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Delivering Results for Agriculture and Conservation





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**NRCS helps private landowners make
good conservation decisions**





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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





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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





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Before and After EQIP





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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



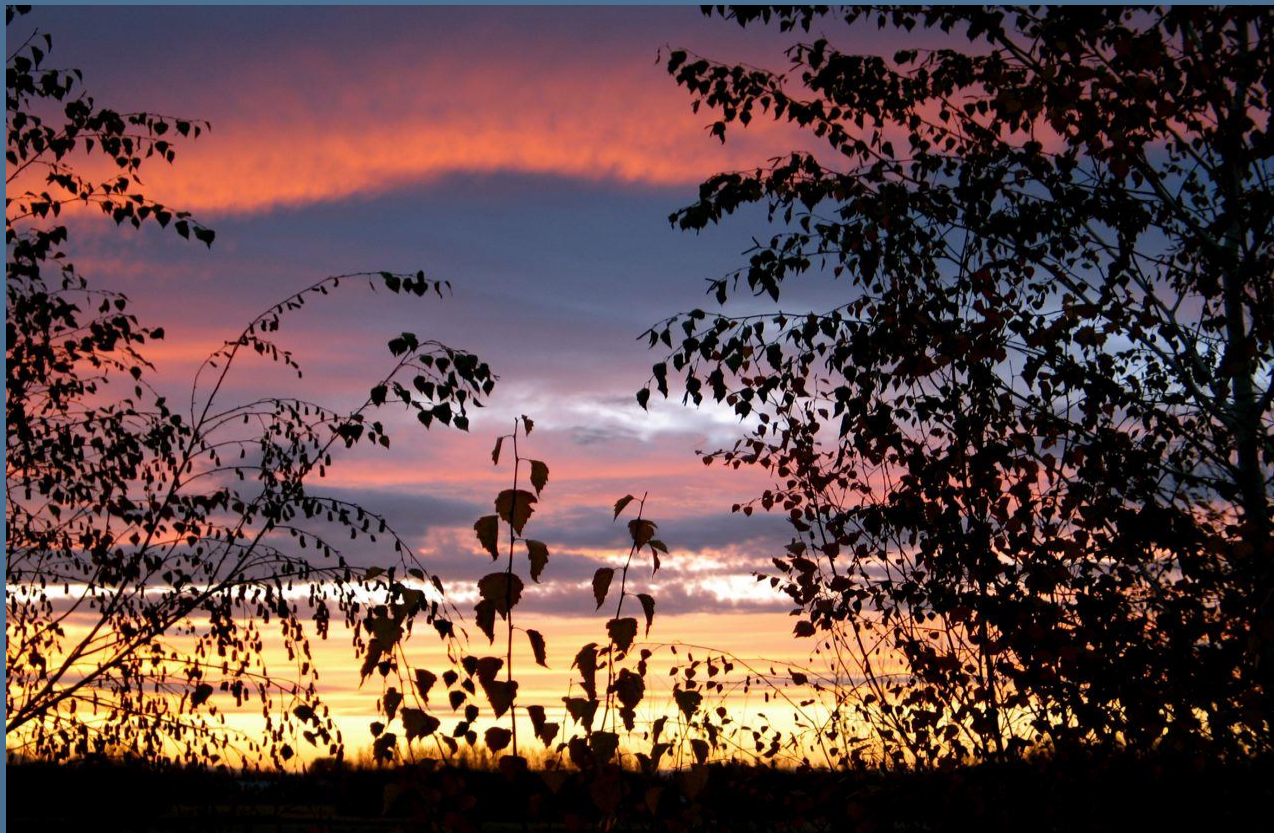
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National Water Quality Initiative (NWQI)

Ashley Lenig, Program Manager



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NWQI PURPOSE

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



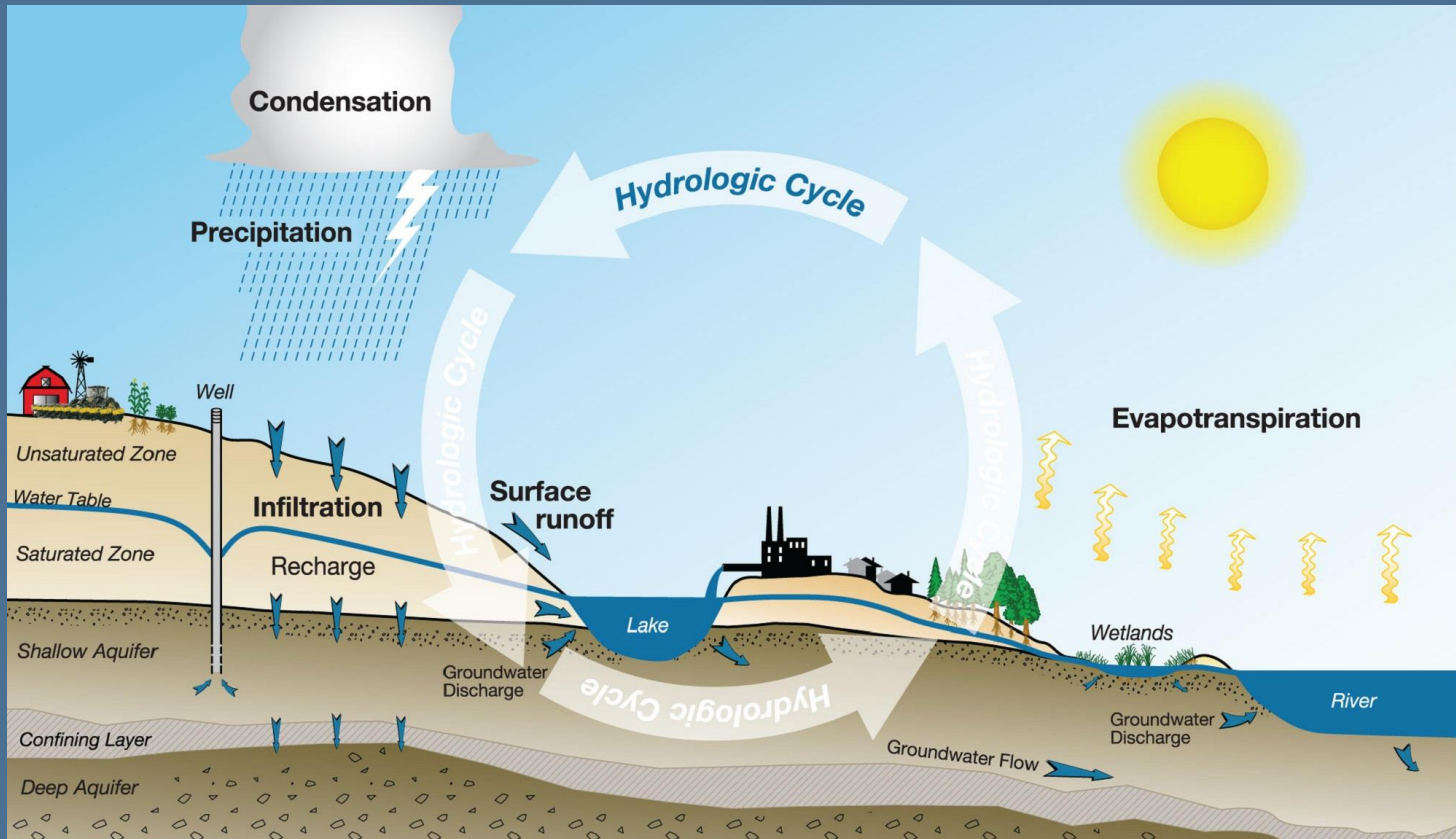
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REQUIREMENTS

- 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



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



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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



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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



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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



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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

	Swatara		Maiden Creek
	Beaver Creek		Upper Kish
	Warrior Run		Yellow Creek



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PA BMP REMOTE SENSING PILOT PROJECT

SPONSORED BY: USDA - NRCS

PA - DEP

ACKNOWLEDGEMENTS:

JOE KRAFT, SOIL SCIENTIST, NRCS

MARCIE DUNN, GIS SPECIALIST, NRCS

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.

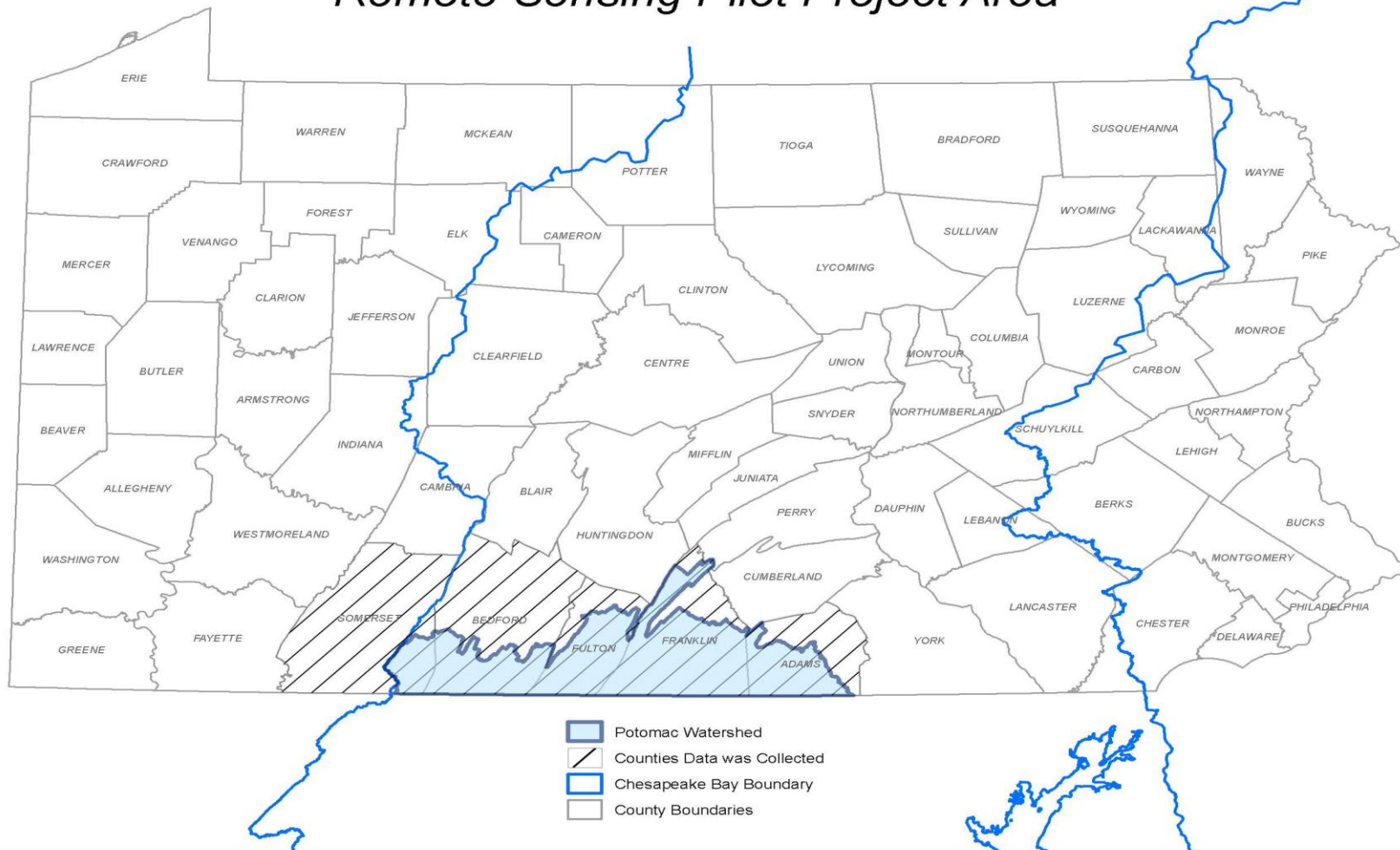


28 IMPORTANT CONSERVATION PRACTICES*

- 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



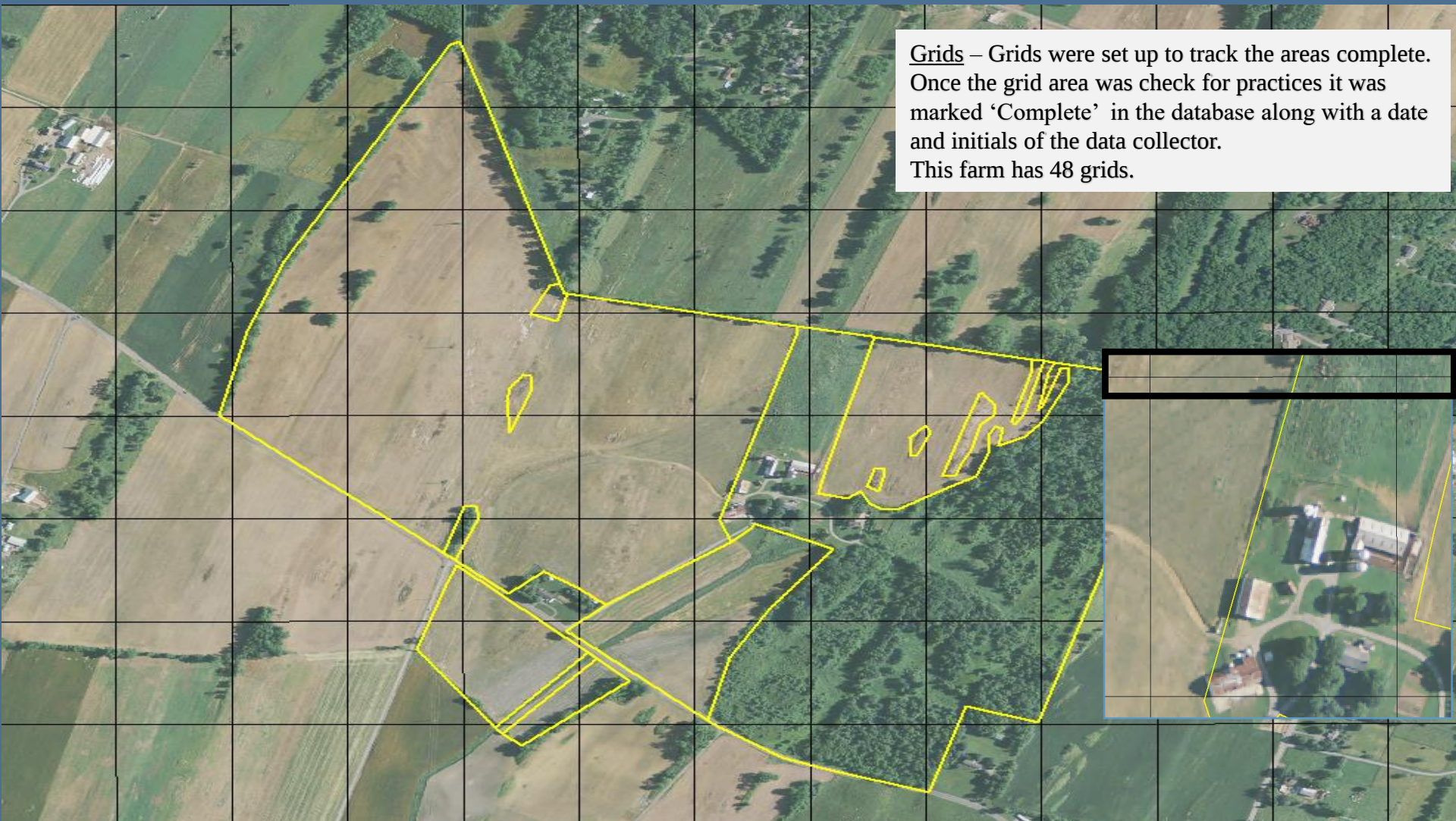


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Remote Sensing – How it Was Systematically Analyzed

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.





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Remote Sensing – What Can We See?

Remote Data Collection Finding –

- Grassed Waterway
- Riparian Buffer
- Waste Storage Facility
- Heavy Use Area Protection

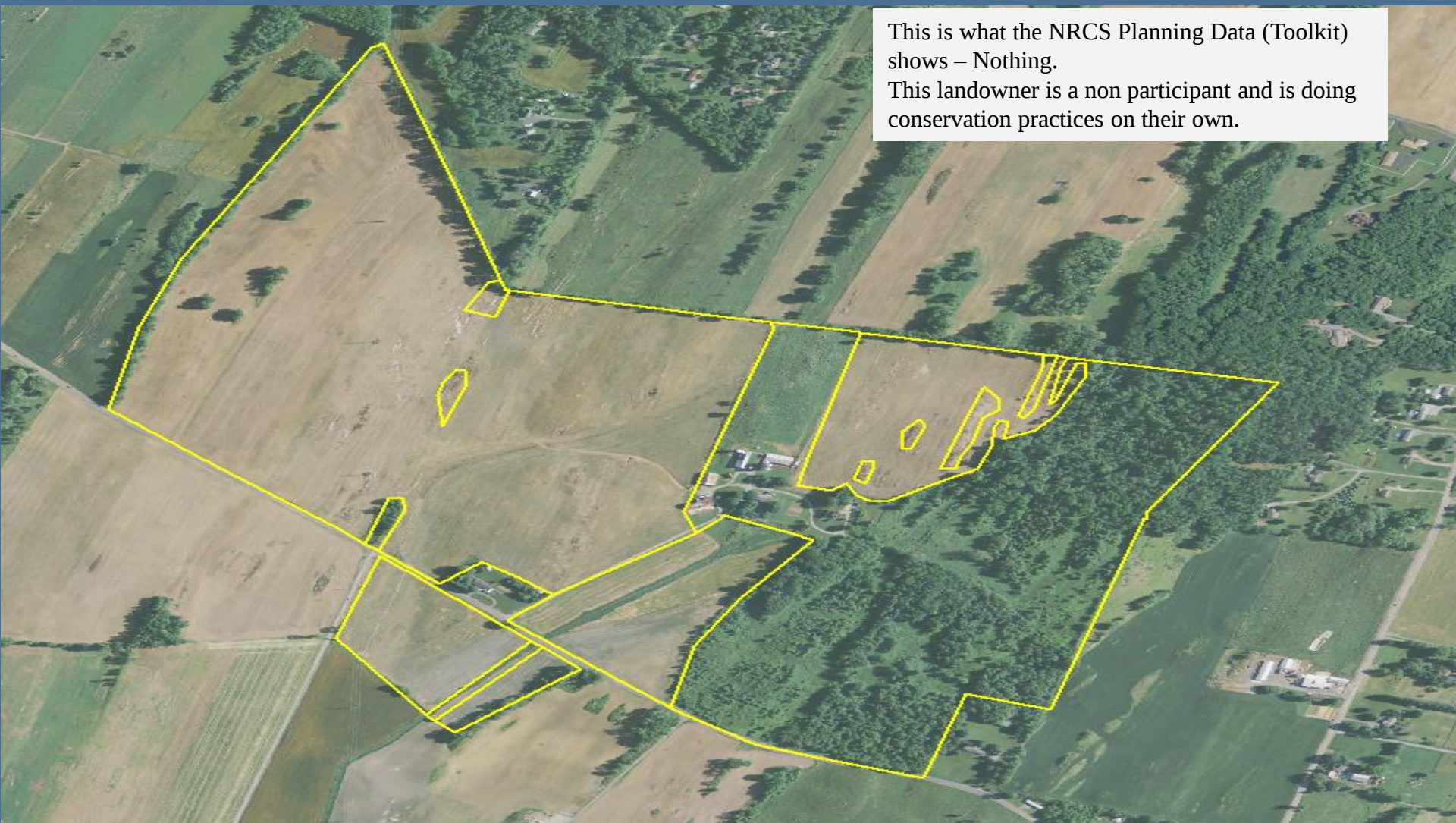




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Remote Sensing – Comparison to Toolkit Data



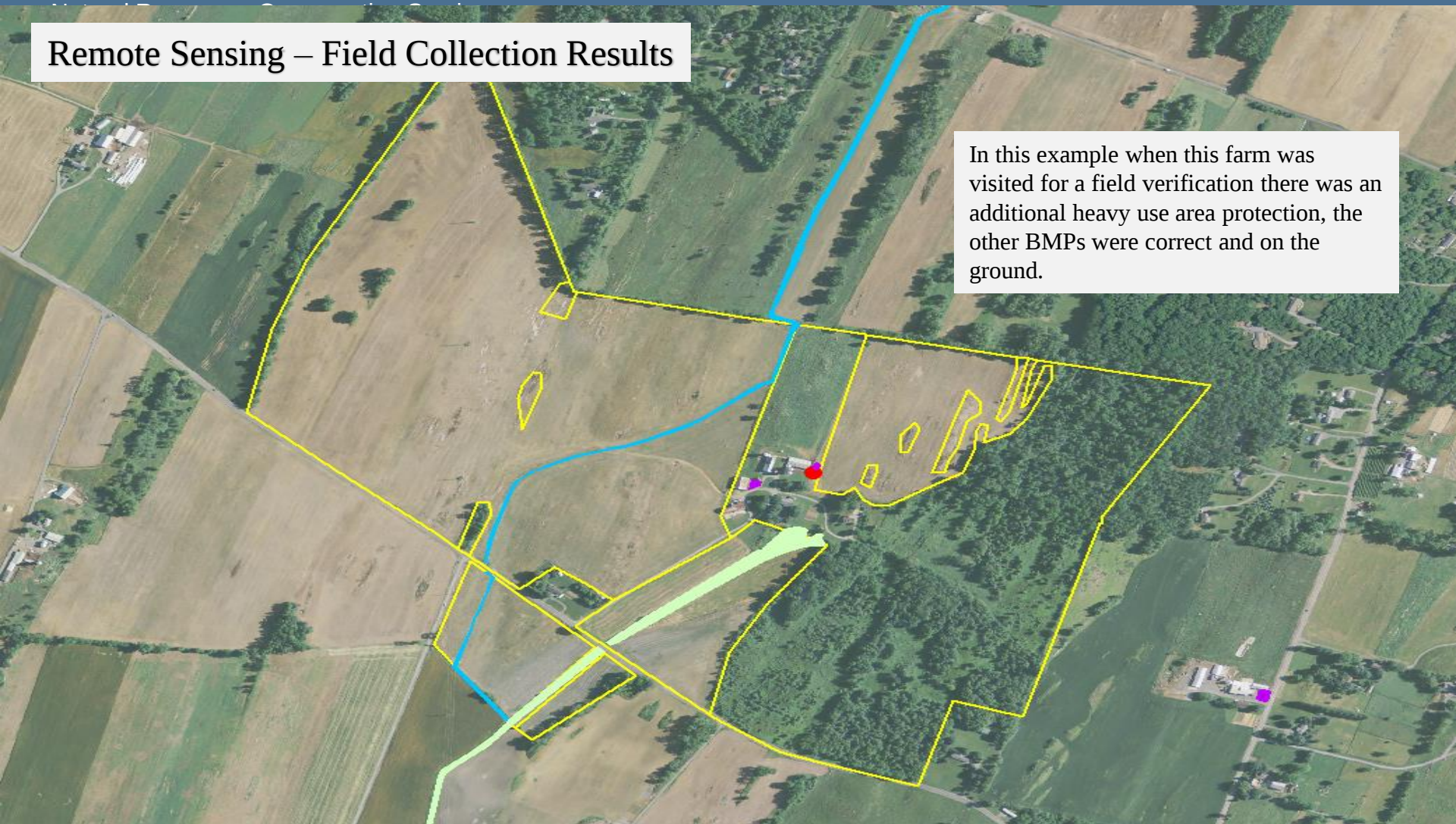
This is what the NRCS Planning Data (Toolkit) shows – Nothing.
This landowner is a non participant and is doing conservation practices on their own.



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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
- ERS� 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



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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





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OPPORTUNITIES?

QUESTIONS?

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