

# Lake impacts on property taxes and values in Kosciusko County

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## ***Abstract***

Kosciusko County is home to more than 100 lakes. This abundance of lakes impacts many aspects of the community including its economy. The present study identifies lake impact on property taxes and values as specific indicators of economic impact. In 2012, the presence of lakes in Kosciusko County directly caused the generation of at least \$15,000,000 in additional property tax revenues for the county. Properties within 500 feet of the 41 largest lakes in the county accounted for 37% of total county property tax revenues. These same lake properties have a total value of \$3,000,000,000 which is predominately (76%) made up of single family home properties. These property values, and thus property tax revenues, are subject to change based on improved or degraded water quality of these lakes. Therefore, efforts of the Kosciusko Lakes and Streams center are important for future economic development, funding of public services, and personal wealth considerations.

**Keywords:** lake economic impact, Kosciusko County, property taxes, property values

## ***Introduction***

Several other U.S. states have conducted studies relating the economic impacts of local lakes to the region or state-wide economies. One important component of the economic impact of lakes are the property values and tax revenue generated by the presence of the lakes. There has been no such analysis of Indiana at the state level, or of Kosciusko County, to date despite large numbers of lakes in the state and a particular concentration of over 100 such lakes in the county.

In the present study we quantify property values and property tax revenues around the larger lakes in Kosciusko County in order to further understand the economic impact of the lakes to this county. We specifically isolate only tax revenue generated due to the presence of the lakes. Then we briefly explore potential future influences on property taxes and values.

## ***Methods***

### **Study sites**

We selected all lakes in Kosciusko County greater than 25 acres in surface area which results in 44 lakes. Of these 44 lakes, Spear and Shock lakes (within the Tri-County Fish and Wildlife Area) and Muskellunge Lake were removed from the analysis because they had no permanent residential structures.

Property parcels were selected around each lake based on three distinct categories: lake front, channel front, and lake view. Lake front parcels were those that bordered the main shoreline of the lake. Channel front parcels were those that bordered shoreline of one of the channels around the lake. Lake view parcels were parcels within 500 feet of a main or channel shoreline but did not actually border any lake waters. Additional parcels from four representative non-lake subdivisions were also collected for comparison purposes.

### **Data collected**

Data on lake extents and parcel sizes and locations were taken from Kosciusko County GIS Department databases. Property information on each of these property parcels was exported from the Kosciusko County Assessors and Auditor offices, including land value, improvement value (structures), spring taxes, fall taxes, property type (zoning classification), building information, building size, and if the parcel received a homestead credit for taxes. All data was for the 2012 tax year.

## Data analysis

Parcels were categorized and separated according to lake front, channel front, and lake view as described above. For each parcel, three new quantities were calculated. Total taxes due per year were calculated as the sum of spring and fall taxes. The average tax per square foot was calculated as the total tax divided by the building size. Property values were calculated as the sum of the land value and improvement value. These three quantities were then summarized for each category for a particular lake by summing taxes and property values and averaging all tax per square foot values across all parcels.

Parcels were then filtered twice and these three quantities were summarized once again for each of the lake front, channel front, and lake view categories. First, parcels were filtered for property type (1 Family Dwelling) and building type (Single-Family R 01) which resulted in only permanent single family residential homes being included in analysis rather than all property types around the lake. Commercial properties, vacant land, mobile homes, condominiums, and agricultural land were thus filtered out. Second, parcels were further filtered to only include homes with a homestead credit which indicated that these were primary residences, rather than secondary residences.

In order to find total residential property taxes generated due to lake presence, the portion of the primary residence taxes due to the lakes had to be calculated. All taxes generated from secondary residences were assumed to be attributed to lake presence. Average taxes per square foot were used to explore the proportion of primary residence taxes that were due to lake presence. Since this quantity was calculated separately for lake front, channel front, lake view, and non-lake subdivisions, the influence of lake proximity and presence was seen in the variation of this quantity. In the case of each lake, the difference in the tax per square foot quantity between the categories was assumed to be due to the lake presence, and thus the proportion of this difference compared to the higher tax per square foot quantity was recorded and used to figure out lake portion of taxes generated for primary residences. In some cases the non-lake subdivisions had the lowest tax per square footage, so three lake categories were compared to this. However, in other lakes the channel front or lake view categories were lower so differences were taken with them instead. For example, a lake may have the following tax per square foot quantities: lake front - \$1.50, channel front - \$0.75, lake view - \$0.60, and non-lake subdivision \$0.47 (same for all lakes). In this case, lake front had a difference of \$1.03 from the lowest category (non-lake subdivision), so the percentage of the taxes due to the lake presence would be \$1.03 divided by \$1.50 or 69%. These percentages are then multiplied by taxes generated from primary residences and added to taxes generated by secondary residences to get total residential taxes generated due to lake presence.

## ***Results and Discussion***

### **Property Taxes**

Property taxes associated with larger lakes in Kosciusko County are an important component of total annual property tax revenue for the county (Table 1). Though only a minute fraction of the total land in Kosciusko County, property parcels of all types within 500 feet of the 41 lakes accounted for 37% of county property taxes in 2012. Focusing on residential property only, parcels with permanent single family homes around these lakes made up over half of the residential property taxes in the county. It is likely that some of these residential parcels happen to be near a lake and would still generate tax revenue without the presence of a lake. Taking this fact into account through methods described above, we found that \$15,000,000 (25%) of the total county property tax revenue was completely and solely attributed to these 41 lakes, such that the hypothetical removal of these lakes would immediately reduce county tax revenues by this amount. This finding is conservative because it does not take into account other types of residential or commercial properties that were there because of the lake presence as well.

Tax revenue generated varied greatly by lake (Figure 1). Of the \$15,000,000 of property taxes from permanent single family homes in 2012, Lake Wawasee, the Lake Tippecanoe chain, and Winona Lake accounted for 36%, 13%, and 13% of the total, respectively. Though almost 80% of this lake-generated tax revenue was produced by secondary homes versus primary homes (Table 1), variability in relative contributions from primary and secondary homes was also evident across lakes. These differences in lake tax generation and relative contributions of primary and secondary homes are attributed to length of shoreline around each lake, lake water quality, local amenities, lake recreational opportunities, and historical development of each lake.

### **Property Values**

Like property tax generation, property values are an important economic impact of lakes in Kosciusko County. Within 500 feet of these 41 lakes, there is \$3,000,000,000 worth of real estate (Table 2). Permanent single family homes make up 76% of this total, which shows that an important amount of personal wealth is tied up in these lakes.

The most important aspect of lake-associated property values is that they are subject to change based on water quality conditions in the lake. Previous research in Ohio has shown a 4-5% increase in lake home values when water clarity increased two meters. Using a 4.5% increase, it is estimated that homeowners on the 41 largest lakes in Kosciusko County would see a \$135,000,000 increase in property values. Unfortunately the converse is also possible and even

alarming. Surveying of real estate agents around Grand Lake St. Mary's in Celina, OH resulted in an estimate of a 30-50% decrease in lake home values due to recent blue-green algae problems in the lake. Using a 40% decrease, it is estimated that single family home property values would drop a total of \$1,200,000,000 if these sorts of water quality problems would happen in Kosciusko County lakes.

These property values vary across specific lakes in the county and specific property categories around each lake (Figure 2). Lakes with highest portions of the total property value among single family homes include Lake Wawasee (39%), the Lake Tippecanoe chain (14%), Syracuse Lake (8%), and the Barbee Lake chain (8%). Individual lake characteristics contribute to relative values of property categories (lake front, channel front, and lake view) as well. For example, though Lake Wawasee and Syracuse Lake are close to each other and have many similar attributes, Lake Wawasee has an extensive network of channels while Syracuse Lake does not. As expected then, Lake Wawasee has a larger portion of its total property values contributed from channel front (14%) compared to Syracuse lake (4%).

## ***Conclusion***

The presence of lakes in Kosciusko County directly caused the generation of at least \$15,000,000 in additional property tax revenues for the county in 2012, and properties within 500 feet of the 41 largest lakes in the county accounted for 37% of total county property tax revenues. These same lake properties have a total value of \$3,000,000,000 which is predominately (76%) made up of single family home properties. These property values, and thus property tax revenues, are subject to change based on improved or degraded water quality of these lakes. Therefore, efforts of the Kosciusko Lakes and Streams center are important for future economic development, funding of public services, and personal wealth considerations.

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## Tables

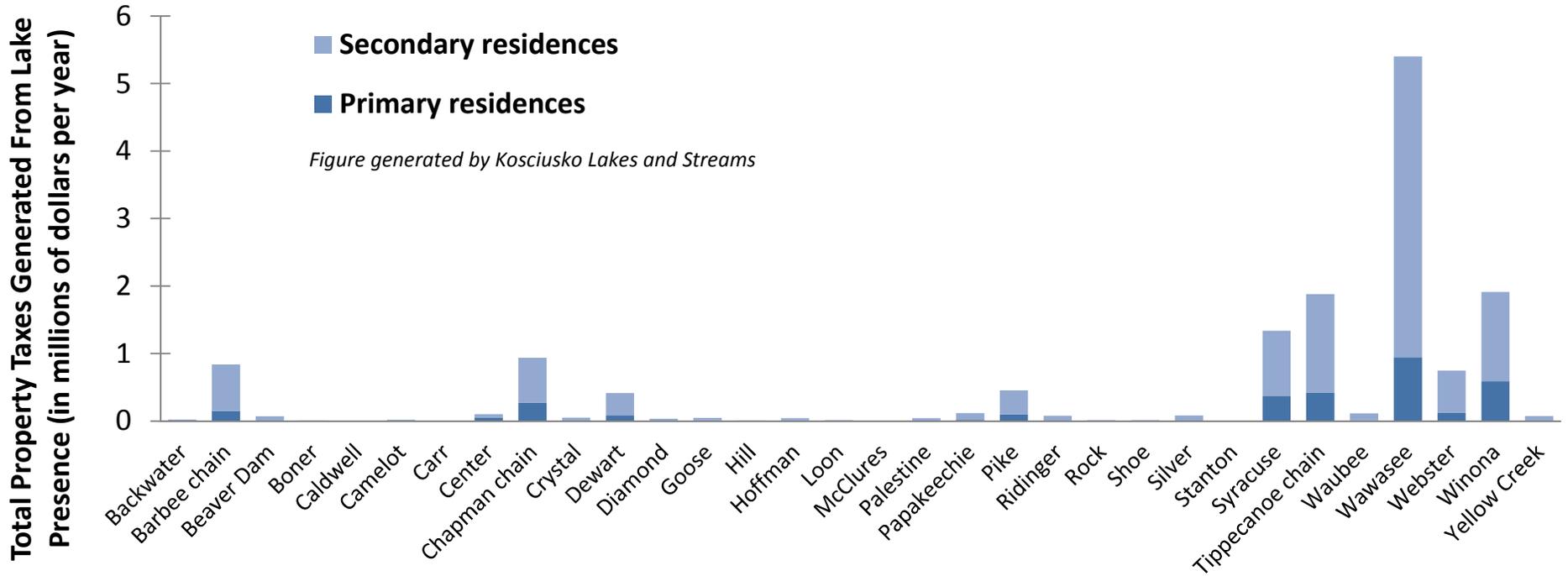
**Table 1:** Annual property taxes due for Kosciusko County in 2012. Lakes categories include parcels within 500 feet of 41 largest lakes. Primary and Secondary homes refer to residences that are single family homes, and Lake portion refers to portion of all Primary homes that is attributed to lakes.

Category	Amount
County Total	\$59,900,000
Residential	\$33,300,000
Lakes - Single Family Homes	\$17,400,000
Primary (All)	\$5,700,000
Primary (Lake portion)	\$3,300,000
Secondary	\$11,700,000
Total lake-generated	\$15,000,000
Lakes - Other	\$4,700,000

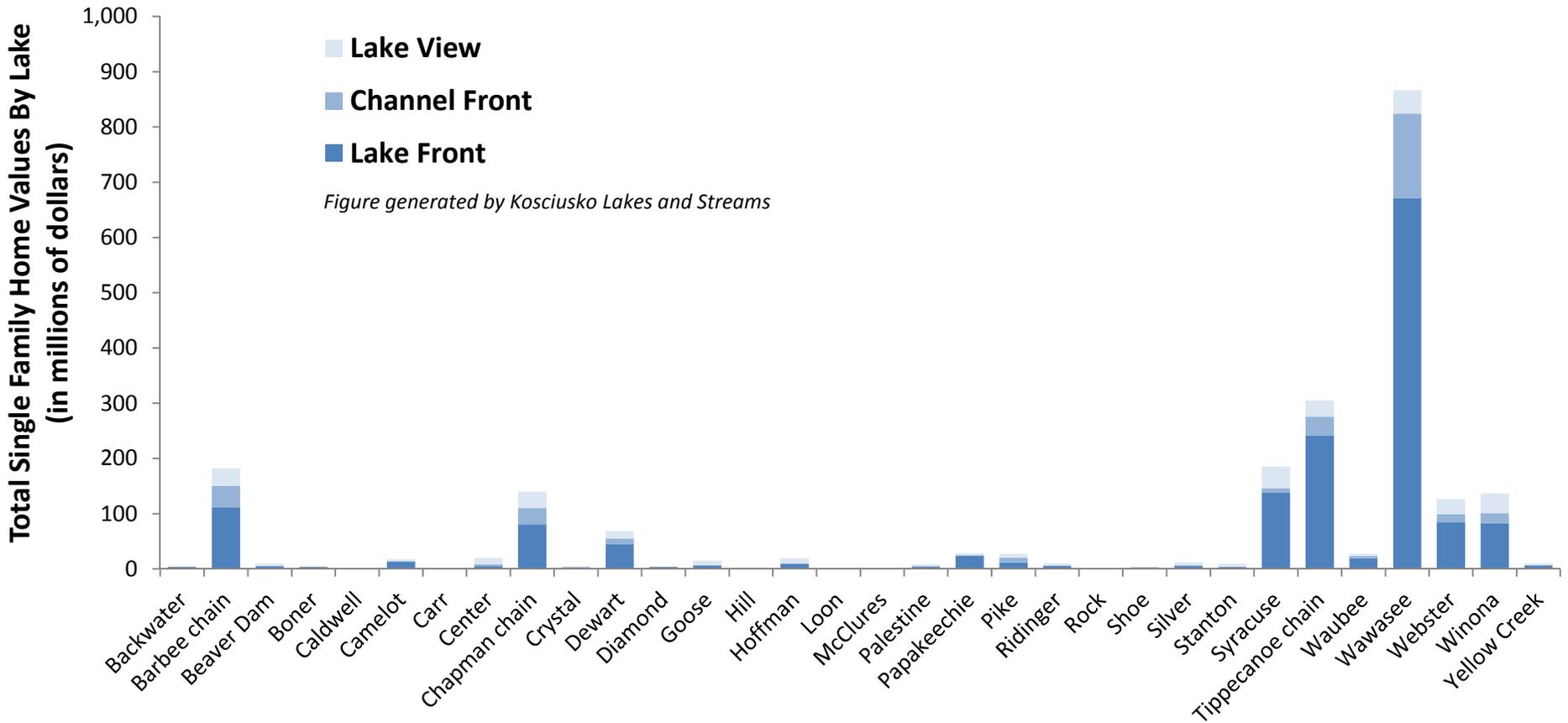
**Table 2:** Total property values around largest lakes for Kosciusko County in 2012. Value increase and decrease are estimations of possible property value fluctuations due to lake water quality changes.

Category	Amount
Lakes total	\$ 3,000,000,000
Single Family Homes	\$ 2,280,000,000
Value increase (4.5%)	\$ 135,000,000
Value decrease (40%)	\$ 1,200,000,000

**Figures**



**Figure 1:** Portion of annual property taxes generated by lake presence for Kosciusko County in 2012. Taxes included for larger county lakes with primary and secondary residence portions shown. Taxes displayed in millions of dollars.



**Figure 2:** Total property values for all parcels with permanent single family homes for Kosciusko County in 2012. Values included for larger county lakes with lake view, channel front, and lake front parcel types shown. Values displayed in millions of dollars.