City Trees & Community Economics

Research Review & design possibilities

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people & trees – health & well being!
Outline

Econ 101
Trees & Property Values
Trees & Retail Centers
So What’s Going On?
urban trees & forest - economic value?
Forest Products

- lumber and milled products
- chip board/oriented strand
- paper fiber
- bark mulch
- shakes and siding
Identification & Valuation of City Trees?

- Forest Products Industry
  - = market goods
  - excludable
  - identifiable ownership
  - expenses - revenues - profits

- Trees/Forests in Cities
  - = public goods
  - non-excludable
  - multiple “owners”
  - expenses - returns? - profits?
Putting a price on nature is a crude, risky business

WHAT price would you put on the beautiful, musical and now extinct ivory-billed woodpecker? Of course, the entire gross planetary product could not bring the bird back. It's gone.

But suppose you could fly the time machine back 90 years to the shrinking Southern swamps, where the last pairs were seen. And said, placing a price tag on nature remains a risky business.

In his article titled, "What is Nature Worth?" Wilson doesn't dismiss such calculating out-of-hand, although he'd rather be making a moral argument. But he finds that today's economic value assessments make for a crude measuring device. They tend to lowball the worth of a species over the long haul.

Consider the economic case for saving the endangered blue whale. The usable environmentalist would make the kill, and you'd lose 40 percent of the prescription drugs sold in

...about 40 percent of the.

...for the blue whale. Gene-splic.

...remains in its infancy.

Likewise, our minds can potential for new pharmace
gen species of plants, animals and
isms. The value of the.

...based on plants alone totals worldwide.

...we barely

...wild speci
tures they r

...in
Outline

Econ 101
Trees & Property Values
Trees & Retail Centers
So What’s Going On?
City Trees & Nature Property Values

- Residential real estate values - 3-7% with trees in yard
- Residential real estate values - 5-20%, proximity to natural open space
- Commercial property rental rates – 7%

hedonic valuation method
City Trees & Nature
Community Economics

- Heating and cooling costs reductions

*Where Does the Energy Go in a Typical Home?*

Energy Information Administration, Annual Energy Outlook 2004
City Trees & Nature
Community Economics

- Heating and cooling costs reductions
Outline

Econ 101
Trees & Property Values
Trees & Retail Centers
So What’s Going On?
- Inner City Business Districts
- Small Town Business Districts
- Freeway & Roadside Communities
- Athens GA Case Study
- Strip Malls & Roadside

5 studies

Sponsors:
National Urban and Community Forestry Advisory Council - USDA Forest Service
National Main Street Program
National Scenic Byways Research Center
many local partners!
Message to shoppers?
Visibility = customer appeal?
• Research Questions:
  trees and visual quality?
  trees and consumer behavior?
  trees and product pricing?

• Methods:
  mail out/in surveys
  national or local sample
  residents/nearby city residents
Methods

- Surveys
- Mailings across selected districts
- Person-to-person contact
- Interviews
Image Categories (sorted by ratings)

Pocket Parks
mean 3.72
(highest)

Full Canopy
mean 3.63

Scale: 1 = not at all,
5 = like very much,
26 images
Enclosed Sidewalk  3.32

Intermittent Trees  2.78
No Trees
mean 1.65
(lowest)
(high - 3.72)
Survey Scenarios

Streetscape and Canopy Differences
Business District Scenarios

- district character
- respondent sees one
- architecture constant
1. Place Perceptions

Place Character
Products & Merchants

higher ratings for scenario
with tree canopy
2. Patronage Behavior

- travel time, travel distance
- duration of visits
- frequency of visits
- willingness to pay for parking

*increased market range & potential*
Visit Length

![Graph showing visit length with and without trees.](image)
3. Product Pricing

- higher willingness to pay for all classes of goods

- 9.2% higher in districts with trees (12% in large cities)

**trees & consumer spending**
Product Pricing

![Bar Chart]

- **Mean Stated Price**

- **Categories**:
  - Convenience
  - Shopping
  - Specialty

- **Comparisons**:
  - No Trees
  - With Trees

- **Observations**:
  - Convenience: Low price with trees, high price without trees.
  - Shopping: High price with trees, moderate price without trees.
  - Specialty: Moderate price with trees, moderate price without trees.
1. Place Perceptions
   - Place Character
   - Interaction with Merchants
   - Quality of Products

2. Patronage Behavior
   - travel time, travel distance
   - duration & frequency of visits
   - willingness to pay for parking

3. Product Pricing
   - higher willingness to pay for all types of goods
   - higher in districts with trees – 9-12%
Small Malls

Preferences and Scenarios
Small Malls (strip malls)

1: Mixed Screen - mean 3.18, 0.91 sd

2: Ordered Trees, mean 3.09, 0.78 sd

3: Shrub Edge, mean 2.35, 0.96 sd

4: No Vegetation, mean 1.39, 0.83 sd

Preference ratings 1-5

Mean
1.39
2.35
3.09
3.18
Small Malls (strip malls)

Mall Having Trees
- Amenity: much higher
- Business Quality: higher
- Positive Merchants: higher
- Wayfinding: much lower

Product Pricing
- willingness-to-pay
  - 8.8% more

Wolf, Arb & UF, 2009
funding by ISA Tree Fund
Product Pricing
retail & place marketing

“Companies stage an experience when they engage customers in a memorable way.”
Trees make a retail “experience”

Place Marketing
- More expensive to recruit new customer than to retain established customer
- Trust, quality, loyalty

Trees & District Image
- Product and business quality
- Higher price willingness-to-pay
communities & economic prosperity
Results & Knox City

- “greenleaf” sustainability programs
- Living Links – walkable community
- quality of life/livability
- livable communities = business recruitment & retention
Human Dimensions of Urban Forestry and Urban Greening

featuring research on peoples’ perceptions and behaviors regarding nature in cities

Nature and Consumer Environments
Research about how the urban forest influences business district visitors.

Trees and Transportation
Studies on the value of having quality landscapes in urban roadsides.

Civic Ecology
Studies of human behaviors and benefits when people are active in the environment.

Policy and Planning
Integrating urban greening science with community change.

Urban Forestry and Human Benefits
More resources, studies and links . . .

Research Director
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