



Steve Troxler
Commissioner

North Carolina Department of Agriculture
and Consumer Services
Division of Soil and Water Conservation

Patricia K. Harris
Director

Memorandum

TO: Environmental Review Commission and Fiscal Research Division

FROM: Patricia K. Harris, Director *by DSW*

Date: January 31, 2014

RE: 2013 Annual Report on the Agriculture Cost Share Program for Nonpoint Source Pollution Control

This memo transmits the 2013 Annual Report on the Agriculture Cost Share Program for Nonpoint Source Pollution Control as required by General Statute 106-850(e). The statute requires the Soil and Water Conservation Commission to provide annual reports to the Environmental Review Commission and the Fiscal Research Division that include a list of projects that received State funding pursuant to the program, the results of the water quality evaluations conducted pursuant to subdivision (7) of subsection (b), findings regarding the effectiveness of each of these projects to accomplish its primary purpose, and any recommendations to assure that State funding is used in the most cost-effective manner and accomplishes the greatest improvement in water quality.

If you have any questions or need additional information, please contact me at (919) 715-6097 or by email at pat.harris@ncagr.gov.

Enclosure

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**REPORT TO THE ENVIRONMENTAL REVIEW COMMISSION
AND FISCAL RESEARCH DIVISION OF THE NORTH CAROLINA
GENERAL ASSEMBLY ON WATER QUALITY ACCOUNTABILITY
FOR THE AGRICULTURE COST SHARE PROGRAM
PROGRAM YEAR 2013**



INTRODUCTION

The North Carolina Agriculture Cost Share Program (ACSP) was authorized by the General Assembly in 1983 to improve water quality associated with agriculture in three nutrient sensitive watersheds covering 16 counties. In 1990, the program was expanded to include 96 soil and water conservation districts (districts) covering all 100 counties across the state.

While the Soil and Water Conservation Commission (commission) has the statutory responsibility to create, implement and supervise the ACSP, it is delivered at the local level by 492 elected and appointed district supervisors who are assisted by their staff and partners in natural resource conservation. These partners include technical and professional employees of the soil and water conservation district or county, the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), the North Carolina Department of Agriculture and Consumer Services (NCDACS) Division of Soil and Water Conservation (division), the Cooperative Extension Service, and the North Carolina Department of Agriculture and Consumer Services.

The commission continues to adapt the program to respond to changing needs and technology. There were 71 approved best management practices (BMPs) in the ACSP for program year 2013. BMPs include both short-term and long-term practices. For a BMP to be approved by the commission, a NRCS technical standard addressing the water quality problem must exist, or the commission must adopt standards for the practice. Sufficient cost information must also be available to determine the appropriate cost share amount. Occasionally, BMPs are approved on a limited scale for evaluation purposes. These are referred to as district BMPs. The definitions of approved BMPs for the ACSP are provided in the Detailed Implementation Plan (Attachment A).

For most practices, the amount provided in cost share is based on 75 percent of a predetermined average cost for the practice up to a maximum of \$75,000 per cooperating farmer per year. However, some practices are cost shared on 75 percent of actual cost due to the variable nature of the practice. Farmers who qualify as beginning farmers or limited resource farmers, and farmers participating in an enhanced voluntary agricultural district are eligible to receive up to 90 percent cost share up to a maximum of \$100,000 per year.

The commission conducts a wholesale review of its cost share average costs every three years, but it makes necessary corrections when presented with information that one of its predetermined costs is inaccurate.

Districts spot check a minimum of 5 percent of randomly selected active contracts each year to ensure that practices are being maintained properly. The division and NRCS also spot check contracts as part of regular reviews of district office implementation of the ACSP. Spot checks for 2013 showed excellent compliance with maintenance requirements by participating farmers. Only 1.6 percent of contracts were out of compliance. When practices are discovered to need additional maintenance, the district is usually able to assist the cooperator to restore the practice to its intended function.

Table 1: Number of site visits conducted during program year 2013

County	Number of Participating Supervisors	ACSP Contracts Spotchecked	ACSP Active Contracts	% of ACSP Contracts Spotchecked	ACSP Contracts in Compliance	ACSP Out of Compliance	ACSP Contracts Needing Maintenance
Alamance	4	20	286	7%	19	0	1
Alexander	2	15	73	21%	13	0	2
Alleghany	3	13	126	10%	12	0	1
Anson	2	11	38	29%	10	1	0
Ashe	5	5	104	5%	5	0	0
Avery	1	5	108	5%	5	0	0
Beaufort	5	5	39	13%	5	0	0
Bertie	1	9	139	6%	9	0	0
Bladen	1	10	88	11%	10	0	0
Brunswick	2	3	49	6%	3	0	0
Buncombe	3	7	109	6%	7	0	0
Burke	2	6	68	9%	5	0	1
Cabarrus	2	9	71	13%	9	0	0
Caldwell	4	8	67	12%	6	0	2
Camden	3	5	12	42%	5	0	0
Carteret	3	1	1	100%	1	0	0
Caswell	1	16	300	5%	16	0	0
Catawba	3	5	89	6%	5	0	0
Chatham	5	32	119	27%	28	2	2
Cherokee	4	12	191	6%	12	0	0
Chowan	3	5	74	7%	5	0	0
Clay	4	5	80	6%	4	0	0
Cleveland	3	4	59	7%	3	0	1
Columbus	2	9	132	7%	9	0	0
Craven	1	6	49	12%	4	1	1
Cumberland	2	7	68	10%	7	0	0
Currituck	3	2	4	50%	2	0	0
Dare	2	1	2	50%	1	0	0
Davidson	2	20	76	26%	19	1	0
Davie	2	17	70	24%	16	0	1

County	Number of Participating Supervisors	ACSP Contracts Spotchecked	ACSP Active Contracts	% of ACSP Contracts Spotchecked	ACSP Contracts in Compliance	ACSP Out of Compliance	ACSP Contracts Needing Maintenance
Durham	4	6	60	10%	6	0	0
Edgecombe	3	10	158	6%	10	0	0
Forsyth	3	5	85	6%	5	0	0
Franklin	2	12	105	11%	12	0	0
Gaston	2	3	71	4%	3	0	0
Gates	5	8	105	8%	8	0	0
Graham	2	5	41	12%	5	0	0
Granville	2	12	229	5%	12	0	0
Greene	2	9	83	11%	9	0	0
Guilford	4	22	149	15%	21	0	1
Halifax	2	10	69	14%	10	0	0
Harnett	5	14	280	5%	11	0	3
Haywood	2	6	115	5%	6	0	0
Henderson	1	8	109	7%	7	0	1
Hertford	1	5	104	5%	4	0	1
Hoke	3	7	48	15%	7	0	0
Hyde	3	9	70	13%	5	0	0
Iredell	1	4	62	6%	3	0	1
Jackson	2	4	67	6%	4	0	0
Johnston	3	24	210	11%	22	0	2
Jones	2	12	70	17%	11	0	1
Lee	2	5	100	5%	2	3	0
Lenoir	3	19	169	11%	18	0	1
Lincoln	1	7	98	7%	5	1	1
Macon	1	3	65	5%	3	0	0
Madison	2	5	95	5%	5	0	0
Martin	4	9	138	7%	9	0	0
McDowell	2	3	3	100%	3	0	0
Mecklenburg	2	2	8	25%	1	0	1
Mitchell	2	13	125	10%	13	0	0
Montgomery	2	17	55	31%	17	0	0
Moore	3	17	39	44%	17	0	0
Nash	6	5	94	5%	5	0	0
New Hanover	2	1	4	25%	1	0	0
Northampton	2	16	279	6%	10	0	6
Onslow	3	9	9	100%	8	0	1
Orange	1	16	149	11%	16	0	0
Pamlico	1	4	44	9%	4	0	0
Pasquotank	3	3	31	10%	31	0	0
Pender	3	6	112	5%	5	0	1
Perquimans	3	7	40	18%	7	0	0
Person	1	10	199	5%	7	0	3
Pitt	2	18	359	5%	18	0	0
Polk	2	5	44	11%	5	0	0

County	Number of Participating Supervisors	ACSP Contracts Spotchecked	ACSP Active Contracts	% of ACSP Contracts Spotchecked	ACSP Contracts in Compliance	ACSP Out of Compliance	ACSP Contracts Needing Maintenance
Randolph	2	11	75	15%	11	0	0
Richmond	1	12	55	22%	10	2	0
Robeson	3	5	100	5%	5	0	0
Rockingham	2	9	173	5%	7	2	0
Rowan	1	9	95	9%	8	0	1
Rutherford	2	9	152	6%	5	0	4
Sampson	4	22	195	11%	17	1	4
Scotland	1	5	41	12%	5	0	0
Stanly	2	8	113	7%	8	0	0
Stokes	4	8	124	6%	8	0	0
Surry	3	14	202	7%	12	1	1
Swain	4	4	33	12%	4	0	0
Transylvania	1	3	60	5%	3	0	0
Tyrrell	1	2	27	7%	2	0	0
Union	1	12	54	22%	12	0	0
Vance	2	5	102	5%	5	0	0
Wake	5	8	148	5%	7	0	1
Warren	2	11	166	7%	9	0	2
Washington	2	6	50	12%	6	0	0
Watauga	1	9	85	11%	9	0	0
Wayne	2	11	163	7%	11	0	0
Wilkes	3	22	80	28%	22	0	0
Wilson	4	5	109	5%	5	0	0
Yadkin	2	18	134	13%	18	0	0
Yancey	2	14	127	11%	13	0	1
Total	246	929	10,075	9%	886	15	51

PROGRAM ACCOMPLISHMENTS

Since the first ACSP contracts were issued in 1984 through the end of program year 2013, 56,960 contracts have been approved for installing BMPs affecting over 2.8 million acres. Most BMPs have a life expectancy of ten years, which is how long participating farmers must agree to maintain the practices.

Early in the program, the major factor used for determining success was tons of soil saved because the program funded predominantly sediment and erosion control practices. It is estimated that best management practices installed through the ACSP since its inception are saving over 7.6 million tons of soil annually. Since the mid-1990s, while continuing its attention on minimizing soil loss and erosion, the program has increased its attention on reducing and managing nutrients from cropland and livestock production. Part of the impetus for this new attention was the promulgation of the 15A NCAC 2H.0200 (now 15A NCAC 2T) animal waste management rules and the nutrient sensitive waters strategies for the Neuse and Tar-Pamlico River Basins as well as Jordan and Falls Lakes.

Highlights of additional accomplishments include the following:

- ☐ 199,632 acres of marginal or environmentally sensitive cropland have been converted to trees, grass or wildlife habitat areas.
- ☐ 4,002 waste management practices have been installed to properly store and manage dry and wet animal waste.
- ☐ 942 mortality management systems have been installed to properly manage livestock mortalities to minimize water quality impacts.
- ☐ 4,124 water control structures have been installed improving water management on and reducing nutrient loss from approximately 319,308 acres.
- ☐ 1,225 miles of fencing have been erected, in combination with other practices (e.g., watering sources) to exclude livestock from streams.
- ☐ 653,390 acres of cropland have been converted to no-till or conservation tillage to reduce sediment loss associated with traditional practices.
- ☐ 17,008 acres of forested riparian buffer have been established to reduce nutrient loss from approximately 68,027 acres of cropland.
- ☐ 143 chemical handling and management structures have been installed to provide an environmentally safe means for mixing and storing agricultural chemicals.

REPORTING REQUIREMENTS

Projects Receiving State Funds

Participating farmers have up to three years to complete the work included in ACSP contracts. Therefore, cost share payments made each year may be for contracts written in the current program year or in the two previous program years. For this reason the fund balance for the program will always exceed the amount appropriated in a given year.

Each contract is considered a “project.” Each project may include only one BMP or a system of practices that include several BMPs. Cost share payments are made only when installation of a BMP is completed and certified to be in accordance with current NRCS or commission standards.

ACSP payments were applied to 812 projects statewide between July 1, 2012 and June 30, 2013. These contracts received total payments of \$3,986,600. A list of individual contracts to which agriculture cost share funds were applied in program year 2013 is available upon request.

New Contracts for Program Year 2013

In program year 2013, districts requested \$20,472,474 to address identified water quality concerns. The General Assembly appropriated \$4,464,413 in recurring general funds for BMP installation. Current appropriations do not enable districts to meet demand for financial assistance for installing BMPs to protect water quality in North Carolina.

In total, the commission allocated \$5,081,963 to districts. In addition to the 2013 appropriation, the commission also had available for allocation (1) funds allocated to districts in 2012 with which districts were unable to execute contracts with farmers prior to the end of the program year and (2) funds

recovered from completed and expired contracts from program years 2010 through 2012. Despite the commission's actions to improve efficiency of the ACSP, districts still must turn away two out of every three farmers requesting cost share assistance.

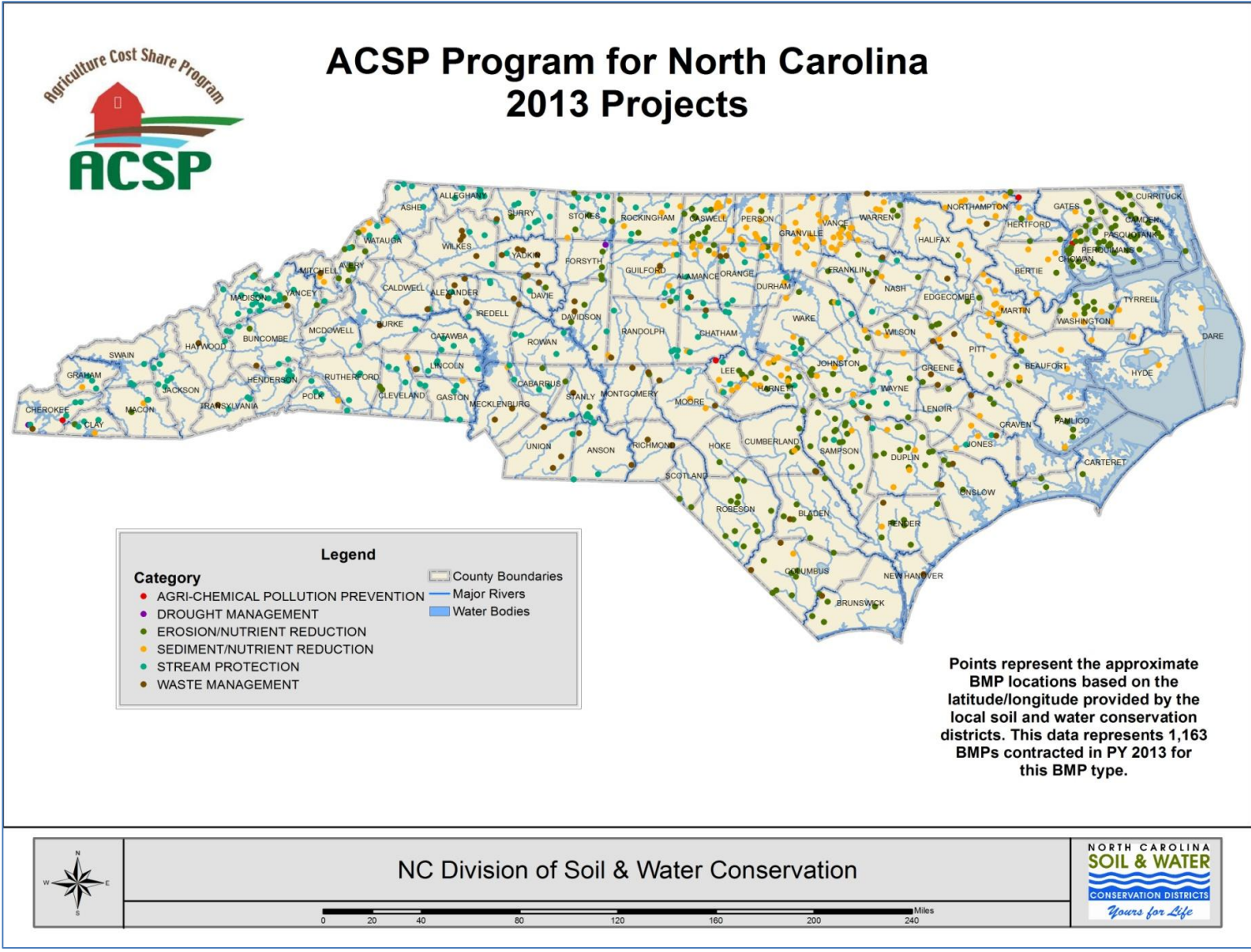
Districts obligated \$4,819,171 of state appropriated cost share funds to 744 new contracts with farmers in program year 2013. In addition, the ACSP infrastructure was used to implement conservation practices using several other funding sources, including the Agricultural Drought Response Project, numerous grants, and an agreement with the Ecosystem Enhancement Program. In all, districts obligated \$6,213,499 to 825 contracts. Table 2 presents the total number and value of 2013 contracts for each county. Figure 1 shows the distribution of ACSP projects within each county. Maps by BMP category can be found in Attachment E.

Table 2: Total number and value of 2013 contracts by county

County	Number of 2013 Contracts	Amount Contracted (Cost Share)	Total Amount Contracted	County	Number of 2013 Contracts	Amount Contracted (Cost Share)	Total Amount Contracted
Alamance	14	\$49,080	\$133,232	Jones	7	\$48,707	\$54,396
Alexander	5	\$64,116	\$95,967	Lee	15	\$50,597	\$50,597
Alleghany	11	\$54,654	\$75,094	Lenoir	5	\$35,142	\$35,142
Anson	4	\$57,170	\$63,227	Lincoln	7	\$54,464	\$77,297
Ashe	5	\$54,922	\$62,478	Macon	4	\$32,483	\$32,483
Avery	11	\$52,462	\$52,462	Madison	15	\$55,589	\$75,874
Beaufort	12	\$57,591	\$63,256	Martin	9	\$23,557	\$27,818
Bertie	9	\$37,721	\$37,721	McDowell	2	\$10,588	\$15,581
Bladen	11	\$46,485	\$46,485	Mecklenburg	2	\$25,020	\$33,226
Brunswick	5	\$41,355	\$41,355	Mitchell	4	\$55,961	\$76,924
Buncombe	10	\$60,702	\$83,443	Montgomery	3	\$44,682	\$44,682
Burke	6	\$32,305	\$32,305	Moore	5	\$51,462	\$56,525
Cabarrus	8	\$46,285	\$47,871	Nash	8	\$52,083	\$53,059
Caldwell	4	\$40,959	\$45,643	New Hanover	0	\$0	\$0
Camden	11	\$37,122	\$37,122	Northampton	14	\$44,076	\$44,076
Carteret	4	\$13,856	\$13,856	Onslow	6	\$32,840	\$32,840
Caswell	21	\$54,196	\$76,665	Orange	10	\$61,860	\$108,233
Catawba	7	\$41,815	\$46,984	Pamlico	6	\$47,812	\$47,812
Chatham	11	\$64,844	\$111,792	Pasquotank	13	\$48,989	\$58,985
Cherokee	9	\$22,667	\$32,350	Pender	9	\$44,424	\$48,554
Chowan	12	\$39,456	\$52,467	Perquimans	15	\$41,808	\$53,885
Clay	5	\$29,984	\$39,734	Person	11	\$45,679	\$46,286
Cleveland	7	\$43,002	\$43,002	Pitt	9	\$44,764	\$53,646
Columbus	12	\$47,432	\$82,632	Polk	4	\$39,840	\$39,840
Craven	5	\$43,311	\$47,378	Randolph	8	\$65,931	\$78,604
Cumberland	7	\$23,737	\$26,622	Richmond	4	\$35,496	\$51,284

County	Number of 2013 Contracts	Amount Contracted (Cost Share)	Total Amount Contracted	County	Number of 2013 Contracts	Amount Contracted (Cost Share)	Total Amount Contracted
Currituck	3	\$19,999	\$19,999	Robeson	14	\$71,425	\$71,425
Dare	0	\$0	\$0	Rockingham	14	\$44,139	\$115,149
Davidson	7	\$49,831	\$58,000	Rowan	4	\$53,311	\$53,311
Davie	5	\$49,116	\$49,116	Rutherford	8	\$46,021	\$46,021
Duplin	22	\$85,038	\$96,550	Sampson	19	\$58,804	\$58,804
Durham	11	\$43,289	\$66,266	Scotland	3	\$19,921	\$19,921
Edgecombe	6	\$42,754	\$42,754	Stanly	7	\$53,808	\$59,987
Forsyth	5	\$35,086	\$51,042	Stokes	15	\$36,075	\$91,349
Franklin	10	\$59,439	\$72,807	Surry	9	\$73,903	\$113,600
Gaston	7	\$46,642	\$52,090	Swain	5	\$29,203	\$29,203
Gates	7	\$26,356	\$29,417	Transylvania	4	\$39,388	\$39,388
Graham	5	\$23,600	\$26,677	Tyrrell	2	\$42,849	\$42,849
Granville	17	\$52,410	\$52,410	Union	7	\$56,000	\$56,000
Greene	5	\$47,090	\$47,090	Vance	13	\$42,168	\$42,168
Guilford	11	\$53,012	\$150,737	Wake	13	\$58,519	\$80,023
Halifax	5	\$46,303	\$46,303	Warren	12	\$47,546	\$56,746
Harnett	21	\$38,346	\$38,346	Washington	14	\$47,439	\$47,439
Haywood	5	\$48,584	\$48,584	Watauga	8	\$46,048	\$61,151
Henderson	7	\$62,752	\$68,905	Wayne	11	\$49,113	\$63,232
Hertford	6	\$36,963	\$36,963	Wilkes	7	\$60,528	\$137,343
Hoke	2	\$31,133	\$31,133	Wilson	9	\$34,644	\$39,342
Hyde	6	\$37,350	\$37,350	Yadkin	7	\$59,463	\$71,512
Iredell	6	\$44,768	\$44,768	Yancey	11	\$50,030	\$67,583
Jackson	7	\$37,678	\$37,678				
Johnson	21	\$64,239	\$70,426	Total		\$4,819,171	\$6,213,499

Figure 1: 2013 Agriculture Cost Share Program Projects



Estimated Water Quality Benefits of ACSP Contracts Initiated in 2013

N.C.G.S 143-215.74(b)(7) requires that each project's benefits to water quality be estimated before funding is awarded. To meet this requirement, the commission chose three indicators of water quality benefits: (1) tons of soil saved, (2) pounds of nitrogen saved or managed, and (3) pounds of phosphorus saved or managed.

Soil savings estimates have been required on all ASCP contracts since the start of the program. Beginning with the 1997 program year, estimates of nitrogen and phosphorus savings were required. The division continues to work with the Division of Water Resources, NRCS, and North Carolina State University to improve and refine the methods used to estimate and account for nutrient reductions.

These estimates have allowed the division to track progress made by agriculture relative to the nutrient reduction requirements in the Neuse, Tar-Pamlico, Jordan Lake and Falls Lake nutrient reduction strategies for agriculture. The ACSP is playing a key role in helping farmers achieve and maintain the nutrient reductions required by these rules.

Local districts determine which projects are eligible for funding in their areas according to a required priority ranking process. The priority ranking is tailored to each district's water quality concerns. The water quality evaluations on each project are carried out at the district level, and the water quality benefit estimates are provided to the division on each contract and in the online contracting system.

Between 1984 and 2012 it is estimated that an average of 6.62 million tons of soil have been saved annually during the life of the program. Also the program has reduced nitrogen and phosphorus losses from agricultural land by 18 million and 5.3 million lb/year, respectively. In 2013 the division is in the process of a database conversion and specific information for program year 2013 can be provided upon request.

The division does not have a good tool for estimating the benefits for many of the drought response BMPs, such as livestock watering wells. Still, these practices are known to improve water quality by reducing livestock dependence upon streams for watering. The Technical Review Committee for the program has formed a workgroup to develop better accounting tools for these practices. Another factor impacting benefits is the reduced total number of contracts per year. Fewer contracts are due to the reduced funding for the program and the increase in costs for materials and practices over time.

Some BMPs standing alone will not directly result in sediment or erosion reductions or nitrogen or phosphorus savings, but are used in conjunction with other practices. These BMPs are called "facilitating practices" and are necessary to facilitate and ensure that other practices in the BMP system are effective at reducing nutrient or sediment loading to a water resource. Therefore, their reduction credit is linked to the facilitated practice. An example of a facilitating practice is a water tank, which must be installed for livestock drinking water purposes before fencing can be put up to keep livestock out of a stream.

Effectiveness of Each Project to Accomplish Its Primary Purpose

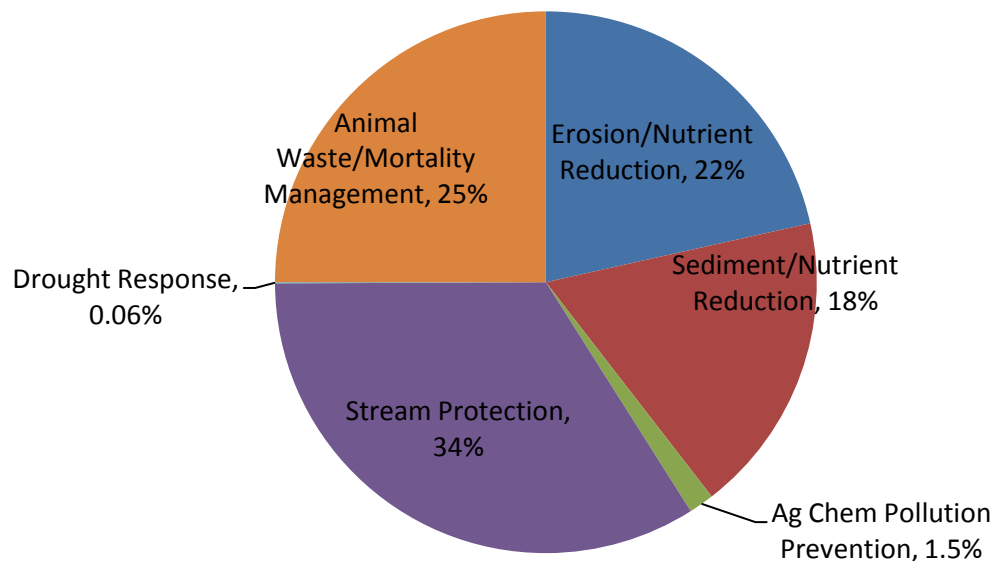
The statutory purpose of the program and each project is to improve water quality by reducing the input of agricultural non-point source pollution into the water courses of the state. Each BMP approved for the ACSP is designed for at least one of five major purposes to protect the water resources of the state:

- (1) sediment/nutrient delivery reduction through reduction of applied nutrients, reduction of soil loss, or interception of nutrients from fields;
- (2) erosion reduction/nutrient loss reduction in fields through reduction of applied nutrients or prevention of soil detachment;
- (3) prevention of agricultural chemical pollution of ground or surface water from improper handling or accidents;

- (4) reduction of nutrient loading through proper management of animal waste;
- (5) stream protection measures to reduce the delivery of sediment and nutrients by animals and stabilize streambanks to minimize further erosion and sediment contribution.

As shown in Figure 2, 29 percent of the 2013 funds from all funding sources were directed toward erosion and nutrient-reducing BMPs (e.g., conservation tillage, cropland conversion to grass or trees); 18 percent were directed toward sediment and nutrient-reducing BMPs (e.g., riparian buffers, field borders, grassed waterways); 34 percent were directed toward stream protection systems (e.g., livestock exclusion); 25 percent were directed toward animal operations for waste and mortality management BMPs (e.g., poultry litter storage structures, closure of inactive lagoons, livestock feeding/waste storage structures); 1.5 percent was directed toward agrichemical pollution prevention measures (e.g. agrichemical handling facilities), and less than 1 percent was directed toward drought response BMPs (e.g. pasture renovation, wells, conservation irrigation systems). Attachment C includes charts showing the approved BMPs in these categories and their relationship to water quality improvement.

Figure 2: 2013 ACSP Contracts by Category



Projects for which program funds have been expended are verified by staff to ensure that the practices are installed in accordance with program standards and that it is accomplishing its primary purpose.

TARGETING ACSP FUNDS TO WATERSHEDS OF IMPAIRED WATERS

The commission continues to exercise leadership in allocating ACSP resources to local districts containing impaired waters. This is best illustrated by the fact that the commission targeted \$399,987 of funds available in 2013 for the specific purpose of installing BMPs into watersheds listed on the State's 303(d) list of impaired waters due to agricultural nonpoint source pollution. Agriculture was identified as a potential source of pollutants to impaired waters in 94 counties. This allocation was limited to 30 districts that have completed Impacted/Impaired Streams Initiative surveys to identify specific project locations to address the potential sources of the impairment.

In 2013, about 12.7 percent of ACSP funds were used to implement BMPs in watersheds of impaired waters. Considering that only 2.4 percent of North Carolina's stream miles are attributed to being impaired by agricultural sources, this demonstrates that the ACSP funds are being significantly targeted toward improving streams that do not fully meet their uses.

Approximately 20 percent of funds contracted in program year 2013 were contracted with farmers in the Neuse and Tar-Pamlico River Basins to help them achieve and maintain the required 30 percent reduction in agricultural nitrogen losses. Districts in the Neuse and Tar-Pamlico Basins will continue to use ACSP to sustain the reductions already achieved and to attain further voluntary reductions in these nutrient sensitive watersheds. ACSP funds are also being used to reduce phosphorus losses from agriculture to help achieve the goal of no net increase in phosphorus loading to the Tar-Pamlico Basin. Participating farmers continue to assess phosphorus losses using the Phosphorus Loss Assessment Tool (PLAT). The Commission also targeted \$300,000 of program year 2013 funds to districts to assist with implementation of riparian buffers under the Conservation Reserve Enhancement Program (CREP).

Incorporating Information from the Basinwide Water Quality Plans Published by the Division of Water Resources (DWR)

In 2005, the commission established a policy relating District Strategy Plans to the DWR's Basinwide Water Quality Plans which requires that all strategy plans for ACSP include a section describing waters listed as impaired or with notable water quality problems and concerns as documented in the most recent basinwide water quality plan(s), and for which agriculture is a potential source or stressor. The district should also list any waters of local concern for which agriculture has been identified as a potential source or stressor. This section of the strategy plan should also describe how the district intends to address agricultural nonpoint source problems impacting these waters.

All districts completed this section of the strategy plan and documented the impaired waters in their county and the actions the district plans to take to address the problems impacting these waters.

NEW PROGRAM ENHANCEMENTS TO IMPROVE EFFICIENCY AND PROGRAM DELIVERY

ACSP is focused on continually improving the program's cost effectiveness due to recurring budget reductions in state appropriations. The commission is moving forward on enhancements for the 2013-2014 program year. These enhancements are designed to improve the efficiency by which program funds are used by agricultural cooperators to install BMPs and to improve the responsiveness of the program to state and local water quality priorities.

Database Development

In June of 2012 the division finished an upgrade to the legacy ACSP database. The division worked with the DENR Information Technology Services (ITS) and the NCDA&CS ITS to implement the new ACSP database and online contracting system. The upgraded system utilizes the DENR-Integrated Build Environment for Application Management (IBEAM) approach to permit more efficient on-line contracting and contract approval to eliminate duplicative data entry and to shorten contract review and approval time. The upgrade includes mechanisms to attach GPS and GIS information

and digital photographs to better present the benefits and outcomes associated with BMP implementation. It also provides real-time ACSP information that can easily be updated by the division and local district staff, with minimal errors and will be used to generate standard reports on program use and water quality benefits. The online contracting system was fully utilized in program year 2013. In June of 2013, NCDA&CS ITS as well as division staff began working on a conversion from the DENR-IBEAM system to the NCDA&CS Soil and Water Cost Share Contracting System (CS²). The new CS² system will allow for better contract and payment functionality as well as an increased level of system support.

Program Changes

For program year 2013 the Commission has made several changes to the program including:

1. Approving the following changes to existing practices:
 - a. Cover Crop- clarified planting and kill dates for the cover crop to match federal policy.
 - b. Nutrient Scavenger Crop- clarified adjusted planting and kill dates to match research data.
 - c. Waste Application Systems- extended BMP to waste compost spreaders.
 - d. Well- clarified the use of alternative casing when required by 15A NCAC Subchapter 02C Well Construction Standards, as well as job approval authority.
2. Adopting the following new practices:
 - a. Agricultural temporary water collection pond means to construct an agricultural water collection system for water reuse or irrigation to improve water quality. These systems may include construction of new ponds, utilizing existing ponds, water storage tanks and pumps in order to intercept sediment, nutrients, manage chlorophyll a. These systems may have the added benefit of reducing the demand on the water supply, and decreasing withdrawal from aquifers but these benefits shall not be the justification for this practice.

COST-EFFECTIVENESS CONSIDERATIONS

The ACSP is a cost-effective program from both a state expenditure perspective and the farmer's perspective. This program has been credited with helping the state to achieve considerable success in protecting and improving water quality. Many farmers could not afford to implement BMPs (many of which are required by regulations) without cost share assistance. Because a farmer must invest at least 25 percent of the cost for BMPs, the farmer has ownership in the practice and is more likely to maintain it. The educational value of local farmers participating in the program is substantial in helping to change local practices.

Leveraging Additional BMP Implementation Funds from Other Sources

In addition to the appropriated funds for the Agriculture Cost Share Program, the division and districts used the Agriculture Cost Share Program infrastructure to encumber over \$1.5 million in grant funds from other funding sources to conservation contracts with NC agricultural producers and landowners. These funding sources included:

- Clean Water Management Trust Fund (grant funds to support implementing water quality best management practices in the French Broad and Yadkin River Basins and in support of the Swine Buyout Program);
- NC Ecosystem Enhancement Program (receipted funds to use the ACSP infrastructure to install BMPs adjacent to stream and wetland restoration projects);
- US EPA Section 319 (grant funds to support implementing water quality best management practices in the Dan River Watershed and Jordan Lake Watershed);
- Three separate USDA Conservation Innovation Grants for installing innovative best management practices for aquaculture operations, installing innovative mortality management practices for livestock operations, and installing innovative controlled drainage structures on crop production operations.

ACSP funds are an essential part of the state match for the Conservation Reserve Enhancement Program (CREP), a federal/state partnership. ACSP and other state programs (CWMTF) are providing a total of \$54 million over eight years to match \$221 million in federal payments to North Carolina landowners participating in CREP.

ACSP funds for BMP implementation and technical assistance also provide the required state match for EPA-319 grants for accelerating BMP implementation in the Neuse, Tar-Pamlico River Basins, and Jordan Lake Watershed.

Whenever possible, the districts use the ACSP in conjunction with other programs, such as the federal Environmental Quality Incentive Program (EQIP) and the Conservation Reserve Enhancement Program (CREP), to stretch scarce resources as far as possible. Districts also partner to meet the needs of cooperating producers and landowners.

Leveraging of Local and Federal Resources for Technical Assistance and Local Delivery

The ACSP is delivered locally by 492 elected and appointed volunteer district supervisors and by over 440 local staff of districts and NRCS. District supervisors receive no state salary, yet are responsible for seeing that state funds are spent where they are most needed to improve water quality. District supervisors are required to develop a prioritization ranking system for administering the ACSP in their respective district to maximize the water quality benefits of the program. Applications to each district are evaluated and prioritized according to this system. District supervisors also must inspect at least five percent of all cost share contracts in their district every year to ensure the BMPs are properly maintained.

The ACSP is heavily dependent on the technical resources of the local districts and the NRCS. District and federal employees develop conservation plans, design BMPs, and provide engineering assistance for water quality improvements at no cost to the farmers whose applications are accepted for cost share assistance. The staff also assists farmers and other landowners in implementing water quality projects using other funding sources such as EQIP, the U.S. Environmental Protection Agency's Section 319 Nonpoint Source Program, and North Carolina's Clean Water Management Trust Fund.

A critical portion of the General Assembly's appropriation for ACSP provides a state match for salaries for many of these district technical employees and for their operating expenses to carry out the cost share program. For 2013, the General Assembly appropriated \$2,448,778 in recurring funds for cost sharing technical assistance positions in local districts. County commissions provide more than 50 percent match for salaries and operating expenses, including office space and administrative support for these technical assistance positions. In program year 2013, the cost share technical assistance program cost shared on 110 technical positions in 95 districts to assist farmers in designing and installing BMPs. These state technical assistance cost share funds maintain a local conservation infrastructure that is also used to deliver federal cost share funds to NC landowners and land users. In 2013, local districts cooperated with the NRCS to deliver \$30.4 million of conservation assistance. Technical assistance funds are critical to sustain local county support and funding for local delivery of the program.

NRCS engineers and conservation specialists are also available to each district. These federal employees carry out a portion of the cost share work support without cost to the state, and they provide additional technical resources and expertise to ensure that cost-shared practices are properly installed and maintained for the expected life of the practice.

In addition, NRCS allows district staff in some districts to use federal vehicles for use on state cost share work. NRCS also provides computers and sophisticated natural resources materials and computer software in field offices, and develops the technical standards for most of the BMPs used in the cost share program. This state program leverages a much greater amount of federal funding for water quality improvements in North Carolina.

PROGRAM MANAGEMENT

Attachment D is an overview of the funding and compliance process used for implementing the ACSP.

A division staff of five full time employees reviews approximately 900 contracts annually and processes about 1,500 requests for payment each year. The division also trains local personnel, provides daily technical assistance to the districts, maintains the ACSP Manual, and conducts oversight through district program reviews to ensure proper record keeping and BMP maintenance for continued water quality protection.

Because the state specifies that the purpose of the program is to assist agricultural operations in addressing an existing water quality problem, the program does not assist new operations to go into business. It is the policy of the commission that new producers or companies constructing new agricultural operations should be aware of the existing environmental requirements and technical standards and should be prepared to meet them without state funding assistance. This is especially important when existing operations are struggling to comply with new requirements that were not in place when they began operating. Therefore, the commission has restricted eligibility for ACSP funds to those operations, which have been in existence for three years prior to the date of cost share application. Operations that were not in existence for three years prior to application date may still be eligible for cost-share if changes in environmental statutes or regulations create new requirements that could, without assistance, make the facility out of compliance. These exceptions require commission approval.

Session law 2012-142 clarified eligibility for the ACSP. An applicant or landowner must submit one of the following:

- a. A copy of a schedule F or equivalent tax for from the most recent tax year
- b. A copy of the agricultural tax exemption issued by the Department of Revenue
- c. A copy of the sound forest management plan for tracts actively engaging in the commercial growing of trees.

In extraordinary circumstances an applicant or landowner who does not meet the above criteria may appeal to the SWCC as long as the land has a conservation plan that meets the statutory purpose of the program.

IMPACT OF INCREASED COSTS TO THE ACSP

The ACSP has experienced many challenges due to the increased costs of fuel, labor, and materials over the past few years. Since the ACSP is based on 75 percent of a predetermined average cost for each practice it has been almost impossible to keep up with the cost changes in areas such as gravel, pipe, fencing, lumber, and the cost of operating heavy machinery to install many of the BMPs in the program. In program year 2004, the ACSP was able to contract with 2,053 projects statewide encumbering \$6,827,880 compared to only 1,163 projects statewide in the 2013 program year encumbering \$4,819,171. Because of the price increase the soil and water conservation districts are not able to help as many farmers install conservation practices.

The ACSP continues to monitor the established average costs list for the program and receives feedback from the local soil and water conservation districts on any adjustments that are needed. Division staff completed a review of the current average cost manual in the spring of 2012 and made the adjustments effective for the 2013 program year. The division staff continues to consider changes in average cost as receipts and documentation determine the current average cost is incorrect.

CONCLUSIONS AND RECOMMENDATIONS

Based on the above considerations, the commission believes the ACSP is being administered cost-effectively and that considerable water quality benefits are being realized for the investment made with state funds. The program aids agricultural operations in making essential water quality improvements. The cost of these water quality practices cannot be passed on to the consumer in the price of the food or fiber product. The ACSP thereby contributes both to water quality and to sustaining a strong state agricultural economy. The Commission continues to emphasize prioritizing, targeting, accountability, leveraging, and adaptability in managing these public funds to further improve the water quality benefits intended by the General Assembly.

Increased costs of fuel, labor, and materials have significantly impacted the amount of conservation the program can effect and the number of cooperating farmers who can be assisted. The commission has taken actions to improve program efficiencies that have helped to partly offset these impacts in the short-term. The ACSP continues to play a vital role in assisting farmers and ranchers with voluntary water quality protection and with compliance with state and federal regulatory requirements. The program is our state's cornerstone in efforts to support private working lands stewardship for the benefit of water quality and all the citizens of the state of North Carolina.

AGRICULTURE COST SHARE PROGRAM DETAILED IMPLEMENTATION PLAN (DIP) PROGRAM YEAR 2013*

(REVISED August 2012)

Definition of Practices

- (1) Abandoned tree removal means to remove Christmas and/or apple tree fields for integrated pest management and for reducing sedimentation. An abandoned tree field can be of any size or age trees where standard management practices (e.g., maintaining groundcover, insect and disease control, fertilizer applications and annual shearing practices) for the production of the trees are discontinued or abandoned. The field must have been abandoned for at least 5 years. Abandonment leads to adverse soil erosion formations such as gullies and to production of disease inoculums and increased pest population. Conversion to grass, hardwoods, or white pine on abandoned fields further protects soil loss by preventing runoff on steep slopes due to a better groundcover thereby providing additional water quality protection. Benefits include water quality protection, prevention of soil erosion, and wildlife habitat establishment.
- (2) An abandoned well closure is the sealing and permanent closure of a supply well no longer in use. This practice serves to prevent entry of contaminated surface water, animals, debris, or other foreign substances into the well. It also serves to eliminate the physical hazards of an open hole to people, animals, and farm machinery. Cost share for this practice is limited to \$1,500 per well at 75% cost share and \$1,800 per well at 90%.
- (3) An agrichemical containment and mixing facility means a system of components that provide containment and a barrier to the movement of agrichemicals. The purpose of the system is to provide secondary containment to prevent degradation of surface water, groundwater, and soil from unintentional release of pesticides or fertilizers. Cost share for this practice is limited to \$16,500 per facility at 75% cost share and \$19,800 per facility at 90%.
- (4) An agrichemical handling facility means a permanent structure that provides an environmentally safe means of mixing agrichemicals and filling tanks with agrichemicals for application and storage to improve water quality. Benefits may include prevention of accidental degradation of surface and ground water. Cost share for this practice is limited to \$27,500 per facility at 75% cost share and \$33,000 per facility at 90%.
- (5) Agricultural pond restoration/repair means to restore or repair existing failing agricultural pond systems. Benefits may include erosion control, flood control, and sediment and nutrient reductions from farm fields for better water quality. This practice is only applicable to low hazard classification ponds. For restoration projects involving dam, spillway, or overflow pipe upgrades, cost share is limited to \$15,000 per pond at 75% cost share and \$18,000 per pond at 90%. For restoration projects involving removal of accumulated sediment only, total charge to NCACSP is restricted to a total of \$3,000 per pond at 75% cost share and \$3,600 per pond at 90%.

- (6) Agricultural road repair/stabilization means repair or stabilization of existing access roads utilized for agricultural operations, including roads to existing crop fields, pastures, and barns.
- (7) Agricultural temporary water collection pond means to construct an agricultural water collection system for water reuse or irrigation to improve water quality. These systems may include construction of new ponds, utilizing existing ponds, water storage tanks and pumps in order to intercept sediment, nutrients, manage chlorophyll a. These systems may have the added benefit of reducing the demand on the water supply, and decreasing withdrawal from aquifers but these benefits shall not be the justification for this practice.
- (8) Chemigation or fertigation backflow prevention is a combination of devices (valves, gauges, injectors, drains, etc.) to safeguard water sources from contamination by fertilizers used during the irrigation of agricultural crops. The practice is intended to modify or improve fertilizer injection systems with components necessary to prevent backflow or siphoning of contaminants into the water supply thereby improving and protecting the state's waters.
- (9) A conservation cover practice means to establish and maintain a conservation cover of grass, legumes, or other approved plantings on fields previously with no groundcover established, to reduce soil erosion and improve water quality. Other benefits may include reduced offsite sedimentation and pollution from dissolved and sediment-attached substances. Eligible land includes that planted to Christmas Trees, orchards, ornamentals, vineyards and other cropland needing protective cover.
- (10) A three-year conservation tillage system means any tillage and planting system in which at least (60) sixty percent of the soil surface is covered by plant residue for the same fields for three consecutive years to improve water quality. Benefits may include reduction of soil erosion, sedimentation and pollution from dissolved and sediment-attached substances. This incentive is broken down into two categories depending on the crop(s) to be grown:
 - (a) Grain crops and cotton
 - (b) Vegetables, Tobacco, Peanuts, and Sweet Corn

Cost share for each category of this practice is limited to \$15,000 per cooperator in a lifetime.

- (11) A cover crop means a crop of grasses, legumes, or small grain grown primarily for seasonal protection, erosion control and soil improvement. It usually is grown for one year or less. The major purpose is water and wind erosion control, to cycle plant nutrients, add organic matter to the soil, improve infiltration, aeration and tilth, improve soil quality, reduce soil crusting, and sequester carbon. Benefits may include reduction of soil erosion, sedimentation and pollution from dissolved and sediment-attached substances. Cost share for this incentive practice is limited to \$15,000 per cooperator in a lifetime.
- (12) A critical area planting means an area of highly erodible land that cannot be stabilized by ordinary conservation treatment on which permanent perennial vegetative cover is

established and protected to improve water quality. Benefits may include reduced soil erosion and sedimentation.

- (13) A cropland conversion practice means to establish and maintain a conservation cover of grasses, trees, or wildlife plantings on fields previously used for crop production to improve water quality. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved and sediment-attached substances.
- (14) Crop residue management means maintaining cover on sixty (60) percent of the soil surface at planting to protect water quality. Crop residue management also provides seasonal soil protection from wind and rain erosion, adds organic matter to the soil, conserves soil moisture, and improves infiltration, aeration and tilth. Benefits may include reduction in soil erosion, sedimentation and pollution from dissolved sediment-attached substances. Cost share for this incentive practice is limited to \$15,000 per cooperator in a lifetime.
- (15) A diversion means a channel constructed across a slope with a supporting ridge on the lower side to control drainage by diverting excess water from an area to improve water quality. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved and sediment-attached substances.
- (16) A field border means a strip of perennial vegetation established at the edge of the field that provides a stabilized outlet for row water to improve water quality. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved and sediment-attached substances.
- (17) A filter strip means an area of permanent perennial vegetation for removing sediment, organic matter, and other pollutants from runoff and waste water to improve water quality. Benefits may include reduced soil erosion, sedimentation, pathogen contamination and pollution from dissolved, particulate, and sediment-attached substances.
- (18) A grade stabilization structure means a structure (earth embankment, mechanical spillway, detention-type, etc.) used to control the grade and head cutting in natural or artificial channels to improve water quality. Benefits may include reduced soil erosion and sedimentation.
- (19) A grassed waterway means a natural or constructed channel that is shaped or graded to required dimensions and established in suitable vegetation for the stable conveyance of runoff to improve water quality. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved and sediment-attached substances.
- (20) A heavy use area protection means an area used frequently and intensively by animals, which must be stabilized by surfacing with suitable materials to improve water quality. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved, particulate, and sediment-attached substances.
- (21) A land smoothing practice means reshaping the surface of agricultural land to planned grades for the purpose of improving water quality. Improvements to water quality include:

- (a) Reduction in nutrient loss.
 - (b) Reduction in concentrated flow of water from an agricultural field.
 - (c) Improved infiltration.
- (22) A livestock exclusion system means a system of permanent fencing (board or barbed, high tensile or electric wire) installed to exclude livestock from streams and critical areas not intended for grazing to improve water quality. Benefits may include reduced soil erosion, sedimentation, pathogen contamination and pollution from dissolved, particulate, and sediment-attached substances.
- (23) A livestock feeding area is a sized concrete pad where feeders are located, surrounded by a heavy use area. The livestock feeding area is designed for the purpose of improving the lifespan of the heavy use area and to reduce the runoff of nutrients and fecal coliform to adjacent water bodies. The practice is to be used to address water quality concerns where livestock feeding areas are in close proximity to streams and where relocation or rotation of feeding areas is infeasible due to physical limitations (e.g., slope) and where other stream protection measures are insufficient to protect water quality. Cost share for the concrete pad for this practice is limited to \$4,200 at 75% cost share and \$5,040 at 90%.
- (24) A long term no-till practice means planting all crops for five consecutive years with at least eighty (80) percent plant residue from preceding crops to improve water quality. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved and sediment-attached substances. Cost share for this incentive or this incentive combined with 3-year conservation tillage for grain and cotton is limited to \$25,000 per cooperator in a lifetime.
- (25) A micro-irrigation system means an environmentally safe system for the conveyance and distribution of water, chemicals, and fertilizer to agricultural fields for crop production. A micro-irrigation system is for frequent application of small quantities of water on or below the soil surface as drops, tiny streams, or miniature spray through emitters or applicators placed along a water delivery line. This practice may be applied as part of a conservation management system to support one or more of the following purposes:
- (a) To efficiently and uniformly apply irrigation water and maintain soil moisture for plant growth.
 - (b) To efficiently and uniformly apply plant nutrients in a manner that protects water quality.
 - (c) To prevent contamination of ground and surface water by efficiently and uniformly applying chemicals and fertilizers.
 - (d) To establish desired vegetation.
- Cost share for this practice will be based on actual cost with receipts required not to exceed \$25,000 charge to the NCACSP at 75% cost share and \$30,000 at 90%, including the cost of backflow prevention.
- (26) A nutrient management means a definitive plan to manage the amount, form, placement, and timing of applications of nutrients to minimize entry of nutrients to surface and groundwater and improve water quality.

- (27) A nutrient scavenger crop is a crop of small grain grown primarily as a seasonal nutrient scavenger. The purpose is to scavenge and cycle plant nutrients. The nutrient scavenger crop also adds organic matter to the soil, improves infiltration, aeration and tilth, improves soil quality, reduces soil crusting, provides residue for conservation tillage, and sequesters carbon. Benefits may include reduction of soil erosion, sedimentation and pollution from dissolved and sediment-attached substances. Cost share for this incentive practice is limited to \$25,000 per cooperator in a lifetime.
- (28) A pastureland conversion practice means establishing trees or perennial wildlife plantings on excessively eroding land with a visible sediment delivery problem to the waters of the state used for pasture that is too steep to mow or maintain with conventional equipment to improve water quality. Benefits may include reduced soil erosion and sedimentation.
- (29) A pasture renovation practice means to establish and maintain a conservation cover of grass, where existing pasture vegetation is inadequate. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved and sediment-attached substances.
- (30) A portable agrichemical mixing station means a portable device to be used in the field to prevent the unintentional release of agrichemicals to the environment during mixing and transferring of agrichemicals. Benefits may include prevention of accidental degradation of surface and ground water. Cost share for this practice is limited to \$3,500 per station at 75% cost share and \$4,200 at 90%. Cost share is also limited to one station per cooperator.
- (31) Precision Agrichemical Application means using a system of components that enable reduction and greater control of fertilizer and pesticide application. This is accomplished through avoidance of excessive overlapping, unnecessary application to end/turn rows, and more precise control of application rates.
- (32) Precision nutrient management means applying nitrogen; phosphorus and lime in a site-specific manner (with specialized application equipment or multiple application events) based on the site specific recommendations for each GPS-referenced sampling point to minimize entry of nutrients to surface and groundwater and improve water quality. Cost share for this incentive is limited to \$15,000 per cooperator.
- (33) Prescribed grazing involves managing the intensity, frequency, duration, timing, and number of grazing animals on pastureland in accordance with site production limitations, rate of plant growth, physiological needs of forage plants for production and persistence, and nutritional needs of the grazing animals. The goal of this practice is to reduce accelerated soil erosion and compaction, to improve or maintain riparian and watershed function, to maintain surface and/or subsurface water quality and quantity, to improve nutrient distribution, and to improve or maintain desired species composition and vigor of plant communities. Productive pastures maintain wildlife habitat and permeable green space. Cost share for this incentive is limited to \$15,000 per cooperator.
- (34) A riparian buffer means a permanent, long-lived vegetative cover (grass, shrubs, trees, or a combination of vegetation types) established adjacent to and up-gradient from watercourses or water bodies to improve water quality. Benefits may include reduced

soil erosion and nutrient delivery, sedimentation, pathogen contamination and pollution from dissolved, particulate and sediment-attached substances.

- (35) A rock-lined outlet means a waterway having an erosion-resistant lining of concrete, stone or other permanent material where an unlined or grassed waterway would be inadequate to improve water quality. Benefits may include safe disposal of runoff, reduced erosion and sedimentation.
- (36) A rooftop runoff management system means a system of collection and stabilization practices (dripline stabilization, guttering, collection boxes, etc.) to prevent rainfall runoff from agricultural rooftops from causing erosion where vegetative practices are insufficient to address erosion concerns and protect water quality.
- (37) A sediment control basin means a basin constructed to trap and store waterborne sediment where physical conditions or land ownership preclude treatment of a sediment source by the installation of other erosion control measures to improve water quality.
- (38) A sod-based rotation practice means an adapted sequence of crops, grasses and legumes or a mixture thereof established and maintained for a definite number of years as part of a conservation cropping system which is designed to provide adequate organic residue for maintenance or improvement of soil tilth to improve water quality. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved and sediment-attached substances. Cost share for this incentive practice is limited to \$25,000 per cooperator in a lifetime.
- (39) A stock trail or walkway means to provide a stable area used frequently and intensively for livestock movement by surfacing with suitable material to improve water quality. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved, particulate, and sediment-attached substances.
- (40) A stream protection system means a planned system for protecting streams and stream banks that eliminates the need for livestock to be in streams by providing an alternative-watering source for livestock to improve water quality. Benefits may include reduced soil erosion, sedimentation, pathogen contamination, and pollution from dissolved, particulate and sediment-attached substances. System components may include:
 - (a) A spring development means improving springs and seeps by excavating, cleaning, capping or providing collection and storage facilities.
 - (b) A stream crossing means a trail constructed across a stream to allow livestock to cross without disturbing the bottom or causing soil erosion on the banks.
 - (c) A trough or tank means devices installed to provide drinking water for livestock at a stabilized location.
 - (d) A well means constructing a drilled, driven or dug well to supply water from an underground source.
 - (e) A windmill means erecting or constructing a mill operated by the wind's rotation of large vanes and is used as a source of power for pumping water.
- (41) Streambank and shoreline protection means the use of vegetation to stabilize and protect banks of streams, lakes, estuaries, or excavated channels against scour and

erosion. This practice should be used to prevent the loss of land or damage to utilities, roads, buildings, or other facilities adjacent to the banks, to maintain the capacity of the channel, to control channel meander that would adversely affect downstream facilities, to reduce sediment load causing downstream damages and pollution, or to improve the stream for recreation or fish and wildlife habitat.

- (42) A stream restoration system means the use of bioengineering practices, native material revetments, channel stability structures, and/or the restoration or management of riparian corridors in order to protect upland BMPs, restore the natural function of the stream corridor and improve water quality by reducing sedimentation to streams from streambank. Cost share for this practice is limited to \$50,000 per cooperator per year at 75% cost share and to \$60,000 per year at 90%.
- (43) A stripcropping practice means to grow crops and sod in a systematic arrangement of alternating strips or bands on the contour to improve water quality. Benefits may include reduced soil erosion, sedimentation, and pollution from dissolved and sediment-attached substances. The crops are arranged so that a strip of grass or close-growing crop is alternated with a strip of clean-tilled crop, fallow, or no-till crop, or a strip of grass is alternated with a close-growing crop.
- (44) A terrace means an earth embankment, a channel, or a combination ridge and channel constructed across the slope to improve water quality. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved and sediment-attached substances.
- (45) A waste management system means a planned system in which all necessary components are installed for managing liquid and solid waste to prevent or minimize degradation of soil and ground and surface water resources. System components may include:
 - (A) A closure of waste impoundment means the safe removal of existing waste and waste water and the application of this waste on land in an environmentally safe manner. This practice is only applicable to waste storage ponds and lagoons. Cost share for this practice is limited to \$75,000 per cooperator at 75% cost share and \$90,000 at 90% cost share.
 - (B) A concentrated nutrient source management system is a system of vegetative and structural measures used to manage the collection, storage, and/or treatment of areas where agricultural products may cause an area of concentrated nutrients.
 - (C) A constructed wetland for land application practice means an artificial wetland area into which liquid animal waste from a waste storage pond or lagoon is dispersed over time to lower the nutrient content of the liquid animal waste.
 - (D) A drystack means a fabricated structure for temporary storage of animal waste. Cost share for drystacks for poultry and non-.0200 animal operations are limited to \$33,000 per structure at 75% cost share and \$39,600 at 90%.
 - (E) The feeding/waste storage structure is designed for the purpose of improving the collection/storage of animal waste and to reduce runoff of nutrients and fecal

coliform to adjacent water bodies. The practice is intended to be used where livestock feeding areas are in close proximity to streams and where relocation or rotation of feeding areas is infeasible due to physical limitations (e.g., slope) and where other stream protection measures are insufficient to address water quality concerns. Cost share for this practice is limited to \$27,500 per structure at 75% cost share and \$33,000 per structure at 90%.

- (F) An insect control system means a practice or combination of practices (planting windbreaks, pre-charging structures, incorporation of waste into soil, etc.) which manages or controls insects from confined animal operations, waste treatment and storage structures, and waste applied to agricultural land.
- (G) Lagoon biosolids removal means removing accumulated biosolids from active lagoons to restore required treatment volume at on-going operations. The biosolids will be properly utilized on offsite farmland or processed to a value-added product, including energy production, to reduce nutrient impacts. Lagoon Biosolids Removal Incentive payments shall be limited to \$15,000 in a lifetime.
- (H) A livestock mortality management system is a facility for managing livestock mortalities such as to minimize water quality impacts or to produce a material that can be recycled as a soil amendment and fertilizer substitute. Cost shareable mortality management system components include: composter, rotary drum composter, forced aeration static pile composter, mortality freezer, mortality incinerator, and mortality gasification system.
- (I) A manure composting facility is a facility for the biological treatment, stabilization and environmentally safe storage of organic waste material (such as manure from poultry and livestock) to minimize water quality impacts and to produce a material that can be recycled as a soil amendment and fertilizer substitute.
- (J) Manure/litter transportation means transporting dry litter and dry manure from livestock and poultry farms that lack sufficient land to effectively utilize the animal-derived nutrients. The litter/manure will be properly utilized on alternative land or processed to a value-added product, including energy production, to reduce nutrient impacts. Manure/Litter Transportation Incentive payments shall be limited to 3-years per applicant and \$15,000 in a lifetime.
- (K) An odor control management system means a practice or combination of practices (planting windbreaks, pre-charging structures, incorporation of waste into soil, etc.) which manages or controls odors from confined animal operations, waste treatment and storage structures and waste applied to agricultural land.
- (L) A retrofit of on-going animal operations means modification of structures to increase storage or to correct design flaws to meet current standards. This practice may also be used to close waste impoundments on on-going operations, including the safe removal of existing waste and waste water and the application of this waste on land in an environmentally safe manner.
- (M) A solids separation from tank-based aquaculture production means a facility for the removal, storage and dewatering of solid waste from the effluent of intensive tank-based aquaculture production systems. The system is used to capture

organic solids from the effluent stream of intensive fish production systems that would otherwise flow to effluent ponds for storage and further treatment. This waste comes from uneaten feed and feces generated by fish while being fed within a tank-or raceway based fish farm.

- (N) A storm water management system means a system of collection and diversion practices (guttering, collection boxes, diversions, etc.) to prevent unpolluted storm water from flowing across concentrated waste areas on animal operations.
- (O) A waste application system means an environmentally safe system (such as solid set, dry hydrant, mobile irrigation equipment, etc.) for the conveyance and distribution of animal wastes from waste treatment and storage structures to agricultural fields as part of an irrigation and waste utilization plan. Cost share for this practice is limited to \$35,000 per cooperator in a lifetime at 75% cost share and \$42,000 in a lifetime at 90%.
- (P) A waste storage pond means an impoundment made by excavation or earthfill for temporary storage of animal waste, waste water and polluted runoff.
- (Q) A waste treatment lagoon means an impoundment made by excavation or earthfill for biological treatment and storage of animal waste.
- (46) A water control structure means a permanent structure placed in a farm canal, ditch, or subsurface drainage conduit (drain tile or tube), which provides control of the stage or discharge of surface and/or subsurface drainage. The management mechanism of the structure may be flashboards, gates, valves, risers, or pipes. The primary purpose of the water control structure is to improve water quality by elevating the water table and reducing drainage outflow. A secondary purpose is to restore hydrology in riparian buffers to the extent practical. Elevating the water table promotes denitrification and lower nitrate levels in drainage water from cropping systems and minimizes the effects of short-circuiting of drainage systems passing through riparian buffers. Other benefits may include reduced pollution from other dissolved and sediment-attached substances, reduced downstream sedimentation and reduced stormwater surges of fresh water into estuarine area.

This practice is not intended to be used to control water inflow from tidal influence (i.e., no tide gates).
- (47) A wetland restoration system means a system of practices designed to restore the natural hydrology of an area that had been drained and cropped.

*To be used in conjunction with the most recent version of the APA Rules for the North Carolina Agriculture Cost Share Program for Nonpoint Source Pollution Control and the NC-ACSP Manual.

BEST MANAGEMENT PRACTICES ELIGIBLE FOR COST SHARE PAYMENTS

- (1) Best Management Practices eligible for cost sharing include the practices listed in Table 1 and any approved District BMPs. District BMPs shall be reviewed by the Division for technical merit in achieving the goals of this program. Upon approval by the Division, the District BMPs will be eligible to receive cost share funding.

Table 1

<u>Practice</u>	<u>Minimum Life Expectancy (years)</u>
Abandoned Tree Removal	10
Abandoned Well Closure	1
Agrichemical Containment and Mixing Facility	10
Agrichemical Handling Facility	10
Agricultural Pond Restoration/Repair	10
Agricultural Road Repair/Stabilization	10
Agricultural Water Collection System	10
Backflow Prevention System	
Chemigation	10
Fertigation	10
Conservation Cover	6
3-Year Conservation Tillage System	3
Cover Crops	1
Critical Area Planting	10
Cropland Conversion	10
Crop Residue Management	1
Diversion	10
Field Border	10
Filter Strip	10
Grade Stabilization Structure	10
Grassed Waterway	10
Heavy Use Area Protection	10
Land Smoothing	5
Livestock Exclusion	10
Livestock Feeding Area	10
Long Term No-Till	5
Micro-Irrigation System	10
Nutrient Management	3
Nutrient Scavenger Cover Crop	1
Pasture Renovation	10
Pastureland Conversion	10
Portable Agrichemical Mixing Station	5
Precision Agrichemical Application	5
Precision Nutrient Management	3
Prescribed Grazing	3

Riparian Buffer	10
Rock-lined Waterway or Outlet	10
Rooftop Runoff Management System	10
Sediment Control Basin	10
Sod-based Rotation	4 or 5
Stock Trail and Walkway	10
Stream Protection System	
Spring Development	10
Stream Crossing	10
Trough or Tank	10
Well	10
Windmills	10
Streambank and Shoreline Protection	10
Stream Restoration	10
Stripcropping	5
Terrace	10
Waste Management System	
Closure of Abandoned Waste Impoundment	10
Concentrated Nutrient Source Management System	10
Constructed Wetland for Land Application	10
Drystack	10
Feeding/Waste Storage Structure	10
Insect Control System	5
Lagoon Biosolids Removal Incentive	1
Livestock Mortality Management System	
Incinerator	5
Others Systems	10
Manure Composting Facility	10
Manure/Litter Transportation Incentive	1
Odor Management System	1 to 10
Retrofit of On-going Animal Operations	10
Solids Separation from Tank-Based Aquaculture	
Production	10
Storm Water Management System	10
Waste Application System	10
Waste Storage Pond	10
Waste Treatment Lagoon	10
Water Control Structure	10
Wetlands Restoration System	10

- (2) The minimum life expectancy of the BMPs shall be that listed in Table 1. Practices designated by a District shall meet the life expectancy requirement established by the Division for that District BMP.
- (3) The list of BMPs eligible for cost sharing may be revised by the Commission as deemed appropriate in order to meet program purpose and goals.

**NC AGRICULTURE COST SHARE PROGRAM
WATER QUALITY IMPROVEMENT PURPOSES OF APPROVED BMPs**

Purpose: Stream Protection Measures

BMP	Reduction of applied nutrient	Reduction of soil loss	Facilitating BMP	Life of BMP (yrs.)
Heavy Use Area Protection	-	√	-	10
Livestock Exclusion System	√	√	-	10
Spring Development	-	-	-	10
Stock Trail	-	√	-	10
Stream Crossing		√	-	10
Trough or Tank	-	-	√	10
Well	-	-	√	10
Windmill	-	-	√	10
Livestock Feeding Area	-	-	√	10

Purpose: Waste Management Measures – Mortality and Manure Management

BMP	Proper mgmt. of nutrients	Reduction of soil loss	Nutrient interception	Facilitating BMP	Life of BMP (yrs.)
Closure of Waste Impoundment	√	-	-	-	10
Constructed wetlands	√	-	√	-	10
Controlled Livestock Lounging Area	-	√	-	√	10
Dry Manure Stack	√	-	-	-	10
Feeding/Waste Storage					10
Heavy Use Area Protection	-	√	-	-	10
Insect Control	-	-	-	-	5
Odor Control	-	-	-	-	1-10
Storm Water Management	√	-	-	-	10
Waste Treatment Lagoon/Storage Pond	√	-	-	-	10
Mortality Management Systems	√	-	-	-	10
Incinerators	√	-	-	-	5
Waste Application System	√	-	-	√	10
Tank-Based Aquaculture	√	-	-	-	10
Manure/Litter Transportation Incentive	√	-	-	-	1
Manure Composting Facility	√				10
Lagoon Biosolids Removal Incentive	√	-	-	-	1
Concentrated Nutrient Source Management	√			√	10

Purpose: Erosion Reduction/Nutrient Loss Reduction in Fields

BMP	Reduction of applied nutrient	Reduction of soil loss	Life of BMP (yrs.)
Conservation Tillage 3-yr	√	√	3
Long Term No-till	√	√	5
Critical Area Planting	√	√	10
Cropland Conversion	√	√	10
Water Diversion	√	√	10
Land Smoothing	√	√	10
Wetlands Restoration	√	√	10
Pastureland Conversion	√	√	10
Sod-based Rotation	√	√	4 or 5
Stripcropping	√	√	5
Terraces	√	√	10
Conservation Cover	√	√	6
Nutrient Scavenger Cover Crop	√	√	10
Cover Crop	√	√	1
Pasture Renovation	√	√	10
Micro-Irrigation System	√	√	10
Rooftop Runoff Management		√	10
Prescribed Grazing	√	√	3
Crop Residue Management	√	√	3

Purpose: Agricultural Chemical Pollution Prevention

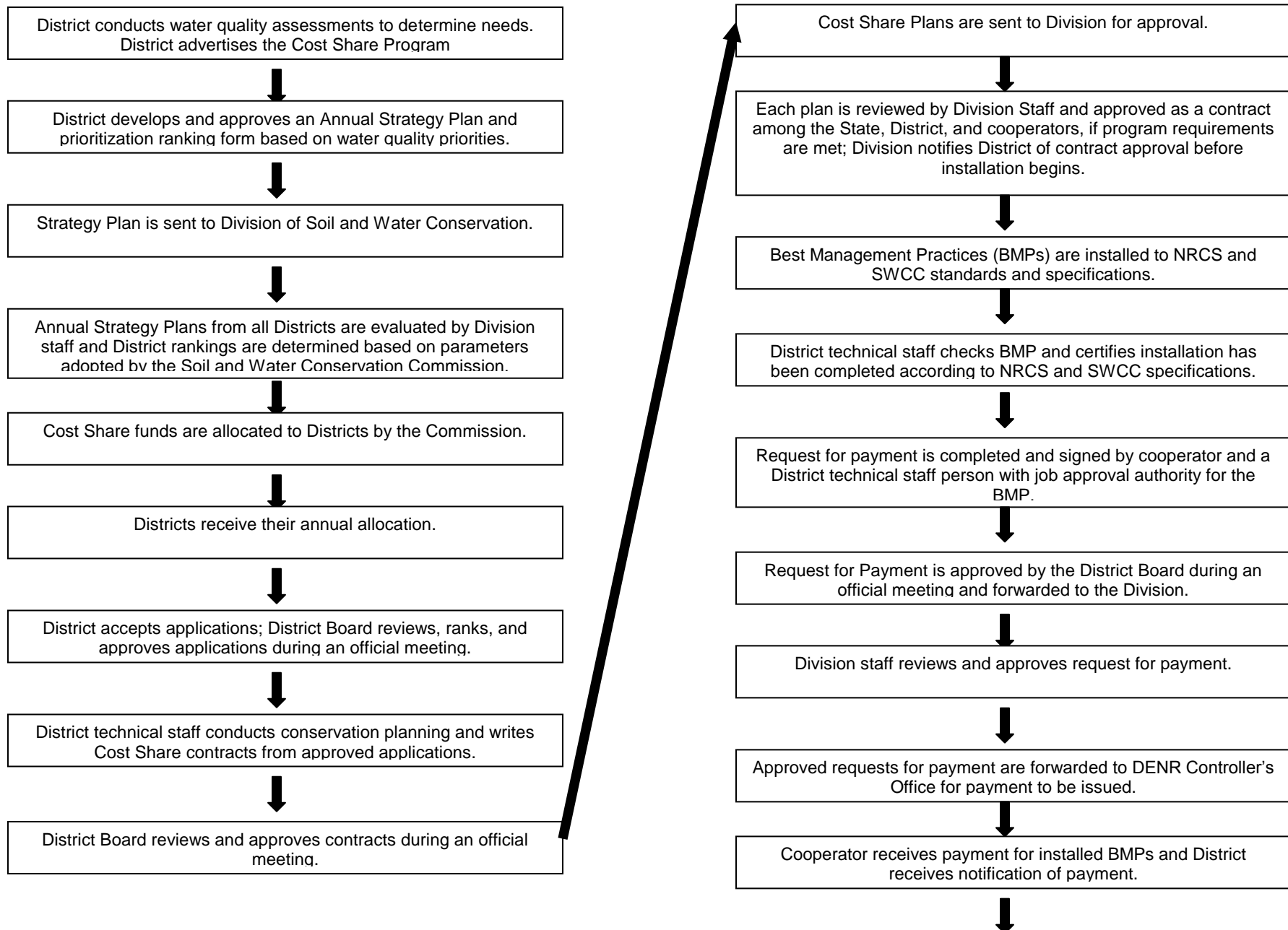
BMP	Interception of chemicals	Life of BMP (yrs.)
Abandoned Tree Removal	√	10
Agri-chemical Handling Facility	√	10
Fertigation Back Flow Prevention	√	10
Chemigation Back Flow Prevention	√	10
Portable Pesticide Mixing Station	√	5
Agrichemical Containment and Mixing Facility	√	10

Purpose: Sediment/Nutrient Delivery Reduction from Fields

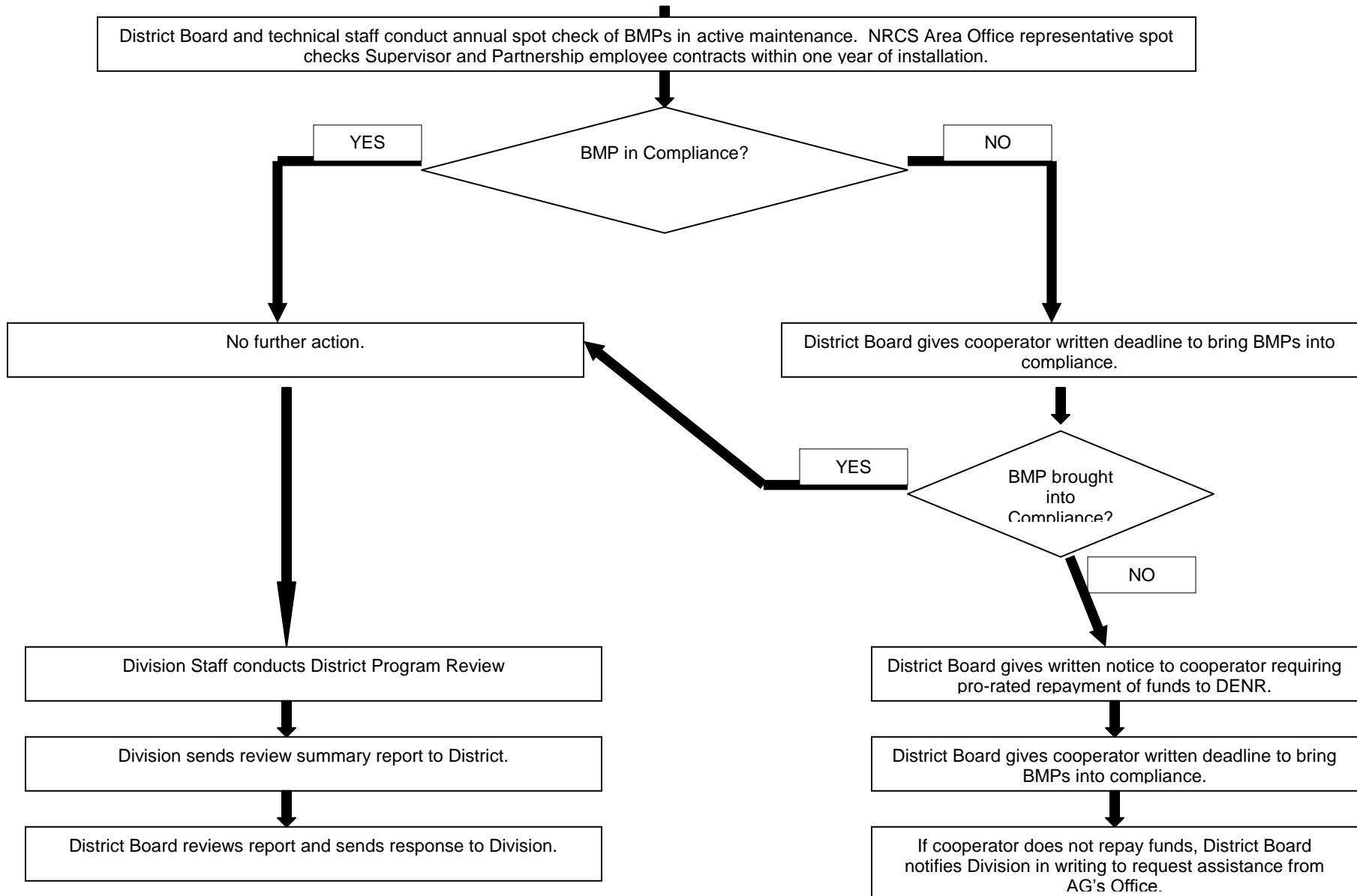
BMP	Reduction of applied nutrient	Reduction of soil loss	Nutrient interception	Facilitating BMP	Life of BMP (yrs)
Field Border	-	√	√	-	10
Filter Strip	-	√	√	-	10
Grade Stabilization Structure	-	-	-	√	10
Grassed Waterway	-	√	√	-	10
Nutrient Mgmt.	√	-	-	-	3
Riparian Buffer	-	√	√	-	10
Rock-lined Outlet	-	-	-	√	10
Sediment Control Basin	-	-	√	-	10
Water Control Structure	-	√	√	-	10
Streambank and Shoreline Protection	-	√	√	-	10
Stream Restoration		√			10
Agricultural Road Repair/Stabilization	-	√	-	-	10
Abandoned Well Closure	-	-	-	√	1
Agricultural Pond Restoration/Repair		√	√		10
Precision Nutrient Management	√			√	3

NC Agriculture Cost Share Program

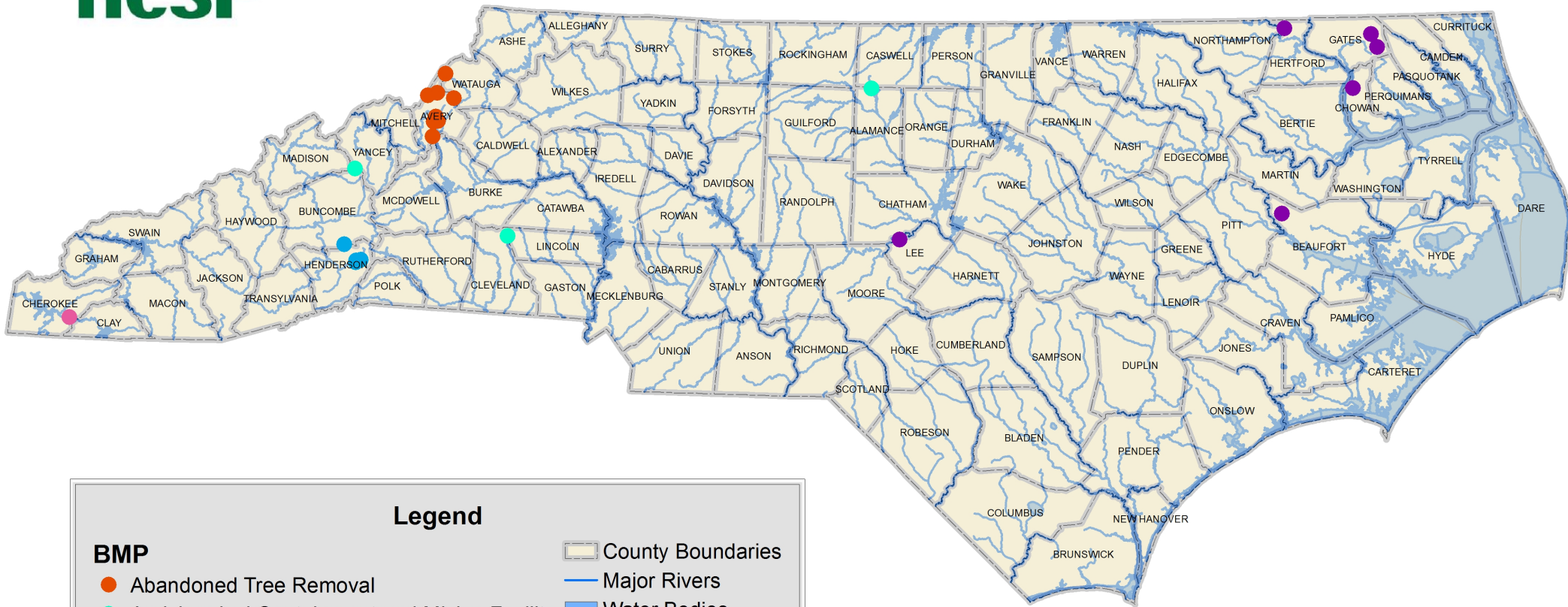
Funding and Compliance Process



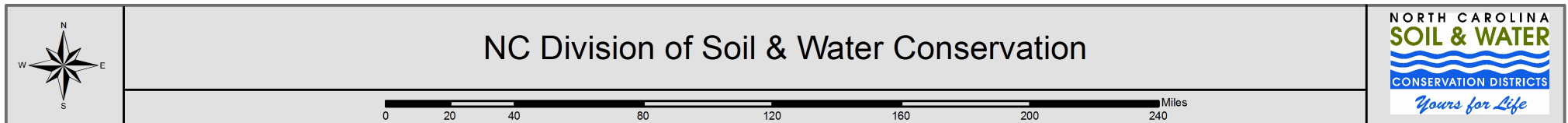
Attachment C



ACSP Program for North Carolina 2013 Agri-Chemical Pollution Prevention Projects

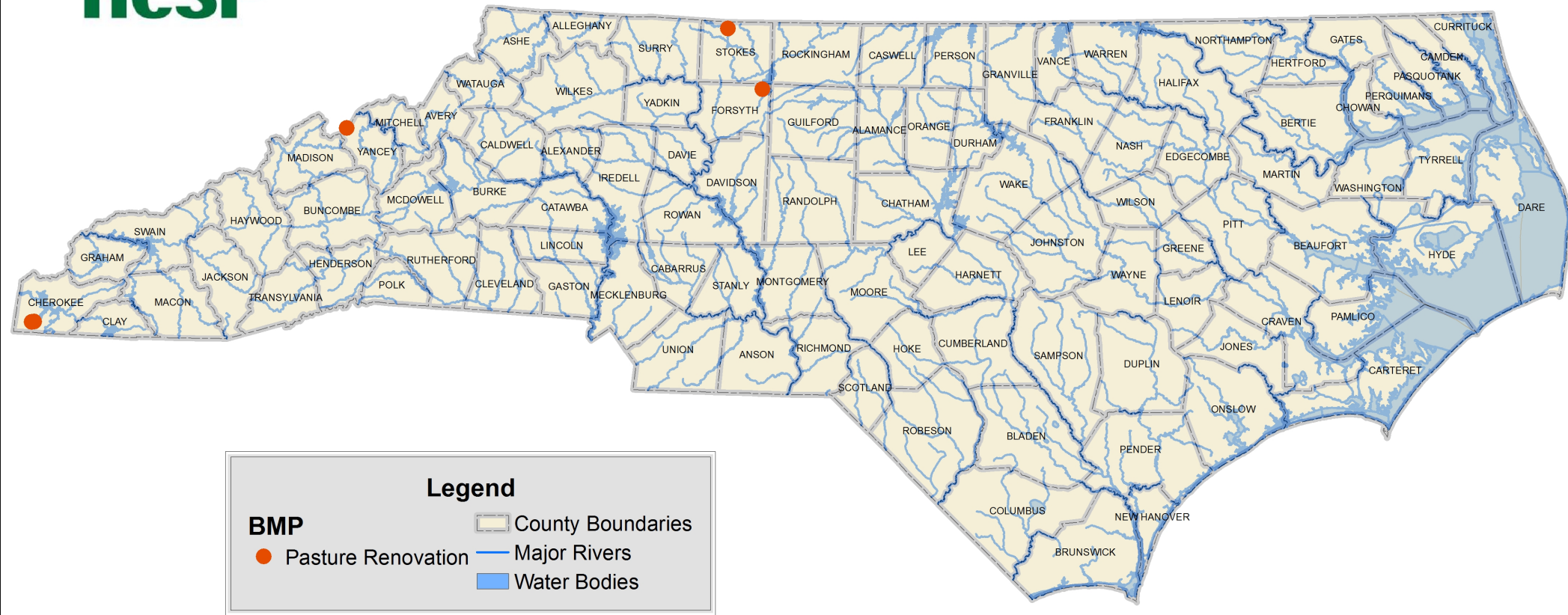


Points represent the approximate BMP locations based on the latitude/longitude provided by the local soil and water conservation districts. This data represents 22 BMPs contracted in PY 2013 for this BMP type.



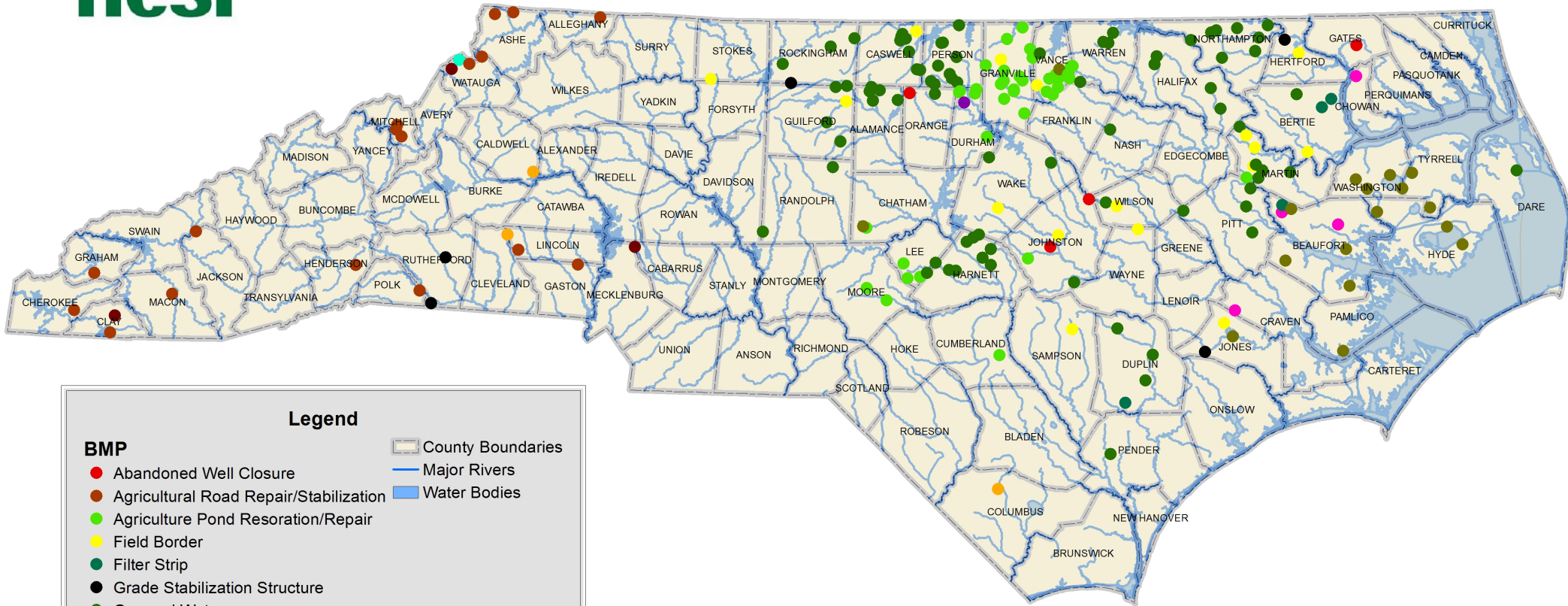


ACSP Program for North Carolina 2013 Drought Management Projects



ACSP Program for North Carolina

2013 Sediment/Nutrient Reduction Projects



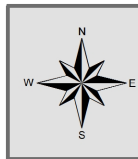
Legend

BMP

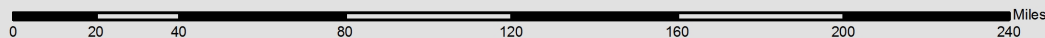
- Abandoned Well Closure
- Agricultural Road Repair/Stabilization
- Agriculture Pond Resoration/Repair
- Field Border
- Filter Strip
- Grade Stabilization Structure
- Grassed Waterway
- Precision Nutrient Management
- Riparian Buffer
- Rock-lined Outlet
- Stream Restoration
- Streambank and Shoreline Protection
- Water Control Structure

- ▭ County Boundaries
- Major Rivers
- Water Bodies

Points represent the approximate BMP locations based on the latitude/longitude provided by the local soil and water conservation districts. This data represents 230 BMPs contracted in PY 2013 for this BMP type.

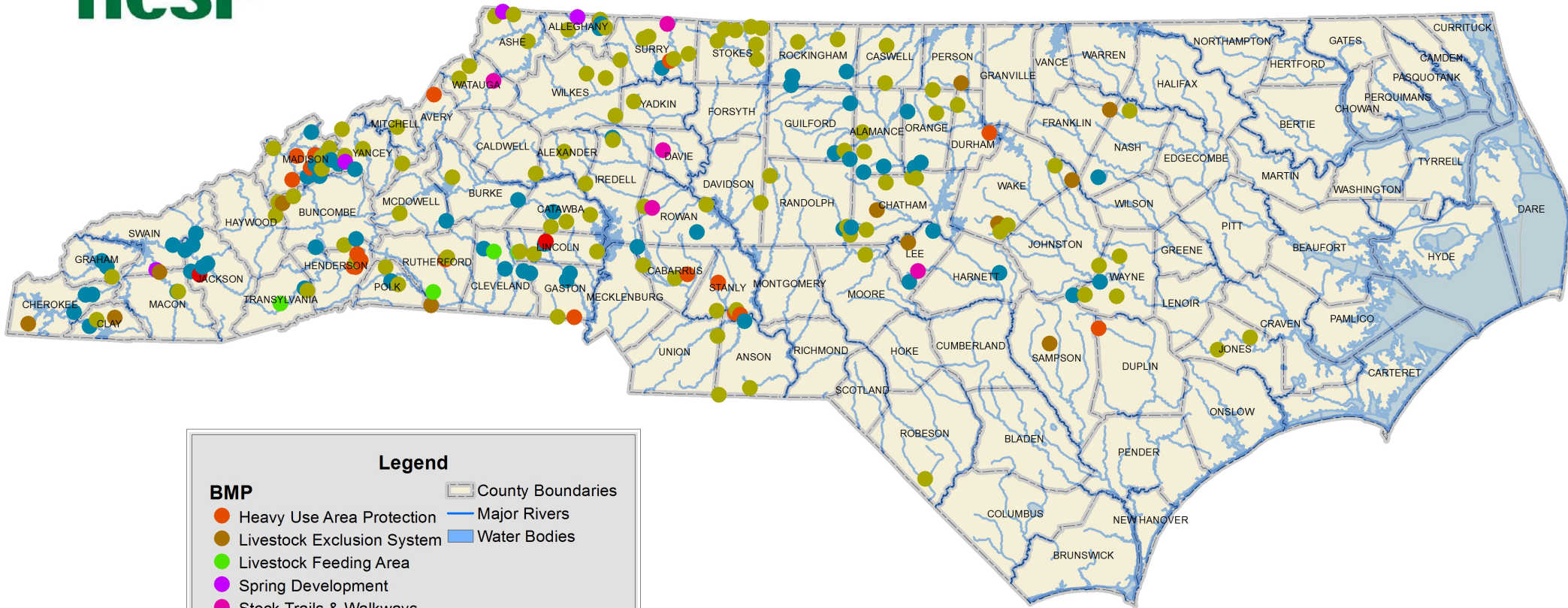


NC Division of Soil & Water Conservation





ACSP Program for North Carolina 2013 Stream Protection Projects



Legend

BMP

- Heavy Use Area Protection
- Livestock Exclusion System
- Livestock Feeding Area
- Spring Development
- Stock Trails & Walkways
- Stream Crossing
- Watering Tanks (Troughs)
- Well

County Boundaries

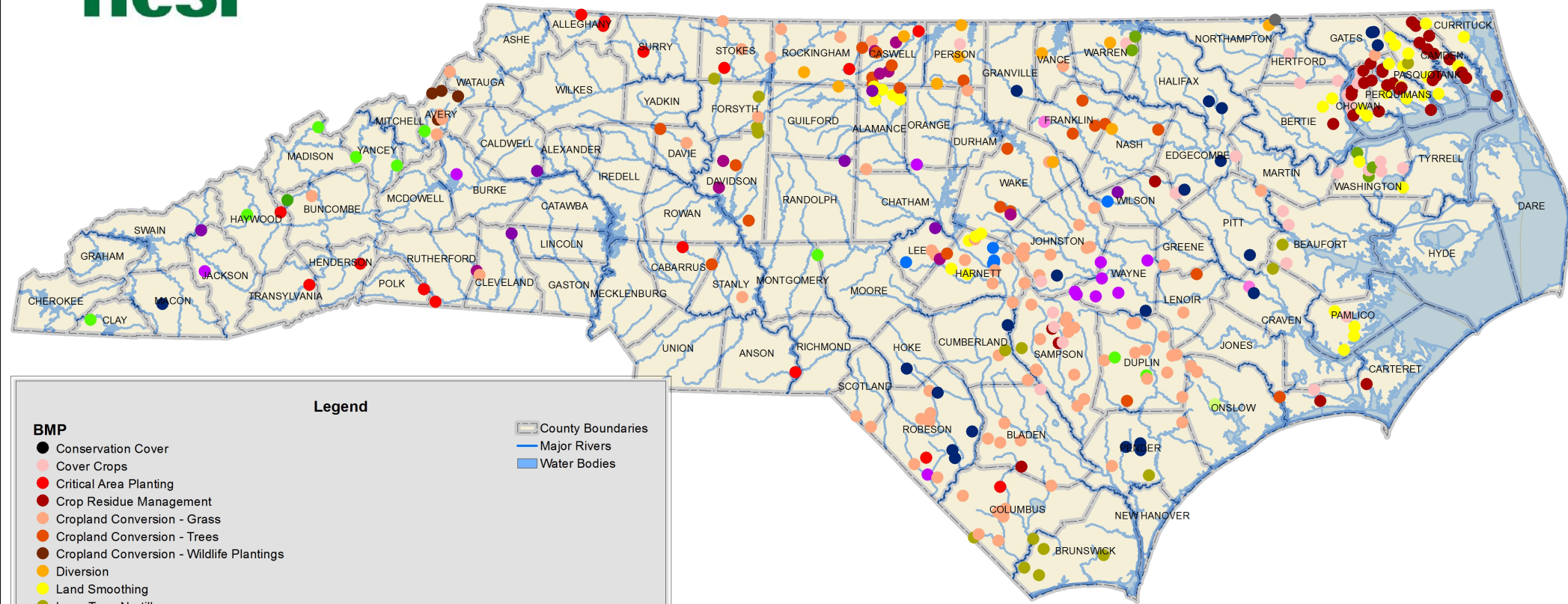
Major Rivers

Water Bodies

Points represent the approximate BMP locations based on the latitude/longitude provided by the local soil and water conservation districts. This data represents 476 BMPs contracted in PY 2013 for this BMP type.

ACSP Program for North Carolina

2013 Erosion/Nutrient Reduction Projects



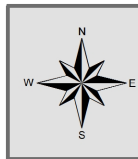
Legend

BMP

- Conservation Cover
- Cover Crops
- Critical Area Planting
- Crop Residue Management
- Cropland Conversion - Grass
- Cropland Conversion - Trees
- Cropland Conversion - Wildlife Plantings
- Diversion
- Land Smoothing
- Long-Term No-till
- Micro-Irrigation
- Nutrient Scavenger Crop
- Pasture Renovation
- Pastureland Conversion
- Prescribed Grazing
- Rooftop Runoff Management System
- Sod-Based Rotation - 3 Year SBR (17 months)
- Sod-Based Rotation - 5 Year SBR (41 months)
- Terrace
- Three Year Conservation Tillage for Grain and Cotton
- Three Year Conservation Tillage for Peanuts, Sweet Corn, Tobacco & Vegetables

- ▬ County Boundaries
- ▬ Major Rivers
- ▬ Water Bodies

Points represent the approximate BMP locations based on the latitude/longitude provided by the local soil and water conservation districts. This data represents 354 BMPs contracted in PY 2013 for this BMP type.



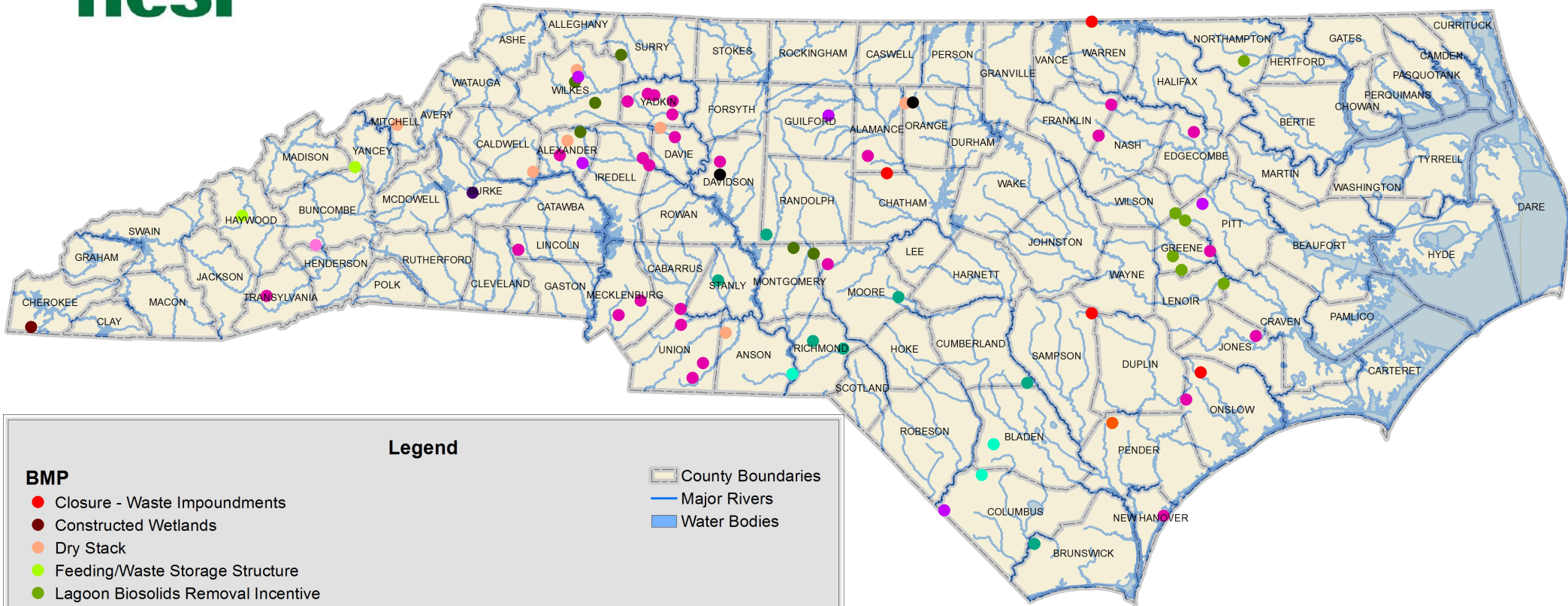
NC Division of Soil & Water Conservation

0 20 40 80 120 160 200 240 Miles





ACSP Program for North Carolina 2013 Waste Management Projects



Legend

BMP

- Closure - Waste Impoundments
- Constructed Wetlands
- Dry Stack
- Feeding/Waste Storage Structure
- Lagoon Biosolids Removal Incentive
- Livestock Mortality Management System - Composter
- Livestock Mortality Management System - Forced Aeration Static Pile Composter
- Livestock Mortality Management System - Mortality Incinerator
- Livestock Mortality Management System - Rotary Drum Composter
- Manure Composting Facility
- Stormwater Management System
- Waste Application Systems - Mobile Application System
- Waste Application Systems - Solid Set System
- Waste Application Systems - Underground Main and Hydrant System

- County Boundaries
- Major Rivers
- Water Bodies

Points represent the approximate BMP locations based on the latitude/longitude provided by the local soil and water conservation districts. This data represents 76 BMPs contracted in PY 2013 for this BMP type.



NC Division of Soil & Water Conservation

0 20 40 80 120 160 200 240 Miles

