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Title: Lakeshore Property Values and Water Quality: Evidence From Property Sales in the Mississippi Headwaters Region

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Abstract:

This paper seeks to determine if water quality of Minnesota lakes located in the Mississippi Headwaters region affects lakeshore property prices. The paper estimates the value of water quality for 37 lakes by using the hedonic pricing method to determine the individual effect of water quality on overall property prices surrounding individual lakes and for the lakes grouped within six real estate markets. A sample of 1205 property sales were used for these lakes from 1996-2001. Water quality was determined by the water clarity, which is measured by the mean secchi disk reading for the lake for the year a property sold. Site quality was also evaluated using this model, so aspects like lake frontage, improvements on the land, and neighborhood are calculated in the estimate with water quality. This study is closely related to the design and format of a similar study conducted for [Maine lakes](#).

The study finds that water quality plays a significant role in determining lakeshore property prices with a positive relationship between water quality and property prices for all groups of lakes. Site quality was also significant in four of the six lake groups, although it had a negative relationship with three of the groups. This can be attributed to the possibility that some buyers may prefer and be willing to pay more for more urbanized and developed properties, even though this contributes to water degradation and contradicts the preference for higher water quality. In addition, the study finds that changing the water clarity by one-meter can cause a change in property prices that range from tens of thousands to millions of dollars for each individual lake. Aggregate property prices would increase by a total of \$217,715,429 for all 37 lakes if all water clarity was increased by one meter. If water clarity decreased by one meter, the aggregate property prices for all 37 lakes would drop by \$362,867,507. These results reflect other studies that show a drop in water quality tends to have more severe results on economic value than an increase of water quality, providing further evidence that maintaining water quality is even more important than any efforts to improve them and a justified restoration expenditure when additional funds for improving water quality are not available.