

Pennsylvania Wetland Replacement Project Monitoring Report Summer 2000



Waterfowl nesting structures in the Howard wetland.

Tom Ridge, Governor
Commonwealth of
Pennsylvania

James M. Seif, Secretary
Department of Environmental
Protection

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DEP Visits Restored Wetlands

Summer 2000 Field Observations of Wetlands Restored with Funds from the Pennsylvania Wetland Replacement Project

Pennsylvania's Department of Environmental Protection staff joined representatives from the U.S. Fish and Wildlife Service, the PA Fish and Boat Commission and the Chesapeake Bay Foundation to evaluate 21 wetland restorations in July and August completed under the Pennsylvania Wetland Replacement Project. The sites have been assessed to determine how successful they are in providing wetland functions and value and collect information relative to the development and establishment of soils, hydrology and plant communities including vegetative type. The vegetative type listed with each project description is the proposed vegetation for the site. The descriptor is taken from the Cowardin system of wetland classification. In that system, PEM is palustrine emergent, plants that die every year, PSS is palustrine scrub-shrub, and PFO is palustrine forested.

This is Monitoring Year Two for some of the sites, and photos have been provided to showcase "before and after" conditions. DEP is committed to monitoring all sites for at least five years. Sites that will be monitored for a longer term will be selected at the end of the five-year monitoring period.

Between 1996 and 1999, a total of 50.3 wetland acres on 21 sites in 11 different counties were restored. When completed, all sites were surveyed for size and to document their "as-built" conditions. An "as-built" plan provides DEP with the shape and contours of the restored wetland. The purpose of the Pennsylvania Wetland Replacement Project is to improve mitigation success by targeting funding and staff efforts toward larger, more suitable, wetland replacement sites. Twenty of 21 wetland restoration projects have achieved an acceptable level of success. One site, which has not been successful, is being evaluated for remedial action and will be modified to improve its

performance.

Wetlands offer many benefits for property owners such as wildlife habitat, improvement of water quality and the enjoyment of unique and special plants and wildlife. If you are interested in restoring these important natural resources, please contact DEP at 717-787-6827.

The following screens summarize the condition of the restoration sites. Where available, photos have been included.

Ryan Property - Adams County

Date Constructed: July 1997

Monitoring Year: 2

Current Size: 2 acres

Vegetative Type: PEM

The Pennsylvania Wetland Replacement Project partnered with the U.S. Fish and Wildlife Service (USFWS) to restore this wetland. Plant materials provided by the Pennsylvania Wetland Replacement Project have helped Mr. Rusty Ryan meet his goal of attracting a variety of wildlife species. He has reported seeing over 140 different species of birds including waterfowl and wading birds.



The Ryan site in July 2000.

Skopic Property - Adams County

Date Constructed: October 1998

Monitoring Year: 2

Current Size: 4.7 acres

Vegetative Type: PFO

The goal for the Skopic site was to create a forested floodplain. This 4.7-acre site was planted with pin oak and green ash saplings. While there is evidence that the site was seasonally saturated as expected in the spring, the annual inspection revealed that many of the tree saplings did not survive the 1999 drought. Future monitoring visits will determine if remedial action is required.

Wynfield Business Park - Lancaster County

Date Constructed: November 1999
Current Size: 1.75 acres

Monitoring Year: 1
Vegetative Type: PSS

In cooperation with the Lititz Run Watershed Alliance and the tenants of the business park, the wetlands in the floodplain of Santo Domingo Creek (upstream of the Santo Domingo Project described later) were restored. This site has been planted with various tree and shrub saplings to create a riparian buffer as well as a wetland. The site withstood a very localized flooding event in June 2000.

Siegel Property - Union County

Date Constructed: October 1997
Current Size: 0.58 acres

Monitoring Year: 2
Vegetative Type: PEM

The site is providing a water quality benefit for a tributary of Buffalo Run by trapping sediment and nutrients from two upstream farm fields. Wetland vegetation is healthy and vigorous and is moving upslope from the inundated area. Irregular grading has been very effective in creating small islands and pools. This site has been so successful that a second survey is needed to detect increases in wetland size and has been scheduled for October 2000.

Santa Domingo - Lancaster County

Date Constructed: October 1998
Current Size: 2.6 acres

Monitoring Year: 2
Vegetative Type: PEM

As part of a larger watershed restoration and protection effort by Warwick Township and the Lititz Run Watershed Alliance, the Pennsylvania Wetland Replacement Project was a financial partner to the project. This wetland is assimilating sediment and nutrients by managing a large percent of the stormwater flow in the Santo Domingo Creek. The photos below document the progress of the site from construction year one to construction year two, a trend that is becoming apparent.



Santo Domingo in
September 1999.



The same site in
July 2000.

Lake Naomi - Monroe County

Date Constructed: October 1996
Current Size: 3.5 acres

Monitoring Year: 2
Vegetative Type: PEM

This USFWS-designed wetland restoration project, located in an abandoned sand and gravel mine, was completed in 1996. The goal of the project was to provide wildlife habitat. During the 2000 field visit, evidence of use by deer, waterfowl and songbirds was observed. While the site seems to be progressing slowly, there has been positive progress in every monitoring year.



Lake Naomi in July 2000.

Good Farm – Lancaster County

Date Constructed: August 1999
Current Size: 0.26 acres

Monitoring Year: 1
Vegetative Type: PEM

The wetland at the Good Farm is part of a larger demonstration project in the Hammer Creek watershed. This project was completely vegetated by *Polygonum* spp. on the day of the field inspection.

Tarutis Property - Monroe County

Date Constructed: October 1997
Current Size: 0.40 acres

Monitoring Year: 2
Vegetative Type: PEM

This restoration effort involved the removal of old fill from a peat bog. Wetland vegetation in bog communities is very unique and has covered approximately 30 percent of the site over the last two years. This is an excellent sign that over time native bog species will revegetate the entire site.



Vegetation has covered approximately

30% of the site over the last two years.

Carlisle Property - Warren County

Date Constructed: November 1998
Current Size: 4.2 acres

Monitoring Year: 2
Vegetative Type: PEM

This 4.2-acre project has not reached its full potential. DEP is planning remedial action for the spring of 2001. While the drought hurt the project, the upper area is holding water and wetland vegetation is developing. The lower and larger area is dominated by seasonal upland vegetation.

Wenner Property - Columbia County

Date Constructed: June 1997
Current Size: 1.7 acres

Monitoring Year: 2
Vegetative Type: PEM

The progress of this site over the last year is remarkable. While some plants did not survive through the first two years, the photo below documents improved conditions this year. A remedial planting scheduled for 2000 was not necessary. Take note that this site was established adjacent to an existing scrub-shrub wetland. Habitat diversity and wildlife use are high. The owner reports several different species of waterfowl.



Vegetation has shown marked improvement in one year.
Photo from July 2000.

Klotz Property - Lycoming County

Date Constructed: June 1999
Current Size: 1 acre

Monitoring Year: 1
Vegetative Type: PEM

Just one of many conservation practices on the Klotz farm, the wetland restoration was completed in cooperation with NRCS. At the base of a fallow field, the wetland buffers the creek from sediment and nutrients.

Steward Property - Huntingdon County

Date Constructed: July 1997
Current Size: 2 acres

Monitoring Year: 2
Vegetative Type: PEM

The series of three wetlands is vegetating nicely. The landowner's restoration goal was to expand woodcock habitat. Shrubs and trees provided by the Pennsylvania Wetland Replacement Project and planted by the landowner are thriving. The alders and pin oaks will provide resting and nesting cover. The emergent vegetation present at the site is also very healthy and diverse. The photos below document the changes in vegetation from 1999 to 2000.



Photo taken in May 1999.



Photo taken in July 2000 in the same area as the above photo.

Hemlock Girl Scout Council Property - Huntingdon County

Date Constructed: September
Current Size: 1 acre

1998 Monitoring Year: 2
Vegetative Type: PEM

Vegetation is well established at this site. Irregular grading was very effective in creating islands and pools. This area has been used this summer as an educational tool for campers and has been very successful in teaching the difference between a wetland and a pond.



Construction in
September 1998.



Same site in
July 2000.

Emerick Property - Cambria County

Date Constructed: July 1997
Current Size: 1.3 acres

Monitoring Year: 2
Vegetative Type: PEM

As the Environmental Education Center for Cambria County, this site was developed to create a variety of different aquatic habitats by restoring emergent wetlands adjacent to a pond. The project has been very successful (over 200 students have visited) and this year, on the day of the monitoring visit, Mr. Joe Emerick was training 30 school teachers.



The Emerick site in September 1998.



The site from the same vantage point in August 2000.

Pfadt Property - Erie County

Date Constructed: August 1998
Current Size: 4 acres

Monitoring Year: 2
Vegetative Type: PEM

This site is another excellent example of wetland restoration. Ditches from the late 1950s or early 1960s were filled in and the site was seeded to provide a jumpstart and to compete with reed canary grass in the area. Currently, the vegetation on the site is healthy and robust and the area is seasonally saturated. The wetland is buffering the West Branch French Creek, a tributary to French Creek.



The Pfadt wetland restoration in early Fall 1998.

Stout Property - Huntingdon County

Date Constructed: November 1999
Current Size: 1 acre

Monitoring Year: 1
Vegetative Type: PEM

The goal of the Stout wetland restoration is wildlife habitat. A secondary benefit will be retention of sediment from an upslope pasture area. The wetland has been fenced from cattle. This year's monitoring showed some plant mortality due to Canada goose predation. DEP will follow this site closely to determine if some remedial action is necessary.

Honeybrook Golf Course - Chester County

Date Constructed: July 1999
Current Size: 1.5 acres

Monitoring Year: 1
Vegetative Type: PEM

The wetland restoration at the Honeybrook Golf Course will buffer a tributary to the Brandywine Creek from sediment and nutrients from a newly constructed golf course. The golf course voluntarily added the wetland to its landscape during construction. After construction, the site was seeded with a wetland meadow seed mix. This first year monitoring visit found numerous volunteer plant species along with the planted species.

Lauden Farms - Dauphin County

Date Constructed: September 1999
Current Size: 0.29 acres

Monitoring Year: 1
Vegetative Type: PEM

While this is not a large wetland, it is located at an extremely good location at the base of a slope pasture. The site was dominated by cattails after just one growing season. The wetland is just one of many conservation practices at the Lauden farm.

Howard Property - Mercer County

Date Constructed: September 1997
Current Size: 11.5 acres

Monitoring Year: 2
Vegetative Type: PEM

This site is performing very well. The development plan emphasized the creation of a diverse ecosystem consisting of several deep-water channels and submerged terraces to enhance wildlife diversity. All of the design features are present; four different water regimes are represented. The vegetative community is diverse and includes numerous emergent species and some shrubs. The

wildlife observed included frogs, deer, fox, muskrat, beaver and several species of birds including a little green heron.

Steinberger Property – Centre County

Date Constructed: August 1999

Current Size: 3 acres

Monitoring Year: 1

Vegetative Type: PEM

With the assistance of NRCS and the enthusiasm of the landowner, this old field has been restored to a wetland. The goal of the wetland is to attract reptiles and amphibians, an interest of the landowner. Spring 2001 will be the first real test of the wetlands attracting powers. Water levels are optimal and the vegetation is progressing nicely.



The Steinberger wetland 11 months after construction.



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