

**L. Non- Cost Shared BMP Development Decision Check List**

## **Non- Cost Shared BMP Development Decision Check List**

Below are 14 steps to consider when developing state protocol systems. Under each step are questions for your consideration.

### **1. Determine what to collect:**

- a) Do you want to collect: all BMPs, BMP's that assist in getting the greatest nutrient or sediment reduction; BMPs that were agreed to in WIP, some other combination?
- b) Do BMPs meet NRCS, CBP, or state standards?
- c) Are BMPs a functional equivalent (do not meet NRCS, state, or CBP standards but do have nutrient or sediment reductions)?
- d) When collecting BMPs do you have the year they were implemented?
- e) For cover crops to do you have species, date planted, kill down date, fertilization if any?
- f) Have the BMPs been accepted by Chesapeake Bay Program for use in the Watershed Model and gone through the Chesapeake Bay Program's BMP Protocol Process? If not, do the BMPs have CBP provisional acceptance status as an interim BMP?
- g) Are the practices you plan to collect worth the cost of collection?

### **2. Determine where to collect:**

- a) Depending on the BMPs you choose to collect- will you be collecting these on the county level or on a watershed level? Does the whole state need to be canvassed or only certain areas or partial counties?

### **3. Protocol (How to collect):**

- a) What system have you decided to use to collect BMP's (see data collection options chart)? Will your system of collection change throughout time?
- b) Is the system you selected, people intensive or technology intensive?
- c) What is the cost benefit ratio on the system selected (HI, MED, LO)?
- d) Do you have current funding for the system?
- e) Do you plan to collect BMPs in the selected areas only during certain seasons of the year, throughout one fiscal year or will it take several years?
- f) Has your selected system been approved by the people who will be collecting the BMPs (i.e... Districts), local and state leadership, farm community, special interest groups, USDA/EPA or other federal entity if necessary?

### **4. BMP verification system development:**

- a) What system will be used for verification? Does it require: trained district; other trained specialists; farmer self certification; or technological expertise (aerial photography interpretation)?
- b) Has your selected system been approved by the people who will be collecting the BMPs ( i.e. Districts), local and state leadership, farm community, special interest groups, USDA/EPA or other federal entity if necessary?

**5. Training on selected data collection and verification systems:**

- a) Do you have written guidance and documentation on the data collection and verification systems?
- b) Who do the data or verification collectors call if there is a question?
- c) Do data collection personnel and/or farmers need training and how will it be conducted?
- d) Is there a certification requirement for anyone who collects data?

**6. Use existing electronic data collection system update or develop new system:**

- a) Does the electronic data collection and storage system exist or do you have to build a new one or make adjustments to the existing system?
- b) What is the cost to develop the system and do you have funding?
- c) How long will the system be viable (due to technology or other changes)?
- d) What is the ease of use for the data and verification collectors?
- e) What is the ease of use for the landowner (if applicable)?
- f) Where will the data be maintained?
- g) Is the system mapped to provide the data through NEIEN to the Chesapeake Bay Program? Who will transmit the data?
- h) How will you update the data in the future and remove BMPs that are no longer in existence, expired, no longer in use or not being maintained?
- i) Does the electronic system have standard reports that can be provided to leadership or others if requested or will someone have to build reports?
- j) Have you taken into account BMPs that may have more than one funding source so that you do not have double counting?
- k) Is the data available to the public? Do you have FOIA or 1619 protection of the data?

**7. Training on data entry:**

- a) Will the training on the selected data entry system be given by: reading documentation or guidance documents; group training; net meetings; field training; etc.; or any combination?
- b) Will there be a certification requirement to use the data entry system?
- c) Will training be required for the landowners (if they are entering data)? How and when is the best time to conduct the training? Will there be a certification requirement for farmers?

**8. Pilot of collection, verification and data entry systems:**

- a) Where will the state pilot the data collection and verification systems?
- b) How long will the pilots(s) take?
- c) Who will be involved in the pilot(s)?
- d) How will debriefing be conducted to determine pilot success and/or system changes needed after the pilot?

**9. Reliability and validity testing:**

- a) Reliability assures that every time you ask the data collection question, you get the same answer. How will you test this?
- b) Validity is when you compare what you collected to another system of collection, to see if you get the same or a similar answer. How will you test this? (Example: looking at the same data in another system like the Chesapeake Bay Program's BayTAS and ChesapeakeStat, CEAP, NASS data, etc.)

**10. Adjust systems and training:**

- a) After testing the systems, how will you implement adjustments you have to make and are there documentation changes, system changes or retraining involved in making the changes?

**11. Communication Strategy;**

- a) Do you need to prepare and conduct communication strategies for: the data collection event; landowners; local, state or federal leadership; general public?
- b) How will information be provided: written, electronic, news or media, public meetings or any combination?
- c) Do you want feedback about what you propose to do before you start the process?
- d) Will you make changes if you accept feedback?
- e) Will there be communication of findings throughout the process or at a specific time in the process?
- f) Who does the landowner or general public call if they have questions?
- g) Will there be a published document of the findings our outcomes of the collection of BMPs?

**12. Implement data collection and entry and verification systems:**

- a) What are contingency plans if something happens during: data collection, data entry, electronic data storage malfunctions or other issues?
- b) How do individuals get answers when they have problems?
- c) Will a system problem cause changes in how the system is used, documentation, output of data, timeline for collection, etc.

**13. Reliability and Validity Testing after Change to the System:**

- a) Reliability assures that every time you ask the data collection question, you get the same answer. How will you test this?
- b) Validity is when you compare what you collected to another system of collection, to see if you get the same or a similar answer. How will you test this? (Example: looking at the same data in another system like Chesapeake Bay Program's BayTAS and ChesapeakeStat, CEAP, NASS data, etc.)

**14. Future Year Systems:**

- a) How often will you collect data?
- b) How often will you verify that the practice is still in existence?

- c) How will you remove practices from the database that are no longer in existence, have expired, are no longer in use or are not being maintained?
- d) If you do an intensive on the ground collection system, do you need to do the same thing in future years? How often?
- e) How would you change the system if you go to a less intensive system and does it have approval? (local, state, federal, Chesapeake Bay Program, etc.)
- f) If you use a different system in the future, have you gone through all of the above steps?

## **M. Draft Data Collection Protocol EXAMPLE**

**Objective: Agreement among states, if possible, on a methodology and protocol for collecting non-cost shared conservation practice information for inclusion in the Chesapeake Bay Program Model.**

Note: those practices that have the greatest impact on the current model are those that cover large acreages within the watershed. Generally those are cover crops, conservation tillage (no-till, minimum till), nutrient management (fertilizer and manure), precision/decision agriculture (fertilizer timing and placement) and land use conversion. These practices can be substituted for the term "any and all conservation practices" in "What" section of the following.

**Definitions:**

**Practices that meet NRCS Standard and Specifications** are those that comply with all the requirements in the State Technical Guide and Engineering Field Manual.

**Practices that are Functional Equivalents** are those that provide nutrient and sediment reductions equal to a practice that fully meet NRCS Standards and Specifications but do not meet the rigorous criteria. An example would be a grassed buffer strip along a stream that is the correct width, species composition, etc. to meet Standards and Specs but the fence keeping livestock out of the area does not meet the criteria.

**Practices that are Almost Functional Equivalents** are those that do not meet NRCS Standards and Specifications, yet provide some degree of nutrient and sediment reduction. An example would be a grassed buffer strip along a stream that is less than the correct width, or not the correct species composition, etc. to meet Standards and Specs.

**Options:**

**Plan A:**

**1a. Farm by Farm Inventory:**

**Who:** Completed by trained professionals such as District employees or District authorized third parties.

**How:** Data search in existing Conservation Plans, interviews with farmers and field by field check (all three).

**What:** Any and all conservation practices, structural or management, long term or annual, those that have been installed with federal, state cost sharing assistance, and those that are farmer installed without cost sharing assistance, noting the installation date. Note also if the practice meets NRCS specifications, is a functional equivalent or is almost a fully functional equivalent. Note what additional needs to be done to make the practice meet standards or become a functional equivalent. Note whether the practice is properly maintained and functioning as intended or not. If not what needs to be done to assure proper operation and function.

**Data Recordation Procedures:** States will design a data recordation tool that will ultimately feed into the Chesapeake Bay Program Watershed Model through the NEIEN portal. This will be completed by trained professionals such as District employees or District authorized third parties. States will be responsible for the QA/QC.

**Verification Protocol:** A 5–10% spot check of the farm by farm inventory will be completed by employees from a different office (arms–length impartial verification) or certified TSP's.

**Future Years:** Practices that are leaving the lifespan will be checked for functionality. If the practices are continuing to provide nutrient and sediment reduction benefits they will be maintained in the state database of functional BMP's. This can be accomplished through a mailing to landowners/farmers with a list of the practices at the end of their lifespan and a check sheet where the practice situation (still there, functional, needs work, eliminated, etc.) can be noted by the landowner/farmer. These will be spot checked at the 10% per year rate.

**Certainty:** This procedure will lead to the establishment of a "Certainty" program for that farm (also a Green Harbor or Safe Harbor in some circles). If the farm meets the TMDL baseline then they will be eligible for entry into the state run program.

**Variation 1b:** Only those practices that meet NRCS standards and specifications will be accepted and counted by the state. Functional equivalents are not counted until they meet standards and specs. All other items remain the same.

## **Plan B, if funding, staffing or other issues require a different approach**

### **1a. Farmer Self Certification by Survey:**

**Who:** Farmer provides information on conservation practices

**How:** Farmer completed a survey mailed by the Conservation District. Details and pictures will be provided to the survey recipients to assure a common understanding of each practice being inventoried.



**What:** Any and all conservation practices, structural or management, long term or annual, those that have been installed with federal, state cost sharing assistance, those that are farmer installed without cost sharing assistance, noting the installation date.

**Data Recordation Procedures:** Farmer supplied information will be transferred to a state designed data recordation tool that will ultimately feed into the Chesapeake Bay Program Watershed Model through the NEIEN portal.

**Verification Protocol:** A statistical sampling (5–10%) of farms will be field reviewed by trained conservationists or certified TSP's. The findings will be recorded and the rate of reporting accuracy applied to all results within the state.

**Future Years:** Practices that are leaving the lifespan will be checked for functionality. If the practices are continuing to provide nutrient and sediment reduction benefits they will be maintained in the state database of functional BMP's. This can be accomplished through a mailing to landowners/farmers with a list of the practices at the end of their lifespan and a check sheet where the practice situation (still there, functional, needs work, eliminated, etc.) can be noted by the landowner/farmer. These will be spot checked at the 10% per year rate.

**Certainty:** Only those farms going through Plan A and meeting the TMDL baseline will be eligible.

**Variation 1b:** Farmer reports at local USDA or District office completes questionnaire/survey at local USDA/District office when completing annual crop reporting activity.

**Variation 1c:** An option would be an on-line data entry tool available to farmers with web access and computer skills.

**Variation 1d:** An option for consideration would be group meetings among the community where farmers provide information.

### **Plan C, if other options are not possible due to lack of funding**

#### **1. Use of Existing Federal and State Records: Status Quo**

**Who:** State Conservation Partnership will develop a procedure for obtaining data from Federal and State Agencies that provide cost sharing assistance on conservation practices

**How:** This activity can be completed at the State Office (federal and state agency) Administrative level with essentially no involvement from the local Conservation Districts

**What:** Known and documented conservation practice data will be collected. This list will vary from state to state and will not reflect non-cost shared practices or functional equivalents.

**Data Recordation Procedures:** A state designed data recordation tool that will ultimately feed into the Chesapeake Bay Model through the NEIEN portal. State agency will be responsible for the data entry.

**Verification Protocol:** A statistical sampling (5–10%) of farms will be field reviewed by trained conservationists or certified TSP's. The findings will be recorded and the rate of reporting accuracy applied to all results within the state.

**Future Years:** Practices that are leaving the lifespan will be checked for functionality. If the practices are continuing to provide nutrient and sediment reduction benefits they will be maintained in the state database of functional BMP's. This can be accomplished through a mailing to landowners/farmers with a list of the practices at the end of their lifespan and a check sheet where the practice situation (still there, functional, needs work, eliminated, etc.) can be noted by the landowner/farmer. These will be spot checked at the 10% per year rate.

**Certainty:** Only those farms going through Plan A and meeting the TMDL baseline will be eligible.

### **For Discussion among good friends...**

**Variation:** Annual practices will be counted but only at the rate agreed to by the farmer ahead of time (example: 60% of cropland will utilize cover crops. Fields will vary but time and type will be constant). This starts the discussion on the whole farm having to meet the TMDL and what might be required in the long term, on that specific farm or within the watershed to meet the TMDL standards.

## **N. West Virginia Materials**

# Tracking and Reporting Definition Guide Book WV Best Management Practices

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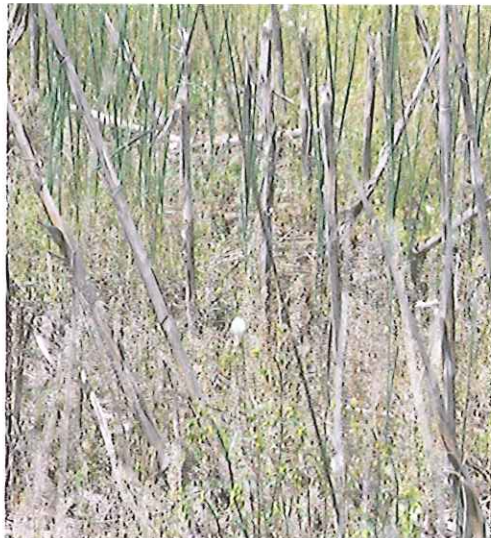
## Conservation Tillage

Any tillage and planting system in which at least **thirty percent** of the soil surface is covered by plant residue to reduce soil erosion and improve the quality of surface water. This also includes using a non-inversion tillage method.

**Units:** Acres

**Effectiveness:** N/A

**NRCS practice(s) counted:** 329 (Residue and Tillage Management, No-Till/Strip Till/Direct Seed); 344 (Residue Management, Seasonal); 345 (Residue and Tillage Management, Mulch Till)



## Continuous No-Till

Crop planting management practice in which soil disturbance by plows, disk or other tillage equipment is eliminated. CNT involves no-till methods on all crops in a multi-crop, multi-year rotation.

When an acre is reported under CNT, it will not be eligible for additional reductions from the implementation of other practices such as cover crops or nutrient management planning.

**Units:** Acres

**Effectiveness:** Varies by geography, TN: 10-15%, TP: 20-40%, TSS: 70%

## Riparian Forest Buffer

Agricultural riparian forest buffers are linear wooded areas along rivers, streams, and shorelines. Forest buffers help filter nutrients, sediments and other pollutants from runoff as well as remove nutrients from groundwater. **min width 35', recommended 100'.**

**Units:** Acres

**Effectiveness:** TN: 19-65% (4x acres), TP: 30-45% (2x acres), TSS: 40-60% (2x acres)

**NRCS practice(s) counted:** 391 (Riparian Forest Buffer)



## Wetland Restoration

Agricultural wetland restoration activities re-establish the natural hydraulic condition in a field that existed prior to the installation of subsurface or surface drainage. Projects may include restoration, creation or enhancement acreage. Any wetland classification including forested, scrub-shrub, or emergent marsh.

**Units:** Acres

**Effectiveness:** TN:14%, TP: 26%, TSS: 8%

**NRCS practice(s) counted:** 646 (Shallow Water Development & Management), 657 (Wetland Restoration)



## Grass Buffer

Grass plantings between fields and rivers and streams. Linear strips of vegetation along rivers and streams, helping to filter nutrients, sediment, and other pollutants carried in runoff. **Min width = 35', recommended 100'.**

**Units:** Acres

**Effectiveness:** TN: 13-46% (4x acres), TP: 30-45% (2x acres), TSS: 40-60% (2x acres)

**NRCS practice(s) counted:** 390 (Riparian Herbaceous Cover), 393 (Filter Strip), 412 (Grassed Waterway)



## Loafing Lot Management

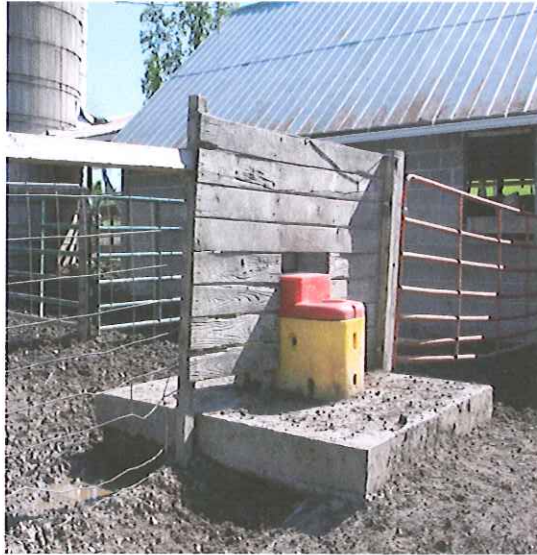
The stabilization of areas frequently and intensively used by people, animals or vehicles by establishing vegetative cover, by surfacing with suitable materials, and/or by installing needed structures.

**Units:** Systems

**Effectiveness:** TN-20%, TP-20%, TSS-40%

**NRCS practice(s) counted:**

561 (Heavy Use Area Protection)



## Tree Planting

Any tree plantings on any site except those along rivers and streams. Tree plantings do not include reforestation. Targets land that is highly erodible or identified as critical resource area. Density should be sufficient to produce forest-like cover over time. CRP planting given as an example.

**Units:** Acres

**Effectiveness:** N/A

**NRCS practice(s) counted:** 612 (Tree/Shrub Establishment)/ 666 (Forestland Re-established or Improved)



## Nutrient Management Plan Implementation

Application of nutrients to croplands. Details type, rate, timing, and placement of nutrients for each crop. Soil, plant tissue, manure and/or sludge tests used to assure optimal application. Revised every 3 years.

**Units:** Acres

**Effectiveness:** N/A

**NRCS practice(s) counted:** 633 (Waste utilization), 590 (Nutrient management)



## Cover Crops

(Non-harvested) cover crops specifically designed for nutrient removal. Seeded into crop residue with little or no disturbance of soil.

**Units:** Acres

**Effectiveness:** Varies greatly

**NRCS practice(s) counted:** 340 (Cover crops)





## Commodity Cover Crops

Commodity cover crops differ from cereal cover crops in that they may be harvested for grain, hay or silage and they may receive nutrient applications, but only after March 1 of the spring following their establishment. The intent of the practice is to modify normal small grain production practices by eliminating fall and winter fertilization so that crops function similarly to cover crops by scavenging available soil nitrogen for part of their production cycle.

**Units:** Acres

**Effectiveness:** Varies



## Stream Protection W/ Fencing

Excluding a strip of land with fencing along the stream corridor to provide protection from livestock. The fenced areas may be planted with trees or grass, or left to natural plant succession, and can be of various widths.

**Units:** acres

**Effectiveness:** Varies geographically; TN: 13-46% (4x acres), TP: 30-45% (2x acres), TSS: 40-60% (2x acres)

**NRCS practice(s) counted:** 472 (Access Control), 580 (Streambank and shoreline protection), 584 (Channel Stabilization)



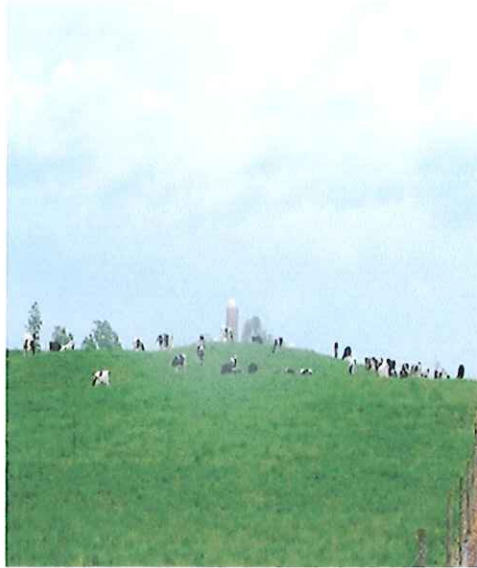
## Prescribed Grazing

This practice utilizes a range of pasture management and grazing techniques to improve the quality and quantity of the forages grown on pastures and reduce the impact of animal travel lanes, animal concentration areas or other degraded areas.

**Units:** Acres

**Effectiveness:** Varies by geography; TN:9-11%, TP: 24%, TSS: 30%

**NRCS practice(s) counted:**  
528 (Prescribed Grazing )



## Animal Waste Management Systems –Livestock

Storage/handling of manure during times when manure is susceptible to runoff. Includes controlling the runoff from roofs, feedlots, and loafing areas.

**Units:** Systems

**Effectiveness:** TN: 80%,  
TP: 80%

**NRCS practice(s) counted:** 313  
(Waste storage facility), 359  
(Waste treatment lagoon)



**Animal Waste  
Management Systems-  
Poultry**

Storage/handling of manure during times when manure is susceptible to runoff. Includes controlling the runoff from roofs, feedlots, and loafing areas.

**Units: Systems**

**Effectiveness: TN: 80%,**

**TP: 80%**

**NRCS practice(s) counted:**

313 (Waste storage facility),



**Barnyard Runoff  
Control**

Installation of practices to control runoff from barnyard areas. Roof runoff control, diversion of clean water from entering the barnyard and control of runoff from barnyard areas.

**Units: Systems/Feet**

**Effectiveness: TN: 20%,**

**TP: 20%, TSS: 40%**

**NRCS practice(s) counted:** 558 (Roof runoff management), 575 (Animal trails and walkways)



## Barnyard Runoff Control

Installation of practices to control runoff from barnyard areas. Roof runoff control, diversion of clean water from entering the barnyard and control of runoff from barnyard areas.

**Units:** Systems/Feet

**Effectiveness:** TN: 20%,  
TP: 20%, TSS: 40%

**NRCS practice(s) counted:** 558  
(Roof runoff management),  
575 (Animal trails and walkways)



## Non-urban Stream Restoration

Restoring the natural ecosystem by restoring the stream hydrology and natural landscape. Site specific engineering techniques used to stabilize an eroding streambank and channel. These are areas not associated with animal entry.

**Units:** Linear feet

**Effectiveness:** 0.02 lbs N/ft;  
0.003 lbs P/ft; 2lbs Sed/ft

**NRCS practice(s) counted:**  
395 (stream habitat improvement and management)



## Mortality Composters

A physical structure and process for disposing of dead poultry. Composted material is combined with poultry litter and land applied using nutrient management plan recommendations.

**Units:** Systems

**Effectiveness:** TN: 40%,

TP: 10%

**NRCS practice(s) counted:** 316 (Animal Mortality Facility), 317 (Composting Facility)



## Alternative Watering Facility

Planned system for protecting streams and streambanks which eliminates the need for livestock to be in or near the streams by providing an alternative watering source and possibly shade for livestock.

**Units:** Systems, acres

**Effectiveness:** TN: 5%,

TP: 8%, TSS: 10%

**NRCS practice(s) counted:** 614 (Watering Facility),



### Contour Buffer Strips

Narrow strips of permanent, herbaceous vegetative cover established around the hill slope, and alternated down the slope with wider cropped strips that are farmed on the contour.

NRCS practice(s) counted:  
332 (Contour Buffer Strips)

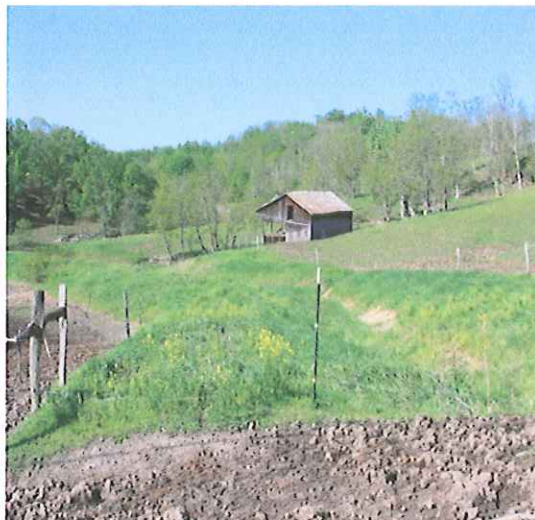


### Diversion

A channel constructed across the slope generally with a supporting ridge on the lower side.

Units: Feet or acres treated

NRCS practice(s) counted:  
362 (Diversion)



### **Sinkhole and Sinkhole Area Treatment**

The treatment of sinkholes and/or sinkhole areas to reduce contamination of groundwater resources, and/or improve farm safety.

Units: acres

NRCS practice(s) counted:  
527 (Sinkhole and sinkhole area treatment)



### **Strip Cropping**

Growing planned rotations of row crops, forages, small grains, or fallow in a systematic arrangement of equal width strips across a field.

Units: Acres

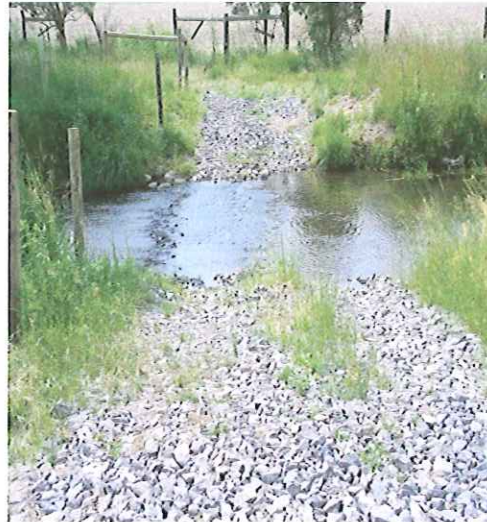
NRCS practice(s) counted:  
585 (Strip Cropping)



### **Animal Access Control**

The temporary or permanent exclusion of animals, people, vehicles, and/or equipment from an area.

NRCS practice(s) counted:  
472 (Access Control)



### **Dairy Precision Feeding and Forage Management**

Reduces the quantity of phosphorus and nitrogen fed to livestock by formulating diets within 110% of Nutritional Research Council recommended level in order to minimize the excretion of nutrients without negatively affecting milk production.

**Units:** N/A

**Effectiveness:** Reported by states





### **Carbon Sequestration and Alternative Crops**

Carbon Sequestration refers to the conversion of cropland to hay land (warm season grasses). The hay land is managed as a permanent hay land providing a mechanism for sequestering carbon within the soil.

**Note: this practice has not been incorporated into the watershed model nor has specifications been developed for its use as an approved BMP.**



### **Water Control Structures**

Installing and managing boarded gate systems in agricultural land that contains surface drainage ditches.

**Units:** Systems

**Effectiveness:** TN: 33%

## Decision Agriculture

A management system that is information and technology based, is site specific and uses one or more of the following sources of data: soils, crops, nutrients, pests, moisture, or yield for optimum profitability, sustainability, and protection of the environment.

**Units:** Acres

**Effectiveness:** TN: 4% is applied after landuse change.



## Horse Pasture Management

Stabilizing overused small pasture containment areas (animal concentration area) adjacent to animal shelters or farmstead.

**Units:** Acres

**Effectiveness:** TN: N/A TP: 20%, TSS: 40%



## Non-urban Stream Restoration

Restoring the natural ecosystem by restoring the stream hydrology and natural landscape. Site specific engineering techniques used to stabilize an eroding streambank and channel. These are areas not associated with animal entry.

**Units:** Linear feet

**Effectiveness:** 0.02 lbs N/ft;  
0.003 lbs P/ft; 2lbs Sed/ft

**NRCS practice(s) counted:**  
395 (stream habitat improvement and management)



## Mortality Composters

A physical structure and process for disposing of dead poultry. Composted material is combined with poultry litter and land applied using nutrient management plan recommendations.

**Units:** Systems

**Effectiveness:** TN: 40%,  
TP: 10%

**NRCS practice(s) counted:** 316  
(Animal Mortality Facility),  
317 ( Composting Facility)



## Alternative Watering Facility

Planned system for protecting streams and streambanks which eliminates the need for livestock to be in or near the streams by providing an alternative watering source and possibly shade for livestock.

**Units:** Systems, acres

**Effectiveness:** TN: 5%,

TP: 8%, TSS: 10%

**NRCS practice(s) counted:**  
614 (Watering Facility),



## Contour Buffer Strips

Narrow strips of permanent, herbaceous vegetative cover established around the hill slope, and alternated down the slope with wider cropped strips that are farmed on the contour.

**NRCS practice(s) counted:**  
332 (Contour Buffer Strips)



### **Diversion**

A channel constructed across the slope generally with a supporting ridge on the lower side.

Units: **Feet or acres treated**

NRCS practice(s) counted:  
362 (Diversion)



### **Sinkhole and Sinkhole Area Treatment**

The treatment of sinkholes and/or sinkhole areas to reduce contamination of groundwater resources, and/or improve farm safety.

Units: **acres**

NRCS practice(s) counted:  
527 (Sinkhole and sinkhole area treatment)



### **Strip Cropping**

Growing planned rotations of row crops, forages, small grains, or fallow in a systematic arrangement of equal width strips across a field.

**Units:** Acres

NRCS practice(s) counted:  
585 (Strip Cropping)



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The temporary or permanent exclusion of animals, people, vehicles, and/or equipment from an area.

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Reduces the quantity of phosphorus and nitrogen fed to livestock by formulating diets within 110% of Nutritional Research Council recommended level in order to minimize the excretion of nutrients without negatively affecting milk production.

Units: N/A

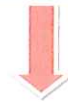
Effectiveness: Reported by states



### Carbon Sequestration and Alternative Crops

Carbon Sequestration refers to the conversion of cropland to hay land (warm season grasses). The hay land is managed as a permanent hay land providing a mechanism for sequestering carbon within the soil.

**Note: this practice has not been incorporated into the watershed model nor has specifications been developed for its use as an approved BMP.**



## Water Control Structures

Installing and managing boarded gate systems in agricultural land that contains surface drainage ditches.

**Units:** Systems

**Effectiveness:** TN: 33%

## Decision Agriculture

A management system that is information and technology based, is site specific and uses one or more of the following sources of data: soils, crops, nutrients, pests, moisture, or yield for optimum profitability, sustainability, and protection of the environment.

**Units:** Acres

**Effectiveness:** TN: 4% is applied after landuse change.





## Horse Pasture Management

Stabilizing overused small pasture containment areas (animal concentration area) adjacent to animal shelters or farmstead.

**Units:** Acres

**Effectiveness:** TN: N/A TP: 20%, TSS: 40%



## **O. Pennsylvania Materials**

2010 Transect Survey Training  
May 20, 2010

ROUTES:

Routes will be outlined on maps provided for each county by Capital RC&D. The route is determined by the 2007 data points. Each route will be comprised of a minimum of 110 miles and 460 data points (approx. 250 stops). Each county should determine how many points were counted for survey purposes in the last survey (points with residue data collected from cropland). If there are less than 460, then either the route should be extended or the interval between points should be smaller. For example, if stops were at .5 mile intervals, reduce this interval to maybe every .3 mile. If using a new route then consider maybe starting with an interval of .4 mile. Several counties with limited ac of cropland and interspersed development are currently using a .2 mile interval. From a statistical standpoint, it is better to have extra points than too few.

DATA:

Crops:

- |                           |                                 |
|---------------------------|---------------------------------|
| Corn                      | Barley                          |
| Full Season Soybeans      | Oats                            |
| Winter Wheat              | Forage Crop (seeding year only) |
| Other Winter Small Grains | Tobacco (Lancaster only)        |

If you encounter any winter small grain planted as the primary crop that has unidentifiable residue, mark it as unknown. Any established forage crops may be recorded as unknown or left as a non-point.

Cover Crops:

- |         |  |
|---------|--|
| Legumes | Grasses (annual ryegrass and small grains) |
|---------|--|

Data sheet:

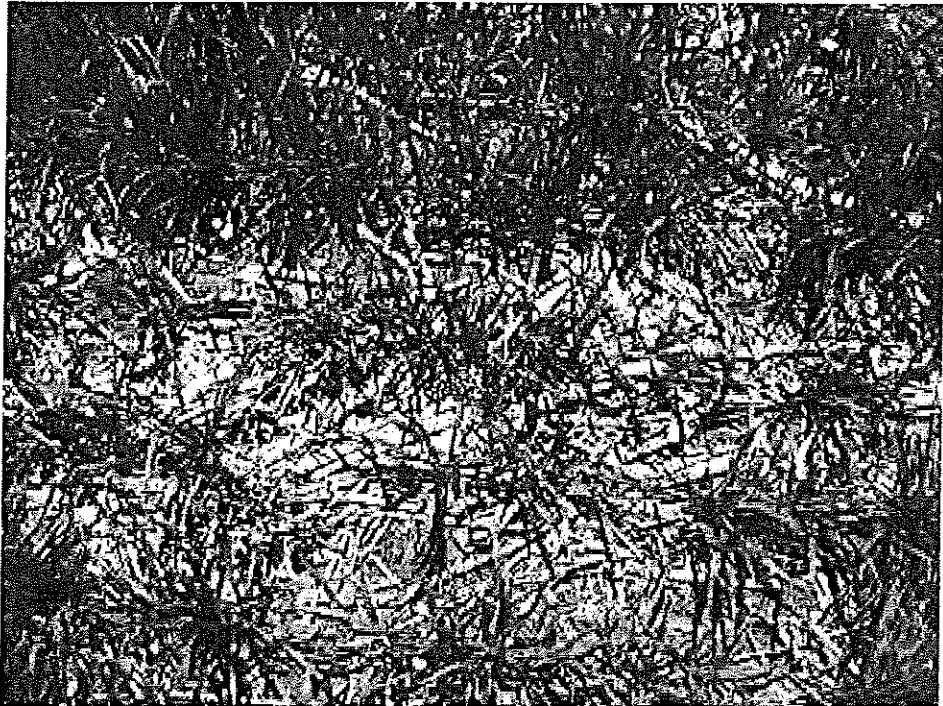
- Each time a new crop is encountered, write the name of the crop in the left column
- At each point, select the crop(s) and mark in the appropriate column, for both the left and right side of the vehicle (unless one or both is a "non-point"). Please also indicate, when applicable, if there is a cover crop of legume or grass.
  - Note: There will always be a primary crop and cover crops should be marked in addition to the primary.
  - Unplanted crop fields may be counted if you are relatively sure of what will be planted. If a field is unplanted, and there is corn residue, it is likely going to be planted with soybeans (or tobacco in Lancaster).

ETHOD:

- Each vehicle will consist of a driver, a technician, and an assistant.

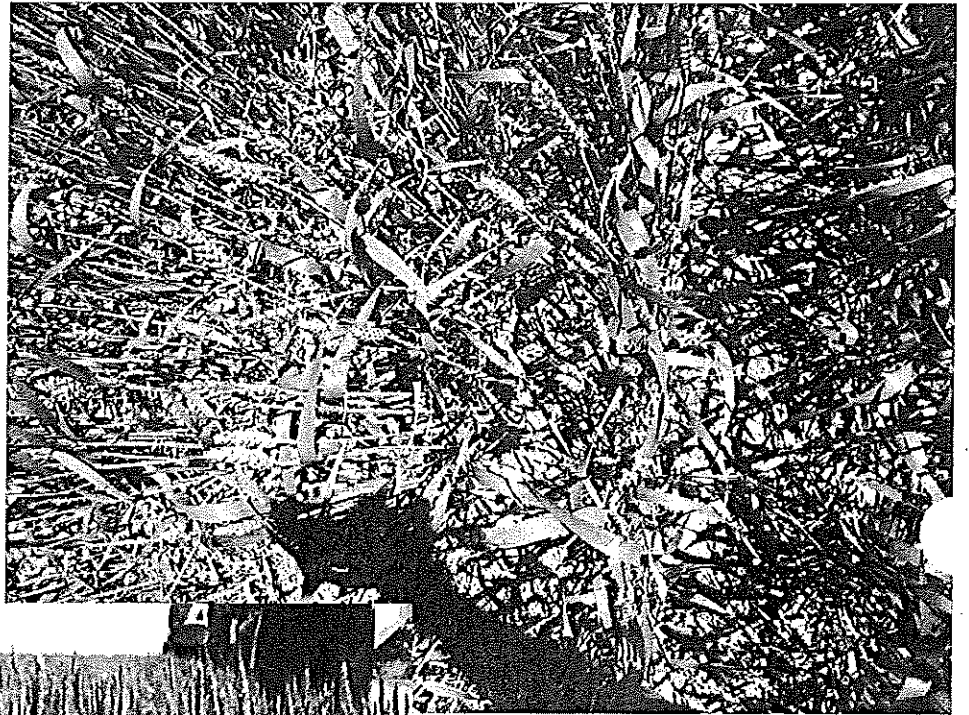
- At each stop, assess the status of the property to the left and right of the vehicle. Exit the vehicle frequently to ensure estimate accuracy when first starting the survey. Those exiting each side should communicate enough to be sure they are doing the determination consistently. As you move through the survey this will become less necessary unless an odd situation occurs. Also, you will need to exit the vehicle in situations where you cannot visually see the field from the car, such as where the field is higher than the road.
  - Anything other than the above mentioned crops and cover crops should be considered a “non-point” and should not be recorded unless you can see what is immediately behind or adjacent, at which point utilize that data.
  - If, on either side of the road, there is a non-crop (non-point), move on to the first crop you come to on at least one side of the road. Your next stopping point will be at the same predetermined interval. Example: Starting from 0.0, proceed to .4 mile but if you find nothing at .4, continue until you do, hypothetically .5 miles on the odometer. Record your findings and proceed to .8 mile which is your next anticipated stop.
  
- The assistant will record the results of each stop and mark a waypoint in the GPS device to record the exact route used during the 2010 survey and to submit points to CTIC.

Field A: No-till Oats 60% Res.

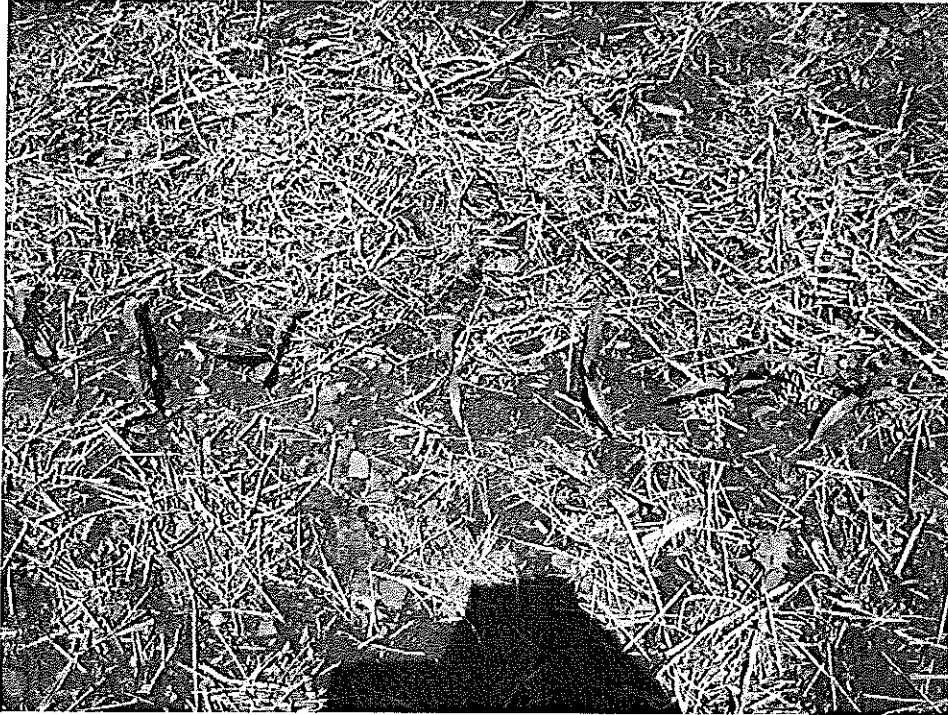


Field B: No-till Winter Wheat

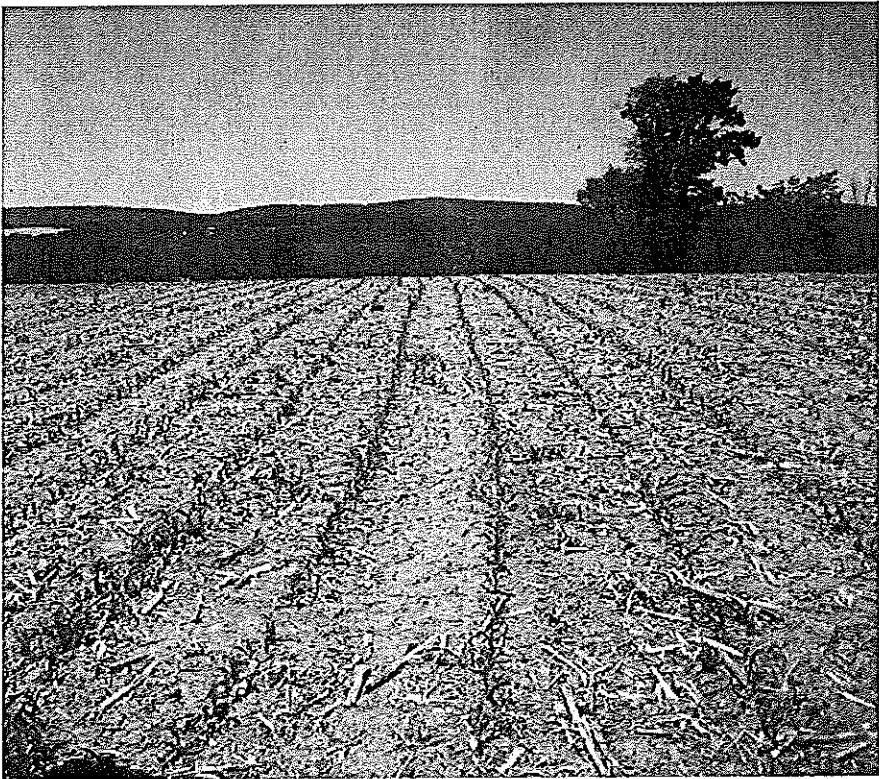
Soybean Res. >30%  
(2 Yr. Corn Res.)



Field C: No-till Corn Soybean Res. >30%



Field D: Tilled Corn (Disk) 15-30% Residue





## Pennsylvania RC&D Survey Results- From Mark Dubin

<u>County</u>	<u>Feet</u>	<u>Miles</u>
Adams	914956	173
Cumberland	1014550	192
Franklin	1338805	254
Lancaster	1156848	219
York	1205302	228
Lebanon	1058859	201
Dauphin		153

1. The time to survey each county varied:  
Adams 13.5 hours  
Cumberland 18 hours  
Dauphin – Not done by RC&D Contractors  
Franklin 17.5 hr  
Lancaster 30 hr  
Lebanon 18 hr  
York 19 hr
2. We used 3 survey staff per county. The three were: one was the driver/cooperative extension agronomist who was from the county and knew the farms/roads, one contract surveyor who worked in multiple counties to provide consistency (these folks were retired from NRCS and had agronomy experience), and one data entry intern.
3. The goal was to survey at least 450 data points: Adams 495, Cumberland 467, Dauphin 494, Franklin 447, Lancaster 491, Lebanon 462, York 494
4. I do not have access to the mileage figures as cooperative extension provided transportation. I will check to see if we can calculate this from our maps.
5. Our total staff/contractor costs were: \$7,205 this includes a 6 hour training, survey implementation and data entry and presentation. This figure does not include the cost to cooperative extension of their agronomists (1 per county)
6. As a rough estimate, prep costs were \$880 or about 40 hours, this included identifying subcontractors, borrowing equipment, planning for a training and working with county participants to determine each route.
7. Data entry and analysis costs were approximately \$943 or 45 hours.

## **P. Maryland Materials**

## Non-Costshare BMP Data Collection for Maryland

### BMPs collected through field verification process

- Grassed Buffers, Waterways & Filter Strips
- Forest Buffers
- Stream Fencing
- Watering Facilities
- Heavy Use Area Protection (Livestock & Poultry)
- Waste Storage Facility
- Roof Runoff Control
- Composting Facility
- Pasture Management (Livestock & Horses)
- Wetland Creation/Restoration
- Structures for Water Control/Drainage Water Management
- Vegetative Environmental Buffer
- Alternative Crops/Carbon Sequestration

### BMPs collected through NM Annual Implementation Report

- Conservation Tillage/No-Till
- Manure Incorporation/Injection (Poultry & Livestock)
- Decision/Precision Agriculture
  - Ranking System?

### Other potential BMPs

- Cover Crops
  - Change in fertilizer recommendation/regulation – all small grains will count
  - Remote Sensing analysis
- Cropland Irrigation
  - Withdraw permits issued by MDE
- Poultry Litter Treatment
  - DPI, UMD Extension, NM AIR?

## Field Verification Process

- Process documented in *MDA Non-Costshared Best Management Practice Verification Procedures Manual*
  - Purpose
  - Objectives
  - Procedures
  - Minimum Practice Standard for functional equivalent (Non-NRCS Standard BMPs)
  - BMP Evaluation Questionnaire/Worksheet
  - Verification Report
- Performed by Soil Conservation District Staff (Planners & Technicians)
  - Either a certified planner or working under one
  - Trained in verification process & data entry
- Walking inventory of farm to document all practices
  - Documented on BMP Evaluation Form & Verification Report & photos
  - Determination if meets NRCS standard or functional equivalent
  - Included in Conservation Plan and reported via Conservation Tracker
- MDA exploring additional resources for dedicated staff to perform task
- Using existing staff, performed as Conservation Plans are updated ~10yrs
- Possible 5 year review to verify practice is still functional

## **MD11 – DRAINAGE WATER MANAGEMENT**

(Reported by Acre)

### **DEFINITION**

The process of managing water discharges from surface and/or subsurface agricultural drainage systems.

### **PURPOSES**

The purpose of this practice is:

- Reduce nutrient, pathogen, and/or pesticide loading from drainage systems into downstream receiving waters
- Improve productivity, health, and vigor of plants
- Reduce oxidation of organic matter in soils
- Reduce wind erosion or particulate matter (dust) emissions
- Provide seasonal wildlife habitat

### **CONDITIONS WHERE PRACTICE APPLIES**

This practice is applicable to agricultural lands with surface or subsurface agricultural drainage systems that are adapted to allow management of drainage discharges.

### **CRITERIA**

The management of gravity drained outlets shall be accomplished by adjusting the elevation of the drainage outlet. The management of pumped drainage outlets shall be accomplished by raising the on-off elevations for pump cycling.

Structures and pumps shall be located where they are convenient to operate and maintain.

Raising the outlet elevation of the flowing drain shall result in an elevated free water surface within the soil profile.

When operated in free drainage mode, water control structures shall not restrict the flow of the drainage system.

Drainage discharges and water levels shall be managed in a manner that does not cause adverse impacts to other properties or drainage systems.

During non-cropped periods, the system shall be in managed drainage mode within 30 days after the season's final field operation, until at least 30 days before commencement of the next season's field operations, except during system maintenance periods or to provide trafficability when field operations are necessary.

The drain outlet shall be raised prior to and during liquid manure applications to prevent direct leakage of manure into drainage pipes through soil macro pores (cracks, worm holes, root channels).

### **OPERATION AND MAINTENANCE**

Inspections of the drainage management systems are required at least every 5 years.

## **MD11 – HEAVY USE AREA PROTECTION**

(Reported by Acre)

### **DEFINITION**

The stabilization of areas frequently and intensively used by animals or vehicles by establishing vegetative cover, surfacing with suitable materials, and/or installing needed structures.

### **PURPOSES**

The purpose of this practice is to provide a stable non-eroding surface for areas frequently used by animals or vehicles to improve water quality.

### **CONDITIONS WHERE PRACTICE APPLIES**

This practice applies to agricultural areas requiring treatment to address one or more resource concerns.

### **CRITERIA**

Surface treatment should be appropriate to the purpose and use of the heavy use area.

Any structure associated with the heavy use area should have appropriate roof runoff controls to divert clean water.

Surface and subsurface drainage should be managed sufficient to control the disposal of runoff without causing erosion or water quality impairment and to exclude runoff from entering the heavy use area. Treatment areas should prevent ponding of water.

Treated areas should extend an appropriate distance from facilities such as hay rings, water troughs, feeding troughs, mineral boxes and other facilities where livestock concentrations cause resource concerns.

Manure accumulations and contaminated runoff should be collected, stored and utilized in an environmentally sound manner.

### **OPERATION AND MAINTENANCE**

Inspections of the heavy use area are required at least every 3 years.

### **SUPPORTING DATA AND DOCUMENTATION**

The following is a list of the minimum data and documentation to be recorded in the case file:

1. Purpose of heavy use area with animal type;
2. Location and extent of the practice on the conservation plan map;
3. Operation and maintenance plan.

## **MD01 - NATURAL FOREST BUFFER**

(Reported by Acre)

### **DEFINITION**

An area of predominately trees and/or shrubs located adjacent to and up-gradient from water bodies.

### **PURPOSES**

This practice is to reduce excess amounts of sediment, organic material, nutrients, pesticides and other pollutants in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow and to increase carbon storage in plant biomass and soils.

### **CONDITIONS WHERE PRACTICE APPLIES**

This practice qualify if applied on stable areas adjacent to permanent or intermittent streams, lakes, ponds, wetlands and areas with ground water recharge.

### **CRITERIA**

To reduce excess amounts of sediment, organic material, nutrients, pesticides and other pollutants in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow.

The minimum width shall be at least 20 feet measured horizontally on a line perpendicular to the water body, beginning at the top of bank or wetland edge. In order to adequately address water quality, the buffer width may need to be expanded to include important resource features such as wetlands, steep slopes, areas that are occasionally or seasonally flooded, or critical habitats.

Livestock shall be controlled or excluded as necessary to achieve and maintain the intended purpose.

### **OPERATION AND MAINTENANCE**

Inspections of the natural forest buffer are required at least every 3 years.

Control concentrated flow or mass soil movement up-gradient of the forest buffer to maintain buffer function.

Manage the dominant canopy to maintain maximum vigor of overstory and understory species.

### **SUPPORTING DATA AND DOCUMENTATION**

The following is a list of the minimum data and documentation to be recorded in the case file:

1. Purpose of riparian forest buffer;
2. Field location and plan map;
3. Size of planting;
  - a. Width of floodplain (ft);
  - b. Width of planting (ft);
  - c. Length of stream (ft);
  - d. Acres of riparian forest buffer.
4. Planting details;
  - a. Date planted;
  - b. Species planted;
  - c. Spacing of planting.
5. Operation and maintenance plan.

## **MD02 - NATURAL GRASSED BUFFER**

(Reported by Acre)

### **DEFINITION**

Grasses, grass-like plants and forbs that are established or managed to provide a herbaceous buffer located adjacent to and up-gradient from water bodies.

### **PURPOSES**

This practice is to reduce excess amounts of sediment, organic material, nutrients, pesticides and other pollutants in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow and to increase carbon storage in plant biomass and soils.

### **CONDITIONS WHERE PRACTICE APPLIES**

This practice qualify if applied on stable areas adjacent to permanent or intermittent streams, lakes, ponds, wetlands and areas with ground water recharge.

### **CRITERIA**

To reduce excess amounts of sediment, organic material, nutrients, pesticides and other pollutants in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow.

The minimum width shall be at least 10 feet measured horizontally on a line perpendicular to the water body, beginning at the top of bank or wetland edge. In order to adequately address water quality, the buffer width may need to be expanded to include important resource features such as wetlands, steep slopes, areas that are occasionally or seasonally flooded, or critical habitats.

Livestock shall be controlled or excluded as necessary to achieve and maintain the intended purpose.

Plant and animal pest species shall be controlled to the extent feasible to achieve and maintain the intended purpose of the vegetative cover. Noxious weeds shall be controlled as required by state law.

### **OPERATION AND MAINTENANCE**

Inspections of the natural grassed buffer are required at least every 3 years.

Control concentrated flow or mass soil movement up-gradient of the forest buffer to maintain buffer function.

Species shall have stiff stems and high stem density near the ground surface.

### **SUPPORTING DATA AND DOCUMENTATION**

The following is a list of the minimum data and documentation to be recorded in the case file:

1. Field location, extent of the herbaceous buffer in length & width, and assistance notes. Also note the location of the planting on the conservation plan map;
2. Species selected for establishment, seeding/planting rates, and planting dates;
3. Completed copy of the appropriate Job Sheet(s) or other specifications, and management plans.



## **MD01 – STREAMSIDE FENCING**

(Reported in Feet)

### **DEFINITION**

A constructed barrier to livestock.

### **PURPOSES**

This practice is to prevent, restrict, or control access of livestock into surface water or environmentally sensitive areas.

### **CONDITIONS WHERE PRACTICE APPLIES**

This practice may be applied on any area adjacent to surface water or environmentally sensitive areas where the control of livestock is needed. Fences are not needed where natural barriers will serve this purpose.

### **CRITERIA**

Fencing shall be appropriately installed and maintained sufficient to control or restrict the access of livestock.

The minimum buffered width between fence and surface water and or environmentally sensitive area shall be no less than at least 10 feet measured horizontally on a line perpendicular to the water body, beginning at the top of bank or wetland edge. In order to adequately address water quality, the buffer width may need to be expanded to include important resource features such as wetlands, steep slopes, areas that are occasionally or seasonally flooded, or critical habitats.

### **OPERATION AND MAINTENANCE**

Fencing materials shall be new, of high quality and durability, and constructed to meet the intended purpose of the practice.

Inspections of the fencing are required at least annually.

### **SUPPORTING DATA AND DOCUMENTATION**

The following is a list of the minimum data and documentation to be recorded in the case file:

1. Purpose of the fence and type of livestock;
2. Field location and plan map;
3. Fencing Details;
  - a. Length of fence (ft);
  - b. Type of fence/posts;
  - c. Average buffer width (ft);
4. Operation and maintenance plan.



### Non-Standard Best Management Practice Verification Report

Cooperator Name, Address and Phone #		FSA Farm / Tract		District		Inspection Type	
		Parcel ID#		MDA Plan ID #		<input type="checkbox"/> Initial Inspection <input type="checkbox"/> Q.A.R. <input type="checkbox"/> Nutrient Trading <input type="checkbox"/> Recheck <input type="checkbox"/> Other _____	
Best Management Practice	Date Installed	Extent Implemented	Unit	Comment			
Stream Fencing	__/__/__		FT				
Watering Facility	__/__/__		NO				
Waste Storage Facility	__/__/__		NO				
Heavy Use Area Protection	__/__/__		AC				
Roof Runoff Structure	__/__/__		NO				
Natural Grassed Buffer	__/__/__		AC	<15 FT	15-35 FT	>35FT	
Natural Forest Buffer	__/__/__		AC	<15 FT	15-35 FT	>35FT	
Natural Wetland	__/__/__		AC				
Cover Crop	__/__/__		AC				
Drainage Management	__/__/__		AC				
Grassed Waterway	__/__/__		AC				
Filter Strip	__/__/__		AC				

- Does the BMP meet the minimum standard as defined in the RC QA manual?  Yes  No
- Is the BMP being utilized to achieve an environmental benefit?  Yes  No
- Is there any maintenance work needed to bring the project up to the minimum standard?  Yes  No
- Has the SCD discussed any improvements or corrective actions with the cooperator?  Yes  No

Expected Completion Date: \_\_/\_\_/\_\_

SCD Description/Remarks:

SCD Reviewer: Name, Position, and Signature

Date of Review

**DRAFT**

# Grass Buffers, Forest Buffers & Filter Strips-

*Please include photo and a map with the location of the buffer(s) marked.*

**DESCRIPTION-** A strip or area of herbaceous vegetation situated in the transitional zone between terrestrial and aquatic habitats.

**PURPOSE-** To protect and improve water quality, reduce erosion from wind and water and to prevent pollution from nutrients, sediment, organic materials or agricultural chemicals from reaching the waters of the State.

## Interview:

1. When was the practice installed? _____ / _____ Month Year
2. How is the buffer managed? Is it mowed? Is it ever burned down? Is it fertilized? How are weeds controlled? Describe:
3. Why no cost-share? <input type="checkbox"/> Not aware that cost-share was available <input type="checkbox"/> Not eligible <input type="checkbox"/> Practice doesn't fit standard <input type="checkbox"/> Programs too complicated <input type="checkbox"/> Programs take too long <input type="checkbox"/> Not selected for program <input type="checkbox"/> Other:

## Field Review:

4. Is it a <input type="checkbox"/> forest buffer or <input type="checkbox"/> grass buffer?	
5. Does the buffer border a <input type="checkbox"/> river, <input type="checkbox"/> stream, <input type="checkbox"/> forest or <input type="checkbox"/> ditch?	Y / N
6. Are livestock excluded from the buffer?	Y / N NA
7. Is there an additional grass or forested area in between the non-cost-shared buffer and the water? If so, how wide?	Y / N
8. How wide is the non-cost-shared buffer? If it buffers water, measure from the top of the bank. If buffer width varies significantly, describe the practice as if it were two or more distinct buffers.	
9. How long is the buffer?	
10. Is the buffer thick? Is there high stem density near the ground surface? Does the grass or trees look healthy? Are bare spots few or none? Describe:	Y / N
11. What is the land use upslope of the buffer? <input type="checkbox"/> Cropland <input type="checkbox"/> Pasture <input type="checkbox"/> Hay <input type="checkbox"/> Other	

FSA Tract # or Parcel ID:

Planner Initials & Date:

**DRAFT**

# Grassed Waterways-

Please include photo and a map with the location of the waterway(s) marked.

**DESCRIPTION-** A natural or constructed waterway, shaped or graded and established in suitable vegetation, to safely convey water across areas of concentrated flow.

**PURPOSE-** To provide protection from erosion prevention of pollutants from nutrients, sediment, animal wastes, or agricultural chemicals from reaching the waters of the State.

## Interview:

1. When was the practice installed? _____ / _____ Month Year
2. How is the waterway maintained? Is it mowed? Is there weed control?
3. Why no cost-share? <input type="checkbox"/> Not aware that cost-share was available <input type="checkbox"/> Not eligible <input type="checkbox"/> Practice doesn't fit standard <input type="checkbox"/> Programs too complicated <input type="checkbox"/> Programs take too long <input type="checkbox"/> Not selected for program <input type="checkbox"/> Other:

## Field Review:

4. What is the length of the waterway? _____	
5. What is the width of the waterway? _____	
6. Does it appear to have healthy plant growth?	Y / N
7. Does the waterway have a steep slope?	Y / N
8. Are there any gullies in the waterway?	Y / N
9. Is there any erosion around the waterway?	Y / N
10. Have any erosion problems been solved by: <input type="checkbox"/> Rock/Riprap <input type="checkbox"/> Gravel <input type="checkbox"/> Erosion Control Matting	
11. Is the waterway buffered by a filter strip?	Y / N
12. Does the waterway pond in any area? (May need to ask landowner.)	Y / N
13. Is there a stable outlet?	Y / N
14. Where does the water outlet to? <input type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Vegetated Channel <input type="checkbox"/> Grade Stabilization Structure	
15. Does the practice provide an environmental benefit?	Y / N

Additional notes and observations are written on back of work sheet.

FSA Tract # or Parcel ID:

Planner Initials & Date:

DRAFT

# Fencing-

Please include photo and a map with the location of the fencing marked.

**DESCRIPTION-** A constructed barrier to wildlife, livestock or people.

**PURPOSE-** This practice may be applied to 1) To prevent, restrict, or control access by domestic animals or people into hazardous or environmentally sensitive areas, 2) To protect areas such as new plantings from damage by livestock, wildlife, or people, 3) To implement a prescribed grazing plan or provide better distribution of grazing animals, 4) To prevent access to areas by predators, 5) To minimize liability and human health concerns or 6) To maintain or improve the quantity and quality of natural or visual resources.

### Interview:

1. When was the practice installed? _____ / _____ Month Year
---

### Field Review:

1. What type of animal does the fence control?	
2. What is the main purpose of the fence? <input type="checkbox"/> Stream/Ditch Buffer <input type="checkbox"/> Prescribed Grazing <input type="checkbox"/> Protect other environmentally sensitive area <input type="checkbox"/> Other (describe):	
3. What is the fence made of? <input type="checkbox"/> Non-Electric Smooth Wire <input type="checkbox"/> Electric Smooth Wire <input type="checkbox"/> Woven Wire <input type="checkbox"/> Barbed Wire <input type="checkbox"/> Wood Boards	
4. How tall is the fence?	5. How many strands?
6. Post spacing?	7. Post material?
8. If used to exclude livestock from a stream, how far is the fence from the top of the bank?	
9. Does the fence appear to be well-maintained? Is it operational?	Y / N
10. Are there any erosion problems around the fence?	Y / N
11. Describe the vegetation around the fence. Is it sufficient? Under control? Are there trees?	
12. Are there properly maintained stream crossings?	Y / N
13. Are there floodgates at stream crossings?	Y / N
14. Are all gates in working order? Are they closed except when moving livestock?	Y / N
15. Are there warning signs on electric fencing?	Y / N

Additional notes and observations are written on back of work sheet.

FSA Tract # or Parcel ID:

Planner Initials & Date:

**DRAFT**

# Watering Facility-

*Please include photo and a map with the location of the practice marked.*

**DESCRIPTION-** A trough or tank with needed devices for water control and/or excess water disposal installed to provide drinking water for livestock in order to improve water quality or stop erosion.

**PURPOSES-** To provide watering facilities which will bring about the desired protection of vegetative cover to prevent erosion and pollutants from nutrients, sediment, and animal wastes from reaching the waters of the State. The primary purpose is not to provide livestock water, but to protect water quality.

**Interview:**

1. When was the practice installed? _____/_____/_____ Month Year	
2. What type of livestock is using the watering facility? <input type="checkbox"/> Dairy <input type="checkbox"/> Beef <input type="checkbox"/> Horses <input type="checkbox"/> Other:	
3. Why no cost-share? <input type="checkbox"/> Not aware that cost-share was available <input type="checkbox"/> Not eligible <input type="checkbox"/> Practice doesn't fit standard <input type="checkbox"/> Programs too complicated <input type="checkbox"/> Programs take too long <input type="checkbox"/> Not selected for program <input type="checkbox"/> Other:	

**Field Review:**

4. What type of watering facility is it? <input type="checkbox"/> Trough <input type="checkbox"/> Waterers	
5. Is it <input type="checkbox"/> Permanent or <input type="checkbox"/> Portable?	
6. Is the facility pulling animals from a sensitive area?	Y / N
7. Is it causing good animal distribution?	Y / N
8. Is it located within 100' of any streams, wetlands or drainage waterways?	Y / N
9. Is it accessible by wildlife? Does it include measures to prevent wildlife drowning?	Y / N Y / N
10. Is the area protected from erosion? If so, by what material? <input type="checkbox"/> Concrete <input type="checkbox"/> Sufficient vegetation <input type="checkbox"/> Other:	Y / N
11. Is overflow managed? If so, how? <input type="checkbox"/> Overflow mechanism <input type="checkbox"/> Roof <input type="checkbox"/> Drainage Outlet	Y / N
12. What is the trough size?	
13. What is the trough material? <input type="checkbox"/> Concrete <input type="checkbox"/> Plastic <input type="checkbox"/> Fiberglass <input type="checkbox"/> Steel	
14. Is there a mechanism to prevent freezing?	Y / N
15. Does the practice provide an environmental benefit?	Y / N

Other notes and observations on back.

FSA Tract # or Parcel ID:

Planner Initials & Date:

DRAFT

# Heavy Use Area Protection-

Please include photo and a map with the location of the practice marked.

**DESCRIPTION-** The stabilization of areas frequently and intensively used by people, animals or vehicles by establishing vegetative cover, surfacing with suitable materials, and/or installing needed structures.

### Interview:

1. When was the practice installed? _____ / _____ Month Year	
2. For poultry: are there HUAPs on all areas where crustouts/cleanouts occur?	Y / N
3. Does the producer clean litter off of the pads after each crustout or cleanout?	Y / N
4. Why no cost-share? <input type="checkbox"/> Not aware that cost-share was available <input type="checkbox"/> Not eligible <input type="checkbox"/> Practice doesn't fit standard <input type="checkbox"/> Programs too complicated <input type="checkbox"/> Programs take too long <input type="checkbox"/> Not selected for program <input type="checkbox"/> Other:	

### Field Review:

5. What type of traffic does the area protect from?	
6. Is there an HUA in front of a waste storage facility?	Y / N
7. The material used is: <input type="checkbox"/> Concrete <input type="checkbox"/> Gravel /Stone <input type="checkbox"/> Mulch	
8. The practice is <input type="checkbox"/> Permanent <input type="checkbox"/> Semi-permanent	
9. Is the material permeable?	Y / N
10. Is the material holding up to the load?	Y / N
11. Describe what is near the area	
12. Is the drainage from the portected area managed?	Y / N
13. Any erosion problems? If so, please describe.	Y / N
14. Does the practice include a vegetated component? If so, please describe.	Y / N
15. Are there any culverts associated with the practice? If so, are they functional?	Y / N
16. What is the total area of the HUAP(s)? In <input type="checkbox"/> Square Feet or <input type="checkbox"/> Acres	
17. Does the practice provide an environmental benefit?	Y / N

Additional notes and observations are written on back of work sheet.

FSA Tract # or Parcel ID:

Planner Initials & Date:

DRAFT

# Waste Storage Facility/Lagoon-

Please include photo and a map with the location of the structure marked.

**DESCRIPTION-** A fabricated structure for temporary storage of animal waste.

**PURPOSES-** The purpose of this practice is to construct a storage facility for animal waste as a component of a waste management system in order to prevent or abate pollution of the waters of the state.

### Interview:

1. When was the practice installed? _____ / _____ / _____ Month Year	
2. What type of livestock does the facility provide storage for? <input type="checkbox"/> Poultry <input type="checkbox"/> Dairy <input type="checkbox"/> Beef <input type="checkbox"/> Swine <input type="checkbox"/> Horses <input type="checkbox"/> Other:	
3. How many animals does the facility support?	
4. What type of facility is it? <input type="checkbox"/> Manure Shed <input type="checkbox"/> Lagoon <input type="checkbox"/> Other (Describe):	
5. What is the capacity of the storage facility? (Either record cubic feet or gallons, or describe cleanout schedule that facility supports.)	
6. Why no cost-share? <input type="checkbox"/> Not aware that cost-share was available <input type="checkbox"/> Not eligible <input type="checkbox"/> Practice doesn't fit standard <input type="checkbox"/> Programs too complicated <input type="checkbox"/> Programs take too long <input type="checkbox"/> Not selected for program <input type="checkbox"/> Other:	

### Field Review:

7. Does the facility appear to be well-located given the layout of the property? <input type="checkbox"/> 100' or more away from water bodies and roads <input type="checkbox"/> Easy access for loading and unloading <input type="checkbox"/> Reasonable proximity to waste source	Y / N
8. What type of manure is being stored? <input type="checkbox"/> Solid <input type="checkbox"/> Liquid	
9. Dimensions: Length & Width _____ & _____ or Diameter _____ Height _____	
10. Constructed Material: Walls: Floor/Liner (or soil type if not lined):	
11. Is the loading/unloading area <input type="checkbox"/> lined? <input type="checkbox"/> Concrete? <input type="checkbox"/> None	
12. Is there a foundation? Y / N / NA	
13. Is the structure covered? Y / N	
14. Is the covering <input type="checkbox"/> permanent or <input type="checkbox"/> temporary?	
15. Is rainfall directed away from the structure? Y / N	

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16. Is there an auxiliary spillway? Y / N 17. Are there any potential problems? (If so, please describe.) Y / N	
18. Does the practice provide an environmental benefit?	Y / N

Additional notes and observations are written on back of work sheet.

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# Roof Runoff Structure-

Please include photo and a map with the location of the structure(s) marked.

**DESCRIPTION-** A facility for collecting, controlling, and disposing of runoff water from roofs.

**PURPOSE-** To prevent roof runoff water from causing a water quality problem, and to reduce pollution and soil erosion from reaching the waters of the State.

### Interview

1. When was the practice installed? _____ / _____ Month Year
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### Field Review:

1. What type of building is it?	
2. Is the top width of the gutter at least 5"?	Y / N
3. Are downspout outlets avoiding contamination with animal waste?	Y / N
4. Do the gutter and downspouts appear to have sufficient strength for snow and ice? Are there a sufficient number of supports? (24" on centers)	Y / N Y / N
5. Are downspouts protected from potential animal/equipment damage?	Y / N
6. Is the system in good condition? Does it need repair?	Y / N
7. Where does the outflow exit? <input type="checkbox"/> Field <input type="checkbox"/> Stream <input type="checkbox"/> Storage Area	
8. Does it cause any erosion or pollution problem? (If so, please describe.)	Y / N
<b>Outlets:</b>	
9. How large is the outlet?	
10. For surface outlets, is the outflow directed/protected from erosion (ex. by a splash block)? How far from the structure is the outlet?	Y / N
11. For subsurface outlets, is there a proper slope for steady flow?	Y / N
12. Is there any sign of <input type="checkbox"/> clogging, <input type="checkbox"/> cracks or <input type="checkbox"/> erosion?	Y / N
<b>Collection Trenches:</b>	
13. Are collection trenches aligned with the roof drip line?	Y / N
14. Are trenches at least 24" wide and deep?	Y / N
15. Do they have a concrete or stone bottom?	Y / N
16. Are they protected/fenced from animals and animal waste?	Y / N

Other notes and observations:

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# Composting Facility-

Please include photo and a map with the location of the practice marked.

**DESCRIPTION-** A facility to process raw organic by-products- typically dead livestock and manure- into biologically stable organic material.

**PURPOSES-** To reduce the pollution potential of organic agricultural wastes to surface and ground water.

### Interview:

1. When was the practice installed? _____ / _____ Month Year	
2. The facility's main purpose is to compost: <input type="checkbox"/> Livestock <input type="checkbox"/> Manure/ Litter <input type="checkbox"/> Other organic material	Y / N
3. What ingredients are used in the compost mix?	
4. For the purposes of managing the compost material, do you factor in: Temperature? Moisture Content?	Y / N Y / N
5. Is the compost aerated? If so, how?	Y / N
6. Is the compost turned? If so, how often?	Y / N
7. Where does the finished material go?	

### Field Review:

8. Is the facility located adjacent to a Waste Storage Facility?	Y / N
9. Is the facility more than 100 feet from streams, wetlands and waterways? Is the facility more than 100 feet from other dwellings?	Y / N Y / N
10. What are the materials used? Walls: Floor: Roof:	Y / N
11. What are the dimensions of the structure? Length: _____ Width: _____ Height (to the top of the wall): _____	
12. Is the composting facility configured using <input type="checkbox"/> Bins or <input type="checkbox"/> Channel Design?	

Other notes and observations:

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# Prescribed Grazing, Rotational Grazing

Please include a map with the location of the practice marked.

**DESCRIPTION-** Managing the controlled harvest of vegetation with grazing animals.

**PURPOSES-** This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes: 1. Maintain or improve the health and vigor of plant communities and meet the basic needs of livestock; 2. Reduce soil erosion, and maintain or improve soil condition; 3. Maintain or improve water quality and quantity; 4. Improve quantity and quality of forage for livestock health and productivity; 5. Maintain or improve the quantity and quality of food and/or cover for wildlife habitat; 6. Promote economic stability through grazing land sustainability.

## Interview & Field Review

1. When did you begin using this practice? _____ / _____ Month Year	
2. What species of animals are grazing? (Check all that apply) <input type="checkbox"/> Dairy Cows <input type="checkbox"/> Beef Cows <input type="checkbox"/> Sheep <input type="checkbox"/> Goats <input type="checkbox"/> Horses <input type="checkbox"/> Other:	Y / N
3. Do you have a rotational grazing plan?	Y / N
4. How many paddocks are there?	
5. How many total acres?	
6. How many animals are in each paddock?	
7. How many days do the animals spend in each paddock?	
8. What dictates livestock rotation? <input type="checkbox"/> Set schedule <input type="checkbox"/> Forage height	
9. How many months out of the year do you graze the animals?	
10. Is livestock given additional feed?	Y / N
11. What grass species are there?	
12. Do the animals graze crop residues?	Y / N
13. Are there any unprotected heavy use areas?	Y / N
14. Are there any erosion issues? If yes, please describe.	Y / N
15. Have you ever used C-GRAZ or G SAT (Computer Grazing Programs)	Y / N
16. Do livestock have access to streams, wetlands or waterways?	Y / N
17. Is there a sacrifice area?	Y / N
18. Do livestock have access to clean water within a reasonable distance?	Y / N

Other notes and observations:

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# Wetland Restoration & Wetland Creation-

Please include photo and a map with the location of the wetland marked.

**DESCRIPTION-** An area of vegetated wetland to remove sediment, nutrients, organic matter and other pollutants from surface and ground water associated with agricultural operations.

**PURPOSE-** The purpose of this practice is the restoration of wetland areas and their functions and values which will result in removing sediment, organic matter, pollutants and utilizing nutrients, from surface and ground water associated with agricultural operations.

**Interview:**

1. When was the practice installed? _____ / _____ Month Year	
2. Was this area a wetland historically?	Y / N
3. How was the wetland restored? <input type="checkbox"/> Plugging/pipe riser <input type="checkbox"/> Drain removal <input type="checkbox"/> Drain replacement (perforated with non-perforated) <input type="checkbox"/> Other (please describe):	
4. Were any plant/ trees installed during restoration? If so, please describe:	Y / N
5. Was topsoil added to promote new plant growth?	Y / N
6. Was any form of organic matter added? (Straw, compost, wood chips, etc.)	Y / N
7. Was any soil removed from the area? Shallow excavation?	Y / N
8. Were any embankments added?	Y / N
9. Why no cost-share? <input type="checkbox"/> Not aware that cost-share was available <input type="checkbox"/> Not eligible <input type="checkbox"/> Practice doesn't fit standard <input type="checkbox"/> Programs too complicated <input type="checkbox"/> Programs take too long <input type="checkbox"/> Not selected for program <input type="checkbox"/> Other:	

**Field Review:**

10. Is the wetland wooded?	Y / N
11. Is there a buffer surrounding the restoration? If so, how wide is the buffer?	Y / N
12. Are there any spillways or pipe conduits added for surface inflow?	Y / N
13. Does the wetland affect any other upstream drainage? If so, how?	Y / N
14. Is there a water control structure to control inflow or outflow?	Y / N
15. Is the wetland adjacent to a water body?	Y / N
16. How large is the wetland?	

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17. How much area drains into the wetland?	
18. Does the practice provide an environmental benefit?	Y / N

Other notes and observations:

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# Water Control Structure-

Please include photo and a map with the location of the drainage system marked.

**DESCRIPTION-** The process of managing water discharges from surface and/or subsurface agricultural drainage systems

**PURPOSE-** The purpose of this practice is to 1) reduce nutrient, pathogen, and/or pesticide loading from drainage systems into downstream receiving waters, 2) improve productivity, health and vigor of plants, 3) reduce oxidation of organic matter in soils, 4) reduce wind erosion or particulate matter (dust) emissions or 5) provide seasonal wildlife habitat.

**Interview:**

1. When was the practice installed? _____ / _____ Month Year	
2. What type of drainage management system is it? <input type="checkbox"/> Tile Drain <input type="checkbox"/> Water Control Structure <input type="checkbox"/> Ditch <input type="checkbox"/> Pond <input type="checkbox"/> Other:	
3. What is the main purpose of the drainage system? <input type="checkbox"/> Wildlife benefits <input type="checkbox"/> Environmental quality <input type="checkbox"/> Drainage of agricultural land Describe:	
4. Does it fulfill its intended purpose?	Y / N
5. Do you ever leave the water control structure in free drainage mode? When?	Y / N
6. How often do you drain your water body? _____ Why? <input type="checkbox"/> Clean out sediment <input type="checkbox"/> Plant Crops for Wildlife <input type="checkbox"/> Other:	
7. Why no cost-share? <input type="checkbox"/> Not aware that cost-share was available <input type="checkbox"/> Not eligible <input type="checkbox"/> Practice doesn't fit standard <input type="checkbox"/> Programs too complicated <input type="checkbox"/> Programs take too long <input type="checkbox"/> Not selected for program <input type="checkbox"/> Other:	

**Field Review:**

8. Does the drainage system include a water control structure with a gate system?	Y / N
9. Does the system collect surface water from ag land?	Y / N
10. How many acres drain into the system?	
11. Where does the outlet drain?	
12. Where in the field is the structure?	

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13. Does the drainage/collection provide wildlife habitat?	Y / N
14. Does the system provide an environmental benefit?	Y / N
15. Does the practice provide an environmental benefit?	Y / N

Additional notes and observations:

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# Vegetative Environmental Buffer-

(also "Tree Shelter", "Poultry Windbreak")

**DESCRIPTION-** Windbreaks or shelterbelts are single or multiple rows of trees or shrubs in linear configurations.

**PURPOSES-** This practice may be applied for one or more of the following purposes: 1. To provide shelter for structures, livestock, and people; 2. To improve air quality by reducing and intercepting airborne particulate matter, chemicals and odors; 3. To provide noise screens; 4. To provide visual screens

**Interview:**

1. When was the practice installed? _____ / _____	
Month	Year
1. Why was the buffer installed?	
<input type="checkbox"/> Visual screen	<input type="checkbox"/> Control particulates
<input type="checkbox"/> Odor Control	<input type="checkbox"/> Shading livestock
<input type="checkbox"/> Other:	
2. What type of livestock operation?	
<input type="checkbox"/> Poultry <input type="checkbox"/> Dairy <input type="checkbox"/> Beef <input type="checkbox"/> Swine <input type="checkbox"/> Other:	
3. How is the area managed? Weeds? Pests? Accumulated particulates?	
4. Why no cost-share?	
<input type="checkbox"/> Not aware that cost-share was available	<input type="checkbox"/> Not eligible
<input type="checkbox"/> Practice doesn't fit standard	<input type="checkbox"/> Programs too complicated
<input type="checkbox"/> Programs take too long	<input type="checkbox"/> Not selected for program
<input type="checkbox"/> Other:	

**Field Review:**

5. How long is the buffer?	
6. How wide is the buffer?	
7. Is the buffer on both sides of the animal production area?	Y / N
8. How many rows of trees are there?	
9. What is the spacing of the trees?	
10. What species are the trees?	
1 <sup>st</sup> row:	2 <sup>nd</sup> row:
	3 <sup>rd</sup> row:
11. Do the trees appear to be healthy?	
12. What percentage of trees are missing or dead?	

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13. Is the buffer irrigated?	Y/N
14. Are the trees in front of ventilation fans? If so, how far are the trees from the fans?	Y/N
15. Does the practice provide an environmental benefit?	Y/N

Additional notes and observations:

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# Alternative Crops/Carbon Sequestration/ Fallow

Please include photo of crop and a map with the location marked

**DESCRIPTION-** A designated area devoted to herbaceous vegetation of a desired variety of alternative crop, such as switchgrass.

**PURPOSE-** Improve water quality; Promote desired plant growth; Control insects, disease and weeds; Improve or provide wildlife habitat

## Interview:

1. When was the practice installed? _____ / _____ Month Year	
2. How many acres are planted in alternative crops?	
3. What was the prior land use? <input type="checkbox"/> Cropland <input type="checkbox"/> Pasture <input type="checkbox"/> Fallow Land <input type="checkbox"/> Other (Describe)	
4. What is planted? <input type="checkbox"/> Switchgrass <input type="checkbox"/> Warm Season Grass <input type="checkbox"/> Cool Season Grass <input type="checkbox"/> Other (describe):	
5. What is the primary reason for establishing the alternative crop? <input type="checkbox"/> Poor soil <input type="checkbox"/> Buffer <input type="checkbox"/> Wildlife Benefits <input type="checkbox"/> Profit <input type="checkbox"/> Other (Describe) <input type="checkbox"/> Cost-Share/ Incentive <input type="checkbox"/> Carbon Sequestration	
6. Does anyone provide financial assistance for the crop? If so, who?	Y / N
7. Does anyone provide technical assistance for the crop? If so, who?	Y / N
8. What are your future plans for the alternative crop?	
9. How is the stand managed? (Mowing, burning, fertilization, weed control, etc.)	
10. Is the crop harvested for any use? If so, please describe.	Y / N

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11. Is the area grazed?	Y / N
12. Why no cost-share? <input type="checkbox"/> Not aware that cost-share was available <input type="checkbox"/> Not eligible <input type="checkbox"/> Practice doesn't fit standard <input type="checkbox"/> Programs too complicated <input type="checkbox"/> Programs take too long <input type="checkbox"/> Not selected for program <input type="checkbox"/> Other:	

**Field Review:**

13. How many acres are planted in alternative crops? (Or describe length & width.)	
14. Does the stand appear to be healthy and maintained?	Y / N
15. Are there excessive weeds?	Y / N
16. Does the practice provide an environmental benefit?	Y / N

Other notes and observations:

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