

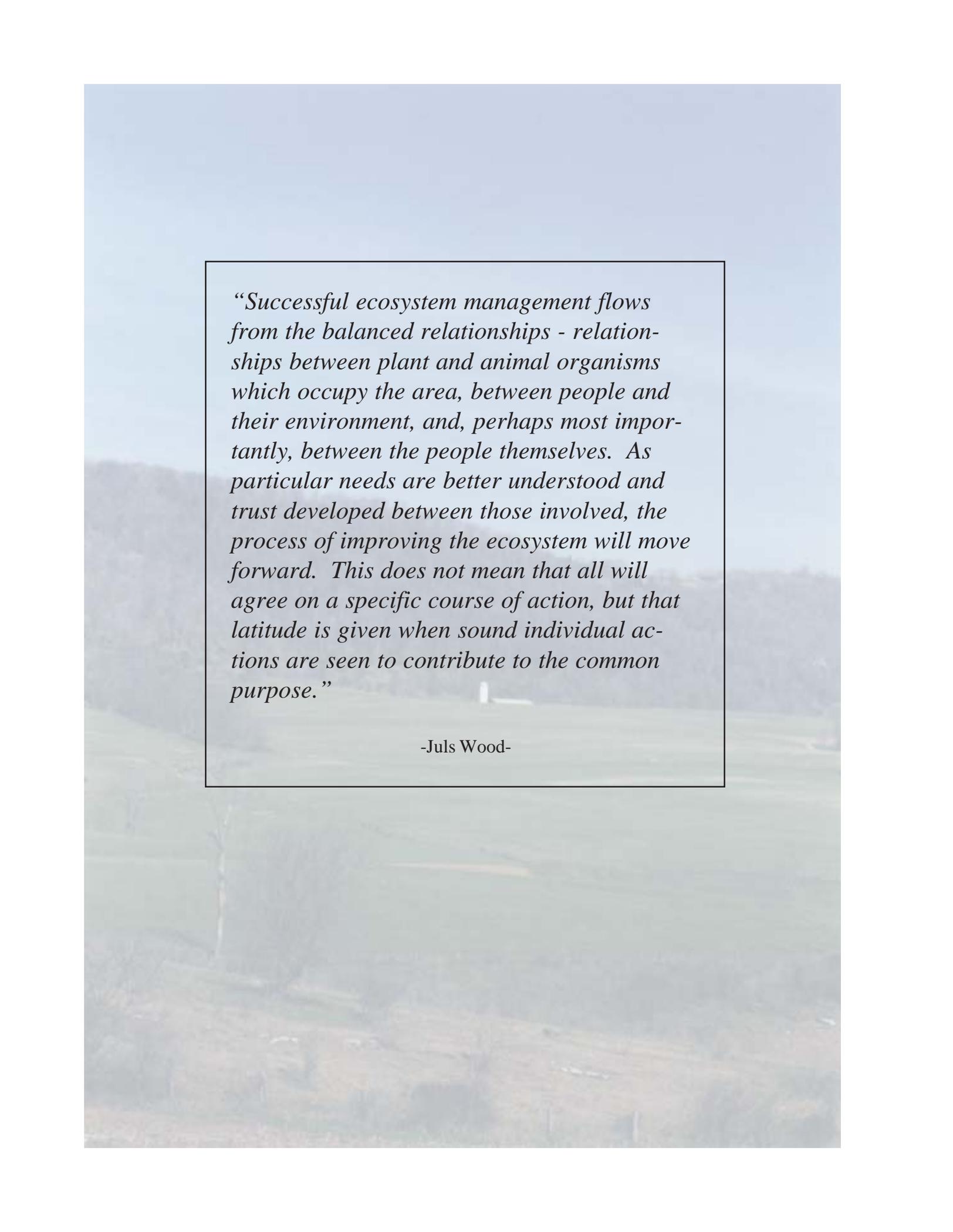
Town Creek

Long-range Planning Guide for Ecosystem Management



Town Creek Ecosystem Management Project

Promoting Responsible Stewardship



“Successful ecosystem management flows from the balanced relationships - relationships between plant and animal organisms which occupy the area, between people and their environment, and, perhaps most importantly, between the people themselves. As particular needs are better understood and trust developed between those involved, the process of improving the ecosystem will move forward. This does not mean that all will agree on a specific course of action, but that latitude is given when sound individual actions are seen to contribute to the common purpose.”

-Juls Wood-

Town Creek

Long-range Planning Guide for Ecosystem Management

Town Creek Ecosystem Management Project Steering Committee

Promote Responsible Stewardship

Maryland Representatives:

Ron Clapp, Landowner

Craig Hartsock, District Manager, Allegany County Soil Conservation District

Daniel B. Hedderick, Forester and Town Creek Project Coordinator, MD DNR-Forest Service

Owen McAteer, Landowner and Member of the Town Creek Watershed Landowners Association

Georgene McLaughlin, Landowner
and President of the Town Creek Watershed Landowners Association

Landowner Vacancy

Pennsylvania Representatives:

Dave Scamardella, Service Forester, PA DCNR Bureau of Forestry

Landowner, Vacancy

Bill Poorbaugh, Landowner

Bill Plank, Bedford Soil Conservation District Board Member and Member
of the Ridge & Valley Stream Keepers

Dave Scheffler, Landowner and Member of the Ridge & Valley Stream Keepers
and Member of the Woodland Owners of Southern Alleghenies

Juls Wood, Camp Director of Covenant Village and Private Forestry Consultant

The Steering Committee is made up of 12 individuals, 8 of whom are landowners and 4 of whom are either state or local government representatives evenly divided between the states of Maryland and Pennsylvania.

State of Maryland

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Michael S. Steele, Lt. Governor



Department of Natural Resources

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W. P. Jensen, Deputy Secretary

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Welcome To The

Town Creek

Long-range Planning Guide

for Ecosystem Management

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Introduction

The Town Creek Ecosystem Management Project Steering Committee and the Maryland Department of Natural Resources-Forest Service are pleased to present to you the *Town Creek Long-range Planning Guide for Ecosystem Management*.

The Town Creek Ecosystem Management Project was started as a pilot project in 1994 by the Maryland Department of Natural Resources-Forest Service, Western Region to try to figure out how to apply an emerging concept called ecosystem management in a mixed ownership watershed. The ecosystem selected is defined by the geographic boundary of the Town Creek watershed. Town Creek watershed is a perfect location since it has federal, state, county, and privately owned lands. The largest portion of the watershed is privately owned and is dominated by a farming and forestry community. Ownership for the entire watershed can be seen in figure 1. Town Creek lies in the Ridge and Valley physiographic province of both Maryland and Pennsylvania. The watershed also lies in a rain shadow of the Appalachian Mountains and contains well-drained, shaley soils. The watershed has 97,645 acres, with 43,501 acres in Allegany County, Maryland and the other 54,144 acres in Bedford County, Pennsylvania. Town Creek enters the Potomac River, which delivers its waters to the Chesapeake Bay. A map of the watershed can be found on page 3.

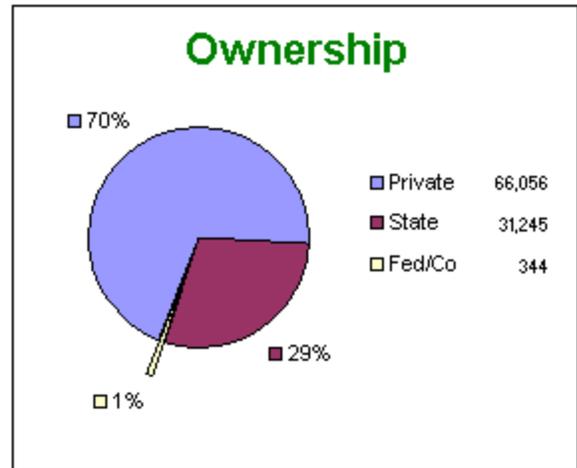


Figure 1: Ownership of the Watershed

This project provides a great opportunity to be on the cutting edge of technology and a unique management concept. The Town Creek Ecosystem Management Project provides a community working together through partnerships, interagency cooperation, and voluntary projects. This has been accomplished by collecting data on natural systems to look at the big picture so that better decisions and recommendations can be made to meet the needs of society. Also, we depend on a sustainable community and a healthy environment for our survival. No underlying problem in the Town Creek watershed prompted the start of this project. Even resource management historians say that Town Creek is, environmentally, in better shape today than it was 100+ years ago. We hoped that we would learn a great deal about implementing the concept of ecosystem management ... and we have!

The planning guide is made up of 12 guiding issues which are accompanied by several objectives and recommendations. These guiding issues will provide direction to continue the implementation of ecosystem management within the Town Creek watershed. These guiding

issues were developed from information gathered at grassroots public meetings, community workshops, individual landowner suggestions, and the desires of active groups including the Town Creek Watershed Landowners Association, the Ridge and Valley Stream Keepers, various technical advisors and data gathered from the 34 organizations that attended the Town Creek Summit. The Steering Committee and the MD DNR-Forest Service facilitated numerous meetings over several years to organize the information gathered from these sources to develop this Long-range Planning Guide. Some of the recommendations you will find to be generalized while others you will find to be very specific. This has been done because we understand that nothing in nature stays the same and this watershed we call Town Creek is always changing. Over time, as this watershed changes, so will the desires of the people that occupy the land. With these changes should come adjustments to any long-range plan and this is why we have developed a planning guide and not a strict management plan.

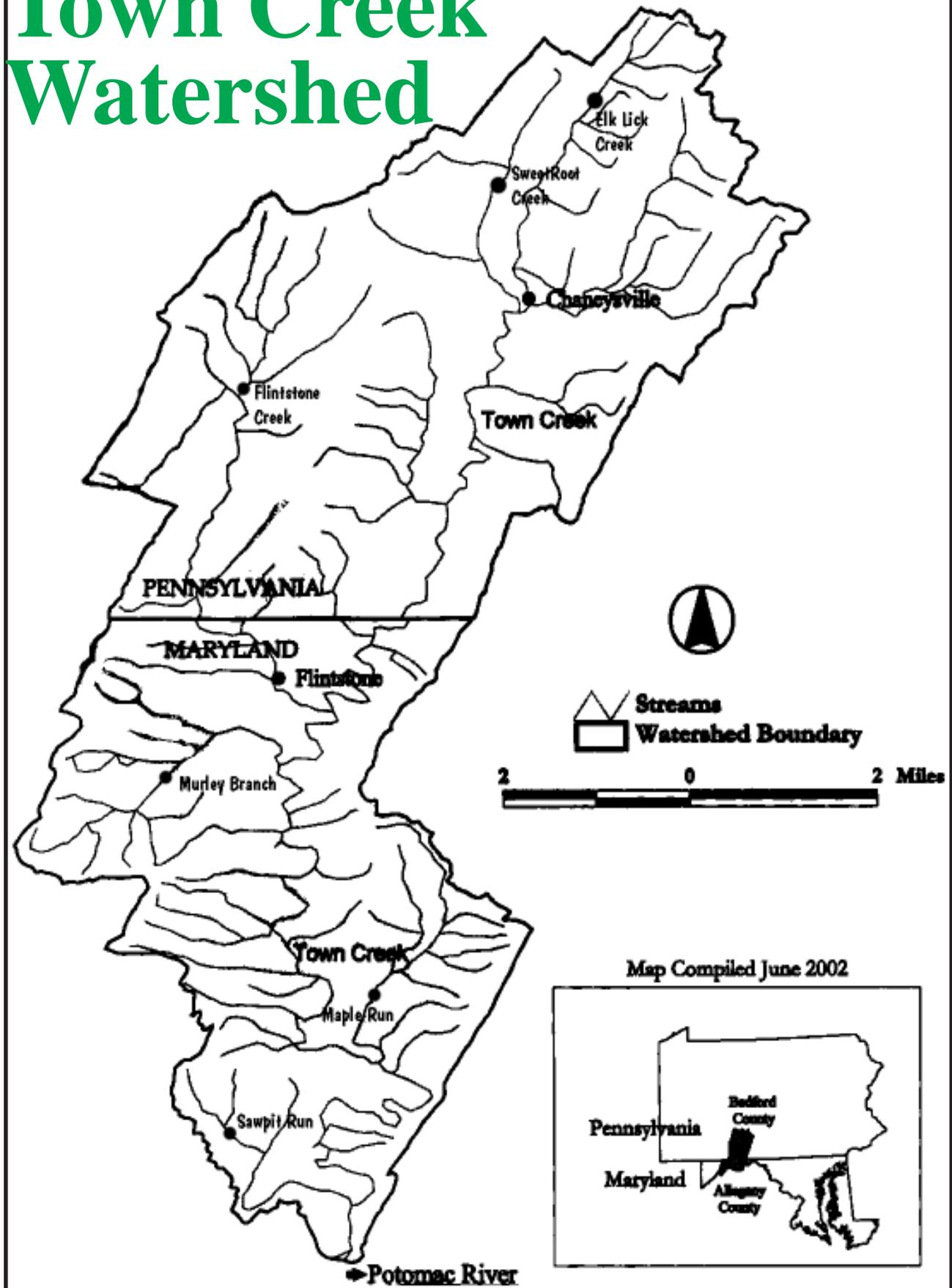
The implementation of this guide will be as it always has been in the past, which is through the voluntary efforts of interested community members, voluntary programs provided by government agencies, and projects by local organized groups developed by the landowners of the Town Creek watershed. As you look through this guide you will find objectives and recommendations that do not specify any one person or group responsible for its implementation; that is where you come into play. Find your niche and take the lead with these suggestions. Other organizations already have, and it will be evident who they are as you read through this guide.



Town Creek Steering Committee at the Town Creek Summit

This guide has been designed for both those that choose to skim the document and for those who want to sit back and dive into the details. There are also a number of side articles which accompany each guiding issue such as: case studies, program studies, community leaders' views, restoration and preservation projects, organizations' and associations' activities, unique features, personal views and professional views. These articles, photos and charts provide the true picture of the Town Creek watershed. There is something for everyone to enjoy and/or learn from within this exciting document. Other portions of this publication will share with you a little bit of what we have learned about the implementation of ecosystem management with mixed ownership of both public and private land. So, sit back and enjoy the adventure of discovering the Town Creek watershed within this planning guide!

Town Creek Watershed



Defining Ecosystem Management

Ecosystem management takes an overall view of the needs and opportunities related to the ecosystem within the Town Creek watershed. An ecosystem is the interaction of organisms and their physical environment. By looking at the interaction of the various ecosystems within the watershed, each person will be more aware of how his or her land fits into this bigger picture. By looking beyond property lines, individuals can make informed decisions about how their actions affect the ecosystem, their own objectives, other landowners, and the general public. Ecosystem-based management is a goal-driven approach to restoring and maintaining healthy ecosystems and their functions and values. It is based on a collaboratively developed vision of desired future ecosystem conditions that integrates ecological, economic and social factors affecting a management unit defined by ecological, not political, boundaries. By ecosystem management, we mean that an ecological or whole-system approach will be used to achieve the objectives. This does not imply keeping human influence out of the ecosystem. People have been a part of the Town Creek watershed for 10,000 years, and human influences can not be separated from natural processes. We must not and can not exclude the public from the use of their land. Many species are linked to our cultural identity and many ecological processes are essential for sustainable human populations. Management of the Town Creek ecosystem is done through the various committees, partnerships and local organizations. The project is **not** done through increased regulations, government control, taking away private property rights or putting farmers out of business. Ecosystem management ultimately is a long-term process accomplished through public involvement and education for sustainable communities and sustainable ecological functions.

PERSONAL VIEW:

Ecosystem Management: The Town Creek Watershed

There are many definitions of ecosystem management. In the case of ecosystem management for the Town Creek Project, the definition is one of practical management in a naturally defined area of the Town Creek watershed. Practical management is the desire of the watershed's citizens to organize and direct their efforts to issues in the area in which they live. It is the combination of the organized groups and individuals that makes land management of the Town Creek Ecosystem possible. The people and organizations are as diverse and complex as the web of life. As these groups work together on what they feel is important to them and their livelihood, a bigger picture develops. The picture is one that is dynamic in scope and texture. It is the big picture that defines the true meaning of ecosystem management. Within this picture you will find every aspect of nature and human existence. It is the experiences and desires of the people in this watershed that maintains, improves, and changes the big picture. The changes in the ecosystem are ones that reflect the stewards of this area. Over time, this big picture will change as do the seasons of the year. The land and its inhabitants are not static, but are constantly changing. Even the boundaries that define this watershed will change as will its inhabitants, human or otherwise. But for now, the people of Town Creek are painting a big picture of strong, bright colors that include all aspects of life and nature, one that will always be in the true meaning of ecosystem management. So, if someone asks you what ecosystem management is, tell them, "it is the big picture of life!"

-Dan Hedderick-

Guiding Issue #1

Consistent, Regional Watershed Management Approach Across Political Boundaries

The Town Creek watershed lies in Bedford County, Pennsylvania and Allegany County, Maryland. The Pennsylvania portion includes Southampton and Monroe Townships, Buchanan State Forest, and State Game Lands #97. The Maryland portion includes Green Ridge State Forest, one small portion of Billmeyer Wildlife Management Area and the C&O Canal National Historic Park. **This diversity of local, state, and federal political boundaries necessitates a consistent, regional watershed management approach.**

Summary of Objectives

- ☞ **Coordinate exchange of information between PA and MD governments at local, county & state levels.**
- ☞ **Acquire funding for dual state projects.**
- ☞ **Instill ownership through partnerships.**

3. The Maryland Department of Natural Resources-Forest Service, assisted by the Town Creek Steering Committee, will develop a directory of involved groups, agencies and government programs.

4. Encourage ongoing dialogue at the Town Creek Steering Committee meetings by having discussions with partners and organized groups in the watershed.

5. Coordinate funding opportunities for dual state projects.

Recommendations

Coordinate exchange of information between PA and MD governments at local, county & state levels.

1. Promote technical information exchange between states. This can be accomplished by combining Geographic Information Systems (GIS). There are currently four different systems in use among various agencies.
2. The Town Creek Steering Committee and other involved groups will hold meetings as needed to assist with information exchange between the jurisdictions.

Acquire funding for dual state projects.

1. Determine funding opportunities through the use of programs and grants.
2. Coordinate efforts with county or regional grant writers and provide grant writing training to representatives of local organized groups within the Town Creek watershed.

Instill ownership through partnerships.

1. Increase membership in local citizen groups.
2. Involve future stakeholders (youths and students) in watershed projects.

3. Generate a bi-annual report with watershed partners and make it available to citizen groups, the business community and local governments.

4. Make landowners aware of special needs of the Steering Committee that could be satisfied by volunteered use of privately owned land.

CASE STUDY:

Funding For Buffers: One Watershed, Two States

Trying to establish two riparian forest buffers within the same watershed only miles apart was a challenging task because they are on opposite sides of the Mason-Dixon line. Individual members of the Town Creek Steering Committee took the lead on both projects. Juls Wood took on the task of searching for funding for a water quality improvement project on a privately-owned property along Flintstone Creek in Bedford County Pennsylvania. Concurrently, Dan Hedderick was taking on the task of searching for funding for a water quality improvement project on privately-owned land along Murley Branch in Allegany County, Maryland.

Mr. Woods, Camp Director of Covenant Village, was able to tap into funding from the Pennsylvania Department of Environmental Protection (DEP) through the Growing Greener Program to the tune of \$29,000. This funding was used to plant a stream buffer, restore a wetland, stabilize a stream crossing, stabilize several access roads and establish bluebird boxes. The projects have improved wildlife habitat, provided soil protection, and improved water quality.

Mr. Hedderick, Forester for the State of Maryland Department of Natural Resources-Forest Service, was able to obtain grants from the Chesapeake Bay Trust (CBT), and Maryland Department of Natural Resources Shore Erosion Control. Other funding was obtained through the owner getting involved in the Conservation Reserve Enhancement Program (CREP). Additional in-kind funding was also provided from several agencies including Allegany Soil Conservation District, Maryland Department of Natural Resources-Forest Service, Maple Run Youth Center and Maryland Department of Agriculture. All funding came to a total of \$28,500.

This funding was used to plant a stream buffer, remove a man-made berm, restore a flood plain and stabilize streambanks with both vegetation and structure systems. This project has also improved wildlife habitat, provided soil protection, and improved water quality.

Being creative and working across political boundaries with dedicated individuals for a single watershed focus can create the desired conditions a community is looking for within the watershed. Perhaps someday funding will be available to watershed entities despite the political boundaries. However, for now, creativity in funding is the key.

By: Maryland Department of Natural Resources-Forest Service.

Land Use in the Watershed

With a depressed local economy, changes in ownership, and other changes over time, there are concerns about the future land use of the Town Creek watershed. **Foresight is needed along with an understanding of natural resource limitations of the system as a whole, in order to ensure that the future needs of the community can be met in a sustainable way.**

Summary of Objectives

- ☞ **Collect information on existing land-use patterns on a wide (landscape) level, including historic changes.**
- ☞ **Monitor percentage of forest cover and other land uses over time.**
- ☞ **Promote smart growth management.**
- ☞ **Provide insight into parcelization and fragmentation.**

Monitor percentage of forest cover and other land uses over time.

1. Use GIS layers as a tool for long term monitoring of the Town Creek ecosystem. This can be accomplished by partnering with county planning offices, state forest managers, Natural Resource Conservation Service (NRCS), University of Maryland Center for Environmental Science and other GIS active partners.

2. Review local government annual reports on building, grading, and land development permits. Also, maintain contact with the Maryland DNR-Forest Service and Pennsylvania DCNR Bureau of Forestry to monitor forest land base changes.

3. Monitor the changes in riparian forest buffers with tracking systems that are already established by the MD DNR-Forest Service, PA DCNR Bureau of Forestry and other partnering agencies.

Promote smart growth management.

1. Have the *Town Creek Long-range Planning Guide* included in the comprehensive planning in both Allegany County, MD and Bedford County, PA. The Town Creek Steering Committee will present the plan to Bedford and Allegany officials upon the plan's completion.

Recommendations

Collect information on existing land-use patterns on a wide (landscape) level, including historic changes.

1. Gather information from the state planning office and compile with the Town Creek Ecosystem Management Project Long-range Planning Guide.

2. Coordinate with state, county and local governments in both states to conduct local community meetings, to gather additional information that is applicable to the entire watershed.

2. Incorporate natural resource limitations into individual development project approvals and subdivision review processes. This will help local officials determine what limitations they will be faced with in this natural system prior to implementing land-use changes in the area.

Provide insight into parcelization and fragmentation.

1. Help promote general understanding of the economic and environmental problems that arise from land parcelization and fragmentation.

2. Coordinate with the Allegany County Forestry Board and local bar associations and other groups or agencies the promotion of tax and estate planning seminars and workshops.

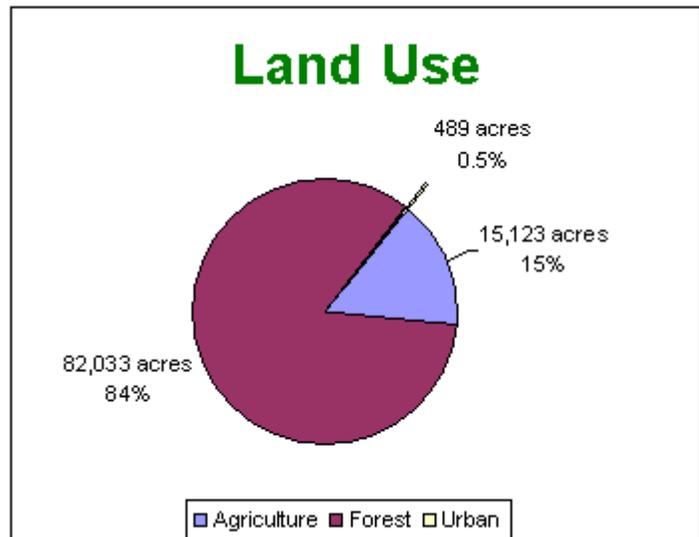


Figure 3: Land Use in the Town Creek Watershed

PROGRAM STUDY:

Land Management: Large Acreage with Professional Assistance

A small study was conducted to determine the number of acres that are receiving professional land management assistance. The study looked at state, federal, and industry programs available to private landowners. Also included was the number of acres of land managed by the states of MD and PA. Surprisingly, 74% of the entire 97,645 acre Town Creek watershed, which lies in both MD and PA, has received some type of professional land management assistance. This did not include acres managed by private consultants.

- Stewardship / Tree Farm Programs = 13,095 acres
- Mead/Westvaco’s CFM Program = 10,620 acres
- USDA NRCS Conservation Farm Plan = 17,606 acres
- Government Land MD & PA = 31,245 acres
- Total Lands Receiving professional land management assistance = (72,566 acres) or 74% of 97,645 acres.

By: Maryland Department of Natural Resource, Forest Service

Diversity and Distribution of Forest Types for Economic, Social and Biological Importance

With 84% of the Town Creek ecosystem covered by forest, great importance should be placed on this resource. It will affect the quality of life as well as the local economy. The local way of life is built around the fact that most of the area is covered in forest. **This forest land provides opportunities not yet realized. It has shaped our past and will shape our future.** We should do everything possible to properly understand and maintain this vital resource of the watershed. The distribution of forest types and size classes is important since wildlife populations, forest industries, and landowner opportunities are all determined by the composition of the forest.

Summary of Objectives

- ☞ **Encourage management practices which maintain healthy ecological function of the watershed's forested ecosystems.**
- ☞ **Promote the maintenance of native biodiversity by maintaining a diversity of forest types and size classes within the watershed.**
- ☞ **Encourage the maintenance of a diverse forest economy and industry to optimize the ecological and economic benefits from the watershed's forest.**

Recommendations

Encourage management practices which maintain healthy ecological function of the watershed's forested ecosystems.

1. Educate landowners about the importance of long-range management planning for forested properties to ensure timber harvesting is

conducted in a manner consistent with landowners' objectives and best management practices.

2. Encourage the use of forest resource professionals (government, private, and industry) both in writing management plans and in conducting timber sales and other management activities on private land.

3. Encourage the planting of riparian forest buffers and explain their importance for human and ecological health.



Planting of both Virginia and pitch pine after site preparation which included both herbicide and the use of fire.

4. Utilize Town Creek Newsletter to inform and educate landowners about the connection between forest and watershed health and to disseminate information on events, programs and resources designed to promote responsible management on private forestland.

Promote the maintenance of native biodiversity by maintaining a diversity of forest types and size classes within the watershed.

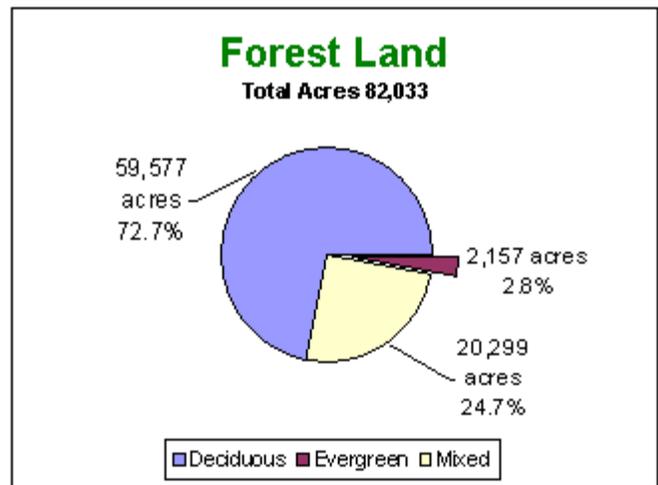


Figure 4: Distribution of Evergreen vs Deciduous

1. Improve the diversity of size classes needed to maintain healthy wildlife populations. Presently, a random sample shows that most of our forest contains a high percentage of pole and sawtimber size trees. We will need to increase the amount of seedlings/early successional forest and biologically mature forest to improve the habitat for a more diverse plant and animal community (see figure 5).

2. Presently, pure stands of evergreens make up only 2.6% or 2,157 acres in the Town Creek watershed (see figure 4). Foresters and the forest products industry need to work with landowners to find economically feasible ways to increase the pine component. This can be accomplished by various cost share programs and tax break incentives to replant harvested stands of pine. Other management techniques like prescribed burning, deer fencing, hardwood thinnings, reforestation, and the reduction of invasive plants could be used.

3. Identify and disseminate information about forestry issues and impediments to forest health, diversity, and regeneration such as overpopulation of whitetail deer, acid deposition, high-grading, invasive plants and the lack of fire.

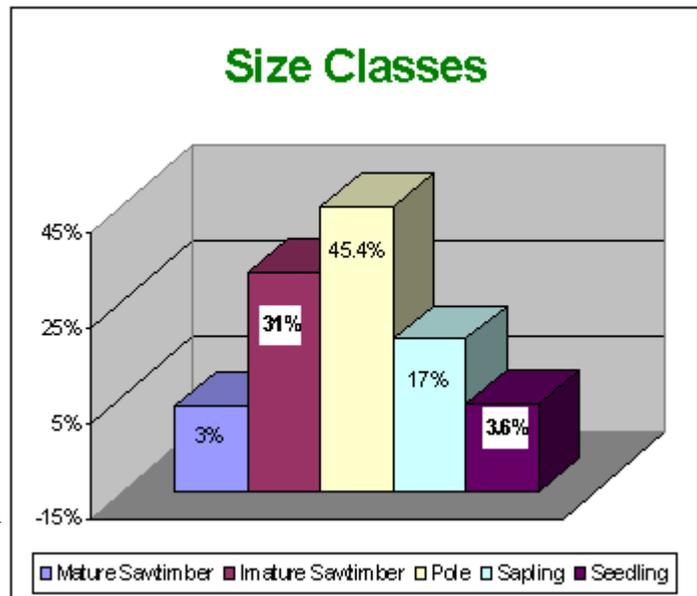


Figure 5: Distribution of Timber Size Classes

Encourage the maintenance of a diverse forest economy and industry to optimize the ecological and economic benefits from the watershed's forest.

1. Provide information to local business organizations, banks, and planning commissions about the economic value of forest based

industries.

2. Promote the concept of a diversified, value-added timber industry that will provide local markets for all classes of timber products (pulp, small/low grade sawlogs, and high value sawtimber and /or veneer.)
3. Encourage the development of a diversified ownership structure of the local timber industry to ensure a robust economic sector not too heavily dependent on outside capital.
4. Diversify the forest economy to include non-consumptive industries such as eco-tourism, recreation, and educational resources that provide an economic return.



Damage to Christmas tree plantation from white-tailed deer near Flintstone, Maryland. Photo by Ron Clapp.

CASE STUDY:

Forest Regeneration: One attempt at Increasing Diversity

A recent timber sale involved a biologically mature (very large sawtimber) oak-hickory stand that included a significant percentage of sugar maple, red maple, black gum and black birch in the understory. Very few evergreens were present (about one tree per two acres). There was an overabundance of grapevines. Almost no advanced regeneration above 6" in height existed due to deer pressure. The desire was to regenerate the stand to a mix of desirable species - not just a birch-maple forest.

The stand was marked for a shelterwood harvest which sought to maintain the very best oaks as a seed source and to reduce the red maple and black birch component significantly. Almost all evergreens were maintained. Grapevines were severed one growing season prior to the harvest. After the harvest, two hundred tree shelters were installed over existing regeneration of oak, poplar, ash, sugar maple, hickory, cucumber tree, birch, and locust in an attempt to protect them from deer browse. After one growing season, the seedlings in the tree tubes were significantly larger than those not protected. The hope is that the oak component will increase over the next few years as acorn production increases and new seedlings become established. Additional tree shelters may be installed over time.

By: Juls Wood, who is a member of the Steering Committee, PA Forestry Consultant, and the Camp Director at Covenant Village Camp.

The air quality has a fundamental effect on the quality of life and our natural resources in the watershed. Finding out what information is present will increase the understanding of how important air quality is to the ecosystem and the people.

Summary of Objectives

- Monitor air quality and disseminate information to the public.

Recommendations

Monitor air quality and disseminate information to the public.

1. Develop a group of individuals interested in investigating this topic.
2. Identify sources of air quality data.
3. Monitor issues and provide information to the landowners, organized groups and other interested parties.

Sources of Information:

A good location for someone to start is on the Internet at www.dnr.state.md.us. This is the State of Maryland's DNR web page and you will want to look under *Bays and Streams* and then look under *Streams for Atmospheric Deposition*. This page will also link you to other web sites of interest which are: US EPA Office of Air and Radiation, Atmospheric Deposition Data, National Atmospheric Deposition Program, etc.

ACTION NEEDED:

Air Quality: An Opportunity to Look Beyond the Watershed

As watersheds are mapped so also are airsheds mapped. The airshed in this area extends from Tennessee to Ontario and encompasses an area more than 5.5 times larger than the Chesapeake Bay watershed. This shows that we are not in a closed system and we must look beyond Town Creek to manage our ecosystem.

Air pollution affects every aspect of our ecosystem and is harmful to both our living resources and the public health. In terms of our forest, significant foliar damage is caused by three major pollutants: ozone, sulfur dioxide and fluorides. In mountainous terrain like the Ridge and Valley physiographic province pollutant dispersion is very complex. Inversions are common in these deep valleys and high concentrations of pollutants can be expected.

Atmospheric deposition has also had an effect on our streams, with approximately 75% of nitrogen deposition affecting the Chesapeake Bay Watershed, which Town Creek is a part of, originating outside the Bay's drainage area. This is a reason to look beyond the Town Creek watershed.

By: Maryland DNR, Forest Service

Regional Approach to Allocation & Management of Water Resources, Both Quality & Quantity

The streams are the veins of life for the Town Creek watershed. Their health and stability indicate the overall health of the entire ecosystem. Past droughts and flooding events accentuate the importance of this guiding issue to the residents of Town Creek.

Summary of Objectives

- ↳ **Determine water budget.**
- ↳ **Incorporate water quality and quantity information into the county planning and land use process.**
- ↳ **Develop a process to disseminate information to appropriate audiences.**
- ↳ **Coordinate activities with Chesapeake Bay improvement projects.**

3. Support RVS in persuading local planners to establish a reliable water budget that will require a major commitment in funding and manpower.

[Incorporate water quality and quantity information into the county planning and land use process.](#)

1. Involve county planning groups in both Maryland and Pennsylvania.

2. Provide data to the county and/or township during their plan reviews for the governed areas.

Recommendations

[Determine water budget.](#)

1. Continue ongoing water quality and quantity monitoring through the efforts of the Town Creek Watershed Landowner's Association and the Ridge and Valley Stream Keepers (RVS) to develop a baseline.
2. Compile currently available information on water quality and quantity of both surface and ground water.

[Develop a process to disseminate information to appropriate audiences.](#)

1. Generate a bi-annual report with partners and present it to local governments and make it available to citizen groups, economic development interests and banking industry. This report could be included with the report discussed in Guiding Issue #1.
2. Send copies of the Town Creek Ecosystem Management Project Newsletter to audiences that influence land use changes, which may include schools, Chamber of Commerce, service organizations, banks, etc.

Coordinate activities with Chesapeake Bay improvement projects.

1. Cooperate with groups involved with bay-related activities by obtaining memberships and other professional affiliations. The Ridge and Valley Stream Keepers maintains partnerships with the River Navigator, Interstate Commission of the Potomac River Basin, Upper Potomac Tributary Team and Friends of the Potomac.

2. Assist interested parties in attending bay-related conferences. The representative can provide a report to the Town Creek Steering Committee.



Riparian forest buffer planting along Murleys Branch.

COMMUNITY LEADER'S VIEW:

Water Resources: A Regional Approach

Proper resource planning requires the best possible information on the quality, quantity and distribution of the resources in question. Water is rapidly emerging as the most important and valuable resource, ahead of oil, gas, and minerals. Secretary Hess of the Pennsylvania Department of Environmental Protection recently stated that most rural communities in PA do not have adequate water resources to cope with drought conditions. The consequences of the lack of long range planning is becoming more evident daily. In most rural communities, information for managing water resources is woefully inadequate and in some areas non-existent. The Town Creek watershed is no exception. The steep, convoluted terrain of the region presents significant challenges and limitations compounding the difficulty of the work of planners.

The only watershed-wide efforts currently underway to assess the quality and flow of surface water in the Town Creek watershed is the Watershed Monitoring Project of the Ridge and Valley Stream Keepers (RVS). The primary goal of this effort is to establish a baseline on the state of the basin's water. Underway since 1999, the project has two components. One is to consolidate the considerable body of existing data on the watershed from various public sources. The second is the completion of a regional monitoring of rainfall, water chemistry, bacteria, macroinvertebrates and the conditions of the riparian zone. The end result of this project will be a series of reports in which data from all sources is analyzed and conclusions drawn. The first of these reports is scheduled to be released in July, 2002. The report will be made available to the public and to local planning boards. RVS has enlisted the support of many local officials and scientists to ensure its completeness and accuracy. The RVS report will be a major contribution to determine the water quality of the basin and to quantifying the flow of surface water.

By: Don Morris, who is a member of the Steering Committee, Founder of the Ridge & Valley Stream Keepers, and a PA landowner.

Wildlife Population Management

The natural landscape and setting of the Town Creek watershed brings forth an abundance of wildlife. While this abundance provides opportunities for outdoor recreation, it can also generate conflicts between people and wildlife. With conflicts come the need for proper management and resolution. **Wildlife populations are extremely significant since only 5% of the watershed is urbanized.**

Summary of Objectives

- ☞ **Promote the use of hunting as a management tool in the watershed.**
- ☞ **Provide information on invasive and exotic plant species and their controls to help maintain wildlife habitats.**
- ☞ **Provide information and agency contacts to landowners who are voluntarily interested in the management of rare, threatened and endangered species.**
- ☞ **Protect areas of special concern.**
- ☞ **Make information available on species that commonly cause conflicts.**

2. Promote extended hunting opportunities for landowners on their own land for the purpose of safety and land management.

3. Encourage more landowners to permit hunting.

Provide information on invasive and exotic plant species and their controls to help maintain wildlife habitats.

1. Publish information through the Town Creek Newsletter.

2. Encourage landowners to become cooperators with local agencies that are involved in active controls of the invasive species.

Provide information and agency contacts to landowners who are voluntarily interested in the management of rare, threatened and endangered species.

1. Publish information and agency contacts through the existing newsletters.

2. Coordinate on a state and national level assistance to landowners in identifying species of special concern on their properties.

Recommendations

Promote the use of hunting as a management tool in the watershed.

1. Participate in state deer management planning sessions to promote changes that are beneficial for the landowners and sportsmen.

Protect areas of special concern.

1. Encourage maintenance and restoration of areas of special concern such as wetlands, shale barrens, old growth forest, flood plain forest, freshwater mussel beds, vernal pools, sinkholes, and old fields.
2. Promote compatible techniques and management practices for economic enterprise, including agriculture, to protect the function of areas of special concern.

Make information available on species that commonly cause conflict.

1. Complaints about beaver, deer and bear are common. By providing an understanding of how to live in an area prone to conflicts, fewer problems will occur.
2. Provide assistance to landowners on specific species through established organizations and agencies contacts.

RESTORATION:

Habitat Improvement With Fire: Establishing and Maintaining Warm-season Grasses

Using fire as a management tool to improve habitat and other aspects of ecosystem health is becoming more common. The successful establishment and maintenance of warm-season grasses relies on land managers using fire in the appropriate fashion. Warm-season grasses, although currently uncommon in the Town Creek watershed, made up most of the grasslands that originally existed in Maryland, Pennsylvania and throughout the United States. As interest in re-establishing native plants increases, plants like warm-season grass species will become more popular, replacing introduced or exotic species such as fescue. These grasses provide ideal nesting cover due to the plant structure. Warm-season grasses grow in bunches and are not turf forming. This structure, if maintained, will provide access and pathways for ground nesting species. These grasses also remain standing during the winter months, providing cover. They are also excellent at holding soils in place with their deep root systems.

Within the Maryland portion of the Town Creek watershed, fire has been used to prepare sites on 25 acres for warm-season grass establishment. In situations like this, fire is used to burn off existing non-native vegetation that was first treated by herbicide. Once successfully established, warm-season grasses need to be rejuvenated every 5 to 10 years with the use of fire. Fire eliminates the build-up of old grass stems, opening up the stand providing a flush of nutrients from the ash and setting back other competing vegetation. Presently, 30 acres of controlled maintenance burns have been completed. With luck more will be established on both state and private land.

By: Maryland Department of Natural Resources-Forest Service.

UNIQUE FEATURE:

Shale Barrens: An Isolated, Ecologically Important Community

The shale barrens of Allegany Co., Maryland, represent isolated ecological communities which developed long ago on certain moderately steep, southerly exposed hillsides. From a global perspective, this natural open habitat is quite unique. These shale barrens only occur in a relatively narrow band within the Ridge and Valley physiographic province of the mid-Appalachian Mountains from south-central Pennsylvania through Maryland and West Virginia to western Virginia.

These hot, dry habitats are geologically interesting because their formation depends on the unusual lithological character of particular shales, primarily of Middle and Upper Devonian Age. What makes this particular barren even more unusual is that it is the only one in the state with shale that developed during the Silurian period, predating the Devonian and making it one of the oldest shale barrens known.

Natural shale barrens can be viewed as climax communities, characterized by open, prairie-like situations dominated by herbaceous vegetation, intermixed with shrubs and stunted trees supported by shallow, shaley soil. Shale outcrops, either large or small, usually occur somewhere on the site. Apparently, the main ecological force allowing the habitat to stay open is drought stress on seedlings of trees and shrubs. Anyone who has been on a shale barren in late July would undoubtedly agree with this assessment. A big part of this is the fact that the annual rainfall of the Ridge and Valley province is less than any other region in Maryland. A very hot, dry period from June to September is quite normal for the heart of the Ridge and Valley.

The term “barren” is descriptive of the overall openness of the habitat, but it may lead one to believe that little plant life is associated with them. This may be true on the very steep, acidic sites. Quite often, however, the opposite is true. This is particularly evident on shales that appear to have a neutral or slightly basic chemistry. Here, the species diversity of the herbaceous layer is quite high and many unusual plants grow. Several of these plants are rarely found off the shale barren habitat and have very restricted ranges. The most notable of these occurring in Maryland is Kate’s Mt. clover. It is listed as a Threatened species in Maryland. The microhabitat requirements for this plant seem to be quite stringent. For instance, there are many shale barrens that appear to offer suitable habitat, often within close proximity to established colonies, but the plant does not occur there. Furthermore, when this clover does occur on a site it is usually restricted to certain sections of a barren. Only rarely does Kate’s Mt. clover establish itself more or less homogeneously through-out the barren’s openings. This situation does occur on several prairie-like barrens in Maryland, and these sites may be considered very special. Also, it might be mentioned

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Shale Barrens: An Isolated, Ecologically Important Community

that a good “population” of this plant is very small by usual botanical standards. An occurrence of 100-200 plants over a few acres is outstanding and rare. The largest occurrence discovered in Maryland numbers between 300-350 individuals. A majority of the sites harbor less than 50 individuals. Other unusual plants that are primarily restricted to the shale barren region, or that grow in other prairie-like habitats elsewhere in the country and are found on Maryland shale communities include: Allegheny plum (Prunus alleghaniensis), shale ragwort (Senecio antennariifolius), shale evening-primrose (Oenothera argillicola), shale bindweed (Convolvulus purshianus), mountain nailwort (Paronychia montana), bent milkvetch (Astragalus distortus), prickly-pear cactus (Opuntia humifusa), side-oats grama grass (Bouteloua curtipendula), three-flowered melic grass (Melica nitens), and hairy-lip fern (Cheilanthes lanosa), to name a few. Many other interesting species of plants can be found on most barrens.

Not only is the plant life of special interest on these natural, open habitats, the animal life is quite interesting as well. Even though the invertebrate fauna of shale barrens is largely uninvestigated, several species of uncommon or rare butterflies are known to occur in the shale barren region. These include the grizzled skipper (Pyrqus wyandot), Olympia marble-wing (Euchloe olympia), cobweb skipper (Hesperia metea), northern metalmark (CaleDhalis borealis), and the silvery blue (Glaucopygma lygdamus). The shale barren openings provide a unique habitat for other wildlife, too. Wild turkey and ruffed grouse dusting sites are frequently observed on shale barrens and, no doubt, poult are brought here to hunt the large variety of insects available. A variety of reptiles may be observed, such as, five-lined skinks, eastern fence lizards, six-lined racerunners, and several species of snakes. Shale barrens provide important egg-laying sites for the box turtle and the wood turtle.

The number one biggest threat to these unique communities is when disturbances such as agriculture, logging, road-building, etc. occur too close to the barren. These disturbances create a pathway for the invasion of non-native weeds which often take over large sections of the habitat and crowd out native vegetation. Some of these weeds are quite troublesome, such as, Bromus sterilis (a grass), bush honeysuckle (several species of Lonicera), crown vetch (Coronilla varia), spotted knapweed (Centaurea maculosa), several species from the mustard family (Cruciferae), to name a few.

Allegheny County is quite fortunate because there are a number of fine natural shale barrens within its border. Many of these are within the Green Ridge State Forest, but several excellent barrens occur on private land, as well. The protection of these very special habitats would represent insightful conservation and cause negligible economic impact.

By: Ed Thompson, Ecologist, Maryland Department of Natural Resources-Wildlife & Heritage Division.

Soil Erosion Reduction

The land which we manage and live on is as important as any other resource within the watershed. **The soil's stability and condition is important to the farm and forest product economies. It is also important to new economic ventures such as nature tourism and outdoor recreation.** Many of the soils in the area are relatively poor, with thin topsoil layers located on steep slopes, which highlights a need to conserve this fragile resource.

Summary of Objectives

- ☞ **Identify current streambank and stream corridor conditions.**
- ☞ **Promote stabilization and restore streambanks.**
- ☞ **Promote conservation outreach to landowners, governments, schools, private sectors and all land users in the watershed.**
- ☞ **Encourage best management practices (BMP) in forestry and agriculture.**
- ☞ **Promote proper all terrain vehicle (ATV) usage to alleviate soil disturbance.**

Recommendations

Identify current streambank and stream corridor conditions.

1. Research and document through currently available information.
2. Support groups like the Town Creek Watershed Landowners Association and RVS on projects to assess streambank instability.

Promote stabilization and restore streambanks.

1. Develop a presentation with photos and information from the watershed area.
2. Assist local students in developing a learning and demonstration project that involves Soil Conservation Districts (SCD), landowners, and the private sector.
3. Actively promote the voluntary establishment and conservation of riparian forest buffers.

Promote conservation outreach to landowners, governments, schools, private sectors and all land users in the watershed.

1. Tour of demonstration sites for forestry, game management and BMP's.
2. Raise awareness of financial incentives available.

Encourage best management practices (BMP) in forestry and agriculture.

1. Partner with SCD and DNR to conduct an annual plant sale in Town Creek watershed, targeting streambank restoration and stabilization.
2. Establish a "landowner cooperative" utilizing efforts already begun by the Penn State University School of Forest Resources.

3. Provide BMP literature to interested land-owners.

Promote proper all terrain vehicle (ATV) usage to alleviate soil disturbance.

1. Promote responsible ATV use on designated lands/trails by working with the public and ATV dealerships.
2. Improve the observance of ATV rules and regulations by working with the public



Establishing proper drainage and stabilizing road banks with seed.
Photo by Georgene McLaughlin.

ASSOCIATION ACTIVITY:

One Community: Two-Hundred Fifty Miles of Unpaved Roads

Allegany County Maryland has about 250 miles of dirt and gravel roads. These roads were built by the repeated use of settlers or landowners in the area, and were not designed for today's heavier vehicles or the amount of traffic that they see. Roads in many instances followed the path of least resistance through stream valleys. It is an unchanging fact that dirt roads erode, with the major erosion culprit being water. Unfortunately, the resulting dust and run-off can cause damage to the environment. Sedimentation is one of the sources degrading our streams. It adversely affects life by smothering plant species, insects and fish eggs and destroys the habitat they require. Concerns about this runoff were expressed at a meeting of the Town Creek Watershed Landowners Association.

Various people and groups were then consulted. A major source of information was Pennsylvania's Task Force On Dirt and Gravel Roads. These consultations resulted in a meeting between the President of the Landowners Association and Transportation Chief and District Supervisor of the Allegany County Department of Public Works. Working with these individuals from the County, the Landowners Association was able to obtain a grant from the Canaan Valley Institute for \$4700. This was used at a demonstration site to grade and place rip-rap in the ditches and hydroseed all newly graded banks with vegetation spray. Since we also wanted to help the wildlife populations, we requested that a flower mix be planted along with the grass seed that was sprayed on all banks.

Since this project's completion, there have been some major improvements in the grading practices on adjoining roads. I have noticed more rip-rap being used in ditches to maintain them and slope seeding is being done to cut down on erosion. Many roads have been improved by these dirt and gravel road management practices. If you see any of the local roads department personnel give them a thank you from all of us for a job well done.

Excerpts from articles produced by Georgene McLaughlin, who is a member of the Steering Committee, President of the Town Creek Watershed Landowners Association and a MD Landowner.

Involvement, Participation and Education of the Watershed's Residents

Many of the concerns related to the Town Creek watershed are due to the lack of public awareness and education about natural systems. **The extent to which the residents' or visitors' awareness is increased will have a great effect on the success of future plans in the watershed.**

Summary of Objectives

- ☞ **Identify and promote existing educational opportunities and create opportunities to fill the void in existing programs.**
- ☞ **Continue ongoing delivery of the Town Creek Ecosystem Management project information to the public.**
- ☞ **Promote and encourage people to participate in political processes.**
- ☞ **Instill community pride based on knowledge of**

Recommendations

Identify and promote existing educational opportunities and create opportunities to fill the void in existing programs.

1. Provide educational opportunities for the Town Creek Steering Committee.
2. Create environmental outdoor educational facilities and/or classrooms for students at Flintstone Elementary and Chaneyville Elementary. Then coordinate dual educational opportunities across state boundaries.

3. Provide notice of educational events for teachers about Project Learning Tree, Project Wild and Project Wet by placing the dates for programs in the Calendar of Events on the back page of the Town Creek Newsletter.

Continue ongoing delivery of the Town Creek Ecosystem Management Project information to the public.

1. Continue printing the *Town Creek Ecosystem Management Project Newsletter*. Also, promote other groups in the watershed to use this forum to list events and provide articles.
2. The Town Creek Steering Committee can provide landowners a safe contact point to assist them with meeting their land management interests. We could utilize community members who are designated as VIP or Coverts cooperators to promote Forest Stewardship in both PA and MD.

Promote and encourage people to participate in political processes.

1. Educate citizens about issues by providing information at festivals, celebrations and various other community events.
2. Foster a sense of community as Town Creek instead of only the political boundaries of

boundaries of States, Counties and Townships.

3. Encourage the development of individuals as caretakers.

Instill community pride based on knowledge of natural resources.

1. Choose one community cleanup project per year, such as adopting a stream to keep clean.

2. Encourage public involvement with the various groups in the watershed.



Town Creek Community Workshop at Flintstone, MD in 1996

STEERING COMMITTEE ACTIVITY:

Fall Tour Series: Educating the Watershed's Community Leaders

Since the fall of 1999, the Town Creek Ecosystem Management Project's Steering Committee, made up of mostly local landowners, has participated in the Town Creek Fall Tour Series sponsored by the State of Maryland Department of Natural Resources-Forest Service. Assistance has been provided by the State of Pennsylvania Department of Conservation and Natural Resources Bureau of Forestry and from some of the Steering Committee's members. The tours over the years have provided numerous opportunities to see local land management, industry, research and history. More specifically, they have looked at warm-season grass planting, riparian forest buffer plantings, wetland restorations, streambank stabilization, in-stream habitat structures, timber bridges, solar operated fencing and water trough systems, a fish hatchery, timber harvesting techniques in both PA and MD, forest regeneration techniques, tree champions, local history (including preserved structures) and water quality testing demonstrations. The last tour highlighted the local forest products industry, during which a local sawmill, dry kiln, flooring and molding mill and furniture shop were visited.

The diversity shown on these tours has provided a more in-depth look at a community and its watershed. The many facets that are presented increase the local leaders' knowledge of the challenges they face when making decisions about managing their watershed. These tours also provide an understanding of the big picture and ecosystem management. Thanks to the local community for their help and assistance with these tours, the information provided is an invaluable resource that any community would be proud to have.

By: Maryland Department of Natural Resources-Forest Service.

Preserve Quality of Life

Many of the residents enjoy living in the Town Creek watershed for the following reasons: outdoor recreational opportunities, abundant wildlife, privacy and isolation, aesthetic scenery, peaceful rural setting, farming and owning businesses, raising children and family connections, friendly people, clear skies, abundant water, and low crime! **The quality of life is directly tied to the reasons people live within the Town Creek watershed. Economic stability and a well informed public are the keys to preserving this quality of life.**

Summary of Objectives

- ↳ **Promote compatible natural resource economic activities.**
- ↳ **Respect private property rights while seeking to achieve project objectives.**

Respect private property rights while seeking to achieve project objectives.

1. Use a code of ethics when seeking cooperation from private landowners and when responding to requests for assistance.
2. Provide legislative updates that involve private property rights items in one of the newsletters published in the watershed.

Recommendations

Promote compatible natural resource economic activities.

1. Promote the development of economic landowner cooperatives to encourage sustainable natural resource management.
2. Connect landowners to resource agencies by obtaining published points of contacts. One such guide is titled: *A Guide for Funding Assistance, Landowner Stewardship Referral Service*.
3. Maintain a list of upcoming events related to natural resource economic activities in the Town Creek Newsletter.
4. Devote a special section of the Town Creek Newsletter to economic activities in the watershed and models from outside the watershed.



Many locations of this watershed provide the Town Creek landowners with a “sense of place”.

PROFESSIONALS VIEW:

Sustainably Certified Forest: An Effort in Conservation by Design

Forests provide ecological and economic benefits for the communities in our watershed. On top of the role forests play in maintaining the ecosystem, health, and quality of life for human and non-human residents in the watershed, they provide outdoor recreation and tourism that provides economic opportunities for area residents. However, forests produce wood – perhaps the most versatile, useful, and valuable industrial material in the world. Wood production is a natural “by-product” of a healthy forest ecosystem – wood can be one of the most environmentally benign of industrial materials. Therefore, an economically viable wood products industry can be a valuable cultural asset. At its best, a vibrant wood products industry can provide economic stability and opportunity while also providing an economic incentive to maintain a healthy and productive forested landscape. This can prevent the transition of the landscape to other types of land uses, which may not provide the full suite of ecosystem functions that the forested landscape does.

For the wood products industry to play this positive role in protecting the health of our watershed, it must have as one of its primary concerns the sustainability and vitality of forest ecosystem function. When unbridled profit motive or the economic constraints of an unbalanced or insufficiently diversified wood products sectors or wood products market result in unsustainable or shortsighted timber harvesting practices, industry practices can impact the watershed in ways that are incompatible with concerns for the long term economic and ecological health of the watershed.

For example, extremely high competition for high quality sawlogs may lead to high-grading. High-grading removes only the most profitable trees without regard to the long-term ecological impact to the forest ecosystem or the future economic value of the residual stand. However, high-grading is not the only way industry can have a less than desirable impact on native forest diversity and ecosystem health. High prices for softwood pulp and dimension lumber in the Southeast have led to conversion of large areas of southern forests into intensively managed monoculture of pine plantations, often at the expense of natural forest diversity or sensitive habitat areas such as swamps and wetlands. Whole tree harvesting, extremely short rotation ages, and increased use of agricultural fertilizers and pesticides are all economically motivated practices used by forest industry that can run contrary to concerns for ecological health, diversity, and long-term sustainability in certain contexts.

So, what options are available for a community interested in both having its forests and logging it too? One emerging method is the use of Third Party Certified Sustainable Forestry. Originally conceived in the European community by both environmental and industrial organizations, Certified Wood was a way of giving a “Green Stamp of Approval” to a lumber product - a way of assuring the consumer that the wood product they were purchasing was produced in an ecologically sustainable manner.

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Sustainably Certified Forests: An Effort in Conservation by Design

Much like organically produced agricultural products, where markets for Certified Wood have become established, consumers are willing to pay a premium for a product that they know has been sustainably produced. Such market premiums create incentives at the production end to offset increased costs incurred by more careful use of forest's wood production capacity. (For example, certification requires deferring high value harvests until advanced regeneration is established, establishing and protecting buffers around ecologically sensitive areas such as vernal ponds, riparian areas, and wetlands, and removing low quality or undesirable trees to enhance the growth of the future timber/forest resource. None of these activities generate profit for a wood products industry in the conventional market and, in fact, represent additional costs – but all of them help ensure the health of the forest ecosystem.) Thus, certification ensures other economic and ecological values of a healthy forest ecosystem - clean air, clean ground and surface water, wildlife, biodiversity, and beauty - are sustained within the community rather than sacrificed in the name of short term profit for the wood products sector.

A community interested in providing for the long term health of its forested landscape would do well to learn about both the positive and negative impacts that a wood product industry can have on the forest ecosystem. Exploring and understanding the certification process can be a step in this process. For more information about Sustainably Certified Wood, visit the Forest Stewardship Councils webpage at <http://www.web.net/fscca/fsc.htm>.



Local landowner brings in wood for the winter from a crop tree release demonstration.
Photo by Dan Hedderick, MD DNR, Forest Service

By: Roy Brubaker, who is a Service Forester with the Pennsylvania DCNR Bureau of Forestry.

Understanding Regulations and Laws Compatible With Watershed Management

In this ever-changing world in which we live, knowledge and understanding of the law is becoming more important for the active groups in the watershed. Their ability to be successful and to maintain or improve the area relies on the ability to make laws and regulations work in their favor.

Summary of Objectives

- ☞ **Monitor legislative process and disseminate information.**
- ☞ **Evaluate effectiveness of existing laws and regulations.**

Recommendations

Monitor legislative process and disseminate information.

1. Compile existing state and federal laws and regulations in both MD and PA, that are of interest to the local organized groups, and have information accessible to the public by adding it to the Town Creek Resource Library.

2. Recruit a legal assistant or advisor that could provide assistance to organized landowner groups in the Town Creek watershed.

Evaluate effectiveness of existing laws and regulations.

1. Encourage interstate cooperation with the proper authorities.

2. Encourage local citizens to follow the

newsletters of both the Town Creek Landowners Association and the Maryland Forests Association for legislative updates.

ORGANIZATION'S ACTIONS:

Legislative Updates: Two Local Sources

The Maryland Forests Association (MFA) has been in existence for 25+ years and has a mission statement which reads: Promoting the Maintenance of a Healthy and Productive Forest Land Base. MFA produces a newsletter called *The Crosscut*. In certain issues they publish a legislative update. The updates will show you Senate Bills of Concern and House Bills of Concern and provide you with pertinent information and MFA's position on those bills. Check out MFA's webpage at <http://mdforests.org> and for more information on "General Assembly Bills to Watch" check out <http://mdforests.org/bills.htm>.

The other source of legislative updates for local farmers is the Town Creek Watershed Landowners Association local meetings and newsletters. To get involved call 301-478-5548.

By: Maryland Department of Natural Resources- Forest Service.

Preserving Aesthetics, Historical, Cultural and Outstanding Features of the Watershed

Increased awareness of the aesthetic, cultural and historic features within the watershed is needed to maintain many of the important aspects in the area. This awareness will promote aspects of the watershed that provide a “sense of place”.

Summary of Objectives

- ↳ **Promote an annual historical/cultural festival.**
- ↳ **Develop a tourism promotional package compatible with historical, cultural and natural resources.**

Develop a tourism promotional package compatible with historical, cultural and natural resources.

1. Develop and distribute brochures to proper locations about local features.
2. Develop the historic Hancock Road Trail.

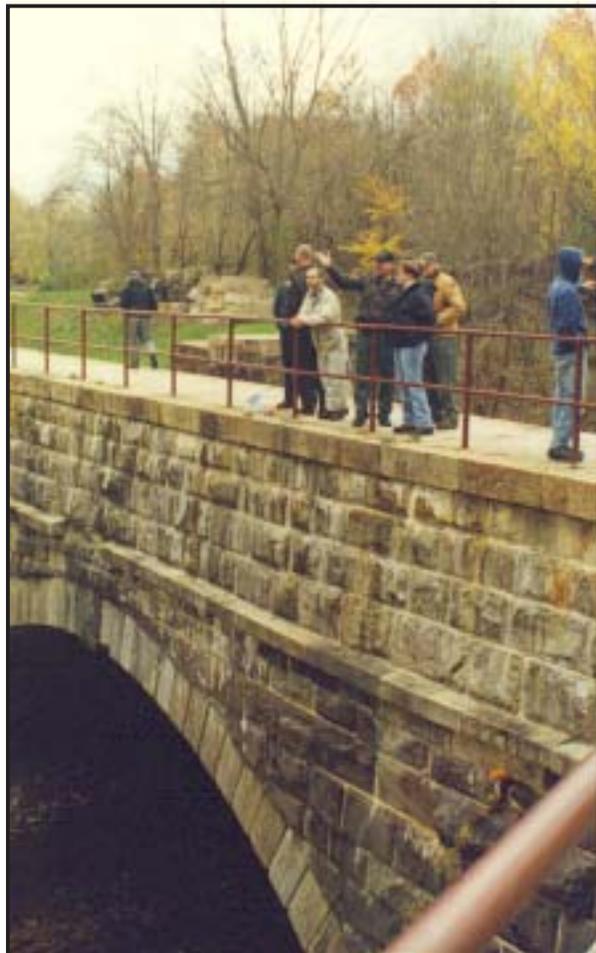
Recommendations

Promote an annual historical/cultural festival.

1. Include all partners in the watershed, especially groups designed to promote historical preservation.
2. Include outstanding features, highlighting a different theme each year.
3. Conduct tours of historical/cultural features in the watershed.
4. Themes could recognize cultural difference and local traditions.



Preserved Bridge on Town Creek Road in Maryland.



Town Creek Steering Committee Fall Tour Series at the Town Creek Aqueduct C&O Canal National Historic Park.

RESTORATION AND PRESERVATION:

Spanning History: Preserving Local Bridges North and South of the Mason-Dixon

Two bridges within the Town Creek watershed have been saved to be enjoyed by future generations. The Hewitt Covered Bridge, built in 1879, located in Bedford County, Pennsylvania, was restored to its former glory in 2000 with help from some modern building supplies to withstand the test of time and modern transportation. Eighty percent of the structural timbers were used in the rehabilitation of the 88' long burr truss bridge. This bridge was an important part of the historical town of Hewitt. This town used to have a post office, general store and a flour mill.

The other bridge also crosses Town Creek and is located on Town Creek Road in Allegany County, Maryland. This bridge was preserved by building a new bridge in 2001 just to the left of the original one. This old bridge was built in 1919 with concrete, using a more modern building technique than the



Hewitt Covered Bridge in Bedford County Pennsylvania.

bridge in PA. The preservation of the old bridge has provided a place for the local residents to fish and take walks. It is also aesthetically pleasing to the eye and provides that “sense of place” and a bit of local history. Modern transportation can now safely travel south into the watershed while others take a leisurely stroll across a small piece of history to look at the stream that has been there since the beginning, the famous Town Creek.

Both bridges in MD and PA have served the communities of the Town Creek watershed well and will continue to provide safe passage for future generations. These bridges have provided an easy link to other areas for many people within the local community and it is nice to see that their value has not been taken for granted. If you are not familiar with these bridges, take a Sunday drive and enjoy these special landmarks and take a moment to think about other land marks in this community that may be worth saving. Old structures and graveyards are just a few of the local treasures present within the famous Town Creek watershed. More information can be found in your local library, with the local people, and through the Allegany Historical Society.

By: MD DNR, Forest Service with assistance from MD landowner Tom Grieves and PA landowner Chris Gruitt.

Collaborative Public Land Management in PA and MD

About 30,000 acres of the Town Creek watershed’s land base is in public holdings. Therefore, public land management issues provide a critical area of concern for ecosystem management within the watershed. They also represent excellent opportunities for engaging local communities and user groups in discussion and education on stewardship and natural resource management issues. Increasing coordination between state land managers and the user groups and local communities they serve will maintain public awareness and involvement in public land management. This will also encourage a stewardship ethic on the part of the local public for land management issues overall.

Summary of Objectives

- ↳ Encourage development of a stewardship ethic on the part of public land users through education about and promotion of public land resources.
- ↳ Promote stakeholder participation in management of public lands.
- ↳ Maintain public land managers’ input to the Town Creek Steering Committee.

2. Utilize public lands for educational programs/events and promote educational opportunities available on public lands through feature articles in the Town Creek Newsletter.
3. Encourage more public expression of a stewardship ethic in management of state lands through informational signs and through the Town Creek Newsletter.
4. Promote nature-tourism and eco-tourism through infrastructures already established within the state managed areas.

Promote stakeholder participation in management of public lands.

Recommendations

Encourage development of a stewardship ethic on the part of public land users through education about and promotion of public land resources.

1. Encourage public land managers to adopt a clear and coherent approach to mapping and delineating public land boundaries and areas.

1. Encourage user groups to volunteer and participate in management of public lands. This can be done with a note of encouragement in brochures and maps.

2. Create a mechanism for dialog between public land managers and public land users. This may be accomplished through groups like the Green Ridge State Forest Advisory Committee and ongoing public meetings.

3. Promote public participation at meetings currently being held by public land managers designed for public participation in the state land planning process.

4. Utilize public land managers' technical expertise for advising the Steering Committee with pertinent information

Maintain public land managers' input to the Town Creek Steering Committee.

1. Maintain individual representation of all major state land management agencies with the Town Creek Steering Committee. This includes the PA DCNR Bureau of Forestry and the MD DNR-Forest & Park Service.

2. During tours of public lands highlight areas that provide practical demonstrations of proper land management.

3. Ensure all agencies receive copies of the Town Creek Newsletter.



Town Creek Summit 2001

AWARENESS:

Town Creek Newsletter: An Opportunity to Work Together

Each issue of the *Town Creek Ecosystem Management Project Newsletter* has been distributed to a total of 1000 readers since 1997 in both Maryland and Pennsylvania. The newsletter is developed by the landowner members of the Town Creek Steering Committee and various natural resource professionals. Articles in the past have been about local events, management practices, local history and some activities on public lands.

The public land managers include MD DNR-Forest and Parks, MD DNR-Wildlife Division, PA DCNR Bureau of Forestry, PA Game Commission and the United States Department of the Interior C&O National Historic Park. All have an opportunity to use this forum to inform the land user groups of opportunities for activities and public meetings. This newsletter has the potential to assist public land managers with meeting their objectives in assisting the public land users. Also, ideas on various management techniques can be shared with local citizens and neighboring public land managers. Those interested in providing articles or being placed on the mailing list, contact the MD DNR-Forest Service at 301-777-5835.

By: Maryland Department of Natural Resources-Forest Service

Town Creek Ecosystem Management Project's Major Milestones

- 1994** - Maryland Department of Natural Resources-Forest Service develops the idea for the project and starts GIS mapping. The Department also developed Town Creek as an enhancement project with the Regional Team.
- 1995** - Maryland Department of Natural Resources-Forest Service receives funding for Town Creek as a Special Rivers Project through the Environmental Protection Agency Chesapeake Bay Implementation Grant.
- Three public participation planning meetings and one technical partnership meeting are conducted.
 - Town Creek project is presented to Allegany County Forestry Board, Allegany and Bedford County Soil Conservation Districts, Allegany County Commissioners and Society of American Foresters.
- 1996** -Three grassroots public involvement meetings are held for citizens in Flintstone, Oldtown, and Chaneyville. This was followed by the Town Creek Community Workshop. (workshop data available).
- Project presented to Congressman Roscoe G. Bartlett District Assistant Myra Kidd.
 - Town Creek Landowners Association and Town Creek Steering Committee are organized. A team meeting including these groups is held later in the year.
 - Streambank stabilization demonstration project completed on Murleys Branch.
- 1997** - Town Creek roads improvement project conducted by Town Creek Watershed Landowners Association.
- Water quality meeting is held by Town Creek Steering Committee.
 - Town Creek Project partnership developed with PA DCNR Bureau of Forestry.
 - Town Creek Newsletter series is started by Steering Committee.
- 1998** - Steering Committee members present project to the Interstate Commissioners of the Potomac River Basin and provide a tour.
- Town Creek Watershed Landowners Association receives water quality monitoring grant.

- 1999** - Ridge and Valley Stream Keepers are formed by local citizens to direct efforts to water quality issues.
- Town Creek Project presented to the Upper Potomac Tributary Team.
 - Town Creek Steering Committee starts Fall Tour Series of the Town Creek watershed. Both private land management and state land management are highlighted on tours.
- 2000** - Two stream improvement demonstration projects are completed, one in MD on Murleys Branch and one in PA on Flintstone Creek. Assistance is provided by Chesapeake Bay Trust (CBT) and Pennsylvania Department of Environmental Protection (DEP) Growing Greener program.
- Town Creek Steering Committee develops an outline draft of the *Town Creek Long-range Planning Guide for Ecosystem Management*.
- 2001** -The Town Creek Project is the first ecosystem management project for Maryland listed on the EPA's web site as part of the Inventory of Ecological Restoration Projects within the Mid-Atlantic Integrated Assessment (MAIA) Region.
- The first Town Creek Summit with 34 organizations in attendance is held. Funding is provided by Friends of The Potomac.
 - The Town Creek Project is presented to the Friends of the Potomac and Leadership Potomac.
 - Riparian buffer plantings have become well rooted within the community and interest in the Conservation Reserve Enhancement Program (CREP) takes hold with 7 plantings, including 65 acres of established buffers.
 - Town Creek Steering Committee successfully conducts a tour of the local forest product industry in the Town Creek watershed.
- 2002** -The first pine regeneration demonstration is completed, which is designed to promote native species to be replanted in the watershed to maintain the pine component within our forest. The demo includes the use of herbicide and fire with the planting of Virginia pine and pitch pine.
- Riparian forest buffers continue to be popular with the local landowners through programs like CREP, BIP and corporate sponsors. An additional 57 acres are established.
 - Ridge & Valley Stream Keepers produce a report on *State-of-the-Streams*.
 - The *Town Creek Long-range Planning Guide for Ecosystem Management* is completed and distributed.

What Have We Learned

Implementing ecosystem management in a mixed ownership at the landscape level is one of the greatest challenges we have ever faced. We discovered five key ingredients that have made this project a success. This is not to say that implementing ecosystem management in other watersheds will work the same way, but it is what made the Town Creek Ecosystem Management Project successful. The key ingredients are as follows: a clear understanding of the project; leadership and control by the local community; funding from diverse sources; agency support; and, last but not least, partnerships.

The term ecosystem management needs to be clearly defined. Concerns and/or interests from the local community need to be clear in the beginning of any ecosystem management project. With clear direction landowners, citizens and local organizations will have a better understanding about ecosystem management and skepticism will be reduced. Numerous times unexpected events developed that steered the project in unexpected ways. These events and/or problems may have played a major role in larger scale community actions which took place. In the beginning, we used the term watershed in the title for the project. This was meant to be a way to designate the project area. However, the term “watershed” in the project title at the local workshops made the participants think of WATER. Also, the fact that this first workshop took place directly after one of the largest floods in the area unintentionally steered the participants to only think of water and not all the other aspects of ecosystem management. This was very evident in the responses to the questions asked at the workshop. Ultimately, these unexpected events, which seemed to have occurred at the worst possible time, actually played a major role in the success of this project.

We also learned that the landowners and local citizens need to be involved right from the beginning. Also, control of a project of this nature needs to be given over to the people themselves. Empowering the community is very important and is the only voluntary way to bring about true action and accomplishments on-the-ground. It is important for anyone working on an ecosystem management project to remember that people are part of our environment and that human existence coincides with the other modern-day species that have been here for the past 10,000 years. Private citizens groups like the Town Creek Watershed Landowners Association and Ridge and Valley Stream Keepers are extremely influential with implementation of on-the-ground projects and can more easily obtain funding because of their non-profit status.

Funding to implement a dual state project can be a significant challenge. The case study on page 6 titled *Funding for Buffers: One Watershed, Two States* explains it best. Project participants need to search out diverse funding sources. Many times funding will need to come from the state that the project is in. Even federal dollars are designated to segments of state government to distribute under certain guidelines that may vary from state to state. A good example is the Conservation Reserve Enhancement Program. (CREP). Maryland and Pennsylvania both implement the programs but there are differences even down to the number of seedlings per acre that can be planted. Organizations like the Chesapeake Bay Trust, who provided funding for

several issues of the Town Creek Newsletter, could only sponsor those newsletters produced and distributed to the Maryland portion of the Town Creek watershed. This was done because of funding they distribute comes from the sales of the Maryland license plates. In this case, Pennsylvania DCNR Bureau of Forestry was able to come up with the funding for its portion of the watershed. Finding out what type of funding is available is one area where agency support comes into play.

Public agencies' involvement needs to come in the form of having an individual or individuals focus solely on the project. They will be able to look at the big picture and support the community in its ventures while working on the challenging concepts of ecosystem management. Focused individuals from public agencies will also be able to come up with multiple funding sources for workshops, newsletters, summits, planning guides, data sources, and most importantly, implementation of resource management projects. With ecosystem management projects, experience suggests that high level government positions need to reach out beyond their political boundary lines and form common partners with neighboring states. This will aid greatly in the support of field personnel when multiple-state projects like Town Creek are conducted. Support can then be filtered down through the ranks allowing for time and funding availability. This would reduce struggles by field personnel for justification of time to effectively participate in projects of this type.

Partnerships that work well can be as complex as the web of life itself. The more partnerships that develop, the clearer the big picture of the ecosystem becomes. The natural resource portions of our state governments are very complex. They cover almost every aspect of natural resource management that you can think of. It is extremely important for these segments to work together. In the beginning, the Maryland Department of Natural Resources-Forest Service developed the Town Creek Ecosystem Management Project which was enhanced by the Western Regional Team. The Regional Team provided valuable data, including GIS mapping, that would have been a struggle to obtain if it had not been for their involvement. These projects provided the resource managers with a chance to look at the big picture. Hopefully, a number of these resource professionals now actively look at the big picture while they work on their individual segments of the resource.

Overall, ecosystem management is a challenge that takes dedicated individuals from the community, local organizations, and local and state agencies to make it work. The key ingredients which were discussed included: a clear understanding of the project; leadership and control by the local community; funding from diverse sources; agency support; and partnerships. The outcome of this recipe for ecosystem management may or may not work for other watersheds. The timing of certain events can create or destroy projects of this nature. In many ways, this project developed successfully because of dedicated individuals and a good deal of luck. Our advice to others working on projects of this type is to take a step and watch the outcome, then take another step! You never know what may happen, but in the end we will all find that we are working for the same outcome; we just sometimes take different roads. As Juls Wood said, **“this does not mean that all will agree, but that latitude is given when sound individual actions are seen to contribute to the common purpose.”**

Conclusion

The Town Creek Ecosystem Management Project has developed a life of its own and has become a community working together for the betterment of the people and environment. It is the voluntary efforts of the community that has made the Town Creek Ecosystem Management Project a success. As we move on, more landowners are getting involved and more local groups are being formed, directing their efforts to issues that interest them. These actions in themselves create additional financial opportunities in the form of grants or other funding that is available to organized groups or individual landowners. Projects like the water quality monitoring, road improvements, streambank stabilization, wetland development and riparian buffers establishment have all come from the voluntary efforts of the Town Creek community.

As new information and ideas become available we will need to adjust our strategies as we always have. Building better partnerships with a variety of groups and agencies is critical to the continued success of this project. Partnerships are very important since ecosystems are extremely complex. As we continue and learn, we need to be ready to adapt our actions and management practices.

As new generations take their place in society, a broader view of our environment will be fostered as increasing demands on our resources force us to look at the big picture. This project has become a long term process. It has produced great awareness by planting a seed in society which will grow over time.

This project has empowered its citizens and changed the lives of the people and the environment in the Town Creek watershed forever! Ultimately, the Long-range Planning Guide is in the hands of the community to implement in its own time and place.

PERSONAL VIEW:

Closing Remarks: The Final Word

What makes the Town Creek ecosystem-based management project unique is that it is an attempt to discover how to practice ecosystem-based management at the landscape scale in a mixed ownership watershed. This project covers two states and land owned or controlled by private individuals, federal, state and county governments and non-profit groups. The diverse ownership has made this project challenging.

This publication is a planning guide based on the input provided by the many interests within the watershed guided by the project Steering Committee. It is a summary and consolidation of information gleaned from many public meetings culminated by a summit with 34 organizations participating.

This project has been successful because of the cooperation of the many interests within the watershed. Another factor contributing to the success of this project has been Dan Hedderick, the project coordinator. Without his dedication, unique perspective and insight this project would not have been as successful as it has been.

A lot has been learned about ecosystem-based management at the landscape scale within a mixed ownership watershed. This publication summarizes what has been learned and provides an excellent guide for the continuing implementation of ecosystem-based management in the Town Creek Watershed. Hopefully it will serve as a means to a functioning, sustainable ecosystem, infinitely serving people living in harmony with the environment.

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Bill Plank on another adventure at a wetlands developed on the Gruitt farm in Beford County, PA Town Creek Watershed.



With this planning guide, the Town Creek Ecosystem Management Project crosses over into a new era. So take the lead and get involved. The future of this watershed is up to you! Good Luck.