



Happel's Meadow Wetland

Management Plan

*Prepared for the Washington Township
Board of Supervisors
by
Happel's Meadow Wetland Advisory Committee*

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This plan was developed by the Happel's Meadow Wetland Committee comprised of John Birely, Lisa Donahoe, Thomas D. McFarland, Angela Rocks and William H. Smith.

HAPPEL'S MEADOW MANAGEMENT PLAN

I INTRODUCTION

Happel's Meadow, as all wetlands, is a place where water and land come together to form a drainage basin. To qualify as a wetland the area must have one or more of the following attributes: 1) at least periodically, the land supports plants that thrive in wet soils which are deficient in oxygen; 2) the substrata is predominantly water saturated soil; and/or 3) the substrata is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

Water, sediment, nutrients, toxic matter, organic matter and seeds from upstream move into wetlands where they may be changed in energy or biochemical status before eventually being removed further downstream. Animals move in and out of wetlands using them as sources of food, water, and habitat, thus transferring energy and chemical components between terrestrial and aquatic ecosystems. Because of these interrelationships, activities upstream or on adjacent areas have profound effects on wetlands and communities downstream and within the radius of movement of living things that use the wetland.

II BACKGROUND INFORMATION

Happel's Meadow Wetland is a gift to the people of Washington Township from Charles S. and Amelia Gardner, and Letitia G. Gardiner, in memory of Charles S. and Elizabeth C. Gardner and Dr. and Mrs. Harvey C. Bridgers. Hpaael's Meadow is recognized as a significant wetland because of its size and its upland location.

SITE DESCRIPTION

Happel's Meadow, a primarily scrub and shrub wetland site, was formerly known as Bear Swamp. It is located along Route 16, seven miles east of Waynesboro, in Blue Ridge Summit. It is in Washington Township, Franklin County in south central Pennsylvania. Happel's Meadow consists of 72.679 acres and forms a somewhat flattened bowl surrounded by some higher hill tops.

COMMUNITY VALUE

While Happel's Meadow provides the community of Washington Township with a rich natural treasure, the meadow also serves the community as a flood control device. During periods of heavy rainfall the wetland collects much of the surface water and slowly releases it, reducing the risk of flooding to neighboring and down stream properties. The wetland also serves as a water filtration system filtering out impurities and restoring healthy ground water systems.

CONSERVATION AND PRESERVATION

Over half of Pennsylvania and the nation's wetlands have been drained or filled since colonial times, and more are lost each year, even since passage of the Clean Water Act. In order to balance some of these losses, society has begun to actively create or restore wetlands so as to minimize and even reverse this trend in loss of wetland resources.

The Washington Township Board of Supervisors and the Wetland Advisory Committee are committed to maintaining Happel's Meadow as a significant wetland. Various committees have been organized to carry out this commitment.

CULTURAL HISTORY

The first known deed transfer to the land which is now called Happel's Meadow was dated 1798. One hundred eighty eight acres was deeded from Dr. Robert Johnston to Patrick Mooney for three hundred pounds. Supposedly, Dr. Johnston, a ginseng exporter who also was George Washington's personal physician, had used the property to grow ginseng.

In 1814 another one hundred acre section of land which now comprises Happel's Meadow was sold to Mooney for \$200. Mr. Mooney sold one hundred acres of the original property to his son, William. Eventually, all of this property was sold to Lewis Ripple and his wife. Mr. Ripple sold the property to Sam'l Buhrman, who in 1868 sold the land to Henry Yingling.

In 1885 the Monterey Land Company purchased two hundred forty-five

acres from Henry Yingling and Francis King. Then, in 1897, the Monterey Land Company sold forty acres to Martha Happel. This tract of land, along with another forty six acres purchased by Martha Happel, comprises the main parcel of the wetland.

The Monterey Land Company placed restrictions on the purchased property which included:

Property not to be used for other than dwelling or agricultural purposes.

No liquor sold on the land

No manufacturing or other public building

No establishment where a charge is made for admission.

In 1902, Albert L., John, William and Frank Happel purchased the land.

Albert L. Happel was born in 1871 near Chewsville, Maryland into a family of eight sons. In 1906 he and his brother John G. Happel began a farming operation on the plateau now known as Happel's Meadow. The brothers cleared nearly 80 acres of brush which Albert Sr. described as a thicket with muck 8-10 feet deep. The land had a 30 inch drop from the South to the North end with a small meandering stream known as Red Run flowing through it. Following the clearing of the meadow, the Happel brothers dug lateral ditches every 100 feet, and placed drainage tiles between the ditches to drain and irrigate the land. It is believed that seven railroad cars of tiles were required. The flow of Red Run was redirected into a straight ditch. The ditches were four to eight feet deep. People ice skated in them in the winter.

The property was cultivated into two acre vegetable plots, where tomatoes, cauliflower, corn, green beans, carrots, and spinach were grown. The meadow was particularly known for producing fine celery. From 1906 through 1921 the farm provided fresh produce for the popular Pen Mar Park resort area. This produce was sold from the Happel's grocery store (located on the north side of the Western Maryland Railway on the west side of Monterey Lane) to hotels and private homes. In later years, customers placed orders by telephone and the store delivered, or summer residents would send their chauffeurs to pick up orders.

On the south end of the meadow the Happels built a pond by damming the stream where they harvested ice to use in the store. It was located in the

area behind what is now Mountain Shadows restaurant. Beside the pond was a little shanty where they washed and trimmed the celery which they grew as a winter crop. They planted the seeds in the summer, replanted the seedlings, covered them with leaves and dirt to protect them in the fall and harvested the celery in the winter.

Two large barns were erected in the southwestern section of the meadow, where the Little League field is now located. According to Ethel Happel McClain and her brother, Albert Jr., dangerous sink holes were found in the meadow where teams of horses were lost. One of these sink holes was near the barns, while the other was near the present golf course. In later years tractors got stuck and had to be pulled out. Mrs. McClain recalls some of the meadow being dry and believes that the meadow is even drier today than years ago.

Two main factors which led to the farm being abandoned were the decline of the Pen Mar Park resort crowds and their demand for fresh produce, and the building of PA Rt. 16. With the decline of the resort, the vegetable farm was converted to a hay farm. When the Sunshine Trail (PA Rt. 16) was built in 1938-41, it bisected the Happel land. It ruined the tile irrigation/drainage system and Mr. Happel determined that it could not be farmed again, except for hay. Mr. Happel died in 1943. Eventually the farm was abandoned allowing the meadow to return to a natural state. The store burned down in 1944. Since the mid-forties, the property and wetland has been relatively undisturbed.

The property remained with the Happel brothers until 1963. Charles Gardner, Jr. purchased the property in August of 1963. Mr. Gardner made seven acres available to the Pen Mar Youth League for a baseball field where the baseball stadium is presently located. Following his death, Mr. Gardner's widow, Letitia G. Myers, who still resides in Blue Ridge Summit, deeded the property over to the Pen Mar Youth League in 1979. The deed places some restrictions including "No construction or earth moving activities are planned on these parcels," and "To be used as recreational purposes and no structures generating sewage are planned."

In 1990 Charles S. Gardner, III, Amelia Gardner and Letitia Gardiner donated the property to Washington Township. The deed states that the property is "to be kept and maintained as wetlands in its natural state perpetually and not to be sold, developed, subdivided or used for

commercial or industrial purposes"..... "the premises conveyed shall forever be held as a natural preserve for scientific, educational and aesthetic purposes, and shall be kept entirely in its natural state, excepting only such fences, foot trails and property maintenance activities as may be appropriate to effectuate the foregoing purpose without impairing the essential natural character of the premises."

NATURAL HISTORY

According to a publication of the Pennsylvania Scenic and Historic Commission, the Blue Ridge Summit area claims the widest inhabited plateau in the world, being a level mountain top a mile wide and a mile and three-quarters long.

Little is known about the natural history of Happel's Meadow. Geologists believe that Happel's Meadow may have actually been a lake bed at one time, possibly having volcanic origin. Originally, the property was known as Bear Swamp and may have been a peat bog. Following the era when the property was cultivated, Happel's Meadow has slowly succeeded into several natural plant communities with a cattail swamp, scrub and shrub swamp, and a forested swamp. Today, over seventy different species of birds and 200 species of plants [eight rare plants] inhabit Happel's Meadow.

George Benchoff, son of George Happel's daughter May Happel Benchoff, worked on the farm as a boy. He recalls many snapping turtles and many skunks, especially in the celery field. According to May Benchoff they collected sacks of 40 skunks at a time. Lewis and Alma (Bloom) Muth grew up on the edge of the wetland and remember seeing deer, pheasant, squirrels and skunks. Alma's father told of wildcats being in the swamp.

FLORA AND FAUNA

With ongoing study, we hope to develop a thorough inventory of plant and animal diversity and abundance. For a current inventory see Appendix A. Many plant species and some animal species that are found in Happel's Meadow are not native to the wetland.

GEOLOGY AND HYDROLOGY

Little is known about the hydrology and geology of Happel's Meadow. A professional study is considered critical to gaining specific knowledge about how this particular wetland functions. Such information is crucial for basing stewardship decisions on scientifically sound information. A hydrology study could be accomplished by one or a combination of the means listed below.

1. Raise money privately and hire professionals to complete the study.
2. Apply for grant funds.
3. Seek college/university assistance through a graduate study.

Happel's Meadow Wetland has multiple sources of water: 1) precipitation, 2) groundwater, and 3) surface flow. Groundwater inputs are rich in nutrients, resulting in high biological productivity in the wetland. Surface waters flowing in also carry nutrient-rich sediments and promote biological exchange with the drainage basin. These three sources of water allow the wetland to perform valuable hydrologic functions such as flood flow alteration and groundwater recharge and discharge. Water quality functions provided by the wetland are removal and transformation of nutrients, and filtration of water-borne sediments and toxins.

CLIMATE AND WEATHER

Blue Ridge Summit experiences a moderate-temperate climate with annual average temperatures between 50 and 55 degrees Fahrenheit. The prevailing direction of the winds is from the northwest from October through April, and from the south in the other months of the year. The highest wind velocities generally occur during the colder months. The percentage of sunshine is greatest from May through October and decreases to a minimum from December through February.

According to the National Climatic Data Center, thirty-year data trends of two weather stations in close proximity to Happel's Meadow (20 to 30 miles distant), indicate an average January temperature low of 32.4 degrees Fahrenheit and an average July maximum temperature of 74.4 degrees F.. The first freeze date generally occurs in early October; the last

freeze date usually occurs from late April to early May. Precipitation levels recorded at the Hagerstown Weather Station indicate an average annual rainfall of 38.8 inches and an average monthly rainfall of 3.2 inches, with the least amount of rainfall occurring in February (2.26 inches), and the highest amount occurring in June (3.92 inches). Snowfall in Hagerstown averages 26.7 inches per year and generally occurs from November through January, with January receiving the largest and November receiving the least amount of snow.

Hagerstown is a lower elevation (an altitude of 547 feet as compared to Happel's Meadow at 1,300 feet), and so , as expected temperatures are usually 3 to 5 degrees cooler in the Meadow and snowfall is considerably greater. Temperatures in the Meadow are known to range from -20 degrees F. to the high 90's.

EDUCATION/RECREATION

Happel's Meadow has great potential as an educational facility for local education agencies. Relationships with local school districts should be encouraged.

The uniqueness of the wetland provides great opportunity for science students at all levels to conduct studies beneficial to both the students and the meadow. This cooperative activity should be extended to qualified individuals in the community, as well.

Current recreational uses are passive in nature, such as bird watching.

Happel's Meadow is a valuable asset to the local community due to its unique character. Many derive great pleasure noting the aesthetic appeal as the meadow marks the changing seasons. This particular point is destined to become all the more important as the surrounding area becomes more developed, and the meadow remains an undisturbed open space. Educationally, Happel's Meadow also has value. In 1993 and 1994, Greencastle-Antrim High School science classes conducted studies in the meadow. Their reports are available in the township office.

III. GOALS AND OBJECTIVES

COMMUNITY VALUE

Goal: Preserve, protect and enhance Happel's Meadow wetland community with regards to any effect on the water supply, flood control, natural water filtration, and aesthetic value.

Provide recreational and educational uses including bird watching and nature walks without degrading the flora and fauna or the integrity of the wetland.

FLORA AND FAUNA

Goal: Preserve and restore native species of Happel's Meadow; sustain or increase the biodiversity and ecological productivity of the wetland.

The removal of exotic species must be given consideration. This will enhance the growth of native plant and animal communities.

Domestic activity over the last 85 years has greatly disturbed the natural plant community through clearing, burning, farming, irrigating, and draining.

Objectives:

1. Compile complete list of all species occurrences including:

Mammals	Reptiles and Amphibians
Birds	Crustaceans
Insects	Plants

2. Identify and protect any species listed as endangered, threatened or of special concern

3. Maintain a balance in the biodiversity of the wetland. Specifically,

hunting, fishing, and trapping threaten the viability of wildlife populations. Should there prove to be an imbalance of species that threatens the biodiversity of the wetland, the township supervisors and the wetland committee, in consultation with professional sources following state regulations will develop a management plan to correct the imbalance. This may include the removal of an excess of specific wildlife species.

4. Manage the wetland as an open marsh to encourage more marsh species diversity.

5. Install regular monitoring programs for plants (including exotic species), birds, amphibians, reptiles, invertebrates, and wetland communities.

6. Establish native species restoration program under the direction of qualified individuals.

GEOLOGY AND HYDROLOGY

Goal: To undertake a geological study to help identify the various geological components within and surrounding the wetland; to maintain a water level that encourages and enhances marshland species diversification; to maintain a water quality that supports native species diversification.

Objectives:

A more detailed study of the relationship between water levels and marsh communities, as well as a study of the annual water flow cycle in and around Happel's Meadow would be desirable. This information could be used as a basis for the development of a long term hydrological management plan. Since wetland restoration is the procedure by which a former wetland is restored to its natural, pre-disturbance conditions, the re-establishment of wetland hydrology requires the removal of water control structures or blockage of drainage ditches/tiles.

CLIMATE AND WEATHER

Goal: Gather long term data on precipitation and climate in relation to Happel's Meadow water levels and the resulting effect on flora and fauna.

Objectives:

1. Gather historical weather data.

EDUCATION/RECREATION

Goal: Inform and educate the public about the importance of Happel's Meadow, and wetlands in general.

Objectives:

1. Develop a cooperative working relationship with educational agencies such as school districts and environmental organizations.
2. Develop a facility in or near Happel's Meadow to be utilized for educational activities, research, and storage.
3. Maintain records and information pertinent to Happel's Meadow as a reference library.
4. Develop a public relations/information program that may include brochures, slide programs, and video tapes.
5. Build a boardwalk to allow people to experience the wetland while at the same time confining them to a narrow corridor; thereby minimizing environmental disruption. The intention is to provide accessibility to the handicapped, bicyclists, and to walkers. In addition, build a viewing tower or elevated platform along the boardwalk.

RESEARCH

Goal: Gain knowledge about this wetland to enable responsible management decisions, and ensure that any research is conducted in a manner which preserves the integrity of the site.

Objectives:

1. Recruit knowledgeable people including other government agencies, the private sector, conservation and service organizations to provide technical

assistance and funding and to assist in the data collection effort.

2. Encourage individuals and institutions to conduct pertinent research projects, in order to provide in-depth knowledge of the meadow.

3. Coordinate and control all research activities with the Happel's Meadow Wetland Advisory Committee.

DEVELOPMENT/CONTROL/MANAGEMENT

Goal: Establish guidelines to direct future decisions by the Board of Supervisors regarding allowable development in the area surrounding Happel's Meadow.

Objectives:

1. Develop a "network system" tying together local, state, and federal regulations concerning wetlands. [See appendix regarding Federal Regulation 404 and Chapter 105 including the Sewage Facilities Act] Networking ensures that applicants are aware of state and federal requirements and helps federal, state and local authorities work together more effectively.

2. Require all public works agencies to follow official wetland policies.

3. Apply for grant funds such as those available under the Recreational Improvement and Rehabilitation Act and the Water Conservation Fund for the purpose of acquiring adjacent properties as opportunities occur.

4. When existing township ordinances are followed any development proponent should be compatible with the functions of the wetland. Environmentally sensitive site planning of adjoining properties is necessary to protect the wetland's environmental, scenic, scientific and educational values.

5. Purchase conservation easement deeds with landowners who border the wetlands, or as an alternative, develop a wetlands 'registry'. Consider opportunities to acquire adjoining property to expand and protect the wetland.

Note: The aforementioned objectives are excerpts from a manual titled *Wetlands Protection: A Handbook for Local Officials*, May, 1990 Department of Environmental Resources. These objectives are suggested for Happel's Meadow as well as for any declared wetland within the township.

ENFORCEMENT

Enforce policies and procedures as outlined in this document, including federal and state wetland regulations.

III. POLICIES AND PROCEDURES

COMMITMENT TO PRESERVATION

The Washington Township Supervisors are faced with the challenge of balancing and integrating potentially conflicting uses of Happel's Meadow and surrounding properties. In addition, as land managers they must comply with a number of environmental requirements in law to protect and manage Happel's Meadow. The purpose of this management plan is to provide general guidance on basic ecological issues and to comply with applicable wetland laws and regulations.

The people who manage the wetland must be aware of activities happening inside Happel's Meadow Wetland, as well as in the surrounding area, that may impact negatively on the wetland ecosystem. It is the responsibility of Washington Township to protect Happel's Meadow. When Happel's Meadow Wetland is threatened the Township must take the necessary steps to protect it.

It is the commitment to the preservation of Happel's Meadow Wetlands that has brought about the development of this Management Plan.

FLORA AND FAUNA

Any removal, alteration or introduction of flora or fauna shall be approved by the Happel's Meadow Wetland Advisory Committee and the Washington Township Board of Supervisors. Any activity of this nature requires a plan. Minor removal of common items shall only require the approval of the Happel's Meadow Advisory Committee.

GEOLOGY AND HYDROLOGY

Any alteration to the geology or hydrology of the wetland is forbidden without written approval of the Happel's Meadow Wetland Advisory Committee and the Washington Township Board of Supervisors. Any such activity must be carried out in accordance with all local, state and federal regulations.

EDUCATION/RECREATION

Only limited access to the meadow for field trips is permitted. It is preferred that education groups remain on designated trails or the boardwalk. Any group considering activities off designated trails or the boardwalk must be granted permission from the Happel's Meadow Wetland Advisory Committee. Written permission will be issued following approval. Description and location of activities must be provided before approval can be given.

RESEARCH

All research conducted within the meadow must be for the purpose of providing information about Happel's Meadow or to provide benefit to the flora and/or fauna of Happel's Meadow.

Those wishing to conduct research must have the approval of the Happel's Meadow Wetland Advisory Committee. A written proposal must be submitted before approval. All research activity must be conducted in an ethical and professional manner.

Happel's Meadow policy discourages specimen collection. Such collection may occur only with written permission. A detailed plan for such activities must be submitted to the advisory committee before permission is granted.

Photographic recording of Happel's Meadow plant and animal community, rather than physical removal of actual species, is the preferred method for record keeping. The inventory committee will collect and catalog all photographic records.

A database containing the following information will be gathered by the inventory committee: natural history, species categories, geology, hydrology, weather and other monitoring data. The inventory committee will report to the advisory committee annually.

DEVELOPMENT

The Happel's Meadow Wetland Advisory Committee is concerned about the impact of salt used on the roads in snowy and icy weather. We are

also concerned that spraying for weed control along Route 16 by PennDot is potentially damaging to the desirable natural plant and animal life of the wetland. Such spraying must be discontinued. If action must be taken, a vegetation management plan may be submitted to the Advisory Committee for approval. Any efforts to put additional roads through or adjacent to the wetlands should be resisted.

No structures are to be permitted within the current site, with the exception of a boardwalk and a viewing tower. Trash cans will be maintained by the township.

Signs are for educational purposes and/or public notification of rules and regulations only.

Plans for development adjacent to the wetland that could have an impact on it must be submitted to the Washington Township Board of Supervisors.

ENFORCEMENT/USE REGULATIONS

The intent of these use regulations is to protect the integrity of the wetland.

Enforcement of Happel's Meadow Wetland policy and regulation will be carried out by the Washington Township Police Department and code Enforcement Officer, or by other persons designated by the Washington Township Supervisors.

Groups wanting access to Happel's Meadow must contact the Township Office. Their request will be referred to the Chairperson of the Advisory Committee, who will place the request on the next meeting's agenda, and respond within 60 days of the initial request. Individuals or small groups seeking permits for other activities must contact the township office. A set of use regulations should be developed and posted. Regulations should include the following:

1. Trail Bikes / Off-Road Vehicles

- A. Trail bikes, off-road vehicles, snowmobiles and all other similar motorized vehicles are prohibited within the wetland boundaries.

2. Fuel Wood and Timber Removal

- A. Cutting of fuel wood or removal of live or downed timber is prohibited unless expressly permitted by approval of the wetland committee and township supervisors.
- B. Any removal of timber that is permitted must be done in accordance with local, state and federal regulations.

3. Camping

- A. Camping within wetland boundaries is prohibited. (Note: This could be changed should an appropriate site become available.)
- B. Open fires are prohibited.

4. Removal of Plants or Animals

- A. Picking, digging, cutting, damaging or otherwise removing any living plant or animal is prohibited without written authorization by the wetland committee.

5. Introduction of Plants or Animals

- A. The transplanting of any foreign or native plant or animal into the wetlands is restricted. Specific written authorization must be obtained from the wetland committee.

6. Soil Removal or Soil Addition

- A. The removal of soil or addition of soil to Happel's Meadow is prohibited without written authorization by the wetlands committee and formal approval by the Washington Township Board of Supervisors.
- B. Any authorized soil addition or removal must meet all local, state and federal regulations.

7. Hiking

- A. Hiking within the wetlands is prohibited except along designated pathways and at viewing stations designated by Happel's Meadow Wetland Committee.

8. Photography

- A. Photography of plants and animals is encouraged provided this activity does not damage or harm Happel's Meadow Wetland plants or animals.

9. Sporting Uses

- A. Hunting, fishing, target shooting and trapping are prohibited.

10. General Use Regulations

- A. Destruction of property, posting of signs and littering are prohibited.
- B. Visitors must remain on the designated pathways.
- C. Open dawn to dusk only.

CONTROL/MANAGEMENT

Control and management of Happel's Meadow Wetland policies and procedures should be carried out in the following manner:

- A. The Washington Township Board of Supervisors will be responsible for all final decisions related to Happel's Meadow Wetland policy and procedure.
- B. The Happel's Meadow Wetland Advisory Committee will act as an advisory board to the Washington Township Supervisors.

V. Appendix

Section 404

Enacted by the Congress in 1972, Section 404 of the federal Clean Water Act created the main federal program regulating wetlands. Section 404 prohibits the discharge of "dredged" or "fill" material into the waters of the United States without a permit. Violators are subject to fines as well as jail penalties. According to the Act, a permit is required for:

any discharge of dredged or fill material ... incidental to any activity having as its purpose bringing an area of the navigable waters into a use to which it was not previously subject, where the flow or circulation of navigable waters may be impaired or the reach of such waters reduced...

"Waters of the United States" include all waters and wetlands--even isolated wetlands--that may affect interstate commerce. For instance, potential use by migratory waterfowl, and recreational use by people from across state lines qualify as interstate commerce.

The U.S. Fish and Wildlife Service and the National Marine Fisheries Service also have important advisory roles in the Section 404 program, and other governmental agencies, industry, and the public can all play an important role in commenting on public notices of permit application or participating in hearings or other information-gathering activities.

Office to Contact:
U.S. Army Corps of Engineers
Baltimore District
Regulatory Branch
P.O. Box 1715
Baltimore, MD 21203
(301) 962-3670

Chapter 105

The Chapter 105 permit program, administered by DER, is the cornerstone of the state's wetlands protection. The Chapter 105 program, created by the Dam Safety and Encroachments Act, requires permits for constructing, operating, maintaining, modifying, enlarging, or abandoning any dam, water obstruction, or "encroachment." An encroachment is any structure or activity that changes, expands, or diminishes the course, current, or cross-section of any watercourse, floodway or body of water, including wetlands.

The Chapter 105 program covers more activities than the federal Section 404 program, which covers only dredge and fill activities. **Virtually any activity that would disturb a wetland requires a Chapter 105 permit.**

Offices to Contact:

Division of Waterways and Storm Water Management
Bureau of Dams and Waterway Management
Department of Environmental Resources
P.O. Box 2357
Harrisburg, PA 17105
(717) 541-7904

Division of Rivers and Wetlands Conservation
Bureau of Water Resources Management
Department of Environmental Resources
P.O. Box 1467
Harrisburg, PA 17105
(717) 541-7802