



THE

Valley

DARBY CREEK VALLEY ASSOCIATION

The President's Pen

By Jaclyn Rhoads



Reflections on the Past Year



As we finish up 2022, I always find it helpful to look back on our accomplishments. Our members will receive our annual report that will elaborate and highlight much of the great work completed by our manager, volunteers, and the wonderful board members of DCVA.

This year felt like we are "getting back to normal", but we still face the challenges caused by COVID.

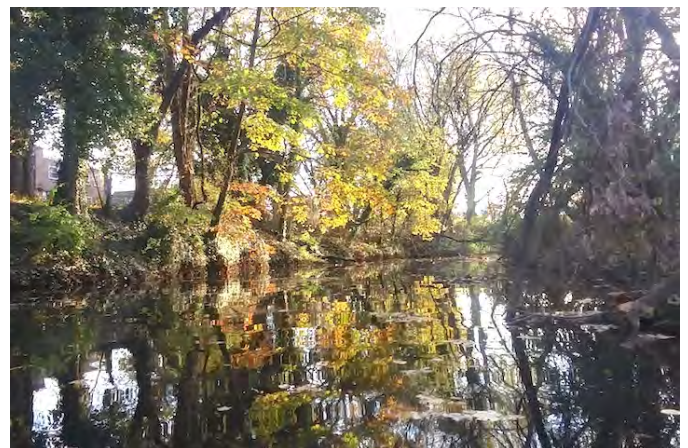
DCVA in partnership with Natural Lands Trust was awarded funding from Delaware County to complete a watershed plan to encapsulate, in particular, impacts and potential solutions to flooding, climate changes, and environmental injustices and inequities in the watershed. We are soliciting input from community members and will be looking for your input as well. I see this plan as the roadmap to work that DCVA will focus on in the next 10 years. We will continue to offer many of our great programs like the clean-up, stream watch, and education events, but want to make sure we are moving the needle on watershed and community health.

At our Folcroft property, we received funding and support to remove large quantities of invasive species. Land in urbanized areas suffer from invasive plants that aggressively take over native vegetation including very large trees. Our board member lead,

Gerry Krieg, continues to apply for funding to restore this habitat and provide easy accessibility to the Muckinipates Creek where people can kayak into the Darby Creek and down to the John Heinz National Wildlife Refuge. This property gift helped us to realize the importance of protecting small areas of land throughout the watershed - some of the last remaining great spaces in our densely developed communities.

Lastly, we are thankful for our manager, Aurora Dizel. Although Aurora has been with DCVA for a couple of years now, she stepped into the manager role a little over a year now, and that is truly an accomplishment for DCVA to have a competent, smart, and caring person in charge.

May all of our members and volunteers have a wonderful holiday, and hopefully I will see you at our annual meeting in 2023.



A History of the Founding of the John Heinz National Wildlife Refuge at Tinicum A Story that spans 35 Years

by Jean Diehl,
FOHR Board of Directors Emeritus

We are pleased to reprint this article which appeared in a 2015 issue of The Valley in celebration of the 50th Anniversary of the establishment of the Heinz Refuge and the 25th Anniversary of the Friends of the Heinz Refuge (FOHR). This article is reprinted with permission of the author, Jean Diehl. Jean is a former president of Concerned Area Residents for Preservation of Tinicum Marsh (CARP). Jean lived in Tinicum Township as a child and was taught by her dad, who hunted and fished, about the marsh. Jean used the marsh as her stomping ground. When she returned from the service she married and had a family. She learned about and became interested in the preservation of Tinicum Marsh at her daughter's Girl Scout meeting. CARP president Rhoda Gribbel introduced Mrs. Diehl to state environmental officials and involved her in all of CARP's infant activities. This article is Mrs. Diehl's personal account of the events that lead to the preservation of the marsh and the formation of the John Heinz National Wildlife Refuge. Mrs. Diehl is active in The Friends of the Heinz Refuge.

Congratulations to our friends at JHNWF and in FOHR!!!

The Setting - The lands and waters that now comprise the John Heinz National Wildlife Refuge at Tinicum are set in a highly industrialized corridor at the foot of the Darby Creek watershed. Approximately ¼ of the refuge lands lie within the boundaries of the City of Philadelphia and are known today as the "refuge impoundment". The remaining ¾ of the refuge's acreage lie in Delaware County and contain the bulk of the refuge's tidal marshes. In the early 50's, the area was surrounded or impacted by an ever expanding international airport, three sewage treatment plants, a tank farm, a smoke belching, water polluting incinerator, high density residential development, and crisscrossed by several oil and gas pipelines. Then in the mid to late 60's two highly unsanitary landfills and international highway development were added to the mix. This was an unlikely spot in which to found a National Wildlife Refuge!



The Background - It was also in the early 50's that developmental pressures began escalating, and resulted in the massive loss of Tinicum's wetlands. The Corps of Engineers, as part of a river deepening project, was depositing millions of cubic yards of dredge spoils daily on the wetland corridor bordering the Delaware River, and a Folcroft developer began

executing his well-organized plan to fill and develop Delaware County's remaining marshes in Folcroft and Tinicum Township. This developer lived Folcroft Borough and had close connections to Delaware County's political power structure and members of the state legislature. His plan was simple. First, purchase all the Delaware County marshes which were being sold at tax sales for

\$50 an acre; second, petition Folcroft Borough to rezone his newly acquired wetlands for light industry; third, have the Delaware County Planning Department and the DVRPC update their zoning and land use maps to reflect the zoning change granted by Folcroft Borough; and fourth, petition Folcroft Borough for a permit to begin a solid waste landfill on his wetland acreage. State permits that might have been required to construct a landfill in tidal waters did not exist and while the Corps of Engineers which has

permit authority over filling in navigable waters, they failed to require the developer to obtain one. If the developer had been required to apply for, and then been denied a landfill permit - There never would have been a Folcroft Landfill!

The developer did not stop there. He encouraged a PA state legislator (who coincidentally lived in Folcroft) to execute two more actions on his behalf, which would facilitate or enhance his plans for future industrial development of Folcroft's marshes. First, legislation (ACT 347 OF 1957) was introduced and approved. This

A History of the Founding of the John Heinz National Wildlife Refuge at Tinicum A Story that spans 35 Years *continued*

legislation permitted the use of Land and Water Conservation Fund monies anywhere in the state of PA, EXCEPT DELAWARE COUNTY. This law is still on the books today. Second, he asked the same state legislator to introduce another bill in the legislature to authorize the construction of a cross marsh highway (from Folcroft to I-95) that would connect his existing and planned industrial parks, by land, air and sea, to the markets of the world, while splitting the remaining wetlands in half. Finally, in order to gain public acceptance for his landfill, the developer flooded the Tinicum Marsh communities with a flyer promising them economic and other benefits as a result of the construction of his landfill. He promised that once the landfill was completed and an industrial park was developed on the site, there would be no more mosquitoes or rats, and they would never have to pay taxes again.

A Major Controversy Regarding the Future of Tinicum Marsh Was Taking Form - At this point it became clear that 2 opposing views for the future of Tinicum Marsh were emerging. One view called for filling the marsh, constructing highways through and around it, and later developing the area into an industrial park. The second view - the one which ultimately won - called for preserving the marsh forever as a National Wildlife Refuge.

Chapter one of the story which began in 1952 and lasted for about 20 years took place primarily in the City of Philadelphia



Heinz Sunset - Bernice V Coles

- Members of the Delaware Valley Ornithological Club, led by Alston Jenkins, formed an organization called the "Tinicum Committee" (later known as the "Philadelphia Conservationists") and devised a plan by which they hoped they could save the Philadelphia portion of Tinicum's marshes. First they negotiated with Gulf Oil and the City of Philadelphia, arranging for Gulf to donate 150 acres of wetland to the city, and for the city to manage it as a Wildlife Preserve. Then they negotiated with the Corps of Engineers to donate 70 more acres to the city also to be managed as part of the Wildlife Preserve. That area is known today as the highly popular "Refuge Impoundment".

Over the next 20 years, the Conservationists continued their work on behalf of Tinicum Marsh. They constructed a visitor's building (twice destroyed by arson and known today as the "observation platform") on the edge of the impoundment, paid the Preserve warden's (Jim Carroll) salary, built a visitor's contact station (still in use today), brought a successful suit in federal court to halt the expansion of the Folcroft Landfill, along with other organizations, lobbied PennDot to relocate the proposed bed of I-95 away from the bow of Darby Creek and the refuge impoundment, promoted legislation to create a national wildlife refuge in Tinicum, and provided testimony against the construction of the "cross marsh highway" at several hearings held in Folcroft.

A History of the Founding of the John Heinz National Wildlife Refuge at Tinicum A Story that spans 35 Years *continued*

by Jean Diehl,
FOHR Board of Directors Emeritus

The Conservationists were successful in all their pro-Tinicum Mash ventures, **except** their efforts to kill the bill which would have permitted construction of the cross marsh highway. In this, they were soundly rebuffed by Delaware County politicians who called them “**carpetbaggers**” and told them that since they didn’t live here, they couldn’t tell them what they should or shouldn’t do. The final insult to Tinicum Marsh’s integrity was PennDot’s failure to select the most environmentally sensitive alternative for constructing I-95 through Tinicum Marsh. That alternative would have put I-95 on pilings and would have required minimal dredging and filling. **Instead PennDot selected the worst alternative which was to construct the highway on a raised berm and required massive amounts of dredging and filling that decimated over half of what remained of Tinicum Marsh.**

At this point in time Department of Interior Secretary, Walter Hickel, was invited to view the area and hopefully broker a solution between the warring factions. First, he met with Delaware County politicians who assured him that they supported the highway construction with its attendant dredging and filling operations, as well as future industrial development of the area, and would not change their minds. Then Secretary Hickel met with preservationists and advised them that in light of the political atmosphere, if they wanted a chance to win they would have to form a grass roots organization.

Concerned Area Residents for the Preservation of Tinicum Marsh was formed

The time had come to move the primary focus of the fight to save Tinicum Marsh to Delaware County. Everyone knew that the Philadelphia Wildlife Preserve was not large enough to support the feeding and nesting requirements of the large number of migratory and resident wildlife that used the area. Making sure that the Delaware County marshes were saved was critical to meeting this need. Responding to Secretary Hickel’s advice a new organization – Concerned Area Residents for Preservation of Tinicum Marsh (CARP) was born, a grassroots group (initially) consisting primarily of Delaware County residents who lived in the communities immediately surrounding the marsh.

So, Began Chapter Two of the Fight to Save Tinicum Marsh - One of CARP’s first actions was to work with the Philadelphia Conservationists and other interested organizations to petition our congressional delegation to submit a bill to the U.S. Congress that would create a National Wildlife Refuge at Tinicum. On June 30, 1972 Public Law 92-326 creating the Tinicum National Environmental Center (now called the Heinz Refuge) was signed into law by President Nixon.



Concerned citizens testifying before Congress

While this was a significant victory in one way, in another it was a hollow victory - The legislation passed with no appropriations and significant tracts of land and water had been cut from the bill before it passed. Besides that, the FWS was not wildly enthusiastic about this new refuge that was now their responsibility. This was a refuge on paper only, and the proposed refuge’s lands and waters, were still subject to ongoing atrocities. Highway dredging and filling operations were still underway, Folcroft landfill was accepting hospital and industrial wastes, and was constantly on fire because it was using hot incinerator fly ash as ground cover, the Darby Creek Joint Sewer Plant was still spewing raw sewage into Darby Creek almost daily; the nearby incinerator was still causing air and thermal pollution; “Fly-by-night” dumpers were still making illegal deposits everywhere; and PennDot still hadn’t made a decision about relocating the highway corridor. Clearly, much remained to be done, and it was going to be largely up to CARP to find a way to do it because they were “grassroots” and not “carpetbaggers” - To address these problems successfully, CARP developed non-political strategies to topple the wall created by public apathy, governmental neglect, and GREED. These strate-

A History of the Founding of the John Heinz National Wildlife Refuge at Tinicum A Story that spans 35 Years *continued*

gies worked amazingly well, and as a result CARP's support base swelled in a few short years from a few diehard individuals to a veritable army of supporters. Including hundreds of individuals, plus 4 youth groups, 30 civic groups, 11 environmental groups, 6 men's groups, 9 schools, 19 garden groups, 4 fraternal organizations, 10 political subdivisions, 1 senior group, 2 historic groups, 7 sports groups, 4 political groups, 7 birding organizations, 25 businesses, 7 foundations, 13 women's groups, 1 animal group, 2 corporations, 1 union, Delaware County, and individuals from 9 states and the Virgin Islands.

CARP's first strategy was to find ways to transform public apathy

into public support

- People generally relate well to something they can visualize. For the most part, Tinicum Marsh was inaccessible to the general public. CARP decided to bring the public (including politicians and the news media) to the marsh to let them see for themselves what was going on. CARP offered guided canoe tours and walks through the area several times a month. Everyone came away energized and ready to join the fight to save the marshes (and nobody ever fell in). CARP borrowed a page out of the developer's notebook and stressed the (true and ongoing) economic value of Tinicum Marsh to the public if it remained undeveloped.

CARP brainstormed economic factors in favor of marsh preservation, researched them, quantified them, and sought out certified experts who could lend credibility to these economic arguments. Once all the background information had been completed, we worked up a slide show and got ourselves invited to other people's meetings, presented at malls, school assemblies, sportsmen's shows, garden shows and all sorts of fraternal, political, women's church youth groups and more. At each of these venues we gathered signatures on petitions, accepted spontaneous donations, and gained new members.



Citizens experiencing the natural beauty of the marsh

Economic Arguments for Preservation of the Marsh included:

- **Better Water Quality:** Marsh Plants can remove up to 5.3 tons of chemicals per acre per day and exchange that for up to 6.2 tons of oxygen per acre per day.
- **Groundwater Recharge:** A rock formation called an aquifer lies under Tinicum Marsh and supplies well water to a sizable portion of Gloucester County NJ; if the land over the aquifer is kept open water can continue to seep into it and feed those wells.
- **Flood Prevention:** The function of sponge-like wetland soils is to absorb water during peak periods of rainfall and to slowly release them during times of drought. Studies have shown that each marsh acre is capable of absorbing up to 640,000 gallons of water.
- **Erosion Control:** During storms water is channeled into storm drains and crashes downstream with enormous force. It tears soil from stream banks, uprooting trees and eroding stream bank properties. But when this high velocity water reaches a marsh - its force is diminished - and erosion is eliminated.
- **Education and Recreation:** Tinicum Marsh has everything. It is an outdoor classroom utilized by students from pre-school through university. It is a natural recreation area with trails and waterways for hiking, biking, canoeing, fishing, bird-watching, or just plain relaxing.
- **Food Chain Amelioration:** At least half of the organic matter produced in marshes is transported downstream to the estuary and sea, forms the base of the food chain. EPA estimates that U.S. Commercial fisheries harvest is valued at more than \$2 billion annually, and is the basis for a \$26.8 billion fishery processing and sales industry.
- **Noise Control:** The nearness of the Philadelphia International Airport and I-95 make it a high noise area. Spongy marsh soils deaden much of this noise. CARP members have also noticed while on canoe trips that the high walls provided by stands of cattails and wild rice provide this same function.
- **Improved Mental Health:** Studies have shown that passively recreating in open space helps relieve the stresses of highly structured urban life, and with children, playing in the outdoors can reduce the effects of ADHD.

A History of the Founding of the John Heinz National Wildlife Refuge at Tinicum A Story that spans 35 Years *continued*

by Jean Diehl,
FOHR Board of Directors Emeritus

The shock value of the presentation energized public and (gradually) municipal support. It also generated donations, new members, and lots of referrals.

CARP partnered with many other area organizations - The new partners spread the word in their own newsletters and wrote letters of support when needed. The Valley Forge Audubon Society Camera Club even created an awesome narrated slide show for us to take around. This approach doubled, tripled, and then quadrupled public support for saving Tinicum Marsh.

CARP often staged publicity events with news coverage - Lots of friendly news media to give us attention. In one event, we staged interstate commerce to prove (to the Corps of Engineers) that Darby Creek was not only historically, but also currently commercially navigable. Along with minstrels, and the news media, a cavalcade of about 20 canoes started in Jersey, picked up produce, crossed the Delaware and paddled up Darby Creek, trading their produce at the Ridley Marina, The John Morton House in Prospect Park, Montgomery Park in Folcroft, The Refuge and finally at the junction of Darby and Cobbs Creeks. Needless to say the trip had to be carefully planned with the tides in mind, because by the time they reached the Darby/Cobbs confluence there was precious little time that would elapse between high and low tides at that point.

Another of CARP's strategies was to find ways to transform governmental antipathy into governmental respect and support - CARP members became knowledgeable about municipal codes and the PA Municipality Planning Code. We attended all public meetings at which discussion on Tinicum Marsh might occur, and offered input where appropriate. At first we were always challenged and ridiculed. However we always had documentation with us to prove our points. Over time CARP gained grudging respect, then grudging support and finally outright support. When we began, there were no politicians anywhere in Delaware County who supported the preservation of Tinicum Marsh. By the time we were finished there was no politician to be found anywhere in Delaware County who did not say they ALWAYS supported it.

CARP developed a strong working relationship with state environmental officials including the state environmental strike force,

which resulted in our being able to halt fly-by-night dumping. We had spotters everywhere, and when dumping was discovered, it was reported immediately. Our high level of respect by state officials resulted in their immediate response and dumpers were immediately halted. Dumpers were once overheard in a public restaurant complaining that CARP had little old ladies in tennis sneakers hiding behind every bush, and that as a result no one would be successful in finding dumping spots in the area without being certain to be prosecuted.

CARP worked with state environmental officials in a number of ways:

- We monitored activities on both Folcroft and Clearview landfills and the Delaware County Incinerator # 2. CARP utilized canoe "spy patrols" to gather photographic documentation of illegal activities which were ongoing at each of these facilities. The results of this collaboration included the eventual closing of the incinerator and Folcroft Landfill, but CARP was never successful in closing the Clearview Landfill.
- While CARP filed suit several times in Delaware County Court against the Folcroft and Clearview Landfills, utilizing the same information that we had given to the state, but the "landfill judge" always threw the suits out. This was one battle we never won - at least in this court, but not for lack of trying.
- CARP worked with state Bureau of Water Quality to institute a ban on connections by new construction to the Darby Creek Joint Sewer Authority. The existing system was frequently spewing raw sewage into Darby Creek because it was over design capacity. This sewer ban was to stay in place until the authority either updated their capacity, or connected to the regional sewer authority.
- CARP, along with other organizations, finally convinced PennDot to relocate the final segment of I-95 away from the bow of Darby Creek, and the impoundment.
- Since the founding legislation was incomplete, CARP spear-headed 5 additional pieces of Tinicum Marsh legislation over the next 10 years which authorized purchase money for refuge lands, and restored lands to the refuge boundaries which had been cut from the original legislation. Senator Bob Edgar was the primary sponsor for all five of these bills.

A History of the Founding of the John Heinz National Wildlife Refuge at Tinicum A Story that spans 35 Years

Four of the pieces of legislation passed easily, the one in 1976 didn't. That bill, as written, would have added the Folcroft Landfill and the Tinicum Lagoons to the refuge's boundaries. Both tracts had been stricken from the original legislation. The owners of both tracts were seeking permission to develop them, so preserving them was critical to the integrity of the newly established wildlife refuge. The owner/developer of the Folcroft Landfill had petitioned Folcroft Borough to put a trash transfer station on it. Since the landfill protrudes like a thumb into the remaining marshes, this type of activity would have been totally incompatible, and finally, this person had an established reputation as a notoriously bad neighbor. The lagoon owners had advertised in the PA Bulletin for a permit to re-fill the lagoons and develop them commercially.

Congress approved having the Folcroft Landfill added to the refuge, but advised CARP that if we wanted the lagoons added we would have to show them more public support first. Translated, that meant raise some money (suggested amount \$100,000.00) and then come back to ask them again to add the lagoons.

CARP formed a partnership with the Delaware County Council of the Leagues of Women Voters (Rosalie Piersol was their energetic representative) and together we sponsored a fundraiser we called "The Tinicum Fund" - A groundswell of public support ensued in spite of a recession and the area being primarily blue collar, and in a little over 2 years we raised over \$113,000. Donations ranged from pennies from school children to a \$50,000 grant from the Ethel Sergeant Clark Smith Endowment Fund. The funds were presented to the FWS at a celebratory function held at the Ramada Inn in January 1980.



Black-Billed Cuckoo - Bernice V Coles

In the next session of Congress CARP (and partners) once again petitioned for the Lagoons to be added to refuge boundaries, and we were finally successful. The final piece of Tinicum Marsh legislation increased Refuge appropriations to a max of 19.1 million dollars "in perpetuity". The designation "in perpetuity" means that the use of the funds has no expiration date. They have not yet been fully expended.



Board Member Lisa Borowski elected to the Pa State House of Representatives!

DCVA Board member Lisa Borowski has been elected to the 168th District of the PA State House of Representatives (this district is in the upper part of the Darby Creek watershed). Lisa ran a hard fought campaign in a competitive district against an incumbent and prevailed with 56% of the vote. Lisa has served as Vice President of the Radnor School Board and for the last four years served with distinction on the Radnor Board of Commissioners tackling issues of concern to the community, including improved storm-water management. Lisa has served on the Board of DCVA for the last two years. We look forward to Lisa being a strong voice for issues of concern throughout the Darby Creek Watershed.

Gillespie Park, Upper Darby - Flourishing & Protecting Darby Creek Thanks to a Tremendous Community Effort

by Stephen Lockard,
DCVA Board Member

The Darby Creek flows mostly north to south through a long stretch of eastern Delaware County. A bit secluded along North Sycamore Avenue in Clifton Heights is Gillespie Park. Gillespie Park formerly had a ballfield, many vine tangled trees, multiple invasive species and little means to combat stormwater runoff. Several years ago a coalition of concerned citizens with the cooperation of Upper Darby's mayor began to envision something different for this park.

Gillespie Park is now a burgeoning gem that graces that section of Darby Creek. The Upper Darby Tree Tenders in concert with the Delaware Riverkeeper Network (DRN), the Eastern Delaware County Stormwater Collaborative (EDCSC), some members of the DCVA, and others began writing for grants to return Darby Creek to greater health as it passes through Gillespie Park.

A Tree Vitalize grant (often funded by Aqua and the PA Department of Environmental Protection) was won to bring 300 trees and 100 shrubs to cover the land of the former ballfield. With the help of Township employees the trees and shrubs were planted in fall 2021. Upper Darby Township applied for and was awarded funds for an extension of the Darby Creek Trail through the park. In addition, two bridges to continue the trail in both a northerly and southern direction are planned. 500 yards of the trail are now complete, and the first bridge (a 150 foot span) is

due to begin construction in the next few weeks. Last spring a second Tree Vitalize grant was won and an additional 100 trees and 50 shrubs were planted after a herd of goats was employed to clear a field of invasive plants.

One of the goals of the tree/shrub planting has been to establish a riparian buffer, i.e., a vegetated area near a stream, usually forested, which helps shade and partially protect the stream from the impact of adjacent land uses. The residential community uphill from Darby Creek sheds a large volume of stormwater into the creek in Gillespie Park.



Riparian buffer at Gillespie Park.



Riparian buffer at Gillespie Park.

This riparian buffer now interrupts that stormwater. In addition, two retention basins have been established at either end of the trail to capture runoff as part of the trail construction. A seed mix of water loving plants and an assortment of water loving shrubs have been planted in both retention basins.

Gillespie Park, Upper Darby - Flourishing & Protecting Darby Creek Thanks to a Tremendous Community Effort

Across the stream from Gillespie Park a beloved historic fixture, The Swedish Cabin, sits just back from a deteriorating streambank. Last winter Upper Darby Township, in cooperation with several other groups planned, then installed a novel means of protection for that streambank: a revetment of discarded Christmas trees was attached to the bank to catch sediment. A tree revetment, made by anchoring trees along a streambank, is an inexpensive, effective way of stopping streambank erosion. The trees greatly slow the current along the eroding bank. This decreases erosion and allows silt and sand to be deposited along the bank and within the tree branches.

Additional trees have been planted on the Swedish Cabin side of the creek and more are planned. Also, the Upper Darby Trails group spent numerous hours last winter cutting vines that had for decades tangled mature trees.

And a few weeks ago The Upper Darby Environmental Advisory Council won a grant to establish a pollinator garden to support a bee colony at Gillespie Park. Thanks to these, and other groups, the future health of the Darby Creek looks bright. And, we aren't done yet at Gillespie Park.



Goats at Gillespie Park

Marple Greenspace Update

by Ken Hemphill,
Co-founder, Save Marple Greenspace; The Whetstone Coalition
Member, Don Guanella Masterplan Advisory Committee

It's been nearly a year and a half since Delaware County Council used their condemnation authority to protect the 213 acres at Don Guanella School in Marple Township along Route 320 (Sproul Road) from development. As was noted at that time (the summer of 2021), the goal was to preserve the 180 acres of woods and repurpose the already developed 34 acres in the front of the property along Sproul Road for various public uses. Determining what those uses will be is the goal of the appointed "Don Guanella Master Plan Advisory Committee" and the park design professionals hired by the Delaware County Council in 2021.

The design team, led by Ann Toole and Associates, says that "the plan will reflect the needs and desires of the residents of all sections of Delaware County, as this is intended to be a county scale park, serving citizens countywide with facilities that are not typically provided by municipal parks...The park as realized from the final plan should serve interests throughout Delaware County while being attentive to natural features and other site considerations...The preservation of this land will not only provide open space for residents, but help with overall environmental issues such as preserving trees for climate change mitigation, stormwater management, and protection for two streams that flow into Darby Creek...Retaining ecosystem value of the forest will be one of the highest goals, while also improving the safety and accessibility for passive recreational activities such as hiking."

To this point, the first stage of the planning process - where we are right now - is to identify and characterize the physical conditions of the property. At the most recent advisory committee

meeting, various planning and environmental consultants laid out their preliminary site analysis findings on soil types present throughout the entire 213 acres, trail conditions, stream crossing situations, the various successional stages (ages) of the forest, species inventories, stream health, trail connectivity potential, conditions of the five acre former sanitary landfill on site, and overall forest health. With the groundwork of these analyses complete, the planning will proceed to recommending the various uses possible on the 34 developed acres.

At some point in the near future, Ms. Toole and her team will present these site analysis findings and the recommendations for various uses for the site to the public in open meetings. One such "open house" type meeting will be at Cardinal O'Hara High School and is tentatively scheduled for January 14th from 9 AM to Noon. This meeting will likely feature the findings enumerated above. In addition to these public meetings, there will be "Key Person Interviews" of 30+ individuals, focus group meetings, and online public participation as well as two surveys. One of these surveys will concern initial planning ideas and the second will be for feedback.

One thing the design committee won't do is name the park, so stay tuned to county communications for the upcoming naming contest which will kick off after the New Year, with the winning name being announced on or before Earth Day next spring 2023. Signing up for weekly county newsletter emails will ensure that you don't miss any important announcements about public meetings and the naming contest: <https://www.delcopa.gov/council/newsletter/index.html>

Don Guanella forest aerial from Cardinal O'Hara side



Downspout Planter Rain Gardens are Perfect for Challenging Stormwater Management Projects

by Jamie Anderson,
DCVA Board Member

The Darby Creek Valley Association with project partners the Eastern Delaware County Stormwater Collaborative, the Pennsylvania Resources Council and the Lower Merion Conservancy has continued the Streamsmart Stormwater Housecall Program throughout 2022. This program offers individual visits to homeowners in a format that provides detailed feedback regarding steps property owners can take to manage stormwater on their properties through the use of best management practices that will help with nonpoint source pollution while increasing habitat.



Norwood resident Chanel Jackson with her planter that removes stormwater that had been discharging to her driveway



Downspout planter intercepts water previously directed to storm-water system

This past year, the partners have built close to 40 downspout planters that are perfect for stormwater management in situations where downspouts discharge onto driveways and are too challenging to redirect to other areas. The downspout planters, retrofitted out of feeding troughs, function like raised bed rain gardens. The plants and soil in the planters absorb stormwater with water storage at the bottom of the planter. This water is held there during the storm reducing the runoff leaving the property during the storm. A spigot on the planter allows for this water to drip slowly following the storm where it can evaporate. These planters work to reduce overall stormwater runoff and due to the native plants in the planters, create needed habitat for pollinators.



Landscape contractor Michael Duranti adds plants into a newly installed planter in Drexel Hill

Along Darby Creek to a Sustainable Future

by John Haigis,
DCVA Board Member Emeritus

The Darby Creek watershed was full of natural beauty and a good place to live long before it got that name. For many thousands of years, the people known as Lenape (the People) hunted, fished and traded throughout the region known as Lenapehocking which stretched from the headwaters of the Delaware River to the southern tip of Delaware. They saw the earth as a living thing, worthy of respect. The first European immigrants to the area were from Sweden and Finland, although there was also a smattering of Dutch fur traders. The area was part of the 17th century "Fur Wars," as European nations competed for beaver pelts in what was perhaps the first "world" war. Our first highway was the Minquas Indian Trail connecting the Susquehanna region to the Dutch fur trading posts along the Schuylkill River.



The Swedish settlers came with explicit instructions from the Swedish Crown to treat the "wild nations" with humanity and respect and to give them better prices on trade goods than they were getting from the Hollanders or the English, so they would be "more won to our people." This was the period of time in which the Swedish Cabin was built. It was also the time a "blockhouse inhabited by freemen" stood at the convergence of Cobbs and Darby Creeks. Cobbs Creek was called "Aaronmink" by the Lenape, and "Mondal" (Place of the Mill) by the Swedes. The circa 1645 mill was the first water powered mill in what later became

Pennsylvania. The water powered mill was built to replace the windmill, which in the words of Swedish Governor Johannas Printz, was "good for nothing."

The first court in this area was authorized in 1673 under the Dutch when inhabitants of the South River (aka Delaware River), went to New Amsterdam (on current day Manhattan Island, NY) and petitioned for free trade with Christians and Indians, rights in the government, and freedom of conscience. The court, called the Court at Upland, later moved to Kingsessing in the Schuylkills (current day Southwest Philadelphia) for the "greater ease of the people." The Court sat from 1676 to 1681 and was the area's first "people's court", created to give a forum to settle disputes rather

than a mechanism to impose morality. One notable case involved an ongoing dispute between neighbors Mouns Staake, Hans Julian, and Morton Mortonson on land near Calcons Hook near the present day Heinz Wildlife Refuge. Morton Mortonson testified that Mouns Staake was riding outside Hans Julian's door shouting "You Rogue, You Dogg, Come out I'll shoot a bullet through your head." A descendant of Staake says the name Mouns Staake was pronounced like "Mouns the Stick" and added that alcohol was likely involved. Morton Mortonson's home is still standing! It is sometimes

called the Ferry House and is on Route 420 just north of Route 95. It is a beautiful place to visit.

The arrival of William Penn in 1681 brought more people, more mills, and since many of the original settlers were Quakers from Darbyshire, the name Darby. One legacy that remains is the network of roads built to connect the Darby Quaker Meeting with other Quaker Meetings including Radnor, Haverford, Chester, Springfield, and Providence. Another legacy that remains is the gate house/sluice gate for the mill race built in Darby before 1695.

Along Darby Creek to a Sustainable Future

Horse drawn streetcars were a major mode of transportation

throughout North America from about 1820 until the 1880s. The first streetcars to connect Philadelphia and Delaware County arrived in 1858, to be followed by others as "Streetcar Suburbs" changed the landscape and created first ring suburbs of Philadelphia. At the same time, other areas were ravaged by the Industrial Revolution, simultaneously

making the region an economic powerhouse and helping win two world wars. The steep slopes of the Darby Creek watershed limited industrial development somewhat as neighborhoods grew up in Media, Haverford, Bryn Mawr, Garrettford, Drexel Hill, Springfield and others.



Trolley tokens from around the country

After World War II, the inter-urban network that had allowed trolley travel between Maine and Florida, and also connected our region, was sabotaged. Companies controlled by oil, rubber, and auto interests, working as National Cities Lines began a nation-wide program to purchase trolley lines and convert them to bus lines. Philadelphia was

one of the rare exceptions, and although we have all the problems of urban sprawl, we still have a viable, if under-appreciated, public transit network, including actual trolleys still functioning in the Darby Creek Watershed.

It is said the Chinese character for crisis is related to the character for opportunity,

and as the Global Climate crisis continues to worsen, the world continues, to wonder what to do about it? In Germany, after the devastation of the Second World War, the city of Freiburg in Germany began to rebuild, and is now one of the more sustainable cities on earth. One section of Freiburg is called Vauban which was the site of a French army barracks during the postwar occupation of Germany. When the French left, there was a decision to recreate Vauban



Vauban trolley

in the mold of the "Passiv Haus" movement in which buildings create more energy than they use. The existing Freiburg trolley network was seen as an asset and became an integral part of the transformation into a sustainable future. Our region could also work toward a more sustainable future by maintaining and expanding trolley and rail systems in the Darby Creek watershed and greater Philadelphia area.

Managing Eastern Pennsylvania's Aquatic Invasive Plants

by Michael Hartshorne &
Scott Churm of Princeton Hydro

What is the first thing that comes to mind when you think about an invasive species? For most people, it's not hydrilla or fanwort! Aquatic invasive plants might not have the same visibility as some of the most publicly prominent invasive species, but they are a severe threat to the health of our water bodies, and it's important to find ways to control and manage them.

What makes a species invasive?

In the same way that mold consumes a loaf of bread left in the pantry for too long, invasive species are able to thrive, spread rapidly, and outcompete native species due to the lack of environmental checks that control the species in their native setting. The subsequent damage they cause occurs on many ecological levels, including competition for food or habitat (feeding, refuge, and/or spawning), direct predation and consumption of native species, introduction of disease or parasites, and other forms of disruption that lead to the invasive species replacing the native ones. As a result, invasive species very often cause serious harm to the environment, the economy, and even human health.

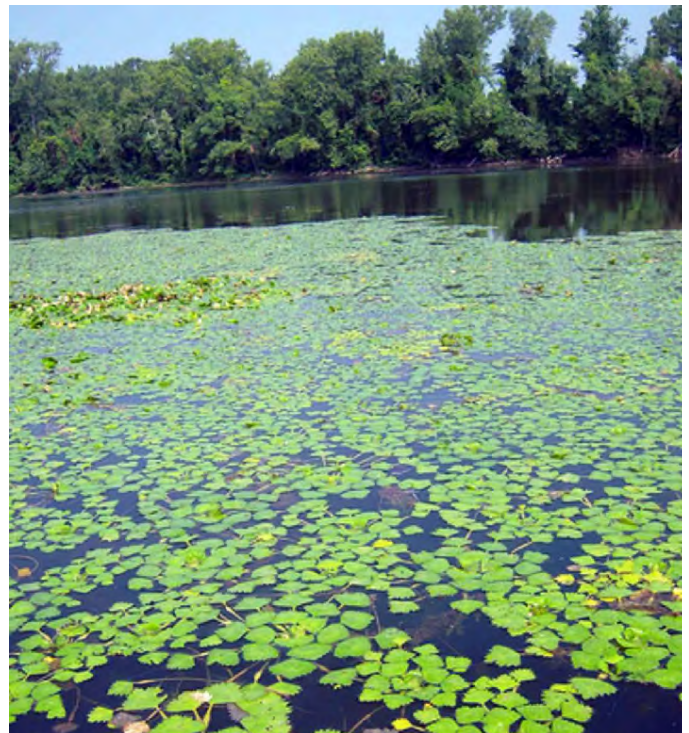
How can we manage aquatic invasive species?

There are many ways to manage, control, mitigate, and eradicate aquatic invasive species, but the right technique depends on the species at hand and the area in which it is invading, as every site will have its own unique issues. We are describing some of the most effective approaches to invasive species management.

Monitoring

Sometimes the best way to combat invasive species in an ecosystem is to be proactive. Like preventative medicine for your body, eradicating an invasive species before it becomes an issue in a water body is usually the easiest and most cost effective measure. The best way to implement proactive measures is by prioritizing consistent and effective monitoring programs.

Water chestnut (*Trapa natans*), an invasive species native to Eurasia and Africa, was introduced in the mid-1800s. It is an important invasive to catch early, as it can very easily and quickly become a massive and costly problem. At Westtown Lake in Chester County, Princeton Hydro employees discovered isolated patches of water chestnut during a dredging project. This aquatic plant reproduces with seed pods that can remain viable for up to 10 years, making it very difficult to fully eradicate once it establishes. Water chestnut grows as a mat of plants that slowly reduces dissolved oxygen levels in ponds, which can lead to fish kills.



This is a good example of the importance of monitoring; if water chestnut is found early enough, it can be removed before becoming a detrimental issue. At Westtown Lake, the team worked with the client to hand pull the water chestnut, ultimately cutting off what could have become a very problematic, lake-wide bloom. By keeping an eye on and actively monitoring your waterbody, you're more likely to avoid a massive outbreak of an invasive species and the catastrophic mess it can wreak on the water body and your community.

Managing Eastern Pennsylvania's Aquatic Invasive Plants *continued*



Harvesting

Another sustainable way to combat an invasive species is to harvest and use it for another purpose such as compost, fuel, and sometimes even food. As far as aquatic invasive species go, many of the ones found in Pennsylvania aren't edible, however, once they've been harvested/removed from a water body, they can be composted if handled properly.

Large-scale compost systems are the most effective way to properly compost aquatic invasive species. These systems allow the compost to be heated to a high enough temperature, so that seeds and other propagules are non-viable; therefore, the invasive plant cannot re-establish. It is important to note that species that have been treated with chemicals should not be composted into soil that will be used on crops.

One way to harvest aquatic invasives on a large scale is to utilize a multifunctional amphibious vehicle such as a Truxor. This machine is able to maneuver in and out of ponds and lakes to cut up and pull large quantities of invasive plants. Princeton Hydro owns and operates two Truxor machines and has successfully completed aquatic weed removal projects for a variety of pond and lake owners in the region.

Bladderwort (*Utricularia*) is another aquatic weed that is actually

native to the Northeast but acts like an invasive. This carnivorous plant grows quickly and intertwines itself with other native plants, making it difficult for them to grow; therefore, it needs to be managed like an invasive species. The easiest way to manage bladderwort is to cut and remove it with a machine like the Truxor.

Biological Control

Biological control refers to using one living organism to control another living organism. If a species can be introduced to control an invasive species, and this introduction does not disrupt the ecosystem balance, this biological control can be a very effective natural way to eradicate unwanted invasives. For example, two aquatic invasive species Eurasian watermilfoil (*Myriophyllum spicatum*) and Curly-leaf pondweed (*Potamogeton crispus*), which are present in water bodies in Pennsylvania, have been managed using biological controls.



Eurasian watermilfoil was discovered in the eastern United States in the early 1990s, and primarily spreads through vegetative fragmentation, a process by which a fragment breaks off, settles in the sediment, and establishes a new plant. While the plant itself dies off in the fall, the root system can survive the winter and re-establish itself in the spring. Curlyleaf pondweed is another invasive species native to Eurasia, Africa, and Australia and was first discovered in the U.S. in 1910. This plant grows from the shoreline down to water depths of 15 feet and can grow about that long, taking up necessary space needed for native species to thrive.

For these two species, strategically and carefully introducing a

Managing Eastern Pennsylvania's Aquatic Invasive Plants *continued*

by Michael Hartshorne & Scott Churm of Princeton Hydro

fish population that likes to munch on those plants can serve as an effective solution and natural alternative to managing and mitigating aquatic weed growth. In Woodridge Lake in Litchfield County, Connecticut, Princeton Hydro introduced triploid (sterile) grass carp (*Ctenopharyngodon idella*) to this freshwater lake to help eradicate Eurasian watermilfoil and curly-leaf pondweed. Originally from Asia, grass carp have been imported to the U.S. since the 1960s to be intentionally released into controlled freshwater environments for aquatic plant control. The species relies almost entirely on aquatic plants for their diet, preferring to eat many of the non-native aquatic plant species that negatively impact freshwater environments.

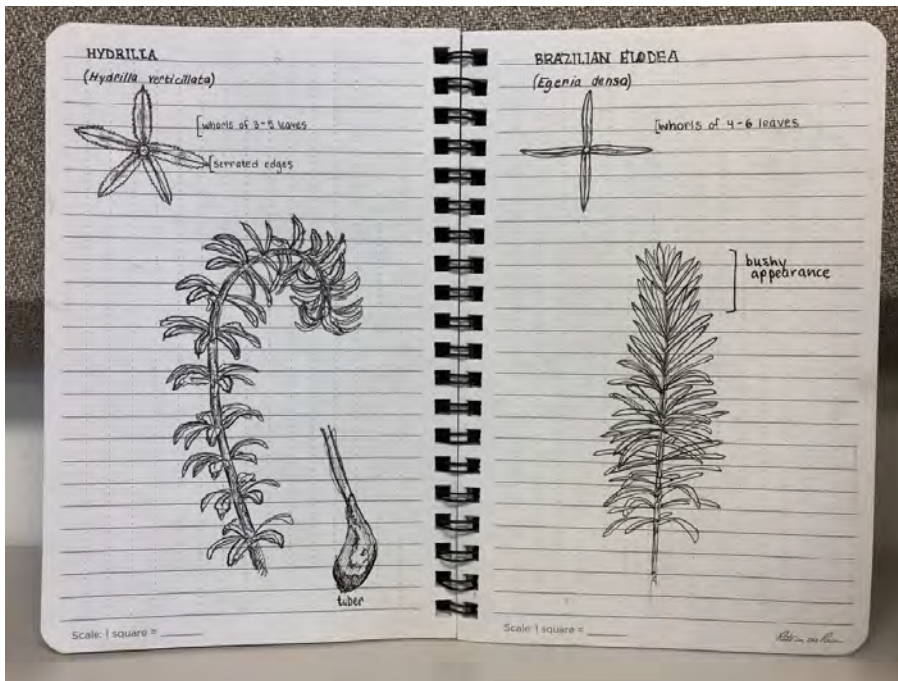
Chemical Treatment

While resorting to chemical treatment isn't always a favored approach, sometimes it is the most efficient and effective way to handle an invasive outbreak. Chemical treatments prove to be most useful and necessary when the outbreak has advanced to a degree where manual labor would not be feasible.

Hydrilla (*Hydrilla verticillata*), an aggressively growing aquatic plant, took root at Harvey's Lake in Luzerne County Pennsylvania in 2014 and quickly infected 250 acres of the lake in a matter of three years. If left untreated, hydrilla will grow to the water's surface and create a thick green mat, which prevents sunlight from reaching native plants, fish, and other organisms below. Hydrilla has stems which can grow up to 25 feet in length, and this mat inhibits boating and other recreational activities.

To quickly manage the outbreak of hydrilla, Princeton Hydro conducted an emergency treatment of the impacted area utilizing the systemic herbicide Sonar® (Fluridone). This herbicide blocks hydrilla's ability to produce chloroplasts, which in turn halts the photosynthetic process. The low-concentration herbicide

does not harm fish, wildlife, or people using the lake. Surveys conducted after the treatment showed it was working; the hydrilla had turned white and was dying off. When the proper herbicide is applied by a licensed professional, chemical treatment can be a safe and very effective way to eradicate an invasive species if the outbreak is affecting the entire ecosystem.



Because the introduced carp are sterile, they do not reproduce and contribute to the invasive problem. And, as an additional measure of protection to ensure that the carp remain in the lake, a screen, or emigration control device, is required. When the correct size is stocked at the proper rate and right time, triploid grass carp can reduce or eliminate the need for chemical treatment of the water to control aquatic vegetation. Once they eradicate the invasive plant species by literally eating it to death, the ecosystem will be able to reset.

Managing Eastern Pennsylvania's Aquatic Invasive Plants

What can you do?

It's important to learn to identify invasive species in your area and report any sightings to your county extension agent or local land manager so that the proper mitigation techniques can be utilized. One way to contribute is by using Pennsylvania iMapInvasives (paimapinvasives.org), an online reporting and data management tool used by community scientists, landowners, and natural resource professionals to track invasive species in Pennsylvania. Additionally, consider developing a stewardship plan for your community to help preserve its natural resources. Princeton Hydro's team of scientists can help you get the ball rolling by preparing a stewardship plan focused on controlling invasive species using nature-based solutions and, thereby, protecting the long-term health of open spaces, forest habitats, wetlands, and waterquality in your community. And, to facilitate know edge sharing, ask your community lake or watershed manager to host an educational workshop where experts can share their knowledge about invasives specific to your area and how best to address them.

Together, we can stop the spread of invasive species!

This story was written by Princeton Hydro, a water resource engineering and natural resource management consulting firm committed to changing our ecosystems, quality of life, and communities for the better. The firm provides integrated ecological and engineering consulting services, collaborating with clients to create resilient, sustainable, regenerative, and nature-based solutions. For more information or to request our services, visit PrincetonHydro.com or email us at info@princetonhydro.com.



Michael Hartshorne - Director of Ecological Services-Aquatic

Mr. Hartshorne is an Aquatic Ecologist who serves as a principal Investigator for many of Princeton Hydro's watershed, river, and lake management projects. His primary responsibilities focus on lake diagnostic studies, ecological restoration, TMDL development, holistic watershed management, and lake restoration. He is particularly skilled in every facet of water quality characterization, from field data collection to statistical analysis, modeling, technical reporting and the selection and implementation of best management practices.



Scott Churm - Director of Field Services

Mr. Churm has directed Princeton Hydro's lake management and invasive species control field services since 2006 and is a licensed applicator in five states. The invasive weed management application programs include species identification and determination of appropriate control response (i.e., chemical, biological, mechanical, or manual). Control operations have ranged from single applications at privately-owned ponds to season-long maintenance operations at large waterbodies and wetland sites. Mr. Churm has utilized both mechanical removal of invasives to restore native landscapes and chemical treatments of nuisance aquatic vegetation and algal growth at hundreds of sites (ponds, lakes, wetland, uplands) totaling more than 1,000 acres. Additional contributors to this story include Dr. Fred Lubnow, Kelsey Mattison, Amy Kruzan, and Dana Patterson.

Reprinted with permission of the Perkiomen Watershed Conservancy

Proforestation Related to Carbon Sequestration and Climate Change Mitigation

by Carl DuPoldt,
DCVA Board Member

What is Carbon Sequestration?

Most people are aware that carbon dioxide levels have greatly increased in the atmosphere and oceans due to fossil fuel use. According to NASA.gov, carbon dioxide is responsible for one-third of climate warming due to anthropogenic activities such as fossil fuel use. About 30% of atmospheric carbon dioxide is absorbed into sea water where it causes acidification that is affecting organisms that build calcium carbonate skeletons. For example, the lowered pH in the oceans is affecting oyster and clam shell formation and reducing skeleton formation in reef building corals (NOAA.gov). Carbon sequestration is a natural or artificial process by which carbon dioxide is removed from the atmosphere, stored, and thus taken out of "circulation" to help mitigate the climate change effects of carbon dioxide.

What is Proforestation?

As trees grow in height and diameter, they sequester carbon from the atmosphere. Evidence suggests that allowing forests to regenerate of their own accord – a process known as "proforestation" – is a more effective, and perhaps more importantly, a more immediate way of sequestering carbon from the atmosphere than planting new forests. Coined by scientists William Moomaw and Susan Masino, the term means, in Moomaw's words, "allow[ing] trees that are already planted, that are already growing, to continue growing to reach their full ecological potential, to store carbon, and develop a forest that has its full complement of environmental services."

What are the Benefits of Proforestation?

According to Moomaw et al., (2019) "Proforestation serves the greatest public good by maximizing co-benefits such as nature-based biological carbon sequestration and unparalleled ecosystem services such as biodiversity enhancement, water and air quality, flood and erosion control, public health benefits, low impact recreation, and scenic beauty."

Why is Sustaining Biodiversity Important?

The biodiversity of a natural community is the number of species in the community. The more species in an ecosystem, and the greater the evenness in abundance of species, the more stable the ecosystem. A spider web with many strands is more stable than a spider web with few strands...if a single strand is lost in a complex (and thus reinforced) spider web, it is less likely to collapse than a simple web. Similarly, an ecosystem with greater biodiversity is more stable. Biodiversity is the key to ecosystem stability. Forests are the most biodiverse land-based ecosystem, and provide habitat for a vast array of animals, birds, plants and other life.

Conclusion:

While planting new forests is certainly beneficial, minimizing monoculture and encouraging more biodiversity are part of the equation to sequestering carbon to help mitigate climate change for future generations. Trees, especially in already established diverse forests, are an important natural remedy to sequestering carbon from the atmosphere.



References:

Moomaw, William R.; Masino, Susan A.; Faison, Edward K. (2019). "Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good". *Frontiers in Forests and Global Change*. 2. doi:10.3389/ffgc.2019.00027.

<https://en.wikipedia.org/wiki/Proforestation>



JOIN THE DARBY CREEK VALLEY ASSOCIATION TODAY!

The Darby Creek Valley Association (DCVA) is dedicated to the protection and enhancement of all of the watershed's resources, including water, wildlife, historical sites, and the floodplains. The organizations immediate goals are to prevent all forms of pollution in the Darby Creek and its tributaries, to prohibit dumping and construction on the floodplain and to expand our educational programs for all residents within the watershed. It also seeks to improve water quality and maintain a debris-free stream through clean-ups and public education. DCVA works to preserve historic properties, such as the Swedish Cabin and the Blue Bell Inn. We need your support. Help us continue to protect the environment for ourselves and our children.

We invite you to fill in the form below, check member category, and mail form with your check to: Darby Creek Valley Association, PO Box 732, Drexel Hill, PA 19026 or join at www.dcva.org

Name: _____ Date: _____

Address: _____ City: _____ State: _____

Phone Number: _____ Email Address: _____

DCVA is a 501(c)(3) Non-Profit Organization – All donations are tax deductible to the fullest extent of the law.

\$15 Senior/Student Membership

\$25 Friend Membership

\$50 Supporter Membership

\$100 Patron Membership

\$250 Protector Membership

\$500 Steward Membership

The Valley is the quarterly publication of the Darby Creek Valley Association. Send your articles to Kathryn Goddard Doms Editor kgoddard@ursinus.edu

Production management and design by Gerry Krieg and Carol Coster

CALENDAR

DCVA Board meetings: Dates for board meeting will be posted on our website.


DCVA Annual Meeting. Saturday, March 4, 9 am - 1 PM
• Meet @ Haverford CREC, 9000 Parkview Drive, Haverford, PA 19041
Register at DCVA.org

Rain Garden Workshop. Saturday, March 18, 9 am - Noon
• Meet @ Haverford CREC, 9000 Parkview Drive, Haverford, PA 19041
Register at DCVA.org



Printed on Recycled Paper

dcva.org Quarterly Newsletter of the Darby Creek Valley Association


Darby Creek Valley Association
P.O. Box 732
Drexel Hill, PA 19026

Non-Profit
Organization
US Postage Paid
Permit #29
Upper Darby, PA