

Welcome to the Torrey Botanical Society 2017 Field Season Review! This year marked an important milestone for the activities of the Torrey Botanical Society. We celebrated 150 years of botanical field work and exploration. Together with our sister organizations in the region, we have hosted 16 field trips, covering 14 counties in New York, New Jersey, and Pennsylvannia. Documenting the biodiversity of the region continues to be of paramount importance as our flora adapts to the pressures of climate change, invasive species, and land development. This booklet is intended to serve as a glimpse into the rich botanical heritage waiting to be discovered in our region. If you have joined us on past trips, I hope you will do so again. If you are considering joining us for the first time, an exciting world full of wonderful and enigmatic plants are awaiting discovery and appreciation.

Cordially, Uli Lorimer - Field Committee Chair



Our field season began in late April with a full throated celebration of spring wildflowers and ephemerals. Concurrently and in partnerships with the Long island Botanical Society and the Philadelphia Botanical Club, trips were planned to **Van Cortland Park** in the Bronx and **Crosswick Creek** outside of Trenton, NJ. Ranking the third largest park in NYC, Van Cortland is home to quality oak woodlands and carpets of spring wildflowers like *Dicentra cuccularia* (Dutchman's breeches) and *Erythronium americanum* (fawn lily). Stands of *Podophyllum peltatum* (mayapple) along with stately individuals of *Caulophyllum thalictroides* (blue cohosh) are denizens of the forests in Van Cortland Park. Its headwaters flowing from Fort Dix and McGuire Air Force Bases, Crosswick Creek terminates at the Delaware River near Bordentown, NJ. The marshes and bottomland forests along its edges are influenced by the tides, so timing is crucial in order to see the spring wildflowers and ferns that make their home there. Typical marsh species like *Caltha palustris* (marsh marigold) and *Myosotis scirpoides* (forget-me-not) are abundant along the shores.

The Philadelphia Botanical Club led a series of excursions in late April, into the New Jersey Pinelands visiting **Brendan T. Byrne State Forest** and various locations near the town of **Warren Grove.** The Pinelands encompassover 1 million acres of protected lands and are home to a great diversity of plant, insect and animal species some of which are rarely encountered elsewhere in the region. *Chamaecyparis thyoides* (Atlantic white cedar) swamps are found along stream corridors and host unusual spring flowers, carnivorous plants, and orchids such as *Sarracenia purpurea* (purple pitcher plant) and *Neottia bifolia* (southern twayblade). Drier, upland areas are dominated by *Pinus rigida* (pitch pine) and *Quercus sp.* (oak) communities, often with characteristic white "sugar" sands. This habitat is home to a charming, diminutive, and state listed sub-shrub, *Pyxidanthera barbulata* (pixie moss). This is the best time of year to see pixie moss as its low, sprawling braches are covered in white, five petaled blossoms. At other time sof year, this plant can be easily overlooked or mistaken for a clump of moss.

In early May, we vsited **Rockefeller State Park Preserve**, in Westchester County, NY to see spring wildflowers and ferns continue to bloom and brighten the landscape. Only 30 miles fromt he bustle of NYC, the park offers a variety of habitats from wetlands and meadows to woodlands and scenic overlooks of the Hudson River. In addition to the wealth of plant species found there, Rockefeller State Park Preserve has been designated an Important Bird Area by the Audobon Society on account of the 180 bird species which have been recorded there! Yet further evidence of how interconnected nature is in our region. Plant diversity supports avian diversity!





Quercus alba







Corydalis flavula



Viola sororia















Caulophyllum thalictroides

Neottia bifolia





Osmunda regalis

Fragaria virginiana



Phegopteris hexagonaptera - broad beech fern



Later in the month of May, the Philadelphia Botanical Club dropped in on **Bordentown Bluffs** in Mercer County, NJ. The bluffs overlook Abbott's Marsh along Crosswick Creek. The steepest parts of the bluffs were festooned with *Kalmia latifolia* (mountain laurel) which was in full bloom. The group also located several mature *Diospyrios virginiana* (American persimmon) trees whose blocky bark is a distinguishing character.

The end of May brought the annual joint meeting of the Northeast section of the Botanical Society of America, the Philadelphia Botanical Club and the Torrey Botanical Society. This years focus was the limestone regions of northwestern New Jersey. The region is encompassed by two larger physiographic provinces, the Appalachian Ridge and Valley and the Highlands. To the west the Kittatiny Mountains are comprised primarily of erosion resistant guartzite and conglomerate rock, the adjacent valleys underlain with more erodable shales, dolomites, and limestones. These rocks are the result of an ancient inland sea which deposited sediment and marine life millions of vears ago. Subsequent upheaval and soil formation have created pockets of alkaline soils which favor plant communites adapted to those conditions. As these pockets are highly localized, they are botanically rich and of interest to botanists and naturalists. Over the span of four days, the group visited Kittatiny Valley State Park, Johnsonburg Swamp Preserve, White Lake Natural Recreation Area and others in Sussex and Warren counties in search of these calciphiles. Limestones fens, which differ from bogs in that they receive surface water flows, are home to unique plant communities. Plants such as Triglochin maritima (seaside arrowgrass), Diasiphora fruticosa (shrubby cinquefoil), and Menyanthes trifolia (bogbean) along with Eriophorum viridicarinatum (thinleaf cottonsedge), Betula pumila (bog birch), and Lysimachia thyrsifolia (tufted loosestrife) were observed here. Several species of *Carex* (sedge) and the state listed *Galium labrodoricum* (northern bog bedstraw) were also located. Some plants display a wide range of tolerance, evidence of the importance of provenance and ecotype. Sarracenia purpurea (purple pitcherplant) grows here in alkaline conditions and in extreme acidic conditions in the pine barrens of southern NJ. Truly remarkable!

Limestone rock and soils are also home to a variety of unusual perennials and ferns. The group was thrilled to find a small clump of *Cypripedium parviflorum* var. *pubescens* (greater yellow lady slipper) along with Zizia aptera (golden alexanders) and *Phlox subulata* (moss pink). Highlights of the diversity of pteridophytes seen include *Adiantum pedatum* (northern maidenhair fern), *Asplenium rhizophyllum* (walking fern), *Pellea atropurpurea* (purple cliffbrake), and *Asplenium ruta-muraria* (wall rue). What a privilege to see so many species!



Cypripedium parviflorum var pubescens



Triglochin maritima

















Pellea atropurpurea

Phlox subulata









Betula pumila



Galium labrodoricum





Lysimachia thyrsiflora

Sarracenia purpurea

Asclepias exaltata - poke milkweed



In early June, our group visited Sherwood Jayne Farm Preserve in Suffolk County, NY to highlight the work of the American Chestnut Foundation (ACF). Castanea denata (American chestnut) was once a major component of Eastern North American forests. After near extinction due to an introduced disease, chestnut blight, the ACF has spearheaded the effort to breed resistant varieties of chestnuts for reintroduction into american forests. Concurrently, the Philadelphia Botanical Club led a trip into the Glassboro and Clayton Wildlife Management Areas in Gloucester County, NJ. These wildlands contain the headwaters for the Maurice River, which flow through red maple swamps and sedge meadows. In addition to late spring wildflowers, the group saw multitudes of Polygala lutea (orange milkwort) along with Carex folliculata (northern long sedge) and Juncus scirpoides (needlepod rush). In the middle of June, the group explored Ken Lockwood Gorge Wildlife Management Area in Hunterdon County, NJ. Found along the south branch of the Raritan river as its waters spill from the Highlands physiographic province into the Coastal Plain, the deep gorge spans 2.5 miles of mixed deciduous evergreen forest. The microclimate within the gorge allows for the southern most stands of Tsuga canadensis (Canada hemlock) in the state along with other perennials usually associated with more northern habitats. Examples observed include Mitella diphylla (twoleaf miterwort), Impatiens pallida (pale touch-me-not) and Rubus odoratus (flowering raspberry).

Towards the end of July, our explorers, with friends from the Olive Natural Heritage Society, headed north into the Catskills to visit a unique wetland called **Pacama Vly** in Ulster County, NY. Encompassing over 300 acres, this wetland is home to a *Picea mariana* (black spruce) and *Larix laricina* (tamarack) woodland, unusual for southern Catskill forests. The aim of the trip amongst others was to relocate a rare disjunct fern, *Vittaria appalachiana* (Appalachian shoestring fern) pictured righ from Big South Fork in TN. Ferns and lycophytes are distinct among plants in producing two free-living life stages: a long-lived sporophyte phase and a (usually) short-lived gametophyte phase. Notably, however, some species have perennial, vegetatively reproducing gametophytes. *Vittaria appalachiana* is one of just three species in which mature sporophytes are unknown. Finding this abberrant fern proved impossible on this trip, however, the group did manage to observe over 25 species of *Carex* (sedge) along with more common wetland plants like *Dryopteris cristata* (crested woodfern), *Cicuta maculata* (water hemlock), *Mimulus alatus* (sharpwing monkeyflower), *Calla palustris* ( water arum), and *Platanthera clavellata* (small green wood orchid). With local blueberries fully ripe, the group observed plenty of evidence of black bear activity, from freshly broken branches to piles of scat. Thankfully there were no close encounters!!





Platanthera clavellata

Calla palustris







Spotlight on the Sedge Family! The Cyperaceae is one of the most species diverse families in our flora with over 2000 species in the genus Carex in North America alone. The Northeast of the United States supports the greatest diversity of Carex in the country. Spring and summer are the best times of year the see sedges in their various habitats. Often overlooked, sedges and their relatives form the backbone of many plant communities. They grow



in standing water to pure sand. Sedges can be challenging to identify, but those who are persistent will be rewarded for their hard work. Botanical field trips are a good way to gain exposure to the world of sedges and their relatives. Beyond their place in ecosystems, members of the Cyperaceae have unlimited potential in designed spaces and garden. Such a delightful and wonderful group of plants !!!

Carex magellanica

Carex lacustris

Glassmere Ponds, Ringwood State Forest, NJ



With summer in the rearview mirror, our friends the New York Flora Association and the Long Island Botanical Society co led a trip to **Jones Beach State Park** in Nassau County, NY. Early September is a good time to visit beach and maritime plant communities with summer flowering annuals like *Chamaesyce polygonifolia* (seaside sandmat) still extant along with perennials shrubs and herbs like *Rosa rugosa* (rugose rose) and *Solidago sempervirens* (seaside goldenrod) coming into bloom. *Ammophila breviligulata* (American beachgrass) is crucial element of this ecosystem, its rhizomatous growth helping to keep the dunes in place.

Directly following the Torrey Botanical Society;s 150th Anniversary Symposium, hosted by the New York Botanical Gardens, the Society led an anniversary field trip to Ringwood State Park in Passaic County, NJ. Ringwood lies at the heart of the Ramapo Mountains and is near to the location of the first published field day, held by the Torrey Botanical Club in 1874. The group departed from the grounds of Skylands Manor and headed into the forest, traversing a series of ridges before reaching Glassmere Ponds. Aside from common drier forest species like Deschampsia flexuosa (wavy hairgrass), the group was delighted to find Agalinis tenuifolia (slender false foxglove), an annual species infrequently encountered in the area. Glassmere Ponds are a series of man mad eponds connected by spillways and full of aquatic plants like Brasenia schreberi (water shield), also known as "snot leaf" on account of the thick clear mucilage which the leaves produce to protect themselves from being eaten. Aureolaria flava (smooth false foxglove) and Asclepias exaltata (poke milkweed) were seen near the ponds. The forests also yielded good populations of parasitic plants such as Monotropa hypopithys (pine sap) and Epifagus virginiana (beech drops). These plants preferred lifestyle entails stealing sugar and carbon from their host plants and therefore do not undergo photosynthesis. They are often pale vellow or brown in color and lack the green pigment chlorophyll which is associated with photosynthesizing plants.

Botanical field trips have long been an important tradition of the Torrey Botanical Society. Documenting the diversity of plants in a particular area is not just a pleasurable exeecise, but also provides context for how our flora is reacting to environmental and man made pressures. In a similar way that herabria provide snapshots of time and place, so do documented field trips. Drawing on our archive of trip reports, patterns emerge which can help inform todays and future scientists and botanists about changes in plant community dynamics and composition. These trips also serve as the front lines for invasive species detection. The earlier we become aware of invasives the better chance we have at control and eradication. Field is so important for many reasons!























Aureolaria flava



Brasenia schreberi foliage

Maianthemum racemosum





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## Cirsium discolor - field thistle



The final two trips of the season share wide open spaces in common. **Mount Loretto Unique Area** in Richmond County, NY is wonderful park located on the southwestern shore of Staten Island and comprises over 200 acres of woodlands, meadows, wetlands, and coast line. A variety of habitats awaited exploration and the group was able to observe several state listed species including *Eupatorium serotinum* (late flowered thoroughwort), *Symphyotrichum tenuifolium* (perennial saltmarsh aster), *Lemna perpusila* (minute duckweed), and *Hydrocotyle ranunculoides* (floating marshpennywort). Along with these uncommon species, the group saw grasslands full of *Panicum virgatum* (switchgrass), interspersed by drifts of *Agalinis purpurea* (purple false foxglove), *Symphyotrichum laeve* (smooth aster) and *Spiranthes cernua* (nodding ladies tresses). Mount Loretto pond supported a huge population of the annual aquatic fern *Azolla caroliniana* (mosquito fern). Equally impressive were the clouds of migrating Monarch butterflies, furiously drinking nectar and storing energy for their long flight south. Few sights are as encouraging than a meadow full of butterflies, especially Monarchs whose numbers have suffered sharp declines in recent years.

At the end of September, the Torrey Botancial Society joined the Long Island Botanical Society and the Long Island Native Plant Initiative (LINPI) for an exploartion of **Mashomack Preserve**, located on Shelter Island in Suffolk County, NY. The Nature Conservancy owns and manages this 2039 acre "jewel of the Peconic Bay". Interlaced tidal creeks, mature oak woodlands, freshwater wetlands and extensive grasslands make up this one of a kind property. The focus of our walk was to highlight the diversity and importance of coastal plain grasslands on Long Island. The grasslands at Mashomack support populations of state listed *Pycnanthemum muticum* (broad leaved mountainmint) as well as *Pycnanthemum virginianum* (Virginian mountainmint). Dotted throughout a carpet of *Rhus glabra* (smooth sumac) were statuesque *Cirsium discolor* (field thistle) which were covered in bumble bees. As wonderful and diverse these grasslands are, they are not without threats and pressure. Common horticultural plants like *Miscanthus sinensis* (Chinese silvergrass) and *Viburnum setigerum* (tea viburnum) have begun to invade. Continued good management practices along with early detection will help keep these grasslands thriving and vibrant.

Thank you sincerely for coming along on our botanical adventures this year. A big, big thank you to all of our intrepid trip leaders who selflessly shared their knowledge and passion with our trip participants. Thank to all of our participants as well. While plants are our focus, it is the community of like minded people which bind us together in pursuit of our shared botanical and natural heritage.

Eupatorium serotinum





Lemna perpusilla





Mashomack Preserve





Pycnanthemum muticum





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Shelter Island, NY

## 2017 Trip Locations

- 4/22 Van Cortland Park, Bronx Co., NY (w/LIBS)
- 4/22 Crosswick Creek, Mercer Co., NJ (w/PBC)
- 4/28 Brendan Byrne State Forest & Warren Grove, Burlington/Ocean Co., NJ (w/PBC)
- 5/7 Rockefeller State Park Preserve, Westchester Co., NY (w/LIBS)
- 5/20 Bordentown Bluffs, Mercer Co., NJ (w/PBC)
- 5/21-5/25 Limestone Regions of Northern New Jersey (w/BSA, & PBC)
  - Kittatiny Valley State Park, Sussex Co.
  - Johnsonburg Swamp Preserve, Warren Co., & Sussex Co.
  - White Lake Natural Resource Area, Warren Co.
- 6/10 Sherwood Jayne Farm Preserve, Suffolk Co., NY (w/LIBS)
- 6/10 Glassboro/Clayton Wildlife Management Area, Gloucester Co., NJ (w/PBC)
- 6/17 Ken Lockwood Gorge Wildlife Management Area, Hunterdon Co., NJ
- 7/22 Pacama Vly, Ulster Co., NY (w/ Olive Natural Heritage Society)
- 9/9 Jones Beach State Park, Nassau Co., NY (w/LIBS & NYFA)
- 9/16 TBS 150th Anniversary Ringwood State Park, Bergen Co., Passaic Co., NJ
- 9/24 Mount Loretto Unique Area, Richmond Co., NY
- 9/30 Harriman State Park, Rockland Co., NY
- 9/30 Mashomack Preserve, Suffolk Co., NY
- LIBS = Long Island Botanical Society
- PBC = Philadelphia Botanical Club
- BSA = Botanical Society of America
- NYFA = New York Flora Association
- TBS = Torrey Botanical Society