

TWINELINE

2006 SUMMER/FALL DOUBLE EDITION VOL. 28/NOS. 3/4

Hot Commodity

Cleaner Water Increases Lake Erie
Waterfront Property Values



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About this Double Issue

This special double issue of Twine Line covers research, education, and outreach topics from summer through the end of 2006. We kick off a new, regular feature, Student Spotlight, in this issue, which will highlight students who have attended Stone Laboratory classes. Also included is a two-page 2006 Program Summary, which provides an overview of our accomplishments and new partnerships from the past year.

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Cover photo: Kelleys Island, courtesy of Art Weber of the National Center for Nature Photography.

Visit naturephotocenter.com for more information about his photo collection

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Hot Commodity

Cleaner Water Increases Lake Erie Waterfront Property Values



by Jill Jentes Banicki, Ohio Sea Grant Communications

You may not think water clarity could be something to list as a home asset, but if you're a Lake Erie shoreline property owner, you may want to think again. New Ohio Sea Grant research by Drs. Elena Irwin and Tim Haab of Ohio State University finds that cleaner shoreline water can bring higher returns when selling a waterfront property on Lake Erie.

Like much of the waterfront property around the country, the demand for shoreline property bordering Lake Erie's eight Ohio counties has skyrocketed over the past 20 years. Residential development across the 27-mile stretch of shoreline has grown considerably, with amenity-packed counties like the Port Clinton area's Ottawa County increasing its urban shoreline areas even more.

As with most things, a growing demand sparks higher prices, and waterfront properties around Lake Erie are no exception, with average home prices in many areas starting at \$500,000.

But could environmental amenities like clear lake

water and nearby beaches have contributed to those housing prices being higher? Irwin's research finds they do.

"We knew from previous work that lake amenities like clean beaches, recreational amenities, and clear water are valued by individuals, however, we wanted to see if such amenities could actually influence housing prices around the Lake and if so, by how much," states Irwin.

To do this, Irwin and Haab worked with graduate student Shihomi Ara to collect historical housing information from four predominantly-residential Lake counties, as well as data on the water quality associated with Lake Erie beaches.

"People view houses not as one good, but as a bundle of goods—house size, number of bathrooms, school district, and proximity to retail are a few of the factors that potential buyers evaluate when purchasing a home," explains Irwin. "We wanted to add an environmental variable like water quality as one of

those goods and compare it with the more traditional home amenities.”

Using two variables to define water quality, Irwin, Haab and Ara examined (1) fecal coliform bacteria data to average water quality over time and (2) secchi disk depth readings to average water clarity. They compared the bacteria and water clarity averages associated with the closest beach for each house and tested whether changes in these environmental variables had any impact on property values.

What they found was when water clarity and quality increased, so did property values. But the amount changed drastically depending on which—water quality or water clarity—you were evaluating.

“When bacterial counts in the water decreased to below beach advisory levels (200 bacteria counts per 100 milliliters) in one of our hypothetical scenarios, the price of an average home increased by 0.1 percent,” explains Irwin.

“However, when water clarity (how far you can see into the water) increased to two meters, the price of that home increased considerably more, to between four to five percent.”

These increases in property values, Irwin points out, tell us that homeowners value both clear and clean Lake Erie water. “But that five percent gain shows us that water clarity matters more,” says Irwin.

Just how much more? Irwin compared increased water clarity to other home amenities such as home square footage, number of bathrooms, and school district ranking. What she discovered was that increasing the water clarity to two meters was the dollar equivalent to having that house in a better school district (see figure 1).

Proximity to a beach also added value to waterfront property. A house that is 10 miles closer to a beach would sell for an average of \$11,880 more than the



Increased water clarity by two meters increased average property values by \$4308.



Irwin and Haab’s research determined that average property values increased by nearly \$12,000 (or the same benefit as adding a fireplace) when the waterfront home was within 10 miles of a Lake Erie beach.



Figure 1
Added Resale Value to Average Lakefront Homes

Lakefront Amenities	
Increase water quality, eliminating beach advisories	+ \$108
House distance from beach (per mile)	+ \$1,188
Improve water clarity to depth of two meters	+ \$4,308
Traditional Home Amenities	
Additional bathroom	+ \$7,270
Additional fireplace	+ \$10,807
Improved school system ranking by 10%	+ \$3,764



New Sea Grant research finds cleaner water can bring higher returns for Lake Erie water front property.

identical house located farther away. That \$11,000+ gain is equivalent to the resale value of adding a fireplace.

“It’s important to remember that these numbers are higher-end estimates because they assume no market changes. Nonetheless, this research shows that there is a direct link to environmental amenities and increased economic value—if we increase the Lake’s water quality or if a house is close to a beach, property owners can profit by a specific dollar amount,” says Irwin.

The hope is for policy makers and elected officials to try to strike a balance between economic growth and conservation management. “Cleaner, clearer water is a long-term managerial goal but we hope this data will show policymakers that there is a large dollar benefit (to their waterfront property owners) to make it a priority,” concludes Irwin.

Irwin, Haab, and Ara plan to expand on their research later this year by establishing exact benefits to water quality changes and estimating how other variables like beach advisories may affect housing values. TL

For more information about this Ohio Sea Grant funded project, contact Dr. Elena Irwin at 614.292.6449 or irwin.78@osu.edu.

Our Changing Landscape

by Abbie Basile, Ohio Sea Grant Communications

The countryside around Ohio’s cities is changing. This transformation is the focus of The Ohio State University’s Exurban Change Project, which analyzes economic, social, agricultural, and land use changes in Ohio’s regions and localities. The project is led by Drs. Elena Irwin and Jeff Sharp, with Jill Clark serving as Program Manager.

Exurban areas are typically defined as lying 10-50 miles outside of a city. These traditionally rural areas have become transitional communities between urban and rural spaces. Exurbanites have long commutes back to their city jobs and houses. Their shopping areas use the generous space afforded to them, creating communities different from their more densely packed suburban counterparts.

In the past forty years, the population of Ohio’s large cities has decreased by 15.2%, while townships have seen a 33.2% increase. “Although Ohio’s population isn’t increasing dramatically, we’re consuming land at a rate that exceeds anything we’ve seen in the past,” says Clark. “This has definite implications for resources and services, such as water and education.

Begun in 2002, the Exurban Change Project’s goal is to provide data to local officials that can be applied to real-world problems associated with exurban areas, such as loss of farmland and increased demand for education and infrastructure. Nancy Kukay, an Ohio State Extension Educator for Wyandot and Crawford Counties, is a past client. “The economic and census data Jeff Sharp presented showed Wyandot as having the second highest reliance on incomes from manufacturing in the state,” explains Kukay. “A significant portion of that comes from automotive manufacturing. That caught everyone’s attention.”

Wyandot leaders decided it was imperative to diversity the county’s economy. They are now looking into agricultural businesses, such as biotechnology and ethanol production. Utilizing the information Sharp presented and the county’s current land uses, Clark created a map that now serves as Wyandot’s comprehensive land use plan.

The Exurban Change Project maintains a website, exurban.osu.edu, featuring data and resources related to population and community planning. The site gets over 3,000 visitors a year, including city and regional planners, local officials and agencies, interested citizens, and extension agents. Site highlights include:

- How to create your own story of local growth and change
- Ohio township data and maps
- Exurbanization research for Ohio, the U.S. and beyond

The Exurban Change Project is available to help communities manage the changes happening in their own backyards. “As we see populations push out from urban areas and be pulled into rural areas, rural residents and their leaders are concerned about being able to keep up with the pace of growth and change,” states Clark.

The project is a joint effort of The Ohio State University’s Departments of Agricultural, Environmental, and Development Economics, and Human & Community Resource Development. Collaborating organizations include The Ohio State University Extension, the Swank Program in Rural Urban Policy, and the Agroecosystem Management Program.