

Calculating Premium of Water Quality Trading for Jordan Lake, NC

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Abstract. Based on an EPA report, 60% of assessed lakes, reservoirs, and ponds were threatened or impaired for their designated uses in 2006, mostly by nutrients. While many different policies have been used to improve water quality, one program that is favored by economists but that has struggled to find even limited success is Water Quality Trading (WQT). In theory, water quality improvement is achievable at lower cost using WQT. While the idea of a WQT program is an appealing way to improve water quality, many practical wedges have been identified in the literature such as premiums that are proving to be substantial impediments to successful markets. In this study, we investigate the innovation premium that farmers demand in a newly formed WQT market to address nitrogen and phosphorus pollution in Lake Jordan, North Carolina. A survey was developed and implemented in the region to ask water quality credits' producers about the program. We estimate that willingness to accept (WTA) a credit payment for constructing riparian buffer that qualifies for nutrient credits in the Jordan Lake, NC watershed range from 3.68 to 3.78 times the cost of installing BMPs' on livestock farms and from 4.56 to 5.38 for crop farmers. This paper illustrates that, besides all the tangible hindrances for having a successful WQT program, the intangible reasons like distrust about payments or uncertainty about the unknown program might be equally or even more important to address.