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 2009

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 ASCP, 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 district or county, the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), the North Carolina Department of Environment and Natural Resources (DENR) 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 63 approved best management practices (BMPs) in the ACSP for program year 2009. 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. 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 $100,000 per year.

The Commission conducts a wholesale review of its cost share average costs every three years, but it can make 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 2009 showed excellent compliance with maintenance requirements by participating farmers. Only 3.6 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 2009

DISTRICTS	CPOs	VISITS	PERCENT VISITED	COMPLIANT	NEED REPAIR	NON-COMPLIANT	PARTICIPATING SUPERVISORS
ALAMANCE	363	23	6.3%	21	2	0	5
ALEXANDER	80	17	21.3%	10	5	2	3
ALLEGHANY	135	13	9.6%	13	0	0	4
ANSON (BROWN CREEK)	60	18	30.0%	15	1	2	4
ASHE (NEW RIVER)	124	13	10.5%	12	0	1	4
AVERY	80	5	6.3%	5	0	0	4
BEAUFORT	46	4	8.7%	4	0	0	4
BERTIE	164	9	5.5%	7	2	0	1
BLADEN	137	21	15.3%	21	0	0	1
BRUNSWICK	84	5	6.0%	5	0	0	3
BUNCOMBE	108	6	5.6%	6	0	0	3
BURKE	60	11	18.3%	8	2	1	3
CABARRUS	54	10	18.5%	10	0	0	2
CALDWELL	67	11	16.4%	11	0	0	3
CAMDEN (ALBEMARLE)	20	6	30.0%	5	1	0	2
CARTERET	2	2	100.0%	2	0	0	2
CASWELL	357	18	5.0%	18	0	0	1
CATAWBA	60	5	8.3%	5	0	0	4
CHATHAM	117	33	28.2%	32	1	0	4
CHEROKEE	164	9	5.5%	7	2	0	2
CHOWAN (ALBEMARLE)	79	8	10.1%	8	0	0	4
CLAY	131	11	8.4%	11	1	0	4

DISTRICTS	CPOs	VISITS	PERCENT VISITED	COMPLIANT	NEED REPAIR	NON-COMPLIANT	PARTICIPATING SUPERVISORS
CLEVELAND	62	8	12.9%	8	0	0	4
COLUMBUS	167	10	6.0%	8	0	1	3
CRAVEN	127	10	7.9%	6	0	4	1
CUMBERLAND	93	15	16.1%	15	0	0	1
CURRITUCK (ALBEMARLE)	9	1	11.1%	1	0	0	4
DAVIDSON	88	21	23.9%	20	1	0	2
DAVIE	49	14	28.6%	14	0	0	2
DUPLIN	202	17	8.4%	16	0	1	2
DURHAM	47	5	10.6%	4	1	0	1
EDGECOMBE	267	15	5.6%	15	0	0	4
FORSYTH	71	5	7.0%	5	0	0	5
FRANKLIN	151	10	6.6%	10	0	0	2
GASTON	73	7	9.6%	6	0	1	4
GATES	144	14	9.7%	14	0	0	4
GRAHAM	23	4	17.4%	4	0	0	2
GRANVILLE	324	16	4.9%	15	0	1	2
GREENE	150	16	10.7%	15	1	0	4
GUILFORD	179	20	11.2%	19	1	0	5
HALIFAX (FISHING CREEK)	132	7	5.3%	7	0	0	2
HARNETT	313	21	6.7%	21	0	0	3
HAYWOOD	227	16	7.0%	14	2	0	2
HENDERSON	138	10	7.2%	9	0	1	2
HERTFORD	149	10	6.7%	9	1	0	2
HOKE	57	8	14.0%	7	0	1	1
HYDE	99	5	5.1%	4	1	0	3
IREDELL	80	7	8.8%	6	1	0	2
JACKSON	38	5	13.2%	5	0	0	2
JOHNSTON	263	23	8.7%	22	1	0	3
JONES	67	17	25.4%	17	0	0	2
LEE	108	11	10.2%	10	0	1	1
LENOIR	218	29	13.3%	28	0	1	4
LINCOLN	106	10	9.4%	10	0	0	2
MACON	69	5	7.2%	4	1	0	1
MADISON	123	8	6.5%	8	0	0	3
MARTIN	293	15	5.0%	13	0	2	2
MCDOWELL	33	8	24.2%	8	0	0	1
MECKLENBURG	1	1	100.0%	1	0	0	1
MITCHELL	107	12	11.2%	12	0	0	3
MONTGOMERY	45	18	40.0%	18	0	0	5
MOORE	101	33	32.7%	33	0	0	1
NASH	164	10	6.1%	10	0	0	3

DISTRICTS	CPOs	VISITS	PERCENT VISITED	COMPLIANT	NEED REPAIR	NON-COMPLIANT	PARTICIPATING SUPERVISORS
NEW HANOVER	1	1	100.0%	1	0	0	1
NORTHAMPTON	403	20	5.0%	17	2	1	3
ONSLOW	83	6	7.2%	6	0	0	1
ORANGE	184	19	10.3%	16	2	1	4
PAMLICO (BAY RIVER)	122	10	8.2%	1	0	9	1
PASQUOTANK (ALBEMARLE)	28	5	17.9%	5	0	0	3
PENDER	130	15	11.5%	15	0	0	4
PERQUIMANS (ALBEMARLE)	46	6	13.0%	6	0	0	3
PERSON	259	13	5.0%	10	3	0	4
PITT	291	25	8.6%	23	0	2	3
POLK	40	3	7.5%	3	0	0	2
RANDOPLH	65	31	47.7%	29	0	2	5
RICHMOND	51	6	11.8%	3	2	1	1
ROBESON	125	6	4.8%	5	1	0	2
ROCKINGHAM	132	21	15.9%	21	0	0	4
ROWAN	98	12	12.2%	7	5	0	1
RUTHERFORD	165	8	4.8%	8	0	0	2
SAMPSON	221	18	8.1%	18	0	0	3
SCOTLAND	101	5	5.0%	5	0	0	1
STANLY	116	12	10.3%	12	0	0	3
STOKES	138	8	5.8%	8	0	0	3
SURRY	242	24	9.9%	18	1	5	5
SWAIN	16	1	6.3%	2	0	0	4
TRANSYLVANIA	74	15	20.3%	15	0	0	1
TYRRELL	14	2	14.3%	1	1	0	1
UNION	75	17	22.7%	17	0	0	1
VANCE	147	7	4.8%	7	0	0	2
WAKE	151	9	6.0%	9	0	0	2
WARREN	247	17	6.9%	17	0	0	1
WASHINGTON	86	6	7.0%	3	3	0	2
WATAUGA	58	9	15.5%	7	0	2	1
WAYNE	145	16	11.0%	16	0	0	1
WILKES	128	35	27.3%	35	0	0	5
WILSON	151	11	7.3%	11	0	0	4
YADKIN	115	15	13.0%	15	0	0	4
YANCEY	124	10	8.1%	10	0	0	2
TOTALS	12,221	**1,199**	**9.8%**	**1109**	**48**	**43**	**260**
PERCENT(S)				**92.5%**	**4%**	**3.6%**	

PROGRAM ACCOMPLISHMENTS

Since the first ACSP contracts were issued in 1984 through the end of program year 2009, 52,381 contracts have been approved for installing BMPs affecting nearly 2.4 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 7.1 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.

Highlights of additional accomplishments include the following:

- Nearly 134,000 acres of marginal or environmentally sensitive cropland have been converted to trees, grass or wildlife habitat areas.
- Nearly 2,200 waste management structures have been constructed to properly store and manage dry and wet animal waste.
- Just over 900 mortality management systems have been installed to properly manage livestock mortalities to minimize water quality impacts.
- 3,948 water control structures have been installed improving water management on and reducing nutrient loss from approximately 304,000 acres.
- 1,054 miles of fencing have been erected, in combination with other practices (e.g., watering sources) to exclude livestock from streams.
- Nearly 625,000 acres of cropland have been converted to no-till or conservation tillage to reduce sediment loss associated with traditional practices.
- Nearly 465 miles of forested riparian buffer have been established to reduce nutrient loss from nearly 55,000 acres of cropland.

A complete list of program accomplishments is included as Attachment B.

<u>Special ACSP Earmark to Relieve Drought Stricken Farmers</u>
In July 2008, the Commission allocated $1.0 million of ACSP funds to be used by farmers impacted by the devastating drought of 2007-2008. These funds were used to provide supporting practices for water supply BMPs funded by a drought response grant from the NC Rural Center and a $1.5 million drought response appropriation.

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 the BMP is completed and certified to be in accordance with current NRCS or Commission standards.

Cost Share payments were applied to 1,107 projects statewide between July 1, 2008 and June 30, 2009. These contracts received total payments of $5,768,830. A list of individual contracts to which Cost Share funds were applied in program year 2009 is available upon request.

New Contracts for Program Year 2009

In program year 2009, districts requested $24,759,782 to address identified water quality concerns. The General Assembly appropriated $5,176,566 in recurring general funds for BMP installation. The Division of Soil and Water Conservation reverted $505,249 of the appropriated amount to help balance the state budget for FY-2008-09. 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 $6,640,779 to districts. In addition to the 2009 appropriation, the Commission also had available for allocation (1) funds allocated to districts in 2008 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 2005 through 2007. 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 $7,060,297 of cost share funds to 1,093 new contracts with farmers in program year 2009. In addition, the ACSP infrastructure was used to implement conservation practices using several other funding sources, including the Agricultural Drought Response Project ($1.5 million appropriation and $5.5 million grant), several grants, and an agreement with the Ecosystem Enhancement Program. In all districts obligated $13,658,639 to 2,427 contracts. Table 2 presents the total number and value of 2009 contracts for each county. Figure 1 shows the distribution of ACSP contracts within each county. Maps by BMP category can be found in Attachment E.

TABLE 2: Total number and value of 2009 contracts by county.

County	Number of 2009 Contracts	Amount Contracted (Cost Share)	Total Amount Contracted	County	Number of 2009 Contracts	Amount Contracted (Cost Share)	Total Amount Contracted
Alamance	29	$106,531	$315,687	Jones	9	$59,027	$64,575
Alexander	19	$113,241	$160,888	Lee	18	$88,184	$127,978
Alleghany	34	$104,367	$210,123	Lenoir	11	$54,433	$54,433
Anson	18	$101,174	$159,108	Lincoln	35	$87,267	$171,885
Ashe	18	$166,616	$173,804	Macon	11	$81,856	$85,360
Avery	37	$110,956	$162,166	Madison	41	$139,792	$170,555
Beaufort	11	$63,619	$66,619	Martin	24	$50,822	$75,123
Bertie	17	$51,545	$61,680	McDowell	2	$22,742	$59,948
Bladen	13	$68,364	$85,107	Mecklenburg	5	$28,969	$47,715
Brunswick	12	$43,315	$73,467	Mitchell	19	$113,844	$164,469
Buncombe	47	$116,779	$255,649	Montgomery	20	$0	$82,310
Burke	17	$66,283	$102,190	Moore	40	$89,962	$186,363
Cabarrus	17	$69,525	$201,102	Nash	20	$106,525	$145,943
Caldwell	22	$50,000	$98,067	New Hanover		$	$
Camden	2	$32,445	$32,445	Northampton	23	$63,730	$115,141
Carteret	7	$16,781	$37,367	Onslow	10	$78,802	$85,952
Caswell	45	$92,860	$222,946	Orange	36	$94,837	$161,091
Catawba	36	$72,000	$144,449	Pamlico	8	$54,277	$54,277
Chatham	31	$111,771	$210,781	Pasquotank	11	$44,521	$58,110
Cherokee	50	$93,698	$165,373	Pender	10	$56,542	$69,953
Chowan	24	$43,260	$84,030	Perquimans	14	$31,769	$56,024
Clay	8	$60,306	$75,493	Person	38	$87,271	$148,122
Cleveland	38	$39,808	$148,276	Pitt	43	$101,322	$153,069
Columbus	28	$68,410	$111,039	Polk	23	$26,954	$107,975
Craven	8	$13,983	$37,857	Randolph	36	$132,183	$568,934
Cumberland	17	$52,562	$102,504	Richmond	12	$46,097	$59,690
Currituck	2	$16,875	$16,875	Robeson	31	$95,527	$155,130
Dare		$	$	Rockingham	49	$63,156	$182,488
Davidson	21	$26,463	$89,619	Rowan	23	$101,826	$173,149
Davie	22	$59,875	$99,040	Rutherford	34	$44,071	$169,387
Duplin	36	$88,770	$156,485	Sampson	44	$115,337	$1,173,164
Durham	15	$40,331	$76,103	Scotland	15	$36,031	$79,807
Edgecombe	22	$61,583	$111,055	Stanly	39	$87,492	$179,474
Forsyth	27	$35,754	$96,760	Stokes	31	$87,801	$185,234
Franklin	24	$57,530	$140,619	Surry	30	$102,504	$187,988
Gaston	31	$62,315	$155,544	Swain	7	$59,622	$62,528
Gates	11	$45,179	$60,063	Transylvania	20	$68,610	$131,382
Graham	19	$36,831	$71,706	Tyrrell	7	$50,208	$55,789
Granville	64	$60,600	$150,558	Union	32	$85,835	$182,814
Greene	14	$56,855	$59,855	Vance	33	$59,400	$107,745
Guilford	38	$117,440	$179,553	Wake	32	$99,156	$165,948
Halifax	24	$69,242	$109,285	Warren	48	$57,715	$124,716
Harnett	36	$38,246	$95,105	Washington	26	$85,068	$131,752

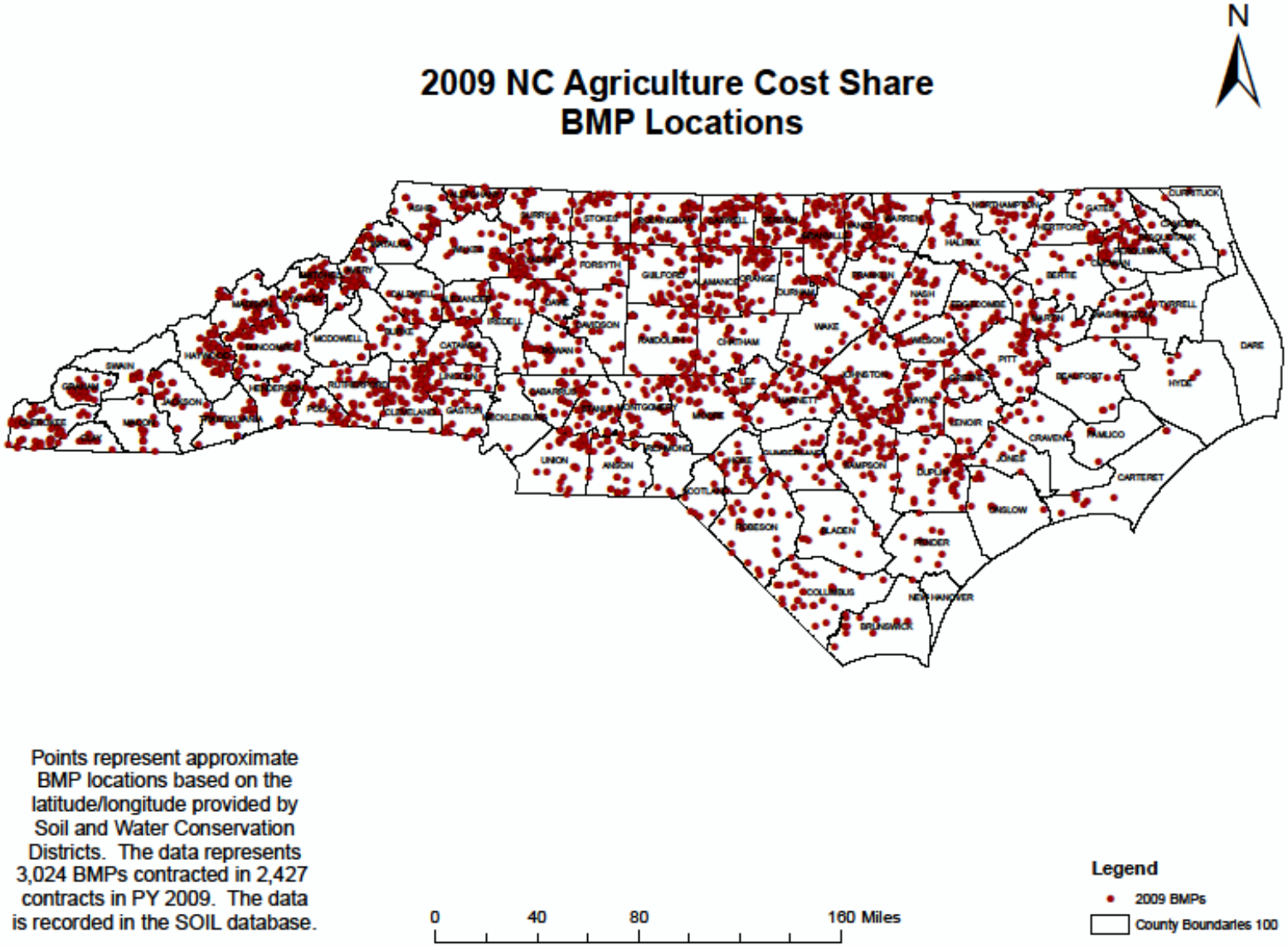
Haywood	43	$115,159	$180,456	Watauga	12	$103,904	$105,029
Henderson	21	$104,315	$175,934	Wayne	70	$124,187	$172,330
Hertford	18	$55,168	$99,869	Wilkes	22	$169,438	$281,070
Hoke	20	$35,123	$78,330	Wilson	17	$63,305	$75,305
Hyde	6	$45,881	$45,881	Yadkin	59	$57,449	$164,870
Iredell	16	$67,330	$146,958	Yancey	25	$165,099	$211,076
Jackson	21	$60,844	$81,556				
Johnston	52	$83,890	$149,911	**Total**		**$7,060,297**	**$13,658,639**

Table 3 below shows the top ten BMPs funded in 2009. This includes BMPs funded from all funding sources, including grant funds, so some of the practices shown below, specifically the irrigation well, are not normally part of the Agriculture Cost Share Program.

TABLE 3: Top 10 BMPs for 2009

Name of BMP	No. of Contracts	Extent of Practice	Contract Dollar Amt.
Pasture Renovation	988	16,052 acres	$2,997,222
Well for Pasture Livestock	409	424 wells	$2,127,754
Watering Trough/Tank	275	576 tanks	$1,291,754
Livestock Exclusion Fencing	149	319,039 feet	$725,060
Cropland Conversion to Grass	149	2,455 acres	$555,453
Pond Renovation	125	139 ponds	$383,982
Irrigation Well	110	116 wells	$556,364
Grassed Waterway	82	72.4 acres	$220,841
Heavy Use Area Protection	73	124 units	$169,994
Field Border	68	78 acres	$178,072

2009 NC Agriculture Cost Share BMP Locations



Points represent approximate BMP locations based on the latitude/longitude provided by Soil and Water Conservation Districts. The data represents 3,024 BMPs contracted in 2,427 contracts in PY 2009. The data is recorded in the SOIL database.

Estimated Water Quality Benefits of ACSP Contracts Initiated in 2008

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 beginning 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 Quality, NRCS, and North Carolina State University to improve and refine our method 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 and Tar-Pamlico Nutrient Reduction Rules for agriculture. The ACSP is playing a key role in helping farmers achieve and maintain the 30 percent nutrient reduction required by these rules. It will also be of critical benefit for achieving the nutrient reduction requirements in the Jordan and Falls Lake watersheds.

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 form. The data are entered from the contract form into the Division's cost share database and tracked by Division staff. The estimated sediment and nutrient reduction benefits for program years 2007-2009 are summarized in Table 4.

TABLE 4: Sediment and Nutrient Reduction Benefits for Program Years 2006 through 2008

	2007	**2008**	**2009**
Number of Contracts	1,297	1,484	1,093
Acres Affected	67,579 acres	68,955 acres	53,256.8
Soil Saved	165,358 tons	125,844 tons	77,480 tons
Nitrogen (N) Saved	696,669 pounds	915,805 pounds	393,071 pounds
Phosphorus (P) Saved	117,203 pounds	254,612 pounds	67,243 pounds
Waste-N Managed	3,690834 pounds	2,906,961 pounds	1,760,951 pounds
Waste-P Managed	4,684,716 pounds	3,219,796 pounds	2,486,697 pounds

The sharp drop off in these estimated benefits from 2007 and 2008 to 2009 can be explained by the focus on drought response in 2009. The Division does not have a good tool for estimating these 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.

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.

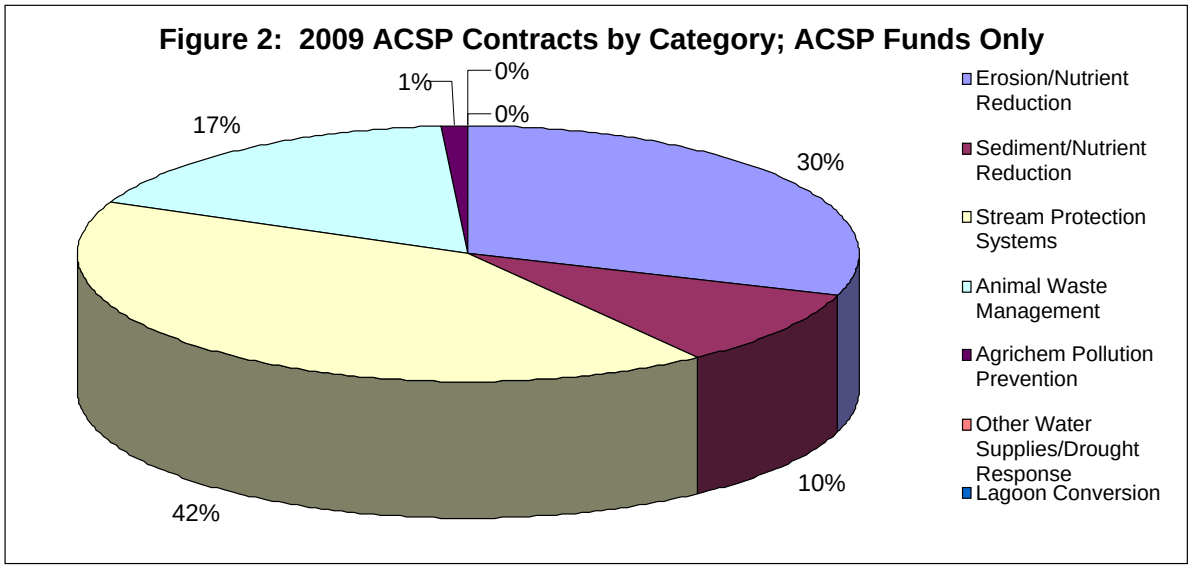
Effectiveness of Each Project to Accomplish Its Primary Purpose

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 Cost Share program is designed for at least one of five major purposes to protect the water resources of the state:

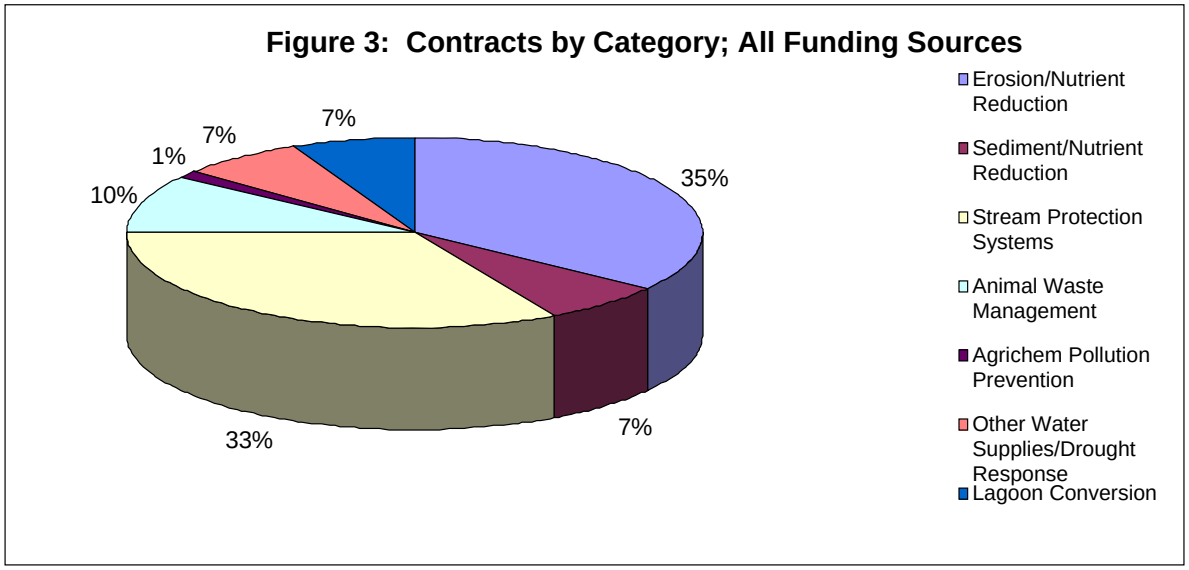
(1) sediment/nutrient delivery reduction through reduction of applied nutrients, reduction of soil loss, or interception of nutrients from fields;
(2) erosion reduction/nutrient loss reduction in fields through reduction of applied nutrients or prevention of soil detachment;
(3) prevention of agricultural chemical pollution of ground or surface water from improper handling or accidents;
(4) reduction of nutrient loading through proper management of animal waste; and
(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, 30 percent of the 2009 funds were directed toward erosion and nutrient-reducing BMPs (e.g., conservation tillage, cropland conversion to grass or trees); 10 percent were directed toward sediment and nutrient-reducing BMPs (e.g., riparian buffers, field borders, grassed waterways); 42 percent were directed toward stream protection systems (e.g., livestock exclusion); 17 percent were directed toward animal operations for waste management BMPs (e.g., poultry litter storage structures, closure of inactive lagoons, livestock feeding/waste storage structures); and 1 percent were directed toward agrichemical pollution prevention measures (e.g. agrichemical handling facilities). Figure 3 shows the same information as Figure 2 except that it reflects the expenditures for both regular cost share funds and other funding sources (e.g., drought response, lagoon conversion, grants). Attachment C includes charts

showing the approved BMPs in these categories and their relationship to water quality improvement.



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 is it 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 $100,000 of funds available in 2009 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 the 16 districts that have completed Impacted/Impaired Streams Initiative surveys to identify specific project locations to address the potential sources of the impairment.

In 2009, about 10 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 25 percent of funds contracted in program year 2009 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 $150,000 of program year 2009 funds to 20 districts to assist with implementation of riparian buffers in nutrient sensitive watersheds under the Conservation Reserve Enhancement Program (CREP).

To help respond to the historic drought of 2007 and 2008, the Commission earmarked $1,000,000 of 2009 ACSP funds to implement facilitating water quality practices to support new and enhanced water supplies contracted through the Drought Response Program. This earmark, while not specifically targeted at impaired waters, helped to address an emergency need for the State.

<u>Incorporating Information from the Basinwide Water Quality Plans Published by the Division of Water Quality (DWQ)</u>

In 2005, the Commission established a policy relating District Strategy Plans to the DWQ'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 96 Districts completed this new section of the strategy plan and did an exceptional job with documenting 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

Because of the need to continually improve the ACSP's cost effectiveness and recurring budget reductions in the appropriation, the Commission is moving forward on enhancements for the 2009-10 program year. These enhancements were 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

The Division has initiated an upgrade to the existing ACSP database. The Division is working with the DENR Information Technology Services (ITS) to upgrade the current ACSP database. The proposed upgraded system will utilize 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 will include mechanisms to attach GPS and GIS information and digital photographs to better present the benefits and outcomes associated with BMP implementation. It will also provide real-time ACSP information that can easily be updated by the Division, DENR Regional Office and local district staff, with minimal errors and be used to generate standard reports on program use and water quality benefits. Non-sensitive information will be accessible for public view on the internet in a read-only format.

It is hoped that the project will be ready for evaluation by districts for the start of Program Year 2010-11.

Program Changes

For program year 2009 the Commission has made several changes to the program including:

1. Adding the following practices to the ACSP:
   a. Lagoon Biosolids Removal Incentive – A BMP and incentive which allows for the removal accumulated biosolids from waste lagoons to restore the required treatment volume at on-going operations.
   b. Agrichemical Containment and Mixing Facility practice – A BMP that provides 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.
   c. Micro-irrigation System– This BMP provides an environmentally safe system for the conveyance and distribution of water, chemicals, and fertilizer to agricultural fields for crop production.
   d. Prescribed Grazing Incentive – This 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. This practice also allows for cost share for cross-fencing in pastures.
   e. Rooftop Runoff Management System – This BMP allows for collection and stabilization practices (dripline stabilization, guttering, collection boxes, etc.) to help prevent rainfall runoff from agricultural rooftops from causing erosion where vegetative practices are insufficient to address erosion concerns and protect water quality.

2. The Commission has also approved several changes to existing practices including:
   a. Adding a provision to the Agricultural Pond Restoration/Repair practice to allow this practice to include removal of accumulated sediment as a standalone cost sharable item. The Commission also removed the restriction that limited this practice to ponds designed by NRCS.
   b. Lowering the lifetime cap of the manure/litter transportation incentive from $45,000 to $15,000.
   c. Revising policies for the riparian buffer and cropland conversion practices to match requirements as they relate to both ACSP and CREP. Both practices now prohibit the use of cropland conversion in conjunction with CREP riparian buffers if the cropland conversion results in complete elimination of the pollutant source. In the case of cropland conversion, revisions also exempt certain CREP enrollments from having to use the tree-planting statement to justify higher-cost species.

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 $5.64 million in grant funds from other funding sources to conservation contracts with NC agricultural producers and landowners. These funding sources included:

- NC Rural Center (grant funds to support restoring pastures and water supplies impacted by the 2007-08 drought),
- Clean Water Management Trust Fund (grant funds to support implementing water quality best management practices in the French Broad and Ararat River watersheds 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 and Smith Creek watersheds)
- 3 separate USDA Conservation Innovation Grants for installing innovative best management practices for aquacultural 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 and Tar-Pamlico river basins.

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 400 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 assist 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 2009, the General Assembly appropriated $2,448,778 in recurring funds and $200,000 in non-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 2009, the cost share technical assistance program cost shared on 115 technical positions in 91 counties 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 2009, local districts cooperated with the NRCS to deliver $32.4 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 all 100 county 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 four full time employees review approximately 1,400 contracts annually and processes about 2,000 requests for payment each year. The Division also maintains the ACSP Manual, trains local personnel, provides daily technical assistance to the districts, 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 Cost Share 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.

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 1,484

projects statewide in the 2008 program year encumbering $7,577,486. Because of the price increase the soil and water conservation districts are not able to help as many farmers install conservation practices on the ground.

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 plan on completing a total review of the current average cost manual in the Spring of 2010 and making the correct adjustments to be effective for the 2011 program year.

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 which cannot be passed on to the consumer in the price of the food or fiber product, and 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 North Carolina.

ATTACHMENT A

DETAILED IMPLEMENTATION PLAN – PROGRAM YEAR 2009*

June 2009

Definition of Practices

1. 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.

2. 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.

3. 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.

4. 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. For restoration projects involving removal of accumulated sediment only, total charge to NCACSP is restricted to a total of $3,000 per pond.

5. Agricultural water supply pond means to construct agricultural ponds for water supply for existing irrigation or livestock watering requirements (not expansion of the operation). Benefits may include water supply, 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. Cost share is restricted to $15,000 per pond. Receipts are required for reimbursement.

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. A chemigation or fertigation backflow prevention system means a system for preventing backflow of chemicals or fertilizers from contaminating water sources in chemigation and fertigation applications. It can include retrofitting or installing injection equipment, check valves, gauges, drains, and vacuum breakers. It does not include items unrelated to

backflow prevention (e.g., tanks, mixers, or filters). Cost share for this practice is limited to $1,500 per system.

8. 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.

9. Conservation irrigation conversion means to modify an existing overhead spray irrigation system to increase the efficiency and uniformity of irrigation water application. Cost Share for this practice cannot exceed a total $25,000.00 charge to NCACSP, including the cost of backflow prevention. Other water quality BMPs needed are in addition to the conversion cost.

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. The three-year conservation tillage 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 annually managing land cover to improve air and water quality.

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.

24. A long term no-till practice means planting all crops for five consecutive years with at least 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 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, including the cost of backflow prevention.

26. A nutrient management practice 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 cover crop means a crop of small grain grown primarily as a seasonal nutrient scavenger. The purpose is to scavenge and cycle plant nutrients, add organic matter to the soil, improve infiltration, aeration and tilth, improve soil quality, reduce soil crusting, provide residue for conservation tillage 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 $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 drought has caused damage to pasture vegetation. Benefits may include reduced soil erosion, sedimentation and pollution from dissolved and sediment-attached substances. (Temporary practice for the Drought Response Program.)

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 and one station per cooperator.

31. 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.

32. A riparian buffer means an area adjacent to solid blue line streams as shown on 7.5 minute USGS maps where a permanent, long-lived vegetative cover (sod, shrubs, trees, or a combination of vegetation types) is established to improve water quality. Benefits may include reduced soil erosion, sedimentation, pathogen contamination and pollution from dissolved, particulate and sediment-attached substances.

33. 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.

34. A rooftop 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.

35. 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.

36. 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.

37. 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.

38. 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:

39. A spring development means improving springs and seeps by excavating, cleaning, capping or providing collection and storage facilities.

40. 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.

41. A trough or tank means devices installed to provide drinking water for livestock at a stabilized location.

42. A well means constructing a drilled, driven or dug well to supply water from an underground source.

43. 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.

44. 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.

45. 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 $30,000 per cooperator per year.

46. 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.

47. 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.

48. 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.

(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 controlled livestock lounging area means a planned, stabilized and vegetated area in which livestock are kept for a short duration.

(E) 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.

(F) A feeding/waste storage structure means a fabricated structure for the combined purpose of animal feeding and temporary storage of animal waste. Cost share for this practice is limited to $27,500 per structure.

(G) 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.

(H) 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.

(I) 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.

(J) 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.

(K) 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.

(L) 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.

(M) 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. .

(N) 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.

(O) 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.

(P) 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.

(Q) A waste storage pond means an impoundment made by excavation or earthfill for temporary storage of animal waste, waste water and polluted runoff.

(R) A waste treatment lagoon means an impoundment made by excavation or earthfill for biological treatment and storage of animal waste.

49. 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).

50. 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

Practice	Minimum Life Expectancy (years)
Abandoned Well Closure	1
Agrichemical Containment and Mixing Facility	10
Agrichemical Handling Facility	10
Agricultural Pond Restoration/Repair	10
Agricultural Water Supply Pond	10
Agricultural Road Repair/Stabilization	10
Backflow Prevention System	
Chemigation	10
Fertigation	10
Conservation Cover	6
Conservation Irrigation Conversion	10
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	3
Portable Agrichemical Mixing Station	5
Pastureland Conversion	10
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
Controlled Livestock Lounging Area	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.

ATTACHMENT B

NC Agriculture Cost Share Program
Practice Log Summary

Year : **2009**
Program : **CS, DG, DA, CE, DE, EE, EN, II, AS, AW,**

	Planned			Implemented		
Best Management Practice	**Units**	**Msr.**	**Cost**	**Units**	**Msr.**	**Cost**
Erosion/Nutrient Reduction						
Pasture Renovation	15,998.48	Acre	$2,958,267	12,624.79	Acre	$2,240,997
Conservation Tillage (3 Yr.)	3,414.13	Acre	$232,409	2,358.86	Acre	$161,494
Long Term No-Till	1,822.45	Acre	$253,851	1,685.93	Acre	$231,439
Cover Crop	7,991.82	Acre	$141,257	6,402.98	Acre	$117,527
Sod-Based Rotation	472.40	Acre	$85,362	394.00	Acre	$73,226
Cropland Conversion - Grass	2,454.75	Acre	$556,135	1,627.98	Acre	$367,053
Cropland Conversion - Trees	727.78	Acre	$98,476	553.57	Acre	$64,050
Cropland Conversion - Wildlife	1.50	Acre	$338	1.50	Acre	$338
Conservation Cover	51.00	Acre	$8,034	42.00	Acre	$6,616
Critical Area Planting	8.82	Acre	$17,864	5.30	Acre	$12,417
Diversion	13,283.00	Feet	$14,490	12,008.00	Feet	$11,889
Land Smoothing	931.20	Acre	$153,949	524.00	Acre	$93,217
Terraces	13,390.00	Feet	$13,931	12,037.00	Feet	$11,727
Micro-Irrigation	403,259.00	Feet	$116,718	184,482.00	Feet	$51,212
Pastureland Conversion To Trees	5.97	Acre	$848	5.97	Acre	$848
Prescribed Grazing	157.90	Acre	$9,434	127.40	Acre	$4,835
Ag Road Repair-Stabilization	4,528.00	Feet	$33,005	3,973.00	Feet	$28,740
Drought Response						
Irrigation Well	116.00	Units	$547,174	87.00	Units	$398,827
Well-Confined Animal Water Supply	70.00	Units	$300,696	53.00	Units	$214,596
Agricultural Water Supply Pond	4.00	Units	$61,633	2.00	Units	$20,064
Conservation Irrigation Retrofit	10,721.00	Feet	$66,659	10,571.00	Feet	$57,307
Sediment/Nutrient Reduction						
Grassed Waterway	72.45	Acre	$220,989	46.22	Acre	$140,662
Field Border	77.49	Acre	$175,359	45.63	Acre	$100,243
Filter Strip	9.80	Acre	$2,774	9.41	Acre	$3,167
Riparian Buffer	110.00	Acre	$13,850	46.80	Acre	$6,084
Water Control Structure	58.00	Units	$96,129	34.00	Units	$45,365
Nutrient Management	2,303.10	Acre	$40,771	2,275.40	Acre	$30,272
Pond Renovation	139.00	Units	$381,476	105.00	Units	$262,353
Rock-Lined Outlet	3.00	Units	$2,074	2.00	Units	$1,089
Stream Restoration	300.00	Feet	$14,083	0.00	Feet	$0
Streambank And Shoreline Protection	547.00	Feet	$15,506	0.00	Feet	$0
Grade Stabilization Structure	9.00	Units	$19,100	7.00	Units	$15,386
Wetlands Restoration System	0.00	Units	$22,342	0.00	Units	$22,342
Run-Off Management System	3.00	Units	$972	1.00	Units	$697
Stream Protection						
Trough Or Tank	571.00	Units	$1,273,050	298.00	Units	$621,032
Livestock Exclusion	317,369.00	Feet	$719,688	126,539.00	Feet	$326,431
Heavy Use Area Protection	124.00	Units	$167,984	51.00	Units	$79,515
Stream Crossing	29.00	Units	$79,401	14.00	Units	$38,702
Stock Trail	20.00	Units	$100,116	10.00	Units	$48,599
Spring Development	6.00	Units	$11,250	2.00	Units	$2,256
Well	422.00	Units	$2,103,159	295.00	Units	$1,314,019
Livestock Feeding Area	7.00	Units	$49,745	1.00	Units	$6,237

Waste Management

Dry Stack	18.00	Units	$309,006	10.00	Units		$131,933
Incinerator	19.00	Units	$189,595	9.00	Units		$85,262
Feed/Waste Storage	3.00	Units	$73,203	2.00	Units		$46,080
Closure - Waste Impoundments	8.00	Units	$165,571	2.00	Units		$11,340
Waste Application Equip	39.00	Units	$333,198	26.00	Units		$217,272
Lagoon Biosolids Removal	1,033,300.00	Gallo	$9,000	958,300.00	Gallons		$8,250
Retrofit	3.00	Units	$1,020,512	1.00	Units		$19,762
Waste Treatment Lagoon	1.00	Units	$1,196	1.00	Units		$1,196
Composter	12.00	Units	$147,540	5.00	Units		$54,381
Solid Set	2.00	Units	$24,330	0.00	Units		$0
Concentrated Nutrient Source	1.00	Units	$23,124	0.00	Units		$0

Agri-Chemical Pollution Prevention

Agri-Chemical Handling Facility	4.00	Units	$83,294	3.00	Units		$58,294
Chemigation Backflow Prevention	2.00	Units	$2,690	2.00	Units		$2,690
Contracts: 2,427	0200	2	Total:	$13,562,607		Total:	$7,869,330

	Value	Expended
Contract $:	$13,525,768	$7,869,668
Non-ACSP	$36,839	$0
Total $:	$13,562,607	$7,869,668

Dairy	7,168
Beef	42,748
Fish	3,210
Hogs	179,339
Horses	1,816
Broilers	6,747,600
Layers	144,800
Turkeys	833,630
Poultry	2,250,008
Sheep	768
Goats	2,122

Acres Affected	Acre	89,047.53
Soil Saved	Tons	140,272.04
Nitrogen Saved	Pounds	467,250.22
Phosphorus Saved	Pounds	89,273.78
Waste-N Managed	Pounds	2,389,433.55
Waste-P Managed	Pounds	2,975,467.80
Square Feet Affected	Square	19,500.00
Impervious Area	Square	321,000.00

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

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

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
Pasture Land Conversion	√	√	10
Sod-based Rotation	√	√	4 or 5
Stripcropping	√	√	5
Terraces	√	√	10
Conservation Cover	√	√	6
Nutrient Scavenger Cover Crop	√	√	3
Cover Crop	√	√	1
Micro-Irrigation System	√	√	10
Rooftop Runoff Management System	-	√	10
Prescribed Grazing	√	√	3

Purpose: Agricultural Chemical Pollution Prevention

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

Purpose: Animal Waste 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 Stack	√	-	-	-	10
Feeding/Waste Storage Structure					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 (Incinerators)	√ √	- -	- -	- -	10 (5)
Waste Application System	√	-	-	√	10
Tank-Based Aquaculture	√	-	-	-	10
Manure/Litter Transportation Incentive	√	-	-	-	1
Manure Composting Facility	√				10
Lagoon Biosolids Removal Incentive	√	-	-	-	1

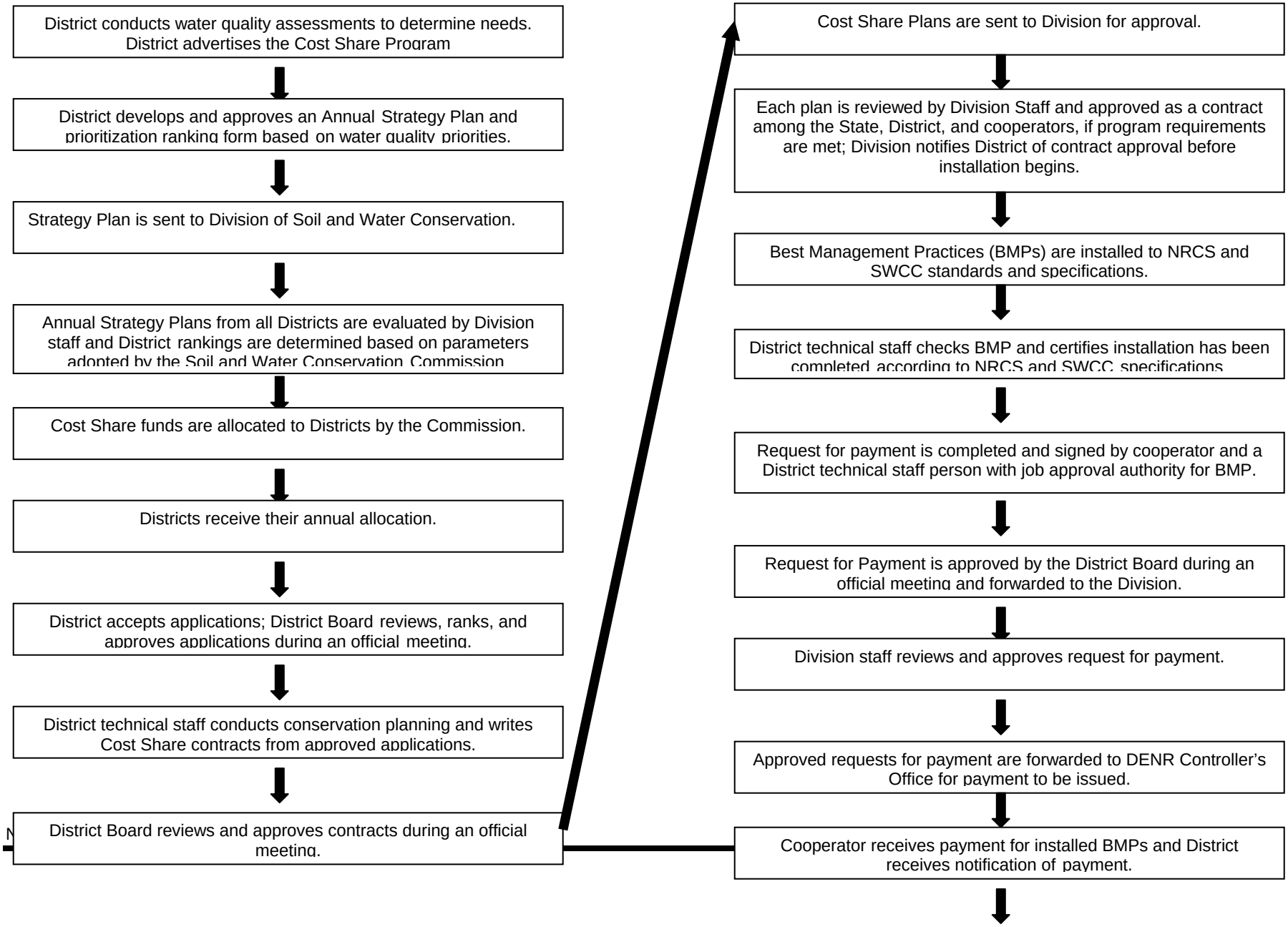
Purpose: Stream Protection from Animals

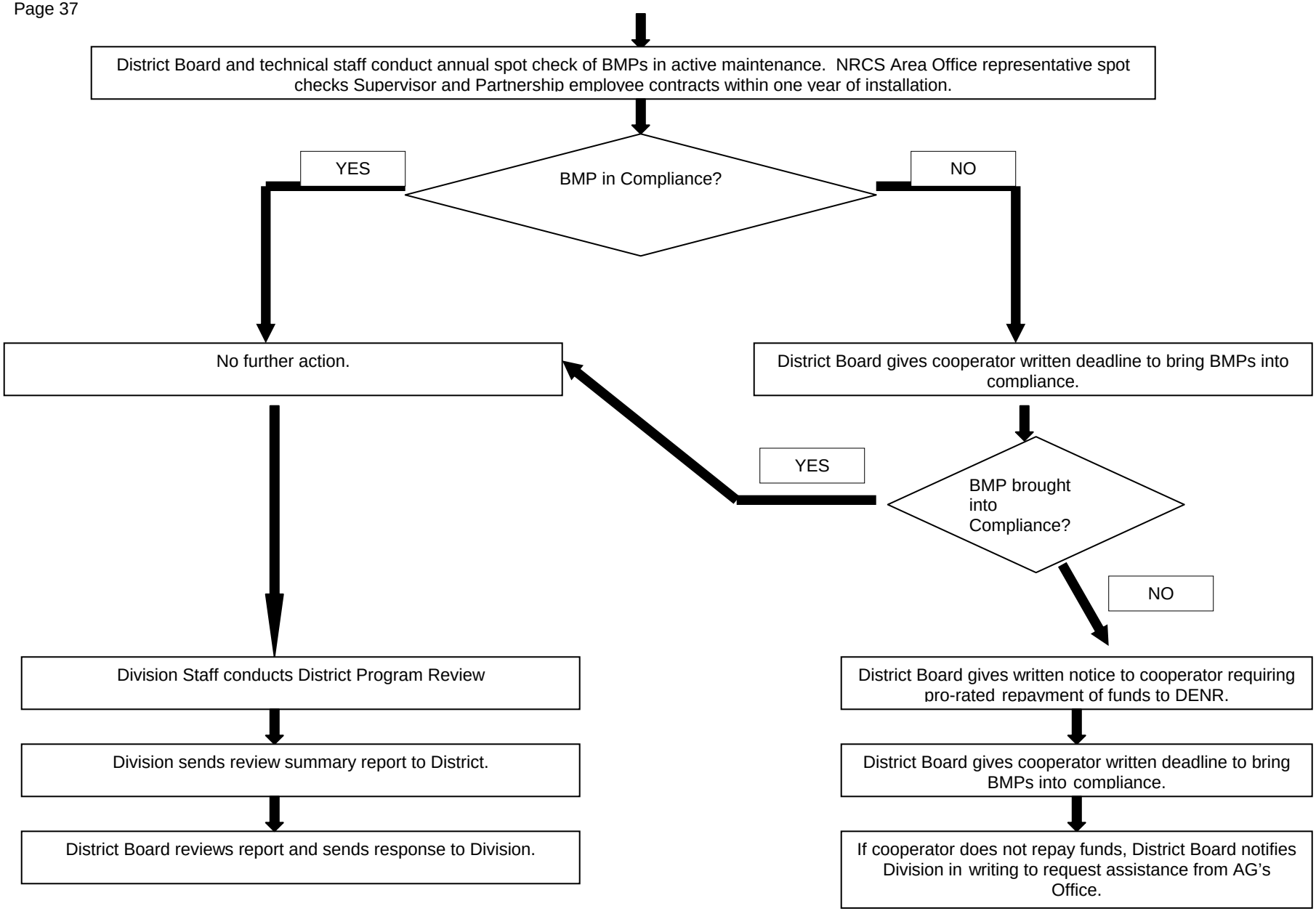
BMP	Reduction of applied nutrient	Reduction of soil loss	Facilitating BMP	Life of BMP (yrs.)
Heavy Use Area Protection	-	√	-	10
Livestock Exclusion System	√	√	-	10
Spring Development	-	-		10
Stock Trail & Walkway	-	√	-	10
Stream Crossing		√	-	10
Trough or Tank	-	-	√	10
Well	-	-	√	10
Windmill	-	-	√	10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

ATTACHMENT D

NC Agriculture Cost Share Program

Funding and Compliance Process




District Board and technical staff conduct annual spot check of BMPs in active maintenance. NRCS Area Office representative spot checks Supervisor and Partnership employee contracts within one year of installation.
BMP in Compliance?
YES
NO
No further action.
District Board gives cooperator written deadline to bring BMPs into compliance.
BMP brought into Compliance?
YES
NO
Division Staff conducts District Program Review
Division sends review summary report to District.
District Board reviews report and sends response to Division.
District Board gives written notice to cooperator requiring pro-rated repayment of funds to DENR.
District Board gives cooperator written deadline to bring BMPs into compliance.
If cooperator does not repay funds, District Board notifies Division in writing to request assistance from AG's Office.

ATTACHMENT E

Best Management Practices (BMPs)
Maps by BMP Category

2009 NC Agriculture Cost Share
Agri-Chemical Pollution Prevention BMP Locations

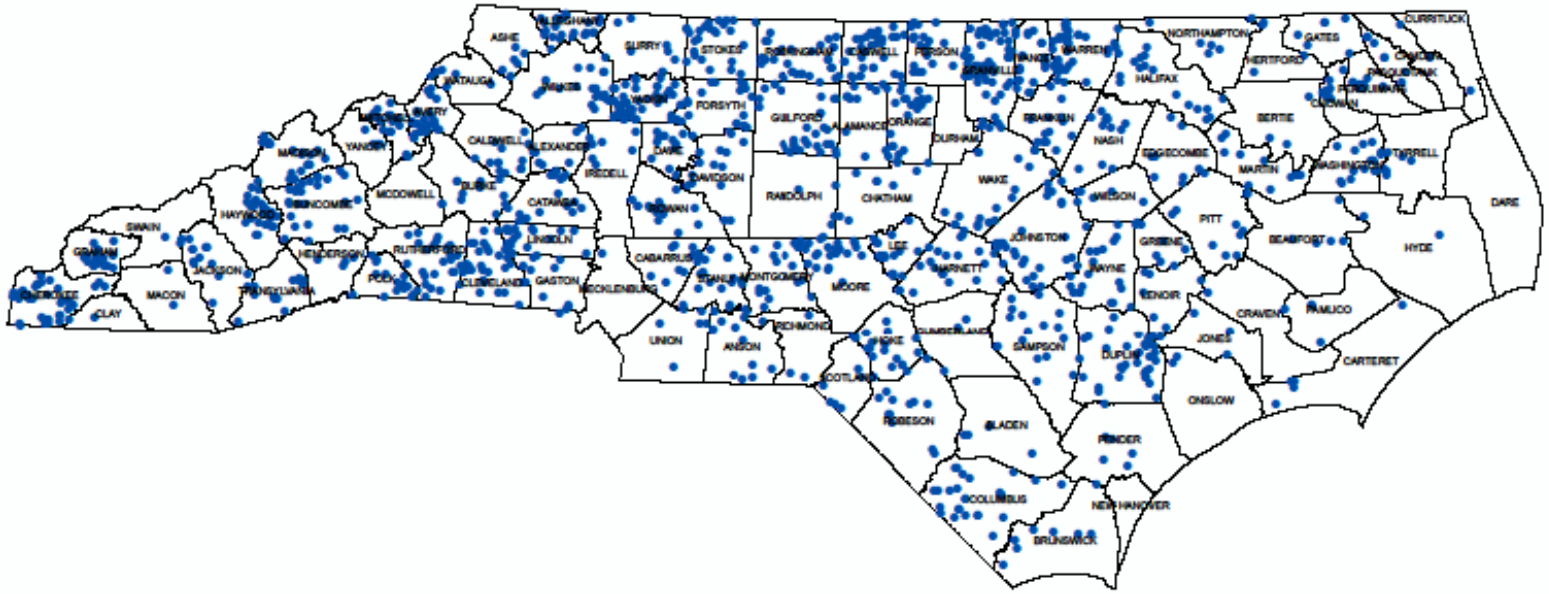
Points represent approximate BMP locations based on the latitude/longitude provided by Soil and Water Conservation Districts. The data represents 5 Agri-Chemical Pollution Prevention BMPs contracted in PY 2009. The data is recorded in the SOIL database.

0 40 80 160 Miles

Legend

- Agri-Chemical Pollution Prevention BMPs
- County Boundaries 100

2009 NC Agriculture Cost Share Erosion/Nutrient Reduction BMP Locations



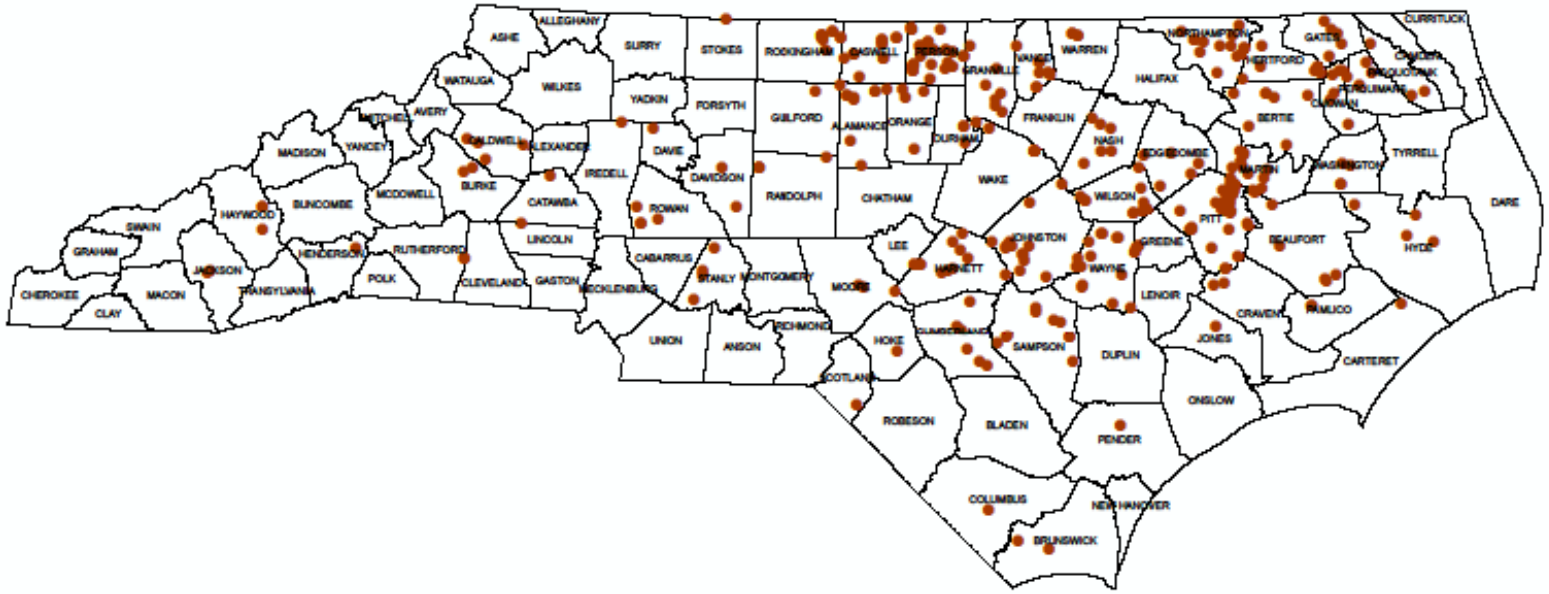
Points represent approximate BMP locations based on the latitude/longitude provided by Soil and Water Conservation Districts. The data represents 1,422 Erosion/Nutrient Reduction BMPs contracted in PY 2009. The data is recorded in the SOIL database.

0 40 80 160 Miles

Legend

- Erosion/Nutrient Reduction BMPs
- County Boundaries 100

2009 NC Agriculture Cost Share Sediment/Nutrient Reduction BMP Locations

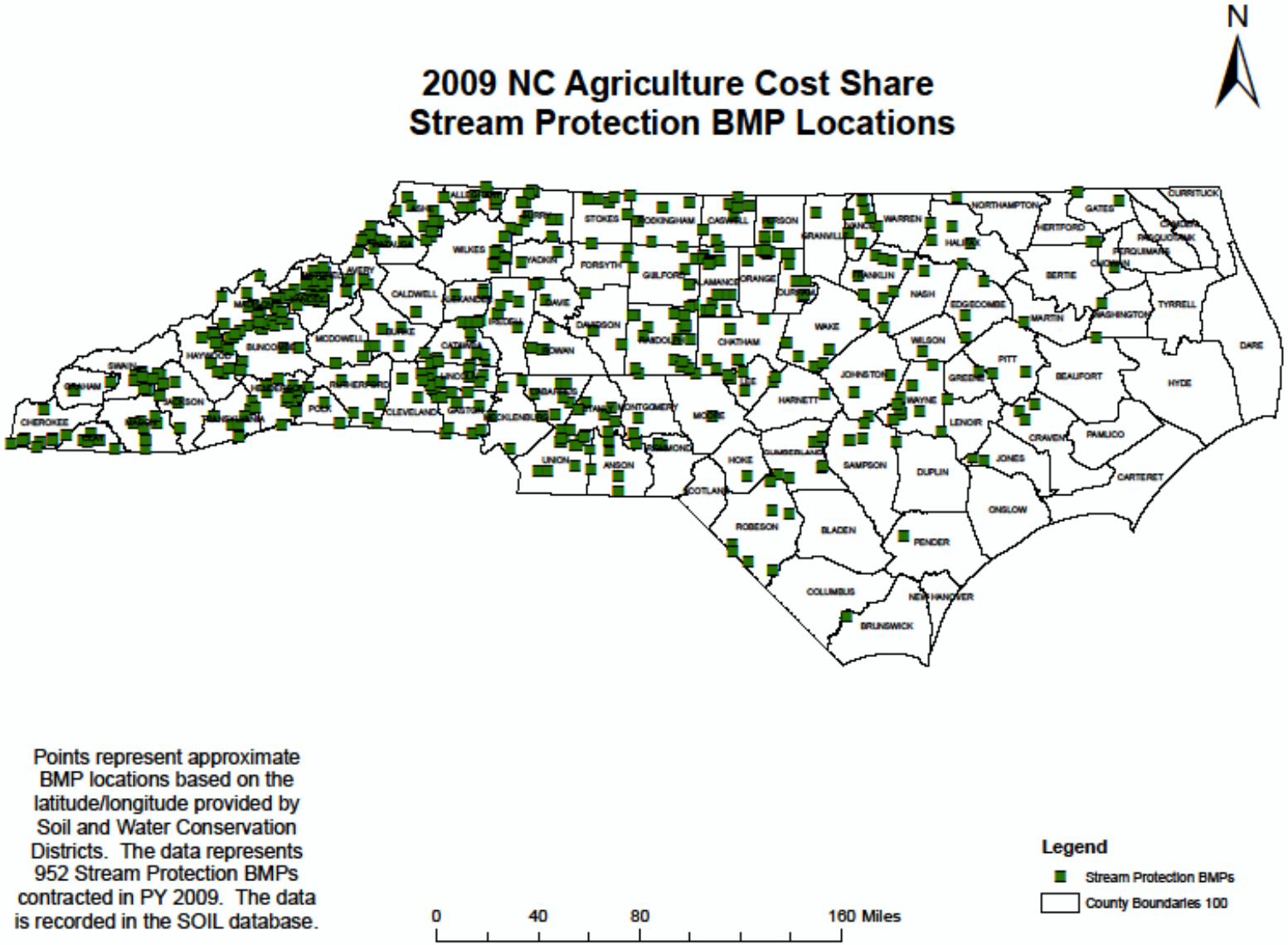


Points represent approximate BMP locations based on the latitude/longitude provided by Soil and Water Conservation Districts. The data represents 338 Sediment/Nutrient Reduction BMPs contracted in PY 2009. The data is recorded in the SOIL database.

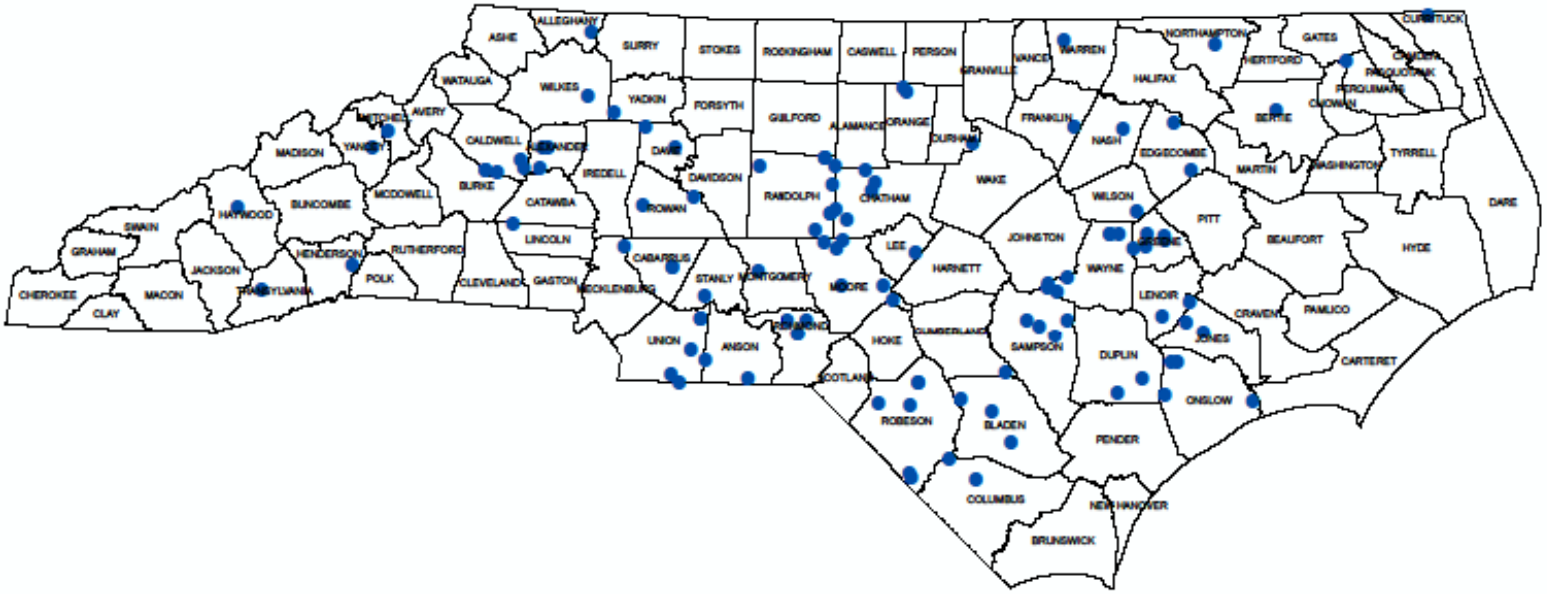
0 40 80 160 Miles

Legend

- Sediment/Nutrient Reduction BMPs
- County Boundaries 100


2009 NC Agriculture Cost Share
Stream Protection BMP Locations
N
Points represent approximate BMP locations based on the latitude/longitude provided by Soil and Water Conservation Districts. The data represents 952 Stream Protection BMPs contracted in PY 2009. The data is recorded in the SOIL database.
0
40
80
160 Miles
Legend
Stream Protection BMPs
County Boundaries 100

2009 NC Agriculture Cost Share Waste Management BMP Locations

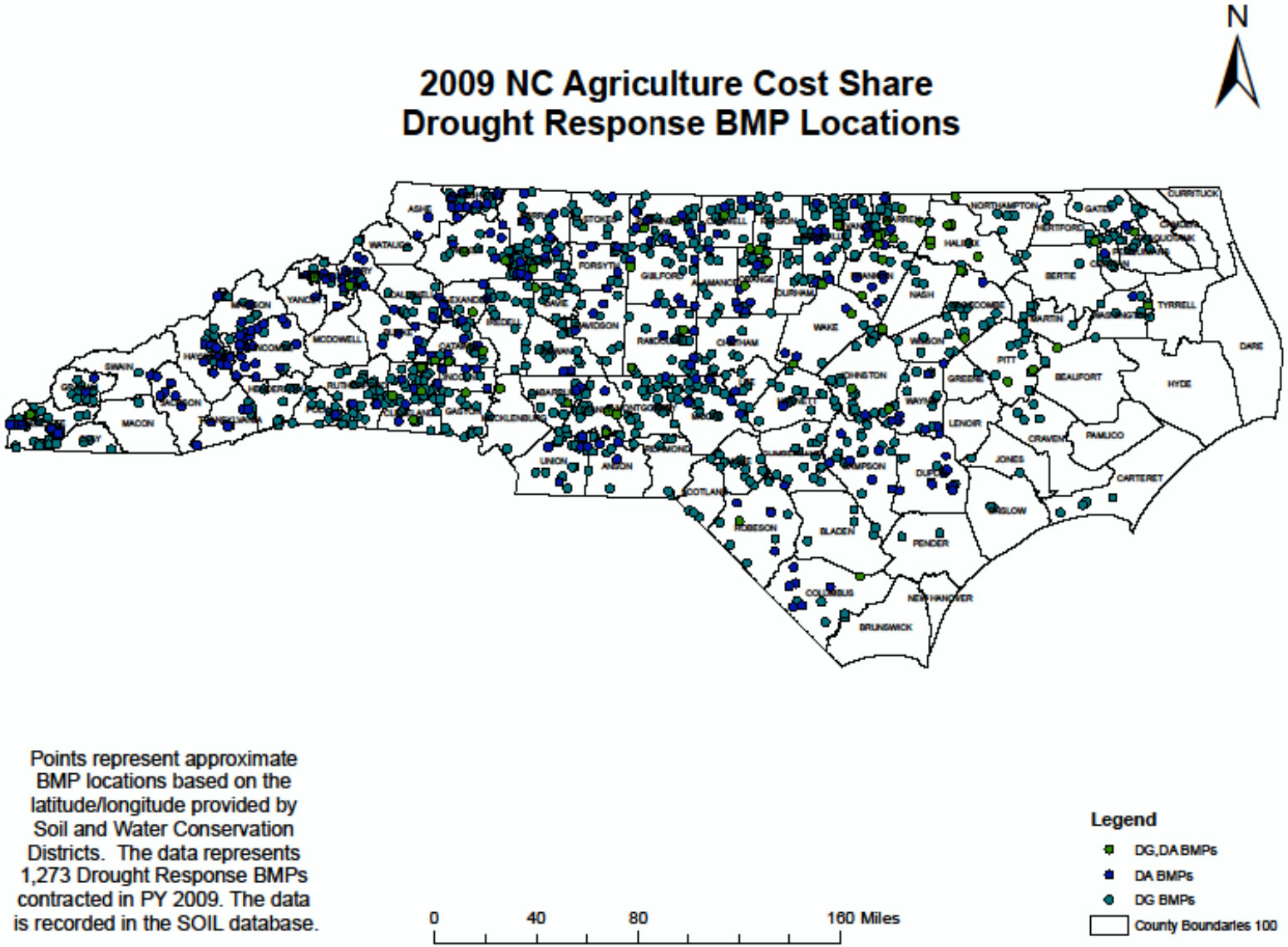


Points represent approximate BMP locations based on the latitude/longitude provided by Soil and Water Conservation Districts. The data represents 110 Waste Management BMPs contracted in PY 2009. The data is recorded in the SOIL database.

0 40 80 160 Miles

Legend

- Waste Management BMPs
- County Boundaries 100


2009 NC Agriculture Cost Share
Drought Response BMP Locations
N
Points represent approximate BMP locations based on the latitude/longitude provided by Soil and Water Conservation Districts. The data represents 1,273 Drought Response BMPs contracted in PY 2009. The data is recorded in the SOIL database.
0
40
80
160 Miles
Legend
DG,DA BMPs
DA BMPs
DG BMPs
County Boundaries 100