

Project Overview

The Peters Creek Watershed is comprised of all that land which eventually drains to Peters Creek. The creek and its tributaries flow through all or parts of thirteen municipalities from its origin in Nottingham Twp, Washington County to where it empties into the Monongahela River in Clairton, Allegheny County. Land use practices within the watershed have a profound effect on the health and water quality of our streams.



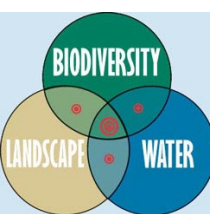
A steep wooded slope along Peters Creek provides the scenic character of our watershed, provides wildlife habitat and intercepts great quantities of rainwater.

Naturally vegetated lands within the watershed provide many services that often go unnoticed and unappreciated. Wetlands act as sponges; storing and cleaning great quantities of rainwater thus helping to decrease flooding and improving water quality. Forested stream banks and slopes release oxygen, provide habitat and food for wildlife, decrease water temperature within streams, intercept great quantities of rainwater before it becomes stormwater, and provide the scenic character of our watershed. These are just a few of the many **ecosystem services** provided by our watershed's undeveloped lands.



The Peters Creek Biodiversity Area, an exceptional value wetland in Jefferson Hills, provides the watershed with many ecosystem services. It decreases flooding by retaining and cleaning great quantities of stormwater and provides habitat for wildlife and a number of rare and endangered plant species in Pennsylvania.

WHY A GREENPRINT?



Undeveloped lands throughout our watershed are not all created equally. Some have a greater capacity to provide ecosystem services than others. Identifying and conserving those lands contributing most effectively to these ecosystem services is essential if we are to minimize the effects of severe flooding and the resulting maintenance costs of continually repairing washed out roads and bridges. Assuring adequate control of stormwater and maintenance of scenic character within a rapidly developing watershed is not a simple task. It requires a well thought out plan as well as the political will and cooperation to carry it out.

This implementation of Allegheny Land Trust's Greenprint is a land conservation plan utilizing Geographic Information System technology to identify and prioritize those lands throughout the Peters Creek watershed contributing most to stormwater control, maintenance of scenic character and preservation of biodiversity. ALT is a non-profit and was formed in 1993 with the goal of protecting land of natural value in and adjacent to Allegheny County. They protect natural lands by accepting donations of property and conservation easements, as well as through purchasing lands of particular natural significance.

The Peters Creek Watershed Greenprint is a cooperative effort between ALT, Chatham University's Department of Landscape Architecture and the Peters Creek Watershed Association. We hope that municipal officials utilize this GREENPRINT as a tool to better understand and conserve those lands within their communities that are providing essential ecosystem services.



Process

Creating the Greenprint for the Peters Creek Watershed

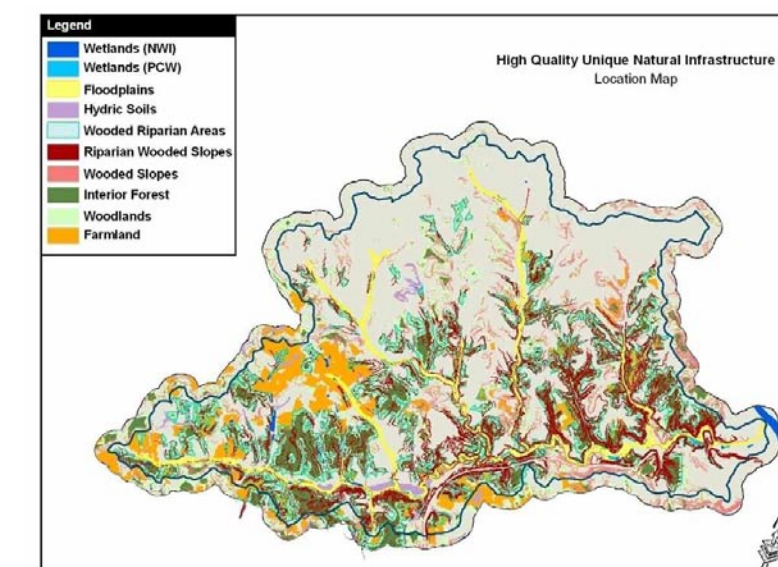
Step 1 - Identify physical attributes within the watershed boundaries that contribute significantly to biodiversity, scenic character, and/or water management.

- Wetlands
- Floodplains
- Hydric Soils
- Wooded Riparian Areas
- Wooded Riparian Steep Slopes
- Wooded Steep Slopes
- Woodlands
- Interior Forest
- Farmland

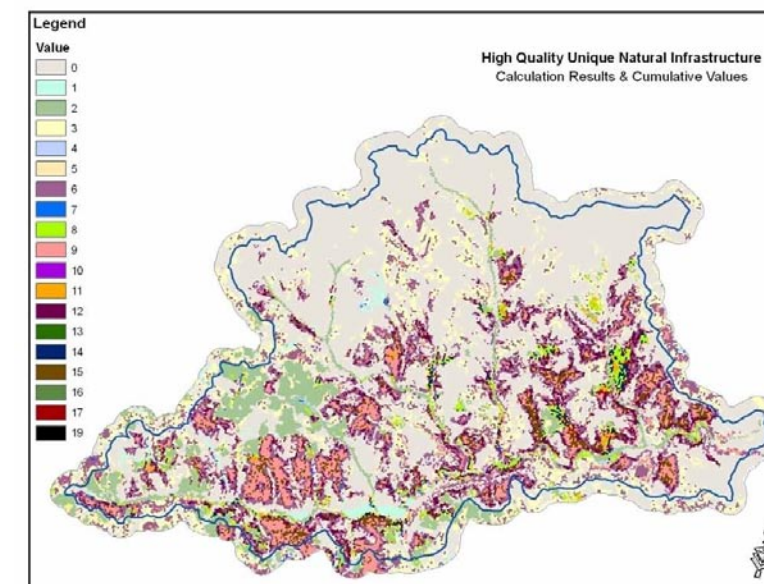
Step 2 - Assign scores to each attribute indicating whether the attribute contributes to biodiversity, scenic character and/or water management.

Unique Natural Infrastructure	Water	Scenic	Habitat	Total
Wetlands (NWI delineated)	1		1	2
Wetlands (PCW delineated)	1		1	2
Floodplains	1		1	2
Hydric Soils	1			1
Wooded Riparian Areas	1	1	1	3
Wooded Riparian Steep Slopes	1	1	1	3
Wooded Steep Slopes	1	1	1	3
Woodlands	1	1	1	3
Interior Forest	1	1	1	3
Farmland	1	1		2

Step 3 - Map each attribute on an equally spaced grid for the entire Peters Creek watershed. Each cell on this grid either exhibits the attribute or it does not. Verify by field observation that the mapping is accurate.



Step 4 - For each grid cell sum the scores for each attribute exhibited by that grid cell.



Example: A grid cell (outlined in yellow) along Piney Fork Rd in South Park Twp is bisected by Peters Creek. North of the creek is a narrow forest margin and then Snowden Wetland which falls within the FEMA 100 yr floodplain. Adjacent to and south of the creek is a steeply sloped (> 25 deg) forest in the riparian zone. Attributes exhibited by this grid cell along with scoring:

- Wetland 2
- Floodplain 2
- Hydric Soils 1
- Wooded Riparian Areas 3
- Wooded Riparian Steep Slopes 3
- Wooded Steep Slopes 3
- Woodlands 3

Total score for this grid cell: 17

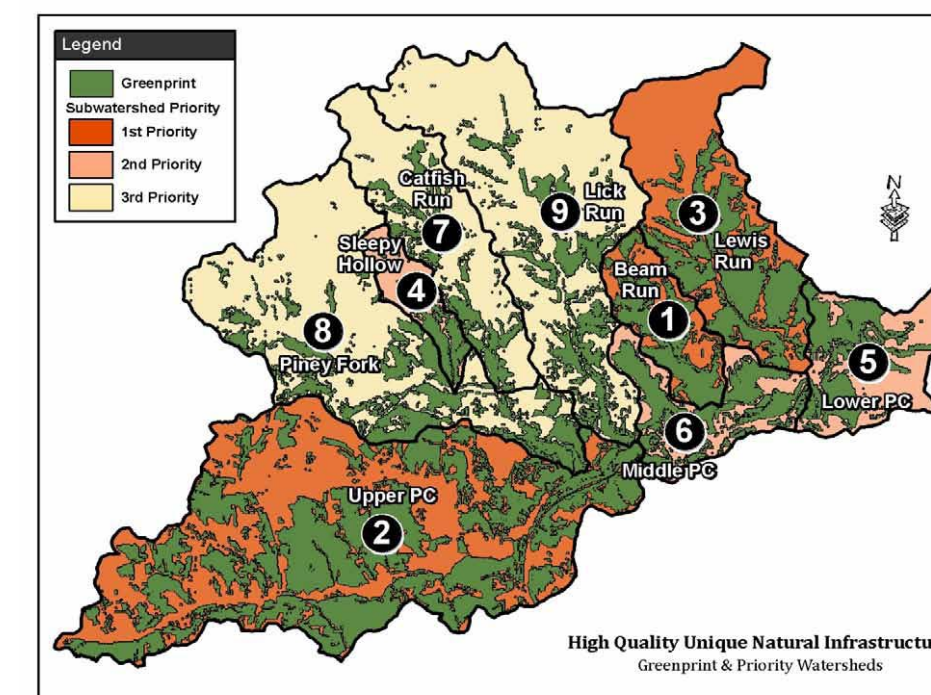
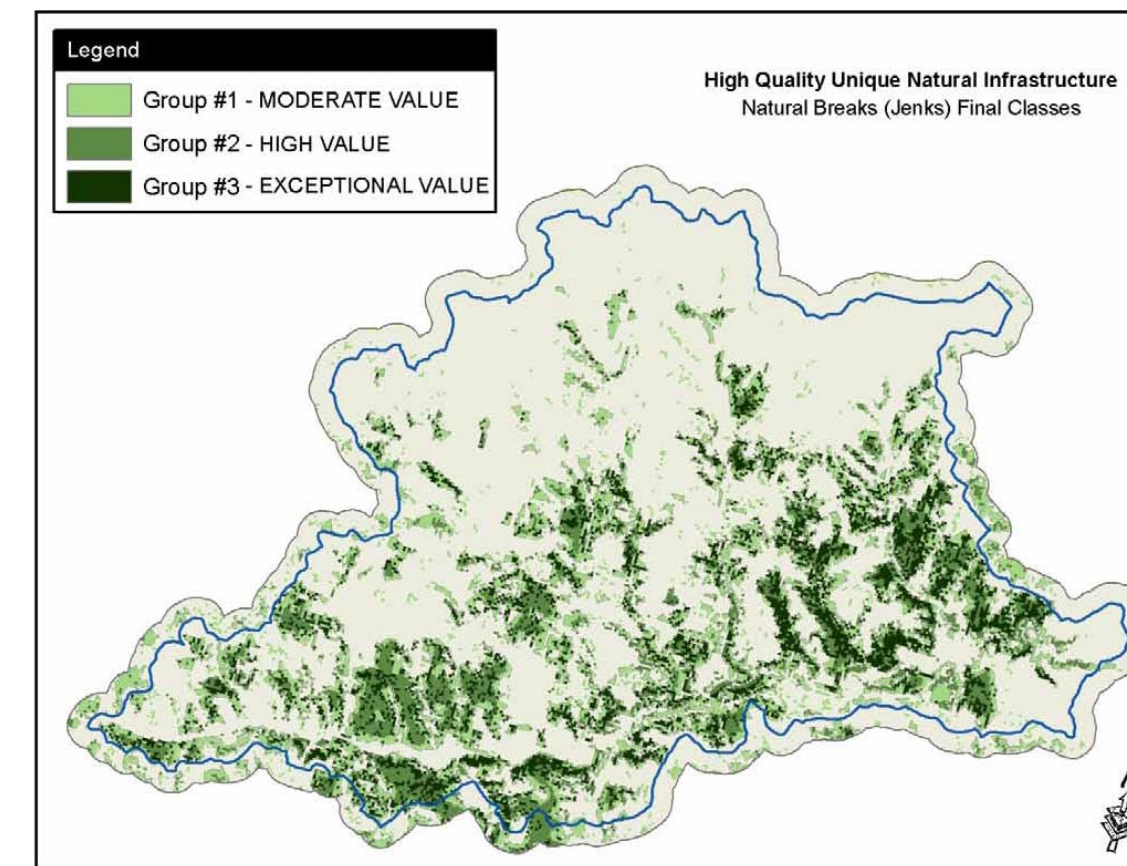


Results

Step 5 - Create three groups from the resultant grid cell summed values.

- Moderate Value (4-7)
- High Value (8-10)
- Exceptional Value (11-19)

This is the Peters Creek Watershed Greenprint



The Peters Creek Watershed Greenprint can now be utilized to guide conservation efforts and answer many questions. We can use it to determine individual parcels containing highly functional greenspace.

It also permits us to prioritize sub-watersheds with the greatest percentage of remaining highly functional greenspace. This will allow us to most effectively concentrate our conservation efforts where they will provide the greatest benefit.

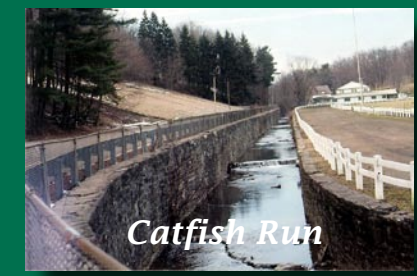
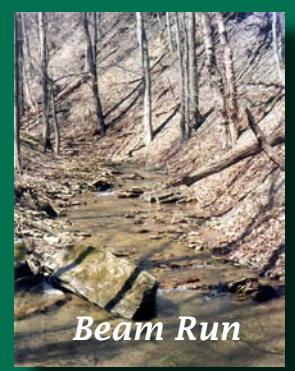
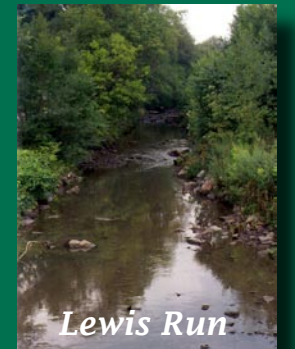
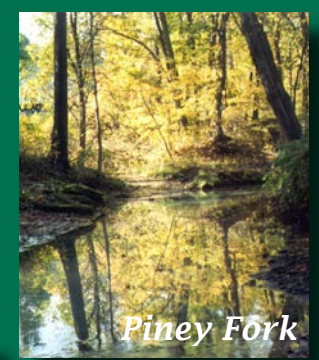
The analysis to the left reveals that the Beam Run, Upper Peters Creek and the Lewis Run subwatersheds contain the greatest percentage of highly functional greenspace and, therefore, provide the most important conservation opportunities within the Peters Creek Watershed.

Recommendations

Conserving highly functional greenspace within the Peters Creek watershed is an economic as well as a "quality of life" issue. Each reduction in greenspace increases the amount of runoff reaching Peters Creek during a rain event. Current minimal, inadequate stormwater controls are cumulatively adding to more frequent and severe flooding; especially in the lower portions of the watershed. There are significant infrastructure (bridges, roads, etc.) repair and maintenance costs associated with this increased flooding. Additional runoff also increases streambank erosion and sedimentation which leads to a decrease in water quality within Peters Creek. A watershed approach to controlling stormwater is essential if we are to be successful in minimizing future maintenance costs and maintaining Peters Creek as a fishing resource. Retaining highly functional wetlands and forested steep slopes along Peters Creek throughout the watershed is an important component of this watershed approach.

Recommendations for successful implementation of the PETERS CREEK WATERSHED GREENPRINT

- 1) Create a multi-municipal Peters Creek Watershed Environmental Advisory Council to develop and help implement a long-term plan to conserve highly functional greenspace throughout the Peters Creek watershed.
- 2) Educate municipal officials and residents on the benefits of preserving highly functional greenspace.
- 3) Identify a high priority demonstration parcel for conservation that has a high probability of success.
- 4) Develop an inventory of highly functional greenspace throughout the watershed at the parcel level.
- 5) Encourage watershed municipalities to strengthen their ordinances to proactively protect highly functional greenspace.
- 6) Encourage watershed municipalities and landowners to utilize all state programs and options provided by the PA Municipal Planning Code to conserve highly functional greenspace.
- 7) Encourage Allegheny County and Washington County to implement a state-mandated Stormwater Management Plan for the Peters Creek Watershed.
- 8) Partner with a land trust organization to maximize conservation of highly functional greenspace identified through the Peters Creek Watershed GREENPRINT.

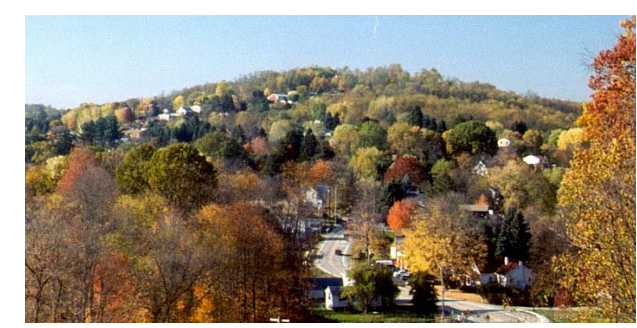


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biodiversity



scenic character



water resources



GREENPRINT

for the
Peters Creek Watershed

A Land Conservation Model to identify, prioritize and conserve lands that harbor biodiversity, manage water resources, and define our watershed's scenic character.

More information available at greenprint.peterscreek.org
We welcome questions and comments. Contact us at peterscreekwsa@verizon.net

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