NATURAL RESOURCES

AGRICULTURE AND SOILS

AGRICULTURE

"When tillage begins, other arts follow. The farmers are therefore the founders of human civilization." Daniel Webster, 1840

Agriculture is the most healthful, most useful and most noble employment of man.
~ George Washington ~

Agriculture Defined

Agriculture is defined as the science, art, and business of cultivating the soil, producing crops, and raising livestock. [1]

Agriculture in Pennsylvania

The first farmers in what is now Pennsylvania were Native Americans. Indians from the Delaware Valley region planted corn while those in Western Pennsylvania grew mainly corn, beans, and squash.[2] Archaeologists digging on Native American sites have found storage pits for preserving dried corn and other foods. Pioneers moving into Pennsylvania brought their own farming customs with them. In rich farmlands within the state, immigrants farmed the area and created the Pennsylvania style barn, now a familiar landmark to our landscape. In the pioneer era of Pennsylvania agriculture, over half of Pennsylvanians lived on farms. These farmers sold their vegetables, fruit and such at farmer's markets. The chief crops produced during the pioneer era of Pennsylvania farming were wheat, corn, oats, rye barley, potatoes, fruit, and hay.[3] During the time of the great depression farmers searched for ways to survive. After World War II, agriculture was less appealing as a way of life and the cost of labor and equipment was increasing. Between 1960 and 1970 over 300,000 people left the rural regions of Pennsylvania when small farms were no longer profitable.[4]

Since 1970 the Pennsylvania Department of Agriculture has worked to address the changing Pennsylvania farm in efforts that farmers will still be able to make a profit with less labor and land to farm. Laws in Pennsylvania were passed to initiate this effort. According to the 2000 United States Census, approximately 2 million Pennsylvanians were employed in farm work in 1999.[5]

The PENNSYLVANIA BARN is also a common structure on the Midwest landscape. It is known as a two level structure with livestock on the ground floor and grain and hay storage on the second story. Often in order to access the second story a dirt or stone bank was built, giving rise to the name 'Pennsylvania Dutch Bank Barn'

Agriculture is Pennsylvania's number one industry. Although Pennsylvania is often recognized for its mining, steel, and manufacturing industries, Pennsylvania has always been a leader in agriculture. According to the Pennsylvania Department of Agriculture 1995-96 Statistical Summary, Pennsylvania ranks fourth in the Nation in milk production

[1] Source: Webster's II New College Dictionary, Houghton Mifflin Company, 1995
[2] Source: Pennsylvania Historical and Museum Commission Website. Agriculture in Pennsylvania.2003
[3] Ibid
[4] Ibid
[5] Source: 2000 U.S. Census

and number of dairy cows. Pennsylvania also has top rankings in: Mushroom Production (first), Total Poultry Production, (fourth), cattle production (seventeenth), turkeys (eighth), Tree Fruits (forth/fifth) just to name a few.

Currently there are 247,157 acres of prime Pennsylvania farmland preserved in 51 counties across the Commonwealth of Pennsylvania. The total number of farms protected: 2,073 farms. [6]

Historic Farm
PHMC Website: 2003

Agriculture in Centre County

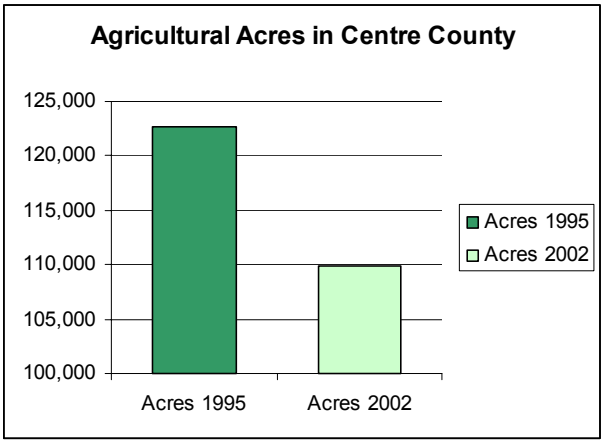
Agriculture in Centre County is distinguished by its fertile limestone soils which have historically supported a large farming economy.[7] Farmland is an important industry in Centre County. In recent years a lot of farmland has gone out of production: according to Centre County Planning Office figures, from 1975 through 1997 a total of 16,249 acres were lost to other uses. This is a rate of about 2.02 acres per day or, put another way, about an average size Centre County farm every three months. Another trend has been a decrease in the farm population while at the same time the non-farming population has increased.

According to the 1997 Census of Agriculture, there are 788 farms in Centre County on 135,982 acres. Of those 788 farms, 449 of the farms are in full-time operation. The average farm in Centre County covers approximately 173 acres, but there are 11 farms in the County over 1,000 acres. Centre County's farms sold agriculture products valued at over $50 million (50% from dairy products). The average Centre County farm sold $64,109 in products. (See Appendix A-1– Centre County Crop and Livestock Data)

Holstein Dairy Cow, Source: Agricultural Research Service, Online photo gallery

Land Use	Acres 1995	%land Use	Acres 2002	%land Use
Agriculture	122,629	17.22	109,913	15.48

Source: Centre County 1995 & Centre County 2002 Land Use Surveys



Source: Centre County 1995 & Centre County 2002 Land Use Surveys

Benefits of Agriculture

Unquestionably, agriculture is significant to a local area, but it is also significant in many ways beyond the property lines or municipal boundaries. Centre County's crops, dairy, poultry and livestock products are in local demand. The consumption of these products

[6] Source: Pennsylvania Department of Agriculture, Agricultural Preservation, Website, 2003
[7] Centre County 1976 Comprehensive Plan, Directions for the Future, Guidelines for Decision Making.

saves County residents the extra expense that would be involved if they were shipped in from other places. This is also important to the economic health of Centre County because cash spent for locally produced items remains in the County. By the same token, exporting surplus products contributes to the flow of cash into the County. [8]

Soybeans, Source: Agriculture Research Service

Agriculture contributes to the open space so highly regarded in Centre County, giving the County a sense of rural character. The existing farming community helps to ensure that this industry continues to be an important part of the economy and the physical landscape. Agriculture limits suburban sprawl particularly when agricultural preservation programs are integrated with a comprehensive plan recommending land use policies. Agriculture land costs less to an individual to maintain than other costly suburban or commercial land uses. (See Figure 3)

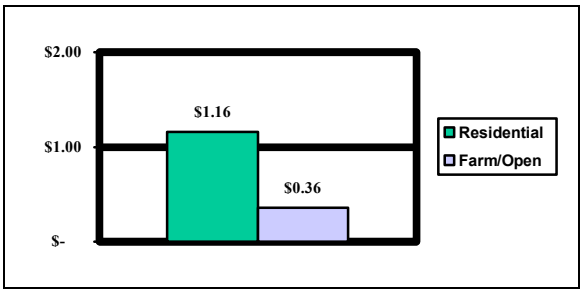


Figure 3: Cost of Agricultural land vs. Residential Land

Threats to Agriculture Land

Growth in our region poses a serious threat to farmland. With approximately 18% of Centre County 's total acreage used for agricultural production and farms being converted to other uses, preserving the rich agricultural heritage of Centre County is an interesting challenge. This is especially true, in light of the sprawl, as families move to the country for open space and as new highways are constructed followed by commercial expansion. (See Figure 4)

The American Farmland Trust, a national farmland conservation group, identified the Chesapeake Bay area, as the fourth most threatened agricultural region in the United States. Sprawling residential and commercial developments are slowly eroding our agricultural base, an asset that can never be replaced. Not only does sprawl directly affect agriculture by consuming farmland but indirectly affects the farmland that remains. Agriculture is not always compatible with nearby homes. Non-farm residents in agricultural areas make it more difficult to farm by objecting to the noise, odor and dust associated with farming, and by making it more difficult to move equipment on busy roads. Non-farm neighbors may also oppose the expansion and diversification of nearby agricultural operations.

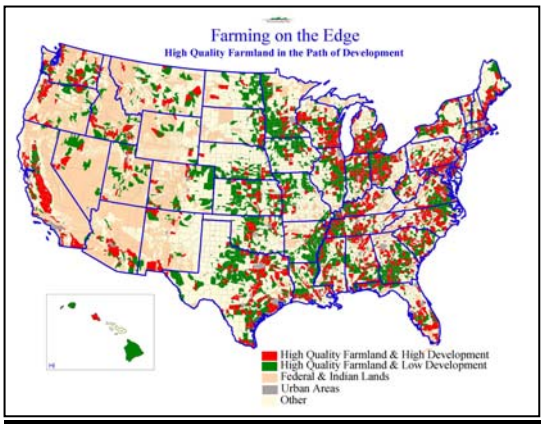
Erosion can cause serious damage to farmland by reducing the fertility and efficiency of the soils on the land. This becomes particularly more damaging when livestock remove vegetation near a stream and allowed to graze on the streambank degrading the stream and allowing large amounts of sediment to enter the waterway.

Stream degradation from livestock grazing near the riparian zone. Source: Upper Penns Creek Watershed Assessment. April 2002

[8] Ibid

Other threats to agriculture lands include:

- Continuing soil erosion and loss of soil fertility;
- Drought and change in climate;
- Mining of underground aquifers;
- Energy supply and cost;
- Crop vulnerability to pests and diseases due to monoculture and heavy
- reliance on chemicals;
- Declining crop yields per unit per acre; and
- Conversion of prime and unique farmlands to nonagricultural uses.



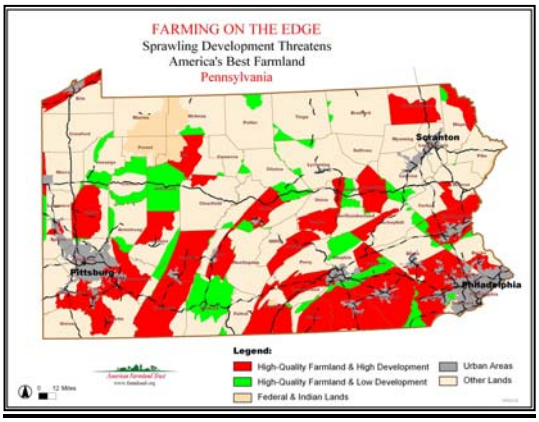


Figure 4: High Quality Farmland in Development Areas. Source: American Farmland Trust

Strategies to Protect Agricultural Lands

Agriculture Security Areas

The Pennsylvania Agricultural Security Act 43 (1981) enables the formation of security areas through the cooperative efforts of farmland owners and local governments. Since 1984, property owners in seventeen municipalities in Centre County have petitioned their local governments to establish agricultural security areas in accordance with Act 43. (See Appendix A-2, Agricultural Security Areas in Centre County)

As a result, over 84,000 acres of Centre County farmlands have been included voluntarily in such areas. This acreage represents over 61 percent of the total acres reported as land in farms in the 1997 Census of Agriculture, prepared by the U. S. Bureau of the Census. It should be noted that the majority of security area parcels are located in areas containing Class I and II soils (prime agriculture soils, see Appendix A-3) and noted as Agricultural Land Use in the County's 1995 Land Use Survey.

Agricultural Security Areas are intended in the long-term to result in a more permanent and viable agriculture base. Agricultural Security Areas are created by municipal governments according to the procedures established in Act 43 of 1981, as amended and known as the "Agricultural Security Law". This act does not regulate or restrict development, but rather provides an incentive for farmers to make known their long-range commitments to farming.

Agricultural Security Areas in Centre County

Municipality	Acres
Benner Township	2,205
College Township	1,304
Ferguson Township	14,380
Gregg Township	4,054
Haines Township	3,457
Halfmoon Township	5,693
Harris Township	3,014
Huston Township	1,858
Marion Township	4,430
Miles Township	7,337
Patton Township	2,993
Penn Township	4,596
Potter Township	11,576
Spring Township	3,225
Taylor Township	4,211
Walker Township	6,881
Worth Township	2,882
Total	*84,094*

Agricultural Security Areas in Centre County are defined geographic areas which consist of at least 250 acres of land used for the agricultural production of crops, livestock, and livestock products under the ownership of one or more persons. Agricultural Security Areas are protected from local nuisance ordinances and ordinances that would otherwise restrict farming activities. Only farms within designated Agricultural Security Areas will be eligible for consideration for easement purchases.

Funds have been used to purchase permanent agricultural conservation easements on 26 farms in Centre County. Those farms are in Benner, Ferguson, Marion, Spring, and Walker Townships. There are 62 active applications (covering more than 8,500 acres) that have been submitted by landowners interested in participating in the program. Each farm is given a weighted score using computer software. (See Appendix A-4, Farmland Ranking System**)** Farms are ranked, based on their score, with farms owners at the top of the list offered the opportunity to sell their development rights.

Criteria for ASA Designation

1. At least 250 acres of viable agricultural land. The proposed area may also consist of two or more contiguous parcels, provided that each tax parcel is at least ten acres.
2. At least 50 percent of the land has soils which fall into one of the following categories: Class I-IV, excepting Class IV, land defined by the U.S. Soil Conservation Service as "unique farmland", or land that do not meet soils criteria but are in active farm use and maintained with soil erosion and sedimentation plans applicable to such land.
3. Use of the land shall be compatible with local government comprehensive plans. Any zoning must permit agricultural use but need not exclude other uses.
4. Landowner(s) may propose to include all their land, regardless of zoning, in an agricultural security area.
5. The land shall be viable agricultural land.
6. Additional factors may be considered related to the extent and nature of farm improvements and economic conditions.

"Being a member of an ASA better ensures that farmland will continue to produce agricultural products."

-Sam Hayes ~ Secretary of Agriculture

Figure 5: Weight Dairy Farm, ASA in Marion Township Centre County

Clean and Green Act Summary

Clean and Green (also known as The Pennsylvania Farmland and Forest Land Assessment Act of 1974) is a conservation program for land in agricultural use, agricultural reserve or forest reserve that lowers the property tax rate for landowners enrolling in the program.

Agricultural use – land which is used for the purpose of producing an agricultural commodity or is devoted to and meets the requirements and qualifications for payments or other compensation under a soil conservation program under an agreement with an agency of the Federal government. This includes the farmstead on the tract.

Agricultural reserve – Noncommercial open space lands used for outdoor recreation or the enjoyment of scenic or natural beauty and open to the public for that use, without charge or fee on a nondiscriminatory basis.

Forest reserve – Land, 10 acres or more, stocked by forest trees of any size and capable of producing timber or other wood products. This includes a farmstead on the tract of land

Landowners may qualify for Clean and Green if

they own 10 acres or more of agricultural land, own less than 10 aces of agricultural land but gross at least $2000 annual income from the land, or if an landowner owns 10 acres of forestland.

Landowners may enroll in the program by completing an application form, which is available from the Centre County Tax Assessment Office, Willowbank Office Building, 420 Holmes Street, Bellefonte, PA. Applications must be postmarked by June 1st in order to be effective for the next tax year.

Centre County Farmland Trust

In Pennsylvania there are 17 Land Trusts registered with the State Agricultural Land Preservation Board as of August, 2002. The Centre County Farmland Trust (CCFT) is a private, non-profit organization. The CCFT:

- Protects and preserves agricultural lands for present and future generations
- Prevents farmland from being developed into commercial and residential properties
- Enables farmers to continue farming
- Works in partnership with farmers, government and non-government agencies, the general public and private organizations

Conservation Easements

A *conservation easement* is an agreement between a landowner and a conservation organization that limits certain specified uses on all or a portion of a property for conservation purposes while leaving the property in the landowner's ownership. Easements are almost without exception of perpetual duration. They are recorded at the county office where all deeds are recorded, and the easement's terms are binding on all future owners of the eased parcel.

Every conservation easement is unique, the terms of the easement tailored to the particular property and to the particular needs and goals of the landowner and conservation organization. An easement might state, for example, that no building or road may be placed within 200 feet of a stream passing through a property but allow for a house to be built on another portion of the same property. Another easement might permit farming on a property but forbid residential, retail and industrial development. Yet another easement may prohibit all activities except for sustainable forestry and recreation. The flexibility and applicability of conservation easements is nearly endless

ClearWater Conservancy is an example of an organization in Centre County that has a Land Protection Program. This organization protects these lands by a conservation easement. [9] In this process a landowner would willingly donate or sell a portion of property rights that all property owners have, such as the right to subdivide or the right to build structures. Landowners granting a conservation easement to ClearWater Conservancy, retain ownership of the property while agreeing to limit certain activities that may be harmful to the resources of the property. This agreement allows the landowner to use their property as they did before the easement, so long as the use is consistent with the easement.

Rhoneymade Farm, Potter Township: ClearWater Conservancy Conservation Easement. Source: ClearWater Conservancy Website.

[9] A Conservation Easement is a legal agreement between a landowner and a qualified organization or agency that protects the natural, cultural, and/or historic resources of a property. Source: ClearWater Conservancy Website

Posted on Fri, Sep. 12, 2003

CENTRE DAILY TIMES

Governments gather cash to preserve local farmland

By Mike Joseph
mjoseph@centredaily.com

LINDEN HALL - Calling it a first in the state and maybe the nation, officials from three levels of government and an environmental group Thursday began a cooperative process to channel money to protect farmland.

The process will result in more than $340,000 in federal, state and county funds going to purchase the development rights to a 197-acre farm on Brush Valley Road owned by Taylor and Elizabeth Potter.

The farm, which has been in the Potter family since 1793, lies partly in Potter Township but mostly in Harris Township. If Harris Township decides to contribute, it would bring to four the number of governments in on the deal.

The deal, three years in the making, got its first public recognition Thursday afternoon when ClearWater Conservancy and the Potters signed a conservation easement protecting the forest and water resources on 81 acres of the farm.

The $80,000 to pay the Potters for the easement came from a fine paid by Texas-based Occidental Chemical Corp. for failing to comply with a federal order to clean up toxic waste at Rutgers Organics Corp. property in College Township.

Next spring, the Centre County Agricultural Land Preservation Program plans to spend an additional $265,000 to buy the development rights to all but 10 acres of the rest of the farm.

Eighty percent of that amount will be state money and 20 percent county money, according to Norman K. Lathbury, coordinator of the county's farmland preservation efforts.

"We're going to save it all," Lathbury said.

At a news conference in the shade of a tree on the Potter farm Thursday, Taylor Potter offered drinks from a pitcher of water -- "fresh, unfiltered and untreated" -- from the farm to about 20 government officials and others who had come to mark the day.

Spring water from the Potter farm flows down the southeastern foothills of Mount Nittany and forms a stream that is part of the headwaters of Spring Creek -- the cross-county waterway into which hazardous wastes from the chemical company leached, fouling the fish.

Katie Ombalski, ClearWater Conservancy watershed coordinator, said the coordinated purchase of the easements will both protect the farmland from development and ensure that good water flows into Spring Creek.

"It is an incredible win-win situation," she said.

The Spring Creek connection enabled the Environmental Protection Administration, the state Fish and Boat Commission and the U.S. Fish and Wildlife Service to leverage the Occidental fine into the larger project to protect Spring Creek.

Taylor Potter, 76, a retired Presbyterian clergyman, rents the tillable land on his farm to a dairy farmer, and the news conference setting was framed by wall-high fields of feed corn.

Because "ministers and missionaries don't stack up an awful lot of money over the years," Potter said, he would have had to sell at least part of the farm if he hadn't received the easement money.

"I wouldn't have been able to compete with the demands in this area on real estate," Potter said. "It would have been very hard to keep the farm existing in its present state. We would have had to sell some off."

A 54-acre farm next to Potter's was sold earlier this month for $1 million.

Larry Silver, a Philadelphia lawyer representing Occidental, presented the $80,000 check Thursday. Another $4,000 from Occidental will go to ClearWater for inspection costs, Lathbury said.

The $15 million cleanup of the toxic site at Rutgers Organics has been under way for 20 years, according to the EPA, and the levels of pesticides in fish have declined during that time.

(Permission *given from Centre Daily Times to use this article)*

Agencies and Organizational Programs Benefiting Agriculture

Natural Resource Conservation Service

This federal agency has put nearly 70 years of experience to work to assist private landowners with conserving their natural resources, soil, and water. Pennsylvania is one of 15 states where agricultural management assistance is available through the Natural Resource Conservation Service (NRCS). The Agricultural Management Assistance Program (AMA) makes available cost-share payments to agricultural producers to voluntarily approach issues such as erosion control by incorporating conservation into their farming operations, improvement of irrigation structures, and diversification of resource conservation practices. Applicants may request AMA assistance at any time by submitting an application to their local NRCS office location.

Another one of their programs The Wildlife Habitat Incentives Program (WHIP), is a voluntary program offered to landowners that encourages high quality wildlife habitats that support wildlife populations of National, State, Tribal and local significance. Assistance is provided to landowners and others to create upland, wetland, riparian, and aquatic habitat environments. In Pennsylvania priority projects include:

- Riparian areas on dairy and beef farms
- Steam corridors are fenced
- Cool season hayfields are converted to warm season grasses for habitat

Warm season grasses provide habitat along edges, also providing minimal land removed from agricultural production

NRCS also administers the Conservation Reserve Program (CRP), which is a large scale land retirement program that offers an annual rental payment plus cost-share for landowners to convert environmentally high quality cropland and pasture to suitable grassland and/or tree cover for 10-15 years. The Conservation Reserve Enhancement Program (CREP) is state/federal partnership that enrolls eligible cropland and pasture land into conservation cover plantings. This program is expected to have significant water quality and wildlife habitat benefits. When fully implemented, this CREP is expected to substantially reduce the nitrogen and sediment deposition due to agricultural activities to the Chesapeake Bay watershed as well as protect other nutrient sensitive waterways in Pennsylvania.

American Farmland Trust

The American Farmland Trust (AFT) was founded in 1980 and since then has worked to provide permanent protection for millions of farmland acres across the United States. Landowners can choose to become a member of the AFT by donation and receive membership benefits. The AFT also provides technical resources through their “Center for Agriculture in the Environment”.

United States Fish & Wildlife Service

The United States Fish & Wildlife through their “Partners for Wildlife Program” initiates a streambank fencing program. The Partners for Wildlife Program provides assistance to landowners who want to restore or improve habitat on their property. This program has

proven to be very successful and in Pennsylvania as in many states there is a waiting list of participants interested in the program. This program works with the landowner by installing fencing and off-stream watering facilities to allow for restoration of stream and riparian areas.

An example of a local ongoing effort is the work done by the Penns Valley Conservation Association (PVCA). PVCA has been able to construct over 3 miles of fence line on 9 farms creating 60.3 acres of protected buffer zone. These fencing projects are designed to reduce animal presence in or near the streams, thus increasing the amount of vegetative growth, and reducing the amount of loosened ground that can erode into the waterway.

Another local project is restoration efforts in the Spring Creek Watershed. Through a collaborated effort by the Centre County Conservation District, the Pennsylvania U.S. Fish and Wildlife Research Unit, and the Spring Creek Chapter of Trout Unlimited a project was initiated to reduce sediment loads in Spring Creek and improve water quality. A grant was awarded by the Department of Environmental Protection to install bank stabilization and fence the riparian area along the stream. Landowners in the project area were involved in a public participation process and educated on how keeping livestock out of the stream and from grazing on the streambank would protect the farmland and improve the water quality.

Other Cost-Share or Free Fencing Programs

- The Department of Environmental Protection can install a free fencing system that includes one livestock crossing
- A joint effort by the Chesapeake Bay Foundation and Duck's Unlimited will provide a free fencing program with a minimum 15-foot buffer
- The Natural Resource Conservation Service through its CRP program mentioned previously provides cost-share funds to install fencing and crossings.

Conservation District Programs

Pennsylvania County Conservation Districts include as part of their work and services several agricultural programs. For more detail on the programs listed below please contact the Centre County Conservation District, 414 Holmes Street, Willowbank Building, Bellefonte, PA. (814) 355 -6817.

The Chesapeake Bay program is designed to assist farmers with costs of installing agricultural Best Management Practices (BMP's)[10]. The BMP's that are installed benefit to help with soil erosion, nutrient management, and water control on the farm properties. This particular program is a cost share program that works with the Conservation Districts and the Pennsylvania Department of Environmental Protection.

Barn area before BMP's were installed
Source: Centre County Conservation District Website, 2003

Barn area after installation of BMP's
Source: Centre County Conservation District

[10] Conservation practices or systems of practices and management measures that control soil loss and reduce water quality degradation caused by nutrients, animal wastes, toxics, and sediment. Agricultural BMP's include strip cropping, terracing, contour stripping, grass waterways, animal waste structures, ponds, minimal tillage, grass and naturally vegetated filter strips, and proper nutrient application measures (Source: Chesapeake Bay Critical Area Commission Glossary).

Project Grass is a program administered by the District to promote the use of rotational grazing as a BMP to reduce the amount of agricultural non-point source pollution. Farms are selected based on their impairment and environmental needs. The Conservation District provides the landowner a nutrient management plan and cost-sharing up to $8,000.

Nutrient Management Plan Implementation Program is a cost-share grant program providing assistance to farmers who have identified BMP's but financially cannot implement those. The program can provide approved landowners with up to 80% of the cost of implementing a BMP not to exceed $75,000.

Pennsylvania's Agriculture-Linked Investment Program (Agri-Link) offers a low interest loan to farmers to implement BMP's that are approved under the PA Nutrient Management Act Program. To be eligible for this program a landowner having a livestock or poultry operation must have been in existence on or before October 1, 1997.

The Centre County Conservation District can also provide free soil and manure testing for farms located in the Penns Creek and Bald Eagle Watersheds. The staff will assist in sample collection and a soil analysis will provide data on pH, magnesium, phosphorous, lime, calcium, and potassium. The manure sampling will provide data on %soils, ammonium, phosphorous, total nitrogen, and potassium. Services provide to staff and for sampling for this project are available through a Growing Greener Grant by the Department of Environmental Protection.

Agricultural Best Management Practices for Landowners

Best Management Practices for Landowners

- Use conservation ethics on small acreage lots
- Develop forest management plans on private owned forest lands
- Practice wise watershed management
- Plant grasses to improve riparian buffers and habitat improvement
- Manage pastures and hayfields for wildlife
- Plant trees and shrubs that benefit wildlife
- Grassed waterways
- Animal waste storage facilities
- Woodland management
- Water control structures
- Conservation tillage systems
- Filter strips
- Manure compost facilities
- Native grass seedlings
- Management intensive grazing
- Constructed or restored wetlands

Conclusion

Centre County's farmland is a valuable resource that is significant locally and a part of the regional and national agricultural system. It is becoming increasing prudent to conserve our agricultural resources for food production and for its other natural functions and to curtail past trends to convert farming to other land uses.

SOILS

"The nation that destroys its soil destroys itself."

~ Franklin D. Roosevelt. Letter, February 26, 1937, to state governors, urging uniform soil conservation laws.

Soils Defined

Soils are defined as a piece of ground, and the top layer of earth suitable for the growth of plants.[11]

Soils In Centre County

Soil is often referred to as the 'primary' resource, having a profound influence on the land use, productivity, and environmental characteristics of an area. Many soils within the County are valuable for their ability to support vegetation, both wild and cultivated, and to provide a foundation for buildings. Soils have varied characteristics of depth, drainage, parent material, texture, and degree of slope and varied uses appropriate to these characteristics. Poorly matched soil-use combinations can lead to personal hardship and environmental degradation. The highly productive soils of UPCW are intimately connected with the stream system network[12].

Soils are directly related to the geology, topography, and vegetation present in an area. Soils have developed from the weathering of the underlying bedrock, including shale, sandstone, limestone, and siltstone. According to the US Department of Agriculture's 1981 Soil Survey of Centre County, certain areas are not suitable for development. Soils that may be unsuitable for building construction, septic tanks, and roads area associated with 1) shallow bedrock; 2) high water tables; 3) steep slopes; and 4) slow permeability. Although the soils tend to be unsuitable for development, they are very suitable for agriculture.

The U.S. Department of Agriculture's Natural Resource Conservation Service classifies certain soils as Prime Farmland soils based on the following definition:

> **Prime Farmland –** Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. It must also be available for these uses. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not easily eroded or saturated with water for a long period of time; these soils either do not flood frequently or are protected from flooding.[13]

[11] Webster's II New College Dictionary, Houghton Mifflin Company, Boston,1995

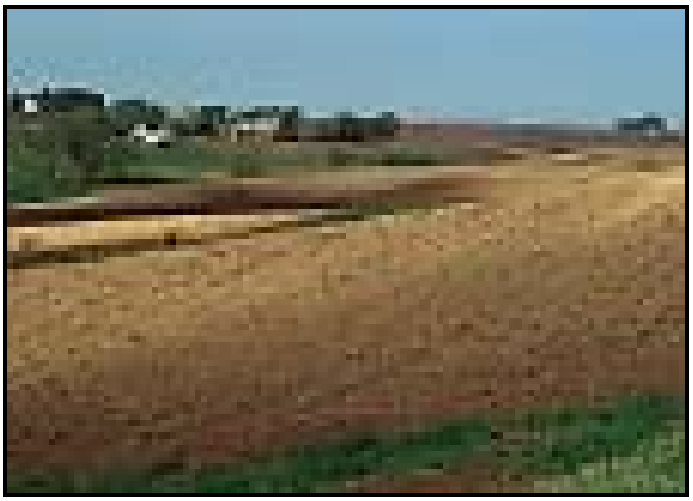
[12] Source: Upper Penns Creek Watershed Assessment, LandStudies, April 2002

[13] Ibid

Prime Farmland Soils in Centre County

Mapping Unit	Soil Description
AbB	Albrights silt loam, 3 to 8 percent slope
AlB	Allegheny silt loam, 2 to 8
Ba	Basher loam
BtB	Buchanan loam, 2 to 8 percent slope
BuB	Buchanan channery loam, 3 to 8 percent slopes
Ch	Chagrin soils
CkA	Clarksburg silt loam, 0 to 3 percent slopes
CkB	Clarksburg silt loam, 3 to 8 percent slopes
ClB	Clymer sandy loam, 3 to 8 percent slopes
EdB	Edom silt loam, 2 to 8 percent slopes
GlB	Gilpin channery silt loam, 2 to 8 percent slopes
HaA	Hagerstown silt loam, 0 to 3 percent slopes
HaB	Hagerstown silt loam, 3 to 8 percent slopes
HcB	Hagerstown silty clay loam, 3 to 8 percent slopes
HhB	Hazelton channery sandy loam, 3 to 8 percent slopes
HuA	Hublersburg silt loam, 0 to 3 percent slopes
HuB	Hublersburg silt loam, 3 to 8 percent slopes
LaB	Laidig channery loam, 3 to 8 percent slopes
LkB	Leck Kill channery loam, 3 to 8 percent slopes
Lx	Lindside soils
MeB	Meckesville silt loam, 3 to 8 percent slopes
MnB	Millheim silt loam, 2 to 8 percent slopes
MoB	Monongahela silt loam, 2 to 8 percent slopes
MrB	Morrison sandy loam, 2 to 8 percent slopes
MuA	Murrill channery silt loam, 0 to 3 percent slopes
MuB	Murrill channery silt loam, 3 to 8 percent slopes
No	Nolin silt loam, local alluvium, 0 to 5 percent slopes
Ph	Philo soils
Po	Pope soils
RaB	Rayne silt loam, 2 to 10 percent slopes
UmB	Ungers channery loam, 3 to 8 percent slopes
WhA	Wharton silt loam, 0 to 3 percent slopes
WhB	Wharton silt loam, 3 to 8 percent slopes

In addition to these Prime Farmland soils, there are several soils that qualify as Farmland of Statewide Importance within Centre County. These soils do not meet all of criteria necessary to be Prime Farmland, but they do support a significant amount of agriculture. This list contains many of the same soil series listed above at higher slopes plus other soil series.



NATURAL RESOURCES GOAL

Identify, preserve, and monitor Centre County's agricultural resources for the benefit of present and future generations.

OBJECTIVES-AGRICULTURE

Promote the wise use and management of the County's agricultural resources

Protect watershed features such as surface and underground water supplies, stream, floodplains, forested riparian areas, wetlands, fish and wildlife habitats, and aquifer recharge areas.

Promote and preserve the County's agricultural areas for open space.

Encourage owners of private lands to work with the proper agencies to protect their prime agricultural soils.

Develop strategies that provide for growth while maintaining a balance with the County's natural resources: forest lands, ag lands, sensitive environmental areas steep slopes, floodplains, scenic views, natural areas, and all unique habitats.

Reduce air, water, land, noise, and visual pollution.

RECOMMENDATIONS

Protect unique and special habitats in Centre County from development pressures and degradation by guiding land development activities.

Encourage through available programs the protection, preservation, and management of agricultural resources for their economic, environmental, and atheistic benefits.

Protect and encourage development of riparian buffers and streambank fencing for improving water quality and preserving agricultural lands.

Coordinate with conservancies and land-trust organizations to encourage the purchase of conservation easements on agricultural lands.

Encourage, educate, and assist landowners in the use of "best management practices" on their lands for economic and environmental benefits.

Encourage the revision and enactment of land use regulations that promote continued agricultural production

Evaluate and revise the Centre County Clean and Green Program in order to limit ineligible properties that could negatively impact tax revenues.

APPENDICES

A-1

Centre County
Crop & Livestock Data

District 50
County 27

COMMODITY	Year or Date	Unit	Total	Unit	Yield	Total	County Rank	Value Dollars
CROPS		1/						
Corn for Grain	1998	Acres	22,400	Bu.	109	2,441,600	13	5,981,900
Corn for Silage	1998	Acres	10,500	Tons	15.5	162,800	14	3,907,200
Hay, All	1998	Acres	33,100	Tons	2.4	80,600	17	9,881,000
Hay, Alfalfa	1998	Acres	18,800	Tons	3.0	56,400	8	7,388,400
Hay, Other	1998	Acres	14,300	Tons	1.7	24,200	30	2,492,600
Winter Wheat	1998	Acres	3,700	Bu.	49	181,300	16	453,250
Barley	1998	Acres	900	Bu.	68	61,200	20	82,600
Oats	1998	Acres	3,900	Bu.	52	202,800	15	263,640
Soybeans	1998	Acres	9,600	Bu.	38	364,800	15	1,933,400
Potatoes	1998	Acres		Cwt.				
Tobacco	1998	Acres		Lbs.				
Apples	1998			Lbs.		2,050,000	19	286,000
Peaches	1998			Lbs.				
CROP SUMMARY								
Field & Forage	1998	Acres	84,288					22,607,000
Vegetables & Potatoes	1998	Acres	1,555					1,467,000
Fruit	1998							355,000
Total-Crops /3	1998							24,429,000
LIVESTOCK								
Avg. Milk Cows & Production	1998	Cows	13,600	Lbs.	16,200	220,900,000	16	34,902,000
Layers & Egg Production	1998	Layers		Eggs				
Broilers Produced	1998	Broilers		Lbs.				
All Chickens On Hand	12/01/98	Head						
Hogs & Pigs On Hand	12/01/98	Head	10,500				21	462,000
Cattle & Calves On Hand	01/01/99	Head	33,000				15	27,390,000
Sheep & Lambs On Hand	01/01/99	Head	1,800				17	198,000
CASH RECEIPTS								
Field Crops	1997						16	8,369,000
Vegetables & Potatoes	1997						11	3,063,000
Fruit	1997						24	323,000
Hort. Specialties	1997						41	1,234,000
Total-Crops	1997						27	12,989,000
Meat, Pltry & Misc. Products /2	1997						22	10,843,000
Dairy products	1997						16	30,412,000
Total-Livestock	1997						23	41,255,000
Government Payments	1997							
Total-Cash Receipts	1997						24	54,244,000
FARMS			Number		Avg Size	Total Acres		
Farms			1,040		140	146,000	20	
Cattle			530				17	
Commercial Dairy			245				14	
Hog			55				19	
Sheep			50				15	
Chicken			85				21	

Source: 1998-1999 Statistical Summary and Pennsylvania Department of Agriculture Annual Report

1/ Harvested acres.

2/ Poultry combined with "Meat Animals & Misc. Products" due to disclosure issues.

3/ Totals may not add due to rounding.

A-2

A-3

A-4

Figure 1

FARMLAND RANKING SYSTEM