

A Brief History of Doan Brook Watershed Partnership

Many of you know the story the Clark and Lee Freeways – multilane highways that were to have intersected right smack where Doan Brook crosses South Park Road, just upstream from the Nature Center at Shaker Lakes. In the mid-1960s, local citizens, garden clubs, and politicians banded together to defeat approved plans for these freeways, which would have sliced the Shaker Lakes in half and divided the neighborhoods of Cleveland's near eastern suburbs.

The fight against the freeways was in many ways the origin of the Doan Brook Watershed Partnership, although the path from the freeways to the Partnership was somewhat winding. As the freeway fight ended in the early 1970s, interest in environmental issues was strong and increasing. Much of Lake Erie was considered "dead" due to severe contamination, and fires on the Cuyahoga River helped prompt passage of the U.S. Clean Water Act.

The threatened destruction of the Shaker Lakes parklands by the freeways focused citizens' attention on the lakes and Doan Brook. Local high school students made independent investigations and published reports about Doan Brook water quality and illegal sanitary sewer connections that dumped sewage straight into the brook. In 1974, local interest and recognition of the value of the brook and the adjacent parklands led the watershed cities – Cleveland, Cleveland Heights, and Shaker Heights – to form the Joint Committee on Doan Brook. The citizen-led Joint Committee worked to coordinate efforts to improve water quality in the brook and preserve the surrounding parklands for more than 30 years.

Interest in the brook was stimulated once again beginning in June 1998, when the Northeast Ohio Regional Sewer District (NEORS) sponsored the Doan Brook Watershed Study as part of

their Clean Water Act mandated effort to reduce contamination of local waterways. The NEORS study included many public meetings and created a stake-holder committee to review a wide array of approaches to improving Doan Brook. As part of the NEORS effort, the Nature Center at Shaker Lakes employed a watershed coordinator and sponsored the "Year of the Brook" to educate the public about the brook and the watershed.

With the results of the Doan Brook Watershed Study before them, leadership at the Nature Center and members of the Joint Committee saw the need for a more intensive, sustained effort to implement the watershed restoration and public education measures recommended in the study. The Doan Brook Watershed Partnership was formed in 2002 to facilitate and support conservation and restoration projects within the watershed, increase public engagement and awareness of the watershed, and serve as a collective voice for the Doan Brook and its constituencies.

In the seventeen years since our formation, the Partnership has maintained our focus on advocacy for Doan Brook and its watershed and parklands. We have sponsored events ranging from small storm drain stenciling and intimate guided hikes along the Doan Brook gorge to lively Family Fishing Days and kayaking on the Shaker Lakes. We have brought watershed citizens together for brook cleanups and rain barrel workshops. We have restored thousands of feet of the brook, stabilized streambanks, installed rain gardens and other green infrastructure, and coordinated a detailed study of creating an estuary to reconnect Doan Brook to Lake Erie. Most importantly, we have maintained our focus on preserving and improving Doan Brook and the surrounding parklands for local citizens and future generations.

— **Laura Gooch, DBWP Secretary**



Lower Lake in the Doan Brook Parklands

Environment. Sustainability. Equity. Public-Private Partnership.

These are often words heard in today's society, but few times seen tangibly in practice. At the Doan Brook Watershed Partnership one finds a cross section of industries and municipal jurisdictions working together to protect our vital common asset, the Doan Brook Watershed.

The watershed's vital importance and role in our communities creates the opportunity for traditionally disparate entities to extend themselves beyond their silos to benefit all of us. In doing so, we, the participating entities, more completely move our respective missions forward because the region is now a better place to live, work and play.

The Doan Brook plays a significant role in the health of our communities and in the health of Lake Erie. Our collective efforts are highlighted by the completion of three significant restoration projects, and the initiation of the Parkland Planning Process. The Parkland Planning Process will hold prominence in the Partnership's 2020 workplan. The three watershed cities will work together to garner resources and elevate the visibility for this important, local greenspace.

We are proud of the work performed by this Partnership and remain excited for the work ahead.

—Darnell Brown, DBWP Board Chair



Thank You!

Every year since its inception, the Doan Brook Watershed Partnership roster of donors has grown. We thank you for your support.

Make a “Doan-ation!”

Please join us in the stewardship of our watershed and its ecosystem — our backyard — by returning this form along with your 100% tax-deductible donation — or donate online by visiting www.doanbrookpartnership.org

My check or money order is enclosed (made payable to DBWP)

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Doan Brook Watershed Partnership
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The Year in Review

A huge thanks is in order for all who contributed to our cause this year, whether through volunteering, attendance at events, or financial support. Your collective contribution has made 2019 a banner year for public involvement and participation in watershed events. Over the course of the year, Doan Brook and our dynamic and hard-working volunteer group, the Friends of Lower Lake, welcomed a little over 2000 attendees at watershed festivals, hikes, talks, and workshops that we hosted ourselves or in collaboration with partner organizations. Additionally, the volunteers who helped lead our hikes and run our events, contributed to the habitat restoration efforts at Lower Shaker Lake, and came out for our stewardship activities, clean-ups, and storm drain stenciling events logged an incredible 2800 hours of work! Both of these numbers exceed similar measures from any previous year, making 2019 our most successful year thus far for attendance and volunteer engagement. We hope to maintain and build on this momentum in the new year and the new decade to come!

Some Highlights of 2019

Watershed Festivals:

Family Fishing Day and Take to the Lake continue to be our most well-attended and popular events, drawing out almost 800 and just over 300 attendees respectively for fun-filled days of fishing, kayaking, and watershed education. These events would not have been possible if not for the efforts of nearly 125 volunteers who helped with everything from assembling 450 fishing rods for kids at Family Fishing Day to setting up tents and managing sign-ins to spending hours out on the water on Lower Lake serving as safety monitors during Take to the Lake. We also relied heavily on our outstanding organizational partners whose staff handle everything from fishing and paddling instruction to rod distribution and kayak rental to supplementing the events with a diverse array of educational hikes and activities. In particular, we want to thank Cleveland Metroparks Youth Outdoors program, Breakaway Excursions and Famicos Foundation for their leadership. We draw special attention to the volunteers from Disabled American Veterans, who were new to Family Fishing Day this year but made an immediate impact as they took on the challenge of cooking 800 hot dogs for event attendees along with helping out wherever else help was needed.

Hike Programs:

In 2019, our hike programming continued to attract diverse audiences, from school children learning about hydrology and geology along the Doan Brook to community members who were introduced to the trails in the Doan Brook gorge for the first time through our informal weekly hike program to the avid learners who attended our tree ID hikes, photo hike, and hikes with Dr. Roy Larick. Overall, we hosted over 275 people and students on the trails in our local green spaces.

Stenciling:

Taking our watershed awareness education to the streets, roughly 70 volunteers from local schools and the community stenciled 570 storm drains in the Doan Brook, Dugway Brook, and Nine Mile Brook watersheds of Cleveland, Cleveland Heights, and Shaker Heights with the message "Lake Erie Starts Here."

Stewardship and Clean-ups:

Our stewardship activities in 2019 included clean-ups, plantings, and park maintenance conducted by students of local schools and universities, the ongoing habitat restoration work at Lower Lake by our volunteer group Friends of Lower Lake, our annual stream clean-ups of the Doan and Dugway, and stewardship events in the Doan Brook parklands that we co-sponsored with local partners such as National Public Lands Day with the Nature Center at Shaker Lakes and a tree planting along Lower Lake with the city of Shaker Heights and Cuyahoga Soil and Water Conservation District. As a whole, hundreds of volunteers of all ages contributed an incredible 1850 hours of labor towards maintaining, restoring, and improving our parklands from the Cleveland Lakefront Nature Preserve to Lower Shaker Lake along the Doan and throughout Forest Hill Park in the Dugway watershed.

Talks and Workshops:

Rounding out our programming for the year, Doan Brook and Friends of Lower Lake offered a variety of workshops and talks that attracted over 530 local residents who learned about everything from how to construct and install rain barrels to how to promote native plants to the historical and ecological significance of our local watersheds and parklands. Of particular note, the Friends of Lower Lake expanded their volunteer capacity to grant-writing and developing and presenting programming to support both biodiverse habitats in our local parks and our backyards. Peggy Spaeth and John Barber's backyard stewardship series inspired roughly 150 attendees over 3 months and 5 programs. We partnered with Dr. Roy Larick of Bluestone Heights to host a weekend of events celebrating Heights ravine landscapes that included a bus tour of ravine segments, a series of talks focused on Heights habitat and waterways, and a facilitated discussion on the future of the Heights environment.

— *Andrew Klooser, Watershed Programs Coordinator*

**Thanks again to all DBWP volunteers!
Call or visit our website if you are
interested in joining this passionate team.**



2019 Restoration from the Heights to Lake Erie

With a small staff, two full-time and three part-time, we do our best to create consistency in our workplan each year. Events are staggered throughout the year and board and fiscal responsibilities have a regular cadence. The Doan Brook Watershed Partnership is fortunate to receive support and work collaboratively with our three municipalities, Cleveland, Cleveland Heights and Shaker Heights. In return, the Partnership provides services for the cities and the Northeast Ohio Regional Sewer District (NEORS). Like most non-profits, the biggest unknown to our workplan each year is the availability of grant funding.

For every stretch of restored stream, forest, marsh or volume of captured stormwater, grant writing is a sine qua non, and a thoroughly unpredictable journey each time. Never before did the vagaries of grant writing impact the Partnership's workplan as in 2019. We were excited and grateful to win several unique project grants—in addition to reoccurring grants that fund events and education. In the first half of this year, we designed and constructed a large bioswale, removed a low-head dam and designed an estuary habitat for Doan Brook's confluence with Lake Erie.



Restored Doan Brook in the gorge.



Hawken School volunteers installed native pollinator plants around the bioswale.

Fairhill Green Infrastructure Project: We had to look no further than our front door to find partners with an interest in restoring the watershed. Our office is located in the Fairhill Partners (Fairhill) building in the Larchmere neighborhood of Cleveland. Fairhill's mission connects people to lifelong learning, intergenerational relationships and successful aging opportunities. Each month, more than 1,500 people visit our shared, ten acre campus, which was once a Merchant Marine hospital base for the Great Lakes. Fairhill's leadership was receptive to our interest in collaborating on grant funded stormwater management on the campus, as it expanded existing sustainability efforts, such as LEED Gold certified building rehabs and permaculture gardens.



Debris rack from 1975 was removed and replaced.



Erosion as a result of the failed debris rack.

With a grant for over \$300,000 in hand, we hired AECOM to design a bioretention basin and F. Buddie Contracting to install it in the center of the parade ground. Like all bioretention basins, its purpose is to capture, slow, filter, and infiltrate peak flows. The 1.25 acre bioretention basin will capture over twelve inches of stormwater a year, equivalent to almost half a million gallons annually. The biggest hurdle during construction (aside from a rainy spring) was determining the draw-down rate of the sub-soils below the basin. Our technical advisors conducted tests and learned that stormwater infiltration into the soils was worse than originally thought. Thankfully this information was ascertained in time to add an under-drain to the design.

On June 5, 2019, the site received 1.5" of rainfall, but experienced no issue draining down. NEORSD and our partners at Fairhill Partners were very happy with the swale's function after this significant test from mother nature. The project benefits Doan Brook by reducing combined sewer overflows to the brook and Lake Erie. The finishing touch to the basin was a colonnade of fruit trees encircling the parade ground to provide additional

stormwater capture. The trees were an historic element of the military's original design for the campus. DBWP raised funds from the William Bingham Foundation for the trees. A big thanks to our partners at Fairhill, as well as, technical advisors from NEORSD, Cuyahoga Soil and Water Conservation District and the Ohio State University.

Doan Brook Gorge Fish Passage Project: This project site is situated at the center of the Doan Brook's 250 acres of riparian parklands. Known locally as the Gorge, this pristine section of parkland is comprised of steep terrain with mature hardwoods, understory species, and herbaceous vegetation typical of floodplains in Northeast Ohio. This reach is designated as an Audubon Important Bird Area with over 184 species of birds being documented in and around the Gorge. Because the Doan Brook riparian corridor is protected along almost its entire length, it serves as a green oasis surrounded by hard-scape at the heart of the Mississippi and Atlantic migratory flyways.

In 1975, a concrete debris rack spanning the width of Doan Brook was installed across the main-stem. The rack was installed after several large floods inundated downstream neighborhoods with 3-11 feet of standing water. Engineers addressed the flooding in two ways. They removed approximately 5,000 tons of trash and debris from Doan's culvert under University Circle and they installed a large debris rack across the brook to prevent large trees and the occasional discarded couch from entering downstream infrastructure.

Fast forward forty years to this century, the debris rack had failed and become a source of impairment, not prevention. The Partnership, with match funding from NEORSD, won a grant from the Sustain Our Great Lakes Foundation for \$180,000 to restore the site's eroded stream banks and in-stream habitat after the failed rack had wreaked havoc. We also hired engineers from GPD Group to re-evaluate whether a rack was still needed to protect downstream infrastructure. Their modeling showed that a new rack would be necessary, so NEORSD provided additional match dollars to the project for a total of over \$750,000. Enviroscience, a local consulting firm with an expertise in stream restoration, created new stream habitats, specifically riffle, runs, and pools. In addition, the eroded stream banks were fortified and invasive species were removed. The most important component of the new rack is its ability to facilitate fish passage and sediment transport. In short, fish and fine materials can move through the system, as intended, but all the large trees will be captured and removed by NEORSD. We are grateful to engineers from Cleveland, Cleveland Heights, Shaker Heights and NEORSD who served as the technical advisors who asked the right questions during the critical modeling stage. The Gorge would inarguably be even more stunning without a new debris rack, but the increasing frequency of large storms and



Doan Brook Estuary Planning Study

an MLK Boulevard immediately downstream necessitated a new rack with a habitat-friendly design.

Doan Brook Estuary Planning Study: The most exciting restoration work we undertook this year was a feasibility study for estuarine habitat at the confluence of Doan Brook and Lake Erie. Our partners, including NEORSD, Cleveland Metroparks (Metroparks), and the Port of Cleveland (the Port), contributed expertise and match dollars to the grant that was awarded to the Partnership from the Ohio Department of Natural Resources.

We studied both Gordon Park North and the Cleveland Lakefront Nature Preserve (CLNP), which is owned by the Port as potential locations for an estuary confluence with Lake Erie. Gordon Park was donated to the City of Cleveland in 1892 with the condition that it would forever remain a free, public park. The Metroparks assumed management of the park in 2013 through a lease with Cleveland.

Typical of Lake Erie tributaries, the Doan originally had a wide, open floodplain and marshlands with sweeping bends at its confluence. Gordon Park was highly popular from the turn of the last century through the 1950s, with a pier, beaches and boat liveries. In the decades after World War II, however, the park declined. Water pollution affected Cleveland's waterfronts and Gordon Park was no exception. Construction of Interstate-90, in the late 1960s, split the park and isolated its shorelands. In 1976, the mouth of Doan Brook was covered by a US Army Corps of Engineers (USACE) dredge disposal facility and the Doan remains locked in this 3300 foot culvert to this day. After the USACE decommissioned the dredge disposal facility, the peninsula's eighty-eight acres repopulated with biodiversity, including, 280 species of birds, 42 species of butterflies, mammals, reptiles, and

26 native Ohio plants. This green coastal oasis became the CLNP in 2012. Unfortunately, the contiguous Gordon Park shares none of this biodiversity, as it is comprised of mostly of lawn and pavement.

We hired Enviroscience, once again, to gather data, evaluate infrastructure and conduct models to better understand how an estuary ecosystem can be restored. Specifically they were tasked with understanding how a daylighted Doan Brook and restored estuary at Lake Erie would a) manage the high stormwater flows from the entirely urbanized watershed, b) increase fish passage c) provide new habitat for additional communities of flora and fauna, d) improve water quality, e) manage ice and lake fluctuations and f) connect the parks to neighborhoods.

Enviroscience, as well as scientists from NEORSD, determined that it is feasible to create habitat that mimics Doan Brook's original estuary. The concept can be scaled up or down in size depending on the Metroparks' preference. Lake levels would primarily influence the estuary's depth and the degree to which wetland vegetation is submerged. The amount and timing of Brook's influence is flexible, depending on the gate control between the habitat and the culvert.

Lake Erie has lost 95% of its coastal wetlands. Even on a small scale, re-establishing coastal wetlands increases imperative habitat for fish & birds. Estuaries filter pollutants & protect against storm erosion. If a new estuary were built to compensate for Doan's habitat loss at Lake Erie, it would be one of the most transformative projects in the watershed. The Metroparks, with site control, can decide whether to seek funding and move forward.

— Victoria Mills, DBWP Executive Director

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Doan Brook Watershed Partnership

Statement of Activities and Changes in Net Assets
for the year ended December 31, 2018

Revenue and Support

City support	\$75,000	23%
Grants	211,315	64%
Contributions	21,320	6.5%
In-kind support	18,748	5.5%
Misc.	3,876	1%

Total Revenue and Support **\$330,259**

Expenses

Program expense	\$246,627	88%
Management services	19,335	7%
Fundraising expenses	13,934	5%

Total Expenses **\$279,896**

