



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

**Amenity Value of Urban Forest Landscapes Attributed to Houses within a 10-Minute Driving Distance**

**Seung Gyu Kim<sup>1</sup>, Seong-Hoon Cho<sup>\*2</sup>, Roland K. Roberts<sup>2</sup>, and Roger Claassen<sup>1</sup>**

\* Corresponding author: Cho, S., Associate Professor, (865) 974-7408, [scho9@utk.edu](mailto:scho9@utk.edu)

1. Economic Research Service, U.S. Department of Agriculture, Washington, DC

2. Agricultural and Resource Economics, University of Tennessee, Knoxville, TN

*Poster prepared for presentation at the Agricultural & Applied Economics Association's 2012 AAEA Annual Meeting, Seattle, Washington, August 12-14, 2012*

*Views expressed are the authors' alone and do not necessarily correspond to those of U.S. Department of Agriculture or the University of Tennessee. The authors thank the Metro Planning Department, Davidson County and the Davidson County Tax Assessor's Office for providing the individual parcel data.*

# Amenity Value of Forest Landscapes Attributed to Houses within a 10-Minute Driving Distance



SeungGyu Kim and Roger Claassen  
Economic Research Service, U.S. Department of Agriculture



Seong-Hoon Cho and Roland K. Roberts  
Agricultural & Resource Economics, University of Tennessee

## Introduction

**Forest landscape restoration** aims to regain the ecological integrity and enhance human well-being in and around deforested or degraded forest landscapes. Funding opportunities for restoration projects are competitive (Barrow et al. 2002).

**Objective** of this research is to identify priority areas for forest landscape restoration with economic benefits (i.e., increased amenity value from forest restoration) and to estimate the amenity values of restoring forest landscapes at potential target sites.

## Data Driven Approach

**The first step** is to construct a sequence of 10 driving-time buffers around each home sales transaction.

**In the second step**, a sequence of 10 hedonic regressions is estimated for single-family housing sales transactions using the deforested and forested land areas within the respective 1-to-10 minute buffers as independent variables.

**In the third step**, the regression coefficients for the forested area and the deforested areas are used to calculate the respective marginal implicit prices from each of the 10 regressions.

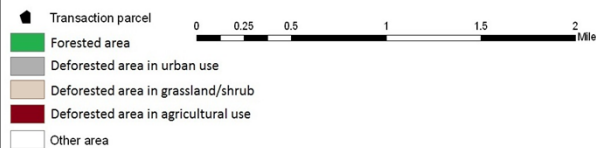
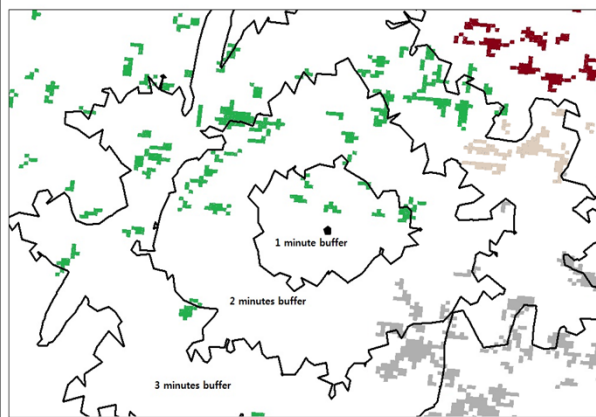
**The fourth step** is to calculate the difference between the marginal implicit price of deforested areas and forested area for each 1-minute increment in the driving-time buffer from 1 to 10 minutes.

**The fifth step** entails identifying the hypothetical target areas for forest landscape restoration.

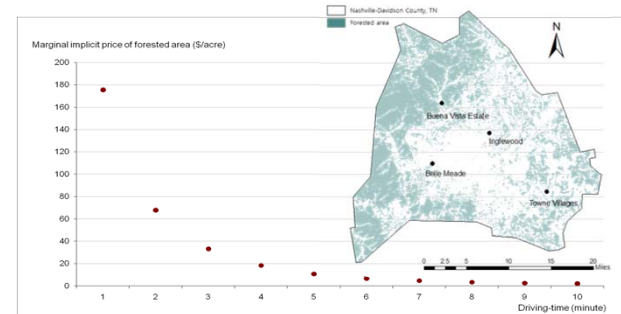
## Case Study: Nashville, TN

The rapid loss of forest land in the Nashville area has increased concerns about changes in the spatial pattern of forest landscapes and heightened the community's focus on forest landscape restoration

## 10 Driving-time Buffers



## Marginal Implicit Prices



## Values of Target Area

Driving time (Minutes)	Added Values in the Selected Target Sites			
	Belle Meade	Buena Vista Estate	Towne Village	Inglewood
0 - 1	\$5,879,496	\$11,420,383	\$13,729,085	\$10,158,292
0 - 2	\$8,393,968	\$12,394,913	\$17,268,652	\$16,685,805
0 - 3	\$9,798,477	\$13,162,711	\$19,290,044	\$18,957,255
0 - 4	\$10,210,962	\$13,590,012	\$19,694,448	\$19,746,195
0 - 5	\$10,459,522	\$13,709,685	\$19,811,788	\$20,050,043
0 - 6	\$10,593,424	\$13,764,209	\$19,849,698	\$20,213,030
0 - 7	\$10,692,496	\$13,808,883	\$19,874,028	\$20,314,959
0 - 8	\$10,754,871	\$13,848,467	\$19,886,371	\$20,359,145
0 - 9	\$10,788,404	\$13,870,087	\$19,896,735	\$20,383,053
0 - 10	\$10,808,829	\$13,884,146	\$19,902,871	\$20,401,179

Agricultural & Applied Economics Association's 2012 AAEA Annual Meeting, Seattle, Washington, August 12-14, 2012  
The views expressed are those of the authors and may not be attributed to USDA ERS or University of Tennessee