

**Nutrient Prices and Concentrations in
Midwestern Agricultural Watersheds.**

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Summary

It has been difficult to assess the relationship between nutrient inputs to farm fields and nutrient outputs in large agricultural watersheds in part because it is very difficult to measure accurately the amount of nutrient applied by farmers on a yearly basis. We hypothesize, however, that there should be a relationship between nutrient prices and nutrient outputs in agricultural watersheds. Economic studies illustrate that higher nutrient prices invite less nutrient use. We test whether the same relationship holds for nutrient outputs from agricultural watersheds. Our results indicate that the price elasticity of nutrient outputs from watersheds is consistent with the economic literature on the price elasticity of nutrients as an input. Specifically we estimate that a 10% increase in nutrient prices will result in a 2.0% reduction in nutrient outputs from agricultural watersheds. In the watersheds we examine, this implies that a 2.6 ton (1 ton = 1 t = 1000 kg) reduction in N inputs reduces N export from an agricultural watershed by 1 t, and each 11 t reduction in P inputs P export by 1 t. The results of this analysis suggest that reducing N inputs can be an effective means to reduce N outputs from agricultural watersheds.