

SECTION V

SIGNIFICANT NATURAL AREAS

Bucks County contains a diversity of unique natural features. These natural features harbor a wide range of flora and fauna, some of which are found nowhere else in the Commonwealth. In June of 1999, an inventory was undertaken to identify and rank the most significant natural areas remaining in the county, including those in the Pennridge Area. The inventory resulted in the publication of the document, *Natural Areas Inventory of Bucks County, Pennsylvania*. The project was conducted by the Morris Arboretum of the University of Pennsylvania (Ann F. Rhodes and Timothy A. Block) for the Bucks County Commissioners, and was intended to provide guidance for implementation of the natural areas protection component of the Bucks County Open Space Initiative.

The individual site evaluation to determine the significance of natural areas is based upon 13 criteria addressing biological, ecological, hydrological, and geological components. The criteria/factors were weighted into three categories of importance as follows. Considered most important were (1) presence of state rare, threatened, or endangered species, (2) presence of federal threatened or endangered species, (3) overall biodiversity, (4) presence of natural communities that are rare in the context of Bucks County, and (5) presence of unusual geologic features. The second priority factors included (1) a size/interior/edge factor, (2) proximity or connectivity to other important natural areas, (3) a site's location in a designated high quality or exceptional value watershed, (4) level of current or ongoing management needed to maintain the site's natural value, (5) the number of natural communities present, and (6) presence of wetlands. Finally, the third priority factors included (1) severity of threats that would result in destruction of a site's natural value, and (2) overall nonnatural disturbance.

Based upon detailed aerial and field surveys, the analysis and evaluation resulted in four levels of importance. In the entire county, there were 240 total sites considered in the survey, and 118 were included in the final list. Some sites are significant in size while others are smaller tracts. In general, small isolated sites that, for instance, may have contained remnant populations of rare species, were not included because they are not part of a sustainable natural community or system.

The following narrative is from the *Natural Areas Inventory of Bucks County* (June 1999). The descriptions of the Priority 1 through 4 sites as identified in the surveys that included portions of the Pennridge Area, are provided below:

Priority 1 Sites

Quakertown Swamp Quakertown Swamp is the largest inland wetland in Bucks County. It contains diverse natural communities ranging from open water to shrub swamp, cattail marsh, tussock sedge marsh, and swamp forests and includes a total of approximately 400 acres. The swamp is entirely within the Quakertown diabase sheet.

The Audubon Society has designated the swamp as an Important Bird Area. It is known to provide habitat for 91 bird species, including 14 rare breeders and eight special concern species. The swamp also harbors the only known great blue heron rookery in the county that

had 48 nests in 1999 making it the largest in eastern Pennsylvania. The swamp is also known to provide habitat for a variety of reptiles and amphibians, although a complete survey has not been done. Beavers are active in the swamp at several locations.

Several parcels of the swamp are part of State Game Lands Number 139, but most of the area is in private ownership. Heritage Conservancy has conducted a survey of properties in the watershed. Continuing efforts to protect the swamp should focus on core areas along Bog Run and the headwaters (which begin in West Rockhill Township).

A pipeline right-of-way that closely parallels Bog Run has brought a severe infestation of common reed (*Phragmites australis*) into the swamp. Action to control this invasive weed is needed. Other weed problems exist along the railroad track where Japanese plume grass (*Miscanthus sinensis*) has spread over several acres and in many parts of the wetland where purple loosestrife (*Lythrum salicaria*) is established.

Ridge Valley Creek Ridge Valley Creek flows for approximately four miles through West Rockhill Township to the border with Montgomery County south of Finland. It is a tributary of the Unami Creek that it joins at Sumneytown.

Ridge Valley Creek flows through the diabase belt of upper Bucks and Montgomery Counties. In Bucks County it follows a course within the Quakertown diabase sheet dropping from 490 feet above sea level at the headwaters to just under 400 feet at the county line. Three dams occur in this stretch, which have created small lakes, each 2–3 acres in extent. Smaller ponds have been built on some of the headwaters streams. Traces of an early millpond and millrace can be seen in one area of forest in the upper reaches of the watershed.

Where the gradient is greater, the stream has eroded away the loose sediments to reveal a jumble of huge diabase boulders; this is especially evident in the section just below Allentown Road. In the section west of Ridge Valley Road, the creek flows through a broad flat valley, where sediment accumulation has occurred forming extensive areas of a swampy floodplain forest and marsh. Headwaters areas in the vicinity of Forest Road and Mountain View Road contain sphagnum shrub swamps, an unusual feature in the diabase region.

Although State Game Lands 196 forms a core area of protected land within the watershed in Bucks County, the remainder of the land is privately owned. Downstream in Montgomery County, Marlborough Township has acquired the former Camp Skymount property, and the Natural Lands Trust has the Fulshaw-Craeg Preserve. The Montgomery County portion of the Ridge Valley Creek corridor is included in the Unami Hills study for which protection strategies are currently being developed.

The continuous forested expanse, part of the diabase zone of upper Bucks and Montgomery counties, provides habitat for birds such as barred owls and pileated woodpeckers that require large unbroken expanses of forest. Further fragmentation would threaten the integrity of the area and its ability to support a diversity of wildlife.

Haycock Mountain (State Game Lands 157) and Nockamixon State Park Nockamixon State Park and State Game Lands 157 together make up the largest expanse of open space in Bucks County, over 7,000 acres. Haycock Mountain in Haycock Township, with its massive

diabase outcrops, rises to a maximum elevation of just over 960 feet, 560 feet above the surface of Lake Nockamixon (able to be seen from the southern side of the lake in Bedminster Township).

The area, including the Bedminster Township portion related to Lake Nockamixon and the southern portion of the park, contains varied habitats including forests, old fields, boulder fields, rocky streams, and forested wetlands, and the 6-mile-long lake created by the dam on the Tohickon Creek. Three rare plant species occur in the area and 47 species of birds, including five rare breeders, make their home on Haycock Mountain. In addition locally rare plant species including Allegheny vine (*Adlumia fungosa*) and butternut (*Juglans cinerea*) are present. Black bears that have wandered into the area from farther north have been spotted in the vicinity several times in the past years. Opportunities to acquire inholdings and properties which jut into the area of protected lands should be sought or which would preserve a corridor between this area and the adjacent lands.

Tohickon Creek (area from below the dam at Nockamixon State Park to the Mouth)

The Tohickon Creek from below the dam at Nockamixon State Park to its confluence with the Delaware River at Point Pleasant is approximately 11.5 miles in length. It flows through privately owned farmland to one mile below PA Route 611; below that most of the land is forested and is in state and county parks. One exception is the Boy Scout Camp Ockanickon Reservation. Periodic releases of water from Lake Nockamixon flush out the creek and provide a white-water recreation opportunity for kayakers and canoeists. The stream is currently classified as CWF (cold water fishery); a petition for an upgrade to EV (exceptional value) status is pending.

The course of the creek cuts through alternating bands of Triassic shales, sandstones, and argillites of the Brunswick and Lockatong Formations. At High Rocks, in Ralph Stover State Park, dramatic 200-foot-high cliffs of Brunswick shale rise above the creek. The Tohickon Creek valley is identified as a potential National Natural Landmark (Butler et al. 1975). The exposures of the stratigraphic structure of both the Lockatong and Brunswick formations and the ingrown meanders caused by down cutting by the stream are of particular interest.

The valley provides a variety of habitats from slow-moving sections with gravel, mud, or silt bottom to a high gradient rocky streambed. Several small dams create impoundments at Stover-Myers Mill and Ralph Stover State Park. Surveys by the Bucks County Audubon Society reveal that the creek valley is home to 82 bird species including 10 rare breeders and four species of special concern in Bucks County.

The creek itself contains populations of rare species that are indicators of high water quality including Riverweed, a higher plant that encrusts the rocks in fast-moving water. A freshwater sponge is also found in the creek, as are several species of freshwater mussels. Mussels are particularly abundant in the section of the creek between PA Route 611 and PA Route 113, at the mouth of Cabin Run, and at the mouth of the Tohickon Creek in Point Pleasant. Four different species were found in 1998 surveys.

Most of the way the creek flows past steep forested slopes on one or both sides. The entire creek valley between Nockamixon State Park and PA Route 611 is privately owned. A particularly nice stretch is on the Bedminster Township side between PA Route 611 and PA

Route 113. Steep wooded slopes rise above the wooded floodplain. A large population of Canadian yew, a plant that has become rare due to over-browsing by deer, is found here. In the floodplain, Shellbark hickory is common. Above the Stover-Myers Mills County Park the forested slope on the Bedminster Township side is privately owned, as is the forested floodplain on the opposite bank of Tinicum Township.

Below Ralph Stover State Park, the Boy Scout Camp Ockanickon Reservation occupies approximately two miles of the creek valley on the Plumstead Township side. Several smaller privately owned parcels are located below the Scout Reservation. On the Tinicum Township side a privately owned parcel of riparian forest along the creek just below Stover Park Road separates the two sections of Ralph Stover State Park. The remainder of the creek valley is in public ownership. Securing all remaining privately owned sections of the Tohickon Creek valley should be a high priority in order to further protect this high quality stream and the diverse habitats within its corridor.

Priority 2 Sites

Butter Creek Butter Creek flows 3.5 miles through West Rockhill and Milford Townships, joining the Unami Creek approximately one mile northeast of Finland, where the Unami goes under the Northeast Extension of the Pennsylvania Turnpike. The course of the creek is entirely through the Quakertown diabase sheet. It drops from 550 feet above mean sea level to approximately 440 feet, with most of the drop occurring in the upper half of the watershed. Most of the creek valley is forested.

A broad flat stream valley with mucky shrub characterizes the lower part. Sedge-dominated marshes spread out from the creek on both sides providing habitat for birds, reptiles, and amphibians. Most of the watershed is privately owned, but the Heritage Conservancy manages the Manderfield Preserve just downstream from Allentown Road, and Milford Township owns a section of the stream valley above the vacated section of Benner School Road. Extensive tussock sedge and shrub wetlands along Butter Creek Road just above Allentown Road are of particular interest.

East Branch Meadow This site is floodplain meadow along the East Branch of the Perkiomen Creek that has a very high diversity of native herbaceous species, including four states species listed as rare plants. Three of the four are species that are components of the midwestern prairie flora that occur primarily on diabase-influenced soils. The owners maintain meadow, which was formerly a hayfield, by annual mowing, without which the exotic invasive Multiflora rose (*Rosa multiflora*) would be a major problem. Heritage Conservancy holds a conservation easement on the site.

Rock Hill This site is part of the Haycock diabase sheet. Rock Hill rises to a height of 850 feet above sea level, 250–300 feet above the surrounding landscape. It includes extensive forested slopes and abundant evidence of several eras of quarrying from residue from early cutting of paving blocks from surface boulders to a large abandoned quarry pit on the southern end. The hill is identified as an outstanding scenic geologic feature of Pennsylvania (Geyer and Bolles, 1979). Rock Hill is an integral part of the continuous forested band that stretches across upper Bucks and Montgomery counties and should be protected from deforestation or fragmentation.

Priority 3 Sites

East Branch of the Perkiomen Creek (between Sellersville and PA Route 309) This site contains approximately 70 acres of floodplain and riparian forest along the East Branch of the Perkiomen Creek. Shagbark hickory (*Carya laciniosa*) is present along the edges of scoured channels and back channels in the floodplain. It is an unusually fine expanse of floodplain forest and adjacent lower wooded slopes.

Sellersville Catch Basin and vicinity² This site includes a small lake (the catch basin) which is actually a dammed portion of a Tohickon Creek headwaters stream, and surrounding forested slopes on diabase. The tract is part of the continuous belt of diabase forest that extends across upper Bucks and Montgomery counties.

Tohickon Creek, Camp Tohikanee This site includes a 1.25-mile-long stretch of the Tohickon Creek above Union Road southeast of Quakertown. Extensive forested slopes and floodplain forest border the creek. Wetlands are present in several locations. Beaver activity was noted. Geology is diabase.

Priority 4 Sites

Goldmine Creek Ravine This site is a forested creek valley containing an abandoned mine shaft. The creek cascades down over stair step-like exposures of hornfels. The adjacent slopes contain a mature red oak/mixed hardwood forest; a stand of pawpaw (*Asimina triloba*) along the creek is unusual for Bucks County.

Ingram's Hill This site consists of forested slopes and hilltop old fields between County Line Road and Gold Mine Road north of the East Branch of the Perkiomen Creek. A large stand of shrubby St. John's-wort (*Hypericum prolificum*), an unusual species in Bucks County, is present.

² Additional information from the Sellersville Borough Open Space Preservation Plan indicates that the Sellersville Borough water department owns several parcels in adjacent West Rockhill Township. A large area is made up of five parcels and contains approximately 100 acres. A smaller area is a single parcel of 2 acres. The larger area serves as a watershed and catch basin. This land is located between the PA Route 309 bypass, Old Bethlehem Pike, and Forest Road. The only facilities on the site are a water treatment plant and pump. The land is almost completely wooded and off limits to unauthorized persons. The catch basin collects and filters rainwater that is treated and pumped to the borough for potable water reserve. The land was cut in two pieces in the 1970s when the PA Route 309 bypass was constructed. There are a number of single-family detached residential uses surrounding the site; and to the northwest, abutting the bypass, is a horse farm.