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Title: Water Quality Affects Property Prices: A Case Study of Selected Maine Lakes

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Abstract:

The objective of this study is to estimate the effect that water clarity has on the property values of lakefront property surrounding 34 selected Maine lakes representing six different real estate markets. Generally, Maine is known for their clear, high-quality lakes but they face threats from runoff and increased nutrient loading, which causes eutrophication and increased algal growth is a common result. Obviously this hurts water clarity significantly and also harms the fish population, both of which are connected to the aesthetic and recreational value of the lake and, in turn, lowers property values surrounding the lake. Researchers from the Maine Department of Environmental Protection (DEP) want to provide incentive for continued funding for lake cleanup efforts and education programs that emphasize the value of water clarity, but they lack the specific connection between water clarity and property prices that this study hopes to discover.

This study uses a hedonic model, which estimates what share of the property value can be attributed to a particular characteristic if all other variables are kept constant. This helps researchers better isolate and accurately estimate the effect a variable can have and figure out how important it is to economic valuation. There are several studies that examine the application of the hedonic model to determine value of water quality, with the earliest concerning Wisconsin lakes by David (1968).

This study shows that water clarity has a significant effect on property prices around Maine lakes. Using the hedonic model in this study to account for current and historical water clarity of the lake, a one meter improvement in the lake water clarity results in gains in average property prices ranging from \$11 per foot of lake frontage to as high as \$200 per foot. Obviously, when accounting for all of the feet of frontage, improvement at one lake can equate to millions of dollars of property value improvements.