# STEWARDSHIP PLAN

## DUFF PARK

**4500 School Road South**
**Murrysville PA, 15668**

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2020

**A special thank you to the following individuals for their contributions of time, resources and expertise:**

**Betsy Aiken** **Ben Sampson** **Pia van de Venne**

**Other Acknowledgements:**

**Dick Byers**
**Bill Paxton**
**Loree Speedy**
**Tammy Colt**

**Friends of Murrysville Parks**
**Regional Trail Corporation**
**Turtle Creek Watershed Association**
**Murrysville Parks & Recreation Commission**
**Westmoreland Land Trust**

**Shelly Tichy**
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Duff Park Stewardship Plan

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# INTRODUCTION

Less than 20 miles east of Pittsburgh, Duff Park is an extraordinary place. Murrysville's first community park, this 220 acre conservation-oriented park occupies forested hillsides above the stretch of Turtle Creek that runs parallel and very close to US Route 22. Situated behind this commercial corridor, Duff Park is separated from the businesses along the south side of Route 22 only by the Westmoreland Heritage Trail (a bicycle and walking trail), and the creek itself. In spite of its location not far from a busy highway, the park is a sanctuary of great natural diversity and beauty.

Duff Park came into being via a partnership between Pennsylvania, Murrysville, community organizations, and individuals. Then Franklin Township, Murrysville acquired the first land for the park in 1968, making use of PA Project 70 ("the conservation bond project") funding matched by the Municipality. Three parcels were combined to form the park, which was named for the Duff family who owned the largest of them. The park's development as a nature preserve immediately followed, with the effort and contributions of many community organizations (including the Lions Club, Garden Club, Jaycees, Boy Scouts and Girl Scouts), the high school, community businesses, and plenty of volunteers.

Over the years since, additional parcels and rights of way have been donated to extend the park, most notably the extremely generous donation of 49 acres by Theo and Pia van de Venne in 2013. This donation was doubly valuable, for it served as a match for the Westmoreland Land Trust in partnership with Westmoreland County to acquire 3 additional properties to further expand the park and conserve a 21 acre greenway connecting Duff Park to Murrysville's 260 acre Pleasant Valley Park. This resulted in the establishment of a block of over 500 acres of connected natural parkland.

Today Duff Park is many things to Murrysville: a reminder of our community's history ….. a nature preserve containing an important old-growth deciduous forest ….. a popular regional destination ….. a Pennsylvania Wild Plant Sanctuary widely recognized for the abundance of its woodland wildflowers ….. and from time to time a rallying point for community attention, investment, and effort.

Several events of local history are associated with the park. General John Forbes passed by in 1758 en route to take Fort Duquesne and rename it Fort Pitt, thereby setting the stage for the growth of the city of Pittsburgh. In 1782 Duff ancestors narrowly avoided an Indian attack that felled their neighbors and burned their home. In 1878, Michael and Obediah Haymaker drilled the nation's first commercial gas well adjacent to this property, with Obediah sustaining mortal wounds guarding the well in 1882. In 1968, Murrysville's establishment of Duff Park was the catalyst for the formation of the community's first Parks Commission.

Overlooking the forest near the park pavilion is a grand old white oak tree that has lived through all these events, its height exceeding 107' and its age estimated at over 300 years. In addition to this venerable tree, Duff Park contains one of Pennsylvania's few remaining deciduous old growth forests, its age in 2020 estimated at 225 to 250 years.

Over 5 miles of trails have been developed in Duff Park, most of them hiking trails built with minimal impact upon the land, placed to permit access without disturbance to the park's many colonies of wildflowers. Some trails cross steep slopes and provide thrilling views over hillsides. Park improvements have been limited to trails, discreet signs, benches, a pavilion with picnic tables, a drinking fountain, and one trail of crushed limestone running alongside Turtle Creek.

This trail was named for William Funk, who built much of it, following a gentle and scenic route along the creek. In 1990, the upgrade of two crossings of this trail over Turtle Creek was executed in dramatic fashion when the Air National Guard made use of a helicopter to set new bridges in place. With Turtle Creek running along one side of most of the trail and a steep forested hillside on the other, this inviting trail is now one of Murrysville's most-used recreational facilities unrelated to organized sports.

If other trail names such as Violet, Trillium, and Hepatica conjure up images of idyllic settings, it is rightfully so, for Duff Park bears a collection of wildflowers exceptional in variety and numbers. In 2001, Murrysville's Environmental Advisory Council published a list of over 60 wildflowers in Duff Park and their approximate times of bloom. Early volunteer activities in the park included planting trees, shrubs, and flowers, but today the park is maintained strictly as a nature preserve, with volunteer efforts directed to maintaining trails and removing invasive plants. Led by Pia van de Venne, a devoted champion of native plants, every year volunteers devote hundreds of hours to this work to protect the park's wildflowers.

Spring brings a profusion of bloom, attracting photographers and wildflower enthusiasts from a broad area. Birdwatchers also flock to the park; the birds of Duff Park listed in 2000 by Murrysville's EAC and the Westmoreland Bird and Nature Club total 58, 18 of which are known to have bred there.

Over the years, Duff Park has drawn the people of Murrysville together – first to acquire the land, then to establish the park, catalog and document its resources, improve it, enjoy it, and when necessary protect it. Shortly after it was acquired, the park was vigorously defended by many in the community against the prospect of its loss to a rerouting of US Route 22. Subsequent threats to the park's natural preservation have included consideration of logging, construction of gas lines, and the intrusion of invasive insects and plants.

Duff Park has provided immeasurable benefit to Murrysville, but its maintenance is not without challenge. Deer pressure has led to a visible reduction in the population of many wildflowers and an attendant increase in the presence of exotic invasive plants, some of which persist every year in spite of the hard work of park volunteers. From time to time there are conflicts between groups of park users, with those protecting native plants sensitive to the possibility of their damage from walkers, cyclists, and dog owners. Turtle Creek carries pollution from upstream mine drainage, and over the years the creek has shifted, occasionally flooded, and significantly eroded its banks as its channel has been narrowed and straightened with surrounding development. With busy Route 22 nearby, it is not known whether airborne pollution and noise from vehicular traffic may adversely impact the park. Finally, maintenance costs for the streamside Funk trail are high, mostly due to landslides and erosion, at a time of increasingly tight municipal budgets.

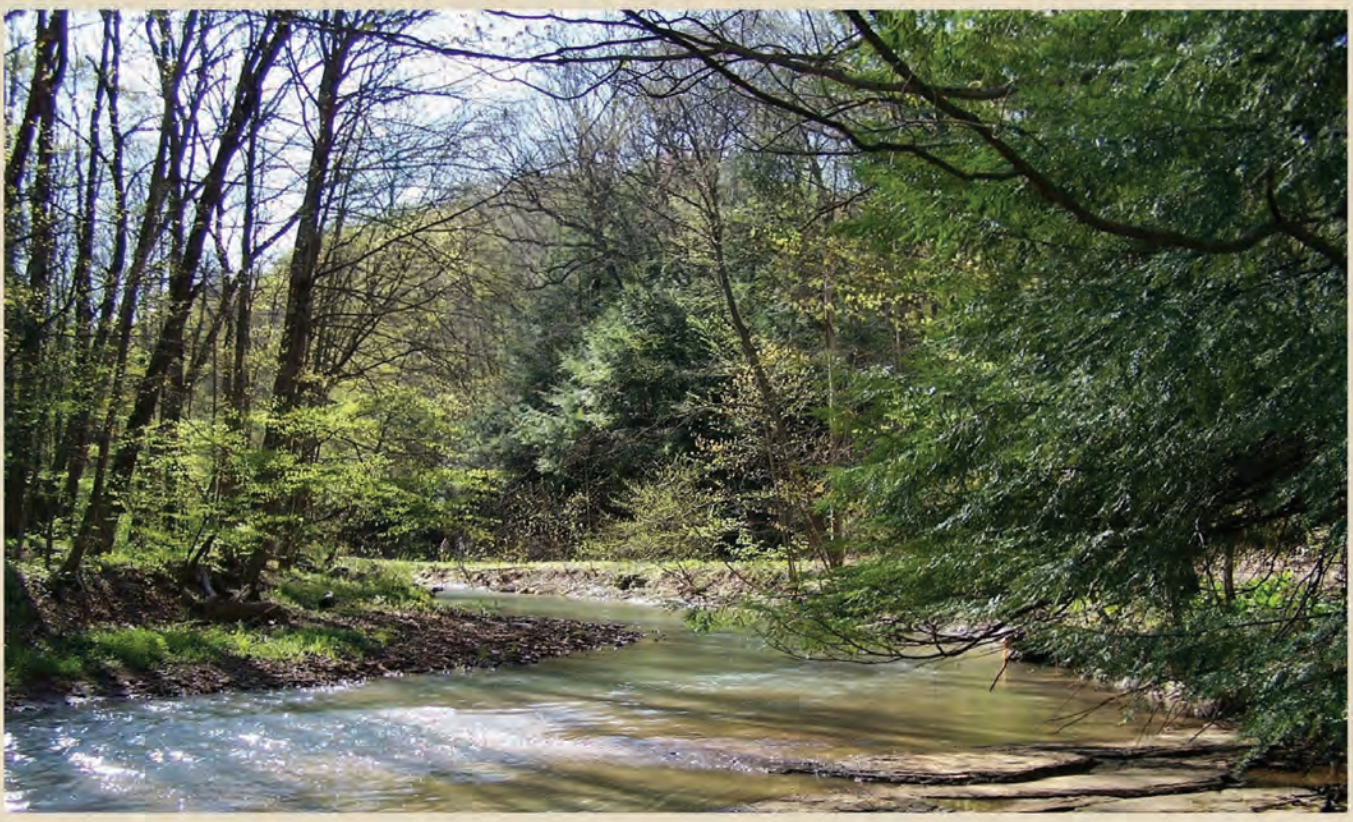
In spite of – or maybe because of – these challenges, Duff Park continues to draw people together. Controlled hunting in the park has helped to contain the deer population. Conscientious volunteers continue to nurture and protect the park, and ongoing efforts are made by Murrysville's Parks and Recreation Departments to accommodate park users in ways that protect the park and all stakeholders' interests. The Turtle Creek Watershed Association and the Westmoreland Conservation District have coordinated many corrective initiatives to improve water quality and stabilize Turtle Creek's banks

In some ways, the grand old oak near Duff Park's pavilion is similar to the park. The oak's height and breadth reveal that it once grew alone, and that the forest grew up around it. Likewise, the land of Duff Park witnessed the early history of Murrysville, and the community grew up all around it. Just as the old oak is appreciated for its beauty and age, Duff Park is valued for its beauty and the age of its forest.

Over the years, the great oak has encountered stress, possibly due in part to the proximity of a gravel trail and park pavilion. Correspondingly, Duff Park has met stress from surrounding development, manifest in such things as today's deer pressure and waterborne pollution. For the white oak, in 2002 an attentive Murrysville resident recognized a need and stepped forward to sponsor its trimming and professional care. This effort is representative of that of so many contributing to the conservation of this great natural resource for the enjoyment of all.

After planning for several years, in 2017 and 2019 Westmoreland County completed construction of segments of the Westmoreland Heritage Trail that run along Turtle Creek at the park's northern boundary. This trail connects Duff Park to the six mile long Turtle Creek Greenway, and brings scores of new visitors to the Greenway and to Duff Park. This trail is part of a regional trail system that will run to Saltsburg and points beyond in the northeast, and which also has potential to join the Great Allegheny Passage in the southwest. These plans bring the likelihood of even more visitors to Duff Park, for the park will serve as a fine diversion for trail users to enjoy this sanctuary of sylvan grace.

-Betsy Aiken
Westmoreland Land Trust



# PURPOSE & GOALS

This stewardship plan aims to set out a long-term, shared vision for Duff Park, as well as provide strategic direction to guide decision-making about the park for an extended period of time. It is the road map that guides park work to protect natural resources while facilitating visitor experiences and learning opportunities. It also helps staff make sound decisions about where to invest financial and human resources. Management planning and implementation is a continuous cycle of engagement, decision-making, evaluating and reporting. This plan is intended to be a working document and should be re-visited based on future park assessment and evaluation, public feedback, Municipal & local organization's strategic priorities and other factors.

**Duff Park should be managed in a manner compatible with the following primary goals:**

**1. Preserve** Protect the natural resources of the park: conserve, enhance and restore when appropriate the park's diverse flora and fauna. Promote long-term sustainability through maintaining the park's healthy and functional natural ecosystems.

**2. Utilize** In a manner that is compatible with goal 1, provide for a variety of opportunities for visitors to experience and utilize the park's natural features. Recognize and accommodate the diverse needs of different types of visitors. Provide a safe, high-quality public use.

**3. Educate** In a manner that is compatible with goals 1 & 2, foster an understanding of the parks' unique natural resources. Instill an appreciation for the park and its preservation by educating visitors. Galvanize an informed, involved, and active community around conservation and stewardship of this shared natural area.

**4. Expand** In a manner that is compatible with goals 1, 2 & 3, pursue and engage future park expansion and connection opportunities.

## Adaptive Management


"Adaptive management is a process whereby evaluation of monitoring results are compared to the goals or defined "measures of success" so that management practices can be changed or modified as needed. Because we can't know everything about managing natural areas, adaptive management has become a widely accepted method of conducting research on the effect of land management practices on an ecosystem. In this scheme, the land manager constructs a model of how he or she believes the system works, implements a practice that attempts to move the system toward the desired condition, monitors the results of that practice and assesses its success. This practice can range from casual observation to systematic research on the effectiveness of management activities, but in each case the land manager attempts to learn from the experience.
For example, if the manager believes that the most effective way to remove an invasive species is mechanical removal followed by herbicide treatment of the stump, then that practice can be applied and the mortality rate assessed. The practice could be compared to other treatments (cutting only or herbicide only) or a single treatment can be monitored for its efficacy. If the practice works as intended, it can be repeated in the future. If not, another practice can be tested and implemented." [3]

# HISTORY

**Historical Sketch of Duff Park**

How Duff Park came to be goes back to the days of Hannastown and the Scots-Irish settlers who had moved into the area. John, the second son of John and Ann McIlduff, was a rather fortunate individual coming into the world in 1786 on a farm in what is today the town of Export. Just four years earlier his mother and older brother Alexander just missed being scalped by the Indians shortly after the Hannastown Raid. The Indians, not satisfied with burning Hannastown, the Westmoreland County seat at the time, continued to raid the settlements in the path of their retreat. They came upon the McIlduff cabin and finding it unoccupied, set it ablaze. Ann McIlduff and her infant son Alexander, after receiving advance notice and hearing the Indian war cries, hid themselves in nearby bushes and were not discovered. Their neighbors, Jacob Langanecker and his wife, were not so fortunate and were killed. Another account, in a book called The Gold Dollar, says John McIlduff was on his way to Hannastown the day of the attack to record the deed to his 500 forested acres while Ann and Alexander were on a picnic. The family rebuilt the cabin and John was born four years later. Westmoreland County at the time was still pretty much a wilderness. The howl of the timber wolf and snarl of the mountain lion could still be heard. The mighty chestnut still dominated the forest and the trees of today's Duff Park were saplings with the exception of the pavilion white oak which was in at least its 70th year.

John McIlduff (the son) grew up and worked the Export farm all his life. When his father died in 1816, he and his two brothers changed their name to Duff, probably to avoid the prevailing prejudice against the Irish at the time. The three brothers each inherited a portion of the farm their father acquired legally in 1803. John's portion contained two mills, built by his father along Turtle Creek that were eventually to become Remaley's Mills in Export, so John was probably a miller more than a farmer. I wasn't able to determine exactly when the grist mills were built. John Duff married Mary Patterson and they had 10 children, but only four survived. Their fourth surviving son, born Aug. 6, 1824, on the Export farm, was James Henderson Duff, the grandfather of Governor James Duff for whom Duff Park is supposedly named.

James Henderson Duff probably learned farming from his uncles and milling from his father, but he wanted to be a doctor and graduated from the Jefferson Medical School in Philadelphia in 1847. He began his practice about five miles west of the family farm in Newlonsburg. In 1848 he married Susanna Thomas Miller of Newlonsburg, but later returned to the family farm in Export, probably around 1859 when his father died. There he had a very busy practice until the advent of the Civil War. He offered his services to the government and treated wounded soldiers from the battles of Bull Run and Antietam. Later he worked in the hospitals of the Washington D.C. area. He returned home early in 1865, sold the 119-acre family farm in Export and bought a farm in Newlonsburg of approximately 300 acres. Why this move was made is not entirely known. A descendent speculates it may have been due to some bad business investments or the desire of his wife to live closer to her family in Newlonsburg. Part of this new property would later become Duff Park.

James Henderson Duff continued his medical practice in Newlonsburg. His medical office was dismantled and reconstructed on the new property. He worked the farm part time while doctoring until his health prevented him from visiting his patients on horseback. In 1874 he moved his practice to the

Carrick area of Pittsburgh to be closer to his son, Dr. John Milton Duff, who was also setting up a practice there. His son has quite a history. He served in the last year of the Civil War at the age of 16, was captured by the Confederates, escaped, and later became a surgeon and professor of obstetrics in the Western Pennsylvania Medical College (U. of Pittsburgh). Another son of James Henderson Duff, Joseph Miller Duff, the father of James H. Duff who became the state governor, was the pastor of the First Presbyterian Church in Carnegie. He is the author of the previously mentioned book, A Gold Dollar, Studies in Nature and Life, published in 1926, that discusses the Hannastown Indian raid and the burning of the McIlduff and Langernecker homesteads. The book also states that Forbes Road passed on the other side of Round Top Hill, probably the origin of the story that Forbes Road passed through Duff Park, a claim heatedly challenged by local historians. For more on Joseph Miller's son who became the state governor, you can google four pages from the Pennsylvania Historical and Museum Commission.

While the two Duff families resided in Pittsburgh, they used the farm in Newlonsburg as a summer residence. There were two houses, a barn and a cottage. Joseph also used the old medical office of his father as a dining room and kitchen. There was a swimming hole on the property, the damned up stream that runs through today's Duff Park parking lot. All these buildings were located above the sharp bend of school Road past the old municipal building. None of the buildings were situated on what is today's Duff Park.

A new house was constructed along School Road in 1914 for the wife of Dr. John Milton Duff (Jenny Kirk). John and Jenny had two daughters, Bess and Hattie who married two brothers, Robert F. and John M. Phillips respectively. Robert F. and Bess Duff Phillips had a daughter – Jane Stanton, now deceased, who happens to be the mother of Ellie Stanton, a friend of mine in the Westmoreland Bird and Nature Club. Ellie referred me to her cousin, Bob Phillips, who had done extensive research in the genealogy of the Duff family and was my major source of information for this article.

Bob reviewed a paper written by Jane Stanton who remembered taking the train to Murrysville to visit her grandmother Jenny Kirk Duff. There was a small one-room station serving the area and two trains a day from Pittsburgh, one in the morning and one in the evening. She remembered the property having a large hill named Round Top that was full of snakes and a barn that was the children's favorite place to play on rainy days. There was one bathroom in the house that only the older folks were allowed to use. The kids had to use the outhouse. There could be as many as 20 family members there at a time and she could not remember where everybody slept. The old swimming hole in the stream that ran into Turtle Creek was well used.

Sue Templeton Duff Jackson, a daughter of James Henderson Duff and her husband were the last ones to occupy the house along School Road. She died in 1954 and the farm was sold in parcels to various groups through the 1980's. Dr. James E. Townsend of Murrysville, fearful the older woods of the farm would be sold to developers, got a group of people and businessmen together to raise funds to purchase some of the land. Some of the people in this group included former mayor Dorothy Pack, Mrs. G. Taylor Davis, Edward Ardisson, George Stewart, Paul Homce and Ed Ritts. They were successful and raised sufficient capital to purchase three parcels totaling about 143 acres. The parcels included land owned by H.G. Barnett (36.7 acres), the Duff Family (88.9 acres) and the Sloan family (18.1 acres). The

park was named for the owner of the largest track and for the family member who became the governor. This land was turned over to the municipality for a park in 1967 and finalized in 1968. Later additions, and a donated right-of-way, brought the total park acreage to 148.

The Murrysville Garden Club, Lions Club and local Boy Scout troops immediately began some work on the park. The Garden Club provided an entrance sign, and the Lions Club built picnic tables. The scouts made tree ID signs, built a bulletin board, and helped Garden Club members plant wildflowers transplanted from the site where Lake Arthur now stands. Orchids, redbud trees and mountain laurel were ordered. Apparently, only the mountain laurel survived.

No sooner had Murrysville acquired the park than it was threatened with destruction. Throughout the 50's and 60's suburbia had spread beyond Murrysville and people as far out as Delmont and Blairsville were commuting to Pittsburgh. The four lanes coming out of Monroeville narrowed to two lanes at the county line making Murrysville a bottleneck and traffic crept through the town. Penn Dot decided in 1967 to put a limited access by-pass around Murrysville and proposed five different routes, two south, two north and one right though the middle of town. The route PennDOT liked best was the one that ran right through the center of the newly created Duff Park. The by-pass proposal also went through Marlee Acres, a housing development east of the park. Citizens of Marlee Acres led by Jim Hinson, formed a group to protect the park and persuade PennDOT to route the highway through town over route 22, but PennDOT said they would have to raze too many businesses and the Newlonsburg Church. I remember attending public meetings in which both sides gave their arguments. Part of the citizen's argument was that part of the park was purchased with project 70 funds which were designated for recreational, historical and conservation purposes. This battle went on for seven years and the citizens lost. Governor Shapp decided that the highway would go through the park. But by that time it was the mid-70's and the country had just gone through a period of severe inflation with wage freezes during the Nixon administration. The cost of building the highway had nearly doubled and Penn-Dot abandoned the project because of the expense. The traffic snarl would strangle Murrysville for almost three more decades before a 4-lane highway through town was completed. I notice the church and most of the businesses are still there.

In 1977-78, the Bicentennial Bikeway (now the Funk Bikeway) was bulldozed through the park and two treated wood bridges were constructed over Turtle Creek. This was quite a disturbance, but one that everybody accepted since it's the most heavily used trail in the park. Bikeway is sort of a misnomer since most users walk, jog, or run their dogs on it. The two wooden bridges were replaced with steel ones that were lowered into place by helicopter in 1991.

Early in 1982 Council thanked Walter and Mary Jankovek, Vincent and June Hall and Youngwood Electronics for donating land or right-of-ways that brought Duff Park up to 148 acres. Later that same year a serious threat came to the park when William Funk, a professional forester on the Parks and Recreation Commission, had a forest management plan done on the park for $800. Called a "thinning operation" by the Kimball forestry consultants of Ebensburg who did the study, it would in fact have removed all the ancient big trees that are the parks unique feature. There are only three old growth hardwood stands in Pennsylvania and Duff Park is one of them. I have seen one of the other stands and

it doesn't hold a candle to the beauty of Duff Park. Murrysville has something very special in the center of town. Not only is it a rare old growth stand, it also ranks among the best vernal flower shows in the state. I know of no other community in the United States that can boast of a municipal park with both such features right in the middle of town. But in 1982 all that was threatened by a proposed logging operation. At the next public meeting of the Parks and Recreation Commission there was standing room only for a crowd of angry citizens, not just Murrysville residents, but members of out-of-town conservation organizations. According to Volume 36, Number 79 of the Penn-Franklin news, letters were read by spokesmen of the Western Pennsylvania Conservancy, Powdermill Nature Reserve, Murrysville Garden Club, Westmoreland County Botanical Society and the Audubon Society of Western Pennsylvania. Also present, but not mentioned, was Bruce Sunquist, representing the Allegheny chapter of the Sierra Club. The meeting proceeded cordially with tempers staying under control, but the commission got the message that the trees were not to be cut. There was a professional forester among the ranks of the protestors speaking against cutting the trees. I sat beside the late Jim Dunbar and listened as Bill Paxton, a consulting forester, while politely giving all due respect to the commission and forestry consultants, described exactly what this thinning operation was going to amount to with skid trails and all the other unsightly features associated with any logging operation. The Park Commission tabled the decision and eventually cancelled the timber management plan.

As a result of the meeting concerning the timbering of Duff Park, a loosely organized watchdog group formed to keep an eye on the park. A Duff Park phone chain was drawn up to initiate an emergency meeting should anyone see or hear about a disturbance or threat to the park. I still have my mimeographed copy. There are 42 names on it. Of the 19 people I know on the list, including myself, six have moved away and three are deceased.

The next threat to the park was a 1983 proposal by the Parks and Recreation Commission to thin the pine tree stand on the western end of the bike path. That pine stand did need some thinning, but it was well past the prime time to do it which would have exposed the remaining trees to windfall. A logging road to haul the logs out was not in the best interests of the public, so that idea was also abandoned.

Then came the biological disaster. The years 1988 and 1991 had record heat and drought. In between those drought years came the first gypsy moth invasion of Western Pennsylvania. The trees were therefore under stress for four straight years and some of the ancient oaks did not make it. But, miraculously, they didn't all die, and the unique feature of the park is still preserved, although some of the grandeur was lost. The dead trees will eventually topple and should be left to decompose where they fall. Logs, large or small, are an important ecological feature of any forest. A few of the big trees are already down.

Between 1991 and 1997, Dr. Fred Utech did a plant survey of the park and catalogued 185 species. Dr. Utech emphasized the job was by no means complete and other species likely remained to be identified. More species were added in a bioblitz survey and a Steward Management Plan in 2008.

When William Funk died, the town council changed the name of the Bicentennial Bike trail in 1995 to the Funk Bikeway in Mr. Funk's honor for services rendered to the community. About the same time the gas company over trimmed the trees along the pipeline that runs up Coronary Trail. Those trees overhung the trail and kept it well shaded so that understory vegetation was relatively sparse. The tree trimmers though, removed all the overhanging branches and cut down some of the trees along the clearing edge. I don't know what the objective was, perhaps the company wanted to inspect their pipelines from the air, but the trimming operation allowed sun on the pipeline for a good two hours of the day and the overlying brush grew thicker, particularly multi-flora rose. It gave a group of park volunteers dedicated to removing invasive species a real challenge. Pia van deVenn, a private citizen, organized a team of volunteers to help her remove invasive plants, a project she began on her own in 1999 that she continues to work on today. Through her efforts and her volunteers, Duff Park is not completely over run with invasive plants like surrounding areas. She reports her progress in a column "Walking Murrysville Trails" in the Penn Franklin News.

On Oct. 16, 2002, arborist Jason Reed took a 3" core sample out of that big white oak near the picnic pavilion, counted the rings and projected the count onto the remainder of the radius. He came up with an estimate of 325 years for the tree's age. This estimate rests on the assumption that the tree grew at the same rate all its life. No one knows if it did or not, but If the estimate is accurate, it started growing in 1677 well before any colonists were in the area. It's the only evidence I've heard indicating the Duff Park oaks are an undisturbed, or virgin stand.

Duff Park received much attention in the summer of 2008. Friends of Murrysville Parks (FOMP) began gathering records and data on all aspects of the park. At the request of the Municipality for a Forest Stewardship Plan, FOMP engaged the services of retired forester Bill Paxton to provide the design. Bill's team began surveying in mid-May and worked through August. Additional plant species were discovered and added to Dr. Utech's list of the 1990's. A real surprise to everyone was blackjack oak (Quercus marilandica), a species not associated with this part of Pennsylvania. Black maple (Acer nigrum), was another species that came as a surprise, particularly to me. It was found to be common throughout the park. It is difficult to distinguish black maple from sugar maple unless you are looking very closely. Some botanists consider them the same species. The best way to tell is by the less divergent wings of the samaras (fruits), but if the samaras haven't yet formed, you have to notice the slightly curled edges of the black maple leaf and the presence of stipules. There are many exceptions, so you have to examine quite a few leaves. If you don't know black maple is present in a sugar maple stand, you can easily miss it. I never knew they were there. I had just assumed all those u-shaped leaves belonged to sugar maples. So one should look closely at those sugar maples. Many of them are black maples.

The forest stewardship team also measured a massive red oak. The peak of the crown was measured at 145 feet making it possibly the tallest tree in Westmoreland County. The size of that oak rivals the American chestnut trees that towered all the other tree species before the blight in the early 20th century all but wiped them out. American chestnut stumps and sprouts still survive today in the park. The Stewardship Plan was completed in September and turned into the municipality.

FOMP followed up Paxton's survey team with a bioblitz in late September, 2008, organized by FOMP's Dr. Kyle Selcer. A bioblitz is a 24-hour search of as many species possible by teams of experts. It began at 6 p.m. on September 26 and ended at 6 p.m. September 27. This bioblitz was sponsored by Duquesne University's School of Natural and Environmental Sciences and the L. Robert Kimball and Associates of Ebensburg. Biologists from several organizations including Duquesne University, the Carnegie Museum, and the Botanical Society of Western Pennsylvania arrived to participate. Live humane mammal traps were set, fish were temporarily immobilized by shock equipment, insects were collected and plant species identified. The preliminary report, for the plants, combining the total from the Stewardship survey, Dr. Utech's list and the bioblitz was 376 species. The bioblitz also listed 41 species of birds, six amphibians, 13 mammals, 7 fish and 23 species of snails. Dr. Timothy Pearce of the Carnegie Museum said only one of the 23 species of snail was non-native. This contrasts sharply with Pittsburgh City parks where the number of non-native snail species is usually 50%. Something else unusual was the fact all four species of the Striata genus known to occur in Pennsylvania were found in the park. It is rare all four species are found together in the same area. Invertebrate station 2 was particularly rich with 12 snail species. From a snail perspective, Duff Park is relatively healthy.

In addition, FOMP also acquired the services of Loree Speedy of the Western Pennsylvania Botanical Society to map the distribution of the invasive species. This information will make a nice data base for future reference and aid Pia van deVenne's volunteer teams in their efforts to hold down the spread of the invasive plants. Loree found an aerial photograph of the park taken on May 24, 1939. Much of the area on Roundtop Trail and both sides of the hill was a pasture. The Duff family leased land to local farmers in the latter years of their ownership. Loree was amazed at the different degrees of recovery from the pasture in various parts of the park. Bob Phillips sent a Duff Family photograph of a loaded hay wagon on School Road drawn by two horses heading for the barn probably taken in the 1920's. Hikers can see evidence on Roundtop Trail that the area was once pastured. Because of the steepness few people walk Roundtop, but it offers a view of the Cathedral of Learning and the USX building from the top on a clear day before the foliage returns.

The seven species of fish found in Turtle Creek on the bioblitz died on November 25, 2008 when a gasoline pipeline behind Atria's restaurant burst and dumped 7,500 gallons of gasoline into the creek. Gone with the fish are all the aquatic insect larvae and other invertebrates of the stream on which the fish depend. It will be several years before the stream gets back to normal. Fish species on the tributary stream that runs through the Duff Park parking lot were unaffected and will provide a reservoir for repopulating Turtle Creek. More species were found in this side stream than in Turtle Creek due to pollution from mines in the Export area.

There will be more threats to Duff Park as time marches on. I noticed the cottony tufts of the woolly aldegid on two of the hemlocks during the bioblitz on September 27. Left untreated, the hemlocks will die within the next six years. The emerald ash borer is now present in western Pennsylvania and sudden oak death was accidentally transported to New England last year. All these new diseases pose a threat to the health and biodiversity of Duff Park. Duff Park is a gem, one of only three old growth hardwood forests left in Pennsylvania with a riot of spring flora. It should be kept as natural as possible. Invasive species threaten the native wildflowers. There are arguments for and

against maintaining the battle against invasive species, but we need to keep at least one area free of these aggressive plants just for a source of comparison on what effect the invasive plants are having on the local flora and fauna. This, however, is a never ending task that must be carried on in succeeding generations.

I have left out many small details of this history for brevity and concern about the accuracy of the sources. Those who know more details may wish to add to the data being compiled by FOMP on Duff Park. I thank Bob Philips of Alexandria, Virginia for his genealogy study, Ellie Stanton of Point Breeze for her loan of her grandfather's book, A Gold Dollar, Betsy Aiken of Murrysville for her many helpful emails and extensive notes on Duff Park, and Joan Kearns of Murrysville for her references.

By

Dick Byers

(published in The Conservancy Corner in the Penn-Franklin News, Delmont Salem News, Penn Trafford News as a five-part series on February 9, 2009; February 11, 2009; February 16, 2009; February 18, 2009; and February 25, 2009)

# INVENTORY OF PARK LANDS

FROM NATURAL AREAS IN & AROUND WESTMORELAND COUNTY, EDITED BY DICK BYERS

# Duff Park

Sue Miller and Dick Byers

**Owner:** Municipality of Murrysville

**Location:** Murrysville, PA

**Size:** 237 acres

**Directions:** From the McDonald's traffic light on Route 22 in Murrysville, travel East about1.5 miles and then turn right at Sheetz at the intersection of Route 22 and School Road South. The main entrance is about 1000 feet on the right hand side.

**History:** Duff Park was acquired for $50,000 in 1968 after a 5-year effort initiated by Dr. James E. Townsend of Murrysville with residents and businessmen working together to raise the funds and partly financed by a PA conservation grant. The park came in three parcels, owned by H.G. Barnett (36 acres), the Duff family (89 acres)-named for the owner of the largest tract, and the Sloan family (18 acres). In October 2014 the Westmoreland Land Trust secured an additional 74 acres which increased the size of Duff Park by almost 50%. Two properties are from private owners, Cynthia Yerick and RDE Land Co., LLC, with grant funds from the Pennsylvania Department of Conservation and Natural Resources. The third property was donated by Theo and Pia van de Venne, and served as the required match for the DCNR grant. The parcels were transferred to the Municipality of Murrysville for annexation to Duff Park and officially celebrated in a ceremony on October 2, 2014.

**General Description:** Duff Park is a very special place. It is one of only three remaining old growth deciduous forests in Pennsylvania and it has survived disturbance in the heart of a suburban community. Its largest trees are oaks with an estimated age 250 to 300 years. In 2002, arborist Jason Reed took a 3-inch sample out of the big white oak tree near the main entrance parking lot, counted the rings and projected its age to be 325-years-old. The tree stands next to the pavilion near the main entrance. The oak trees are also a draw for migrating spring warblers.

Over 60 species of wildflowers and 41 tree identification signs can be found on at least 5 miles of well-maintained trails in the park. In 2010, Duff Park was designated as a **Wild Plant Sanctuary** by the DCNR. Then on August 5,

**The Pavilion White Oak**

2015, as an additional safe guard, Duff Park was designated a **Community Old Growth Forest** and protected as such in the Old Growth Forest Network.

Starting out as a deer trail in 1977, the Bicentennial Bikeway was renamed the William Funk Bikeway for Bill Funk, who worked for many hours with his bulldozer pro bono for much of the effort and then for nominal compensation, in the construction of the broad trail along Turtle Creek. In 1992, the Public Works and Engineering Departments replaced the two treated wooden bridges constructed in

1977-1978 along Turtle Creek. The bridges were flown in by helicopter and set in place from the air with cooperation from the Air National Guard.

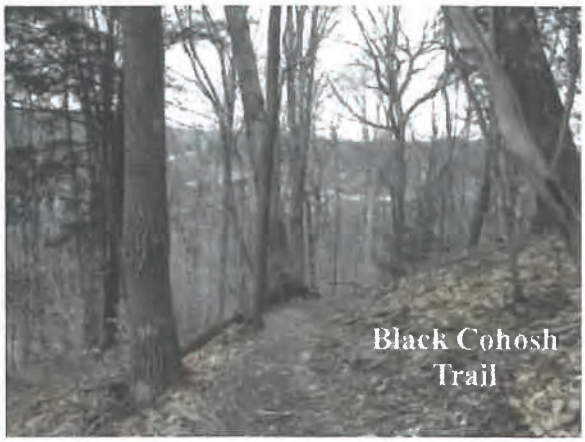

The Funk Bike Trail that crosses Turtle Creek twice provides a flat walking and biking trail for about 1.5 miles before climbing an incline to Round Top Road.

In 2008 and 2014 a BioBlitz to document biodiversity at Duff Park was organized by Dr. Kyle Selcer of Duquesne University's Bayer School of Natural and Environmental Sciences.

**An old beech tree leans over the bike trail**

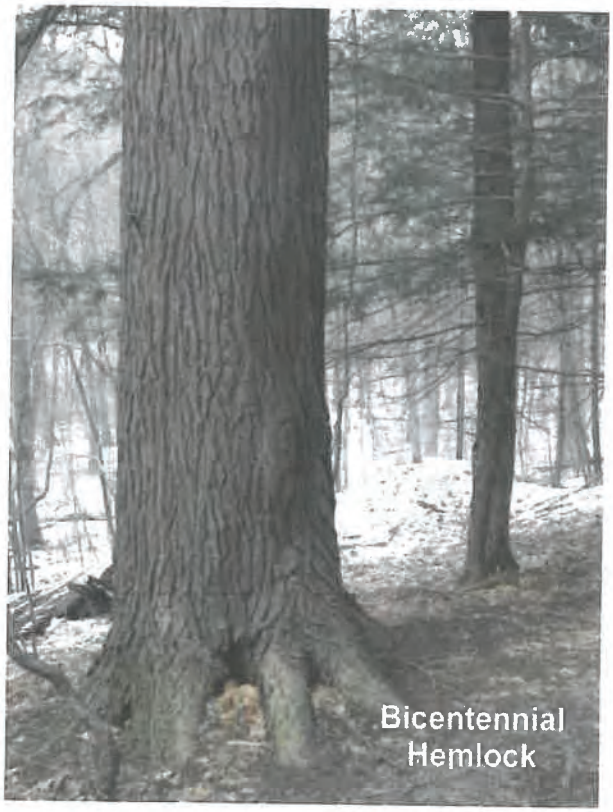
In the spring, the hillsides are botanically rich with beautiful wildflowers including **blue-eyed Marys, Virginia bluebells, spring beauty, cutleaf toothwort,** and **trillium.**

**A trillium stand in the 1970's**

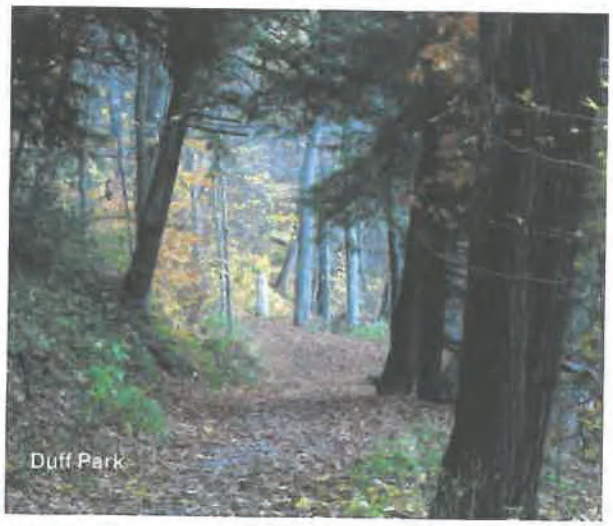



**Black Cohosh Trail sits high above Turtle Creek and offers views when leaves are down**

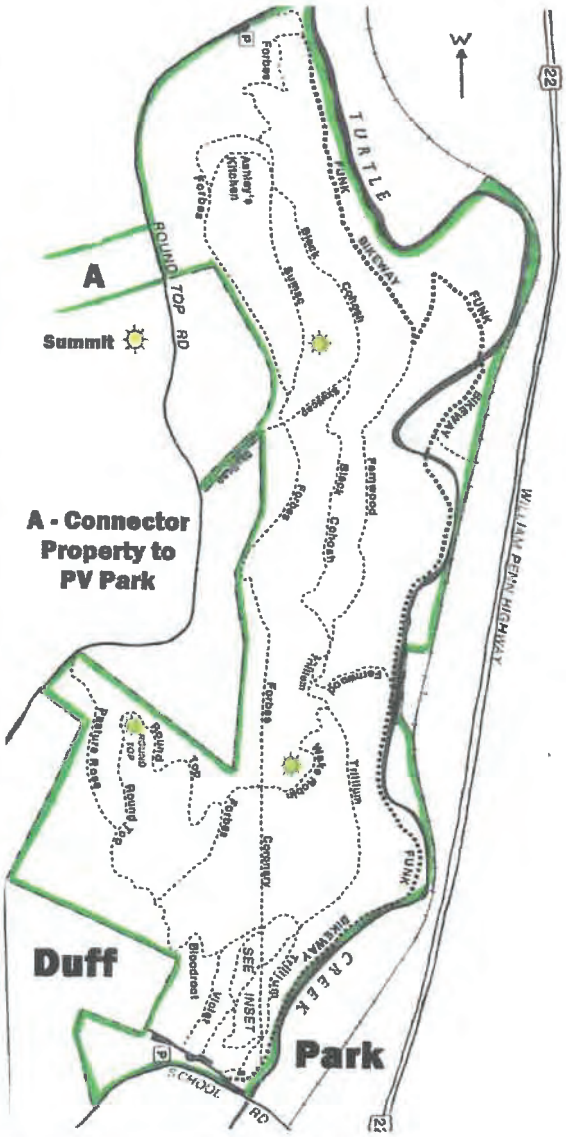

**Visit the Duff Park pine plantation today to see the changes**




Oaks are not the only old growth trees in the park. There are also impressive specimens of hemlock, beech, hickory and sugar maple.

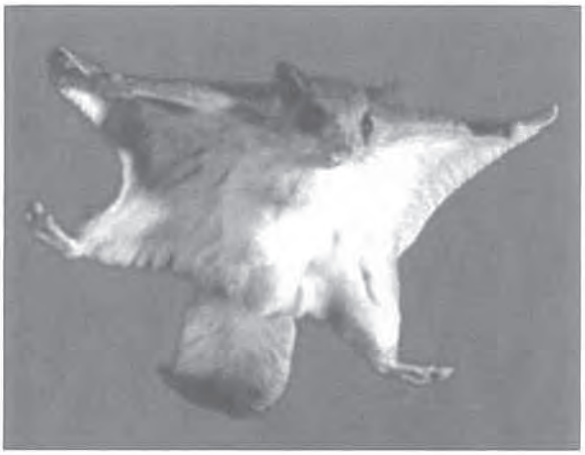



**Duff Park bike trail on an early fall morning**




Violet colored Hepaticas are a Duff Park specialty in early spring.

Two mammals are usually found in old growth, the flying squirrel, for certain in Duff Park, and unconfirmed, the southern red-backed vole. Both species are especially fond of eating the underground truffles, the fruiting bodies of the mycorrhiza fungal filaments that form an underground mycelia network throughout the forest that helps these big trees in water uptake. The voles and flying squirrels, by feeding on the truffles, spread the fungal spores throughout the forest, a great service to both the fungus and the trees.



**Flying squirrel (internet photo)**

**Raccoon are Commonly Seen in Duff Park Old Growth**

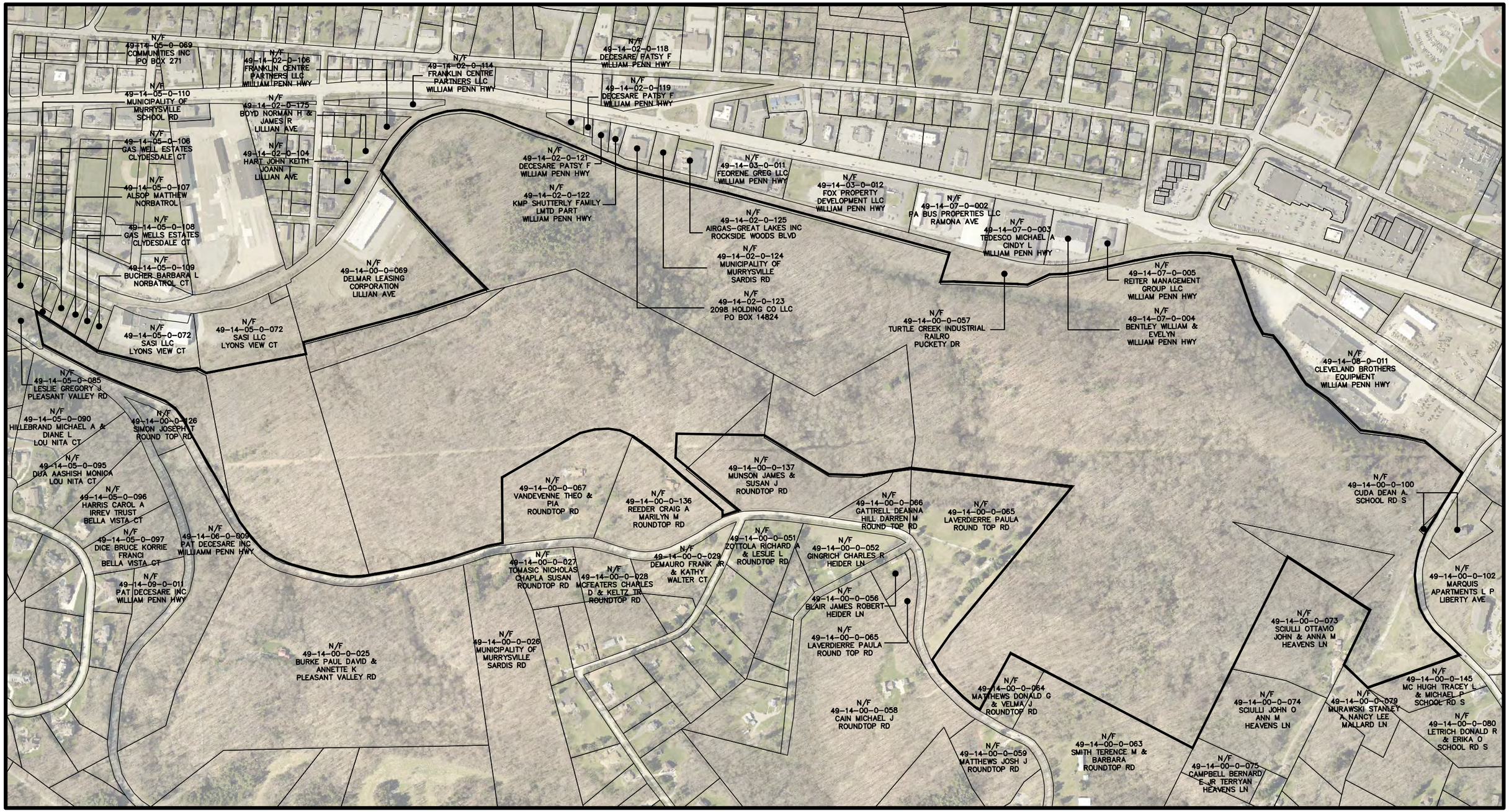
Voles do not exhibit population explosions like their meadow cousins and reproduce in scattered colonies throughout the forest. They like lots of fallen logs, branches, ferns and rocks, all of which Duff Park supplies in abundance.

Bats, before the white-nose syndrome disease appeared, were also plentiful in the upper canopy of this forest. Other cavity nesting species of the old trees include both fox squirrels, red squirrels and gray squirrels.

Duff Park was also once a Mecca for warblers, vireos, gnatcatchers and flycatchers, the neotropical birds that come north every spring to breed. Unfortunately, people prejudiced toward grapevines cut and removed most of these plants from the park that were as ancient as the trees. Forest dwelling birds depend heavily on grapevine bark for nest construction. The removal of this resource apparently put some limits on the number of nesting birds that could take advantage of the park as they are not as abundant. While many other factors have influenced the populations of these birds, the lack of grapevine bark didn't need to be added to the limiting factor list. Duff Park could be used in comparative studies of forests still retaining their grapevine resource.

All the species of woodpeckers also find this park to their liking and create the cavities the other animals depend on for residence. Old growth used to be the only habitat where one could find the pileated woodpecker, that successfully adapted to secondary growth when the old forests were cut.

An old growth forest is a landmark of biodiversity. More species of insects, amphibians, fungi, lichens, herbaceous plants, mosses and liverworts inhabit old growth forests. Birds and mammals are special. Many of these species do not even appear until the forest reaches a specific age. The removal of this kind of habitat drives many species into extinction. It is an interesting place to explore if you know how to look and what to look for. Enjoy your time in this park. In today's world, it is a rare and unusual habitat.

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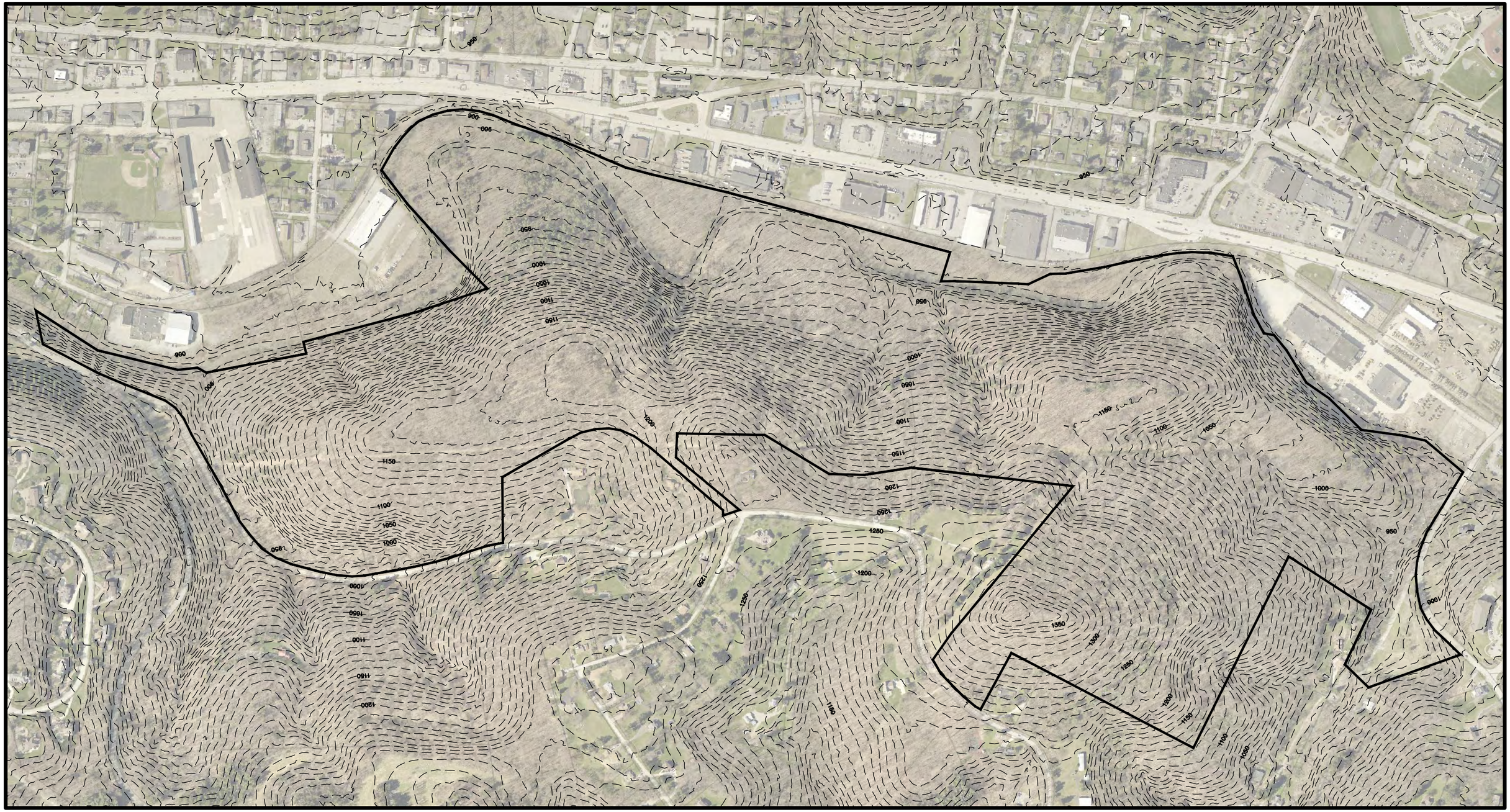
# DUFF PARK

MUNICIPALITY OF MURRYSVILLE | WESTMORELAND COUNTY

## ADJACENT LAND OWNERS



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# DUFF PARK

MUNICIPALITY OF MURRYSVILLE | WESTMORELAND COUNTY

## TOPOGRAPHICAL MAP

| Slopes Table | | | |
|---|---|---|---|
| Number | Minimum Slope | Maximum Slope | Color |
| 1 | 0.00% | 8.00% | |
| 2 | 8.00% | 16.00% | |
| 3 | 16.00% | 24.00% | |
| 4 | 24.00% | 40.00% | |
| 5 | 40.00% | 100.00% | |

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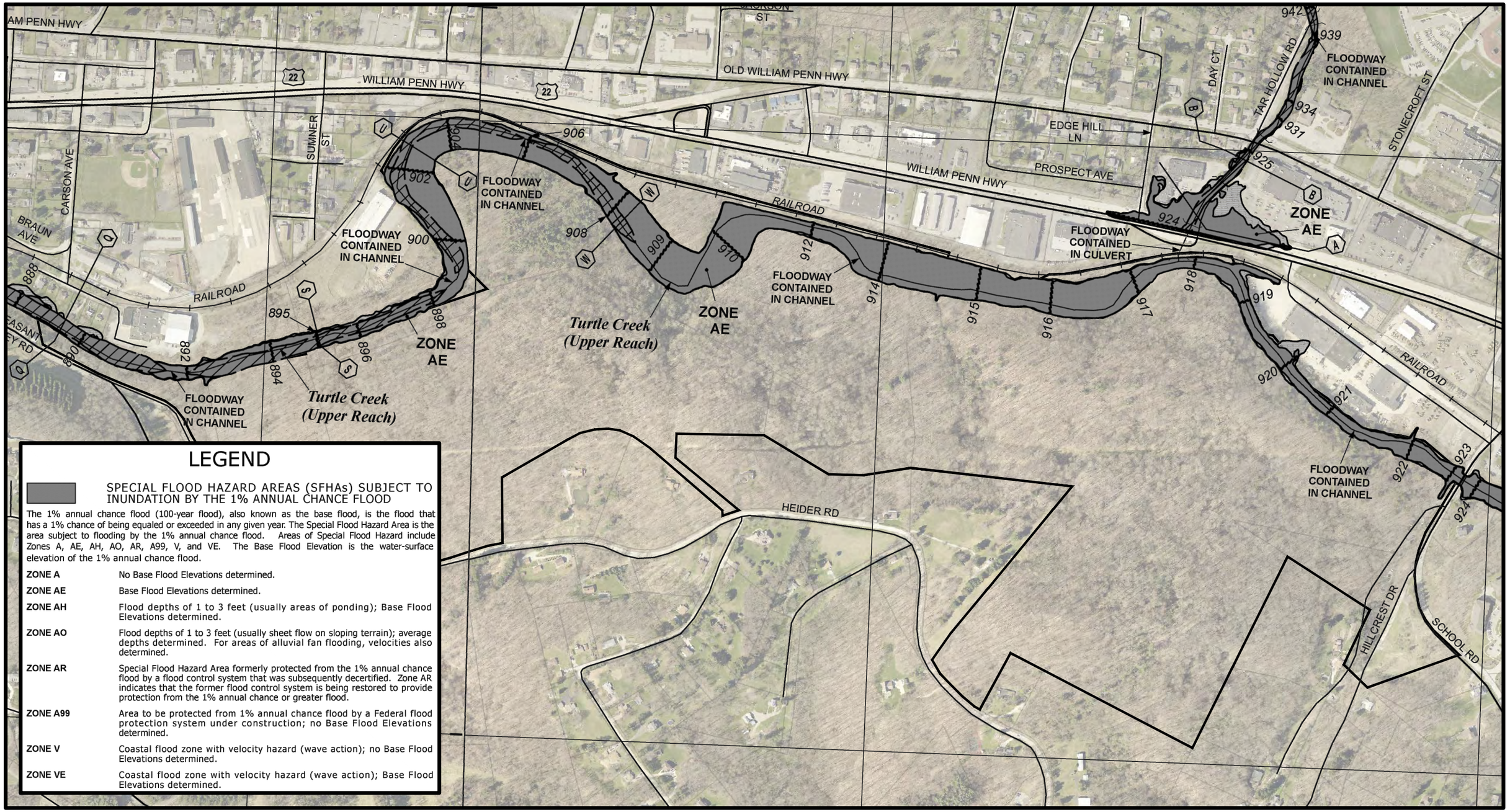
# DUFF PARK

MUNICIPALITY OF MURRYSVILLE | WESTMORELAND COUNTY

## SLOPE MAP




## LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

| | |
|---|---|
| **ZONE A** | No Base Flood Elevations determined. |
| **ZONE AE** | Base Flood Elevations determined. |
| **ZONE AH** | Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined. |
| **ZONE AO** | Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined. |
| **ZONE AR** | Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood. |
| **ZONE A99** | Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined. |
| **ZONE V** | Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined. |
| **ZONE VE** | Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined. |

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# DUFF PARK

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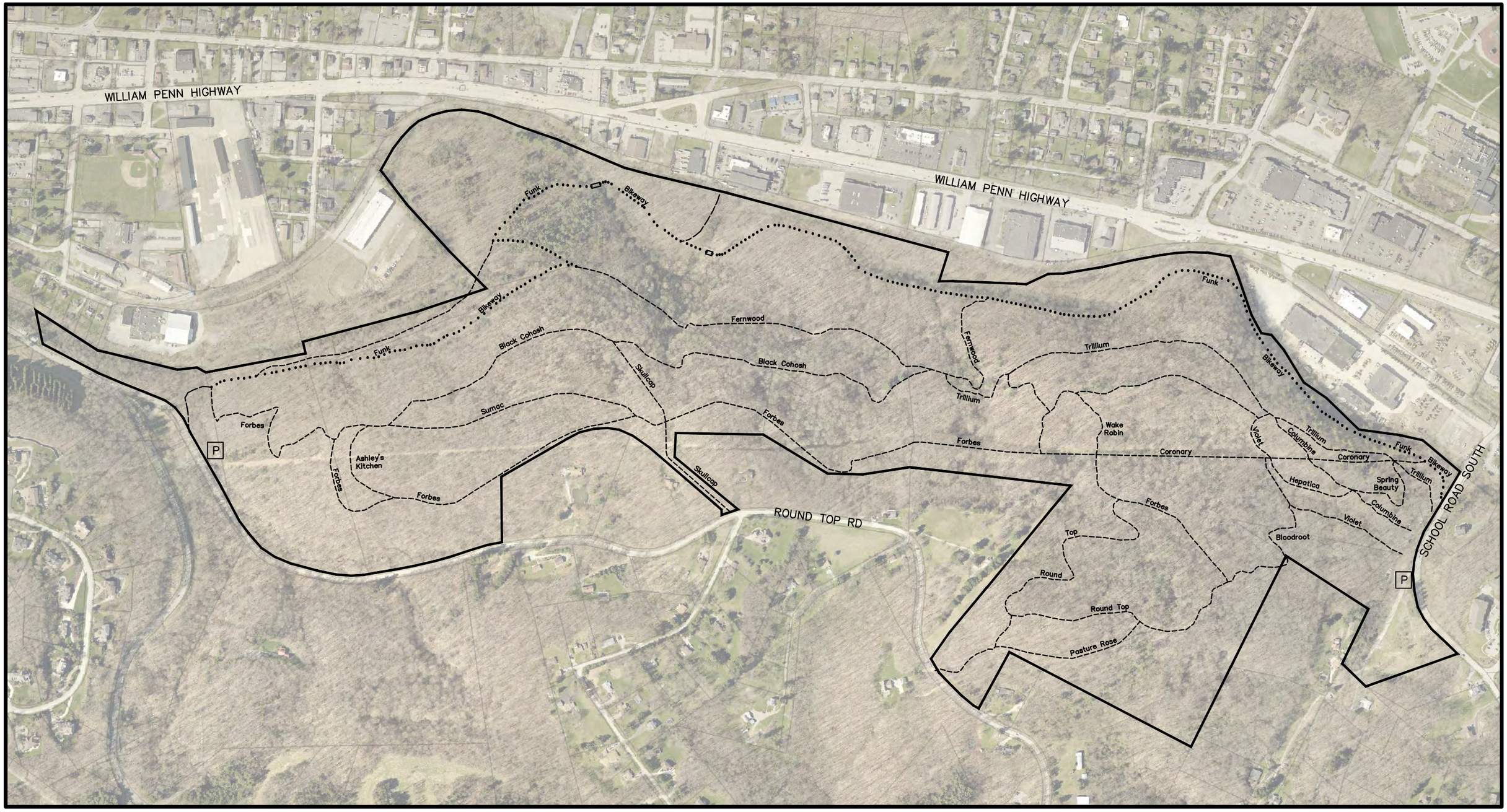
**FEMA MAP**

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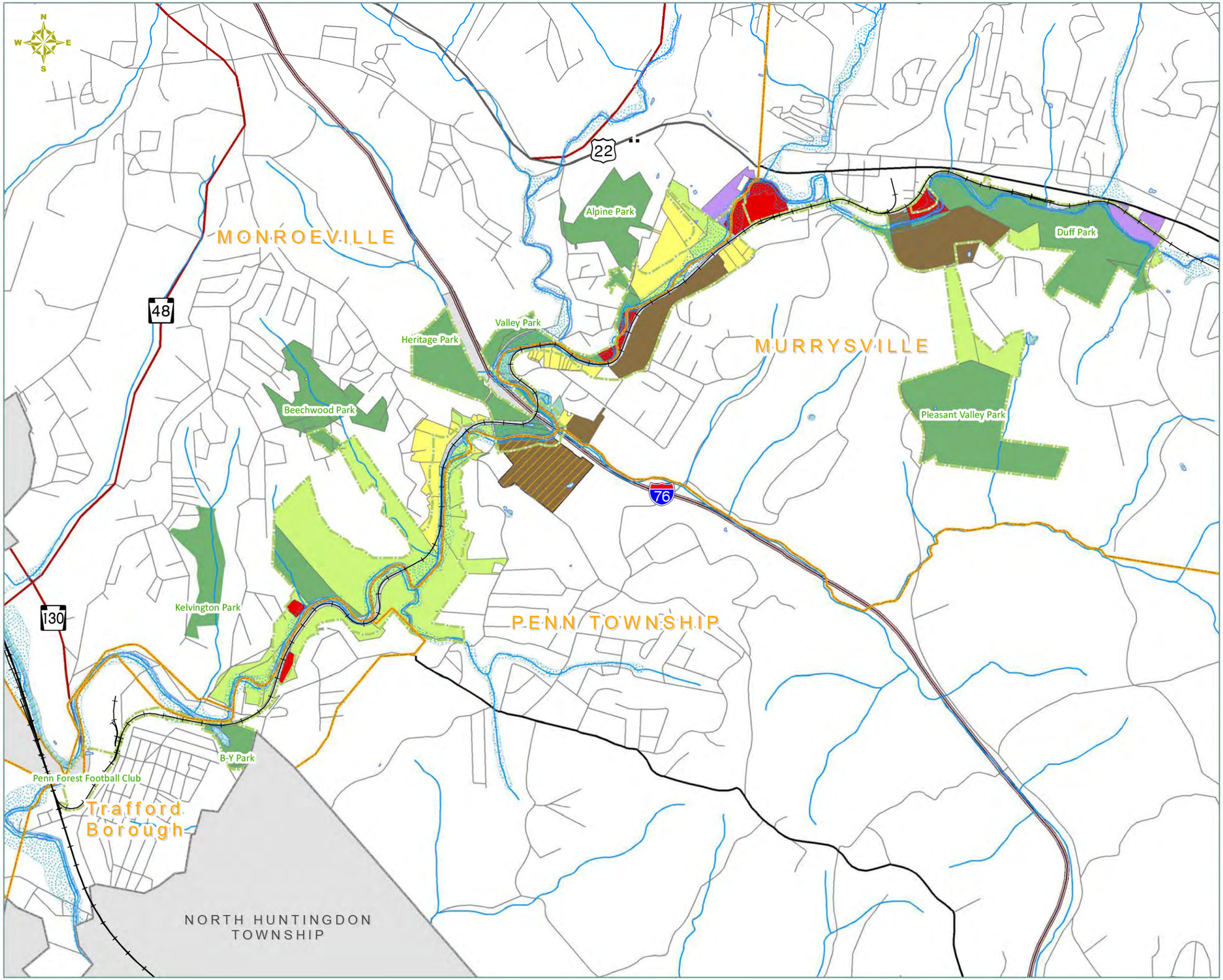
# DUFF PARK

MUNICIPALITY OF MURRYSVILLE | WESTMORELAND COUNTY

**TRAIL MAP**

# Turtle Creek Greenway Plan

## Map 2.1 > Land Use




### Legend

- Municipal Boundary
- Project Area Municipality
- Project Boundary
- NWI Wetland
- Waterway
- Floodplain

Existing Land Use Category

- Agriculture
- Commercial
- Industrial
- Public Park
- Right-of-Way
- Utility
- Single Family Residential
- Undeveloped Land/Open Space
- Agricultural Security Area (ASA)
- Road
- I-76/PA Turnpike
- US Route
- Major State Route
- Railroad

*Data used is courtesy of PASDA, Allegheny County, Westmoreland County and PennDOT.*

Feet
0 1,000 2,000 3,000

Mackin

## Biodiversity

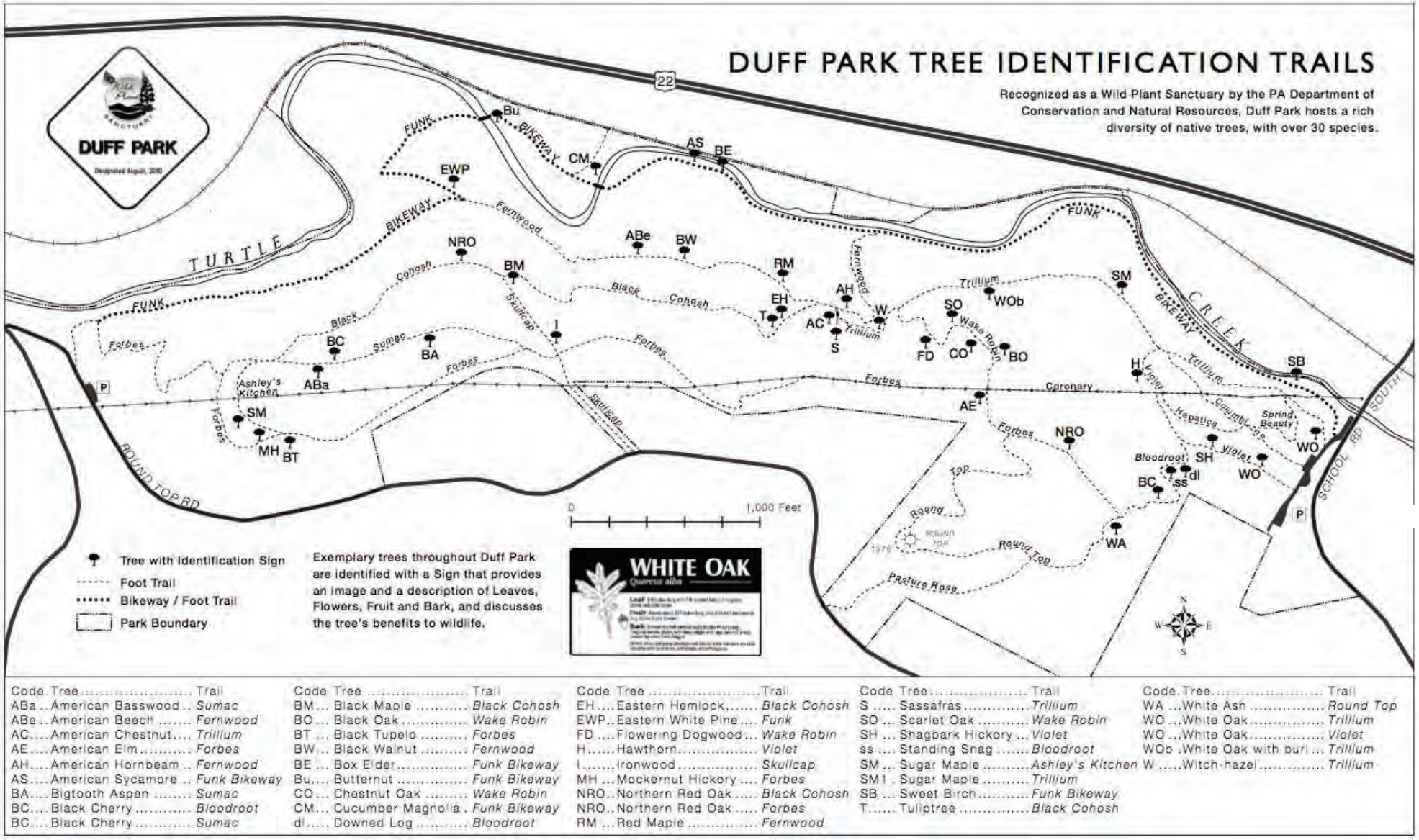
Walking the trails in Duff, it becomes apparent that the many tree signs of various species represent a healthy and diverse ecosystem. This high diversity safeguards against catastrophic loss from pathogens or pests. Chestnut blight and Dutch elm disease are two examples of exotic pathogens and pests decimating tree populations. Very few American Chestnut trees or mature America Elms exist today in Duff Park due to these outbreaks. In both cases, an exotic pathogen or pest was introduced in a population with little or no genetic resistance with devastating results. While most of the species of American Chestnut and American Elm in Duff did succumb, there are ample trees of other species to maintain a vibrant ecosystem.

## Old Growth Trees of Duff Park

Home to one the few remaining deciduous northern hardwoods stands of old growth trees in Pennsylvania, Duff Park's largest trees are estimated to be 250 – 300 years of age. Grand trees, both standing and down, contribute to a dynamic ecosystem. A dense canopy shades a regenerating understory creating a complex self perpetuating cycle. Multi-layered in structure, old growth stands provide an abundance of food and shelter for wildlife. The canopy, understory and forest floor all contribute uniquely towards a healthy wildlife environment.

## Duff Park Tree Walk (Park map inside)

Distributed throughout the park are tree identification signs providing information on key characteristics for over 30 tree species. How does White Oak differ from Chestnut Oak or Black Oak? What tree species are most preferred by wildlife? What's the difference between a drupe and a catkin? Explore, learn and be inspired by nature.




| Code | Tree | Trail |
|---|---|---|
| ABa | American Basswood | Sumac |
| ABe | American Beech | Fernwood |
| AC | American Chestnut | Trillium |
| AE | American Elm | Forbes |
| AH | American Hornbeam | Fernwood |
| AS | American Sycamore | Funk Bikeway |
| BA | Bigtooth Aspen | Sumac |
| BC | Black Cherry | Bloodroot |
| BC | Black Cherry | Sumac |
| BM | Black Maple | Black Cohosh |
| BO | Black Oak | Wake Robin |
| BT | Black Tupelo | Forbes |
| BW | Black Walnut | Fernwood |
| BE | Box Elder | Funk Bikeway |
| Bu | Butternut | Funk Bikeway |
| CO | Chestnut Oak | Wake Robin |
| CM | Cucumber Magnolia | Funk Bikeway |
| dl | Downed Log | Bloodroot |
| EH | Eastern Hemlock | Black Cohosh |
| EWP | Eastern White Pine | Funk |
| FD | Flowering Dogwood | Wake Robin |
| H | Hawthorn | Violet |
| I | Ironwood | Skullcap |
| MH | Mockernut Hickory | Forbes |
| NRO | Northern Red Oak | Black Cohosh |
| NRO | Northern Red Oak | Forbes |
| RM | Red Maple | Fernwood |
| S | Sassafras | Trillium |
| SO | Scarlet Oak | Wake Robin |
| SH | Shagbark Hickory | Violet |
| ss | Standing Snag | Bloodroot |
| SM | Sugar Maple | Ashley's Kitchen |
| SM1 | Sugar Maple | Trillium |
| SB | Sweet Birch | Funk Bikeway |
| T | Tuliptree | Black Cohosh |
| WA | White Ash | Round Top |
| WO | White Oak | Trillium |
| WO | White Oak | Violet |
| WOb | White Oak with burl | Trillium |
| W | Witch-hazel | Trillium |

PARK REGULATIONS (Chapter 166, Code of the Municipality of Murrysville). Please reference Rules and Regulations for Murrysville Parks on the Duff Park kiosk or at www.**murrysvillegov.org**.

**Volunteers Make a Difference. Call Pia van de Venne at 724.733.2770**

*Species observed in Duff Park during Invasive Species Mapping & Assessment*
*Observer: Loree Speedy  Time Period: 2008*

| Scientific Name | Habit | Common Name | Origin | |
|---|---|---|---|---|
| Acer negundo | tree | Boxelder | native | |
| Acer platanoides | tree | Norway Maple | introduced | Invasive |
| Acer rubrum | tree | Red Maple | native | |
| Acer saccharinum | tree | Silver Maple | native | |
| Acer saccharum | tree | Sugar Maple | native | |
| Achillea millefolium | forb | Yarrow | origin uncertain | |
| Actaea pachypoda | forb | Doll's Eyes | native | |
| Ageratina altissima | forb | White Snakeroot | native | |
| Agrimonia parviflora | forb | Harvestlice | native | |
| Alliaria petiolata | forb | Garlic Mustard | introduced | Invasive |
| Alnus incana ssp. rugosa | tree | Speckled Alder | native | |
| Ambrosia artemisiifolia | forb | Ragweed | native | |
| Amelanchier laevis | tree | Allegheny Serviceberry | native | |
| Amphicarpaea bracteata | vine | American Hogpeanut | native | |
| Anemone quinquefolia | forb | Windflower; Wood Anemone | native | |
| Apios americana | vine | Groundnut | native | |
| Apocynum cannabinum | forb | Indianhemp | native | |
| Aquilegia canadensis | forb | Wild Columbine | native | |
| Arabis laevigata | forb | Smooth Rockcress | native | |
| Aralia nudicaulis | subshrub | Wild Sarsaparilla | native | |
| Aralia racemosa | subshrub | American Spikenard | native | |
| Arctium | | Burdock | | |
| Arisaema dracontium | forb | Green Dragon | native | |
| Arisaema triphyllum | forb | Jack In The Pulpit | native | |
| Aruncus dioicus | forb | Goatsbeard | origin uncertain | |
| Asarum canadense | forb | Wild Ginger | native | |
| Asclepias syriaca | forb | Common Milkweed | native | |
| Asplenium trichomanes | forb | Maidenhair Spleenwort | native | |
| Barbarea vulgaris | forb | Yellow Rocket | introduced | |
| Berberis thunbergii | shrub | Japanese Barberry | introduced | Invasive |
| Betula lenta | tree | Black Birch | native | |
| Boehmeria cylindrica | forb | False Nettle | native | |
| Cardamine bulbosa | forb | Spring Cress | native | |
| Cardamine concatenata | forb | Cutleaf Toothwort | native | |
| Cardamine diphylla | forb | Crinkleroot | native | |
| Cardamine impatiens | forb | Narrowleaf Bittercress | introduced | |
| Carex blanda | grass/sedge | Eastern Woodland Sedge | native | |
| Carex laxiculmis | grass/sedge | Spreading Sedge | native | |
| Carex pensylvanica | grass/sedge | Pennsylvania Sedge | native | |
| Carex rosea | grass/sedge | Rosy Sedge | native | |
| Carex torta | grass/sedge | Twisted Sedge | native | |
| Carpinus caroliniana | tree | American Hornbeam | native | |
| Carya alba | tree | Mockernut Hickory | native | |
| Carya ovata | tree | Shagbark Hickory | native | |
| Celastrus orbiculata | vine | Asian Bittersweet | introduced | |
| Cimicifuga racemosa | forb | Black Cohosh | native | |
| Cinna arundinacea | grass/sedge | Sweet Woodreed | native | |
| Cinna latifolia | grass/sedge | Drooping Woodreed | native | |
| Circaea lutetiana | forb | Enchanter's Nightshade | native | |
| Claytonia caroliniana | forb | Carolina Springbeauty | native | |
| Claytonia virginica | forb | Virginia Springbeauty | native | |

| Scientific Name | Habit | Common Name | Origin | |
|---|---|---|---|---|
| Conopholis americana | forb | Squawroot | native | |
| Cornus florida | tree | Flowering Dogwood | native | |
| Crataegus | | Hawthorn | | |
| Cyperus | | Nutsedge | | |
| Cystopteris protrusa | forb | Lowland Fragile Fern | native | |
| Danthonia compressa | grass/sedge | Flattened Oatgrass | native | |
| Dennstaedtia punctilobula | forb | Hayscented Fern | native | |
| Dicentra cucullaria | forb | Dutchman's Breeches | native | |
| Dichanthelium clandestinum | grass/sedge | Deertongue Grass | native | |
| Dichanthelium dichotomum | grass/sedge | Cypress Panicgrass | native | |
| Dryopteris intermedia | forb | Intermediate Woodfern | native | |
| Dryopteris marginalis | forb | Marginal Woodfern | native | |
| Dryopteris x triploidea | forb | Triploid Woodfern | native | |
| Elymus | | Wildrye | | |
| Erigeron | | Fleabane | | |
| Erythronium americanum | forb | Yellow Troutlily; Dogtooth Violet | native | |
| Euonymus alatus | shrub | Burning Bush | introduced | Invasive |
| Eupatorium fistulosum | forb | Trumpetweed | native | |
| Eupatorium perfoliatum | forb | Common Boneset | native | |
| Eurybia divaricata | forb | White Wood Aster | native | |
| Euthamia graminifolia | forb | Grass-Leaved Goldenrod | native | |
| Fagus grandifolia | tree | American Beech | native | |
| Festuca subverticillata | grass/sedge | Nodding Fescue | native | |
| Floerkea proserpinacoides | forb | False Mermaid | native | |
| Fraxinus americana | tree | White Ash | native | |
| Galium aparine | vine | Cleaver | native | |
| Galium circaezans | subshrub | Licorice Bedstraw | native | |
| Galium concinnum | forb | Shining Bedstraw | native | |
| Gaultheria procumbens | subshrub | Teaberry | native | |
| Geranium maculatum | forb | Wild Geranium | native | |
| Geum canadense | forb | White Avens | native | |
| Glyceria melicaria | grass/sedge | Melic Mannagrass | native | |
| Goodyera pubescens | forb | Downy Rattlesnake Plantain | native | |
| Hackelia virginiana | forb | Beggarslice | native | |
| Hamamelis virginiana | tree | Witchhazel | native | |
| Hepatica nobilis var. acuta | forb | Sharplobed Hepatica | native | |
| Hesperis matronalis | forb | Dames Rocket | introduced | Invasive |
| Heuchera americana | forb | Alumroot | native | |
| Houstonia caerulea | forb | Bluets | native | |
| Hydrangea arborescens | shrub | Wild Hydrangea | native | |
| Hydrophyllum appendiculatum | forb | Great Waterleaf | native | |
| Hydrophyllum canadense | forb | Broadleaf Waterleaf | native | |
| Hydrophyllum virginianum | forb | Virginia Waterleaf | native | |
| Impatiens capensis | forb | Orange Jewelweed | native | |
| Impatiens pallida | forb | Pale Jewelweed | native | |
| Jeffersonia diphylla | forb | Twinleaf | native | |
| Juglans cinerea | tree | Butternut | native | |
| Juncus tenuis | grass/sedge | Path Rush; Poverty Rush | native | |
| Kalmia latifolia | tree | Mountain Laurel | native | |
| Lamium amplexicaule | forb | Henbit | introduced | |
| Laportea canadensis | forb | Woodnettle | native | |
| Leersia virginica | grass/sedge | Whitegrass | native | |
| Ligustrum vulgare | shrub | Privet | introduced | Invasive |
| Lindera benzoin | tree | Spicebush | native | |

| Scientific Name | Habit | Common Name | Origin | |
|---|---|---|---|---|
| Liriodendron tulipifera | tree | Tuliptree | native | |
| Lonicera maackii | shrub | Amur Honeysuckle | introduced | Invasive |
| Lonicera morrowii | shrub | Morrow's Honeysuckle | introduced | Invasive |
| Luzula | | Woodrush | | |
| Lysimachia nummularia | forb | Moneywort | introduced | |
| Maianthemum racemosum | forb | False Solomon's Seal | native | |
| Mertensia virginica - possibly introduced to park | forb | Virginia Bluebells | native | |
| Microstegium vimineum | grass/sedge | Japanese Stiltgrass | introduced | Invasive |
| Mimulus ringens | forb | Allegheny Monkeyflower | native | |
| Mitchella repens | subshrub | Partridgeberry | native | |
| Mitella diphylla | forb | Bishop's Cap; Miterwort | native | |
| Monarda | | Beebalm | | |
| Onoclea sensibilis | forb | Sensitive Fern | native | |
| Osmorhiza claytonii | forb | Aniseroot | native | |
| Ostrya virginiana | tree | Hophornbeam | native | |
| Oxalis montana | forb | Mountain Woodsorrel | native | |
| Packera aurea | forb | Golden Ragwort | native | |
| Parthenocissus quinquefolia | vine | Virginia Creeper | native | |
| Phlox divaricata | subshrub | Wild Blue Phlox | native | |
| Picea abies | tree | Norway Spruce | introduced | |
| Pilea pumila | forb | Clearweed | native | |
| Pinus strobus | tree | Eastern White Pine | native | |
| Platanus occidentalis | tree | American Sycamore | native | |
| Poa alsodes | grass/sedge | Grove Bluegrass | native | |
| Poa cuspidata | grass/sedge | Early Bluegrass | native | |
| Poa pratensis | grass/sedge | Kentucky Bluegrass | origin uncertain | |
| Poa trivialis | grass/sedge | Rough Bluegrass | introduced | |
| Podophyllum peltatum | forb | Mayapple | native | |
| Polemonium reptans | subshrub | Greek Valerian | native | |
| Polygonatum pubescens | forb | Hairy Solomon's Seal | native | |
| Polygonum arifolium | vine | Halberdleaf Tearthumb | native | |
| Polygonum cuspidatum | subshrub | Japanese Knotweed | introduced | Invasive |
| Polygonum sachalinense | forb | Giant Knotweed | introduced | Invasive |
| Polygonum sagittatum | vine | Arrowleaf Tearthumb | native | |
| Polygonum virginianum | forb | Jumpseed | native | |
| Polypodium virginianum | forb | Rock Polypody | native | |
| Polystichum acrostichoides | forb | Christmas Fern | native | |
| Prenanthes | | Rattlesnakeroot | | |
| Prunella vulgaris | forb | Selfheal | native | |
| Prunus avium | tree | Sweet Cherry | introduced | |
| Prunus serotina | tree | Black Cherry | native | |
| Quercus alba | tree | White Oak | native | |
| ? Quercus prinus Montana | tree | Chestnut Oak | native | |
| Quercus rubra | tree | Northern Red Oak | native | |
| Quercus velutina | tree | Black Oak | native | |
| Ranunculus abortivus | forb | Kidney-Leaved Buttercup | native | |
| Ranunculus repens | forb | Creeping Buttercup | introduced | |
| Rhododendron maximum | tree | Great Laurel | native | |
| Rhodotypos scandens | shrub | Jetbead | introduced | |
| ? Rhus hirta typhina | tree | Staghorn Sumac | native | |
| Ribes cynosbati | shrub | Eastern Prickly Gooseberry | native | |
| Rosa multiflora | vine | Multiflora Rose | introduced | Invasive |
| Rubus allegheniensis | shrub | Allegheny Blackberry | native | |
| Rubus flagellaris | shrub | Northern Dewberry | native | |

| Scientific Name | Habit | Common Name | Origin |
|---|---|---|---|
| Rubus occidentalis | shrub | Black Raspberry | native |
| Rudbeckia laciniata | subshrub | Green-Headed Coneflower | native |
| Sambucus nigra ssp. canadensis | tree | Common Elderberry | native |
| Sambucus racemosa | tree | Red Elderberry | native |
| Sassafras albidum | tree | Sassafras | native |
| Sedum ternatum | forb | Wild Stonecrop | native |
| Silene virginica | forb | Fire Pink | native |
| Smilax | | Greenbrier | |
| Solidago caesia | forb | Wreath Goldenrod | native |
| Solidago canadensis | forb | Canada Goldenrod | native |
| Solidago flexicaulis | forb | Zigzag Goldenrod | native |
| Solidago patula | forb | Roundleaf Goldenrod | native |
| Solidago rugosa | forb | Wrinkleleaf Goldenrod | native |
| Staphylea trifolia | tree | American Bladdernut | native |
| Stellaria longifolia | forb | Longleaf Stitchwort | native |
| Symphyotrichum lanceolatum | forb | White Panicled Aster | native |
| Symphyotrichum lateriflorum | forb | Calico Aster | native |
| Symphyotrichum prenanthoides | forb | Crookedstem Aster | native |
| Symplocarpus foetidus | forb | Skunk Cabbage | native |
| Taraxacum officinale | forb | Common Dandelion | origin uncertain |
| Thalictrum dioicum | forb | Early Meadow-Rue | native |
| Thalictrum pubescens | forb | Tall Meadow Rue | native |
| Thalictrum thalictroides | forb | Rue Anemone | native |
| Thelypteris noveboracensis | forb | New York Fern | native |
| Tilia americana | tree | American Basswood | native |
| Toxicodendron radicans | shrub | Poison Ivy | native |
| Trillium erectum | forb | Red Trillium; Wakerobin | native |
| Trillium grandiflorum | forb | White-Flowered Trillium | native |
| Trillium sessile - possibly introduced to park | forb | Toadshade | native |
| Tsuga canadensis | tree | Eastern Hemlock | native |
| Tussilago farfara | forb | Coltsfoot | introduced |
| Typha angustifolia | forb | Narrowleaf Cattail | introduced |
| Ulmus americana | tree | American Elm | native |
| Ulmus rubra | tree | Slippery Elm | native |
| Vaccinium pallidum | subshrub | Lowbush Blueberry | native |
| Vaccinium stamineum | shrub | Deerberry | native |
| Valerianella chenopodiifolia | forb | Goosefoot Cornsalad | native |
| Verbena urticifolia | forb | White Vervain | native |
| Verbesina alternifolia | forb | Wingstem | native |
| Viburnum acerifolium | shrub | Mapleleaf Viburnum | native |
| Viburnum dilatatum | shrub | Linden Arrowwood | introduced |
| Viburnum prunifolium | tree | Blackhaw | native |
| Viola canadensis | forb | Canada Violet | native |
| Viola pubescens var. scabriuscula | forb | Yellow Violet | native |
| Viola sororia | forb | Common Blue Violet | native |
| Viola striata | forb | Striped Cream Violet | native |
| Vitis | | Grapevine | |
| Vitis labrusca | vine | Fox Grape | native |
| Vitis riparia | vine | Riverbank Grape | native |

# Duff Park Wild Plant Sanctuary

From the bright light on the pipeline we walk into the dim environment of Geranium Trail, where it is a lot cooler than in the hot sun. Amazed we see a couple of box turtles mating less than three yards from the trail; that is something completely new for us volunteers. It takes turtles many hours to mate and the male seems to be just done. Or maybe we disturbed them and the turtles do not like anybody observing what they are doing. The male is moving slightly forward and sits still on top of the female until we are out of sight. A few hours later, when we come back with a camera, the turtles have disappeared. A little disturbance in the leaves and the soil is the only sign that something happened here before. This area is lush and cool with tall wingstem and cone flowers growing between the mostly native shrubs. Black haw, maple leaved viburnum and spice bush are very common around this moist tributary. Back on the pipeline - between the black raspberries, Joe-Pye weed, white monarda and even a few monkey flowers - a lot of stiltgrass has been pulled and some of it has been burned with a new gadget called a "Weed Dragon", a propane tank carried in a back pack with a handle, a squeeze valve and a flame. Directing the flame to small stiltgrass makes this invasive plant wither very quickly, but the tall specimens seem not to be affected very much. In a few days it will show better how effective the "Weed Dragon" is on these tall, straggly plants. The "Weed Dragon" can only be used when it rains or when the weather is cool and humid. Many multi flora roses have been taken out: it is always a satisfactory accomplishment to dig these thorny bushes up. They are hung up in trees or draped over a trunk, so the rose bushes dry up and do not have a chance to continue spreading their long arching stems. They sometimes are 15 feet tall and look more like vines than bushes. Under the brambles and surrounded by stiltgrass, turtlehead, an unusual native plant is growing: the bud is just big enough that the1/2 inch turtle's head is visible. The bud is still green: the light pink or white of the flower will develop in a few weeks. Turtlehead almost never grows straight up; the stem seems to always weave itself between the other plants and makes itself almost invisible. The dark green, shallow toothed, opposite leaves are not too hard to identify if the plant is not completely obscured by the other vegetation.
Working our way up to Wake Robin, a few garlic mustard plants, with most of the seeds still clinging to the stem, find their way into the bag that the volunteers have taken along for this purpose. Walking further down Wake Robin, small orange flags are in front of several large trees. A little further, two signs have been installed to identify interesting trees close to the trail. The small orange flags are possible locations for additional tree signs. The signs are rather large: almost 3 feet high locust posts with a slanted board on top on which an aluminum sign has been attached with the common name, the Latin name and identification features of the tree. On Wake Robin Trail, tree signs for Dogwood and Black Oak have been installed; Scarlet Oak will be added soon. There will probably be close to forty tree signs in Duff Park before the end of the year. FOMP (Friends of Murrysville Parks) has started this tree sign project with the help of the Municipality of Murrysville. It is very interesting and fun to work on this educational endeavor.

For more information or to help in one of the parks, call Pia van de Venne, Volunteer Coordinator Murrysville Parks at 724 733 2770

# PROJECTS UNDERTAKEN, RECOMMENDATIONS & FUTURE PLANS

# Native Shrubs Recommended for Wildlife Habitat

Shrubs that prefer wetter soils in blue. Shrubs that prefer drier soils in brown. Shrubs that grow in wet or dry soil in black.

requires full sun  shade tolerant

| COMMON NAME | OPTIMUM GROWING CONDITIONS | SEASON OF GREATEST WILDLIFE BENEFIT |
|---|---|---|
| Elderberry | Moist soils | Summer |
| Chokecherry | Well-drained, dry or moist soils | Summer |
| Black Huckleberry | Dry upland soils | Summer |
| Nannyberry | Wet or dry soils | Summer |
| Highbush Blueberry | Wet to dry soils | Summer |
| Gray Inkberry | Moist | Summer (Nectar plant) |
| Mountain Laurel | Dry upland soils | Summer + Winter Cover |
| Rhododendron | Wet or moist soils | Summer + Winter Cover |
| Buttonbush | Wet soils | Summer and Autumn |
| Speckled Alder | Wet/Moist Soils | Summer Cover<br>Autumn Food |
| Blackhaw viburnum | Dry soils | Autumn |
| Maple-leaved viburnum | Dry to moist soils | Autumn |
| Red-osier dogwood | Moist soils | Autumn |
| Silky dogwood | Moist or wet soils | Autumn |
| Black Chokeberry | Moist to dry soils | Autumn |
| Red Chokeberry | Moist to wet soils | Autumn |
| Gray Dogwood | Moist soils | Autumn |
| Arrowwood viburnum | Moist soils | Autumn |
| Winterberry | Wet soils | Autumn |
| Smooth Alder | Wet soils | Autumn |
| Spicebush | Moist to somewhat dry | Autumn |
| Witch Hazel | Moist | Autumn |
| Swamp Rose | Wet soils | Autumn and winter |
| Hercules Club | Moist to Dry | Winter |
| Staghorn Sumac | Dry soils | Winter |
| American cranberry | Wet soils | Winter |
| Hawthorne | Dry upland soils | Winter |
| Common Ninebark | Moist or wet soils | Any season—mostly cover |
| Steeple bush | Moist soils | Any season—mostly cover |

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Bolivar, PA 15923

# Conclusions, Recommendations, Future Plans & Goals:

## General Policies and Procedures

- Comply with current laws and regulations;
- Prevent impairment of Duff Park's resources and value;
- Consult and cooperate with local entities and authorities;
- Support pursuit of the best management practices;
- Reflect a commitment to civic engagement and cooperation;
- Pass on to future generations an improved natural, cultural, and physical resource.

## Purpose

This stewardship plan aims to set out a long-term, shared vision for Duff Park, as well as provide strategic direction to guide decision making about the park for an extended period of time. It is the road map that guides park work to protect natural resources while facilitating visitor experiences and learning opportunities. It also helps staff make sound decisions about where to invest financial and human resources. Management planning and implementation is a continuous cycle of engagement, decision-making, evaluating and reporting. This plan is intended to be a working document and should be re-visited based on future park assessment and evaluation, public feedback, Municipal & local organization's strategic priorities and other factors.

Duff Park should be managed in a manner compatible with four primary goals:

## I. Preserve

Protect the natural resources of the park: conserve, enhance and restore when appropriate the park's diverse flora and fauna. Promote long-term sustainability through maintaining the park's healthy and functioning ecosystems.

### Old Growth Forest

Duff Park is well known for its old growth forest, one of the few remaining old growth deciduous forests in Pennsylvania, it has survived disturbance in the heart of a suburban community. (6) True old growth forest that survived the 19th century logging boom accounts for only a fraction of one percent of the landscape in the Eastern United States. (11) Many children growing up today have no idea of what the natural appearance of the land surrounding them would be like if it were undisturbed. What species of trees would grow? What animals would live there? We speak of "nature-deficit disorder" but how is it to be remedied if there are no places to show these children, but only stories in a book about what their town "used to" look like and the animals that "used to" live there? Parks began as places for human recreation and spiritual refreshment, and the ecological benefits were recognized later. (15)

In Duff Park, grand trees, both standing and downed, contribute to a dynamic and increasingly rare ecosystem. (22) Common characteristics of these old growth forests include ancient trees, significant dead wood, little undergrowth due to canopy shade, and high biodiversity, including many species found in no other habitat. (9) Even with 'protection' status old growth forests face threats from invasive species, wind, landslides, insect and disease outbreaks, forest succession, climate change, pollution, and so forth. (14) Let's not add timber harvesting to that list. The conservation and protection of Duff's old growth forest should be a paramount goal of its stewards. That means striving to prevent future timber harvesting of the old growth sections of Duff.

## Creating Diversity of Habitat

That doesn't necessarily mean ever tree in Duff Park should be saved from a chainsaw – cutting can be essential to creating a diverse habitat. Early successional forests—those dense, tangled thickets of young sap-lings, fruit-bearing shrubs, and vines—represent some of the healthiest wildlife habitat today. (11)

In pre-settlement times, young forests were spawned by natural sources of disturbance like windstorms, hurricanes, and fire that leveled standing trees and reset the successional clock. Then from the late 19th through the mid-20th centuries, after the waves of European settlement, landscapes in the East were full of regenerating clear cuts that provided millions of acres of early successional habitat. Today many natural forces have been dampened by human intervention and the fragmented nature of the landscape, with a lot of land permanently cleared for farming and development. Much of the forest that remains is middle-aged with striking uniformity, and little of the structural complexity from layered understories, snags, and downed logs that promotes biodiversity. (11)

While Duff Park is largely made up of continuous mature forest that should be saved and protected from logging operations, existing forest openings in the form of utility rights-of-way present opportunities for habitat diversity. There are a variety of methods and practices for creating, restoring, and maintaining habitat for the greatest diversity of wildlife. Variety—in this case, habitat variety—is the key. (11) Planned disturbances such as edge feathering done along the edge of these existing forest openings and done at the proper time during succession will greatly enhance the habitat. The purpose of feathering wooded edges is to re-create early successional conditions that provide shrubby and weed areas which are an essential habitat component.

Edge feathering is recommended to create a transitional zone where open areas currently abruptly abut wood lots. In a high-quality wooded edge, a transition in both height and plant composition is created between the wooded component and the adjacent opening. High-quality edge includes a wide band of plants that gradually change from one type of vegetation to another. Low-quality edge, on the other hand, results in an abrupt and quite noticeable change in vegetation with a corresponding loss in important habitat components. A gradual transition zone (one that moves from grasses to shrubs and vines, to small trees, and then to large trees) provides many benefits for wildlife. A recommendation that will assist the natural aesthetic of transitioning is to use release techniques to evaluate where to focus disturbances that will provide the best wildlife habitat for the last effort, and provide the biggest return on management practices. This will strongly enhance the natural look.

By carefully culling wooded edges, removing the linear effect of field versus woodlot, a less man-made look will result. When releasing, avoid removal of trees and shrubs that may be important mast producers and focus on areas lacking wildlife benefits while creating a serpentine edge.

Tree and shrub plantings can also be beneficial to wildlife. The amount of value depends on a variety of factors and includes not only the specific characteristics of the planting, but the type and quality of surrounding habitat. Planting more of the same does little good to wildlife if the property is already a monoculture. The greater the variety of plants on a property, the more wildlife the land has the potential to attract and support. Another benefit of planting to create diversity is the reduced risk of losing all your plants should disease strike a particular species of plant. Also, if one species should fail to produce a nut or fruit crop in a given year, another kind of nut or fruit bearing plant is there to provide alternative food sources.

## Managing Invasive Plants

In Duff Park invasive plant species have many negative impacts, as they do on landscapes throughout the world. Invasive plants can displace desirable species, alter ecological processes, reduce wildlife habitat, degrade riparian systems, and decrease habitat productivity. Experts recognize invasive species are the second most important threat to biodiversity after habitat destruction. In 1994, the impacts of invasive plant species in the United States were estimated to be

13 billion dollars per year. The amount of land infested by invasive plants is rapidly increasing and subsequently the negative impacts of invasive plants are escalating. (10) Often the best approach to managing invasives is an integrated method which involves using a combination of appropriate control methods. As with any approach the effectiveness of the control strategy should be monitored and adjusted over time. Invasive plant control within Duff Park has been very successful thanks to the efforts of FOMP and consideration should be given to designating a portion of the maintenance budget specifically for invasive plant monitoring and control efforts. (4)

Prevention, early detection and eradication of weed species is the most economical and effective means of invasive plant management. It is important to ensure new weed species or vegetative reproductive plant parts are not introduced into a new area. Mechanical control usually refers to the mowing or cutting of an invasive plant infestation to limit seed production. With cutting, timing is essential. Invasive plants must be removed before the plants go to seed in order to be an effective method of control. Plants should be cut as close to the ground as possible and may have to be cut more than once in a growing season to achieve desired results. Manual control usually refers to hand-pulling or digging. Manual control works well for dealing with single plants or small infestations that can be eradicated with a small amount of labor. It is the most effective if invasive plants are shallow rooted and the soil is loose or moist. One should be aware this type of control may not be effective for invasive plants that also reproduce by roots and rhizomes. In these instances, limited hand-pulling or digging may actually increase the size of the infestation.

Used properly Chemical control can be the most effective option for certain persistent invasive plants. The type of herbicide and application method will vary, depending on the target weed species and environmental considerations. Large infestations, infestations near water, or infestations on steep slopes may be too costly or too environmentally sensitive to control by chemical means. In these situations, it is important to look at other management options. (9) Because herbicides are inherently toxic to plants, they are effective tools to manage undesirable plant species, but they can also have unintended, adverse effects on desirable plant species. Thus, it is important to understand the fundamentals of how herbicides affect plants as well as to focus herbicide use to meet particular invasive plant management objectives. Visitors to the park, non-target flora and fauna, water, and soil can all be exposed to herbicides during application or from subsequent off site movement. Once herbicides have been applied, the potential for exposure is further influenced by the many biotic and abiotic processes that affect the fate of herbicides in the environment. Some processes may move or transfer the herbicide away from the target plant to non target organisms while other processes degrade or break down herbicides after application. Following herbicide label instructions and established safety procedures minimizes herbicide exposure. Herbicide applicators generally face the greatest risk, particularly during mixing and loading. The general public can be affected by direct contact, through spray drift, or accidental spills. Herbicides have been designed to target biochemical processes, such as photosynthesis, that are unique to plants. Thus, they typically are not acutely toxic to animals however some exceptions exist. Some herbicides can have subtle, but significant, physiological effects on animals, including developmental effects. So, as with all pesticides, the user needs to thoroughly evaluate the range of potential non target effects and strive to minimize these effects. In some cases, this may involve best management practices that go beyond the requirements on the pesticide label. (9) Because Duff is a public park, open to everyone, the use of chemical control of invasive plants should be carefully considered and reduced or eliminated where other suitable means of control are possible and effective.

### Overabundance of Deer Populations

Overabundant deer populations in the Eastern United States dramatically impact the survival of native flora by browsing tree and shrub regeneration and consuming herbaceous plants. Nowhere is this impact greater than in suburbia where Duff Park is located. The resulting lack of cover, food, and structural diversity within forests has also reduced populations of small mammal and bird species. It is generally recognized that deer overabundance has created degraded forests throughout our region. Without established tree regeneration to fill future canopy gaps the forest will continue to degrade to one dominated by exotic and browse tolerant species that provide far less of the food and structural resources fauna need. (2) The hunting in park program is our best way of combating this and it should be continued.

### Assessment, Evaluation and Monitoring of Results

In Duff Park, assessment, evaluation, and monitoring of results should be conducted cyclically so that management practices can be changed or modified as needed. Because we can't know everything about managing natural areas, adaptive management has become a widely accepted method of conducting research on the effect of land management practices on an ecosystem. In this scheme, the land manager constructs a model of how he or she believed the system works, implements a practice that attempts to move the system toward the desired condition, monitors the results of that practice, and assesses its success. This practice can range from casual observation to systematic research on the effectiveness of management activities, but in each case the land manager attempts to learn from the experience.

## II. Utilize

In a manner that is compatible with goal 1, provide for a variety of opportunities for visitors to experience and utilize the park's natural features. Recognize and accommodate the diverse needs of different types of visitors. Provide a safe, high-quality public use.

### Trails

Duff Parks has two types of trails. In the late 70s, the Bicentennial Bikeway (now the Funk Bikeway) was cleared through the park and two treated wood bridges were constructed over Turtle Creek. The two wooden bridges were replaced with steel ones that were lowered into place by helicopter in 1991. (20) The trail provides a flat walking and biking route along Turtle Creek for about 1.5 miles and then goes up an incline until it reaches Round Top Road. (23) It is by far the most heavily used trail in the park and actually the most used Murrysville facility for non-organized sports. It consists of a generously wide, limestone gravel surface that is well maintained.

Duff Park's other trails consist of foot trails that climb the steep north facing hills and meander through the spring wildflowers and old growth forest. These trails see far less traffic and therefore are far less of a disturbance on the landscape. At one point, consideration was made to allowing bicycle traffic on the upper trail system. The DCNR was informed of the pending decision and strongly recommended not to allow bicycles. They cited soil erosion, wildflower impacts, further spread of invasive plants, and the incompatibility of the trails, given their steep and narrow nature. We would echo their sentiment that biking should be limited to the currently designated bikeway. Other biking opportunities are available throughout the region for those who wish to use steep mountain trails. (16)

The current maintenance operations of the bikeway and other trails throughout the park appear to be quite well done and thorough. A typical yearly maintenance cycle could consist of the following:

- Spring: Inspect for and clean-up winter and spring storm damage. Inspect for standing water and drainage issues
- Summer: Trim as necessary after spring and early summer growth. Best time for blazing
- Fall: Inspect, clean up and complete any projects
- Winter: Inspect as conditions permit (21)

### Conflicting objectives

Given Duff Park's geography and current utilization we think it makes sense to think of the park as having two distinct management sections with two differing goals. The lower reaches of the park along Turtle Creek are heavily utilized and have seen more impacts from human disturbance and improvement. The main parking lot, the pavilion, grills, a water fountain, the information panels and the Funk Bikeway are all located in this lower section. The upper reaches of the park include the old growth forest, wildflower sanctuary, and low impact foot trails. Stewards of the park should consider this separation of assets and differing types of utilization, and tailor their approach to the management of each area accordingly. For instance, providing for recreational opportunities that are most in demand (given other existing recreation facilities in the area) should take precedence on the lower portions of the park. Recognize and accommodate

the diverse needs of different types of visitors. Avoid conflicts between different groups of visitors or between visitors and park resources. Every user of Duff Park doesn't need to be allowed everywhere, but every user of the park should be allowed somewhere, so long as they're not de-grading the resource or their impacts are below an accepted level. On the upper portions of Duff Park, the objectives should emphasize protecting the park's natural resources and biodiversity from harm, both natural and unnatural, while allowing for passive recreation and education. These areas could be thought of as a nature preserve that we are allowed to observe, tasked to conserve, and use to educate.

## III. Educate:

In a manner that is compatible with goals 1 & 2, foster an understanding of the parks' unique natural resources. Instill an appreciation for the park and its preservation by educating visitors. Galvanize and informed, involved, and active community around conservation and stewardship of this shared natural area.

### Encourage School Interactions and Events in Park

It could be partnering with a nearby college or high school to utilize their environmental department or biology classes to assist in the maintenance of the park or use it as an outdoor laboratory. It could be cooperating with local schools to develop an on-site interpretive program for elementary and secondary school children. Anything that gets school classes outside and into the park is a good way to provide inspirational, effective learning experiences from real-world examples in nature while also instilling an appreciation for the park. They allow children a chance to see the wildlife on their doorstep and learn the curriculum in a new way. (20)

Duff Park already features many educational plaques, tree signage, and site maps. We would encourage the stewards to maximize their use and exposure. Talks and lectures, exploration hikes, and educational workshops, can all be linked to school curriculum, while accomplishing the goal of facilitating positive experiences in nature for youth who might otherwise have limited exposure. (23) Weekend children's programs and summer day camps may want to schedule time. A nature art day with supplies and instructors or a celebration of International Mud Day. Field trips, natural resource agencies, nature centers, schools, botanical gardens, zoos, early childhood centers, educational farms, children's hospitals, colleges and universities, pediatric practices, civic groups, youth groups, individual volunteers, and other entities that share a desire to enhance childhood. Speaker series, treasure hunts or passport games can to entice families to visit natural areas. Other possibilities include teacher and parent workshops, play days and festivals, resource fairs, nature nights, etc.

The opportunity for Duff Park to provide a learning experience isn't limited to children. Many adults utilize the parks Funk bikeway for walking, running, and biking. Many more people are patrons of the adjacent business or simply pass by on Route 22. An opportunity exists there to get people up the hill and into the park. Simply getting them there is often enough to create a reaction and instill an appreciation for the park.

### Nature Play

Children need nature, nature needs children. That is, children need the stimulation, adventure, and wonder of nature to foster their healthy, holistic development. And nature needs children to fall in love with it, and thus start down the path towards becoming the future stewards of the natural world. Throughout human history, nearly all children had ample opportunity to build those emotional bonds with the outdoors through spontaneous play in a wild area, whether large or small. Not all of them fell in love with nature, or course; not all children ever will. But the opportunity was routinely there. Only in the past few decades has that changed; now, children's access to frequent unstructured nature play has become much less common. This is an ominous transformation. The single greatest influence on conservation values, nature play, is disappearing from childhood. Consequently, the conservation movement is facing a slow-motion crisis: the maturation of future generations who may be less likely to share our interest and commitment to protecting the natural world.

Many conservationists have witnessed the ecological damage caused by the reckless use of natural resources, and the default reaction has been to routinely impose visitor rules for their protected properties. But as we learn about the power of nature play, the worry is that these rules may do more harm than good if they have the unintentional effect of turning children away from nature. The influential childhood nature experiences that adult conservationists commonly recall often involved collecting insects, climbing trees, exploring away from marked trails, and other joys that are now illicit activities in many parks. Are we prohibiting the very kinds of activities that helped each of us to fall in love with nature when we were young?

Since most conservationists are motivated by a love of the land, and many conservation organizations were founded to preserve a particular natural area, it is understandable that their first-and-foremost concern is to protect the resource. There is no doubt about the good intents behind these powerful commitments to protecting the resource-but now that we better understand the childhood origins of conservation values, there should be concerns about these rules' unintentional impacts. Children need wild places to play in, to explore, to manipulate, and to fall in love with. While they are doing so, they will damage the resource. However, children's nature play rarely does a substantial degree of ecological damage. Obviously, there are places where such play should be prohibited, but in many locations nature play will cause only minimal harm in any true ecological sense. So carefully consider how restrictive we need to be. Don't rule out nature play where its ecological impacts will be minor. A few natural sites have approached this with a simple zoning system: a small amount of land is designated for active play and educational use; the bulk of the site is open for visitor access under typical protective rules; and perhaps a special portion is completely off-limits due to the presence of sensitive species or landforms. Thoughtful trail design, effective signage, and good visitor maps can help support this zoning approach. (13)

## IV. Expand:

### Connections & Corridors

Whenever possible linking parkland together via environmental corridors or public use and access ways is ideal. Drainage ways, greenways, and environmental corridors can all be utilized as part of a permanent open space system suitable for passive recreation use, including nature walking, wildlife habitat preservation, and trail development. (18) Duff Park is already linked to several of these corridors:

The Turtle Creek Greenway is defined as starting behind Sheetz and running to B-Y Park in Trafford. As you travel downstream along Turtle Creek from Duff Park, the stream corridor deepens and becomes the "Turtle Creek Gorge" – rugged, steep slopes, small waterfalls, wild, very pretty. The idea of the Turtle Creek Greenway Plan is to work toward conservation of the green corridor which would include the 'viewscape' of the steep slopes flanking Turtle Creek through the "Turtle Creek Gorge", anchored by a recreational rail trail, and to work toward implementation of the various conservation measures (storm water management, prevention of erosion and flooding, invasive plant control, etc.). ()

Other corridors include the Westmoreland Heritage Trail and the Westmoreland Wildlife Corridor that happen to converge near Duff Park. The Westmoreland Heritage Trail is ideal for walking jogging, bicycling, and cross-country skiing. The trail has a wide, flat handicapped accessible surface and accommodates everyone regardless of age or physical ability. These are fantastic connections and extensions of the park, bringing additional visitors to and past the park and encouraging its use. Future connection opportunities such as these should obviously be explored and taken advantage of whenever the situation is presented.

Another possible connection opportunity - to Pleasant Valley Park, exists through property already owned by the Municipality of Murrysville. Although topographically challenged, further development of this connection should be explored and encouraged.

## Adaptive Management

Adaptive management is a process whereby evaluation and monitoring of results are compared to the goals or defined "measures of success" so that management practices can be changed or modified as needed. Because we can't know everything about managing natural areas, adaptive management has become a widely accepted method of conducting research on the effect of land management practices on an ecosystem. In this scheme, the land manager constructs a model of how he or she believed the system works, implements a practice that attempts to move the system toward the desired condition, monitors the results of that practice and assesses its success. This practice can range from casual observation to systematic research on the effectiveness of management activities, but in each case the land manager attempts to learn from the experience. Future park assessment and evaluation, public feedback, Municipal & local organization's strategic priorities and other factors should all influence the evolution of this document and the stewardship of Duff Park.

# ADDITIONAL ATTACHMENTS

**References & Resources:**


**(1) Allegheny County Park Stewardship Program**
*https://www.alleghenycounty.us/parks/rangers/park-stewards-program.aspx*

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