ULTRA Economic Valuation Studies

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Oaks Bottom Wildlife Refuge
Research Projects

Is the sale price of a residential property influenced by...

Project 1: Green street facilities?

Project 2: Water quality in urban streams?

Project 3: Stream restoration projects?
Hedonic Price Method

Statistical technique that relates the sale price of a property to....

- Structural attributes: lot size, house size, age, etc.
- Location: distance to CBD, quadrant, etc.
- Environmental attributes: land cover, floodplain, etc.

Allows a researcher to focus on the variable of interest while holding all other factors constant. Only captures use value.
Economic Value

- Use Values
  Current Use Values: Consumptive, Non-consumptive
  Option Value

- Non-Use Values
  Bequest Value
  Existence Value

- Total Economic Value = Use + Nonuse Values
Project 1: Valuing Green Infrastructure
In Portland, Oregon

Noelwah R. Netusil and Zachary Levin
Reed College, Department of Economics
&
Vivek Shandas and Ted Hart
Portland State University

Research Questions

- Does proximity to a green street facility influence the sale price of single-family residential properties?
- Does how we measure proximity matter?
- Does the abundance of green street facilities near a property influence its sale price?
- Does the spatial scale for measuring abundance matter?
- Do green street characteristics affect the sale price of nearby properties?
Findings

- Increasing a property’s distance from a green street is estimated to increase sale price, but the effect is small.
- Street Network is preferred proximity measure.
- Census tract or block group are preferred abundance measures.
- Need a critical mass of projects, e.g., 143 at the census tract level which translates into covering around 0.14% of the census tract with green street facilities.
Findings

- Age of nearest green street has a positive effect on sale price after around 4-5 years
- The more trees in the nearest facility, the better
- Complexity has a positive effect; a dam at the nearest facility increases sale price by 0.6% and increasing the number of taxa up to around 9 has a positive effect
Project 2: Valuing Water Quality In Urban Watersheds: A Comparative Analysis Of Burnt Bridge Creek, WA And Johnson Creek, OR

Noelwah R. Netusil and Michael Kincaid
Reed College, Department of Economics
&
Heejun Chang
Portland State University, Department of Geography

Paper currently under review
Research Questions

- Does water quality influence the sale price of single-family residential properties in urban watersheds?
- Does this effect vary by distance to the water body?
- Does how we measure distance matter?
- Is seasonality important?
- Are estimated effects similar across watersheds?
- Does correcting for spatial dependencies change estimated effects?
Johnson Creek Data

- 10,479 residential property sales between 2005-2007
- Detailed information about home sale price, characteristics, location, and environmental attributes
- Five water quality parameters: dissolved oxygen, E. coli, pH, temperature, and total suspended solids
- Matched each property transaction with water quality at nearest of 8 monitoring stations
# Johnson Creek Results

<table>
<thead>
<tr>
<th>Water Quality Parameter</th>
<th>1/4 mile</th>
<th>1/2 mile</th>
<th>1 mile</th>
<th>&gt; 1 mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-coli (100 count per 100 ml increase)</td>
<td>-2.57%</td>
<td>-0.84%</td>
<td>-1.14%</td>
<td>-0.69%</td>
</tr>
<tr>
<td>DO (1mg/L increase)</td>
<td>13.71%</td>
<td>7.05%</td>
<td>8.18%</td>
<td>3.12%</td>
</tr>
</tbody>
</table>

All results statistically significant at the 10% level; 1-tailed test
Findings

- Some water quality measures are statistically significant across models and study areas.
- Impact of water quality on a property’s sale price generally declines as distance from creek increases.
- Results are consistent with survey responses about water quality and property values in study areas.
- Results are consistent with the literature.
Project 3: Urban Watershed Restoration Projects & Property Values: A Repeat-Sale/Hedonic Approach

Maya Jarrad and Noelwah R. Netusil
Reed College, Department of Economics
Research Questions

- Do stream restoration projects influence the sale price of single-family residential properties near Johnson Creek?
- Does this effect vary by distance to the site?
- Does this effect change with a site’s age? Proportion of the area near a property that has been restored?
- Are project goals such as salmon habitat, invasive removal, and new trails important factors?
- Is public access an important factor?
Related Research

- Riparian corridor property value work with Alan Yeakley, Denisse Fisher and Cameron Nilles
- “Benefits of Stormwater Management: Willingness to Pay & Willingness to Help” choice experiment survey with Catalina Londono Cadavid and Amy Ando at the University of Illinois.
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Johnson Creek Watershed