

# Jones Property Conservation Easement Application



85 Old Dublin Pike  
Doylestown, PA 18901

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[www.heritageconservancy.org](http://www.heritageconservancy.org)

Bucks County  
Natural Areas Program Application  
Spring 2010  
Submitted by Springfield Township



BUCKS COUNTY NATURAL AREAS PROGRAM

**APPLICATION CHECKLIST**

***Documentation to be submitted with grant application:***

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**FORMS**

- ☒ Completed Application Checklist.
- ☒ Completed Grant Application Form (Appendix B).
- ☐ Completed Municipal Resolution / Organization Support Form (Appendix C and D).
- ☐ Completed Landowner Understanding Form (Appendix E).

**SUPPORTING DOCUMENTATION**

- ☒ Narrative summary (Appendix F).
- ☐ Two real estate appraisal reports prepared by state certified appraisers.
- ☒ Tax parcel map highlighting subject parcel(s).
- ☒ A map illustrating the linkages to other permanently protected lands.
- ☒ Site plan of proposed conservation easement area and remaining lands, if applicable.
- ☒ Pennsylvania Natural Diversity Index Receipt, if applicable.
- ☒ Photographs documenting current site conditions.
- ☒ Environmental assessment of the property, if applicable.  
*Ann Rhoads review memo*
- ☐ Copies of existing recorded easements encumbrances on the property, if applicable.
- ☐ Copy of the sales agreement, if completed.
- ☒ Proposed declaration or conservation easement language.  
*standard county easement*

**Bucks County Natural Areas Program  
Spring 2010**

**Jones Property Conservation Easement**

**Project Narrative**

**1. Project Overview**

Springfield Township is seeking to acquire a conservation easement on approximately 43.9 acres of the 49.9-acre property owned by Owen and Penelope Jones located at 1876 Salem Road in Springfield Township. A five-acre building envelope and a one-acre building envelope will be excluded from the conservation easement. The property consists of woodlands, wetlands, wet meadow, swamp forest and agricultural fields. Springfield Township is requesting 50% of the conservation easement acquisition cost from the Bucks County Natural Areas Program.

**2. Identification of Significant Natural Resources**

Located within the Pennsylvania Highlands, the Jones Property contains the headwaters of Hickon Creek, a tributary of the Tohickon Creek. According to a memo from Anne Rhoads, the property "lies within an area that will be designated as the Upper Tohickon Conservation Landscape in the Bucks County Natural Areas Update now underway."

During a site visit on October 14, 2009, Anne Rhoads observed the following, "Approximately 22 acres lying along the southern and western property lines consists of swamp forest dominated by young ash and red maple tree with scattered large specimens of pin oak, swamp white oak and elm. Shrubs include winterberry holly, swamp rose, button bush, highbush blueberry, arrow-wood viburnum and spice bush. The herbaceous layer contains typical native wetland species including sedges, wool-grass, wood reedgrass, rice cutgrass, skunk cabbage, northern blueflag, jewelweed, tear-thumb, marsh purslane, turtlehead, purple-stemmed aster, beggar ticks, water-horehound, marsh-marigold, water-hemlock, water-parsnip, bur-reed, scoring bush, sensitive fern and royal fern."

In addition the Jones property contains specific habitat elements for a multitude of our region's fauna. Some examples of wildlife that could be supported by the habitat on the Jones property, are listed below.

- **Mammals:** whitetail deer, red fox, coyote, skunks, opossum, raccoon, ground hog, eastern cottontail, squirrels, eastern chipmunk, voles, mice, bats
- **Reptiles:** snapping turtle, box turtle, black rat snake, eastern garter snake (seen during site visit)
- **Amphibians:** red-backed salamanders, pickerel frogs, spring peepers, northern gray treefrog, woodfrog, American toad
- **Birds:** red-tailed hawk, Cooper's hawk, American kestrel, black vulture, turkey vulture, great horned owl, eastern screech owl, wild turkey, mallard, Canada geese, green heron, great blue heron, red-winged blackbird, woodpeckers, eastern bluebird, nuthatches, chickadee, blue jay, northern cardinal, American robin, crows, mourning dove, swallows, wrens, various sparrows and finches.

Using the Pennsylvania Natural Heritage Program website ([www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us)) a search of the Pennsylvania Natural Diversity Index (PNDI) was conducted to determine whether any species of special concern are currently or historically extant within the vicinity of the Jones property. The results of the search reported one conservation measure recommended by the U.S. Fish and Wildlife Service. Please see the attached PNDI report for further information.

### **3. Resource Management Issues**

It is unknown if the landowner has a soil conservation plan or a forest management plan. It will be recommended that the landowner implement these plans if they do exist for the property. In the absence of these plans, Heritage Conservancy will provide the landowner with general stewardship recommendations on topics such as deer management, invasive species control, woodland management, and riparian corridors.

### **4. Public Access**

The Joneses will allow for guided environmental programs on the property with prior notification of date and time.

### **5. Linkage Potential**

The Jones property is not directly adjacent to other preserved property, but the township hopes to continue to preserve land in the immediate area eventually creating a link to a large area of preserved land to the east of the Jones property.

### **6. Consistency with Local Preservation Goals**

The preservation of the Jones Property is consistent with the open space and farmland preservation goals identified in the Springfield Township Open Space and Farmland Preservation Plan, 1999, as noted below:

**Farmland** – Preserve agricultural areas to protect the agricultural heritage of the area, to preserve open land for environmental purposes (groundwater recharge, reduction of impervious surfaces and associated runoff and erosion), and to protect the scenic character of the Township.

**Resource Protection** – Protect important natural and environmental resources: rare plant and animal habitats; woodlands; scenic vistas of natural beauty; farmland and other open space; watershed areas; wetlands; flood plains; water recharge areas; geological resources; historic sites and steep slopes.

**Water Supply** – Protect water supply and recharge areas. Springtown, Coopersburg and Lower Saucon watershed areas and wells are located in Springfield Township.

### **7. Threat of Development**

The 1990s was a decade of expansion growth for Bucks County. As of 1998, the County's population was estimated to have reached 587,942, an increase of 8.64% since the 1990 federal census count. Bucks County has experienced one of the highest amounts of population growth in the 1990s of any County in the state, with the exception of Chester County.



The Jones property has several aspects that make it prime for development--its readily available water table and relatively level topography.

#### **8. Financial Support**

The appraisal for the Jones property will not be available until May. 50% of the conservation easement acquisition funding will be requested from the Natural Areas Program. The landowner has also applied to the Springfield Township Open Space program for the other 50% of the funding request.

#### **Attachments**

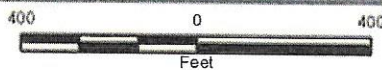
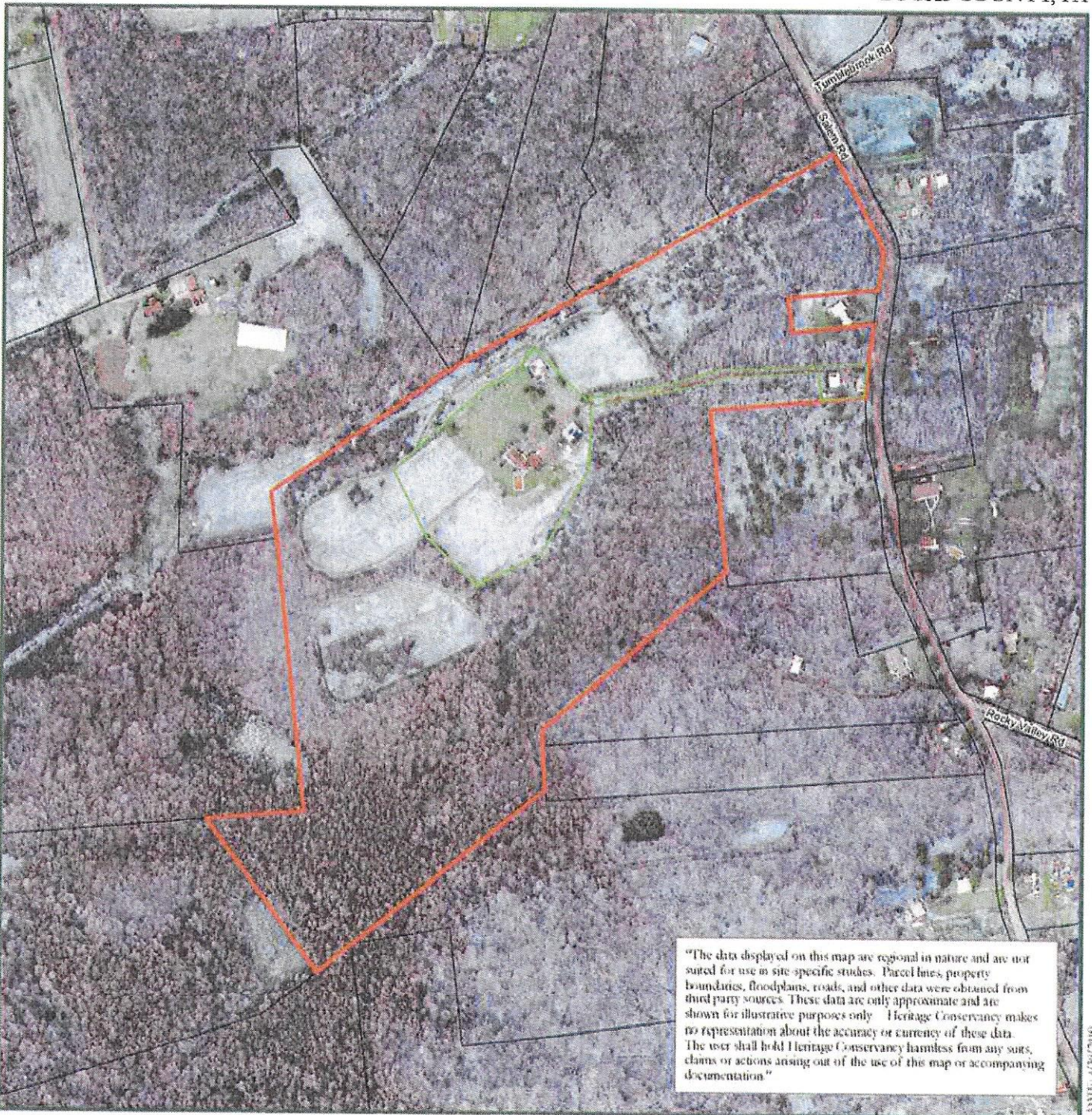
- Exhibit A: Site Plan
- Exhibit B: Preserved Lands Map
- Exhibit C: Tax Parcel Map
- Exhibit D: Open Space Plan Excerpt
- Exhibit E: Property Photographs
- Exhibit F: PNDI Review
- Exhibit G: Ann Rhoads Review memo
- Exhibit H: Stewardship Recommendations
- Exhibit I: Landowner Understanding Form



# Exhibit A

## JONES PROPERTY BUILDING ENVELOPE MAP

PARCEL # 42-004-088  
SPRINGFIELD TOWNSHIP  
BUCKS COUNTY, PA



### Legend



Property



Building Envelope (6 acres)



Parcel Boundaries

Data Sources: Parcels - Next Level Mapping Inc. 1997,  
2005 Aerial Photo - DVRPC, Building Envelope - Heritage Conservancy



**HERITAGE  
CONSERVANCY**

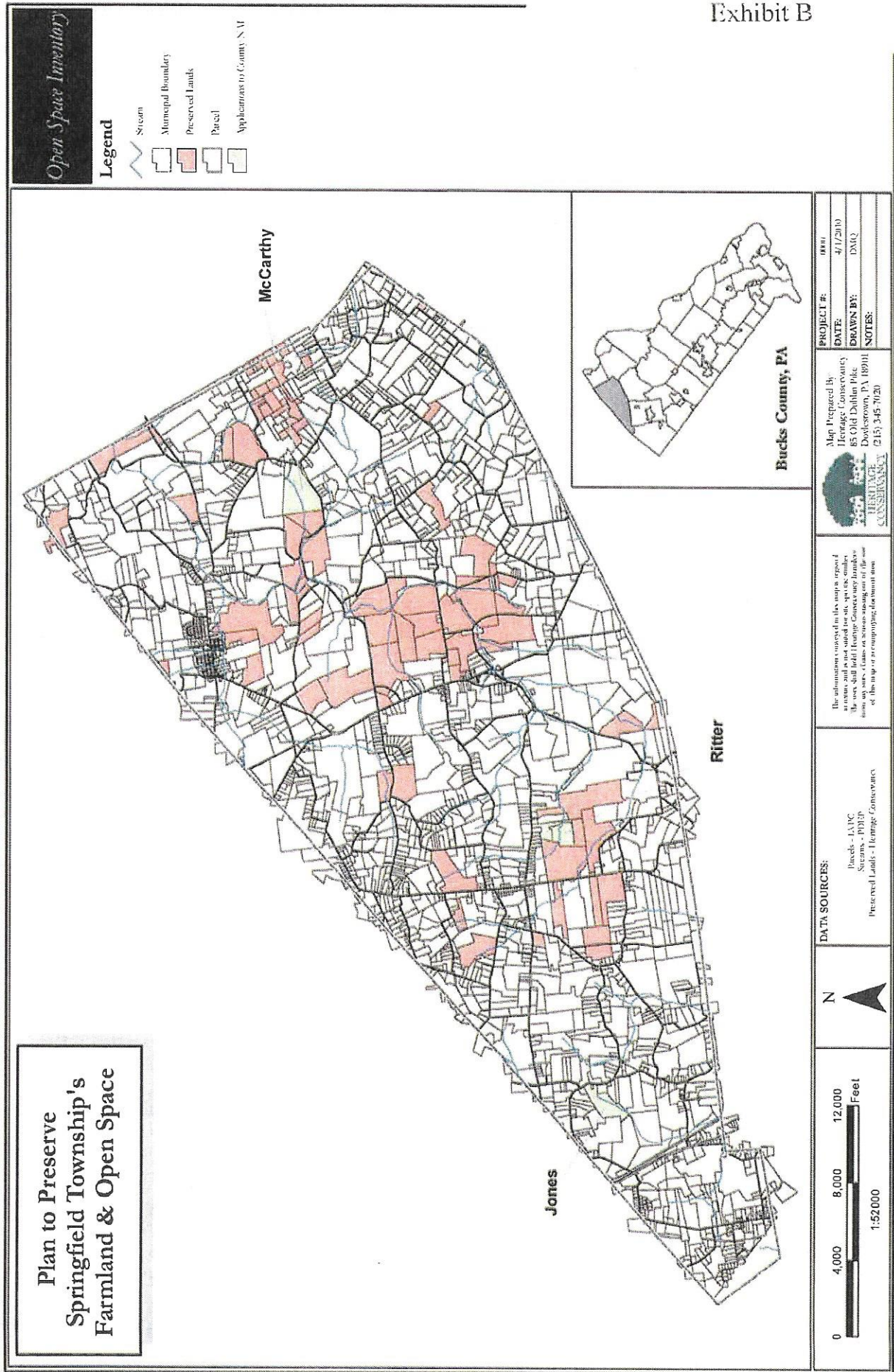
85 Old Dublin Pike  
Doylestown, PA 18901

[www.HeritageConservancy.org](http://www.HeritageConservancy.org)



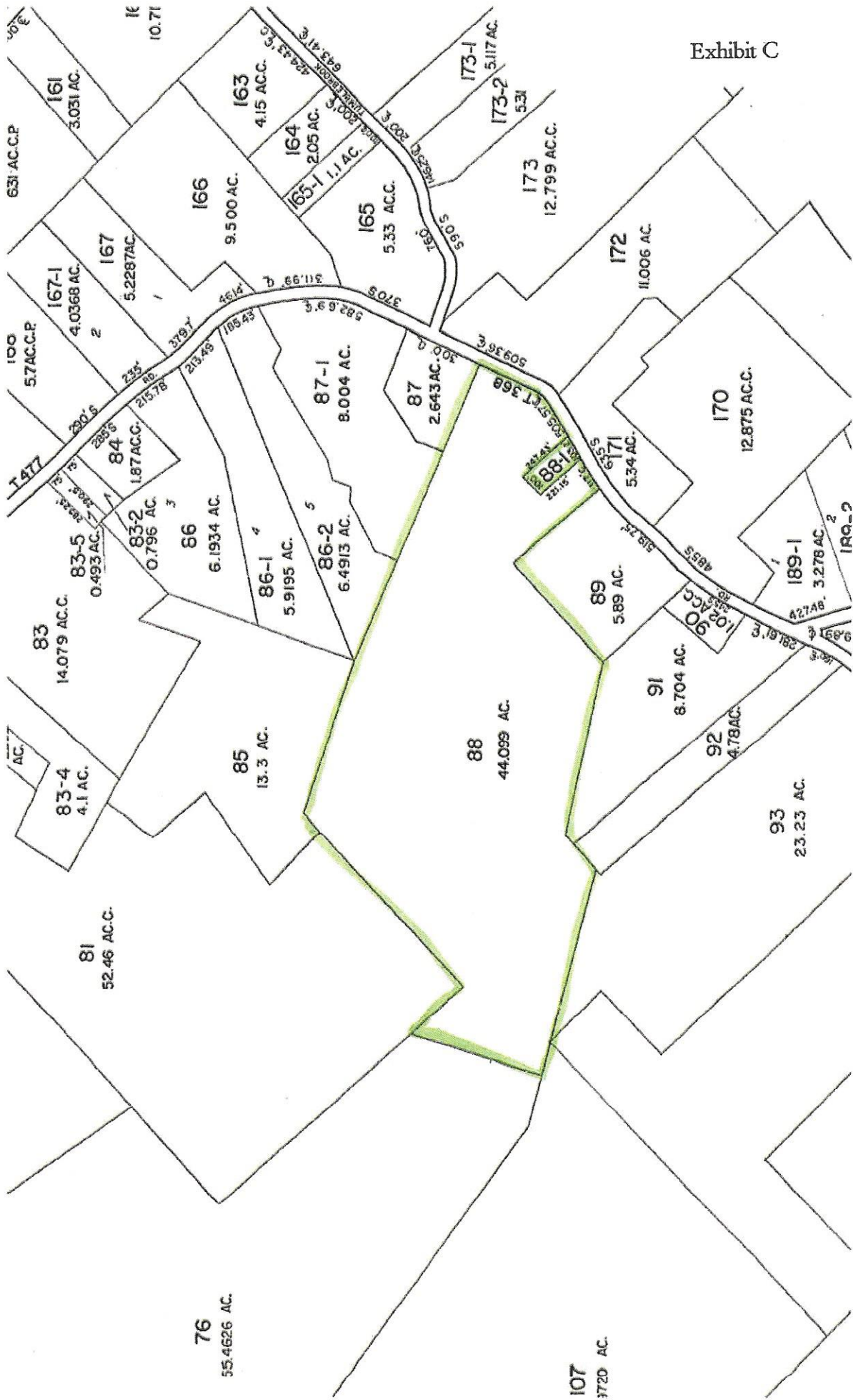
**SITE  
LOCATION**





Jones

Exhibit C





## **XI. Summary**

The Open Space Committee has established criteria for evaluating properties and has undergone four rounds of reviews of potential lands to be preserved. In addition, the township has adopted policies to ensure the monitoring and enforcement of easements through working with land trusts and setting aside funds to implement the program.

As previously noted, Springfield Township has completed some remarkable open space accomplishments since implementing its first open space plan. The analysis and review of current goals and achievements undertaken in the preparation of the 2009-2010 update confirmed the efficacy of the 1999 goals. Accordingly, the goals of the 1999 Open Space Plan continue to be the goals of the 2009-2010 Open Space Plan Update; however, their order of priority has changed. Listed and restated below are the original 1999 goals in the new order of priority.

**Farmland:** Preserve agricultural areas to protect the agricultural heritage of the area, to preserve open land for environmental purposes (groundwater recharge, reduction of impervious surfaces and associated runoff and erosion), and to protect the scenic character of the Township.

**Cooks Creek:** Protect Cooks Creek and its watershed; protect the vegetative buffer, floodplain areas, wetlands, water quality, plant and animal habitat, and scenic character of the Cooks Creek Valley.

**Resource Protection:** Protect important natural and environmental resources by enforcing and broadening ordinance requirements to preserve rare plant and animal habitats, woodlands, flood plains, water recharge areas, wetlands, streams, farmland soils, geologic resources, and steep slopes.

**Water Supply and Recharge Areas:** Protect water supply and recharge areas. Springtown, Coopersburg, and Lower Saucon watershed areas and wells are located in Springfield Township.

**Linkages, Greenways and Hiking and Biking Trails:** Consider establishing greenways, hiking and biking trails, and other linkages connecting recreational, cultural, historic, scenic and natural areas, villages and other neighboring municipal, county and state lands.

**Recreational Needs:** Establish active and passive recreational areas that are available to all residents.

Exhibit E

Jones Property  
Photographs taken September 14, 2009

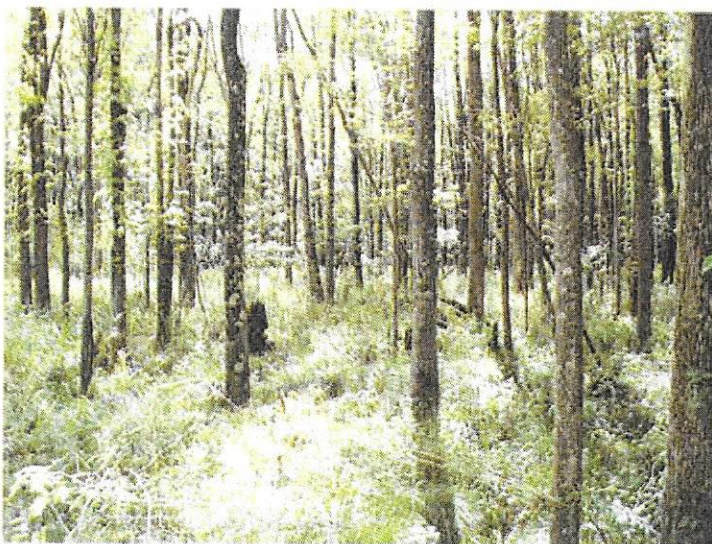
**Photograph 1:** This photo was taken of the one of hay fields located in front of the house.



**Photograph 2:** This photo shows one of the fields located behind the house.



**Photograph 3:** This photo shows the swamp woods located throughout portions of the property.







**Photograph 4:** This photo shows boulders located in the eastern portion of the property along the exiting driveway.



**Photograph 5:** This photo shows one of the many wetlands areas located on the property.



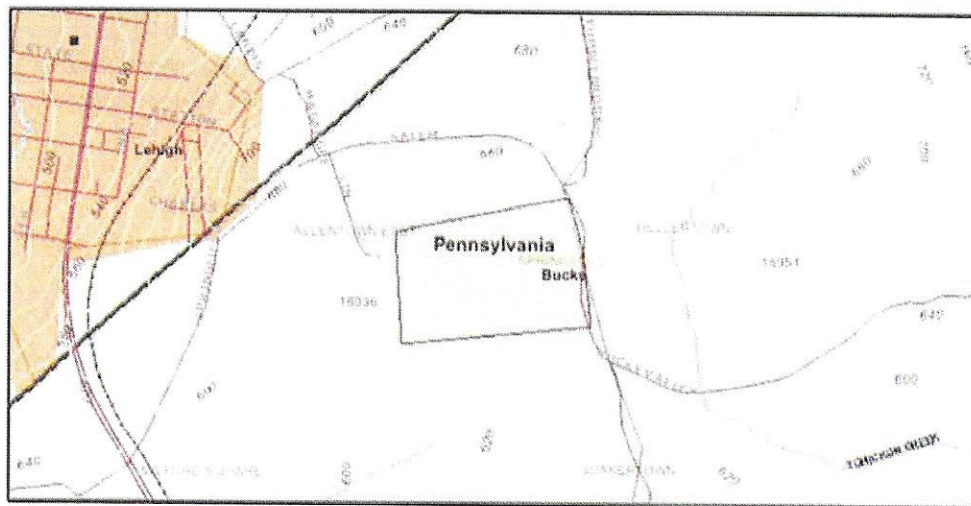
**Photograph 6:** This shows headwaters of the Hickon Creek which flows through the property.



PNDI Project Environmental Review Receipt

Project Search ID: 20090903208822

## 1. PROJECT INFORMATION

Project Name: **Jones**Date of review: **9/3/2009 4:47:25 PM**Project Category: **Habitat Conservation and Restoration, Conservation Easement or Deed Restriction**Project Area: **52.7 acres**County: **Bucks** Township/Municipality: **Springfield**Quadrangle Name: **HELLERTOWN**ZIP Code: **18951, 18036**Decimal Degrees: **40.50262 N, -75.37471 W**Degrees Minutes Seconds: **40° 30' 9.4" N, -75° 22' 29" W**

## 2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	<b>Conservation Measure</b>	<b>No Further Review Required, See Agency Comments</b>

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate that while threatened and endangered and/or special concern species and resources are in the project vicinity, no adverse impacts are anticipated. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. However, the jurisdictional agency/agencies recommend the project proponent/applicant follow the Conservation Measures indicated in their entirety. If a DEP permit is required for this project, DEP has the discretion to incorporate one or more Conservation Measures into its permit. This response does not reflect potential agency concerns regarding potential impacts to other ecological resources, such as wetlands.



Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for one year** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt.

#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### U.S. Fish and Wildlife Service

**RESPONSE:** Conservation Measure: Voluntary implementation of the following recommendations will contribute to the conservation and recovery of endangered and threatened species. -- In order to conserve wetland-dependent species of concern, protect wetlands along with their surface and groundwater recharge areas. In order to maintain or improve wetland water quality, conserve at least a 300-foot wide upland buffer around each wetland, as well as a 50-100 foot wide buffer on each side of waterways (perennial and intermittent rivers, streams, creeks, and tributaries). When adequately vegetated, this upland buffer will act to filter pollutants (e.g., sediment, fertilizers, pesticides, road salt, oil), and stabilize streambanks (preventing or minimizing erosion). Avoid any construction, earth disturbance, and chemical application (e.g., fertilizer, pesticide) in the wetland and upland buffer. If other activities are being considered (e.g., timber harvesting, agricultural use, land development, streambank stabilization, tree planting, control of exotic plant species), conduct a review under those project categories.

#### 4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt, a completed PNDI form and a USGS 7.5 minute quadrangle map with the project boundaries delineated on the map. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.



## 5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page ([www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us)). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

## 6. AGENCY CONTACT INFORMATION

### PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

### U.S. Fish and Wildlife Service

Endangered Species Section  
315 South Allen Street, Suite 322, State College, PA.  
16801-4851  
NO Faxes Please.

### PA Fish and Boat Commission

Division of Environmental Services  
450 Robinson Lane, Bellefonte, PA. 16823-7437  
NO Faxes Please

### PA Game Commission

Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

## 7. PROJECT CONTACT INFORMATION

Name: \_\_\_\_\_  
Company/Business Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone:( ) \_\_\_\_\_ Fax:( ) \_\_\_\_\_  
Email: \_\_\_\_\_

## 8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

\_\_\_\_\_  
applicant/project proponent signature

\_\_\_\_\_  
date



## MEMO

**Date:** 10/17/2009

**To:** Kris Kern, Bucks County Open Space Program

**cc:** Allison Hamilton

**From:** Ann F. Rhoads, PhD, Senior Botanist, Morris Arboretum of the University of Pennsylvania

**Re:** Jones property, 1876 Salem Road, Springfield Township

A site visit was made on October 14, 2009 by Ann Rhoads, Dr. Timothy Block (also of the Morris Arboretum), and Allison Hamilton (BCPC). Owen "Pete" Jones, property owner, led a walk through the 49.9-acre tract.

The property lies in the headwaters of Hickon Creek, a tributary of the Tohickon Creek; it is within the Quakertown diabase sheet (Shultz, 1999). A constantly flowing spring, or shallow spring-fed well, lies at the edge of the wetland south of the house and barn complex. A MetEd powerline right-of-way parallels the northern boundary.

Approximately 22 acres lying along the southern and western property lines consists of swamp forest dominated by young ash and red maple trees with scattered larger specimens of pin oak, swamp white oak, and elm. Shrubs include winterberry holly, swamp rose, buttonbush, highbush blueberry, arrow-wood viburnum and spicebush. The herbaceous layer contains typical native wetland species including sedges, wool-grass, wood reedgrass, rice cutgrass, skunk-cabbage, northern blue flag, jewelweed, tear-thumb, marsh purslane, turtlehead, purple-stemmed aster, beggar-ticks, water-horehound, marsh-marigold, water-hemlock, water-parsnip, bur-reed, scoring-rush, sensitive fern, and royal fern.

Invasive, non-native plants consisted of localized infestations of Japanese barberry, autumn olive, multiflora rose, and common reed; Japanese stiltgrass was present throughout.



*Swamp forest in the headwaters of a tributary of Tohickon Creek*



The northeastern portion of the tract consists of a successional old field on a site that was farmed in the past, and an open canopy, disturbed forest, part of which contains a boulder field. The



*Stone wall in the nursery tract.*

shrub layer in this part of the property was heavily invaded by non-native species such as multiflora rose and autumn olive.

A six acre parcel in the southeastern corner of the property contains the remains of a nursery that operated there in the past. Remnants of beds of ornamental species persist including dawn redwood, Atlas cedar, spruce, pine, weeping cherry, photinia, winged euonymus, sweetshrub, quince, yew, and boxwood. Periwinkle and Japanese pachysandra, non-native groundcover species, cover large areas of the forest floor.

The remainder of the property consists of landscaped grounds around the house and barn and adjacent pastures and hayfields.

The greatest ecological significance of this property is its position in the headwaters of a tributary of the Tohickon Creek. The Jones property and adjacent properties to the north, west, and south form a large forested wetland block that extends from Salem Road on the north and east, to Mine Road to the south, and Route 309 on the west. It is the origin of 2 streams that converge to form Hickon Creek, which in turn flows into the Tohickon Creek approximately 1.5 miles north of Quakertown. In addition to its hydrological significance, the wetland provides habitat for wildlife including birds, reptiles, and amphibians. It lies within an area that will be designated as the Upper Tohickon Conservation Landscape in the Bucks County Natural Areas Inventory Update now underway.



*Purple-stemmed aster*

Preservation of the Jones tract would be a start at protecting this portion of the Upper Tohickon watershed. However, a concerted effort should be made to extend preservation to adjacent properties to assure continuation of the ecological functions provided by the wetland complex as a whole.

Shultz, Charles H. 1999. *The Geology of Pennsylvania*. Pennsylvania Geological Survey, Harrisburg.





## Forests, Woodlands and Hedgerows

### Management Guidelines

- The goals of forest management should include the promotion of forest regeneration and biodiversity.
- Control invasive species establishment with hand pulling or other mechanical methods (being sure to remove as much of the root as possible), such as cutting vines, shrubs and trees, girdling shrubs and trees, and mowing where accessible. Targeted herbicide use can also be helpful. All label instructions for herbicide use should be followed carefully, especially near waterways or wetlands. Several control methods may be applied concurrently to successfully control invasives.

(See Page 6 of this document for more information.)

*Caution: Roundup® has recently been reported in a study published by a University of Pittsburgh researcher to be lethal to amphibians. The research states that the lethal component of Roundup® is not the herbicide itself, glyphosate, but the surfactant, a chemical called polyethoxylated tallowamine, which allows the herbicide to penetrate the waxy surfaces of the leaves. A local professional states that an alternative product to Roundup® is a generic glyphosate, called Glypro, which comes without a surfactant.*

*Given this new information special care should be taken when using Roundup®. It is the author's opinion that Roundup® should not be used during the spring and summer when amphibians are active, but rather during the winter and late fall when the amphibians are inactive. Some invasives can be treated during the winter on a warm day (see manufacturer's label for temperature restrictions), like Japanese honeysuckle, which stays green all year. Herbicide treatment during the winter can be an effective way to target certain species and avoid desirables.*

- To aid in invasive species control, plant non-invasive, native trees and shrubs to replace invasives. Use the surrounding woodland to guide you in your plantings selection and contact local nurseries, such as those included at the end of this document, for additional information.
- Protect plantings and naturally occurring seedlings and saplings of desirable native flora from disturbance by whitetail deer by using fencing, plastic tubing, or other tree shelters.
- Trees providing a desirable seed source for the future forest should be released from vines; however, some grape vine and other beneficial native vine, such as poison ivy and Virginia creeper, should be left in undesirable or severely impaired and underdeveloped trees to provide a food source and protective cover for wildlife.
- Dead trees that are not dangerous to life or property should be allowed to remain to provide foraging, protective and nesting habitat for wildlife.
- Brush piles of removed invasive plants and vines can be made for increased wildlife habitat. Care should be taken to monitor and control any regrowth from these undesirable plants. Brush piles will add an important element to the forest ecosystem by mimicking the shrub layer, which is present in a healthy forest but limited here due to over browsing by whitetail deer. If any of the removed invasive plants have fruits or seeds on them, then they should be put into trash bags and disposed of as trash or if they are known to be extremely aggressive at re-rooting, such as Japanese knotweed, an herbaceous plant that can reroot from a 1-inch piece of stem.





## Forest/Woodland/Hedgerow General Stewardship Recommendations

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- Bat boxes and nest boxes for various birds utilizing the property's habitat elements may be placed in appropriate locations for increase wildlife value. Note: Shagbark hickory is an important summer roosting area for a variety of bats common in this region.
- If you have eastern hemlock occurring on or near your property, you may wish to investigate the trees' health. Eastern hemlock are plagued by a parasitic insect called Elongate scale. This insect inserts its mouthparts into the veins of the leaf, sucking valuable nutrients and water from the tree. Elongate scale insects can and will eventually kill the trees. Yellowing of the leaves will be the first evidence of stress. This pest can be treated with a specific insecticide, but in this large, steeply sloping tract of land, treatment may be difficult. For more information please visit the following website:  
<http://www.fs.fed.us/na/morgantown/fhp/palerts/EHScale.pdf>
- Another parasite infecting our region's eastern hemlocks is the hemlock woolly adelgid, a fluid-feeding insect surrounded by cottony looking egg sacs. PA DCNR uses integrated pest management (IPM) principles to manage hemlock woolly adelgid, which involves using a variety of management techniques, such as biological, chemical, cultural, and silvicultural control to reduce the populations to less damaging levels. The choice of control method will vary depending on the site and other circumstances of each situation. Unfortunately, eradication is not the objective, because hemlock woolly adelgid is already firmly established in our state. For more information visit the following websites:  
<http://www.dcnr.state.pa.us/forestry/woollyadelgid/whatcanido.aspx>  
<http://www.dcnr.state.pa.us/forestry/woollyadelgid/otherlinks.aspx>
- For more information specific to your forestry goals, consult a professional forester with the Pennsylvania Department of Natural Resources Bureau of Forestry to evaluate the best course of action for your property. A forestry consultant may be reached by contacting your local Bureau of Forestry field office. Recommendations by the Bureau of Forestry may include:
  - Thinning of densely stocked areas in order to open the forest canopy to promote growth/maturity of existing trees and natural regeneration of the forest.
  - Those trees that represent desirable seed source for the future forest should be released from dense stocking, vines and invasive species to enable forest regeneration. As these species are stabilized, efforts to identify, release and protect small growing stock should follow.
- If you are interested in expanding your woodlands, follow the guidelines for successional scrub-shrub areas in the above section and consult a professional forester with the Pennsylvania Department of Natural Resources Bureau of Forestry to evaluate the best course of action for your property. A forestry consultant may be reached by contacting your local Bureau of Forestry field office.
- Any forest stewardship/management plan developed for the property should be revised every ten years.

### Acknowledgements

Stewardship guidelines are a compilation of recommendations from Heritage Conservancy, Natural Lands Trust, Penn State's Cooperative Extension, Pennsylvania Department of Natural Resources and the United States Agricultural Department.





## Meadow/Grassland General Stewardship Recommendations

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### Meadows/Grasslands

Grassland habitats are one of the most threatened habitats in Pennsylvania and host a large variety of species not found in shrubby or forested areas. Agricultural lands, grasslands, meadows, and other early successional fields are attractive to developers due to their lack of trees and other vegetation, which would otherwise need to be cleared prior to development, an added expense.

Many bird species, such as bobolink and meadowlark, require meadows/grasslands for their nesting habitat; therefore, it is important to manage these areas according to wildlife breeding cycles and to control woody invasive species that threaten to displace desirable grassland cover species.

Types of meadows/grasslands consist of wildflower meadows and forbs, warm season grasses, and cool season grasses and legumes. Wildflower meadows and forbs provide nectar for various insects and hummingbirds, seeds for songbirds, and foraging for various mammals. Warm season grasslands provide nesting habitat and foraging habitat for upland game birds, waterfowl and songbirds. Warm season grasses remain upright during the winter and provide valuable winter cover for a variety of birds and mammals. Cool season grasslands provide hunting grounds for raptors, nest and foraging sites for various birds and mammals, and valuable insect foraging habitat for upland game birds, songbirds, and various mammals, reptiles, and amphibians.

### Management Guidelines

- Establishment Timeline
  - Wildflower meadows are typically established during the late spring or early summer.
  - Warm season grasslands are typically established during the late spring or early summer.
  - Cool season grasslands are typically established in late summer or early fall.
- Mowing once or twice a year at a height of 4 to 6 inches will help control the establishment of invasives and woody plants.
  - Mowing once a year will keep the meadow from succeeding to a woodland setting, but may not be sufficient to prevent succession to a scrub-shrub habitat overrun with multiflora rose. However, mowing more than twice a year may encourage turf areas.
  - The recommended mowing timeline is early/mid March and early July. The early/mid March mowing schedule allows vegetation to remain during the winter months for wildlife cover and decreases the impact on grassland nesting birds by cutting vegetation before nesting season begins and allowing for vegetative recovery and growth. Early/mid March mowing is not as effective at controlling invasives as the early July mowing. The early July mowing allows the completion of most spring grassland bird nesting, encourages warm season grasses and decreases the ability of invasive plants to reproduce. The early July mowing will allow most wildflowers to bloom in late summer; however, it may negatively affect some nesting birds.



## Meadow/Grassland General Stewardship Recommendations

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- Consider mowing the entire field once a year, some parts of the field in early/mid March and others in early July. This will encourage diversity and provide wildlife with habitat options. It is suggested that areas containing many invasives or undesirable woody plants be mown twice a year until the invasives or woody plants are under control.
- Monitor the meadow for invasive species.
  - Diligently remove invasive herbaceous plants, vines, shrubs, and trees. Invasives can be controlled or eliminated by targeted mowing, hand pulling, other mechanical methods, or targeted spraying of herbicides. All instructions for herbicide use should be followed carefully, especially near waterways or wetlands.
  - Replant non-invasive, native plants to replace the removed invasives. It is suggested that a replanting plan be considered before any large-scale removal of existing vegetation, as open, disturbed soil is vulnerable to erosion and siltation to the creek, and will encourage re-establishment of invasive plants. Replacement of single removed plants is not necessarily required.
- Erect nest boxes or other structures to provide nesting habitat for bats and a variety of birds, including bluebirds, swallows, wrens, American kestrel, screech owls, barn owls and other cavity nesters.

### Acknowledgements

Stewardship guidelines are a compilation of recommendations from Heritage Conservancy, Natural Lands Trust, Penn State's Cooperative Extension, Pennsylvania Department of Natural Resources and the United States Agricultural Department.





## Deer Management General Stewardship Recommendations

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### Deer Management

White-tailed deer (*Odocoileus virginianus*) are a key component to Pennsylvania's natural history. As a large herbivore, they contribute to the checks and balances of our region's ecosystem, by consuming primary producers, i.e. plants, and recycling nutrients back to the soil. Due to the removal of other essential components of Pennsylvania's circle of life, such as the wolf and mountain lion, and the protection of a once dwindling population of white-tailed deer from historic decimation of Pennsylvania forests for industry, white-tailed deer densities and numbers have reached disastrous proportions, at which the primary producers can no longer sustain. Furthermore, the availability of agricultural crops and landscaping plants supplement the deer's diet, allowing their population to continue to grow.

The density of white-tailed deer in counties, such as Bucks, and surrounding counties threatens the health of our region's ecology, poses an economic hardship and threatens human health and the overall fitness of the deer population. Over-browsing by deer has damaged forest ecosystems in several profound ways including the inhibition of sustainability of our region's forests, widespread loss of forest structure, changes in abundance and diversity of flora and fauna, indirect changes to abiotic elements such as hydrology and soil nutrients and interference with processes such as regeneration, succession, and nutrient cycling. Selective browsing and grazing of preferred native woody and herbaceous plants reduce species richness and diversity, plant density and biomass, height growth, and the development of vertical structure. Loss of vertical structure and drastic reduction or elimination of many plant species lead to the decline of animal species that depend on them and lasting changes in forest composition and available seed bank (Latham, R. E., J. Beyea, M. Benner, C. A. Dunn, M. A. Fajvan, R. R. Freed, M. Grund, S. B. Horsley, A. F. Rhoads and B. P. Shissler. 2005. *Managing White-tailed Deer in Forest Habitat From an Ecosystem Perspective: Pennsylvania Case Study*. Report by the Deer Management Forum for Audubon Pennsylvania and Pennsylvania Habitat Alliance, Harrisburg. xix + 340 pp.).

There are both lethal and non-lethal control options for managing deer.

Non-lethal options include, repellants/deterrents, such as, fencing, reflectors, olfactory and taste deterrents, noise devices

Lethal options include, reintroduction of predators, contraception, trap/transfer, trap/dispatch, sharp shooting, recreational/managed hunting (archery, rifle, shotgun, sharp shooting)

### Management Guidelines

- Protect native plantings and naturally occurring seedlings and saplings of desirable native flora (trees and shrubs) from disturbance by whitetail deer by using fencing, plastic tubing, or other tree shelters. Protect native herbaceous plants, such as wildflowers, with fencing. In some cases, erecting deer fencing to exclude deer from a large area is beneficial.
- Where possible hunting activities are encouraged. Follow the Pennsylvania Game Commission's whitetail deer hunting regulations. Encourage hunters to practice responsible and conscientious hunting practices on your property and work with neighboring properties to join in your efforts to reduce the density of the deer population in your area. Enlarging



## Deer Management General Stewardship Recommendations

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the hunting area will have a greater effect in reducing and controlling your area's deer population.

- Post safety zone signs around residential structures and post property boundaries to make hunters aware of the location of buildings and property limits.
- Look into hunting organizations or wildlife management consultants, such as, Hunters for the Hungry, Eccologix Biodiversity Consulting Group, LLC, Natural Resource Consultants, Inc., local rod and gun clubs or archer groups to enlist responsible hunters on your property.
- The re-introduction of timber wolves or mountain lions is not a feasible option for southeast Pennsylvania due to public safety concerns and a lack of appropriate habitat for these predators. Black bears and to some extent, coyotes are the only predators of white-tailed deer that can be found in some parts of this region. Increasing the population of these predators into suburban environments is not generally regarded as a viable option for deer population control because of the lack of suitable habitat, and high human densities (Coffey and Johnston 1997). Also bears and coyotes are not as effective predators of white-tailed deer as wolves and mountain lions once were.
- Support efforts to balance the ecosystem and to preserve wildlife habitat for threatened species, plant native species, do not provide food for deer (because it exacerbates the problem by reducing Mother Nature's ability to balance itself out), learn more.

### Acknowledgements

Stewardship guidelines are a compilation of recommendations from Heritage Conservancy, Natural Lands Trust, Penn State's Cooperative Extension, Pennsylvania Department of Natural Resources and the United States Agricultural Department.





## Riparian Buffers General Stewardship Recommendations

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### Streambanks and Riparian Buffers

A riparian buffer is an area along a waterway (ponds, tributaries, drainage channels, streambanks, adjacent wetlands and uplands, floodplains), which protects the stream from erosion, sedimentation, and pollution. The vegetation in the riparian buffer slows runoff, filters sediments, resists soil erosion, and absorbs nutrients and pollutants. Trees located in a riparian buffer, which shades the stream, also cools the water, reduces the growth of algae and improves fish habitat.

### Management Guidelines

- Create/maintain a vegetative buffer along the waterways and drainage channels.
  - Enhance the vegetative buffer along the waterways and drainage channels, where necessary, ideally leaving at least 35 feet of undisturbed or minimally disturbed natural vegetation. (Never mow to the edge of the waterway.)
  - Limit the amount of mowing and vegetation maintenance/removal along waterway banks and drainage channels. If an area must be mown for access set the mower blades at least four inches high. Taller grasses are more effective in slowing runoff, resists drought, and requires less fertilizer.
  - Remove invasive plants along the floodplain and banks of the waterways and drainage channels to decrease the spread of these non-native species.
  - Replace these invasives with desirable, native trees, shrubs and herbaceous native plants.
- Prevent nutrient loading, sedimentation and silt runoff
  - Limit disturbances of soil and vegetation along pond, stream and drainage channel banks and floodplains, especially on steep slopes.
  - Store soil and mulch piles away from ponds, streams and drainage channels. Keep piles covered with tarps to prevent material from washing into the waterways during rain.
  - Prevent nuisance Canada geese from congregating on your lawn and pond. Goose droppings not only make a mess on your lawn, they are rich in nitrogen and phosphorous, which increase nutrient loading into ponds through runoff. This influx of nutrients can contribute to over abundant algal growth, decreasing the pond's water quality. These droppings can also increase or introduce harmful bacteria in the water.
    - Use scare tactics, such as loud noises, dogs, swans, plastic owls or alligators.
    - Erect short fences or hang wire or monofilament to disable them from landing on the water or navigating land
    - Increase natural vegetative buffers along pond edges and in surrounding areas. The height of the vegetation will make it physically harder for the goose to enter the water from the land and will pose a threat of harboring potential predators, such as fox.
    - Plant trees around the pond edge. The tree canopy will make it more difficult for the geese to land and take off directly from the water.
  - Practice good farming techniques, such as, no-till and planting winter cover crops to prevent soil runoff.
- Reduce pollution
  - Follow fertilizer, herbicide and pesticide application directions carefully, especially near waterways and drainage channels.



## Riparian Buffers General Stewardship Recommendations

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- Do not dump grass clippings, animal or garden waste, chemicals or trash near or in waterways and drainage channels.
- Periodically remove trash and man-made debris from floodplains and waterways.
- Work with adjacent landowners to manage a larger section of the waterway and riparian buffers to increase the effect of management activities.

### Acknowledgements

Stewardship guidelines are a compilation of recommendations from Heritage Conservancy, Natural Lands Trust, Penn State's Cooperative Extension, West Chester University, Academy of Natural Sciences of Philadelphia, Pennsylvania Sea Grant, Pennsylvania Department of Natural Resources and the United States Agricultural Department.



BUCKS COUNTY NATURAL AREAS PROGRAM  
**LANDOWNER'S UNDERSTANDING FORM**  
 (Include with Grant Application)

Prior to formal review by the Bucks County Open Space Review Board of an application, a landowner's basic understanding of the program guidelines, grant process, and standard property restrictions must be established. Completion of this form signifies that the property owner has reviewed the Natural Areas Program guidelines and associated easement language.

I/we Owen & Penny Jones, (Landowner) have been contacted by DAVID W LUNG  
 of authorized representative), of (name of nonprofit or municipality) (Applicant).  
CHAIR, SPRINGFIELD TOWNSHIP OPEN SPACE COMMITTEE SPRING FIELD TOWNSHIP  
 I/we understand the following:

- The Applicant does not represent the County and is not an agent of the County.
- The Applicant is negotiating the deal and is responsible for raising necessary funding. The Landowner shall contact the Applicant with any questions.
- There are rules and procedures the Applicant must follow to receive County grant funds. These rules include the Landowner providing public access on the subject property to be preserved.
- County funds awarded to the Applicant will be based on the average of two appraisals that follow the program guidelines.
- The Applicant has given me copies of the Natural Areas Program Conservation Easement/Declaration and has explained that if we modify the standard language, it may substantially extend the application review time.

Signature: \_\_\_\_\_

Date: 4/3/10Printed Name: Owen Jones

Signature: \_\_\_\_\_

Date: 4/3/10Printed Name: Penny A Jones