

Conservation District Involvement with Nutrient Trading - Best Management Practices, Costs, and Credits Generated

Agricultural Advisory Board

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Purpose

- County conservation districts role in Nutrient Trading Program
- BMP's and nutrient trading credits
- BMP's cost versus credit generation benefit

DEP Grants

■ Trading Grants

- Bedford, Berks, Chester, Cumberland, Dauphin, Lebanon, Mifflin, Potter, Somerset, and Union Conservation Districts, Pennsylvania Association of Conservation Districts (PACD)

■ Local Trading Project

- Lancaster CD
- Cumberland CD

■ **10 districts completed grants that generated 59,789 Nitrogen Credits**

Nutrient Trading Grant BMPs

- No-Till
- Cover Crops
- Manure Storage
- Farm Lane Stabilization
- Mortality Composters
- Riparian Forest Buffers
- Stream Bank Fencing w/ Off Stream Watering
- Rotational / Precision Grazing
- Abandoned Mine Land Reclamation

No-Till

- 2,246 Acres
- 39,821 N Credits generated
- Single year credits
- Installation cost = \$40,764 (incentive)
- 1 Acre = 17.7 nitrogen credits (average)
- 1 Credit = \$1.02 installation cost (incentive average)





Rye

Cover Crops

- 2,481 Acres
- 49,668 Nitrogen credits generated
- Single year credits
- Installation (incentive) cost = \$80,677
- 1 Acre = 20 nitrogen credits (average)
- 1 Credit = \$1.62 installation cost
(incentive average)



Winter Wheat

Manure Storage

- 2 Structures (above baseline requirements)
- 6,514 Nitrogen credits
- Installation cost = \$104,068
- 1 Structure = 3,257 nitrogen credits (average of 2 structures)
- 1 Credit = \$15.98 installation cost (average)
- BMP generates credits, each year, for multiple years
- Installation cost over 10 years = \$1.60 per N credit

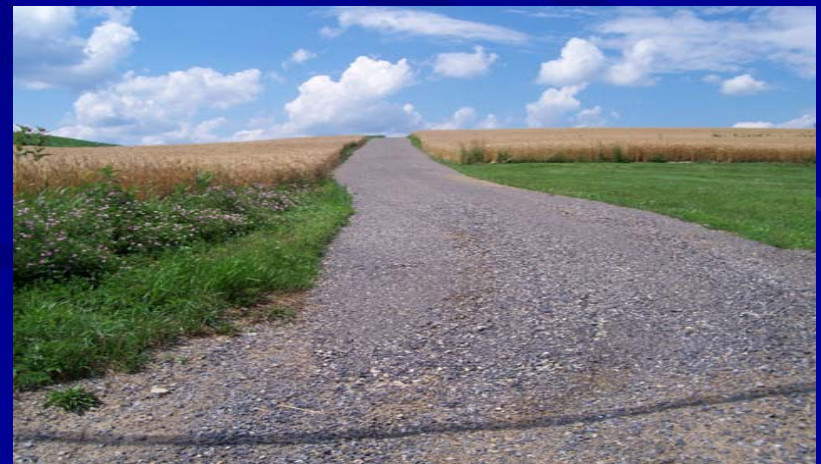
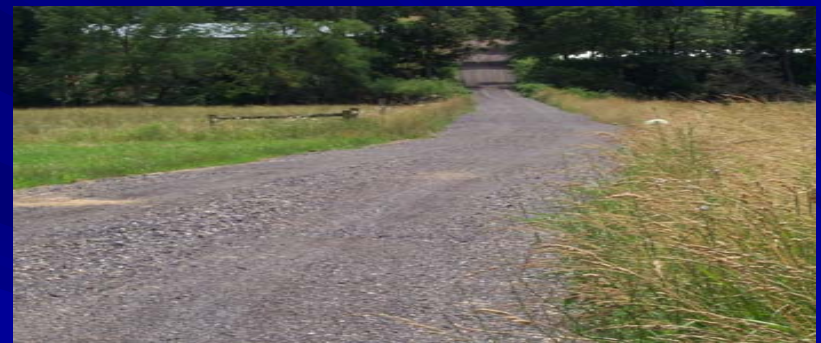


CAUTION
LIQUID
MANURE
STORAGE
AREA



Farm-lane Stabilization

- 15,452 feet stabilized
- 146 N Credits
- Installation cost = \$56,907
- 106 feet = 1 N credit (approx)
 - 1 foot stabilized = .01 credits
- 1 credit = \$390 installation cost
- BMP generates credits, each year, for multiple years
- Installation cost over 10 years = \$39 per N credit



Mortality Composters

- 3 composters
- 6 Nitrogen credits
- Installation cost = \$96,702
- 1 Composter = 2.4 nitrogen credits (average)
- 1 Credit = \$13,430 installation cost (average)
- BMP generates credits, each year, for multiple years
- Installation cost over 10 years = \$1,343 per N credit



Riparian Forest Buffer

- 2.4 Acres
- 86 Nitrogen credits
- Installation cost = \$5,449
- 1 Acre = 36 credits (average)
- 1 Credit = \$63.36 installation cost (average)
- BMP generates credits, each year, for multiple years
- Installation cost over 10 years = \$6.34 per N credit



Stream-bank Fencing

- Protects 60 acres
- 3,377 Nitrogen Credits
- Installation Cost = \$9,750
- 1 Protected acre = 57.23 Nitrogen Credits (average)
- 1 Credit = \$2.84 installation cost (average)
- BMP generates credits, each year, for multiple years
- Installation cost over 10 years = \$0.29 per N credit



Rotational / Precision Grazing

- Protects 13 acres
- 11 Nitrogen Credits
- Installation Cost = \$11,743
- 1 Protected acre = 1 Nitrogen Credits (average)
- 1 Credit = \$1,068 installation cost (average)
- BMP generates credits, each year, for multiple years
- Installation cost over 10 years = \$106.8 per N credit



Manure Trenching & Hybrid Poplars

- Goal to plant 1 million hybrid poplar trees
- Export manure out of Chesapeake Bay Watershed to nutrient deficient lands – 1,081 tons exported
- Trees to be harvested and used for cellulosic ethanol production
- 16,526 N credits generated
- 15.3 N credits per ton exported



Closing up the trench that Contained poultry litter



Vigorous growing poplar stem

Conclusions

- 9 districts completed grants that generated 59,789 Nitrogen Credits
- Certain BMPs deliver more nutrient savings per installation cost
- Certain BMPs are not cost effective to generate nutrient reduction
- Multiple year BMPs deliver “more bang for the buck” over annual BMPs