

CEAP RELEVANT RESEARCH WATERSHED STUDY

Name of Project Nitrate Transport and Transformations in a Coastal Plain Watershed, North Carolina	Location (State, River, HUC) Contentnea Creek subbasin of the Neuse River, North Carolina
Principal Investigator (Name, contact info) Jim Tesoriero, U.S. Geological Survey (503) 251-3202, tesorier@usgs.gov	Website report published- Tseriero, A.J., T.B. Spruill, J.E.Mew, Jr., K.M. Farrell, and S.L. Harden (2005), Nitrogen transport and transformations in a coastal plain watershed: Influence of geomorphology on flow paths and residence times, Water Resour. Res., 41, W02008, doi:10.1029/2003WR002953.
Purpose of Project (Goals and Objectives) Determine the transport and fate of nitrate, applied to fields from concentrated animal feeding operations (CAFOs), to streams dominated by groundwater flow in the coastal plain	
Description of Project (Landscape, Models, Practices) The study is in the coastal plain of North Carolina, in a stream dominated by ground-water flow. Within the basin, CAFOs have been identified as a major component of estuarine nutrient loading. The dominant practice at CAFOs in this area is the use of lagoons and spray fields. Hydrologic and lithologic analyses as well as geochemistry of the ground water, including multiple isotopes, were used to determine the transport and fate of nitrogen. Ground water age flow and residence times were determined, and excess nitrogen gas and other redox-active constituents were measured to determine rates of denitrification.	