Undergraduate Internship Project #1 of 7 for FY12

Intern Tyler Monteith’s project, sponsored by the DWRC, was titled “The Returns to Best Management Practices: Evidence from Early Proposals for Nutrient Trading in the Chesapeake Bay Watershed.” He was advised by Dr. Joshua Duke of the UD’s Department of Applied Economics and Statistics.

Abstract

This paper examines the effectiveness of a proposed nutrient offset trading market at increasing adoption rates of best management practices (BMPs) in the Chesapeake Bay Watershed. The analysis incorporates real agronomic data collected from farms on Maryland’s Eastern Shore to accomplish three study objectives: (1) derive the farms’ demand to adopt BMPs; (2) determine the heterogeneity of nutrient reductions for various farms; and (3) estimate the likely participation in the proposed program. Seventy-seven low-load fields were entered into the Maryland Nutrient Trading Tool where reductions were calculated from the planned installation of four management practices: Forest and grass buffers, decision agriculture, and land use conversion. Estimated costs of BMP adoption and credit values were applied to generate net benefits of adopting a BMP in the offset trading market, from which participation was then estimated. The results showed the trading tool creates heterogeneous reductions in nutrient loadings. Second, the incentives derived from the program are only likely to incentivize riparian buffer adoption, a practice that is likely already fully incentivized. This may lead to low participation rates within the program. Finally, adoption rates could be increased through the incorporation of unmeasured and additional benefits, though doing so could create a distortion within the market.