Chapter 11 E. Case Study: Pennsylvania's Conservation Reserve Enhancement Program

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Overview of Pennsylvania's CREP

Pennsylvania's Conservation Reserve Enhancement Program (CREP) is a partnership between the United States Department of Agriculture (USDA), the Pennsylvania Game Commission, the Pennsylvania Department of Environmental Protection, the Chesapeake Bay Foundation, Ducks Unlimited and many additional state agencies and non-governmental organizations. The Pennsylvania CREP partnership is working with agricultural producers and rural landowners to reduce erosion entering into the Chesapeake Bay by more than 14 million tons, reduce sediment loading by 193,000 tons, and nitrogen and phosphorus loading by more than 26 million pounds per year. The goal is to enroll 265,000 acres of highly erodible cropland and streamside cropland or pastureland into this 10- to 15-year program, plant the areas in native hardwood trees or perennial herbs and grasses, and restore riparian forest buffers that will filter sediment and nutrients from runoff water and provide wildlife habitat.

The CREP is a voluntary program available to landowners in 59 Pennsylvania counties located within the Chesapeake Bay and Ohio River watersheds. Among other things, the goals of CREP are to:

- Restore and enhance riparian habitat corridors next to streams and wetlands by enrolling at least 45,000 acres of buffers, grass filter strips and wetlands; and
- Restore and enhance grassland habitats for declining grassland-dependent wildlife and improve water quality by enrolling 220,000 acres of highly erodible cropland in conservation cover plantings.

To participate in CREP, landowners enter into 10 to 15 year contracts with the USDA, agreeing to establish and then maintain conservation practices for the life of the contract. Landowners receive technical assistance, a conservation plan for their land, financial assistance to pay for installation of the conservation practices, and annual rental payments. They also may receive a one-time incentive payment for choosing high-priority conservation practices such as forested riparian buffers, grass filter strips adjacent to streams, wetland restorations, and grassed waterways.

Eligible land includes highly erodible cropland that meets cropping history requirements (defined by USDA) and land within 180 feet of a stream. The type of land enrolled in CREP varies greatly from farm to farm. Active farmers often continue to farm their most productive land and enroll buffers along streams and marginal land, such as steep slopes and droughty soils. If needed, they may also choose to install grassed waterways or contour buffer strips in crop fields. Other farmers and rural landowners may enroll all of their eligible fields. Let's take a closer look at how CREP works, by visiting a couple of farms in central Pennsylvania that have enrolled in the program.

Case study – southeastern Northumberland County farm

This farm is located in a scenic, rural setting in southern Northumberland County. The farm consists of 400 acres in two parcels about one mile apart. Most of the acreage is in cropland and pasture. The balance is either forestland or in small woodlots and hedgerows scattered throughout the crop fields. The farm operation includes cash-grain crops (mainly corn and soybeans), beef, and produce. Seventy-nine acres of the farm were enrolled in CREP.

This family-owned farm was enrolled for a variety of reasons. First, the family was interested in good land stewardship. They enrolled their steepest, most erodible fields to reduce soil erosion and agricultural runoff and to minimize the use of farm equipment on the steep slopes. They enrolled the land adjacent to the stream that flows through their pasture to fence the livestock out of the stream thereby protecting the health of both the livestock and the stream. Crop fields adjacent to a forested ridge north of the farm were enrolled because crop damage from wildlife was consistently high. Other fields which produce inconsistent crop yields were enrolled as grass filter strips to buffer adjacent streams. In active crop fields where erosion problems occurred, critical areas were enrolled and grassed waterways were constructed.

Surrounding area

The majority of the land in the surrounding area is agricultural. Generally speaking, agriculture occurs in valleys that are divided by forested ridge tops and hillsides. The habitat types in the landscape surrounding this farm include crop fields, hay fields, livestock pastures, small scrub-shrub areas usually adjacent to low-lying wet meadows, seeps, and small streams. An oak-hickory forested ridge borders the farm to the north. A portion of the top of the ridge is owned and managed by the Pennsylvania Game Commission as a State Game Land. Small woodlots and hedgerows are interspersed within crop fields. Forested and brushy riparian zones are common.

Figure 1. The farm.

Figure 2. The surrounding countryside.

Implemented practices

The conservation practices implemented using CREP included planting a 3.5-acre forested riparian buffer in the pasture coupled with the installation of stream-bank fencing and two livestock crossings. Native hardwood trees and shrubs with wildlife benefits were planted in the buffer area. Other implemented practices included planting grassed waterways in crop fields, cool-season grass filter strips along streams, and cool-season grass fields on highly erodible cropland. All fields enrolled in CREP were planted to a perennial cool-season grass and legume mix containing timothy, orchard grass, red clover, and alsike clover. Tables 1 and 2 provide examples of the level of financial assistance provided for implementing these types of practices.

Figure 3. Planted riparian buffer.

Wildlife benefits

The CREP fields planted to grass and clover are fragmented and small. Field size is between 1.0 and 17.5 acres with an average of 4.1 acres. Although these grass fields may be too small to provide nest sites for most grassland bird species there will be increased opportunities for turkeys and quail to nest and forage for insects. Field and song sparrows, gray catbirds, eastern kingbirds, and cottontails will use the hedgerows between the fields. These same species plus common yellowthroats and willow flycatchers likely will use the newly planted riparian buffer once it becomes well established. Many of these species have experienced population declines in the region primarily because of a lack of habitat. The riparian buffer habitat, although narrow (70 feet wide), will also help to improve water quality, which will benefit the aquatic species found in the stream.

The farm acreage currently enrolled in CREP may or may not be returned to agricultural use after the contract expires (ten years). This depends largely on the owner's long-term plans and if programs such as CREP that provide technical and financial assistance to maintain land in conservation cover exist into the future.

Case study – southwestern Northumberland County farm

This farm is located in a scenic, rural setting on the border of Northumberland and Dauphin Counties. The farm is approximately 102 acres in size with most of the acreage in cropland. The owner used to farm the fields himself but started renting them to his neighbor a few years ago. The neighbor planted the fields mainly in corn and soybeans. The remainder of the farm is forestland and riparian areas dominated by a variety of grasses. Some of the riparian areas were once used for pasture and hay. The farm includes an approximately 1/2-mile stretch of a fifth order stream that drains into the Susquehanna River. Sixty-seven acres of the farm were enrolled in CREP.

The farmland was enrolled in CREP to improve the overall wildlife habitat. The owner is particularly interested in providing habitat for grassland birds such as ring-necked pheasants and eastern meadowlarks, which were present when he was a child growing up on the farm. He is also interested in providing habitat for cottontails and white-tailed deer. The owner is an avid sportsman who would also like to improve hunting and fishing opportunities on his land. He is committed to being a responsible steward of the land and wishes to reduce soil erosion and agricultural runoff to improve water quality in the streams that flow through his property. The owner had already begun establishing wildlife habitat on his land by planting warm-season grasses and evergreen trees. The opportunity to receive financial assistance, making it possible to establish larger areas of wildlife habitat at one time, was a big incentive.

Surrounding area

The area surrounding this farm is very similar to that surrounding the southeastern Northumberland County farm described earlier; farmed valleys divided by expanses of forested ridgetops and hillsides. An oak-hickory forested ridge borders this farm to the south. A unique feature in the landscape is an adjacent farming operation of over 1,000 acres that includes a cash-grain operation and a pheasant-hunting preserve. Numerous small (one to three acres), warm-season grass and sorghum fields are planted for hunting on the preserve.

Implemented practices

The CREP conservation practices implemented on the farm included planting 13 acres of forested riparian buffers in two locations. One of the buffers is 180 feet wide on both sides of a small (first order) stream. The second buffer is 180 feet wide and is located on one side of the fifth order stream (there is an existing forested riparian buffer on the other side). Both of the new riparian buffers were planted in native hardwood trees and shrubs such as white oak and silky dogwood, which are beneficial to wildlife. A few groups of four to five evergreen trees were planted as well.

Warm-season grasses with 15-foot wide cool-season grass and legume borders were planted in three fields totaling 54 acres (10, 16, and 28 acres each). Two, 1/2-acre food plots adjacent to the grass fields are planted in corn each year. The warm-season grass fields adjacent to neighboring properties and along the road that bisects the farm contain a mix of big bluestem, indiangrass, little bluestem, sideoats grama and 15 wildflower species (most native to the area) including partridge pea (a native legume), black-eyed susan, purple coneflower, and blanketflower. The rest of the warm-season grass fields were planted in switchgrass. The cool-season grass and legume field borders were planted in timothy and ladino clover. Tables 1 - 3 provide examples of the level of financial assistance provided for implementing these types of practices.

Wildlife benefits

Certainly implementation of the CREP practices will improve the overall value of the farm as early-successional habitat. The three fields planted with warm-season grasses are 10, 16, and 28 acres in size. The 16- and 28-acre fields are separated by one of the riparian buffers, while a road separates the 16- and 10-acre fields. Given that meadowlarks can occur in both native warm-season and cool-season grass fields

and generally require fields of 10 to 15 acres and larger, it is plausible that the landowner will get his wish of being able to watch meadowlarks in his farm fields like he did when he was growing up. Henslow's and vesper sparrows, as well as bobwhite quail, all of which have experienced population declines in the region, may also benefit.

The 15-foot wide strips of cool-season grasses and legumes and 1/2-acre food plots planted along the edges of the warm-season grass fields will provide turkey, quail, and pheasant nesting and foraging opportunities. The food plots will also provide foraging opportunities for white-tailed deer.

The wide riparian buffers may provide additional habitat for common yellowthroats, willow flycatchers, and yellow warblers, among other songbirds. The riparian buffers will also help reduce soil erosion and runoff from adjacent steep slopes, thereby improving water quality and habitat for aquatic organisms in the streams. Streams with good water quality adjacent to farmland also provide excellent habitat for wood turtles and a variety of dragonflies.

The forested riparian buffers will likely be maintained after the CREP contracts expire. The grass fields currently enrolled in CREP may or may not be returned to agricultural use after the CREP contracts are complete (ten years). As in the case of the Southeastern Northumberland County farm, this depends largely on the owner's long-term plans and if programs such as CREP exist into the future that provide technical and financial assistance to maintain land in conservation cover.

Eight of the 13 states covered by this manual (DE, MD, NJ, NY, PA, VA, VT, and WV), and the District of Columbia have CREP programs. To find out how to enroll your farmland, contact the USDA Farm Service Agency office in your state (Appendix A).

Biographies

Colleen DeLong is a biologist with the Natural Resources Conservation Service and the Pennsylvania Game Commission. She helps farmland owners and operators enroll land in USDA Farm Bill programs, especially Pennsylvania CREP. She has been helping private landowners manage their forest and farmland habitat since 1992. She received her M.S. in Ecology from The Pennsylvania State University.

Jeff Finn is a biologist with the Natural Resources Conservation Service and the Pennsylvania Game Commission. Jeff has been helping landowners in Ohio and Pennsylvania establish wildlife habitat and conservation practices through the CREP program since 2000. He received his B.A. in Environmental Studies from Ohio Wesleyan University and an A.A.S. in Fish and Wildlife Management from Hocking College.

Table 1. Example of financial assistance provided for ten acres of cool-season grass planting.

Seed	
Timothy (6 lbs/acres @ $1.25/lb.)	$75.00
Red clover (4 lbs/acre x $1.00/lb)	$40.00
CREP share (100%)	$115.00
Fertilizer	
150 lbs based on soil test @ $170.00/ton	$127.50
CREP share (50%)	$63.75
Fertilizer Application	
$3.50/acre	$35.00
CREP share (100%)	$35.00
Lime	
None required per soil test	
Site Prep and Seeding	
$15.00/acre	$150.00
CREP share (100%)	$150.00
Total Assistance	**$364.00**

Table 2. Example of financial assistance provided for ten acres of native warm-season grass planting.

Seed	
Big bluestem (4 lbs/acre @ $10.00/lb)	$400.00
Indiangrass (2 lbs/acre @ $14.00/lb)	$280.00
Switchgrass (2 lbs/acre @ $7.00/lb)	$140.00
Forb mix (1 lb/acre @ $26.00/lb)	$260.00
CREP share (100%)	$1,080.00
Site Prep and Seeding	
$15.00/acre	$150.00
CREP share (100%)	$150.00
Total Assistance	**$1,230.00**

Table 3. Example of financial assistance provided for a 1 acre, 50-foot wide riparian buffer planting

Fencing	
870 ft. x $1.50/foot	$1,305.00
CREP share (100%)	$1,305.00
Tree Seedlings and Accessories	
100 seedlings @ $3.00 each	$300.00
100 tubes/shelters @ $3.00 each	$300.00
100 stakes @ $1.00 each	$100.00
CREP share (100%)	$700.00
Labor	
$3.00/seedling	$300.00
CREP share (100%)	$300.00
Tree Seedling Maintenance	
Herbicide treatment @ $50/acre	$50.00
CREP share (100%)	$50.00
Total Assistance	**$2,355.00**