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INTRODUCTION

Natural resources in the Northern Chester County region (the Region) have long been valued. Land and water resources have been employed in the Region’s settlement and development, evident in designated historic districts, sites, and buildings, and they continue to support its working agricultural and forest landscapes. Their continued presence, high quality, and pattern contribute to the Region’s scenic character that residents appreciate and desire to conserve. Appendix 4 presents information about natural and cultural resources in the Region. Data were drawn from various state, county, and private sources as indicated.

NATURAL RESOURCES

WATER RESOURCES

Map 3, Water Resources, shows the location of streams, floodplains, and potential wetlands by watershed in the Region. It also illustrates the location of the historic Schuylkill River Canal.

RIVERS AND STREAMS

The Schuylkill River and its tributaries, French Creek and Pickering Creek, as well as Marsh Creek, which flows into the East Brandywine Creek, drain the Region. These 18.7 miles of the Schuylkill River and 86 miles of streams were essential to its historical development. Streams supported coal and iron production and powered mills, while the river and canal provided transportation to markets.

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Rivers and streams are classified in several ways. Waterways are classified into several habitat types based on water flow: tidal, lower perennial, upper perennial, and intermittent. They are classified by size and their location in hierarchy of drainage toward the river, e.g., first order, second order, etc. Waterways are also classified by water quality or biotic health by the Department of Environmental Protection (DEP) in response to the anti-degradation policy created by U.S. Department of the Interior and Environmental Protection Agency water quality standards regulations from 1983. Classifications are made for a river's or stream's designated use, such as aquatic life, fish consumption, recreation, and potable water supply (desired as policy, not necessarily attained); existing use (as attained since 1975 and which can be more protective than the designated use); and waters of such high quality that they warrant "special protection."¹ Four uses and two "special protection waters" designations are described below.

- CWF Cold Water Fisheries – Maintenance or propagation, or both, of fish species and additional flora and fauna which are indigenous to a cold water habitat, such as the trout. Many times this classification is based on the presence or absence of trout.
- WWF Warm Water Fisheries – Maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat. This classification is often times looked at as "the bottom of the barrel" but this is not the case. A warm water fishery simply means it is a water body that supports fish, plants, and animals that thrive and prefer warmer temperatures (above 70 degrees F) such as bass and sunfish.
- MF Migratory Fishes Passage – Maintenance and propagation of fishes which ascend to flowing waters to complete their life cycle, including reproduction. Some of them live in streams and reproduce in the ocean (catadromous) like American Eels, and others live in the ocean and reproduce in streams (anadromous) like the American Shad.
- TSF Trout Stocking Fisheries – Maintenance of stocked trout from February 15 to July 31 and maintenance and TSF propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.
- EV Exceptional Value – DEP testing must show a high biotic integrity and health with test data from over a one-year period to obtain this rank. EV streams include all streams that flow through state natural areas or federally-protected wilderness areas, other waters that receive a score of 92 percent biotic integrity ranking, and wilderness trout streams. Once a stream has been defined in such a way, the stream is protected in that DEP regulation does not permit uses along the stream that would lead to any degradation of the stream quality.

¹ *Wildlife Habitat in Pennsylvania: Past, Present, and Future*, accessed at <http://www.dcnr.state.pa.us/wlhabitat/acknowledge.aspx> on May 10, 2011.

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- HQ High Quality - DEP testing must show a macro-invertebrate community score of 83 percent or better, or it must be a state-designated class A trout stream. HQ streams are defined as still sustaining cold water fisheries. Most of the HQ and EV watersheds are located where forest cover is abundant.

The combination of use and special protection designations results in 13 potential classifications:

- CWF - Cold Water Fishery
- CWF, MF - Cold Water Fishery; Migratory Fishery
- EV - Exceptional Value
- EV, MF - Exceptional Value, Migratory Fishery
- HQ-CWF - High Quality, Cold Water Fishery
- HQ-CWF, MF - High Quality, Cold Water Fishery, Migratory Fishery
- HQ-TSF - High Quality, Trout Stocked Fishery
- HQ-TSF, MF - High Quality, Trout Stocked Fishery, Migratory Fishery
- HQ-WWF - High Quality, Warm Water Fishery
- TSF - Trout Stocked Fishery
- TSF, MF - Trout Stocked Fishery, Migratory Fishery
- WWF - Warm Water Fishery
- WWF, MF - Warm Water Fishery, Migratory Fishery

Waterways are also classified as attaining (supporting) or not attaining their designated use(s) based on their water quality conditions, i.e., point and non-point source pollutants. The designated use, existing use (if it exceeds the designated use), the most protective use(s) supported, and any use limitations for each of the major waterways in Northern Chester County are shown in *Table A5.1*.

Table A5.1: PA DEP Designated Uses of Major Waterways in Northern Chester County

Waterway	Designated Use	Existing Use (if exceeds Designated Use)	Status of Support for Most Protective Use(s)
Schuylkill River - Main Stem, Little Schuylkill River to Head of Tide	WWF, MF		Supporting aquatic life and potable water supply; fish consumption use impaired by presence of PCBs.
Pickering Creek - Source to Philadelphia Suburban Water Company Dam	HQ-TSF, MF		Supporting aquatic life.
French Creek - Source to Beaver Run	EV, MF		Supporting aquatic life; supporting recreational use in headwaters only; recreational use of South Branch impaired by the presence of pathogens.
Beaver Run	HQ-TSF, MF	EV; last evaluated 2004	Supporting aquatic life.
French Creek - Beaver Run to the Junction	HQ-TSF, MF	EV from Beaver Run to second/last entry	Supporting aquatic life.

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Waterway	Designated Use	Existing Use (if exceeds Designated Use)	Status of Support for Most Protective Use(s)
of West Vincent, East Vincent, and East Pikeland township borders		into East Pikeland Township; last evaluated 2004	
Birch Run	EV, MF		Supporting; recreational use impaired by the presence of pathogens.
Stony Run	HQ-TSF, MF		Supporting; recreational use impaired by the presence of pathogens.
Pigeon Creek	HQ-TSF, MF		Supporting aquatic life.
Marsh Creek	HQ-TSF, MF		Supporting aquatic life.

Source: EmapPA, at <http://www.dep.state.pa.us>, accessed May 11, 2011.

The Schuylkill River drains the northeastern portion through direct flow, several small unnamed tributaries, and two named tributaries, Pigeon Creek and Stony Run.

PA DEP has designated the river as a warm water fishery. It has also listed the river as impaired for fish consumption by polychlorinated biphenyls (PCBs). A Total Maximum Daily Load (TMDL) has been established to manage further PCB pollution of the river. Other tributary impairments include an unnamed tributary passing through Kenilworth impaired for aquatic life by flow alterations, flow variability, and siltation caused by residential development. Another unnamed tributary in East Vincent is impaired for aquatic life by nutrients (phosphorus from agricultural activities in the watershed) for which a TMDL has been established. The TMDL establishes the maximum annual load at 238 pounds per year and the daily load at 0.65 pounds per day.

Both larger tributaries, Pigeon Creek and Stony Run, are designated as High Quality, though recreational use of Stony Run is limited by pathogens. Pigeon Creek has been classified as a Biodiversity Corridor by Chester County and that the Township is working to conserve land adjacent to it through acquisitions.

French Creek drains the central portion of the Region from west to east, exiting from East Pikeland and flowing to its confluence with the Schuylkill River at Phoenixville. Its named tributaries include Pine Creek, Rock Run, South Branch, Beaver Run, and Birch Run. Stream segments upstream of Beaver Run and Birch Run are designated by PA DEP as Exceptional Value. Downstream segments are designated as High Quality. Assessments confirm that water quality is supporting aquatic life in nearly all segments. Portions are approved for trout stocking. However, the South Branch and Birch Run are impaired for recreational use by unknown sources of pathogens.

Pickering Creek drains the southeastern portion of the Region. Its sole named tributary in the Region is Pine Creek. All segments are designated as High Quality and assessments confirm that water quality is supporting aquatic life. Portions are approved for trout stocking.

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Marsh Creek drains a small portion of East Nantmeal into the East Brandywine Creek watershed. Its sole named tributary in the Region is Lyon Run. Assessments have tentatively confirmed that water quality is supporting aquatic life in all segments. However, a TMDL to manage PCBs in the Delaware River Basin and a TMDL to manage low flow in the Christian River Basin have been established across these watersheds.

STREAM RELEAF

Stream ReLeaf plantings, a program of the Pennsylvania DEP, are intended to restore and conserve riparian buffers along Pennsylvania streams and improve water quality. Six Stream ReLeaf projects have been completed along French Creek. Two Stream ReLeaf projects have been completed along a small, unnamed tributary in North Coventry, and five have been completed along Pigeon Creek.

FLOODPLAINS

As the fluctuating interface between the land and dynamic water resources, floodplains and wetlands are found alongside these water bodies. Floodplains are found along the main stem of all four major waterways in the Region. While minor flooding can occur with any storm event, anticipated flood elevations are determined for a storm that has a one percent annual chance of occurrence, designated as the 100-year floodplain. Locations susceptible to more severe flooding associated with a storm that has a 0.2 percent annual chance of occurrence, the 500-year floodplain, are found only along the Schuylkill River. One-hundred and 500-year floodplain locations are shown on *Map 3*.

Zoning regulations in all nine municipalities manage the uses, activities, and development that are permitted in the floodplain. All regulations are purposed to protect the public's health, safety, and welfare and to minimize property damage and associated impacts to the tax base. Some aim to protect surface and subsurface water supplies, prevent the disruption of activities and services, and minimize public expenditures for flood protection and relief.

North Coventry and Warwick purpose statements recognize the floodplain's vital function in natural drainage and critical conditions (porosity and permeability) in storing and absorbing flood waters and providing areas for the deposition of flood-borne sediment. East Pikeland regulations also aim to protect and preserve the waterway and its habitat, as well as the scenic character of the streams and stream valleys.

WETLANDS

According to the National Wetlands Inventory, 2,150 acres of wetlands cover 2.9 percent of the Region, as shown on *Map 3*. They vary from less than one acre to 74 acres in size. Riverine or river-based wetlands are located along the Schuylkill River and its floodplains, while Freshwater Emergent and Freshwater Forested Shrub wetlands, including some farm ponds, are found in lowland locations. The two most significant wetland areas in the Region are the Great Marsh and the nearly contiguous areas along French Creek and its tributaries upstream of Beaver Run. Due to their function in flood control,

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water filtration, groundwater recharge, water supply, and wildlife habitat, wetlands are considered to be a constraint to development. Their protection is regulated by state and federal law.

NATURAL AREAS

Map 4, Natural Areas, illustrates three natural community types designated in the Region: natural areas/communities, important bird areas, and important mammal areas.

The *Chester County Natural Areas Inventory (1994)*,² prepared by the Pennsylvania Science Office of The Nature Conservancy, contains information on the locations of rare, threatened, and endangered species and the highest quality natural areas in the county. The information and maps presented in the report are intended as a guide for planning community development and parks, for conserving natural areas, and for developing priorities for the protection of vulnerable natural areas in the county.

Twelve sites are located in the Region, as presented in *Table A5.2*. Site #11, Great Marsh, and Site #114, Pine Swamp, are ranked fifth and sixth, respectively, as sites of statewide significance for the protection of biological diversity in Chester County. Additionally, the Warwick County Park Floodplain Forest and Seeps and St. Peters Woods are listed as areas of high county significance, though they do not include high quality natural communities or species of special concern.

Table A5.2: Natural Areas

Site	Name	Size	Significance / Threats
5	Sportsman Club Site	16.1	This site along a powerline right-of-way contained very small populations of two Pennsylvania rare species (SP554 and SP557). Management of the right-of-way and weedy species, Japanese honeysuckle and stilt grass, may be a threat to these populations.
6	Dorrance Estate	15.2	Two species (SP555 and SP556) are located on a slight slope in a weedy wet meadow in poorly-drained silty soil on a shale-conglomerate substrate. The wet meadow is located among mixed woods and is succeeding to a woodland, which will likely shade out these populations over time.
7	Rock Run Thicket	120.8	SP503, found in a wet floodplain thicket and swamp forest along the south side of Harmonyville Road and east of Rock Run, does not warrant protection action. Encouraging the landowner to maintain the wetland and floodplain vegetation does help to protect Rock Run water quality.
8	Trythall Woods	70.1	This Circumneutral Seep natural community is within a mature 16-acre beech-tulip-poplar woodlot. There are about 20 seeps found on this diabase (traprock) ridge on lands managed by the Natural Lands Trust. Management concerns include: 1) maintenance of the forest overstory at the seeps and in the upper part of the watershed above the seeps; 2) protection from over-browsing by deer; 3) impacts from uphill residential properties on water quality and quantity.

² *Chester County Natural Areas Inventory, 1994*. The Nature Conservancy.

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Site	Name	Size	Significance / Threats
9	Warwick Seeps	62.2	This Circumneutral Seepage Swamp natural community is a 15-acre mosaic of wooded uplands and seeps at the base of a diabase ridge. Species diversity and forest age are high. No rare plants or animals have been located here but further searching is warranted. The site could be an ideal local nature preserve because of the easy access afforded it from the abandoned rail line.
11	Great Marsh	2,953.3	<p>This wetland complex contains Graminoid Marsh and Circumneutral Shrub Swamp natural communities, as well as some successional wet meadow and swamp forest habitats. This is the largest freshwater marsh and wetland complex in southeastern Pennsylvania. Four animals of concern are currently known to be using the wetland complex. Approximately 150 bird species utilize the marsh for nesting and foraging or during migration. There are numerous accounts of rare or declining bird species that have nested here in the past, some of which may still nest here.</p> <p>Common reed (<i>Phragmites australis</i>), multiflora rose, and other weeds have become established here following ditching and other disturbance, severely degrading the communities in some areas of the wetland. The lower end of the marsh has been inundated by waters backed up by a dam. This has created the open water areas and marsh which have been beneficial to many forms of wildlife.</p> <p>Monitoring and maintenance of the dam will be necessary for continued high value of the marsh and open water areas. Much of Great Marsh is under an easement to the Brandywine Conservancy, French and Pickering Creeks Conservation Trust, and The Nature Conservancy (TNC), and some of the marsh is owned by TNC. Protection of upland buffers and water sources is needed to protect the marsh and its inhabitants. This site has potential to be a township or county nature preserve.</p>
96	Trythall Road Wetland	35.9	n/a
97	Warwick County Park Seeps	883.1	n/a
105	Pigeon Run Wetland	26.6	<p>This locally-significant site is a fairly large wetland complex on the floodplain of Pigeon Run, which may have been caused by the construction of a power line. No rare species are currently known at this site but more searching for plants and animals is warranted.</p> <p>Maintaining the forest cover is important to protecting the quality of the site. Fencing around the wetland to exclude streamside grazing has helped to prevent erosion and nutrient loading into the swamp. The area provides valuable open space and wildlife habitat and serves as flood and water pollution control as well.</p>
108	Warwick County Park Floodplain Forest & Seeps	157.6	This site is a diverse wooded area of mature trees, understory and herbaceous layer, and seepage wetlands. No known species of special concern are known from this site but there is potential because of the high diversity.

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Site	Name	Size	Significance / Threats
			<p>Forest management should continue to be limited to selective harvest and kept well away from the floodplain and the seeps on the hillside leading down to the floodplain. The forested floodplain helps maintain the water quality of French Creek which does harbor a fairly rare aquatic plant species. The creek and the floodplain woods are recreational resources for residents of the township and county. This site offers a good opportunity for environmental education and a nature trail; a boardwalk may be needed to minimize visitor impact.</p>
109	St. Peters Woods	67.1	<p>This site located to the west of French Creek at St. Peters Village is a locally-significant example of a talus slope forest natural community. The steep slope contains mixed hardwoods and hemlock growing among large diabase (traprock) boulders. The oldest trees appear to be about 75 to 100 years old. The area is known for the scenic French Creek Falls, where the creek tumbles over boulders on its descent to the valley.</p> <p>Left in woodland, the site will continue to serve as a unique example of this woodland type in the county, to provide scenic and recreational value and to serve as a buffer along French Creek, home to at least one plant species of special concern (SP515). Not logging within this site is the best way to maintain the area's unique qualities and its potential for rare species.</p>
114	Pine Swamp	523.2	<p>This site contains an Acidic Broadleaf Swamp natural community and supports a globally-rare plant species. Five other plants of special concern occur in the surrounding wetland plant communities. Part of the swamp is within French Creek State Park but most of the land is privately held. Protection of the swamp and its contributing water resources will require easements on surrounding land in the watershed and possibly ownership of the most critical habitats. Management will require not only maintaining the forested swamp but also the diversity of communities within the wetland and monitoring the populations of the rare species that inhabit the various wetland types.</p>

Source: Chester County Natural Areas Inventory, 1994

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IMPORTANT BIRD AND IMPORTANT MAMMAL AREAS

The Important Bird Areas Program³ is a global effort to identify and conserve areas that are vital to birds and biodiversity. By working with Audubon chapters, landowners, public agencies, community groups, and other nonprofits, the National Audubon Society endeavors to activate a broad network of supporters to ensure that all Important Bird Areas in the U.S. are properly managed and conserved.

Important Bird Areas, or IBAs, are sites that provide essential habitat for one or more species of bird. IBAs include sites for breeding, wintering, and/or migrating birds. IBAs may be a few acres or thousands of acres with distinctive features. They may include public or private lands, or both. If privately owned, they may be protected or unprotected. To qualify as an IBA, sites must satisfy at least one of the following criteria. The site must support

- species of conservation concern (e.g., threatened and endangered species);
- restricted-ranges species (species vulnerable because they are not widely distributed);
- species that are vulnerable because their populations are concentrated in one general habitat type or biome, or
- species, or groups of similar species (such as waterfowl or shorebirds), that are vulnerable because they occur at high densities due to their congregatory behavior.

The two IBA sites in the Region, the Great Marsh and the Hay Creek–French Creek Forest Block, have both core and buffer areas, as shown on *Map 4, Natural Areas*. The core of the Great Marsh IBA extends into East Nantmeal for 507.58 acres with an adjacent buffer area of 3,257.49 acres along its border with West Nantmeal and Wallace. The Hay Creek–French Creek Forest Block has two core areas—one in North Coventry and one spanning South Coventry and Warwick—totaling 7,900.91 acres with a connecting buffer area of 10,612.94 acres just in Northern Chester County, plus additional area in Berks County. Descriptions of the two local IBAs are presented in *Table A5.3*.

Both IBA sites in the Region are fully recognized by the program and hold a state-level priority or significance. Recognized IBAs have been announced to the public through a public ceremony, press release, or some other mechanism that makes it widely known that this site is part of a global network of places identified for their outstanding value to bird conservation. Recognition may mean that a landowner has been notified and has approved of the fact that the property has been identified as an IBA; however, recognition does not require landowner approval.

The Important Mammal Areas Project, IMAP,⁴ was created by the Mammal Technical Committee of the Pennsylvania Biological Survey (PABS). IMAP was a joint partnership of the National Wildlife

³ Audubon website, <http://web4.audubon.org/bird/iba/>, accessed February 23, 2011.

⁴ The Pennsylvania Wildlife Federation, <http://www.pawildlife.org/imap.htm>, accessed February 23, 2011.

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Federation, Pennsylvania Wildlife Federation, Pennsylvania Federation of Sportsmen's Clubs, Mammal Technical Committee/PABS, and the Carnegie Museum of Natural History. The pilot IMAP conservation plan was completed for Pennsylvania, and will be used as a model to protect critical mammal habitat throughout North America.

The Hopewell Big Woods region has been identified as an Important Mammal Area, as listed in *Table A5.4*; individual sites are found throughout all nine municipalities in the Region as shown on *Map 4, Natural Areas*. The three largest sites in fact lie within the French Creek Watershed in East Pikeland.

Table A5.3: Important Bird Areas

Site	Name	Size	Significance / Threats
#71	Great Marsh	2,400	Great Marsh is the largest and most biologically diverse inland freshwater marsh in eastern Pennsylvania and the most significant wetland in Chester County's Natural Area Inventory. The marsh contains a 2,500-acre marshland complex within a broader 5,000-acre watershed on a privately owned site. The site includes shrub swamps, swamp forests, and a corridor of floodplain forest extending to the reservoir at Marsh Creek State Park. Industrialization/Urbanization may threaten the site.
#74	Hay Creek - French Creek Forest Block	12,000	This site large block of relatively unfragmented, low elevation forest with abundant "interior forest birds" is owned by varied municipal, state, federal, and private landowners. Industrialization/urbanization, including heavy recreational development; local introduction of non-indigenous species; and quarries at the site perimeter may threaten the site.

Source: Audubon website, <http://web4.audubon.org/bird/iba/>

Table A5.4: Important Mammal Areas

Site	Name	Size	Ownership	Significance / Threats
#31	Hopewell Big Woods	73,000 +	Various	This vast forested area comprises the watersheds of French Creek, Sixpenny Creek, and Hay Creek. These high-value streams maintain native Brook trout populations and provide clean drinking water for the Philadelphia Metropolitan area. The area also contains a unique broadleaf acidic swamp, globally-rare plants and animals and other unique geological features. Industrialization/urbanization may threaten the site.

Source: The Pennsylvania Wildlife Federation, <http://www.pawildlife.org/imap.htm>

WORKING LANDSCAPES

Map 5, Working Landscapes, selectively illustrates agricultural and forested lands. The working and other agricultural lands are based on Chester County’s tax assessment data and tallied in *Table A5.5*.

Forest and agricultural lands are sometimes considered undeveloped, implying that these lands are not used for their highest and best use. But in fact these lands naturally produce the raw materials for the wood and wood products industry – a staple of the construction industry, and the food and food products industry. The age of many woodlands in Chester County increases the likelihood of nails and other materials, deterring harvesters, but the three cheese makers and two wineries are renowned food producers:

- Amazing Acres Goat Dairy on Grove Road in Warwick.
- Birch Run Hills Farm on Horse-Shoe Trail in West Vincent.
- Yellow Springs Farm Native Plant Nursery and Artisanal Goat Cheese Dairy on Yellow Springs Road in Chester Springs, West Pikeland.
- Clover Mill Farm, Vineyards and Winery, LLC, on Clover Mill Road in Chester Springs, West Pikeland.
- J. Maki Winery on Grove Road in Warwick.

As such, these lands are the basis for substantial portions of the economy. A more appropriate term for these productive and largely unbuilt lands is “working landscapes.”

Table A5.5: Working Landscapes

Landscape Type	Acres	Percent of Region	Parcels	Percent of Parcels
Forested/Woodlands	26,288	35.02%	7,096	36.72%
Total Agricultural Land	16,839	22.43%	644	3.33%
Working Agricultural Land	10,851	14.45%	259	1.34%
Other Agricultural Land	5,988	7.98%	385	1.99%

Source: Gannett Fleming, Inc.

The value of the lands is in their production, since these uses are so fundamental to the contemporary society and the economy, as well as in their indirect value as “undeveloped” lands. *Return on Environment: The Economic Value of Protected Open Space in Southeastern Pennsylvania* demonstrates how protecting land from development saves public and private spending on health care, recreation, and infrastructure.

SCENIC FEATURES

Many natural resources contribute to scenic character. Scenic character is often viewed as a subjective judgment. However, when linked to specified conditions and criteria, scenic character can be measured and more objectively evaluated. Topography, surface water, vegetation, and wildlife are the most commonly cited resources. Dark, unpolluted skies are necessary to view stars. *Map 6, Scenic Features*, depicts designated scenic features and viewing areas in the Region.

TOPOGRAPHY AND SLOPE

Topography creates vertical relief that separates one space from another. This relief separates uplands from lowlands and controls the viewshed. Steeper relief generally creates more dramatic views, though expanses of gently rolling patterns can be equally appealing. Slopes of 15 percent or more are found in all nine municipalities along the waterways and scattered throughout upland locations. Some steeply-sloped areas are relatively small, such as those found in East Pikeland and West Pikeland. Other steeply-sloped areas cover a much larger area, such as those in the upper French Creek and Pigeon Creek watersheds. It is primarily in this western portion of the Region that several municipalities have identified “scenic roads” that offer picturesque views to the adjacent landscape from a motorist’s perspective. East Nantmeal and East Coventry have also identified scenic vistas along these roadways.

SCHUYLKILL AND FRENCH CREEK SCENIC RIVERS

In 1978, the main stem of the Schuylkill River was designated as a Pennsylvania Scenic River for the historical and cultural significance of its watershed and its free-flowing, relatively high quality waters – the first scenic river designated under Pennsylvania’s Scenic River Act. Approximately 1,390 acres of Northern Chester County are included in this designation. In 1982, French Creek received the same designation for 9,319 acres of land along its banks. This special status publicly recognizes the value of the creek’s resources and requires state and federal agencies to follow local management guidelines as they carry out land and water management activities and governmental oversight, including regulations and permitting. In 1984, the Federation of Northern Chester County Communities prepared the French Creek Scenic River Management Guidelines to guide development “in the context of the ecological, cultural, and aesthetic quality of the stream area.” As such, the guidelines address land use and design standards for development and were intended to be implemented locally through municipal ordinances.

Through not state-designated, other water bodies throughout the Region also contribute to its scenic character, as they highlight the local topography, native vegetation, and seasonal conditions.

VEGETATION AND WILDLIFE

The Region’s natural and cultivated vegetation further contributes to its scenic beauty through its seasonal variability. The woodlands burst into bright leaf and bloom in spring, settle into subtle shades of green in summer, blaze with warm colors in fall, and display their minimalist structure in winter.

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Agricultural fields and vineyards display similar seasonal changes to crops organized at the hand of the grower. This seasonal variability, in combination with light, weather, and time of day, distinguishes any one day's view from another.

Glimpses of local wildlife are seasonal, too. Only in March can you find Spotted and Jefferson salamanders, Wood frogs, Spring peepers, and American toads crossing St. Peters Road from the vernal pools in the forest to the safety of French Creek State Park (aided by a crew of volunteer citizen crossing guards). Only in summer can you follow Monarch butterflies throughout the arboretum. Only in winter do the red-crested wings of the Red-winged blackbird stand out from the muted grays and browns of nature's landscape at rest.

DARK SKIES

As urbanization has increased in Northern Chester County, it has become more difficult to fully view the stars in the nighttime sky. The need for illumination of public, semi-public, and even private properties to enable surveillance and convey a sense of security has concentrated outdoor lighting in the most urban areas and introduced light fixtures to every major road corridor, even in rural areas of the Region. Where lighting fixtures are well designed and properly installed, the goals of lighting are achieved. However, poor design and improper installation can lead to light pollution and extensive negative impacts on wildlife and vegetation, as well as unnecessary economic expense. Where roads and properties rise with the topography, these effects can be experienced from miles away.

The Four Components of Light Pollution

- **Urban sky glow** – the brightening of the night sky over inhabited areas due to lighting in unoccupied buildings, outdoor lights pointing up to the sky, or unshielded lights.
- **Light trespass** – light falling where it is not intended, wanted, or needed.
- **Glare** – excessive brightness which causes visual discomfort. High levels of glare can decrease visibility.
- **Clutter** – bright, confusing, and excessive groupings of light sources, commonly found in over-lit urban areas. The proliferation of clutter contributes to urban sky glow, trespass, and glare.

Source: International Dark-Sky Association

Skies in Northern Chester County are darker than in the central and eastern portions of the county, though far brighter than much of the state, according to the Light Pollution Science and Technology Institute, which maps artificial night sky brightness and studies its impacts. Artificial night sky brightness maps, such as the one shown in *Figure 1*, allow comparison of levels of light pollution in the atmosphere, to recognize more and less polluted areas and to identify the more polluting districts and

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the bigger sources.⁵ These maps do not give information on star visibility, however, the color indicators approximates that:

- Black - Close to the natural sky brightness.
- Blue - Artificial sky brightness is more than 10% above the natural level.
- Green - Artificial sky brightness is more than 33% above the natural level.
- Yellow - Artificial sky brightness is equal to the natural level. (Total sky brightness is double.)
- Orange - The Milky Way is no longer visible. (Artificial sky brightness is 3 - 9 times the natural level.)
- Red - Less than a hundred stars are visible. (Artificial sky brightness is 9 - 27 times the natural level.)
- White - The North Star is no longer visible. Only the moon, the brightest planets, and about 25 of the brightest stars are visible. (Artificial sky brightness is 27 - 81 times the natural level.)

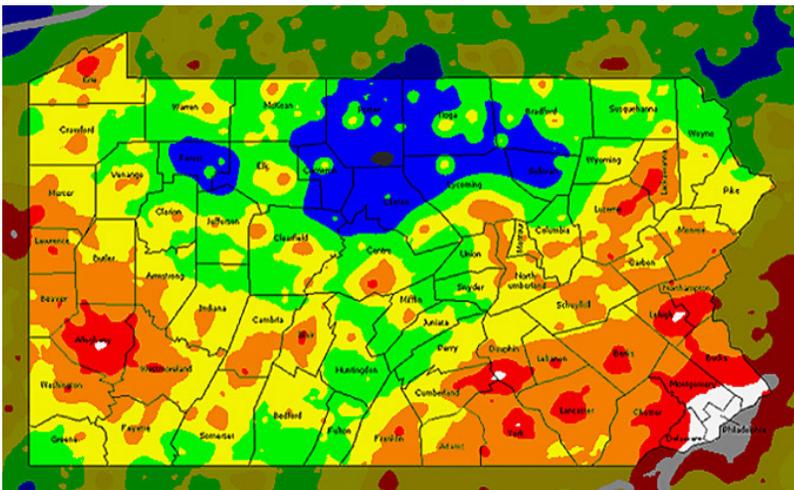


Figure 1: Artificial Night Sky Brightness Map of Pennsylvania
Source: Pennsylvania Outdoor Lighting Council

Similarly, a nighttime satellite image acquired by the International Dark-Sky Association and derived for Pennsylvania by the Delaware Valley Amateur Astronomers, *Figure 2*, shows Northern Chester County in a dark pocket between the nearby metropolitan areas of Lancaster, Reading, and the greater Philadelphia area.

⁵ Pennsylvania Outdoor Lighting Council, www.polcouncil.org, accessed February 25, 2011.

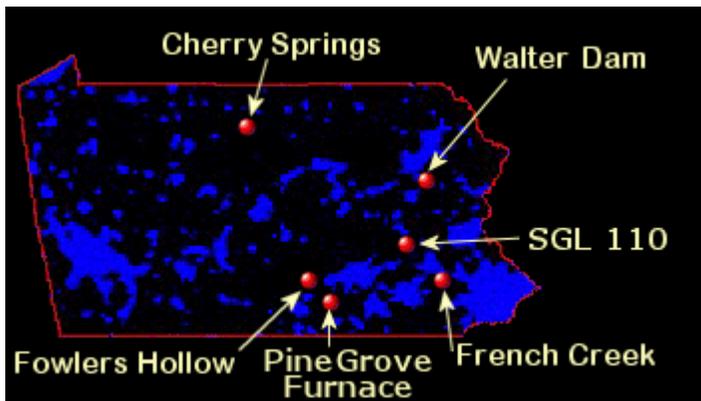


Figure 2: Nighttime Satellite Image of Pennsylvania

Source: International Dark-Sky Association, derived for Pennsylvania by the Delaware Valley Amateur Astronomers

As evidence of the dark skies still found in Northern Chester County, three observatories are located in the Region. The State Game Lands Observatory (the target range on State Game Lands 43), used by the Delaware Valley Amateur Astronomers, and the private Watch Where You Step Observatory are located in Warwick. The private Dark Horse Observatory is located in East Vincent. Given the expansive forest cover designated as Hopewell Big Woods, Warwick may be the darkest place in Chester County.

CULTURAL FEATURES

SITES ON THE NATIONAL REGISTER OF HISTORIC PLACES

Map 10, Historic Sites and Heritage Facilities Map, Table A5.6, National Register Districts, and Table A5.7, National Register Buildings and Sites present sites and districts listed on the National Register of Historic Places and located in or near Northern Chester County.

The National Register of Historic Places is the nation's official list of properties recognized for their significance in American history, architecture, archeology, engineering, and culture. The National Register Program was established by the National Historic Preservation Act of 1966 to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. National Register properties include districts, sites, buildings, structures, and objects. They can be significant to a local community, a state, an Indian tribe, or the nation as a whole. Listing, and

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even nomination, of properties often changes the way communities perceive their historic resources and gives credibility to efforts to preserve these resources as irreplaceable parts of the community.⁶

Spatial data from the National Park Service shows 38 historic sites and 16 historic districts in Northern Chester County. Data from the Pennsylvania Historical and Museum Commission lists two additional districts and one additional building. Districts are found in all nine municipalities and their periods of significance span from 1700 to 1949. The majority of districts are significant for their architecture. Individual National Register-listed historic buildings and sites found in eight of the nine municipalities (none in North Coventry) present a full array of structures associated with early settlement life: homes, farms, mills, churches and social halls, and bridges. The majority are significant for their architectural style, dating from as early as 1700 to as late as 1974.

Table A5.6: Districts on the National Register of Historic Places

Historic District Name and Contents ⁷	Topic and Period of Significance ^{8,9}	Municipal Location
Birchrunville Historic District 193 acres, 53 buildings, 1 structure	For architecture and commerce, 1800-1924	West Vincent Township
Chester Springs Historic District Also known as Good News Buildings Yellow Springs Spa 145 acres, 7 buildings, 1 structure	For architecture, social history, art, and military, 1800-1849	West Pikeland Township
Coventryville Historic District 338 acres	For industry (Warwick (iron) Furnace) and architecture, 1700-1749 and 1875-1899	South Coventry Township, Warwick Township
French Creek Farm Also known as Aman Farm 20 acres, 4 buildings	For architecture, 1750-1824	West Vincent Township
Fricks Locks Historic District 18 acres, 12 buildings, 10 structures	For transportation (canal) and architecture, 1750-1949	East Coventry Township
Hopewell Furnace National Historic Site; Hopewell Village National Historic Site 848 acres, 24 buildings, 15 structures	For industry, military, and architecture, 1750-1899	Warwick Township
Kimberton Village Historic District 40 acres, 3 buildings	For architecture, education, commerce, 1700 to 1799; 18 th - and 19 th -century stone buildings in Chester County vernacular architecture and post- Civil War lot pattern around the railroad station	East Pikeland Township
Kimberton Historic District (Boundary)	For architecture, transportation,	East Pikeland Township

⁶ Pennsylvania Historical and Museum Commission, *National Register of Historic Places Fact Sheet*.

⁷ <http://www.nationalregisterofhistoricplaces.com>, accessed March 9, 2011.

⁸ Ibid.

⁹ <http://www.livingplaces.com>, accessed March 9, 2011.

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Historic District Name and Contents ⁷	Topic and Period of Significance ^{8,9}	Municipal Location
Increase) 44 acres, 46 buildings, 2 structures	education, and commerce, 1750-1924	
Middle Pickering Rural Historic District; Pickering & Pigeon Run Rural Historic District Also known as Stonorov, Oskar G., House 1,055 acres, 76 buildings, 15 structures	For architecture, agriculture, exploration/settlement, 1750-1949	Pikeland, Yellow Springs, Merlin, Church and Pickering Roads in East Pikeland Township, West Pikeland Township, Charlestown Township
North Warwick Historic and Archeological District 1,849 acres, 55 buildings, 13 structures, 1 object	For historic-non-aboriginal, historic-aboriginal, architecture, exploration/settlement, industry, from 3499 BC to 1949 AD	Warwick Township
Parker's Ford 8 acres, 5 buildings, 1 structure	For transportation and commerce, 1750 -1824	East Vincent Township
Pottstown Landing Historic District 22 acres, 76 buildings	18 th , 19 th , and 20 th century buildings, representing Colonial Farmhouse, conservative Victorian Gothic, Bungalow and American Four-Square, and Century Revivals or American Movements	North Coventry Township
Prizer's Mill Complex 4 acres, 5 buildings, 2 structures	For industry, 1750-1799 and 1875-1899	East Pikeland Township
Reading Furnace Historic District 13 acres, 7 buildings, 1 structure	For architecture, 1700-1749, 1800-1824, 1900-1949, namely a mansion house, built in 1744 and expanded in 1812 and 1936; a tenant house, barn, large shed, and three outbuildings built between 1740 and 1820	East Nantmeal Township, Warwick Township
Rice – Pennebecker Farm Also known as Fox Meadow Farm; Hench, Johannes Farm 42 acres, 4 buildings, 1 structure	For architecture and agriculture, 1750-1874	West Pikeland Township
St. Peters Village Historic District 70 acres, 30 buildings, 6 structures	For architecture and industry, 1825-1974, namely a late 19 th century industrial company village including the mining site, worker housing, and tradesmen shops	Warwick Township
Warwick Furnace/Farms 786 acres, 13 buildings	For architecture, industry, agriculture, 1700-1749	East Nantmeal Township
West Vincent Highlands Historic District 1,986 acres, 147 buildings, 6 structures	For agriculture and architecture, 1700 to 1949	West Vincent Township
Total: 5,314 acres, 491 buildings, 47 structures		

Source: National Park Service; National Register of Historic Places.com; Living Places.com

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Table A5.7: Buildings and Sites on the National Register of Historic Places

Historic Building or Site Name	Area and Period of Significance	Address, Municipality
Birchrunville General Store	For architecture, social history, commerce, 1875-1899	Hollow and Flowing Springs Roads, Birchrunville, West Vincent Township
Brower's Bridge	For engineering, 1900-1924	Mansion Road over French Creek, Warwick Township
Bull, Thomas, House Also known as Robert's Plantation; Redding Plantation; Mt. Pleasant	For architecture and commerce, 1700-1799	East of Elverson on Bulltown Road, East Nantmeal Township, Elverson
Clinger-Moses Mill Complex Also known as Clement's Mill	For industry, agriculture, architecture, 1750-1799 and 1875-1899	South of Chester Springs on Pine Creek Lane, Chester Springs, West Pikeland Township
Coventry Hall	For architecture, invention, industry, 1750-1799	Off PA 23, South Coventry Township, Coventryville, South Coventry Township
Deery Family Homestead	For architecture, social history, agriculture, 1750-1824	West of Phoenixville, West Vincent Township
East, Nicholas, House	For architecture, 1800-1824	West of Valley Forge on Kimberton Road, West Pikeland Township
Fagley House	For architecture, 1850-1874	West of Phoenixville on Art School Road, West Pikeland Township
Hall's Bridge Also known as Sheeder-Hall Bridge	For engineering, 1850-1874	About 3 miles North of Chester Springs at Sheeder Road and Birch Run, East Vincent and West Vincent Townships
Hare's Hill Road Bridge	For engineering, 1850-1874	West of Phoenixville on Hare's Hill Road, East Pikeland Township
Hartman, George, House	For architecture, 1750-1799	West of Phoenixville on Church Road, East Pikeland Township
Hockley Mill Farm Also known as Mt. Pleasant Mills; Knauer, Frank, Mill	For architecture and industry, 1700-1949	Warwick Furnace Road, SE of Knauertown, Warwick Township
Kennedy Covered Bridge	For engineering, 1850-1874	Seven Stars Road over French Creek, East Vincent Township
Ker--Feal	For education, art, architecture, 1925-1974	1081 Bodine Road, Chester Springs, West Pikeland Township
Knauer, John, House and Mill Also known as Knauer Mill	For architecture and commerce, 1750-1799	PA 23, Knauertown, Warwick Township
Lahr Farm (added 1979 - Building - #79002199)	For architecture, 1825-1849	East of Elverson on PA 23, Warwick Township
Lightfoot Mill	For architecture and industry, 1700-1749	1703 Conestoga Road, Chester Springs, West Pikeland Township
Meredith, Simon, House	For architecture, 1700-1749	0.5 miles West of Pughtown on Pughtown Road, Pughtown
Meredith, Stephen, House	For architecture, 1825-1849	PA 100 halfway between Bucktown and Pughtown, South Coventry Township
Michener, Nathan, House	For architecture and health/ medicine, 1800-1824	West of Bucktown on Ridge Road, Bucktown, South Coventry Township

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Historic Building or Site Name	Area and Period of Significance	Address, Municipality
Rapps Dam Covered Bridge	For architecture and engineering, 1850-1874	West of Phoenixville on Rapps Dam Road, East Pikeland Township
River Bend Farm	For military, politics/government, architecture, 1750-1790	North of Spring City on Sanatoga Road, East Coventry Township
Rogers, Philip, House Also known as Penn Wick	For architecture, 1750-1799	Ridge Road, Warwick Township
Rooke, Robert, House	For architecture, 1825-1849	North of Downingtown on Horse-Shoe Trail at Fellowship Road, West Vincent Township
St. Mary's Episcopal Church Also known as Old St. Mary's Church	For architecture, 1825-1924	Warwick Road, Elverson, Warwick Township
Strickland-Roberts Homestead Also known as Bryn Coed Farm	For transportation and architecture, 1875-1924	3 miles South of Kimberton on St. Matthews Road, West Vincent Township
Townsend House	For architecture, 1750-1799	SW of Pughtown off PA 100, South Coventry Township
Vincent Forge Mansion Also known as Young's Forge Mansion	For industry and architecture, 1750-1799	Cook's Glen Road, East Vincent Township
Warrenpoint Also known as Branson, William, House; Templin Farm	For industry and architecture, 1750-1799	West of Knauertown off PA 23, Warwick Township, Knauertown, Warwick Township
Warwick Mills Also known as James Mills with Jacob Hager House and Tenant House	For architecture, communications, and agriculture, 1750-1799	East of Elverson off PA 23 on James Mills Road, Elverson, Warwick Township
Welkinweir Also known as Rodebaugh, Grace and Everett, Estate; Morris, Edwin, Farm	For conservation, architecture, and other, 1925-1974	1368 Prizer Road, East Nantmeal Township
Winings, Jacob, House and Clover Mill	For architecture, 1750-1799	SW of Elverson on James Mill Road, Warwick Township

Source: National Park Service; National Register of Historic Places.com; Living Places.com

LOCAL HISTORIC SITES

Many more sites hold historic significance to the Region, Chester County, or Pennsylvania. Examples of these include:

- Sulphur springs, valued by Native Americans and European settlers for their medical properties, in West Pikeland.
- First churches in the Region, including the German Reformed Church, now known as the East Vincent United Church of Christ; Coventry Church of the Brethren, built about 1724 and the

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oldest church of that denomination in continuous use in America; African Union Church (the Union Meeting House on Chestnut Hill near Coventryville) in Coventry (now South Coventry) Township, originally comprised largely of free Africans, some of whom had been rescued from illegal slave-smuggling ships and relocated with families in the Pottstown area.¹⁰

- Numerous mills, including Snyder’s Mill (1776), the site of a gunpowder mill built for General George Washington during the Revolutionary War, later built and operated as a linseed oil mill, a clover mill, a saw and grist mill, a spoke mill and a flour mill from 18030 to 1935, in East Pikeland.
- Revolutionary War Soldiers Cemeteries in East Coventry (Ellis Woods Cemetery) and East Vincent.
- The seven one-room schoolhouses in East Vincent Township, including the Hickory Grove School House (1856); preserved and restored by the East Vincent Township Historical Commission.
- Multiple covered bridges, including the Sheeder Hall Bridge (1850) over French Creek between East Vincent and West Vincent, and Kennedy Bridge (1856 – rebuilt in the 1980s as an exact replacement save for the use of fire and insect resistant wood).
- Railroads corridors, including the Pickering Valley Branch of the Reading Railroad Company, and the stations that served or promoted the development of villages, e.g. Chester Springs

These are but a few of the many sites listed among municipal documents that represent the Region’s local history and its role in our national heritage.

HERITAGE AND INTERPRETATION FACILITIES

Hopewell Furnace National Historic Site and **French Creek State Park** each contain multiple historic structures and interpretive facilities. See Appendix 2 for descriptions of these sites.

Historic Yellow Springs (HYS)¹¹ is a private, nonprofit enterprise in Chester County that preserves and promotes the history and arts of Yellow Springs village. Trails through the grounds are open to the public. Historic Yellow Springs is home to the **Chester Springs Studio**, a vibrant arts center that hosts classes, workshops, and exhibitions in the visual arts. HYS programs allow visitors to explore more than 300 years of history, a rich artistic heritage, and inspiring natural beauty. Education staff offer custom group tours and maintain a self-guided tour program. Exhibits, including a permanent

¹⁰ <http://www.faucsc.org/download/FAUCSCbackgrounder.pdf>, accessed June 28, 2011.

¹¹ www.yellowsprings.org, accessed December 10, 2010.

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orientation exhibit, *The Lure of the Springs*, trace the site's history through original artifacts and images and present the work of innovative artists. Special programs include lifelong learning opportunities for senior groups and summer camps for youth. A lecture series, "Third Wednesdays," brings experts in a variety of fields to the village for enriching discussions.

PROTECTED OPEN SPACE

Map 7, Protected Lands, illustrates the 19,563.9 acres of protected open space in Northern Chester County (26.0 percent of the 75,278.1 acre region) using best available data as of August 2009. Protected open space is defined by the Chester County Planning Commission as "land and water areas that have little or no development; are used for recreation or preserving cultural or natural resources, including productive agricultural soils; and are protected either permanently or on a long-term basis." This total includes 13,423.4 acres of land, or 19.2 percent of the Region, that is protected primarily for land and resource conservation as well as 4,849.5 acres, or 6.5 percent, that is protected as federal, state, county, or municipal public recreation lands.

At the municipal level, East Nantmeal has the largest amount of protected open space (5,143.5 acres) as well as the largest percentage of protected open space (49.1 percent) within its municipal boundary. East Coventry has the smallest amount of protected open space (615.1 acres) and the smallest percentage of protected open space (8 percent) within its municipal boundary.

TYPES AND METHODS USED

The abundance of protected open space in Northern Chester County results from a variety of public and private land protection techniques, as listed in *Table A5.8, Protected Lands by Type by Municipality*. Seven techniques have been used to protect private land in the Region, in addition to public acquisition of recreation lands.

AGRICULTURAL EASEMENTS

Agricultural easements held by Chester County are found in all nine municipalities and total 3,897.9 acres. East Nantmeal has the greatest amount of land protected by agricultural easements, 1,053.7 acres; East Pikeland, the smallest, 1.8 acres.

The Chester County Agricultural Land Preservation Board (ALPB), as authorized by the Chester County Board of Commissioners, implements the Commonwealth of Pennsylvania Agricultural Conservation Easement Purchase Program and the Chester County Challenge Grant Program. Through each Program, the County seeks to proactively preserve the agricultural base that retains Chester County's leading industry.

The purpose of the Commonwealth Agricultural Conservation Easement Purchase Program is to preserve viable agricultural lands. The statewide program has been used in Chester County since 1989.

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Table A5.8: Protected Lands by Type by Municipality, 2009*

Protection Technique	East Coventry	East Nantmeal	East Pikeland	East Vincent	North Coventry	South Coventry	Warwick	West Pikeland	West Vincent	Northern Chester County Acres	Percent of Northern Chester County
Agricultural Easement	288.1	1,053.7	1.8	790.3	642.5	406.9	225.4	10.1	479.1	3,898.0	5.2%
Conservation Easement		3,486.1	908.7		9.3	479.1	210.8	940.7	1,074.4	6,585.5	8.7%
Deed Restriction		532.7							5.2	537.9	0.7%
Homeowners Association Open Space	22.5	64.2	207.2		88.7	60.9		274.3	309.7	1,179.4	1.4%
Municipal Open Space	82.3	7.8	196.3	38.2	23.5	273.1	91.0	250.2	324.6	2,491.5	3.3%
Parcels owned in-fee by Land Trusts		661.8	1.5	12.0	513.4	47.4	426.5	90.8	76.0	1,815.3	2.4%
Transfer of Development Rights			0.5						603.5	604.0	0.8%
Subtotal**	392.9	5,806.2	1,316.0	840.5	1,277.4	1,267.3	953.7	1,566.1	2,872.5	16,292.8	21.6%
Acres with more than one protection (-)	58.3	668.4	35.2	0.0	0.0	2.4	0.0	0.0	274.0	1,582.4	2.1%
Public Recreation Lands (+)	280.5	5.7	104.4	184.5	367.7	79.0	3,706.3	111.3	14.0	4,853.5	6.4%
Total	615.1	5,143.6	1,385.2	1,025.0	1,645.1	1,344.0	4,660.0	1,677.4	2,612.5	19,563.9	26.0%
Percent of Regional Protected Open Space	3.1%	26.3%	7.1%	5.2%	8.4%	6.9%	23.9%	8.6%	13.4%		
Municipal Area	6,982.3	10,484.0	5,691.9	8,736.7	8,638.6	4,861.8	12,093.1	6,374.3	11,415.6	75,278.1	
Percent of Protected Open Space by Municipality	8.8%	49.1%	24.3%	11.7%	19.0%	27.6%	38.5%	26.3%	22.9%		

* 2009 data was provided by Chester County and supplemented with readily available municipal records.

**This subtotal reflects the acreage of all protection types in place; some parcels have more than one protection type and therefore some double-counting occurs. Source: Chester County GIS Department; East Pikeland Township; Gannett Fleming, Inc.

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This program has preserved 39 farms on 3,173.4 acres in the Northern Chester County region, or roughly 11-12 percent of the 338 farms on 28,818 acres in Chester County (data as of July 1, 2011); some parcels have only a portion under easement. Due to the prevalence of prime farmland soils, the southwest region of Chester County competes more effectively for agricultural conservation easements.

The purpose of the Chester County Challenge Grant Program is to preserve agricultural land in Chester County in accordance with the strategy developed by the Board of County Commissioners. Lands in Chester County that are designated as a Rural Resource Area according to the Landscapes2 County comprehensive plan and located in locally adopted Agricultural Security Areas will be targeted for agricultural conservation easement acquisition. These areas contain prime agricultural soils, are generally designated for agriculture in local comprehensive plans and are concentrations of actively farmed land in Chester County. This program has preserved 724.6 acres in the Northern Chester County region, or roughly 13 percent of 5,372 acres protected by this program in Chester County.

CONSERVATION EASEMENTS

Conservation easements protect 7,109.1 acres in seven municipalities in the Region. Under a conservation easement, a landowner voluntarily agrees to sell or donate certain rights associated with his or her property – often the right to subdivide or develop – and a private organization or public agency agrees to hold the right to enforce the landowner's promise not to exercise those rights.¹² Conservation easements are held by the French and Pickering Creeks Conservation Trust, the Natural Lands Trust, Brandywine Conservancy, and other land trusts. Again, East Nantmeal has the greatest amount of land protected by conservation easements, 3,468.1 acres; North Coventry, the smallest, 9.3 acres.

DEED RESTRICTIONS

Deed restrictions are voluntary, self-imposed limitations to future development of a parcel by the landowner. Landowners in East Nantmeal have used this technique to protect 537.9 acres, including a parcel that spans the border with West Vincent.

HOMEOWNER ASSOCIATION OPEN SPACE LANDS

Nearly 1,100 acres have been protected within private neighborhoods as a condition of the subdivision and land development process in seven of the nine municipalities. This type of open space protection is most prevalent in West Vincent where 309.7 acres are protected by private homeowners associations.

¹² The Nature Conservancy, www.nature.org, accessed May 12, 2011.

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MUNICIPAL OPEN SPACE

Eight of the nine municipalities have protected open space through land acquisition or easement or influenced open space protection through their land development requirements. These include the 12 named tracts acquired as open space and available for passive recreation, as listed in *Table 9, Municipal Open Space/Passive Parkland* (also shown as Table 2 in Appendix 2), as well as other parcels. A total of 1,287.0 acres has been protected with this technique.

Table A5.9: Municipal Open Space/Passive Parkland

Facility Name	Municipal Location	Ownership	Acreage
Maack Property	East Coventry	Municipal	59.9
French Creek Open Space (multiple parcels)	East Pikeland	Municipal	98.7
Graham Tract Reserve	East Pikeland	Municipal	38.6
Hares Hill Bridge Reserve	East Pikeland	Municipal	12.7
Pickering Creek Reserve (A and B)	East Pikeland	Municipal	30.7
Township Municipal Complex	East Pikeland	Municipal	22.0
Coventry Woods	North Coventry	Municipal	538.0
Coventry Woods	South Coventry	Municipal	15.0
Town Forest (Woody's Woods)	South Coventry	Municipal	263.0
Coventry Woods	Warwick	Municipal	67.0
Hill School Tract (Coventry Woods)	Warwick	Municipal	16.1
Hallman's Field (Pickering Preserve)	West Pikeland	Municipal	2.0
Total			1163.7

PARCELS OWNED IN-FEE BY LAND TRUSTS

Land trusts and conservancies own land in-fee or fee-simple in the Region. The French and Pickering Creeks Conservation Trust and The Nature Conservancy own 1,829.4 acres in eight of the nine municipalities in the Region. Once more, the most land protected by this technique is located in East Nantmeal, 661.8 acres.

TRANSFER OF DEVELOPMENT RIGHTS

West Vincent is the only municipality where transfer of development rights was used as of August 2009. As reported by the township, private developers bought the development rights from 603.5 acres, including a parcel that spanned into East Pikeland Township, and transferred them to other areas of the township where development was deemed more desirable.

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OVERLAPPING PROTECTIONS

In several locations, more than one protection technique has been used to ensure compliance. Lands where this has occurred are found in five municipalities and total 1,582.4 acres. To avoid double-counting, this figure is deducted from the 16,264.5 acres shown as protected in *Table A5.8*.

PUBLIC RECREATION LANDS

Public recreation lands are also considered protected for the long term by the nature of their ownership and use, though few if any easements or deed restrictions are in place. These lands representing 4,853.5 acres are described in detail in Appendix 2.

CLEAN AND GREEN: A TAX BENEFIT PROGRAM FOR WORKING LANDSCAPES

Landowners have enrolled 30,388.5 acres – nearly all of the agricultural and forested land in Northern Chester County – in the Clean and Green Program, established by the Pennsylvania Farmland and Forest Land Assessment Act of 1974 (Act 319), as shown in *Table A5.10, Acres Enrolled in Clean and Green*. The program provides a real estate tax benefit to enrolled landowners, enabling lands to be assessed according to use, namely agricultural, agricultural reserve, or forest reserve, rather than the prevailing market value. Such strong participation in the program suggests that landowners are fiscally conservative in regard to property tax values.

Clean and Green program enrollment does not specifically indicate a landowner’s interest in open space protection and does not preclude protection. By comparing Map 5, Working Landscapes, and Map 7, Protected Lands, one sees that many have already protected their land.

Table A5.10: Acres Enrolled in Clean and Green

	Acres
Northern Chester County	30,388.50
Percent of Region	40.50%
East Coventry	1,904.60
East Nantmeal	5,796.60
East Pikeland	1,521.80
East Vincent	3,056.70
North Coventry	2,776.00
South Coventry	1,993.60
Warwick	4,551.20
West Pikeland	2,690.10
West Vincent	6,097.80

Source: Chester County Planning Commission

Increases in protected open space from Clean and Green lands would occur in sizeable pieces of at least 10 acres, since the minimum parcel size for all uses is 10 acres, with the exception of agricultural uses producing a minimum yearly gross income. This requirement suggests that many if not most of the parcels enrolled in the Clean and Green program in the Region are 10 acres or more.

The landscape of Northern Chester County is legally divided into thousands of parcels – each with its own landowner. As subdivisions continue, the number of parcels and landowners, i.e. decision-makers,

continues to expand, while the average parcel size declines. Individuals and organizations advocating for open space protection have a steadily increasing audience of land managers making decisions about smaller parcels of land.

OPEN SPACE LANDSCAPE INITIATIVES

SCHUYLKILL HIGHLANDS

The Highlands Conservation Area, a U.S. Forest Service designation, stretch from northwest Connecticut south into southeastern Pennsylvania. The area at the nexus of the Highlands and the Schuylkill River watershed is known as the Schuylkill Highlands, a priority landscape for the Pennsylvania Department of Conservation and Natural Resources (DCNR). The Schuylkill Highlands' boundary was expanded to include the entirety of municipalities that fall within the watershed or that have important shared natural features.

The area's importance derives from the need for water quality protection, habitat conservation, and recreational development in a region poised for considerable growth. Focusing on the combination of the heavily forested Highlands area with the watershed of the second-most important water source for the Southeast (after the Delaware River) is logical and compelling.

The DCNR's Schuylkill Highlands Conservation Landscape Initiative is focused on ecotourism, recreation, and conservation. The Schuylkill Highlands contains a number of large habitat areas that have been called out for protection by county planning commissions, state agencies, and private conservancies. Hopewell Big Woods is perhaps the largest and best known (described below), but the Oley Hills, Unami Forest, Neversink Mountain, and Swamp Creek Corridor are other well-known examples. Public trails along the Schuylkill River have been gradually expanding for many years, and other trail initiatives are under way to connect this spine to adjoining gateways and destinations.

HOPEWELL BIG WOODS

Hopewell Big Woods is the name given to the last large, unbroken forest left in southeastern Pennsylvania. The expanse of 73,000 acres, more than half of which lies in Northern Chester County, surrounds French Creek State Park and the Hopewell Furnace National Historic Site and comprises many of the natural and cultural resources mentioned above. Hopewell Big Woods is home to hundreds of plant, animal, and bird species (some rare, threatened, or endangered), pristine forest, unique wetlands, clean streams, historic landscapes, and recreational opportunities. Hopewell Big Woods is one of the highest priority conservation areas in the Pennsylvania Highlands.

The Hopewell Big Woods Partnership, led by the Natural Lands Trust, is a group of more than 30 government agencies, private nonprofits, and municipal entities. The partnership was established to organize and coordinate effort to achieve the following conservation goals:

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1. The permanent protection and stewardship of at least 15,000 acres of unbroken forest in and around French Creek State Park.
2. The conservation of water quality and quantity in the watersheds of the Upper Reaches of French Creek, the entirety of Hay Creek, and the other smaller watersheds within the Hopewell Big Woods.
3. The conservation of state- and federally-listed and other rare species occurring within the Hopewell Big Woods.
4. The promotion of the recreational resources located in and around the Hopewell Big Woods.
5. The encouragement of compatible economic development within the Hopewell Big Woods that is consistent with the other conservation goals
6. The protection of historic and other cultural resources occurring within and nearby the Hopewell Big Woods.

In 2009, the Partnership completed the *Hopewell Big Woods Trail and Recreation Concept Plan*. The envisioned trail network, linking hundreds of recreational attractions, is anticipated to boost local economies and support tourism; inspire interest in history, culture, and the environment; promote and support health and fitness; and link communities with the assets that surround them.

SCHUYLKILL RIVER HERITAGE AREA

At 70,065 acres, the Schuylkill River National and State Heritage Area encompasses nearly all of the Northern Chester County region. The boundaries of the Heritage Area cover the Schuylkill River watershed in Schuylkill, Berks, Chester, Montgomery, and Philadelphia counties. A National Heritage Area is a place designated by Congress where natural, cultural, historic, and recreational resources combine to form a cohesive, nationally-distinctive landscape. The Heritage Area was designated as a State Heritage Area by the Commonwealth of Pennsylvania in 1995 and as a National Heritage Area by Congress in 2000. This region is nationally significant for the role that its people, places, and events played in the American, Industrial, and Environmental Revolutions.

“A variety of peoples—from the Lenni Lenapi to the first European settlers to the many other ethnic groups who migrated to the Schuylkill region over time—have called the River Valley home. Its abundant natural resources and productive soils made it an early industrial center and breadbasket for the colonies. During the American Revolution, the perseverance and sacrifice of George Washington’s army at Valley Forge played a key role in the birth of a new nation. The 19th century witnessed the emergence of the Schuylkill Valley as one of the world’s leading manufacturing regions, fueled in large part by anthracite coal mined from Schuylkill County. The Schuylkill River and canal system were one of the major arteries of the Industrial Revolution, transporting coal, manufactured goods, and crops to the port of Philadelphia. Industrial and mining

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activities impacted the Schuylkill River Valley's water resources, leading to a new chapter in its history in the 20th century—one of environmental reclamation and water quality restoration on a massive scale, accompanied by the emergence of outdoor recreation as a major activity."¹³

The Schuylkill River Heritage Area is managed by the nonprofit Schuylkill River Greenway Association. Founded in 1974 as an organization focused on the preservation of the riverfront in Berks and Schuylkill counties, the organization has grown in its mission and geographic scope over the years. The Greenway Association is governed by a Board of Directors representing all five counties within the Heritage Area. The eight-member Heritage Area staff administers the programs and projects identified in their management plan, *Living with the River: Schuylkill River Valley National Heritage Area Management Plan and Environmental Impact Statement*, July 2003. The plan guides the organization in its approach to natural and cultural resource conservation and enhancement, education, recreation, community revitalization, and heritage tourism. Today, use of the name Schuylkill River Greenway Association is typically reserved for legal and financial purposes, and members of the Board and staff refer to the organization as the Schuylkill River Heritage Area.

FINDINGS

RESOURCES

1. The 19 miles of the Schuylkill River and 86 miles of streams were essential to the historical development of the Region.
2. The Region's waterways are inherently valuable for aquatic habitat, water supply, and recreation. Warm and cold water fisheries, including trout-stocked segments, are found here.
3. All of the Region's streams are designated as special protection waters – either Exceptional Value or High Quality – due in large part to the forest cover and limited development in each watershed. Six Stream ReLeaf plantings have been installed to restore the forest along urbanized or otherwise cleared stream segments.
4. Most of the riverside and streamside lands (floodplains) in Northern Chester County are held in private ownership. Notable exceptions include the riverfront parks: River Bend Park, Riverside Park, and Towpath Park; State Game Lands 43, Crow's Nest Preserve, Warwick County Park, and various tracts held by East Pikeland that provide access to French Creek; Coventry Woods and Ellis Woods Park that provide access to Pigeon Creek; and Pine Creek Park and Pickering Grove that provide access to Pickering Creek. Many more acres are protected from development, and thus the waterway is protected from direct impacts.

¹³ *Living with the River: Schuylkill River Valley National Heritage Area Management Plan and Environmental Impact Statement*, 2003. Schuylkill River Heritage Association.

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5. Zoning regulations in all nine municipalities manage the uses, activities, and development that are permitted in the floodplain. These regulations generally acknowledge the suitability of floodplains for low-impact uses, such as recreation, however, they do not afford the public access for recreational opportunities in and along the public waterways. Access to the water by way of public lands or easements is critical to encouraging water-based recreation activities, such as boating, fishing, nature study and environmental education.
6. Protection of upland buffers and water sources to the Great Marsh (Site #11) is needed to sustain the marsh and its inhabitants; such protection could be achieved if the site were owned and managed as a local nature preserve.
7. Of the 2,150 acres of wetlands, the two most significant wetland areas in the Region are the Great Marsh and the nearly contiguous areas along French Creek and its tributaries upstream of Beaver Run. While wetlands are a constraint to development, they can also be focus for conservation and environmental education.
8. Of the 12 natural areas in the Region, Site #11, Great Marsh, and Site #114, Pine Swamp, are ranked fifth and sixth, respectively, as sites of statewide significance for the protection of biological diversity in Chester County. Warwick Seeps (Site #9) could be an ideal local nature preserve because of the easy access afforded it from the abandoned Boar's Back rail line, now under development as a trail.
9. The redundancy in locations designated for resource conservation emphasizes the rich natural and cultural environment of Northern Chester County. Natural Areas, Important Bird Areas, and Important Mammal Areas overlap and are encompassed by the Hopewell Big Woods. However, these lands are largely unprotected with the exception of federal, state, and county lands, and the concentration of protected lands in East Nantmeal.
10. Only three percent of parcels (one might also read this as land owners) are devoted to agriculture, but they represent more than 22 percent of the Region's landscape.
11. With the exception of East Nantmeal, agricultural lands are largely unprotected from development yet vastly important to the economy and visual character of the Region.
12. The Northern Chester County region can rightfully be called scenic based on its topographic, water, and biotic features as well as its dark night skies. The Schuylkill River and French Creek corridors are recognized as state-designated scenic landscapes with the waterway as the focal point.
13. French Creek State Park is known as a destination for skywatchers in the Delaware Valley. Their travel from a few to many miles away brings implications for tourism and hospitality services.
14. In all, the 16 historic districts represent 5,296 acres, 491 buildings, and 47 structures in or near Northern Chester County.
15. The majority of historic districts and buildings are significant for their architecture, representing periods as early as 1700 to as late as 1974.

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16. Historic buildings and sites present a full array of structures associated with early settlement life: homes, farms, mills, churches and social halls, and bridges.
17. This palette of architectural styles could be promoted in the design of new buildings, especially public buildings and public art.
18. The vast majority of lands, buildings, and structures is held in private ownership. East Pikeland, South Coventry, West Pikeland, and West Vincent each have standards and an historical architectural review board to advise their governing bodies on the suitability of new development within their historic districts.

PROTECTION

19. There is no one source for accurate, up-to-date protected land totals for the Region. The figures presented in Appendix 5 are based on data collected by Chester County for *Linking Landscapes* (circa 2000-2002) and updated with available municipal records. Even these figures may not fully represent land protection in Northern Chester County.
20. Best available data shows that land trusts and conservancies, municipalities, and Chester County have protected 18,750 acres of open space in Northern Chester County (25 percent of the 75,278 acre region) as of August 2009.
21. Voluntary conservation easements have protected the largest portion of protected open space in the Region, followed by public recreation lands and agricultural easements.
22. Voluntary deed restrictions established by local landowners protect more than 530 acres.
23. Nearly all of the agricultural and forested land in Northern Chester County has been enrolled in the Clean and Green Program. Some but not all of this land is protected. Additional protected open space from Clean and Green lands would occur in sizeable pieces of at least 10 acres. Landowners enrolled in this program are a candidate audience for further open space protection.
24. The increasingly complex parcel pattern in Northern Chester County is a growing challenge to further land and resource protection.
25. With 25 percent of the Region protected and 38 percent developed, the future of the remaining 37 percent (26,754 acres) will be determined by the policies of municipalities, the desires of landowners, and the efforts of conservation-minded organizations and partnerships.

CONSERVATION INITIATIVES

26. Federal and state landscape conservation initiatives overlap in the Northern Chester County region. They complement the efforts of the municipalities and land trusts and conservancies and private sector partners. They also imply a variety of regional identities and often compete for the same resources to implement their plans.