



tree news



A little-known city park offers a parable on exploitation, climate change, and ecological transformation

Paper Buck & Erin Mallea

South Side Park is a lesser-known Pittsburgh city park. There is no grand entrance. In fact, the signs are obscured by weeds. For many who live and work nearby, this gem in the rough remains hidden in plain view. The scruffy canopy nestled into the cliffs of the South Side Slopes is a case study in emergent practices of collaborative and community-based ecological care. We discovered the park by accident, following curiosity down an abandoned, overgrown roadway. We kept waiting for a dead-end to appear amidst the bushy perimeter of sumac and knotweed. Instead, we found a trailhead into a tangled forest with expansive city views.

The obscurity of South Side Park sets it apart from the more manicured and managed landscapes the city has cultivated. Many of Pittsburgh's city parks have grown from former sites of industry and mining. While this is certainly the case at South Side Park, the distinction here is that forest regrowth has been relatively unmanaged. South Side Park's forest is about ninety years old and might be characterized as a post-industrial wild.

South Side Park encompasses 65 acres spanning three neighborhoods. One's experience of the park shifts dramatically from season to season and trail to trail. In summer lush vines blanket the canopy. The green chaos stands in stark contrast to the commercial bustle of nearby East Carson Street. Midsummer bird song and cicadas momentarily drown out passing freight trains, and the park's verdant "Jurassic Valley" shifts your sense of time: is this a glimpse of a past or future forest? As leaves change color and fall from



their branches, time settles to reveal a post-industrial hillside left to its own devices. Crumbled former foundations and rusted car parts surface beside a mess of honeysuckle and bittersweet. The site's layered history is particularly clear in certain areas. Remnants of industrial infrastructure remain scattered throughout the park, and dirt paths suddenly transform into former neighborhood streets and back to trails again. Upon a closer look, the park is a unique study in contrarian uses of public space, the challenge of native botanical survival, and the demanding social context of forest regeneration work. In South Side Park, residents are networking to cultivate vibrant public space and native ecosystems.



COVER Trees in South Side Park blanketed in grapevine, honeysuckle and poison ivy, fall 2021. Photo credit Erin Mallea. COVER REVERSE View of Arlington Avenue showing the deforested hillside of Arlington Heights, Pittsburgh City Photographer, June 21, 1924, courtesy of Historic Pittsburgh. TOP RIGHT Dead tree marked for removal with spray paint, spring 2021. Photo credit Erin Mallea. ABOVE Canopy covered in non-native vines and vegetation similar to the park's "Jurassic Valley", fall 2021. Photo credit Erin Mallea.



Settlers began mining coal from the hillside around 1838. From 1861–1878, the Keeling Coal Company took over operations of the mine and developed an extensive coal road, a network of underground tunnels stretching from Pittsburgh’s South Hills to the “pit mouth” entrance, located in present day South Side Park. The seams of this activity are still visible and small pieces of coal can be found scattered throughout the park’s topsoil.

As Pittsburgh grew into a larger industrial metropolis, and coal deposits at the site were exhausted, the industrial uses of the site diversified. Oral accounts and nineteenth century maps reveal that the site included coke ovens, a freight and residential incline, two brick yards, a steel barrel manufacturer, slaughterhouses, and a bronze foundry. By 1910, the hillside was largely deforested. When small parcels were first set aside as a park that year, it was utterly barren of vegetation. Nothing but dirt.

The development of the park was gradual and piecemeal. A playground was erected by 1920, 5.5 acres were gifted to the city in 1934, and in 1948 the city approved a plan for a 65-acre park. Homes nestled throughout the park’s steep topography remained until the late 1950s and early 1960s. These homes were typical early twentieth-century working class residential spaces: coal fired with outhouses and limited indoor plumbing. Recreational amenities were developed around the park’s perimeter from the 1950s onward: Arlington baseball field, Quarry Field (home to the South Side Bears youth football and cheerleading program, one of the last remaining youth sports teams in the Hilltop Neighborhoods), and the Neville Ice Rink (demolished in 2010 after the roof collapsed). The historic lack of management within the park’s forested interior created a uniquely isolated public space that allowed for a range of activities. The site served as a dumping ground, teenage drinking spot, hunting, trapping and foraging territory, dirt bike track, hiking area, and secluded encampment site. Some of these uses persist today.



TOP Deforested South Side Park plateau looking north, 1910. Photo courtesy of Bill Landon and FoSSP. Source unknown. MIDDLE Clearing in the park’s tangled foliage, fall 2020. Photo credit Erin Mallea. ABOVE A view of the Duquesne Heights steps on cleared Mt. Washington or “Coal Hill”. Steps follow an Indigenous trail, Pittsburgh City Photographer, March 25, 1911, courtesy of Historic Pittsburgh. LEFT Keeling Coal Company miners, c. 1903, source unknown. Photo courtesy of the Carrick-Overbrook Historical Society. FOLLOWING PAGE Coal collected in South Side Park. Running along the 1040ft contour, the coal seam was mined by the Ormsby and Keeling Coal Companies. Small pieces remain scattered along the park’s Keeling Coal Trail, fall 2021. Photo credit: Erin Mallea.





On one of our first visits to the park we spotted a break in the dense understory vegetation and found ourselves amidst a herd of goats. The goats are critical members of Allegheny GoatScape, a non-profit founded by Gavin Deming that partners with local organizations and the city. The GoatScape goats work throughout Pittsburgh in areas where aggressive non-native plant growth is overwhelming native botanical life. All plants evolved within a balance of symbiotic ecological relations that are particular to a given region. Outside their indigenous habitat, non-native plant growth is unchecked by cycles of predation. Insects that coevolved within specific ecologies often will not eat non-native plants. As non-native plants overgrow and shade out native species, native species disappear. As native insect populations decline, so do native birds and animals that rely on them. This process continues up the food chain, spurning further imbalances and propelling extinction. Biodiversity is lost or endangered. Wildlife is diminished. At the same time, native animals that are well adapted for urban spaces – deer, for example – prefer the native species they have evolved with. Diminishing stands of native plants and trees are quickly munched by the deer. Young native saplings and plants are quickly grazed, even as their total habitat shrinks. Over time, fewer and fewer native plants and trees come to reach maturity. The trend is becoming dire.

The goats are part of an experimental set of tools to help cultivate biodiversity by fostering growth and retention of native species within urban ecosystems. The goats aren't native either. Part of their magic is their penchant to eat — just about anything. Not many native animals enjoy knotweed, but the goats do! Since 2017, Allegheny GoatScape has visited the park once a year to feed on the dense non-native vegetation. Each time the goats trim back the knotweed, non-native honeysuckle, and grapevine, the roots weaken. Overtime, the dominance of these species may slowly ebb.



At South Side Park, the first traces of returning native plant and tree life are becoming visible, but the endeavors of the goats cannot succeed alone. Committed gardeners are also required. Our conversation with Gavin Deming led us to the Friends of South Side Park (FoSSP), an all-volunteer community group leading a forest restoration project at South Side Park. Deep in the Covid winter, we hopped on a zoom call with organizing members of FoSSP, Kitty Vagley, Jeff Neubauer and Janice Serra, to hear more about their work in the park. FoSSP officially formed as an organization in 2015, but began years earlier as a small group of committed neighbors through the South Side Slopes Neighborhood Association (SSSNA). Kitty explained, "For the first 10 years or more, the SSSNA hosted cleanup upon cleanup, hauling tons and tons of tires, appliances and cars. Since 2017, FoSSP has partnered with universities, corporations and folks who were working off community service requirements. We'd have anybody who would join us bring a partner and do huge scale cleanups. Once we were able to clear the landscape of dumping, we started working on the plants."



The first tree planting was in fall 2018, when FoSSP received a donation of ten trees from Plant Five for Life. In 2019, they planted another twenty-eight donated by TreeVitalize, a state-wide grant program supported by the Pennsylvania Department of Conservation and Natural Resources. After planting and installing an irrigation system, the knotweed and grapevine quickly overgrew the young saplings. FoSSP shifted gears and realized that planting trees and combating non-native plant overgrowth would need to progress hand-in-hand. Kitty explained: "It's two prongs. More mature trees give you a better foothold in the future. Save as many trees as possible by cutting and removing vines. Once it's clear, come back regularly to make sure something else isn't growing on it. The more trees you can save, the less you have to plant and the easier it is to plant. Trees like to be around trees." Kitty emphasized the importance of the goats. They made it possible to start working with the plants, without them it's incredibly difficult to grasp the topography and figure out where to work.



At the end of the interview, we asked if we could join them the following weekend. Winter provides a great opportunity for

TOP LEFT Allegheny GoatScape goats at work. Photo courtesy of Gavin Deming. TOP RIGHT Fragment of a former house foundation in South Side Park, winter 2021. Photo credit Erin Mallea. CENTER LEFT Electrical lines sagging under the weight of vines near the edge of the park, winter 2021. Photo credit: Erin Mallea. BOTTOM LEFT Vine covered canopy abutting Quarry Field, fall 2021. Photo credit Erin Mallea.

managing vine and non-native understory overgrowth within forests. In the winter, knotweed, for example, is dormant and brittle. Its tubers and root balls are more easily excavated. Sap stops flowing in poison ivy, making it safer to cut. (While poison ivy is a native plant, forest loss and climatic change have super-charged its growth patterns. Poison Ivy vines are prolific tree-killers.) By clearing vines and root structures in the winter, spring tree plantings will face less competition to succeed.

On a snowy weekend, we found ourselves swinging pickaxes above the Keeling Coal Trail. Unlike the 18th and 19th century miners, our target was knotweed: a tall, stalky perennial abundant across Pittsburgh and many American cities. Knotweed was introduced to the US in the 19th century as an ornamental plant and later used to stabilize cleared hillsides and streambanks. While the city's barren post-industrial hillsides desperately needed the erosion support



knotweed provided, it has made contemporary reforestation efforts incredibly difficult. It is prolific and spreads through underground tubers that secrete allelopathic chemicals into the soil. These chemicals suppress the growth and germination of other plants. Large areas of the urban ecosystem are monocultures of knotweed that are effectively toxic to native botanical life. Knotweed thrives in post-industrial urban spaces and damaged ecosystems where native plants have been displaced by development, deforestation, and industry. It takes hold quickly and once it becomes homogeneous, it can be difficult for native species to regain footing and compete. In winter, when knotweed is dormant, it can be most easily removed. We spent the afternoon prying up knotweed root balls with our pickaxes. FoSSP has removed hundreds of knotweed plants in South Side Park – one by one.

We returned each weekend for the rest of the winter with a dedicated group of neighborhood volunteers, chatting away as we slowly excavated red knotweed buds and tubers. We pulled and cut vines of bittersweet, grapevine, honeysuckle, and poison ivy. As the snow melted and the foliage returned, incremental improvements from the last season's work became visible. The knotweed was thinner, and the de-vined trees sprouted new branches where sunlight had long been blocked. We planted a patch of wild leeks and considered which native shrubs might be best to re-introduce to prevent the re-encroachment of the vines and knotweed.



TOP LEFT Kitty Vagley and Paper Buck mining for knotweed roots, winter 2021. Photo credit Erin Mallea. TOP RIGHT Kitty Vagley, FoSSP Board Member. In addition to administrative duties, Kitty and her husband, Jeff, each spend roughly 10-12 hours a week working in the park, winter 2021. Photo credit Erin Mallea. ABOVE Japanese Knotweed (*Polygonum cuspidatum*), fall 2021. Photo credit: Erin Mallea. BOTTOM LEFT Homes in Pittsburgh's Arlington neighborhood adjacent to the park, winter 2021. Photo credit Erin Mallea.

During our time in the park, we noticed that fall, spring, and summer rains didn't seem to bring mushrooms to the surface as it does in less disturbed forests. We reached out to Adam Haritan, a mushroom foraging enthusiast, teacher, and the founder of Learn Your Land, to ask him how native tree biodiversity impacts mushroom communities within a given forest. Adam explained that trees and mushrooms have a natural symbiosis: "Almost every single plant on the planet has a mycorrhizal association, but most of them are microscopic and they never produce mushroom fruiting bodies. Trees depend on their fungi associations as long as the tree is alive. If you introduce the trees, the fungi will come."

Rhizosphere is a term which refers to the fungal layer of an ecosystem. It is a critical component of a healthy forest. Fungi are intimately linked with the process of cycling

nutrients within a forest. “There is fungus in the soil, and it might be one that requires or is looking for an oak tree,” Adam explained. “I would imagine that by starting with a sapling and putting a cage around it, if it survives, it will attract fungi. Now, of course, we’re talking ten, twenty, thirty, forty years from now. But I think the world will be here in that amount of time. So why not just start out? [You] probably won’t reap the rewards from it, but somebody else will.”

Adam also cultivates native saplings. His focus has been a few oaks he planted in a small corner of his yard. “I have eight pots that have been growing for three years now. If you walk around these woods, you will rarely see an oak sprout. Consider yourself lucky if you see it. It’s almost as uncommon as seeing a rare orchid in Pennsylvania because animals are going to get to it.” Oak supports more native species than any other plant in the northeast. More animals and insects can be fed well by an oak than any other singular plant. Yet, climate change is making it difficult for oak to reproduce in the wild. Botanists do not yet fully understand why. As oak populations diminish, and animals continue browsing on the few saplings that emerge, it becomes harder and harder for young oaks to succeed. Many could find space to grow a few oak saplings for a couple years, and maybe we all should. We have now replaced some of our house pots with native saplings that we will eventually find a home for.

FoSSP has made giant strides, but the project continues to be labor intensive. If they gave up tomorrow, it is likely that much of the progress would eventually be lost. The goal isn’t to bring back a pre-industrial, pre-colonial forest. That is not possible. Today’s forest is a manifestation of all that has passed and all that is present. A more buoyant, species-diverse future forest can be possible. This vision requires the establishment of long-term relationships between the present forest and those who now tend it. Few American cities, counties, or states delegate enough resources to forestry to adequately address the scale of needs faced by urban, suburban, and rural forests alike. Pittsburgh’s Urban Forest Master Plan, developed in 2012 by Tree Pittsburgh and the City of Pittsburgh, calls for unprecedented levels of tree planting. The former mayor, Bill Peduto, called for 100,000 new trees by 2030. The Urban Forest Master Plan aims to increase the city’s canopy cover from 42% to 60% in 20 years to mitigate flooding and erosion, promote water quality, decrease surface temperatures, and increase native wildlife populations. It is hard to see how the eight full time staff members for the city forestry department, even with additional support, will be capable of planting the trees the plan calls for.

At South Side Park, a long-neglected city-managed park began to be transformed by neighborhood residents who realized they would need to be the ones to create the changes they wanted to see. After the crumbling Neville Ice Arena was shuttered in 2001, SSNA became concerned about the park’s fate. They built community support for a new vision of South Side Park. More than a decade of work by residents removing garbage, building trails, mapping streams, and tree tending helped spur the City to take action: Pittsburgh City Planning began to develop the South Side Park Master Plan. What started as a grassroots effort is now part of a multi-million dollar effort by the City, partner organizations, and stakeholders. Phase One of the Master Plan, focused on improved stormwater management and updated recreation facilities, is now underway. During initial community input sessions, some expressed concerns about the City’s ability to manage the proposed improvements given the previous decades of neglect. However, many remain hopeful and excited after witnessing the work and commitment of friends and neighbors. SSSNA and FoSSP built relationships, formed networks with like-minded organizers, and are working to build an ecological space that may someday be increasingly generative, edible, and biodiverse.

One morning as we cut and pulled down tangled vines, we asked Jeff and Kitty how they deal with the never ending nature of this endeavor. How do you resist a sense of defeat or hopelessness that so often pervade conversations around climate change? While there is not a lot of clear change in the day-to-day, there has been an incredible evolution since they first started. It’s taken years, but now they can envision the park of ten years ago and see how far they’ve come.



View of the park’s “Jurassic Valley”, barren in winter, with the South Side Slopes in the distance, winter 2021. Photo credit: Erin Mallea.

Resources & Further Reading

Allegheny Land Trust
 Botanical Society of Western PA
 Carnegie Museum of Natural History: Botany Department
 Friends of Southside Park
 GoatScape
 Heritage Nursery
 Jurassic Valley Ecological Restoration Plan
 Learn Your Land
 Pennsylvania Watershed Council

Pittsburgh Forest Master Plan
 Pittsburgh Parks Conservancy
 Pittsburgh Parks For the Love of Parks Podcast
 Pittsburgh Shade Tree Commission
 Pennsylvania Watershed Council
 Powdermill Nature Reserve
 South Pittsburgh Reporter: Master Plan Phase I
 Southside Park Goatfest
 Southside Park Master Plan

Southside Slopes Neighborhood Association
 Tree Pennsylvania
 Tree Pittsburgh
 Tree Tenders
 TreeVitalize
 Upstream PGH
 Western Pennsylvania Conservancy
 Western Pennsylvania Mushroom Club

