

Chapter 11

Agriculture and Water Quality

11.1 Animal Operations

In 1992, the Environmental Management Commission (EMC) adopted a rule modification (15A NCAC 2H.0217) establishing procedures for managing and reusing animal wastes from intensive livestock operations. The rule applies to new, expanding or existing feedlots with animal waste management systems designed to serve animal populations of at least the following size: 100 head of cattle, 75 horses, 250 swine, 1,000 sheep or 30,000 birds (chickens and turkeys) with a liquid waste system.

Key Animal Operation Legislation (1995-2003)

- 1995 Senate Bill 974 requires owners of swine facilities with 250 or more animals to hire a certified operator. Operators are required to attend a six-hour training course and pass an examination for certification. Senate Bill 1080 established buffer requirements for swine houses, lagoons and land application areas for farms sited after October 1, 1995.
- 1996 Senate Bill 1217 required all facilities (above threshold populations) to obtain coverage under a general permit, beginning in January 1997, for all new and expanding facilities. DWQ was directed to conduct annual inspections of all animal waste management facilities. Poultry facilities with 30,000+ birds and a liquid waste management system were required to hire a certified operator by January 1997 and facilities with dry litter animal waste management systems were required to develop an animal waste management plan by January 1998. The plan must address three specific items: 1) periodic testing of soils where waste is applied; 2) development of waste utilization plans; and 3) completion and maintenance of records on-site for three years. Additionally, anyone wishing to construct a new or expand an existing swine farm must notify all adjoining property owners.
- 1997 House Bill 515 placed a moratorium on new or existing swine farm operations and allows counties to adopt zoning ordinances for swine farms with a design capacity of 600,000 pounds (SSLW) or more. In addition, owners of potential new and expanding operations are required to notify the county (manager or chair of commission) and local health department, as well as adjoining landowners. NCDENR was required to develop and adopt economically feasible odor control standards by March 1, 1999.
- 1998 House Bill 1480 extended the moratorium on construction or expansion of swine farms. The bill also requires owners of swine operations to register with DWQ any contractual relationship with an integrator.
- 1999 House Bill 1160 extended (again) the moratorium on new construction or expansion of swine farms, required NCDENR to develop an inventory of inactive lagoons. The Bill requires owners/operators of an animal waste treatment system to notify the public in the event of a discharge to surface waters of the state of 1,000 gallons or more of untreated wastewater.
- 2000 Attorney General Easley reached a landmark agreement with Smithfield Foods, Inc. to phase out hog lagoons and implement new technologies that will substantially reduce pollutants from hog farms. The agreement commits Smith field to phase out all anaerobic lagoon systems on 276 company-owned farms. Legislation will be required to phase out the remaining systems statewide within a 5-year period (State of Environment Report 2000).
- 2001 House Bill 1216 extended (again) the moratorium on new construction or expansion of swine farms.

Table 19 summarizes, by subbasin, the number of registered livestock operations, total number of animals, number of facilities, and total steady state live weight (SSLW) as of September 2003. These numbers reflect only operations required by law to be registered, and therefore, do not represent the total number of animals in each subbasin.

Overall the majority of registered animal operations are found in the upper portion of the basin. Registered animal operations where recent data show problems are discussed in the appropriate subbasin chapter.

Table 19 Registered Animal Operations in the French Broad River Basin (September 2003)

Subbasin	Cattle			Poultry			Swine		
	No. of Facilities	No. of Animals	Total Steady State Live Weight*	No. of Facilities	No. of Animals	Total Steady State Live Weight*	No. of Facilities	No. of Animals	Total Steady State Live Weight*
04-03-01	0	0	0	0	0	0	0	0	0
04-03-02	7	2,810	3,886,000	0	0	0	1	2,000	283,400
04-03-03	2	425	595,000	0	0	0	0	0	0
04-03-04	0	0	0	0	0	0	0	0	0
04-03-05	8	1,215	1,701,000	0	0	0	0	0	0
04-03-06	0	0	0	0	0	0	0	0	0
04-03-07	0	0	0	0	0	0	0	0	0
Totals	17	4,450	6,182,000	0	0	0	1	2,000	283,400

* Steady State Live Weight (SSLW) is in pounds, after a conversion factor has been applied to the number of swine, cattle or poultry on a farm. Conversion factors come from the US Department of Agriculture, Natural Resource Conservation Service guidelines. Since the amount of waste produced varies by hog size, this is the best way to compare the sizes of the farms.

11.2 Impacted Streams in Agricultural Areas

In the French Broad River basin, the majority of agricultural land is in pasture use. There are also a variety of specialty crop farms in this river basin including tomatoes, peppers and apple orchards. Impacts to streams from agricultural activities can include excessive nutrient loading, pesticide and herbicide contamination, bacterial contamination, and sedimentation. In several watersheds, water quality data are indicating toxicity impacts to the aquatic biological community attributable to the use of pesticides on these specialty operations. For more information, refer to the discussion related to Mud Creek (Chapter 2) and the Mills River (Chapter 3).

Overall, there has been a decrease in agricultural land use throughout the watershed. From 1982 to 1997, pasture use has decreased by 7.7% (18,000 acres). Cultivated and uncultivated crop areas decreased by 28.0% and 45.5% (23,500 and 15,700 acres), respectively (USDA-NRCS, June 2001). Impacts to water quality from agricultural sources may decrease over the next basin cycle. It should be noted, however, that there has been an increase in urban/built-up areas in many municipalities throughout the river basin. Refer to Appendix III for more information regarding land use changes.

2005 Recommendations

DWQ will identify streams where agricultural land use may be impacting water quality and aquatic habitat. This information will be related to local Division of Soil and Water Conservation and NRCS staff to investigate the agricultural impacts in these watersheds and to recommend BMPs to reduce impacts. DWQ recommends that funding and technical support for agricultural BMPs continue and increase. Refer to Appendix VIII for agricultural nonpoint source agency contact information.

11.3 Agricultural Best Management Practices Funding Opportunities

11.3.1 USDA – NRCS Environmental Quality Improvement Program (EQIP)

The Environmental Quality Improvement Program (EQIP) provides technical, educational and financial assistance to eligible farmers to address soil, water and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. The program provides assistance to farmers in complying with federal and state environmental laws and encourages environmental enhancement. The purposes of the program are achieved through the implementation of a conservation plan that includes structural, vegetative and land management practices on eligible land. Five to ten-year contracts are made with eligible producers. Cost share payments may be made to implement one or more eligible structural or vegetative practice, such as animal waste management facilities, terraces, filter strips, tree planting and permanent wildlife habitat. Incentive payments can be made to implement one or more land management practices, such as nutrient management, pest management and grazing land management.

Fifty percent of the funding available for this program will be targeted at natural resource concerns relating to livestock production. The program is carried out primarily in priority areas that may be watersheds, regions or multistate areas and for significant statewide natural resource concerns that are outside of geographic priority areas. EQIP's authorized budget of \$1.3 billion is prorated at \$200 million per year through the year 2002.

NRCS district contacts for the French Broad River basin are provided in Appendix VIII or visit the website at <http://www.nrcs.usda.gov/programs/eqip/> for more information.

11.3.2 NC Agriculture Cost Share Program

The North Carolina Agriculture Cost Share Program was established in 1984 to help reduce the sources of agricultural nonpoint source pollution to the state's waters. The program helps owners and renters of established agricultural operations improve their on-farm management by using BMPs. These BMPs include vegetative, structural or management systems that can improve the efficiency of farming operations while reducing the potential for surface and groundwater pollution. The Agriculture Cost Share Program is a voluntary program that reimburses farmers up to 75 percent of the cost of installing an approved BMP. The Division of Soil and Water Conservation (DSWC) implements the program. The cost share funds are paid to the farmer once the planned control measures and technical specifications are completed. The annual statewide budget for BMP cost sharing is approximately \$6.9 million. From 1999 to

2003, \$1,562,128 was provided for projects in counties wholly or partially in the French Broad River basin. Soil and Water Conservation District (SWCD) contacts for the French Broad River basin are included in Appendix VIII or visit the website at <http://www.enr.state.nc.us/DSWC/pages/agcostshareprogram.html> for more information.

11.3.3 Agricultural Sediment Initiative

In 2000, the NC Association of Soil and Water Conservation Districts and the NC Soil and Water Conservation Commission initiated an effort to assess stream channels and watersheds of streams on the state’s 2000 303(d) list due to sediment where agriculture was included as a potential source. The primary objective of the Agricultural Sediment Initiative was to evaluate 303(d) listed waters in order to assess the severity of sedimentation associated with agricultural activities within the watershed and to develop local strategies for addressing sedimentation. The initiative involved 47 Impaired stream segments in 34 counties and 11 river basins.

In 2001, the Soil and Water Conservation Commission allocated additional Agriculture Cost Share Funds to districts to address agricultural sediment. In 2002, the districts in the French Broad River basin received an additional \$110,000 to implement agricultural BMPs in selected watersheds, and an additional \$30,000 was allocated in 2003.

Table 20 summarizes the results of the completed Agricultural Sediment Surveys for five watersheds in three counties in the French Broad River basin. District staff requested approximately \$2,840,000 for restoration and protection work in four of the watersheds.

Table 20 Summary of Agricultural Sediment Initiative Surveys

Stream	County	Problems Identified	Funds Requested by District
Richland Creek	Haywood	Cropland erosion, pasture/hayland overuse, urban development, road construction, streambank erosion	\$100,000
Hyatt Creek	Haywood	Streambank erosion, road construction, urban development, livestock in stream	\$385,000
Mud Creek	Henderson	New development, road construction, streambank erosion	\$725,000
Right Fork Cane Creek	Henderson	New development, streambank erosion in urban areas, small amount of mining	\$765,000
Hominy Creek	Buncombe	Streambank erosion, urban development, road construction, large stone quarry	\$865,000