Natural Resources Conservation Service
Delivering Results for Agriculture and Conservation
NRCS helps private landowners make good conservation decisions.
NRCS can help you...

- Improve Soil Health and Reduce Erosion
- Conserve and Protect Water Resources
- Improve Air Quality and Conserve Energy
- Manage Manure and Nutrients
- Manage Pastures and Grasslands
- Create and Improve Wildlife and Aquatic Habitat
- Manage Forestlands
- Certify or Transition to Organic Farming
- Install a Seasonal High Tunnel
- Restore, Protect and Enhance Wetlands
- Permanently Protect Farm Land
Types of Assistance

- **TECHNICAL** - Conservation planning
- **FINANCIAL** - Cost-share
- All assistance is voluntary
Financial Assistance Programs

• Environmental Quality Incentives Program (EQIP)
• Conservation Stewardship Program (CSP)
• Agricultural Conservation Easement Program (ACEP)
Environmental Quality Incentives Program (EQIP)

• Ag producers & Non-industrial private forestland owners
• For structural and management conservation practices such as
  • Manure storage
  • Barnyard Improvement
  • Organic farming
  • Soil health
Before and After EQIP
Agricultural Conservation Easement Program (ACEP)

- Provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits.

2 Components:
- **Agricultural Land Easements component**: NRCS helps state and local governments and non-governmental organizations protect working ag lands and limit non-agricultural uses of the land.
- **Wetlands Reserve Easements component**: NRCS helps to restore, protect and enhance enrolled wetlands.
Pennsylvania NRCS FY 2018 Investments on Private Working Lands

- Projects: 21,363 Conservation Practices Applied
- CTA: 1,715 Conservation Plans on 212,991 ac.
- EQIP: 424 clients, 49,220 ac., $21.6 M
- CSP: 143 clients, 48,295 ac., $1.4 M
- ACEP:
  - ALE 437 ac. acquired, $572,365 M
  - WRE 112 ac. acquired $472,814
Natural Resources Conservation Service

Contact your local USDA Service Center Today

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National Water Quality Initiative (NWQI)

Ashley Lenig, Program Manager
NWQI PURPOSE

• Implement voluntary agricultural related conservation
• Improve water quality – sediment, nutrients, pathogens
• Focused on a watershed
• Goal: agriculture no longer contributes to impairment
REQUIREMENTS

- At least one quantifiable metric
- Able to report on a regular basis
- Water quality measured against practices implemented
- Aligned with other efforts
CRITICAL SOURCE AREAS

HYDROLOGIC TRANSPORT

https://www.printablediagram.com
RESOURCE CONCERNS

• Primary Resource Concerns:
  • Water quality degradation
    • Nutrients in surface water
    • excessive sediment in surface water
    • excess pathogens and chemicals from manure, biosolids or compost applications in surface water

• Secondary Resource Concerns:
  • Water quality degradation
    • Nutrients, salts, Pathogens, and pesticides in groundwater
    • salts and pesticides in surface water
    • elevated temperature
  • Fish and Wildlife – inadequate habitat
    • Inadequate habitat - water
CONSERVATION PRACTICES

• Conservation Activity Plans

• Core conservation practices
  • E.G.: Waste Storage, Heavy Use Area Protection, No-Till, Cover Crop, Grassed Waterway, Riparian Buffers, Prescribed Grazing

• Supporting conservation practices
  • E.G.: Roofs, Diversion, Fence, Livestock Pipeline & Watering Facility, Stream Crossing, Wetland Creation
SCREENING CRITERIA

• All/Part of the land Must be in the WATERSHED BOUNDARY
• Core CONSERVATION practices that will address pollutant identified

RANKING QUESTIONS

State questions:
• proximity to stream/water body (threatened, ag-impaired, TMDL, specified)
• use of conservation systems
• soil hydrologic group

Local questions:
• specific pollutants/impacts
• soil factors
• stream issues
• systems approach
NATIONAL WATER QUALITY INITIATIVE

• FY 2019, READINESS PHASE
  • Watershed-level assessment
    • Multi-year plan with implementation and funding targets
    • Vulnerable areas, practices needed
    • Partners, monitoring
  • On-farm planning
  • Outreach

• FY 2020, IMPLEMENTATION PHASE
NWQI IN PENNSYLVANIA

Currently approved watersheds:
  • Upper Kishacoquillas Creek
  • Beaver Creek and Upper Yellow Creek

New watershed selections:
  • Warrior Run
  • Swatara Creek – Source water protection pilot
  • Maiden Creek – Source water protection pilot
Approved for Readiness Phase of NWQI
PA BMP REMOTE SENSING PILOT PROJECT

SPONSORED BY: USDA - NRCS
PA - DEP

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ANDY KLING, DATABASE MANAGER, NRCS
Remote Sensing Pilot Project: Potomac Watershed- Pennsylvania

- Provides assurance the Commonwealth is receiving proper credit for Best Management Practices (BMPs) installed without State and Federal cost-share
- Uses a statistically reliable data collection method, in a cost-effective manner
- Determines effectiveness of counting best management practices (BMPs) using aerial photography, reducing the need to visit over 30,000 farms in Pennsylvania’s Chesapeake Bay Watershed
- Involves National Office, Remote Sensing Lab, NGCE, EPA, PA-NRCS, and PA Department of Environmental Protection Agency.
28 IMPORTANT CONSERVATION PRACTICES*

- Diversion
- Windbreak/Shelterbelt
- Pasture Fence
- Field Border
- Lined Waterway or Outlet
- Roof Runoff Structure
- Animal Trails and Walkways
- Terrace
- Vegetative Barrier
- Animal Waste Storage
- Animal Mortality Facility
- Composting Facility
- Spring Development
- Waste Treatment
- Waste Treatment Lagoon
- Water and Sediment Control Basin
- Contour Farming
- Contour Orchard
- Contour Buffer Strips
- Cover Crop
- Riparian Buffer
- Access Control
- Prescribed Grazing
- Heavy Use Area Protection
- Stripcropping
- Tree and Shrub Establishment
- Vegetated Area
- Grassed Waterway

*A crosswalk was needed because the practices in the Bay Model are not named consistently with NRCS practice codes.
Remote Sensing Pilot Project Area

- Potomac Watershed
- Counties Data was Collected
- Chesapeake Bay Boundary
- County Boundaries
Grids – Grids were set up to track the areas complete. Once the grid area was checked for practices it was marked ‘Complete’ in the database along with a date and initials of the data collector. This farm has 48 grids.
Remote Sensing – What Can We See?

Remote Data Collection Finding –
- Grassed Waterway
- Riparian Buffer
- Waste Storage Facility
- Heavy Use Area Protection
This is what the NRCS Planning Data (Toolkit) shows – Nothing. This landowner is a non participant and is doing conservation practices on their own.
Remote Sensing – Field Collection Results

In this example when this farm was visited for a field verification there was an additional heavy use area protection, the other BMPs were correct and on the ground.
PA Remote Sensing Pilot: Project Benefits

- Total of 5,790 farms inventoried in 5 Counties - Adams, Franklin, Fulton, Bedford, Somerset

- Initially 200 Farms selected for on-the-ground spot checks

- A second level review was conducted of an additional 95 Farms
  - 13 staff for data collection and 5 staff for field verification
Remote Sensing Pilot: Deliverables

• Data collected through this pilot is protected by Section 1619 of the Food, Conservation and Energy Act of 2008.

• Data was released to PA Department of Environmental Protection (DEP)

• DEP requested that the data be aggregated to the HUC 12 level.
Remote Sensing Pilot: Results Were Significant

• 15,787 total practice instances were identified as part of this pilot project.

• This serves a baseline of conservation BMP’s present on the ground. By comparison, the toolkit data contained in NCPDB only identified 4,226 of the practice instances.
Remote Sensing: Moving Forward

• Protocols and Procedures are currently in place, and work
• Database is built and is scalable to any project size
• ERSL has experience performing this type of work
• The initial development that was completed will allow this project concept to be used for a variety of projects on varying landscapes
• The remote sensing approach allows for a total landscape inventory and can develop a geospatial baseline of conservation
Conservation Practices Applied

- Fiscal Year 2017 - 540
- Fiscal Year 2018 - 833
- Fiscal Year 2019 (ends 9/30/19) - 632
- Total: 2,055 as of 7/31/19
OPPORTUNITIES?

QUESTIONS?

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