The Manada Conservancy is a land trust dedicated to the preservation of Dauphin County’s natural resources. As part of our mission, we are working to create a greenway, or natural corridor, along the Swatara Creek to help assure healthy local waterways and a positive future for the Chesapeake Bay.

Healthy streamside buffers absorb pollutants, create wildlife habitat and greatly reduce flooding. Because of these benefits, we are working in cooperation with landowners who wish to voluntarily participate in the conservation and restoration of the lands that buffer the Swatara Creek.

Much of this land is located in flood plains and not suitable for permanent dwellings, but some land is at risk for development. Many of these areas would benefit from restoration and plantings.

We are working with private landowners, public utilities, businesses, and municipalities to create a greenway of about 15 miles in length along the Swatara and Manada Creeks in Dauphin County.

Landowners may participate by becoming Partners in Stewardship, pledging to create or maintain streamside buffers on their properties. The protection of these properties can also be achieved by either a gift or sale of land, or by donation of a conservation easement.

**The purpose of the Swatara Stewardship Program is to preserve and increase the diversity of native species in this region by maintaining a buffer of undisturbed vegetation; to encourage connections between natural communities, and to improve water quality and aid in flood prevention.**
The Greenway will serve as a buffer, reducing agricultural run-off and industrial or community derived pollution, helping to protect the quality of the drinking water for several communities for whom it is their water source. This natural corridor is home to a diversity of wildlife including some endangered species. In order to respect the rights of landowners and help to preserve native animals and plants, human access to the greenway will largely be limited to the Swatara Creek itself, by boat, canoe, or wading. Because streamside buffers have the ability to soak up run-off and stormwater and slow down its speed entering waterways, the Greenway will help reduce the effects of flooding. The Swatara Greenway will also help to preserve archaeological and historic sites as well as areas of natural beauty.

Do you know your watersheds?

A watershed, or drainage basin, is an area of land that drains all of its water bodies (lakes, streams, reservoirs, wetlands, groundwater) into a single larger body of water. The Swatara Creek watershed is part of the, much larger, Chesapeake Bay watershed. The use and treatment of the land and water where we live ultimately effects the health of the Bay.
Riparian, or streamside, buffers are designed to maintain or restore streamside land to its natural vegetated state, in order to take advantage of the benefits that a forest’s biological processes can provide to aquatic ecosystems. These forested strips of land along a stream “buffer”, or protect, the stream from the impact of human activities.

Buffers have many benefits, including:
- Protecting streams from pollutants
- Helping to reduce flooding by decreasing the amount of runoff entering local streams immediately after a storm and by slowing water flow
- Reducing stream bank erosion (Roots hold the soil in place, minimizing the erosive force of the stream.)
- Helping to recharge the groundwater supply by providing infiltration
- Protecting habitat by providing a shade canopy that protects the stream from the sun’s heat, keeping the water temperature cool during the summer
- Supplying food, shelter, and breeding habitat for fish and other organisms through leaves and woody debris that fall into the stream
- Providing habitat for terrestrial species
- Beautifying the streamside and promoting recreation

“Top 10” Streamside Buffer Stewardship Practices

Can you get a perfect 10?

1. Leave existing vegetative cover. Stop mowing within 35 feet of the waterway.
2. Remove man-made litter that collects along the stream.
3. Do not apply lawn fertilizers or other chemicals within 35 feet of the waterway.
4. Plant native trees and woody shrubs within 15 feet of the creek ("Zone 1" of your streamside buffer).
5. Remove invasive, non-native plants from your buffer area.
6. Create additional habitat for wildlife, for example, install bird boxes.
7. Limit the size and number of creek access areas; keep trails mostly parallel to the waterway, perpendicular only where needed, to reduce erosion.
8. If you have a private septic system nearby, have it inspected regularly to ensure that there is no contamination to the creek.
9. Increase the width of your buffer by planting additional trees and shrubs and achieve a complete “3 Zone Riparian Buffer Area”. (See next page)
10. Share information with your neighbors and friends about the value of streamside buffers and help them get started on caring for their streamside buffers too!
Planting Guide

The trees, shrubs and perennial flowers and grasses that make up a buffer act as a filtering system that absorbs pollutants before they reach our waterways. They also make beautiful additions to a home landscape. Plant species can be chosen for their bloom time, color, and attractiveness to birds and butterflies!

Design

The design of your stream buffer will depend on your property and your goals. Keep in mind, the wider the buffer, the more beneficial it is.

Two common designs are the forested buffer and the three zone buffer. In the forested buffer, the entire width along the stream is planted or reforested, and is to remain undisturbed. Depending on your property, you may want to consider a three zone buffer.

In zone 1, closest to the stream, larger trees are planted to help stabilize the stream bank and to shade and cool the water.

In zone 2, the middle area, you will plant shrubs and trees. These plantings take advantage of the nutrients being absorbed and use them for their own growth.

Zone 3, the area furthest from the stream, will primarily be perennial grasses and flowers. This zone controls stormwater runoff and allows water to infiltrate into the soil.

Be Part of the Solution!

Plant a Tree
You don’t have to have a creek-side property to enjoy the benefits of trees!

Go Native
Plant native trees, shrubs and flowers. Native plants will thrive in our climate, are easier to care for, and they provide food and habitat for our native wildlife species.

Create a Buffer
Begin with a “no mow” zone along your stream banks. An ideal buffer is 35-75 feet wide, but wider is better.
**Plant Selection**

The following list contains a few, of many, plants that are appropriate for riparian areas. Be sure to choose plants based on the site conditions (sunlight, moisture) specific to your property.

<table>
<thead>
<tr>
<th><strong>Trees</strong></th>
<th><strong>Shrubs</strong></th>
<th><strong>Perennial Flowers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>American Beech</td>
<td>River Birch</td>
<td>Spicebush</td>
</tr>
<tr>
<td>Basswood</td>
<td>Shadbush</td>
<td>Swamp Rose</td>
</tr>
<tr>
<td>Black Ash</td>
<td>Shagbark Hickory</td>
<td>Winterberry Holly</td>
</tr>
<tr>
<td>Black Gum</td>
<td>Silver Maple</td>
<td>Witch-Hazel</td>
</tr>
<tr>
<td>Black Walnut</td>
<td>Swamp White Oak</td>
<td></td>
</tr>
<tr>
<td>Black Willow</td>
<td>Sweetgum</td>
<td></td>
</tr>
<tr>
<td>Dogwood</td>
<td>Sycamore</td>
<td>Beard-Tongue</td>
</tr>
<tr>
<td>Green Ash</td>
<td>Tulip Poplar</td>
<td>Blue Vervain</td>
</tr>
<tr>
<td>Hornbeam</td>
<td></td>
<td>Cardinal Flower</td>
</tr>
<tr>
<td>Pin Oak</td>
<td></td>
<td>Coneflower</td>
</tr>
<tr>
<td></td>
<td><strong>Grasses &amp; Sedges</strong></td>
<td>Goldenrod</td>
</tr>
<tr>
<td></td>
<td>Big Blue Stem</td>
<td>Ironweed</td>
</tr>
<tr>
<td></td>
<td>Broom Sedge</td>
<td>Jack-in-the-pulpit</td>
</tr>
<tr>
<td></td>
<td>Riverbank Wild Rye</td>
<td>Joe-Pye Weed</td>
</tr>
<tr>
<td></td>
<td>Sedge</td>
<td>New England Aster</td>
</tr>
<tr>
<td></td>
<td>Soft Rush</td>
<td>Partridgeberry</td>
</tr>
<tr>
<td></td>
<td><strong>Ferns</strong></td>
<td>Swamp Milkweed</td>
</tr>
<tr>
<td></td>
<td>Cinnamon Fern</td>
<td>Tall Meadow Rue</td>
</tr>
<tr>
<td></td>
<td>Swamp Rose</td>
<td>Wood Geranium</td>
</tr>
<tr>
<td></td>
<td>Ninebark</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pussy Willow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Red Chokeberry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rosebay</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Serviceberry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silky Dogwood</td>
<td></td>
</tr>
</tbody>
</table>

**Maintenance**

Maintenance is key! Be sure to apply 2” to 3” of mulch, as wide as the drip line, at the time of planting. This will help to provide moisture and prevent weed growth. Be careful to not pack mulch against trunks and stems, which may cause rotting. Be sure to water your new plantings and monitor their need for watering throughout the warm months. Consider placing protective fencing for the first few years around your trees and shrubs, to reduce the risk of loss to wildlife. You will need to mow and pull weeds so that they do not compete with your plantings. Apply additional mulch over the first couple of years as needed. Before you know it, you will have a self sufficient, reforested buffer.
Suggestions for Good Stewardship of Your Streamside Property

How to create a 100 foot buffer which provides for the health of the waterway, the stability of your stream-bank, and a habitat corridor for wildlife:

ZONE 1 starts at the stream bank, is approximately 20 feet wide and consists of undisturbed forest with trees and woody shrubs that stabilize the bank and provide shade and nutrients. Some stream banks already have such vegetation, creating a good foundation for improvement. Native shrubs may need to be planted initially. Maintenance is limited to watering during periods of drought, eradication of invasive plants, and removal of litter. Logging, mowing and pruning of native species should not occur. Livestock should be excluded and no foot trails should be created in this zone other than those which are perpendicular to the creek.

Native plants not only require less maintenance, but they are bound into the lifecycles of local wildlife, and help to promote our regional biological diversity.

ZONE 2 is about 60 feet wide and consists of managed forest with trees and shrubs. It provides protective buffering and filtering functions, and in water overflow conditions extends the contact time to help prevent a concentrated flow. Pruning or harvesting of trees may occur according to an approved forest management plan. A foot or (non-motorized) bike trail may be created in this zone, if desired.

Sometimes, good stewardship means nothing more than leaving the existing vegetative cover.

Habits on the rest of your property affect the quality of the run-off into the waterways too.

Applied fertilizers and chemicals may wash into the creek.

ZONE 3 is about 20 feet wide, and consists of a dense herbaceous cover of native grasses, broad-leafed plants, or, woodland. The grasses should be allowed to mature before mowing for hay. This zone helps to convert a concentrated flow in flood conditions to “sheet” flow and to allow for even more efficient filtering effect and nutrient preservation.
You can become a Partner in Stewardship for the Swatara Greenway!

It is a top priority of The Manada Conservancy to protect the corridor of land which lines the Swatara Creek in Dauphin County, to help ensure the maintenance of good water quality and conservation for residents now and in the future. Improving the water quality close to home also helps to improve the health of the Susquehanna River and the Chesapeake Bay. You, as a landowner, are in the fortunate position of being able to help bring the Swatara Creek back into excellent health, and to help keep it that way.

The water quality of the Swatara Creek is important, and taking care of the lands which border the creek is a good way to achieve clean water, good wildlife habitat, and safe and enjoyable recreational opportunities, like fishing and boating.

As a Partner in Stewardship, there is no permanent commitment. It is simply a pledge to create or maintain a healthy stream-side buffer area on your property for a minimum of three years. This can be as simple as discontinuing mowing to the edge of the Creek, and leaving your buffer as a natural area and allowing trees and plants to grow. These plants and trees are essential for stabilizing the banks of Swatara Creek, filtering fertilizers and pollutants, and preventing erosion.

Your efforts will be recognized with a plaque that can be placed on your property, designating you as a Partner in Stewardship for the Swatara Greenway. You will receive an honorary one year membership to The Manada Conservancy, and you will be invited to all special membership events. You will also receive information about healthy streambank management practices.
Swatara Greenway Partner in Stewardship Pledge

The health of the Swatara Creek is important to me! I pledge to create or maintain a buffer of at least 35 feet along the Swatara Creek on my property. If my property is narrower than this at any point, the buffer will be maintained at that width. I understand that I may remove invasive non-native species for the buffer area, if needed.

I understand that I am making a commitment for three years, but that there is no permanent commitment, and that I am not giving up any property rights or creating any restrictions on my deed by becoming a Partner in Stewardship.

I understand that I will receive an honorary one year membership to The Manada Conservancy, and will be recognized for my contribution to the health of the Swatara watershed and the goal of creating a protected corridor along the Swatara Creek in Dauphin County.

I (we) the undersigned, agree to become a Partner in Stewardship with The Manada Conservancy!

Name ___________________________ Date __________

Name ___________________________ Date __________

Address ___________________________

__________________________________

For The Manada Conservancy Date

The Manada Conservancy
PO Box 25
Hummelstown, PA 17036
www.manada.org
(717) 566-4122
office@manada.org
Options for preserving YOUR Swatara Greenway Property

BECOME A PARTNER IN STEWARDSHIP
Landowners may participate in The Manada Conservancy Greenway Stewardship Program. Partners in Stewardship believe that protection of Swatara water quality is important and that the Greenway concept is good conservation practice. They know that a well-managed stream-side buffer can help to prevent water pollution, erosion and sedimentation, and improve water quality as far away as the Chesapeake Bay, as well as close to home. It can provide better habitat for species that move along the land corridor, and also shade stream waters so that the water is cooler and fish habitat is improved. They have committed to use good stewardship practices on their streamside properties.

Please see the Partner in Stewardship sheet for details.

DONATION OF A CONSERVATION EASEMENT
This method is the most popular way to preserve land. The landowner voluntarily places a restriction on the property, limiting development and uses, to protect any environmentally sensitive areas that exist on the land. The landowner retains ownership of the land. Because this is a voluntary restriction, the donation of the easement is often tax deductible. The land trust is responsible for ensuring that the easement is upheld in perpetuity. The landowner is NOT required to allow public access.

DONATION OF A PARTIAL EASEMENT
This works the same way as a conservation easement on an entire property, but protects only the most vulnerable areas such as a stream-bank corridor. This may be a reasonable option if the creek frontage is part of a large parcel, and the landowner does not want to place an easement on the entire property.

DONATION OF LAND
A landowner may donate land to The Manada Conservancy for preservation. The market (appraisal) value of the land may be considered a tax deductible charitable contribution. This may be a reasonable option for a landowner whose parcel is vacant or does not have a dwelling on it.
Mission

The Manada Conservancy is a land trust dedicated to the preservation of the natural, historic, agricultural, and scenic resources of Dauphin County and to the promotion of environmental education.

The Swatara Greenway Program encourages landowners and municipalities to voluntarily participate in the creation and maintenance of streamside buffers to improve the water quality of the Swatara Creek.

Manada Conservancy
volunteers performing a clean-up along the Swatara Creek!

This fact sheet was partially funded by the League of Women Voters of PA Citizen Education Fund through a Growing Greener grant from the PA DEP in partnership with The Manada Conservancy, Hummelstown Borough, and United Water.

Sources: