

THE TIREDNESS OF FAIRMOUNT PARK: AN ISSUE OF OVERUSE AND
URBANIZATION

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STSC 179
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4/26/13

Introduction

When discussing urban green spaces, the city park is often considered. Notable city parks are Central Park, and more recently Chicago's Millennium Park. However, when discussing the best parks in the United States, one must consider Fairmount Park in Philadelphia. The two hundred year old Fairmount Park saga is one of civic pride and botanical interest. Fairmount Park is the largest inner city park in the United States. Its immense dimensions leave it bordering both the Northeast Philadelphia and West Philadelphia. It spans from just off the Benjamin Franklin Parkway, one of downtown Philadelphia's major arteries, to the city's edges at Chestnut Hill, Bala Cynwyd and Northeastern suburb borders. The park is home to Colonial mansions, public art, sports fields, greenhouses and historic structures. The park system accounts for 8,900 acres that include an additional 63 neighborhood parks giving a total of 9,200 acres. It contains varied landscapes from ravines in the Wissahickon, to paved and widely traveled running and rollerblading paths along the Schuylkill. The park's use as a public recreation outlet has not wavered from its inception in the 18th century, as stated by the original members of the Fairmount Park Commission, "Fairmount Park is to be laid out and maintained forever as an open public place and a park for the health and enjoyment of the people" (Klein 22). The greatest threat that the park faces now comes from its recreational users. The demands put on the park result in wear and tear, at many times in the year exceeding the refurbishing capacity of the Fairmount Park Commission. Additionally, as is the qualm of many national, state, and city parks, improper use of the park leads to overall deterioration. The park's history has been a reactionary one, a progression of responses to

urban development and modernization. For the remainder of the paper we will define Fairmount Park as the East/West Region of the park, leaving out the 63 neighborhood parks that are still bounded by city on all sides (this excludes the Wissahickon valley, although it may be discussed briefly.)

Natural History of Fairmount Park

Geological History

Early observations of geologic deposits in the Philadelphia region revealed that this area of the country was once under a glacier. The presence of an actual glacier over this region has, however, been brought forward as the only explanation of our surface deposits (Lewis 1880, 18). Most of the Park lies on what is known as the “Wissahickon Formation,” this is a large schist deposit dating back to the Precambrian era (Goodwin 1964, 40). The schist is metamorphic rock, however, since the deposits there have been numerous igneous intrusions to the area, such as granite and granite gneiss in the period called the “Appalachian Revolution,” and sandstone and shale deposits during the Triassic era (Goodwin 1964, 40). The presence of Chickies quartzite in the Cambrian period of mined stone from the Philadelphia area indicates that a shallow body of water once covered the area (Goodwin 1964, 41). The evidence for this marine environment lies within the fossilized figures of pre-Cambrian era sea mollusks and sea worms (Goodwin 1964, 41). Additional nods to marine ancestry trace to the quartzite itself, Chickies quartzite forms after sand layers accumulate, and once compressed reveal the aforementioned fossilized marine animals (Goodwin 1964, 41). Now the rock structures

that can be seen in the park are the product of sediment accumulation in the Triassic period and later. Schist and quartzite in folded beds still represent most of the rock in the park.

Water System

Fairmount Park is situated inside of the Schuylkill river drainage basin, as well as the Schuylkill watershed (Hart 1999, 287). This means that all of the runoff water from the park after snow melts or rainfall drains into the Schuylkill. All of these water sources including the Schuylkill river drain into the larger Delaware river, serve to cut down the sediment layer and result in series of stream valleys (USGS, 1). These stream valleys provide the water delivery infrastructure to the Eastern region of the state that Philadelphia sits in. Similarly, the streams that flow through the park all end up at the Schuylkill River as well. Although, its final destination is the Schuylkill, 95% of the water that runs through the stream valleys of the Park originates outside of the park (Davis 1999, 115). The park contains over 60 miles of stream that supports all of the biota within its bounds. Among the streams are a series of headwater streams that then break into the five important creeks; Cobbs, Wissahickon, Pennypack, Poqueesing, and Tacony (Davis 1999, 115). The greatest threat that this system faces is pollution and the effects of urbanization on runoff; these will be discussed in the environmental history section. The flow of this water over the terrain for thousands of years has resulted in the current topographical features of the region, most notably in the prevalence of ravines and valleys within the park's bounds. The Schuylkill River is perhaps the most notable in

its influence over the region, as it serves as the collector of all streams, but also as a definitive boundary for development and urbanization.

Flora and Fauna

Not too much time will be spent discussing the natural species of the park, only so much as to give an idea of the diversity it holds. Though the Park contains many pasture areas and sprawling hills, the land where the Park is situated was once all forested (Klein 1974, 9). Early settlers would have known a tree rich Philadelphia, “At the time of Penn’s Woods more than 17 million acres of forest land, including Wissahickon’s primeval forest and gorge covered Philadelphia and the future area of Fairmount” (Klein 1974, 224). In fact, these woods were so prized for lumber that they were used extensively, and by 1786 an effort for reforestation was undertaken (Klein 1974, 224). This began a long tradition of planting in the park, not necessarily with regard to natural species. These early plantings of Poplars, Maple, Hemlock, Spruce and Pine, have now so assimilated themselves as to be considered “natural” foreign species (Klein 1974, 225). In fact, in colonial times, the numerous mansions located within the Fairmount area often planted flowering and “lavish” species to ornament their estates, such as Robert Morris’ lemon grove (Klein 1974, 225). Since the Fairmount Park Commission has been operating, there us an official forestry policy adopted that follows a model of original and non-ornamental European planting models.

The park is home to a forest ecosystem, temperate deciduous forest to be exact, and a sort of modified forest ecosystem, or riparian zone, in that these areas are not forested but rather open grassland bordering forested sections. Additionally, many sections of the park are urbanized and paved. In fact if not paved or “natural”, 59% of the park is landscaped and only 24% is natural land, which is most heavily concentrated in the Wissahickon and Pennypack sections (Hart 1999, 17). The real break with the North Eastern American indigenous species tale, comes with the change from forest to plantation set up around the Philadelphia areas in the late 1600s. It was the European emigrants who began planting species they brought with them either for use or “ornamentation” that began a new story for species surviving in the Fairmount and Philadelphia areas today (Hart 1999, 38).

The Wissahickon Valley section of the park remains its most forested and diverse. Oak, hickory, tulip poplar, beech are the most common trees in that area. The underbrush is mostly shade brush, however two exotic species pervade as well, most prevalent among them is goutweed and pachysandra (Hart 1999, 46). The Fairmount East/West Park, is the most heavily landscaped area of the park and is also the most heavily traveled through and used. In this area of the park, “most remaining forests found in East/West Park are very disturbed and occur as small, scattered patches, mostly in ravines (especially in West Park) or on the slope of the plateau (East Park)” (Hart 1999, 46). The most prominent canopy trees of this park were the black locust, ash, and oak. However, the Tulip poplar and Devil’s Walking Stick have dramatically increased in number since the late 1990s and are asserting themselves among the underbrush and canopy

populations (Hart 1999, 46). The Tacony, Cobbs Creek, Poquessing, Pennypack, and FDR parks all are home to Oak, Beech, Black Locust and Ash primarily, however, they each see different exotic species encroachment. The most notable intruder is the Multiflora Rose, which exists at the shrubbery layer of these areas, with its most serious advances in both Tacony and Cobbs Creek (Hart 1999, 47). In summary, a 1997 study by the Academy of Natural Sciences found that within the parks bounds there are 47 different species of trees and approximately forty herbaceous species, fifteen of which are introduced (Hart 1999, 48). With regard to change, and how much different the park looks today when compared to the records of early settlers, “Comparisons of the existing forest types with those recorded by early floras and travelers indicate that the dominant native tree species are similar, with the exception of decreases in chestnut and hemlock. However, changes in occurrence of a number of less common species have occurred” (Hart 1999, 48). This is to be expected in that the park has been protected land since it was established, and there is a vested interest in its preservation.

As for fauna the park is now home to select mammals such as raccoons and deer, and several species of rabbit. It is home to three species of snake (one water), turtles, snapping turtles, salamanders, frogs and bullfrogs. Twelve species of fish dominate the park. It has Holarctic and Nearctic species of mollusks in its streambeds and river, as well as common insects, crane flies, butterflies, skippers and moths (Rosenburg 1999, 51). The wildlife highlight of the park is the birds. As rapid suburban development continues the park has turned into a sort of sanctuary for birds in the area, there are the common “back-yard” birds that can be found, and other key species, in all over 55 species of bird

live in the park. Fairmount boasts the most diversity in birds for any urban North American park (Rosenburg 1999, 55).

The flora and fauna of the region have not changed much over the centuries since the park was established on “untouched” lands. However, the quantity of species is what should fall under conservational question. For example, the filling in of the wetlands and Delaware feeding tributaries has reduced the number of waterfowl and some predatory birds. However, conversely the increase in forested area particularly in the Pennypack and Wissahickon areas have lead to increased diversification of bird species in the park. This exchange has resulted in equilibrium with certain species losing out (Rosenburg 1999, 56)

Environmental History of Fairmount Park

Fairmount Park was founded in 1855 as a response to the concern over the city’s water supply (Klein 1974, 1). By the 1850s, Philadelphia was a thriving metropolis and one of the most prominent urban centers in the country. However, there was some concern that the industrial contamination downstream of the river was affecting the city’s water quality, and so land was acquired to protect the river as well as to install a water works for pollution control (Klein 1974, 6). The city’s 1790 yellow fever epidemics had long set the City Council into motion trying to find a location for water treatment (Klein 1974, 6). The city began to buy up areas of land in and around the shore of the river in order to protect its water source (Klein 1974, 6). In 1812, the area of the park further up the hill from the water works was selected to hold its reservoir (Klein 1974, 1). Then, in

1844, the first major acquisition of land in the form of bankrupted financier Robert Morris' estate, Lemon Hill, was obtained by the city and Fairmount Park was created. While many estates followed suit to Lemon Hill and were gifted to the city by aristocratic inhabitants, many of the properties within the Park boundaries were seized. In 1867, Eli K. Price, the incumbent state senator of Pennsylvania at the time, passed the Act of Assembly, which granted the city to pay (small figures) owners for their Fairmount land. In the same year, the most important institution for the park was set up, The Fairmount Park Commission.

The Fairmount Park Commission was the Predecessor for the Fairmount Park Conservation Agency that exists today. Both organizations have championed the park's needs and its restoration. For example, once ownership of the larger Wissahickon area fell under the commission, they prohibited any industrial sites from existing there to curtail pollution (Klein 1974, 25). These organizations have also been the impetus behind all changes and installations in the park as well. They can be thought of as the board of directors for the park's space.

The site of Fairmount was first discovered in a survey that William Penn had done in 1682. The area where the Philadelphia Art Museum now sits and the entrance to the West/East Park is located was dubbed "Faire Mount" (Klein 1974, 1). Once the Water works were installed and plans on the rest of the park could commence, Fairmount Park grew in prominence. The Park in colonial times would have looked much different than it does today. Its main use was also recreation, but this did not come in the form of sports fields, and there was little paved area aside from the roadways to and from the mansions.

Paths and trails began to be developed as more and more flocked to stroll the grounds and discover nature. The park began to be heavily landscaped, but not to the extent that many of the urban parks were elsewhere in the country. Famed landscape architect and chief designer for Central Park in New York City, Frederick Law Olmstead, worked on an 1872 drafted plan for Fairmount's Eastern Park, but after this draft was disconnected from Fairmount Park planning. He is believed to have been able to offer no radical suggestions to a "park wrought by nature" (White 1975, 42). The park developed into landscaped gardens and trails, greenhouses, touring of the old mansions, al fresco picnicking and concert viewing, as well as the site of fairs. The Schuylkill was the premiere site for rowing in the nation, and fishing was also a well-practiced pastime in the creeks and rivers of the park (Klein 1974, 160). From John Bartram's Garden in 1782 to the 1953 construction of the mock Japanese Tea House and Garden, Fairmount has been home to heavily designed areas of botanical treats (Klein 1974, 262).

Now we move into modern times. The park has lost most areas of landscaped gardens. The Bartram Gardens still exist and flourish, there are two greenhouses, the Shofusu Japanese Tea House is still present, and the Conservation Agency still retains planting privileges and mostly sees them out in the form of reforestation. Hundreds of statues exist in the park through the movement of the early 60s to incorporate public art into the park (Klein 1974, 301). The primary use of the park remains recreation. There is an extensive network of trails throughout the Wissahickon basin and beyond into the Pennypack territory. Open green fields are used for a myriad uses from informal sports games, to picnics, to the sites of family reunions and barbeques. The park has become the

recreational outlet for a whole city, but also for the site of sporting fields for bordering neighborhoods. The Fairmount Baseball league, Soccer Association, Football Association, and Recreation Department are all based out of the park. With the sports fields has come many paved over areas for easy commuting. Fairmount Park has been used since the dawn of the recreational movement, and continues its prowess as the king of recreation to this day.

This is not necessarily a bad thing. The park allows an urban population access to a world of trees, grass, streams, ravines, wetlands, trails, wildlife fascination, and more. However, even though there is heavy use for the park there is a disconnect for most residents between their daily operations and the health of the park. There are two sources of change that have affected the park the most, and continue to be the cause of much change: heavy recreational use, and increased urbanization of park periphery. The question that is now apparent is what to do to change the behavior of a people toward a plot of land, when that behavior is steeped in historical precedent and has remained, for the most part, unchanged since the area of land was bounded. The issues of urbanization on stream quality and wildlife will next be discussed, as well as hazardous recreational use, before returning to a discussion of these concepts in a larger framework.

Essentially, the issue with urbanization boils down to streambed degradation. Urbanization also affects the habitats and survival of many park dwelling animals that can venture outside park bounds for food. Urbanization also decreases air quality for the park, and increases artificial influx of growth stimulants present in fertilizers and some domestic mulch (Hart 1999, 285). However the issues it causes with stream flow are

paramount because they have a trickle down effect to all flora and fauna in the park. The streams are also the source of freshwater input into the Schuylkill.

Increased urbanization, i.e., paved areas around the park, leads to faster flowing and accumulating runoff. This means that when it rains, torrents of water come rushing down the streambeds, upsetting life within the scene and effectively deepening the streambed through erosion (Hession 1999, 115). The streambeds of the park are naturally on the shallow side, rarely seeing depth of more than 4 to 5 feet. With the erosion to peak runoff, beds can get up to 7 feet in depth. This changes the habitat for plants that thrive with the understanding that sunlight can penetrate through to the bottom of the stream, and for animals that survive on these vegetations, and who are not meant for turbulent waters. When runoff is not high, as in it is not a time of rainfall or snowmelt, the streams can be reduced to small trickles. This is the other side of the sword. Due to pavement and compacted land, little water can penetrate through the ground and become part of groundwater trickle. This means that the streams are constantly existing between states of peak discharge and rapid flow, to a state of little water input, and trickling pace (Hession 1999, 118). Habitat instability is the number one cause of decrease in fish and waterfowl populations in the park (Hession 1999, 118). If we want to view the issue a bit more selfishly, streambed instability leads to unpredictability in the streams behavior, which can lead to flood and abrupt changes in direction affecting the geography of our suburbs (Hession 1999, 119).

Heavy recreational use is also a major factor in the park. The issue stems less from picnicking and sports field use, and more into the relaxed structure of what types of

recreation are allowed, and even supported by the park. ATV use is not prohibited, and many “off-roaders” trudge through the forested areas blazing their own paths and scaring wildlife (Davis 1999, 29). For the past seven years the Thursday night bike races through the woods off of the Belmont Plateau area of the park have been tearing up the trails. A blogger in 2005 wrote this about his encounter with the trails after the racers had been through; “obviously 60-80 bikes is gonna leave a mark but this was re-f@ckin-diculous. at one point the trail went down none too steep hill and there is just a skid mark the whole way down the hill on the center of the trail... these idiots (i guess in some drive to "race" each other) were riding like complete morons destroying the trails” (Mill 2005). Clearly these sorts of recreational uses are harmful to the park and require the use of maintenance and financial resources in the park. There are some restrictions that exist to curb park goers in their activities, but are they particularly useful ones for the overall integrity of the park? A 1997 article at Philly.com talks about one in particular, “The parking area for the scenic Fairmount Park overlook is closed and the road itself - Belmont Mansion Drive - will be closed to all traffic on weekend evenings.

The move is an attempt to break up the throngs of mostly young people who congregate by the hundreds on the parking area and block the roadway (Avery 1997). Protecting the woods and natural lands of the park is mostly done through signs deterring littering, and campaigns by the Fairmount Park Conservation Agency to hold clean up the park events. The park is an integral part of life in Philadelphia, and we need to decide as a city how we want it to continue to function into the future.

If people complain about heavy traffic and noise in the park, then we must realize that as a collective we have an expectation of this urban green space. We want it to mimic a purely natural setting. If we build the roads that make virtually all aspects of the park available how can we then restrict what goes on within them? Fairmount is so uniquely situated amidst urban space. For many, the roads through the park are just a daily commute. Shutting them off at night would wreak havoc on traffic patterns to Northwest Philadelphia and the suburbs. As a city, we need to define our relationship with the park, or perhaps publicize more the restorative efforts of the FPCA and other organizations working within the park. Perhaps we can play up the park as a natural setting in some citywide campaigns and advertisements for the park. The park is such a stable feature of the city and it's refreshing scenery is almost taken for common. When you are driving through on your way to the Please Touch Museum, or just to cut across to 33rd and Oxford, you note that there is green around beneath you but it's familiar scenery. In reality we can't treat the park as just another section of the city. It has a unique composition, and therefore can't be looped with other city civic projects. The 1999 study of the park by the Academy of Natural Sciences was a huge step for the city. It funded a research project that would lead to better understanding of where the health of the park is at. Now we are left with the results and the harsh reality of trying to make changes in peoples lifestyles. Do we have time for urban education? Should there just be a lot of red tape and new rules? Going forward, I would advocate for education. Perhaps all the participants in the athletics programs have to donate a weekend of restoration work to the park, or sit through one "conservation orientation" per season. Educating the urban

populace is key, otherwise the history of the area repeats itself, or the actions of few key players for change go unanswered or without any public response.

The study of Fairmount Park may not seem like a hot environmental topic. There aren't endangered species in the park, we don't risk the erosion of city banks into the Schuylkill river and there aren't issues of toxic waste being sealed off in park regions. However, as urban sprawl will only continue as we move forward as a planet, Fairmount Park represents how our future generations will be exposed to nature. Probably in confined spaces within populated areas, where nature is seemingly, left untouched, yet routes and trails are everywhere to be found.

What first interested me about this project was the idea that the use of a space has remained unchanged. It is similar to looking at a national park. How do these spaces that we have always protected and have always been for public enjoyment get affected? The answer is they do, they are affected, and they aren't museums to nature, because nature is not static. Fairmount Park has remained virtually unchanged for hundreds of years. Instead of examining an area in danger, I chose to look at a very domestic area that has been under human protection since it was discovered. If we can track its progress, we can find relationships that exist between our human culture and the environment we live in. Here is a space that is treasured and loved by so many with such utility, and yet, it is slowly becoming unhealthy. Loss of species of trees and animals, stream degradation, increased areas of toughened and compacted land due to overuse, and relaxed regulation that allow the public huge amounts of freedom in what kinds of activities they can engage in within park bounds. What I learned is that the city and the park are so conjoined in the

mind of Philadelphia residents that it is thought of as just another civil service the city provides.

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