FACU-
<i>Solidago canadensis</i>	Canada goldenrod	FACU
<i>Solidago rugosa</i>	Rough-leaved goldenrod	FAC
<u>Blechnaceae</u>		
<i>Woodwardia virginica</i>	Virginia chain fern	OBL
<u>Cistaceae</u>		
<i>Lechea</i> sp.	Pinweed	--
<u>Commelinaceae</u>		
<i>Commelina communis</i>	Asiatic dayflower ^(b)	FAC-
<u>Cyperaceae</u>		
<i>Carex striata</i>	Walter's sedge	OBL
<i>Cyperus strigosus</i>	Umbrella sedge	FACW
<i>Rhynchospora macrostachya</i>	Tall beaksedge	OBL
<i>Rhynchospora</i> sp.	Sedge	--
<i>Scirpus cyperinus</i>	Woolgrass	FACW+
<i>Scleria reticularis</i>	Reticulated nutrush ^(c)	OBL

<u>Scientific Name</u>	<u>Common Name</u>	<u>Indicator^(a)</u>
<u>Ebenaceae</u>		
<i>Diospyros virginiana</i>	Persimmon	FAC-
<u>Fabaceae</u>		
<i>Chamaecrista fasciculata</i>	Partridge pea	FACU
<i>Fagus grandifolia</i>	American beech	FACU
<i>Lespedeza cuneata</i>	Bushclover ^(b)	--
<u>Haloragaceae</u>		
<i>Proserpinaca palustris</i>	Mermaid weed	OBL
<u>Hammamelidaceae</u>		
<i>Liquidambar styraciflua</i>	Sweetgum	FAC
<u>Juncaceae</u>		
<i>Juncus canadensis</i>	Canada rush	OBL
<u>Lycopodiaceae</u>		
<i>Lycopodium obscurum</i>	Ground pine	FACU
<u>Melastomataceae</u>		
<i>Rhexia virginica</i>	Deergrass	OBL
<i>Rhexia</i> sp.	Meadow beauty	--
<u>Pinaceae</u>		
<i>Pinus taeda</i>	Loblolly	FAC-
<u>Poaceae</u>		
<i>Eragrostis hypnoides</i>	Teal lovegrass	OBL
<i>Panicum clandestinum</i>	Deertongue grass	FAC+
<i>Panicum dichotomiflorum</i>	Fall panic grass	FACW-
<i>Panicum hemitomon</i>	Maidencane ^(d)	FACW+
<i>Panicum spretum</i>	Eaton's rosette grass	FAC
<i>Panicum verrucosum</i>	Warty panic grass	FACW
<i>Phragmites australis</i>	Common reed ^(b)	FACW
<i>Setaria faberi</i>	Foxtail grass ^(b)	--
<u>Rubiaceae</u>		
<i>Cephalanthus occidentalis</i>	Buttonbush	OBL
<i>Mitchella repens</i>	Partridgeberry	FACU

(a) From Reed (1988):

See Key to Table 1 for complete explanation of indicator status.

(b) Non-native.

(c) S2 – State Rare; 6 to 20 estimated occurrences (DNR 2001).

(d) S3 – Watch List species; typical occurrence of 21 to 100 (DNR 2001).

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MNPS Field Botany Updates

By Rod Simmons, John Parrish, and Cris Fleming

MNPS conducts field surveys throughout Maryland each year to assess natural communities, inventory flora, study plant associations, and record information on species distribution. Besides having fun discovering new plants and places, the society performs an important role by documenting Maryland's native flora and habitats, both common and rare. Some of the survey sites are familiar parks and preserves. Others are unknown or have not been seen in a long time, and many are threatened by urbanization, pollution, and invasive exotic plants. Today, there are very few intact examples of these communities in parts of the state, especially the overdeveloped but floristically diverse Washington-Baltimore area. It is hoped that this information will bring attention to these sites as irreplaceable remnants of Maryland's natural heritage, and lead to their conservation.

These surveys also help the Maryland Natural Heritage Program track Rare, Threatened, and Endangered (RT&E) plants and special communities in Maryland. The location of RT&E species and habitats is reported to the Natural Heritage Program to be added to a database that includes all the known occurrences of state-listed RT&E species in Maryland. Most importantly, this information, and other assistance by MNPS, helps the state, counties, and land trusts prioritize lands for acquisition and develop appropriate management strategies.

The following is a list of some of the notable sites and flora recently surveyed by MNPS. Species actively tracked by the Maryland Natural Heritage Program (noted below) have a state rank of S1 (highly state rare) or S2 (state rare) and sometimes a state status of E (endangered) or T (threatened). A watchlist species is given a rank of S3 and is usually not actively tracked. Occasionally, a small voucher specimen is carefully collected (provided the population is large enough) so as not to disturb the plant and deposited in the U.S. National Herbarium or the Frostburg University Herbarium.

Aitcheson Bog, Prince George's County: A fine, gravel-sand based Magnolia Bog near I-95 at the edge of the Konterra gravel mining complex that was discovered by John Parrish several years ago. Halberd-leaved greenbrier (*Smilax pseudochina*) (S2)

was recently discovered growing in the bog. Old-age pitch pine (*Pinus rigida*) occurs throughout the bog. This site is threatened by the Inter County Connector (ICC).

Surveyors: Rod Simmons, Lou Aronica, Katharine McCarthy, John Parrish, and Meghan Tice

Ammendale Bog, Prince George's County: A historic, gravel-sand based Magnolia Bog near the Rt. 1 crossing of Indian Creek that was rediscovered by Mark Strong several years ago. Old-age pitch pine (*Pinus rigida*) occurs throughout the bog. Purple chokeberry (*Aronia prunifolia*) (S3), low rough aster (*Aster radula*) (S1), sheep laurel (*Kalmia angustifolia*) (S3), halberd-leaved greenbrier (*Smilax pseudochina*) (S2), bog goldenrod (*Solidago uliginosa*) (S3), and Virginia chain fern (*Woodwardia virginica*) were recently discovered at this site.

Surveyors: Rod Simmons, Lou Aronica, and Mark Strong; MNPS field trip participants



Magnolia virginiana
Sweetbay Magnolia

Araby Bog, Charles County: The most undisturbed of known remaining Magnolia Bogs. A colony of pipsissewa (*Chimaphila umbellata*) (S1?) was discovered growing under pines on a ridge in upland oak-hickory forest overlooking the bog. Staggerbush (*Lyonia mariana*) was found growing along the edge of the bog. The poorly-sited, proposed Hunter's Brooke and Falcon Ridge housing developments greatly threaten the bog.

Surveyors: Rod Simmons and Meghan Tice; MNPS 2002 Fall Conference field trip participants

Bald Eagle Hill, Washington, D.C.: A high, gravel terrace hill and steep, sloping woodlands overlooking Oxon Run Cove and the Potomac River. Ancient chestnut oaks (*Quercus prinus*) occupy the uppermost slope. Numerous other old-age trees occur throughout the forest. Two ancient post oaks (*Quercus stellata*) measuring 11'3" in circumference at breast height (CBH), a black gum (*Nyssa sylvatica*) at 9'7", American beeches (*Fagus grandifolia*) at 10'4", and large white oaks (*Quercus alba*) form a grove on the upper slope. A gigantic tulip tree (*Liriodendron tulipifera*) measuring at least 17' in circumference, a 9'4" CBH natural hybrid between a black oak (*Quercus velutina*) and a willow oak (*Quercus phellos*), and a 9'8" CBH black oak grow along the richer, lower slopes.

Surveyors: Lou Aronica and Mary Pat Rowan; Raymond Arent and Ellen Scaruffi, Bill and Jane Hill, Pete McClurkin, Rod Simmons, and Ken Wright

Barcroft Park, Arlington County, Virginia: A small remnant of the historic Four Mile Run Bogs was recently discovered at the foot of a steep, forested hillside terrace (Allie S. Freed Park) at Barcroft Park along Four Mile Run. Much of the bog that once existed at this site has been lost. However, the springs which supply the seepage flow and the seep itself still remain in good condition, largely because the upland Terrace Gravel Forest surrounding the seep has been preserved. Many characteristic Magnolia Bog plants still thrive at this site, including sphagnum moss (*Spagnum* sp.), sweetbay magnolia (*Magnolia virginiana*), poison sumac (*Toxicodendron vernix*), swamp azalea (*Rhododendron viscosum*), swamp-haw (*Viburnum nudum*), highbush blueberry (*Vaccinium corymbosum*), black highbush blueberry (*Vaccinium atrococcum*), swamp sweetbells (*Leucothoe racemosa*), winterberry holly (*Ilex verticillata*), fringe tree (*Chionanthus virginicus*), smooth alder (*Alnus serrulata*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*), white turtlehead (*Chelone glabra*), numerous carices (*Carex* spp.), slender wood oats (*Chasmanthium laxum*), and likely others. The seep grades into an Acidic Seepage Swamp that is dominated by very large sweetbay magnolia (some over 2' in circumference at breast height), black gum (*Nyssa sylvatica*), red maple (*Acer rubrum*), willow oak (*Quercus phellos*), river birch (*Betula nigra*), and skunk cabbage (*Symplocarpus foetidus*), and was probably once the heart of the bog. Sweetbay

magnolia, poison sumac, swamp-haw, and slender wood oaks are all records for Arlington County in the *Atlas of the Virginia Flora*. Overall, much of the site is remarkably pristine, with large, moss-covered quartzite cobbles scattered throughout the seep and swamp.

In *A Sketch of the Natural History of the District of Columbia*, W.L. McAtee in 1918 noted several Magnolia Bogs in the Four Mile Run Valley near Green Valley and along the north side of Four Mile Run Hill. A similar bog also once existed near the electric trolley line on the Arlington Estate (Arlington National Cemetery) and flora was collected in the 1930s from bogs at Aurora Hills and Virginia Highlands (both along the upper east slope of Arlington Ridge Road). Urbanization has claimed all of these bogs in Arlington, with this small remnant probably as the only surviving one.

Surveyors: Rod Simmons and Lou Aronica

Broad Run Upland Depression Swamp, Montgomery County: A rare natural community known as an Upland Depression Swamp (Fleming et al. 2001*) in the upper Broad Run watershed of western Montgomery County. This sizable wetland complex overlies Triassic strata within an area recognized as a "Natural Area of Countywide Significance" by the Montgomery County Legacy Open Space (LOS) program. This kind of wetland forms upon nearly level uplands in the Piedmont. The wetlands are seasonally flooded in the winter and spring and dry out as the growing season progresses. The canopy at this site is composed of mature swamp white oak (*Quercus bicolor*), pin oak (*Quercus palustris*), willow oak (*Quercus phellos*), and red maple (*Acer rubrum*). Swamp sweetbells (*Leucothoe racemosa*) also grow here in sizable colonies at the periphery of the wetland and on mossy hummocks within the swamp. Black highbush blueberry (*Vaccinium atrococcum*), winterberry (*Ilex verticillata*), buttonbush (*Cephalanthus occidentalis*), fringe tree (*Chionanthus virginicus*), arrowwood (*Viburnum recognitum*), and greenbrier (*Smilax rotundifolia*) are some of the other woody components growing within this unusual wetland community. In Maryland, willow oak and swamp sweetbells occur in a range almost entirely restricted to the Coastal Plain. These species occur here disjunctly, perhaps by migrating up the nearby Potomac River corridor. While not disjunct, swamp white oak and fringe tree are uncommon and have a

patchy distribution in the Piedmont and Coastal Plain. It is hoped that this special plant community will be preserved through acquisition under Montgomery's LOS program. There will be a survey of the herbs in the spring and summer of 2003.

Surveyors: Carole Bergmann and John Parrish

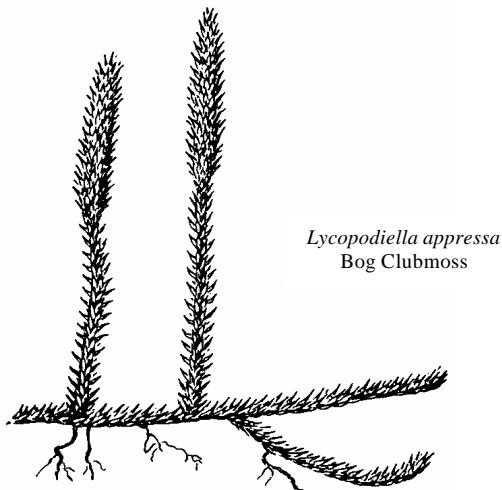
[*G.P. Fleming, P.P. Coulling, D.P. Walton, K.M. McCoy, and M.R. Parrish. January 2001. The Natural Communities of Virginia: Classification of Ecological Community Groups. Natural Heritage Technical Report 01-1. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond VA. 76pp. (page 46)]

Bryans Road Bog, Charles County: A high-quality, gravel-sand based Magnolia Bog discovered by Jim Long several years ago that lies partly under a small powerline easement. This site is the only known station for reticulated nutrush (*Scleria reticularis*) (S2) among remaining Magnolia Bogs. Clustered bluets (*Oldenlandia uniflora*) (S3), slender beakrush (*Rhynchospora gracilentia*), and twisted yellow-eyed grass (*Xyris torta*) were recently discovered here.

Surveyors: Mark Strong, Rod Simmons, Meghan Tice, and Jim Long

Fort Stanton Connector, Washington, D.C.: A high elevation gravel terrace with a mature oak-hickory-heath forest. Large, weathered cobbles closely-knitted with pincushion moss (*Leucobryum longifolium*), woodland grasses, sedges, and wildflowers carpet the ground along the windswept, upland trails. Fragrant goldenrod (*Solidago odora*), a plant of the coastal plain not seen in Washington for decades, was discovered here recently in thin, upland woods.

Surveyors: Rod Simmons and Lou Aronica



Lycopodiella appressa
Bog Clubmoss

Franconia Bog, Fairfax County, Virginia: The last surviving Magnolia Bog complex in Fairfax County. A diverse bog flora, including old-age pitch pine (*Pinus rigida*) and many Fairfax County records, occurs at this site. Another Fairfax County record and characteristic Magnolia Bog plant, halberd-leaved greenbrier (*Smilax pseudochina*), was recently discovered here by Ken Wright on a small outing after a VNPS-MNPS field trip to Accotink Stream Valley Park. Large retention ponds and water management areas created to mitigate stormwater flow and impervious surface runoff from a large townhouse development nearby have severely affected the bog's hydrology.

Surveyors: Rod Simmons and VNPS-MNPS field trip participants

Gunpowder Falls State Park, Baltimore County: A particularly scenic stretch of the park where Blue Mount Road crosses Gunpowder Falls. Steep, rugged outcrops of Baltimore Gneiss (the oldest rock in Maryland) and Loch Raven and Oella schists overhang the road here and are densely vegetated with hemlock (*Tsuga canadensis*), sweet birch (*Betula lenta*), wild hydrangea (*Hydrangea arborescens*) and other shrubs, many varieties of evergreen ferns, mosses, and numerous wildflowers, including smooth false foxglove (*Aureolaria flava*) (S3) and columbine (*Aquilegia canadensis*).

Surveyors: Rod Simmons and Lou Aronica

Konterra Bog #1, Prince George's County: A large, gravel-sand based Magnolia Bog with old-age pitch pine (*Pinus rigida*) near the western end of Muirkirk Road that was recently discovered by John Parrish. This high-quality wetlands is mostly undisturbed and exhibits no sign of soil disturbance that characterizes the adjacent Konterra sand and gravel mining complex. Low rough aster (*Aster radula*) (S1E) was first rediscovered in any of Maryland's Magnolia Bogs at this site last August by John Parrish (a dozen or so plants were also located in an adjacent seepage). The Smithsonian Institution has nine historical records of this species: six from 1898 and 1899 and three from 1909, 1916, and 1917. Eight of the nine historical records are from the Powder Mill Bogs and one is from Suitland Bog. This species is also recorded historically from boggy habitat in Garrett County. Wild sarsaparilla (*Aralia nudicaulis*), wintergreen (*Gaultheria procumbens*), smooth winterberry (*Ilex laevigata*), halberd-leaved

greenbrier (*Smilax pseudochina*) (S2), and many other interesting plants were also found growing here. This site is greatly threatened by the ICC and encroaching sprawl.

Surveyors: John Parrish, RG Steinman, Rod Simmons, and Meghan Tice

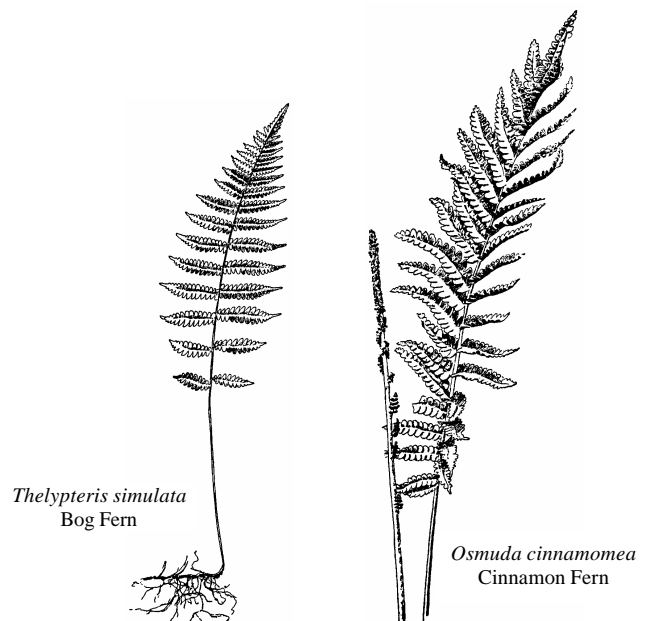
Little Paint Branch Bog #1, Prince George's County: The largest, most diverse, and uppermost bog in a series of terraced, sand and gravel seeps under a powerline easement between I-95 and Little Paint Branch Park. Several colonies of purple chokeberry (*Aronia prunifolia*) (S3) were recently discovered at the bog. This site is a "Wetlands of Special State Concern." Repaving of I-95 in 2000 altered the seepage flow that sustained Bog #2, causing the bog to dry up and its flora to disappear. The invasive exotic buckthorn (*Rhamnus cathartica*) is also highly detrimental to the bogs here.

Surveyors: Rod Simmons, Mark Strong, Meghan Tice, and Jason Harrison

Maydale Nature Center, Montgomery County: Several ragged-fringed orchid (*Platanthera lacera*) plants were observed blooming in a wet meadow on a hillside seepage above the pond.

Surveyors: Barbara Medina, Meghan Tice, Jane Osburn, Ellen Dashner, and field trip participants

Patuxent River State Park, Montgomery County: A small population of bear oak (*Quercus ilicifolia*) was found growing on a rocky ridge east of Hipsley Mill Road in a forest dominated by chestnut oak and black huckleberry. In Maryland, bear oak is most commonly seen in the mountains and is a rare find in Montgomery County. Old Smithsonian records (1910-1913) indicate that bear oak was also found in the Coastal Plain in Anne Arundel County near Glen Burnie and east of Laurel. Additional old records from 1894 (Sudworth) indicate bear oak growing in the Piedmont of Montgomery County in the vicinity of Laytonsville and Goshen. Little Bennett Park in northern Montgomery County currently harbors a small bear oak population and is the only other location known by this botanist to exist in Montgomery County. South of Washington D.C., bear oak is found almost exclusively in the mountains and is known to rarely occur in the upper Piedmont and, to my knowledge, is not known from the Coastal Plain. North of D.C. into New England, bear oak



continues to occupy the Appalachians, but makes a range expansion eastward into the Piedmont and Coastal provinces. For example, bear oak is common in sandy-gravelly soils of the New Jersey Pine Barrens and occurs at or near the coastline north to Maine. I welcome more information about extant and historic occurrences of this species in the Washington-Baltimore area.

Surveyors: John Parrish and RG Steinman

Powder Mill Bog #3, Prince George's County: A very small remnant of the historic Powder Mill Bogs rediscovered by Rod Simmons, Mark Strong, and Lou Aronica several years ago. W.L. McAtee first surveyed the four Powder Mill Bogs very early in the 20th century. All four bogs were located on the east side of and near the Paint Branch; bogs #1 and #2 on the south side of Powder Mill Road and bogs #3 and #4 on the north side. These bogs were among the most floristically diverse of any known. Bog #3 was distinguished by extensive patches of ten-angled pipewort (*Eriocaulon decangulare*) (S2), which still lingers in a much-diminished state, and large, weathered quartzite cobbles scattered over the surface. Purple chokeberry (*Aronia prunifolia*) (S3) was recently observed at the bog.

Surveyors: Rod Simmons, Mark Strong, Meghan Tice, and John Parrish

Rock Creek Park, Washington, D.C.: Several new additions to the Rock Creek Park flora were discovered. Late purple aster (*Aster patens*) and bastard toadflax (*Comandra umbellata*) were found

growing adjacent to each other on a forested knoll with another rare park species, the Virginia snakeroot (*Aristolochia serpentaria*). Several colonies of American dog violet (*Viola conspersa*) were located growing on a moist slope adjacent to the Rock Creek floodplain and watercress (*Nasturtium officinale*) was found growing in a spring brook. Arrow-leaved violet (*Viola sagittata*) was discovered growing in gravelly soil in a mowed area near the edge of a chestnut oak forest. A heavily deer browsed colony of sweet pepperbush (*Clethra alnifolia*) was located at yet another park site growing in association with scarlet oak (*Quercus coccinea*). Sweet pepperbush is a Coastal Plain species found here growing at the extreme western edge of its range. Curiously, this colony was growing on a slope in the upland forest. It is more typically found on moist lowlands to the east of D.C. According to Fleming and Kanal (1995), sweet pepperbush is rare in the park and “probably planted.” Perhaps this species is naturally occurring here and very rare due to it being at the margin of its range. It is known to grow naturally in the nearby Paint Branch and Indian Creek watersheds a few miles to the east.

Surveyors: John Parrish, RG Steinman, and Jake Hughes

Sandy Spring Bog (McKnew Bog), Montgomery County: A large, sand-based Magnolia Bog at the northeastern edge of the county. Many plants of the Coastal Plain region grow in the sandy-gravelly soil of this area, and together with the bog community represent the westernmost occurrence of Coastal Plain soils and flora in Maryland north of Washington, D.C. Screwstem (*Bartonia paniculata*) (S3), a typical plant of Magnolia Bogs, was found growing in a shaded section of the bog. The ICC and a sprawling, ill-sited golf course development are major threats to the bog and nearby seepages.

Surveyors: Rod Simmons and Meghan Tice

Sherwin Island, Montgomery County: A colony of floating paspalum (*Paspalum fluitans*) (S1E) was discovered in a low, rocky river channel between the mainland and the island. About 45 plants in mature fruit were growing along with common nutsedge (*Cyperus strigosus*), water stargrass (*Heteranthera dubia*), and false pimpernel (*Lindernia dubia*). Also, several small shrubs of running juneberry (*Amelanchier stolonifera*) (S2T) were seen on a rocky terrace above the river growing with big

bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*), and riverbank goldenrod (*Solidago spathulata*) (S1T). Both newly discovered species have been documented at other locations in the Potomac Gorge but had not been previously recorded on Sherwin Island. (According to Chris Frye of the Maryland Natural Heritage Program, this is probably the much rarer *A. nantucketensis* (G3S1). Chris has found this juneberry species in the same type of habitat in the Potomac Gorge).

Surveyors: Cris Fleming and Bill Bridgeland

Suitland Bog, Prince George’s County: The most floristically diverse of known remaining Magnolia Bogs. However, numerous outplantings and the “naturalization” of non-native (to the site) pitcher plant (*Sarracenia purpurea*) and cranberry (*Vaccinium macrocarpon*) plants, a boardwalk, and construction of a sewer line immediately below the bog has robbed native species of valuable habitat and significantly degraded the site. Low rough aster (*Aster radula*) (S1), last seen at the bog in 1924, was recently rediscovered.

Few-flowered beakrush (*Rhynchospora oligantha*), “a plant typically occurring in pine barren bogs,” was collected at Suitland Bog in 1953 and 1958 by F.H. Sargent and F.J. Hermann, respectively, but was unreported for the Maryland flora until discovered in the U.S. Herbarium by Mark Strong. The “Noteworthy Collections” for Maryland in the September 2002 issue of *Castanea* was the first reporting of this plant for Maryland and represents the only known occurrence of the plant in the state.

Surveyor: Rod Simmons

Suitland Bog, Prince George's County: Thirteen plants of sandplain flax (*Linum intercursum*) (S2T) were discovered during the annual meeting walk to Suitland Bog. The plants were in late fruit and were quite robust, some up to a meter tall with several stems. They were growing in wet, sandy soil at the high end of the bog, along with other rare species such as red milkweed (*Asclepias rubra*), twisted spikerush (*Eleocharis tortilis*), and tawny cottongrass (*Eriophorum virginicum*). Although Suitland Bog has been heavily botanized for over 100 years, this species has never before been recorded from the bog (personal communication from Stan Shetler).

Surveyor: Cris Fleming

Fall Line Magnolia Bogs of the Mid-Atlantic Region

By Roderick Simmons and Mark Strong

[Reprinted from the October 2002 issue of *Audubon Naturalist*]

Magnolia Bogs have long been regarded as one of the most interesting natural features in the Washington, D.C. area. W.L. McAtee, a Washington area naturalist who first defined these bogs in 1918, termed them “Magnolia Bogs” for the unique assemblage of sweetbay magnolia (*Magnolia virginiana*), *Sphagnum* moss, and other bog flora. Occasionally they are referred to as “McAteean Bogs,” after McAtee, or “Seepage Bogs.” These bogs usually form on hillsides or slopes where a spring or seep flows from an upland gravel and sand aquifer over a thick, impervious layer of underlying clay which prevents the downward infiltration of water. This seepage flow and the highly acidic, gravelly soils create optimal conditions for the formation of bogs.

The term “bog” as applied here, although technically a misnomer, has traditionally been used by people in general, including botanists, to describe acidic, sphagnum wetlands that strongly resemble bogs. Magnolia Bogs are actually acidic, fen-like seeps uniquely associated with high elevation gravel terraces of the inner Coastal Plain near the Fall Line, which divides the Coastal Plain and Piedmont physiographic provinces in the mid-Atlantic region. Their distribution generally follows the Fall Line in a narrow east-west band from the Laurel area, at the northern extent of their range in Prince George’s County, Maryland, to their southern extent near Fredericksburg, Virginia.

Throughout their range, they were never common or very large, usually occupying an area an acre or less in size. Nevertheless, they are vitally important resources both for the pure, naturally filtered waters which flow continuously from them – even in drought periods – and the relic populations of ancient northward and westward migrations of often rare Coastal Plain flora, which have persisted in small communities well inland and fairly close to the Piedmont. Included in these relic communities are plants such as bog clubmoss (*Lycopodiella appressa*), twisted spikerush (*Eleocharis tortilis*), slender beaksedge (*Rhynchospora gracilentia*), bunched beaksedge (*Rhynchospora cephalantha*), hairy

umbrella-sedge (*Fuirena squarrosa*), darkgreen sedge (*Carex venusta* var. *minor*), bog yellow-eyed grass (*Xyris difformis* var. *difformis*), ten-angled pipewort (*Eriocaulon decangulare*), smooth winterberry (*Ilex laevigata*), red milkweed (*Asclepias rubra*), zigzag bladderwort (*Utricularia subulata*), and Elliott’s goldenrod (*Solidago latissimifolia*). Other well-known bogs near Washington in Anne Arundel County, Maryland that are more eastward of the Fall Line – such as the extirpated Glen Burnie Bog and the Magothy and Severn Bogs – are not characteristic Magnolia Bogs, despite some floristic similarities, because of different geological conditions and plant assemblages.

Peatlands, pocosins, fens, and bogs throughout the Coastal Plain are now extremely rare as a result of development, habitat disturbance, fire suppression, and fragmentation. Magnolia Bogs are also increasingly rare and surviving ones degraded throughout their range because of extensive development of the gravel terraces that surround the bogs – destroying or severely depleting their water supply. Most of the famous ones surveyed by the Smithsonian Institution and W.L. McAtee nearly a century ago, like the Holmead Swamp, Terra Cotta Bog, and Powder Mill Bogs, have long been destroyed (although we recently uncovered a small remnant of the latter, along with a small population of ten-angled pipewort).

Some, like the Suitland Bog and Oxon Run Bogs, have survived, although the Suitland Bog is greatly disturbed with the addition of a boardwalk, numerous out-plantings of non-native (to the site) carnivorous pitcher plants (*Sarracenia purpurea*) which rob valuable habitat for native species, a sewer line, and encroaching housing developments. Urbanization, stormwater runoff, siltation, off-road vehicles, and invasive exotic plants have degraded most of the few remaining Magnolia Bogs and greatly threaten their future survival. Unless adequate protection is uniformly given to these sites, most of them will disappear in the decades to come.

For the past five years as part of a research project mainly for conservation purposes, we have been conducting an exhaustive search for any remaining Magnolia Bogs in the region. All available information regarding the historic Magnolia Bogs – going back to the Civil War – was also researched and documented. We have been aided in these surveys by other botanists with the Maryland Native

Plant Society (MNPS), and the preservation of surviving Magnolia Bogs has become a major campaign of MNPS. Although most of the historic sites have been destroyed, some new sites were discovered – the mostly pristine but threatened Araby Bog is a stellar example.

A dozen Magnolia Bogs are known to exist today in Maryland, D.C., and Virginia, three of which are in the path of the proposed Inter County Connector. Several small remnants of historic bogs like the Ammendale and Powder Mill Bogs have been discovered. While most of the rare orchids and lilies have largely disappeared, several very rare plants that had not been seen for many decades – halberd-leaved greenbrier (*Smilax pseudochina*), low rough aster (*Aster radula*), and Long’s rush (*Juncus longii*), for example – have been rediscovered. Several previously unreported plants for Maryland – including featherbristle beak sedge (*Rynchospora oligantha*) – have also turned up.

Rod Simmons is a field ecologist and MNPS Botany Chair. Mark Strong is a botanist with the Smithsonian Institution. They expect to publish their research on Magnolia Bogs later this year.



Asa Gray, 1810-1888

The foremost American botanist and taxonomist of the 1800s, author of the landmark *Manual of Botany*, and friend and most prominent supporter of Charles

Darwin in America. “Do not hurry over Asa Gray,” wrote Darwin. “He strikes me as one of the best reasoners and writers I have ever read. He knows my book [*The Origin of Species*] as well as I do myself...a complex cross of lawyer, poet, naturalist, and theologian.”

Many other anecdotal accounts of Gray and the “community” of America’s early naturalists and explorers, including their European colleagues, are chronicled by Joseph Kastner in *A Species of Eternity*: “Both [Asa Gray and John Torrey] took pleasure in going out into the field to see in nature what others had sent them. Torrey went to Florida to look at the *Torreya taxifolia*, a rare yew. He and Gray both made trips to the west where they camped with the mystic naturalist and conservationist John Muir and visited two Colorado mountains of personal interest, Torreys Peak and Gray’s Peak. Torrey was too old and fatigued to climb his mountain but Gray went all the way up his.

“In the last decade of his life, Gray heard of an event that held a special meaning for him. The *Shortia galacifolia*, the lost mountain plant that André Michaux had found almost a hundred years before and Gray had come upon in the herbarium in Paris, had finally been located again in the Carolina mountains. The many unsuccessful searches for the *Shortia* had made other botanists skeptical, suggesting that Gray had erred in his identification. ‘Now I will sing my *nunc dimittis*,’ Gray wrote when he heard about the find: he needed nothing more to content him and he set out to see for himself.

“It was like an older day when John Bartram hunted for the balm of Gilead tree or William Bartram for the Franklinia. Up into the hills went the aging master of American botany. On the slopes under the laurels and rhododendrons grew the elusive *Shortia*. Standing there, Gray could again claim his discovery and, looking down at the living counterparts of the dried leaves he had found in André Michaux’s herbarium, the closet botanist [Thomas Nuttall’s term for a desk botanist] could now rightfully feel kin to the French wanderer.”

Oconee Bells (*Shortia galacifolia*)

A Really Sad Farewell!!! Unless...

By Bill Grafton

[Reprinted from the August 2002 issue of *Native Notes*, newsletter of the West Virginia Native Plant Society]

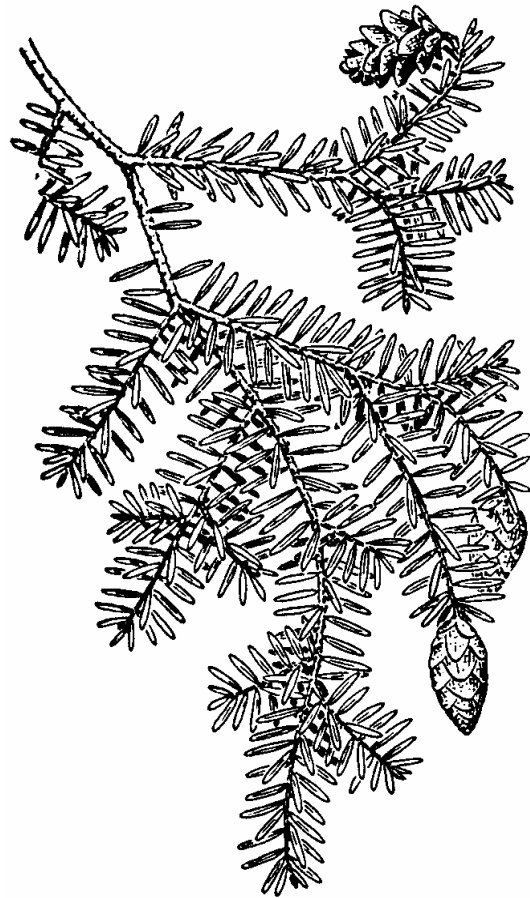
Historians say, "Learn from the mistakes of the past or you are doomed to repeat them yourself." The chestnut blight killed all of our mighty chestnuts, but they were largely replaced by oaks. In more recent times, we've seen the demise of several hundred thousands of acres of beech by beech bark disease in our high mountains. Our dogwoods are gone from the forests as victims of anthracnose. Butternut (white walnut) is being studied for inclusion as a federally threatened species and is killed by another anthracnose. Last year several West Virginia Native Plant Society members were involved with efforts to collect seeds from the few natural stands of balsam fir before the balsam woolly adelgid "stuck its dagger into the heart" of our fir trees in Blister Swamp, Blister Run, and Canaan Valley.

Now for history. Have we learned from past mistakes? Marching relentlessly south and west from New England is the hemlock woolly adelgid. These insects are small, cottony white aphids that can rapidly cover hemlock twigs. They suck out the sap, the needles turn gray-green and fall off, and the trees die. One or two years and a healthy tree is dead. I recently witnessed this dreaded insect near Greenbrier State Forest. It is quite common east of the Allegheny Front. Can you imagine Cathedral State Park without the huge virgin hemlocks? Parts of Babcock, Twin Falls, and much of Blackwater Falls State Parks will resemble a moonscape of dead tree trunks. The mighty spires of the Laurel Run Virgin Hemlock Area on the WVU Forest will be no more. What will happen to the rhododendron thickets, ferns, mosses, and wildflowers that have depended on the moist, shady habitats provided by the dense hemlocks? Where will the Swainson's warblers, winter wrens, and kinglets go? I can't imagine the future devastation of future trips to Blackwater Lodge! Are the trout fishermen concerned that half of the trout streams could be gone?

What are you doing? What is anyone doing? The West Virginia Department of Agriculture is trying to get money to spray the adelgids. Rumor has it that West Virginia State Parks will spray the former national champion hemlock tree in Cathedral. There

seems to be little or no action by big or small landowners nor from managers of other public lands. If you care, you'd better voice your opinions quickly to neighbors, friends, businessmen, and politicians. Or say your farewells. Loss of the hemlock will rival the loss of the American chestnut. Will the mistakes of the past be repeated by our generation?

Ed. Note: The hemlock adelgid was originally imported to this country from Asia. Research suggests that the rapid spread of adelgid infestations may be caused by excess levels of nitrogen in the atmosphere that stem from air pollution. The adelgids seem to thrive on the higher levels of nitrogen that have been absorbed by the hemlocks.



*"This is the forest primeval. The murmuring pines and the hemlocks,
Bearded with moss, and in garments green, indistinct in the twilight,
Stand like Druids of eld, with voices sad and prophetic..."*

~ Longfellow

Role of Native Plant Societies in Grassroots Conservation

By Stanwyn G. Shetler

In 1900, as the Audubon movement to save our native birds was getting underway, the New England Wild Flower Society (NEWFS) was born out of concern for our native plants. While haters were killing birds for their plumes, florists were robbing nature for their flowers. The Audubon movement caught on nationally much more quickly than the native plant movement, which did not really catch on until the second half of the 20th century, especially in the last 25-35 years, when many of the state societies were founded, such as the Virginia Native Plant Society (1982).

Across North America today there are numerous native plant societies under one name or another, including statewide societies in all but a few states. Perhaps the first of the state societies was the North Carolina Wild Flower Preservation Society, founded in 1951. The largest state society is the California Native Plant Society, founded in 1965, which in 2002 has over 10,000 members, 32 chapters, a budget of \$800,000, and 14 full- or part-time employees. The state societies vary greatly in size, budget, and staffing, but most are much smaller, with less than a thousand members, a budget of \$50,000 or less, and typically all-volunteer staffing.

Nothing is more central to their existence than the conservation of the native flora. The rampant development across North America during the last 40 years or so, which has destroyed or fragmented habitat on an alarming scale, has sparked unprecedented citizen concern for the native flora. In effect, the mission of every native plant society is the time-honored mission of the NEWFS: "to promote the conservation of temperate North American plants through education, research, horticulture, habitat preservation, and advocacy."

Few issues have energized the native plant societies in recent years as much as the growing scourge of invasive alien plants in the natural landscape. Thanks to dedicated members, the state organizations and their local chapters have often led the way in providing public information and guiding local eradication campaigns. Important as this focus is, it must be kept in balance and not become the tail that wags the native-plant-society dog.

Rescues of plants from doomed habitats have been a common activity. Gardening interests have also strongly influenced society agendas, particularly in encouraging the use of native species in landscaping and ecological restorations. Conservation education takes many forms, from field trips and tours to conferences, workshops, classes, school programs, publications, and Web sites. Some societies, as VNPS, are supporting state flora projects or other basic research.

In short, it would be hard to overestimate the importance so far of the native plant societies in the growing movement to save the native flora. At the same time there are some reasons for concern about the future.

I see native plant societies at a crossroad. Will growing natives become the obsession? Will our societies be remembered for saving wild habitat or for adding to the planted landscape? The business of our societies should be to save wild places, not to add to or promote planted landscapes *beyond* obvious gardens. Civilization is busily turning natural landscape into planted landscape at an ever faster pace, and native plant societies should be trying to slow down that process, not fuel it. Are we contributing to the clamor for planted landscapes? As the line between *the natural* and *the artificial* (planted) is being blurred on every hand, the North American landscape in general is being homogenized and our *natural* landscape thoroughly compromised. Planting native can be a cop-out for developers, who can develop wild land and then claim that they are mitigating the damage, perhaps even enhancing the environment, by landscaping with native species.

The plant-native trend has spawned a growing market for native species and a whole industry to supply them. The larger the industry, the greater the likelihood of unscrupulous suppliers who will sell wild-collected plants. By pushing the use of native plants, we help to put a price on the heads of native species. Through their own conferences and plant sales, native plant societies help to stimulate and supply the native plant market. Shouldn't native plant societies be strong advocates of natural process in the revegetation of land, minimizing intervention and letting nature be nature whenever possible?

Then there is the question, What is a "native"? A plant from the same continent? Region? State? Part of a state? County? Site? Obviously a species can

be native on one level and not on another. If a species is said to be native to an area, does that mean that all individuals of that species are automatically native there also?

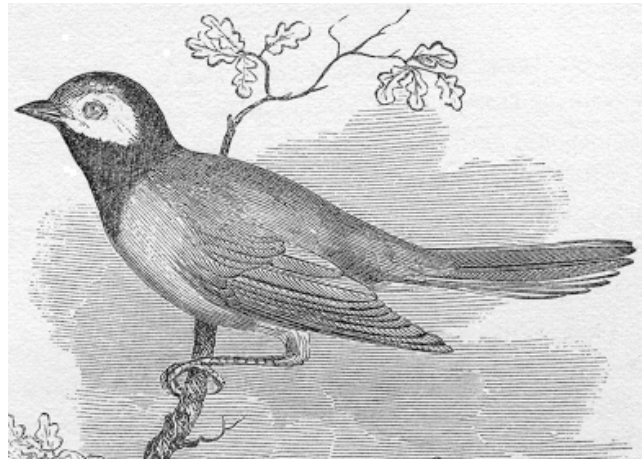
Typically, we think of a species as native if it was here in pre-Columbian times, and I would add that an individual of that species must have reached its present-day site by the natural forces of dispersal and colonization without deliberate human intervention. I would go further and say that a native, regardless of source, near or far, becomes an alien or exotic the moment it is sowed or transplanted by human agency. Deliberate introduction, by definition, makes aliens of otherwise native plants. It is not the distance from the source that determines what is alien, but the act of planting. Thus, **a native plants itself, an alien is planted by someone.**

The plant geographer, in plotting and explaining plant distributions, must be able to rely on the authenticity of the individual records. Everything we know about the nativeness of plants derives ultimately from the geographer's records. The very act of transplanting or sowing falsifies in some measure, large or small, the history of plant migration and establishment and thus falsifies the concepts of "native" and "alien."

From green concrete, fake turf, and plastic greenery and flowers to whole theme parks, ours is an age of fabricated landscapes of little redeeming value as synthetic surrogates for nature. Even our graves are decorated with plastic bouquets, certainly the ultimate cynicism in perpetual care. As a society, we have come to accept counterfeit biomes as the real thing. Surely, native plant societies should spend more time studying nature and less time planting and manipulating it. There are only three rules for saving species—save habitat, save habitat, save habitat! That reality alone should govern our future agenda.

Stanwyn G. Shetler is Botanist Emeritus of the Smithsonian Institution, NMNH, the author of *Annotated Checklist of the Vascular Plants of the Washington-Baltimore Area: Part I (Ferns, Fern Allies, Gymnosperms, and Dicotyledons)* and Part II (Monocotyledons), and Botany Chair for the Virginia Native Plant Society. The above article is an abbreviated version of a talk given by Stan at the 2002 annual meeting of the Potowmack Chapter of VNPS.

Ed. Note: MNPS welcomes continued discussion and exploration of this topic.



Hooded Warbler, a typical denizen of Magnolia Bogs

MNPS Magnolia Bog Survey

In the fall of 2002, MNPS completed an intensive vegetation sampling study of the remaining gravel seepage Magnolia Bogs of the Fall Line vicinity in Maryland, D.C., and Virginia. The focus of this study is to classify the vegetation of these remaining bogs using the National Vegetation Classification System, adding an important dimension to our somewhat limited understanding of these unique natural communities and aiding conservation planning. Vegetation and environmental data was carefully collected with as little disturbance as possible from 12 of the 13 known remaining Fall Line bogs (most of which are mentioned in the Field Botany Updates). This data will be compared to data collected from similar wetlands in the Piedmont and Coastal Plain, leading to a more refined community classification for the bogs. Many thanks are extended to all those who assisted with data collection in the field (many long hours!), the MD Natural Heritage Program for assisting with surveys and fixing plot locations with GPS, the National Park Service, and Gary Fleming, Vegetation Ecologist with the VA Natural Heritage Program, for generous help in analyzing the data. A copy of the report is available from the MNPS library.

Addendum to “Native Woody Plants of Montgomery County”

By John Parrish

The title above may as well read “No Good Research Goes Unpunished.” Just after “Native Woody Plants of Montgomery County” was published in the Summer/Fall 2002 issue of *Marilandica*, I found data that sheds more light on Montgomery’s woody flora heritage. The data falls into three categories:

Category 1: These are records from Montgomery County for five species I overlooked, or should I say, “under-looked” the first time around. Because of contradictions in the old literature, I am uncertain whether the Smithsonian Institution records are correct for *Myrica pensylvanica*. For example, Ward’s *Flora (Guide to the Flora of Washington and Vicinity, 1881)* lists only one species, *M. cerifera*, occurring in our area with the nearest record from “Terra Cotta” in nearby Washington, D.C. Hitchcock and Standley’s *Flora of the District of Columbia and Vicinity, 1919* lists only one species, *M. carolinensis*, and indicates it from “Silver Springs” and notes that this is “*M. cerifera* of Wards Flora.” The Smithsonian records list *M. pensylvanica* from “Silver Spring and vicinity.” I doubt that two species of bayberry were growing in the vicinity of Silver Spring. Since all of the historic sites have been destroyed, a visit to the herbarium may be the best

way to clarify this issue. Three-toothed cinquefoil (*Sibbaldiopsis tridentata*), also known as *Potentilla tridentata*, has a voucher from “Violet Locks Area, rock ledge, 17 April 1976, Porter 20 (MARY).” Although reported in Brown & Brown as an herb, this species is an evergreen sub-shrub more akin to a woody plant. Surprisingly, MD DNR (MNHP) does not recognize this plant as a rare species.

Category 2: These are records for six species found growing within a mile or so beyond the county border but to my knowledge have not been observed in Montgomery County. Because of the close proximity of these occurrences to Montgomery County, it is appropriate to note them as potential additions to Montgomery’s native woody flora.

Category 3: These are two species that I suspect may grow, or have been recorded to grow, in Montgomery County, but for which I presently have insufficient data to make a determination. The two, *Smilax walteri* and *Celtis laevigata*, are listed in the *Selected Vascular Plant List for Chesapeake & Ohio Canal National Historic Park* (National Park Flora database), but I have been unable to ascertain the exact location where they were documented. I welcome help to verify the occurrence of these two “uncertain” species. I also welcome input from readers regarding any of the uncommon, rare, or extirpated plants that I’ve listed in the Montgomery native woody flora thus far.

<u>Latin Name</u>	<u>Common Name</u>	<u>Rank</u>	<u>Where Found</u>
Category 1 – Montgomery Co. records			
<i>Populus heterophylla</i>	Swamp cottonwood		4 mi. w. of Seneca, "marsh on Potomac River floodplain" Uhler & Hotchkiss 1966 (SI); "above Great Falls" Bartlett (H&S)
<i>Myrica pensylvanica</i>	Northern bayberry		"Woodside" Miller 1899; "Silver Spring vicinity" Pollard 1895 (Smithsonian Institution records)
<i>Sibbaldiopsis tridentata</i>	Three-toothed cinquefoil		"Violet Locks Area, rock ledge, 17 April 1976" (R.E. Riefner & S.R. Hill in <i>Castanea</i> 1983, citing Porter's voucher)
<i>Amelanchier nantucketensis</i>	Nantucket shadbush	S1	Potomac River Gorge; extant (MD Natural Heritage Program – Chris Frye determination). Nantucket shadbush is often confused with <i>A. stolonifera</i> .
<i>Baccharis halimifolia</i>	High-tide bush		"Cabin John vicinity" Chickering 1878 (Smithsonian Institution records)
Category 2 – Potential additions			
<i>Itea virginica</i>	Sweetspires		Powder Mill Bogs, Prince George's County (McAtee 1918, Bulletin of the Biological Society of Washington)
<i>Spiraea betulifolia</i>	Corymbed spiraea	S3	"Sugarloaf" (Frederick County) Roller 1946 (SI); personal observation on top of Sugarloaf Mountain (John Parrish 1995)
<i>Hypericum densiflorum</i>	Glade St. John’s wort		Powder Mill Bogs, Prince George's County, McAtee 1917 (Smithsonian Institution records)
<i>Rhododendron arborescens</i>	Smooth azalea	S3	Difficult Run at Great Falls Park, Fairfax County, VA (extant)
<i>Gaylussacia dumosa</i>	Dwarf huckleberry		"Takoma" Steele 1897; Powder Mill Bogs: Oldys 1903 and McAtee 1910 (Smithsonian Institution records)
<i>Kalmia angustifolia</i>	Sheep laurel	S3	Powder Mill Bogs, Prince George's County (McAtee 1918, Bulletin of the Biological Society of Washington)
Category 3 – Potential additions C&O			
<i>Smilax walteri</i>	Coral greenbrier		C&O Canal NHP (<i>Selected Vascular Plant List for C&O Canal NHP</i>); likely found in Montgomery or D.C. section of park
<i>Celtis laevigata</i>	Sugarberry	SU	C&O Canal NHP (<i>Selected Vascular Plant List for C&O Canal NHP</i>); likely found in Montgomery or D.C. section of park