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We have completed a preliminary review of the United States Geological Survey Scientific Investigations Report (2015-5080) entitled "**Surface-Water Quality in Agricultural Watersheds of the North Carolina Coastal Plain Associated with Concentrated Animal Feeding Operations".** The report was prepared in cooperation with the North Carolina Department of Environment and Natural Resources, Division of Water Resources.

Significantly, the data presented in the report does not show any exceedances of state water quality standards in any of the sampled watersheds, including those with swine or swine/poultry CAFOs.

We disagree with the report's conclusions that the data indicate distinct water quality differences at 21 of the 36 swine and swine/poultry sampling sites and that these differences reflect swine and/or poultry CAFO effects. These conclusions are erroneous and unsupported by the data due to the following limitations and deficiencies in the overall study design:

- An inadequate number of stream samples per watershed;
- A lack of adequate stream sampling over a full one-year period covering all four climatic seasons;
- Differing geology and soil types over the study area, and spatial limitations where background basin locations are distinctly different from the actual basins containing swine and poultry operations;
- A lack of poultry and swine population distribution across the sites; and
- A general miss-categorization of several basins (based on historical use including basins dominated by industrial or municipal land uses).

We believe these limitations and deficiencies prevent the data from being used to draw any meaningful conclusions concerning potential influences of swine and swine/poultry CAFOs on coastal plain streams.

On the other hand, we do agree with the report's conclusion that there is no significant difference between phosphorous and organic nitrogen compound concentrations (these are generally associated with CAFOs waste) among the land use group types. There is a general recognition by the USGS that land use and soil type surrounding streams greatly affect the potential impact of land use on water quality. Our research indicates that the distribution and composition of the stream buffers play a much more vital role in maintaining stream quality than the presence or absence of CAFO operations. Based on our evaluation of the limited data presented in the report we believe that the report may provide further insight on how stream buffers can be utilized to enhance downstream water quality.