EVALUATION OF TEN-YEAR IMPLEMENTATION OF THE CONSERVATION
USE VALUATION ASSESSMENT PROGRAM IN GEORGIA

by

JIE PAN

(Under the Direction of David H. Newman)

ABSTRACT

This study presents the results of a survey of Conservation Use Valuation Covenant
Holders in Georgia that took place in 2002. A response rate of 61% was attained with a usable
response rate of 53%. The important findings are that after the program’s first 10 years, the
Conservation Use Valuation Assessment (CUVA) program has been effectively implemented
in Georgia and Covenant holders are quite satisfied with CUVA. The program has been
extremely well received by landowners with more than 80,000 covenants representing greater
than 7 million acres enrolled in the program.

The majority of covenant holders own less than 50 acres and live on a farm or in rural
area. They are well-educated with an average annual income between $50,000 and $60,000.

Common management activities since entering the CVUA program are farming or
ranching, tree planting and timber harvesting. Regarding future land value expectations, the
majority ranked non-economic benefits above economic benefits. Overall, it appears that the
CUVA program is not a significant factor affecting land use decisions.

Index Words: property taxation, use-value assessment, fair market value (FMV), conservation
use valuation assessment (CUVA).
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CHAPTER ONE
INTRODUCTION

A) Introduction to Conservation Use Valuation Assessment (CUVA) Program

The ad valorem property tax is the primary revenue source for local governments and most public school systems in the United States. These "ad valorem" taxes are taxes levied "on the basis of value," and determined for tangible property - "real and personal property such as land, buildings, cars, etc." Property taxes are based on a particular property’s assessed value, which in turn is derived from its fair market value (FMV). In Georgia, with its recent rapid population growth and economic development, property values have increased significantly.

Over the past forty years, Georgia has been one of the fastest growing states in the United States. Population increase is a major contributing factor to increases in property taxes levied due to both a supply and a demand effect. On the demand side, higher populations lead to increased demand for county-based services and greater demands being placed on the county school system. On the supply side, increasing population increases property values. The increases in valuations and higher property taxes on property are major concerns of property owners (Dangerfield et al., 2004). Property taxes play a very important role for landowners in their land use and management decisions.

Recent years have witnessed rapid urban sprawl and conversion of rural lands. As suburban fringe land becomes worth more in development than in its current use, taxation based on fair market value (FMV) places a high financial burden on landowners and causes them to sell their
land. Other forest landowners at the urban/rural interface are presented with a tremendous financial opportunity and many landowners choose to sell or subdivide their land. In either case, forest land is lost and suburban sprawl continues.

The issue of forestland conversion has received a great deal of attention and forestland conversion results in a number of ecological and social problems. The state of Georgia has addressed the issue through various programs. As of January 1, 1994, landowners in Georgia had three tax alternatives for determining bare land value. These three options are Fair Market Value (FMV), Preferential Assessment for Agricultural and Forestry Property (Preferential Assessment) and Current Use Valuations of Conservation Use Properties (Conservation Use Valuation) and Residential Transitional Properties. Land can only be valued under one of the options and no combination of the alternatives is allowed. The Agricultural Preferential Assessment and Current Use Valuation programs are available only to eligible landowners and eligible properties.

The Conservation Use Valuation Assessment (CUVA) program was established in the state of Georgia in 1992 in response to concerns about urban sprawl, loss of natural lands, and the resulting environmental impacts from these changes. The CUVA offers landholders a tax incentive to keep their land at its current use as a way to conserve green space and ease development pressures. Under the program, a landowner signs a 10-year covenant with the county to receive a modified valuation-current use valuation, instead of fair market valuation of their property for taxation purposes. There is a 2000-acre limit for each landowner and only private, non-corporate lands are eligible for the program. In addition, there are substantial penalties for breaking the contract.
At the end of the first 10 years of implementation, the CUVA program has been successful in enrolling properties. There had been a significant increase in the total number of covenants with 84,774 covenants signed and more than 7 million acres land enrolled in 2002. Meanwhile, landowners had obtained substantial tax relief from CUVA. The total annual tax saving has increased from $8.9 million in 1992 to $90 million in 2002. Total tax savings for qualified landowners enrolled in the CUVA is over $400 million over the first ten-year phase.

B) Research Questions

Previous research assessing the first 5 years of implementation of the CUVA program showed that enrolled areas were substantially variable at county level with heavy utilization in the north Georgia region. Fiscal impacts also varied in different counties, with some having substantial reduction in property tax revenues and some only having marginal impacts (Newman, et al., 2000).

The 10th anniversary of implementation of the CUVA program occurred in 2002 and first covenants signed in 1992 were facing renewal. However, there has never been a complete evaluation of the CUVA program. This prompted us to initiate an assessment of the program for the first 10-year phase. The primary aim of this research was to determine covenant holders’ overall satisfaction with the CUVA program and find out what factors would affect their land use decisions after their covenant expired. The focus of this research will be an analysis of land management activities since entering CUVA and covenant holder’s future land value expectations.
Detailed research questions that we will examine are listed below:

- What is the overall satisfaction of CUVA participants?
- What is the land ownership pattern associated with CUVA participation?
- What are the demographic characteristics of CUVA participants?
- What are the factors that significantly affect land management activities?
- What are covenant holder’s future land value expectations?
- What are the factors that affect their future land value expectations?
- Are there any potential environmental benefits from the CUVA program?
- What are CUVA’s effects on covenant holder’s land use decisions?
- Are there any differences between traditional landowners and “new” landowners enrolled in the program?

C) Thesis Outline

The structure of study is as follow:

Chapter 2 provides a literature review of the property tax in the United States, differential taxation of forestlands in the United Stated, the administration and implementation of the CUVA program in Georgia.

Chapter 3 discusses the research methodology, the population sampled and the procedure used to identify the sample. Also discussed are the development and administration of the survey, and the procedures used in the data analysis.
Chapter 4 summarizes the results. It includes descriptive statistics for landowner ownership patterns, ownership values and objectives, land management and owner demographic traits. Also includes significant factors that effect land use objectives in Logistic Regression model.

Chapter 5 examines and discusses the substantively significant results and provides further analyses.

Chapter 6 draws conclusions and provides policy recommendations for the future.
CHAPTER TWO
LITERATURE REVIEW

A) Property Tax in the United States

Property tax is an ad valorem tax that an owner of real estate or other property pays on the value of the thing taxed. In the United States, each of the 50 states has different definitions of property that is to be taxed. Some states allow local communities to tax real property. Real property consists of land and items that are permanently attached to the land, such as homes, factories, wharves, and condominiums. Other states also permit local governments to tax personal property. Personal property is property that is not real property, such as boats, cars, jewelry, airplanes, computers, equipment, tools, and furniture.

The property tax has always been the mainstay of local government finance in the United States. Its long history reaches back to the time of colonial America. Although the state governments establish the legal framework for real estate taxes, local governments are primarily responsible for valuation, assessment and tax collection. Wallis (2001) believes that the property tax is used by local governments instead of by state and national governments, because state and national governments could not make their property taxes work as a benefit tax and local governments are better able to coordinate taxpayers with the benefits of public services financed by those taxes.
Thus, the property tax is now essentially a local tax in the U.S. Local government is typically financed by value-based property taxes, mainly on real estate. Nowadays, the role of the property tax in government finance has changed. Local option and special purpose sales taxes have been important sources of local revenue, however, these taxes are sometimes unreliable due to fluctuations in the economy. Although the property tax is no longer the sole support of local governments, it continues to be the single most important finance resource for increasing demands for infrastructure, economic development and service delivery (Dangerfield et al., 2004).

Over its history, the property tax has been the subject of intense controversy. A leading student of taxation called the tax, as administered, one of the worst taxes ever used by a civilized nation (Seligman, 1905). In Oates’ study (2001), he points out that the dissatisfaction with the property tax has four important sources: 1) Its visibility or transparency: A good tax should make people aware of the costs of public programs, enabling them to weigh the benefits of proposed measures against their costs. 2) Administrative issues: There has been much legitimate concern with inequities in assessment practices that give rise to what are seen as unfair differences in tax burdens across jurisdictions and even among different properties within a jurisdiction. 3) Imperfect association between homeowner incomes and tax liabilities: The most frequent case is that of retired residents living on limited income, who find that their property tax liabilities constitute an especially heavy financial burden. 4) Fiscal disparities across jurisdictions: Some jurisdictions simply have larger property-tax bases than do others.
The impacts of property tax are sociological and ecological. Property tax is sometimes called a regressive tax which particularly affects low-income/high-asset persons (pensioners, farmers in drought years, etc). Because these persons have high-assets accumulated over time, they have a high property tax liability. However, their current income level is low. Therefore, a larger proportion of their income goes to paying the property tax.

On the other hand, the property tax has been implicated as a factor contributing to urban sprawl. The foundation of this argument is that the market value of undeveloped real estate reflects the property's current use as well as its development potential. With a city’s expansion, the development pressure increases the property value and tax. Property uses which generate little or no revenue per land area (such as farms, ranches, private conservation parks, etc) become disadvantaged relative to property uses which generate high revenue per land area (such as retail and industrial).

B) Differential Assessment Taxation in the United States

Since World War II the United States experienced substantial population growth which has resulted in continuing urbanization. This phenomenon has had a crucial impact upon areas used for farming purposes around most cities. Cities expanded far into the surrounding countryside for many urban-oriented uses.

As urbanization occurs, property taxes rise to meet increased local governmental costs to provide new residents with public services, which were unnecessary under rural conditions. In
areas subject to pressures from urbanization and development, the market value of land is often several to many times greater than current use value. Farmers have often found themselves the victims of both higher property tax assessments and the higher taxes associated with increased local revenue needs (Barlowe, et al., 1973). In fact, farm property receives proportionately fewer benefits from services financed by the property tax than does urban property (Blasè, et al., 1971).

Owners of farmland and timberland may find that the tax burden beyond what they can afford since the net profits from agriculture have not kept pace with the increases in assessed values. Under the tax burden, landowners may be forced to sell their land. On the other hand, as the rural land prices are bid up by developers and speculators, landowners have opportunities to sell their land holdings or develop the land for more profit.

As the decreasing of farmland and forestland or other open space became a major concern in these developing regions, differential property tax assessment of farmland and timberland was proposed as a potential solution. This method uses a different method for determining assessed value, other than fair market value (FMV), with the objections of slowing land use change.

Defining value is the first step in administering a differential property tax. In general, assessed value is derived from FMV, which is obtained from the highest and best use of property. However, differential assessment taxation allows eligible land to be assessed on its current-use value, that is, on the basis of its use for farming and not on the basis of the market value. Differential assessment is designed to reduce the effect of urbanization and help landowner to keep their land in rural use. The benefits of differential assessment can help farmers stay in business by lowering their property taxes and ease development pressures and sprawl that may
force a landowner to sell their land prematurely.

The creation and development of differential assessment began in 1956 in Maryland. Currently, all 50 states have land-use programs of some kind to provide property tax relief for agricultural land (Edelman, et al., 1999). These programs encourage landowners to keep their land in current use, both to preserve the production of food or timber and to save a rural link within the region.

Generally, the differential tax assessment has been classified into three categories:

(1) Preferential assessment
(2) Deferred taxation
(3) Restrictive agreements

Preferential assessment is simply a reassessment of eligible land on the basis of its current use rather than its fair market value. The distinguishing feature of preferential assessment is that no penalty is levied if participating land is converted to an ineligible use.

Under deferred assessment, eligible land is valued based on both its use value and fair market value, but only the taxes based on the use value are paid in each year. The “deferred” taxes are the difference between taxes based on use value and fair market value. The distinguishing feature of deferred assessment is that some or all of the “deferred” taxes must be forfeited when landowner converts his land to an ineligible use.

Restrictive agreements are similar to deferred taxation, however, the landowner is required to sign a contract keeping his land in an eligible use (typically ten years) in exchange for use value assessment.
Though the form of differential assessment may differ between states, some form of current use-value is the basis of assessment.

Use-value assessment is the most common form of differential assessment property tax treatment for agricultural land and forest land owners. It ignores other potential uses of the land, assumes continuation in present use, and values the land in that specific use.

Although differential taxation promotes agricultural viability in an attempt to retain farmland, timberland and open space, it is questionable whether these programs are effective in their efforts to stall development (Delworth, 1977). The effects which this assessment method has on timing of development and on land use decision have had been analyzed by different ways and different researchers.

Ferguson (1988) provides an empirical test of use valuation effectiveness. He measures the rates of farmland conversion in four Virginia counties before and after the adoption of use valuation. He finds that there was no change in conversion trends in the three counties closest to Washington DC, but a lower conversion trend in the most rural county. Thus, he concludes that use valuation by itself is not enough to slow land conversion in high development pressure area, but may help preserve land in areas less subject to development pressure.

However, Gloudemans (1974) provides a comprehensive study on use-value assessment. In his theoretical analysis, he concludes that only those lands where market value exceeds use value will be influenced by use-value assessment and areas that are distant enough from urban development so that highest and best use remains in agriculture will be less influenced. Anderson (1993) provided a theoretical analysis of the effects of use-value assessment on land use
decisions. He found that the rate of development was slowed depending upon two crucial factors. One is the difference between the farming value and the developed used value. The greater the difference, the greater effect of use-value assessment has in delaying development. The other one is the property tax rate. A higher property tax rate would make use-value assessment more effective in delaying development. Thus, he concluded that use-value assessment may be ineffective in altering land-use decision in rural decisions, but more effective in altering land-use decisions at the fringe of an urban area.

Coughlin (1978) argues that property tax reduction has much less effect on land use than have soil productivity or the demand for developable land. Although it may slow the pace of land conversion temporarily, use-value taxation does not appear to be able to substantially alter the timing or pattern of development (Hansen, 1975) and has only a limited effect in combating land use change (Wunderlich, 1997).

Differential assessment can be also viewed as a tax expenditure, which leases the development rights of farmland with a reduction in property taxes. Reduced taxes are compensation to owners for maintaining socially desirable land uses. Essentially, this gives qualified landowners a direct payment for the rental of development rights and assessing parcels at their fair market value (Blewett, 1988).

A common argument against use-value assessment is the consideration of fairness. Many people believe that the practice of differential assessment is not consistent with the uniform and equal assessment and taxation. Ultimately, any decrease in property taxes for one party implies an increase in taxes upon another. As a result, decreases in agricultural taxes are simply a tax
shift to homeowner and business properties (Boldt 2002; Kashian and Skidmore 2002). In her research, Boldt suggests that the reduced property taxes under use value have been capitalized, to some extent, into higher land prices. Thus the property tax relief under use value has been offset by higher land values. This may help explain why use valuation, by itself, has done little to stem the conversion of farmland on the urban fringe.

The effect of differential property taxes on land use has been a hotly debated topic for at least a century. Most researchers of differential assessment laws have concluded that they have a marginal impact on land use and the effects depend on the amount of tax savings caused by the differential assessment. Researchers contend that when successful, these objectives are best accomplished if use value is implemented in conjunction with other preservation programs (Parks 1996). These additional programs include state grants, transfer of development rights, and purchase of development rights. Without additional complementary programs, use-value is simply a strategy to time the market and it compounds the situation by raising the cost of development. Atkinson (1977) also believes that it is essential that differential assessment be coupled with strong regional zoning plans and if we want to reduce urban sprawl without limiting population growth, we must be willing to accept more intensive development within existing urban areas. In addition, he provides the most effective tools for distinguishing between “bona fide farmers” and “speculator” when establishing eligibility: the proportion of income derived from farming, and zoning of agricultural preserves.
C) Conservation Use Valuation Assessment (CUVA) Program in Georgia


The CUVA program was seen as the answer in response to concerns about urban sprawl, loss of natural lands, and the resulting environmental impacts from these changes. Under CUVA, a landowner signs a 10-year covenant with the county to receive current use rather than fair market valuation for property taxation purpose.

The main provisions of the CUVA legislation are the following:

(i) Eligibility

Eligible landowners include U.S. citizens, estates, trusts, a family owned farm entity, non-profit conservation organizations and non-profit clubs organized for pleasure. Two features need attention: profit seeking conservation organizations and non-family corporations are ineligible to enroll the program.

Eligible land uses include agricultural and forestry, environmentally sensitive or residential transitional land, steep slopes and mountain tops, wetlands, flood plains, endangered species habitat, ground water recharge areas, undeveloped barrier islands, and residential transitional property. No more than 2,000 acres land of a single owner can be enrolled.

(ii) Ten-Year Contract

In exchange for the modified assessment, ten years covenant to keep the land in its currant
use is signed between local government and landowner. It may be renewed.

(iii) Penalty

Substantial penalties are invoked in cases where conservation use valuation covenant is breached. The penalty is twice of the tax savings for the period that the covenant has been in effect, plus interest, on the entire landholding.

The rules for covenants under H.B.283 in the 1992 program directed that only the Conservation Use table of values that is under the covenant be limited to a maximum increase or decrease of four percent per year for a maximum of 25 percent during the ten-year covenant. The 1993 program under H.B.66 limits the Conservation Use table of values, and the total property value (land and improvements) under the covenant, to increase or decrease of a maximum of three percent per year, after 1993, to a maximum change of 34.39 percent during the 10-year covenant.

Conflicts between the program’s provisions and goals raise concerns. While trying to decrease land use transition and provide environmental benefits, the program limits the application only to qualified landowners and limited the amount of enrolled land because of tax equity. Thus, these conflicts may compromise the effectiveness of the program (Newman, et al., 2000).

Newman, et al., (2000) analyzed the first 5 years of the implementation of the CUVA program in Georgia. This study shows that the program had been widely implemented in Georgia and was growing in importance and use. By 1997, there were 35,000 covenants and an estimated
total land area of approximately 2.37 million acres already enrolled in the program. The study found that enrolled areas varied at the county level with heavy utilization in the north Georgia region. Fiscal impacts also varied by county, with some having substantial reduction in property tax revenues and some only having marginal impacts. Generally, the program had a slight fiscal impact on Georgia’s economy and no significant tax shifting was found. Landowners obtained substantial tax relief though the CUVA program but the environmental benefits of the program were mixed. In their study, they found that the majority of land entered into the program was in the largest tract size group. However, much lower productivity land entered into the program. Since higher environmental benefits would be associated land with larger tract and higher site quality of land, the environmental benefits provided by the program were not clear.

In the research of Wear and Newman (2004), they found that the tax structure in Georgia is different from those in other state because use-value assessment taxation programs exist only for non-corporate owners and are not available for industrial owners. The discrimination let landowners who enrolled these tax preferential programs face a significant competitive advantage over larger corporate owners. Thus, Georgia faces a situation in which the major source of forest production will be individuals who generally have little experience or knowledge of forest management, resulting in higher production costs and reduced environmental benefits.

The 10th anniversary of implementation of the CUVA program in Georgia occurred in 2002. The CUVA program has been well received in the state with 15,771 covenants in the year of implementation and climbing to 84,452 covenants, accounting for almost 7 million acres, at the end of the first 10 years. Figure 1 below shows the number of covenants and acres for each year
during the first phase of the program. Both the number of covenants and total acres have increased substantially. Enrollment in the program varies spatially across the state and has a direct positive correlation with observed FMVs. The Georgia county maps shown in Figure 2 illustrate a heavy concentration of CUVA covenants in the Northern part of the state in the year of implementation. As reassessments have occurred throughout the state and FMV increased, we see more landowners entering the program as apparent in the 2002 map at then end of the first phase of the program.

With the increase in the number of covenants, the amount of assessed value eliminated from the program and total tax losses to the counties have increased substantially. Total tax savings for qualified farm and forest landowners enrolled in the CUVA program is $429.39 million at the end of the first phase of the program. The total annual tax saved from the program has increased from $8.9 million in 1992 to $90.10 million in 2002 (Figure 3). These values are expected to continue to grow as property valuations continue to increase and farm and forest landowners seek ways to maintain production profitability and keep land in farms and forests, green and open space (Dangerfield, et al., 2004). In fact, with the Georgia’s growing economy and increasing property reassessments, the total assessed value and total tax revenue in Georgia steadily also increased during these ten years phase. In general, the fiscal impact of the program was relatively small so that tax shifting was quite small.
Figure 1 Number of Covenants and Acres in the CUVA program from 1992 to 2002
Figure 2 Number of CUVA Covenants in 1992 and 2002
Figure 3 Tax Savings from the CUVA program from 1992 to 2002 in Georgia
The methodology used in this study is discussed below in four sections: 1) a description of the data sources, 2) the population on which this study focused and the sampling procedure used in the survey, 3) an analysis of the survey instrument, 4) the procedures used to analyze the data collected for the study.

A) Data Description

The major source of data used in this study is from the “Survey of Conservation Use Valuation Covenant Holders in Georgia”, which was initiated by the Warnell School of Forest Resources, University of Georgia in 2002. This survey was designed to determine covenant-holders’ overall satisfaction with the CUVA program, including their future expectations, and land management activities initiated since their enrollment. The data includes discrete values and continuous values, consisting of covenant-holder’s demographic characteristics, land ownership patterns, land use and management activities, future land value expectations, CUVA effect on land use decision, and covenant-holder’s attitude on CUVA.
B) Population and Sampling Procedure

Though the majority of covenants are in the 10 to 24 acres class, the majority of acres are in the 100 to 249 acres class (Figure 4). Since the majority of covenants do not represent the majority of acres, the survey assessed landowners with larger landholdings more heavily to account for this skewed distribution. Figure 5 shows classification of land use type by soil productivity class for CUVA covenants for the surveyed counties in Georgia, 2002. About 0.5 million acres of land involved in agriculture activity, 0.6 million acres were woodland. Covenant-holder’s information was obtained from 21 county tax assessor’s offices and a total of 1320 surveys were mailed to a stratified random sample of covenant holders throughout the state (Figure 6). These surveys are based on a population of 14,000 covenants and 1.1 million acres.

The survey design was developed with the assistance of county’s tax assessor’s and the survey was administered using Dillman’s (1978) Total Design Method.

First, a pre-notice letter was delivered to covenant-holders informing them of study objectives and that a survey would be sent to them. A few days later, the survey questionnaire (Appendix 1) was sent along with a cover letter (Appendix 2) and a postage-paid return envelope. A reminder postcard (Appendix 3) followed approximately one week later, asking for return of the survey and thanking those who had already responded. If there was still no response from the participant two or four weeks after initial questionnaire mailing, a replacement questionnaire was sent out. A final appreciation letter (Appendix 4) attached with a report of the survey findings.
was mailed to respondents who expressed an interest in receiving a copy of the results of study about two or four weeks later.

**C) Survey Instrument**

Techniques outlined by Dillman’s total design survey method (Dillman, 1978) were used for the mail survey, which outlined a strategy for achieving a high response rate. The survey was divided into five major sections.

The first section of the survey contains questions regarding land ownership, the duration of ownership, residency status on CUVA properties and the way landowners acquire their land parcel.

The second section of the survey addressed landowners’ experience regarding land use and management, the effect of the CUVA program on their land use decisions, and future land value expectations.

The third section of the survey asked the participants’ likes and dislikes regarding CUVA and their level of satisfaction with the program, as well as their willingness to renew their contract.

Landowners’ landholdings in Georgia were queried in the fourth section of the survey, which was subdivided into questions regarding the amount of land they owned in Georgia, the amount of land eligible for CUVA, whether they have other land parcels in the Agricultural Preferential Program or not, and whether they elected to keep a portion of their eligible land out of the CUVA program or not.
The fifth section of the survey contained demographic questions, including the participant’s age, income level, education level, marriage status, etc.

**D) Data Analysis**

Intensive statistical analysis was the primary method in this research process. All of the data analysis used Statistical Analysis Software (SAS). In addition to the use of standard descriptive statistics (mean, median, percentage, standard deviation), more advanced statistical tools were also used.

Correlations between land management activities and factors such as landowner’s age, income, land parcel location, parcel size were examined.

Correlations between duration (the number of years that landowners have owned their lands) and parcel size, landowner’s income, education level, residency status, the way land acquired were studied.

To find out significant factors that affect future land use expectations, the Stepwise Selection option was used in Proc Logistic procedure in SAS to build appropriate logistic regression models.

Two more logistic models were built using the Stepwise Selection option to determine the factors effecting on land use and management decisions: (a) If the tax savings from the CUVA program were not available, would they have to change their land use or sell their land? (b) Did the CUVA program cause them to alter the management of their land?
Figure 4 Distribution of CUVA Covenants and Acreage from surveyed counties in Georgia, 2002
Figure 5 Classification of land use type by soil productivity class for CUVA covenants for the surveyed counties in Georgia, 2002. (For each land use type, the bars are arranged left to right from the highest to lowest productivity class.)
Figure 6 Distributions of Surveyed Counties
CHAPTER FOUR
RESULTS

A) The Response Rate

A total of 1320 surveys were mailed to the stratified random sample of covenant-holders representing 14,000 covenants and 1.1 million acres. There were 16 surveys returned for non-deliverable address, which decreasing the sample size to 1304. Of the 1304 surveys, 795 were returned for a response rate of 61%. Of the 795 responses, 695 were valid for a usable response rate of 53%.

B) Land Ownership Patterns

Size and percentage of ownership. Figure 7 shows the percentage of respondents and corresponding acres they owned by land parcel size. About 55% of the respondents owned less than 100 acres representing 15,165 acres. 28.6% were in 100-250 acres parcel size representing 30,579 acres. 16.4% of the respondents have parcels more than 250 acres representing 68,263 acres. Thus, a few large ownerships made the mean (163 acres) much larger than the median (79 acres).

An ANOVA analysis shows a significant difference in mean parcel size between North and South Georgia, with mean 106 acres and 278 acres respectively, reflecting the different types of land use in the two regions.
**Duration of ownership.** First, we define duration as the number of years that landowners have owned their land. Table 1 shows a distribution of duration of ownership. Respondents had owned their land for an average of 24 years. 54% of respondents owned their land less than 20 years, while 7.9% of them owned their land over 50 years. In addition, a few covenant holders responded that they owned their land over 80 to 100 years. This is probably due to a misunderstanding of the question. These respondents were likely confused between the number of years that they owned the land themselves and the number of years that their family had owned the property. And these respondents are very likely to obtain their land parcel by
inheritance or by purchasing from their family members. Nevertheless even given these problems, a majority of owners involved with the program have held their lands for a relatively short period.

Table 1: Duration-Number of years landowners have owned their land (n=645)

<table>
<thead>
<tr>
<th>Duration</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=10 years</td>
<td>186</td>
<td>28.8</td>
</tr>
<tr>
<td>10-20 years</td>
<td>162</td>
<td>25.1</td>
</tr>
<tr>
<td>20-30 years</td>
<td>102</td>
<td>15.8</td>
</tr>
<tr>
<td>30-40 years</td>
<td>83</td>
<td>12.9</td>
</tr>
<tr>
<td>40-50 years</td>
<td>61</td>
<td>9.5</td>
</tr>
<tr>
<td>&gt;50 years</td>
<td>51</td>
<td>7.9</td>
</tr>
<tr>
<td>Total</td>
<td>645</td>
<td>100</td>
</tr>
</tbody>
</table>

**Residency Status.** Table 2 shows the number and percentage of respondents living in different types of locations. Of the 674 respondents, 56.7% of them lived on a farm, 20.9% lived in rural area (not a farm), and 22% lived in town or city.

In addition, we found those landowners’ residency locations are highly correlated with their residency status on their CUVA property (P-value =0.021). Most landowners who live on a farm use their CUVA property as their primary residence. However, respondents who only maintain a secondary residence on their CUVA property tend to live in a town or city.
Table 2 Primary residence locations (n=674)

<table>
<thead>
<tr>
<th>Types of Location</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm</td>
<td>382</td>
<td>56.7</td>
</tr>
<tr>
<td>Rural Area, not a farm</td>
<td>141</td>
<td>20.9</td>
</tr>
<tr>
<td>Town</td>
<td>35</td>
<td>5.2</td>
</tr>
<tr>
<td>Small city</td>
<td>72</td>
<td>10.7</td>
</tr>
<tr>
<td>Large city</td>
<td>44</td>
<td>6.5</td>
</tr>
<tr>
<td>Total</td>
<td>674</td>
<td>100</td>
</tr>
</tbody>
</table>

**Land Ownership.** The ownership categories presented in Table 3 describe a landowner’s property. The vast majority (80.4%) of CUVA covenant holders managed their land as individuals. The next largest categories were a Family Corporations and partnerships (both representing 7.6%). However, no landowner responded that they managed the land under a club or association. While it is known that there are associations with the CUVA contracts, they apparently represent a very small proportion of active covenants.

Table 3 Land ownership Patterns (n=687)

<table>
<thead>
<tr>
<th>Ownership category</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>552</td>
<td>80.4</td>
</tr>
<tr>
<td>Family corporation</td>
<td>52</td>
<td>7.6</td>
</tr>
<tr>
<td>Partnership (LP, LLP)</td>
<td>52</td>
<td>7.6</td>
</tr>
<tr>
<td>Club or association</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>31</td>
<td>4.5</td>
</tr>
<tr>
<td>Total</td>
<td>687</td>
<td>100</td>
</tr>
</tbody>
</table>
All landholdings in Georgia. Of the 664 respondents, 38.4% said that they had additional parcels of land in the CUVA program (Table 4). Of the 636 respondents, only 6.6% had other land parcels in the Agricultural Preferential Program (Table 5). Finally, 106 covenant holders (16.3%) elected to keep a portion of their eligible land out of the CUVA program (Table 6). The main reasons for the decision were: (1) for sale or potential development; (2) more advantageous to put the land under the Agricultural Preferential Program because of location; and (3) for building a home site.

We know that among the three tax alternatives for a landowner in Georgia, the Agricultural Preferential Assessment applies to all land and building value in agricultural production and storage buildings that are up to $100,000 dollars. However, under the CUVA program, only bare land values are included, except residential transitional property's value and farm/forest related structures' value. A landowner that has a small amount of land with a great number of agricultural buildings may receive greater benefits under the Agricultural Preferential Assessment. But if a landowner wants to maintain a greater flexibility over the use of one's land, using FMV may be a better option because it obviates the need to sign a ten-year contract with government (http://www.forsythco.com/pdf/files/FAQs_CUVA.pdf).

Therefore, the primary concerns of landowners are drawn from the assignment of value and the procedures used to determine that value.
Table 4 Do you have additional parcels of land in the CUVA program? (n=664)

<table>
<thead>
<tr>
<th>Answer</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>255</td>
<td>38.4</td>
</tr>
<tr>
<td>No</td>
<td>409</td>
<td>61.6</td>
</tr>
<tr>
<td>Total</td>
<td>664</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 5 Do you have other land parcels in the Agricultural Preferential Program? (n=636)

<table>
<thead>
<tr>
<th>Answer</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>42</td>
<td>6.6</td>
</tr>
<tr>
<td>No</td>
<td>594</td>
<td>93.4</td>
</tr>
<tr>
<td>Total</td>
<td>636</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 6 Did you elect to keep a portion of your eligible land out of the CUVA program? (n=650)

<table>
<thead>
<tr>
<th>Answer</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>106</td>
<td>16.3</td>
</tr>
<tr>
<td>No</td>
<td>544</td>
<td>83.7</td>
</tr>
<tr>
<td>Total</td>
<td>650</td>
<td>100</td>
</tr>
</tbody>
</table>
C) Landowner’s Demographic Characteristics

*Age of landowners.* Age was coded into seven categories (Table 7). The mean age of the respondents was in the 55 to 64 years old category. The majority (41 percent) of respondents were over 65 years old. No respondent was under 25 years old. In addition, less than 12% of them were under 45 years old. There is no correlation between age of landowner and duration of ownership.

Table 7 Age Category of landowners (n=668)

<table>
<thead>
<tr>
<th>Age category</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under25</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>25-34</td>
<td>4</td>
<td>0.6</td>
</tr>
<tr>
<td>35-44</td>
<td>75</td>
<td>11.2</td>
</tr>
<tr>
<td>45-54</td>
<td>124</td>
<td>18.6</td>
</tr>
<tr>
<td>55-64</td>
<td>189</td>
<td>28.3</td>
</tr>
<tr>
<td>65-74</td>
<td>164</td>
<td>24.6</td>
</tr>
<tr>
<td>75 and over</td>
<td>112</td>
<td>16.8</td>
</tr>
<tr>
<td>Total</td>
<td>668</td>
<td>100</td>
</tr>
</tbody>
</table>

*Landowner’s annual income.* Income was coded into nine categories (Table 8). The mean income fell within the range of $50,000 to $60,000 per year with over one-half of the respondents earning more than $50,000 per year. The largest category is $100,000 or more with 23.9% fell within this range. Only 610 responses were received for this question as many people are unwilling to respond to questions about their income.
### Table 8 Landowner’s annual gross income level (n=610)

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10,000 or less</td>
<td>21</td>
<td>3.4</td>
</tr>
<tr>
<td>$10,001 to $20,000</td>
<td>42</td>
<td>6.9</td>
</tr>
<tr>
<td>$20,001 to $35,000</td>
<td>96</td>
<td>15.7</td>
</tr>
<tr>
<td>$35,001 to $40,000</td>
<td>54</td>
<td>8.9</td>
</tr>
<tr>
<td>$40,001 to $50,000</td>
<td>57</td>
<td>9.3</td>
</tr>
<tr>
<td>$50,001 to $60,000</td>
<td>69</td>
<td>11.3</td>
</tr>
<tr>
<td>$60,001 to $80,000</td>
<td>69</td>
<td>11.3</td>
</tr>
<tr>
<td>$80,001 to $100,000</td>
<td>56</td>
<td>9.2</td>
</tr>
<tr>
<td>$100,000 or more</td>
<td>146</td>
<td>23.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>610</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Education.** The level of education attained by owner was coded into six categories (Table 9).

Over 70% of the respondents had achieved a college degree among which 22.5% were college graduates and 20% had post-graduate education. Only 6.7% had less than a high school education, 25.6% were high school graduates, and 7.2% attained vocational or technical school education. Generally speaking, most of the respondents were well educated.
Table 9 Level of education attained by owner (n=671)

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than high school graduate</td>
<td>45</td>
<td>6.7</td>
</tr>
<tr>
<td>High school graduate</td>
<td>172</td>
<td>25.6</td>
</tr>
<tr>
<td>Vocational/technical school</td>
<td>48</td>
<td>7.2</td>
</tr>
<tr>
<td>Some college</td>
<td>122</td>
<td>18.2</td>
</tr>
<tr>
<td>College graduate</td>
<td>151</td>
<td>22.5</td>
</tr>
<tr>
<td>Post-graduate education</td>
<td>133</td>
<td>19.8</td>
</tr>
<tr>
<td>Total</td>
<td>671</td>
<td>100</td>
</tr>
</tbody>
</table>

Marital status. Of the 668 respondents, 528 were responded married (Table 10), which represented seventy-nine percent of the participants. Less than 5% were single. 4.8% were divorced and about 12% were widowed.

Table 10 Landowner’s marital status

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>528</td>
<td>79.0</td>
</tr>
<tr>
<td>Single</td>
<td>29</td>
<td>4.3</td>
</tr>
<tr>
<td>Divorced</td>
<td>32</td>
<td>4.8</td>
</tr>
<tr>
<td>Widowed</td>
<td>79</td>
<td>11.8</td>
</tr>
<tr>
<td>Total</td>
<td>668</td>
<td>100</td>
</tr>
</tbody>
</table>
D) Land Use and Management Activities

When participants were asked about the management actions they had performed on their land since entering CUVA (a list of ten land management activities was provided), 46.6% said they practiced farming or ranching (Table 11). 32.2% practiced tree planting and around 22.5% to 25% of them performed timber production, timber harvesting, wildlife management, residency, and conserving green space activities. The less practiced management activities included leasing of property (9.4%) and leasing of hunting rights (11.7%), and pine straw collection (4.2%).

Table 11 Land management activities since entering CUVA (n=695)

<table>
<thead>
<tr>
<th>Management Activities</th>
<th>Number of owners</th>
<th>Percentage of owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming or ranching</td>
<td>324</td>
<td>46.6</td>
</tr>
<tr>
<td>Tree planting</td>
<td>224</td>
<td>32.2</td>
</tr>
<tr>
<td>Timber harvesting</td>
<td>174</td>
<td>25.0</td>
</tr>
<tr>
<td>Wildlife management</td>
<td>160</td>
<td>23.0</td>
</tr>
<tr>
<td>Conserve green space</td>
<td>160</td>
<td>23.0</td>
</tr>
<tr>
<td>Timber production</td>
<td>156</td>
<td>22.5</td>
</tr>
<tr>
<td>Residency</td>
<td>153</td>
<td>22.0</td>
</tr>
<tr>
<td>Leasing of hunting</td>
<td>81</td>
<td>11.7</td>
</tr>
<tr>
<td>Leasing of property</td>
<td>65</td>
<td>9.4</td>
</tr>
<tr>
<td>Pine straw collection</td>
<td>29</td>
<td>4.2</td>
</tr>
</tbody>
</table>
Among the 695 respondents, 69 practiced none of the activities listed above on their land since entering CUVA. Of the 69 people, 72% of them were older than 55 years old, 67% owned land parcel less than 100 acres, 71% lived on a farm or in rural area and 68% were in north Georgia region.

**E) Future Land Value Expectations**

Covenant holders were asked to rate a list of eleven possible benefits that they might expect to receive from their land over the next 10 years. Each benefit level of importance was rated using a Likert scale with a range of numbers from 1 to 5. Here “1” indicated that the benefit was not at all important and “5” indicated it was a very important benefit. Table 12 shows the mean, median and standard deviation for each benefit. The response with the highest mean (4.38) and median (5) of importance among the eleven benefits was having an estate to pass onto their heirs, which was identified by 653 respondents. 601 respondents said that the enjoyment of green space was an important benefit with a mean value of 3.97 and a median value of 5. Among the benefits that were not considered particularly important included the leasing of hunting and fishing rights, selling for development purposes and the leasing of property. A total of 610 respondents said that selling their land for a profit was not important (mean=2.23). Clearly, landholders ranked non-economic benefits above economic benefits when asked what they most valued about their land.
Table 12 Benefits expected from land over the next 10 years

<table>
<thead>
<tr>
<th>Land value expectations</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>An estate to pass onto heirs (n=653)</td>
<td>4.38</td>
<td>5</td>
<td>1.11</td>
</tr>
<tr>
<td>Enjoyment of green space (n=601)</td>
<td>3.97</td>
<td>5</td>
<td>1.35</td>
</tr>
<tr>
<td>Residency (n=614)</td>
<td>3.53</td>
<td>5</td>
<td>1.73</td>
</tr>
<tr>
<td>Increase in land value (n=636)</td>
<td>3.59</td>
<td>4</td>
<td>1.49</td>
</tr>
<tr>
<td>Farming / ranching (N=614)</td>
<td>3.45</td>
<td>4</td>
<td>1.60</td>
</tr>
<tr>
<td>Timber production (n=620)</td>
<td>3.24</td>
<td>3</td>
<td>1.54</td>
</tr>
<tr>
<td>Recreation (n=601)</td>
<td>3.04</td>
<td>3</td>
<td>1.53</td>
</tr>
<tr>
<td>Sell for a profit (n=601)</td>
<td>2.23</td>
<td>1</td>
<td>1.52</td>
</tr>
<tr>
<td>Leasing of property (n=580)</td>
<td>1.66</td>
<td>1</td>
<td>1.25</td>
</tr>
<tr>
<td>Sell for development (n=601)</td>
<td>1.57</td>
<td>1</td>
<td>1.04</td>
</tr>
<tr>
<td>Leasing of hunting/fishing (n=590)</td>
<td>1.55</td>
<td>1</td>
<td>1.08</td>
</tr>
</tbody>
</table>

F) CUVA Effect on Land Use Decisions

Landowners were asked whether the availability of the tax savings from the CUVA program had affected their land use decisions, 33.2% of them said it did and 66.8% said it did not (Table 13).

Landowners were also asked whether the CUVA program cause them to alter the management of their land or not, 7.3% of them said yes and 92.7% said no (Table 13).

Generally, it appears that the CUVA program is not a significant factor affecting land use
decisions.

Table 13 Questions regarding CUVA effects on land use and management decisions (n=695)

<table>
<thead>
<tr>
<th>CUVA Effect on land use</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had altered land management because of CUVA?</td>
<td>33.3%</td>
<td>66.8%</td>
</tr>
<tr>
<td>Would have sold land if tax savings were not available through CUVA?</td>
<td>7.3%</td>
<td>92.7%</td>
</tr>
</tbody>
</table>

G) Landowner’s Overall Satisfaction

When participants were asked what they liked about the CUVA program, 93% of them stated that they really like the tax relief provided by CUVA (shown in Table 14). Over 60% said they liked the limits on property tax increases and the more equitable treatment of rural lands. In addition, participants liked the protection of green space, the fact that heirs are not encumbered by the covenant, and that they were able to continue with practices that would have otherwise been difficult to continue without the tax savings from CUVA. The things they dislike about the CUVA program, with 38% reporting, was the high penalties for breaking the contract. Furthermore, 23% of landholders said they do not like signing a contract with the government, and 14% said the contract time of 10 years was too long. Although the survey did not specifically ask about thoughts towards tax assessors, many landholders commented that they did not like them administering the program.
Regardless of these dislikes, 95% of participants reported that they experienced no difficulty entering the program. An additional criticism was that covenant holders wish they had known about the program sooner and did not feel that the program was made well known to the public because the state had not effectively advertised the program.

Table 14 Likes and Dislikes of Covenant Holders

<table>
<thead>
<tr>
<th>What Covenant Holders Like</th>
<th>Percentage</th>
<th>What Covenant Holders dislike</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax relief</td>
<td>92.8%</td>
<td>Penalties for breaking covenant are too high</td>
<td>38.1%</td>
</tr>
<tr>
<td>Limits on property tax increases</td>
<td>63.5%</td>
<td>Signing a contract with the government</td>
<td>22.9%</td>
</tr>
<tr>
<td>Provides more equitable tax treatment of rural lands</td>
<td>62.5%</td>
<td>Contract time was too long</td>
<td>13.7%</td>
</tr>
<tr>
<td>Protection of green space</td>
<td>50.2%</td>
<td>Limited acreage allowed in program</td>
<td>8.9%</td>
</tr>
<tr>
<td>Heirs are not encumbered by the covenant</td>
<td>39.6%</td>
<td>Others</td>
<td>10.5%</td>
</tr>
<tr>
<td>Ability to practice uses that would otherwise be financially difficult to continue</td>
<td>39.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The primary objective of this research was to determine covenant holders’ overall satisfaction with the CUVA program. This is shown in Figure 8.

A total of 56% of the people said they were completely satisfied with the program while 34% were somewhat satisfied. Less than 1% of the people were completely dissatisfied with the program. The overall satisfaction with the CUVA is also evidenced by the covenant holders’ intent to renew their covenants. 87.6% said yes and only 4.9% intended to opt out of the program. Meanwhile 7.5% said they were not sure at that time or perhaps they would.
Although the survey did not specifically ask about landowners’ attitude towards tax assessors, many of them commented that they did not like them administering the program (Appendix E). The following select comments were taken from surveys and are indicative of the general outlook regarding tax assessors:

“I wish county tax offices would have a better attitude towards people who want in the program!”

“Our local tax assessor’s office is either incapable or unwilling to provide accurate information regarding covenant eligibility or penalties involved in breaking contracts.”

“There is too much red tape to keep you out of the CUVA program or kick you out. Letting county tax administrators administer the program is a mistake because they discourage the program.”

Respondents did list a number of concerns about the program’s administration but most focused on difficulties in entering the program, rather than its usefulness.
Figure 8 Overall Satisfactions with the CUVA Program

Level of satisfaction

- Completely dissatisfied
- Somewhat dissatisfied
- Neither satisfied nor dissatisfied
- Somewhat satisfied
- Completely satisfied

Percentage

0 10 20 30 40 50 60
CHAPTER FIVE
DISCUSSION

A) Environmental Benefits of the CUVA Program

We would expect that higher environmental benefits would be associated with tracts of land that are large and of higher site quality.

In this study, though the majority of acres in the surveyed counties are in the 100 to 249 class, the majority of covenants were in the 10 to 24 acres class. Thus, the majority of covenants do not represent the majority of acres. While land of all productivity classes is found for both agriculture and woodland types, the woodland types are more significantly represented in lower quality sites. More agricultural land is found on site classes 2, 4 and 5 while the majority of woodland is found on classes 6-8. This is quite reasonable that agricultural activities are more likely to be found on higher quality land than woodland.

A substantial amount of land has entered into the program. However, the majority of the land was not in the large tract size group. Moreover, lower productivity land entered into the program to a greater extent than did higher quality lands. This may limit the potential environmental benefits provided by land enrolled in the CUVA program.

B) Land Use and Management

The three common management activities since entering the CVUA program are
farming/ranching, tree planting and timber harvesting. Land use and management decisions are highly affected by ecological and social factors such as landowner’s characteristics, land parcel location, size of land parcel and landowner’s economic condition, etc.

To investigate the relationship between land management activities and these main factors, table 15 shows the correlation coefficients between management activity and size of land parcel (acres), landowner’s age, region of land parcel located (North Georgia and South Georgia), and landowner’s annual income level respectively.

Table 15 Pearson correlation coefficients between management activities and Acreage/Age/Region/Income

<table>
<thead>
<tr>
<th>Management activities</th>
<th>Size</th>
<th>Age</th>
<th>Region</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree Planting</td>
<td>0.29027</td>
<td>-0.09721</td>
<td>0.21226</td>
<td>0.19583</td>
</tr>
<tr>
<td></td>
<td>+**</td>
<td>-*</td>
<td>+**</td>
<td>+**</td>
</tr>
<tr>
<td>Timber production</td>
<td>0.23082</td>
<td>0.03580</td>
<td>0.10564</td>
<td>0.09599</td>
</tr>
<tr>
<td></td>
<td>+**</td>
<td></td>
<td>+**</td>
<td>+*</td>
</tr>
<tr>
<td>Timber harvesting</td>
<td>0.33905</td>
<td>-0.01940</td>
<td>0.06617</td>
<td>0.15689</td>
</tr>
<tr>
<td></td>
<td>+**</td>
<td></td>
<td></td>
<td>+**</td>
</tr>
<tr>
<td>Pine straw collection</td>
<td>0.13776</td>
<td>-0.06092</td>
<td>0.11018</td>
<td>0.08404</td>
</tr>
<tr>
<td></td>
<td>+**</td>
<td></td>
<td>+**</td>
<td>+*</td>
</tr>
<tr>
<td>Farming /Ranching</td>
<td>-0.01889</td>
<td>-0.11128</td>
<td>-0.04326</td>
<td>0.06996</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lease for hunting</td>
<td>0.24110</td>
<td>-0.00079</td>
<td>0.01640</td>
<td>0.11416</td>
</tr>
<tr>
<td></td>
<td>+**</td>
<td></td>
<td></td>
<td>+**</td>
</tr>
<tr>
<td>Property leasing</td>
<td>0.15419</td>
<td>0.07894</td>
<td>0.14760</td>
<td>-0.03775</td>
</tr>
<tr>
<td></td>
<td>+**</td>
<td></td>
<td>+**</td>
<td></td>
</tr>
<tr>
<td>Wildlife management</td>
<td>0.25655</td>
<td>-0.18801</td>
<td>0.08049</td>
<td>0.20226</td>
</tr>
<tr>
<td></td>
<td>+**</td>
<td>-*</td>
<td>+*</td>
<td>+**</td>
</tr>
<tr>
<td>Residency</td>
<td>-0.13901</td>
<td>-0.06162</td>
<td>-0.12859</td>
<td>-0.01232</td>
</tr>
<tr>
<td></td>
<td>-*</td>
<td></td>
<td>-*</td>
<td></td>
</tr>
<tr>
<td>Conserve green space</td>
<td>-0.03479</td>
<td>0.00658</td>
<td>-0.16541</td>
<td>0.05659</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-*</td>
<td></td>
</tr>
</tbody>
</table>
Of the ten management activities listed in the table, seven of them have a significantly positive correlation with parcel size. Larger landholdings are associated with practices activities that require a large amount of land, such as tree planting, timber production and harvesting, property leasing, wildlife management etc. Only one activity—residency, is negatively correlated with parcel size. Smaller tracts tend to be primarily for homesites, rather than managed. This may be because smaller parcels are hard to manage economically. No significant correlations between land size and farming/ranching practice, between land size and conservation of green space were found.

The age of the landowner is generally believed to be one of the key factors that affect land management activities. Tree planting, farming/ranching practice and wildlife management showed a significant, negative correlation with landowner’s age. Only property leasing activity showed a significant positive correlation with age. Undoubtedly, younger landowners have more energy to manage their lands themselves. Older landowners choose to leave their lands to generate income.

We divided Georgia into two regions—north and south Georgia. Since the development pattern of the economy is different in these two regions, parcel location becomes a factor that should affect the landowner’s land use decision. In South Georgia, landowners practice more tree planting, timber production, pine straw collection, property leasing, and wildlife management...
activities. In North Georgia, they keep their land for residency and green space. Furthermore, these results are perfectly consistent with our earlier results showing a significant difference in mean parcel size between North and South Georgia. Thus, landowners in South Georgia are more likely to practices activities that require large land size.

The last factor we investigated was the landowner’s annual income, which is a measurement of investment ability. Obviously, people with higher income levels can practice activities that need more money to invest, such as tree planting, timber production, timber harvesting and so on.

**C) Further Land Use Expectations**

With regard to land use expectations, though increase in land value is important to landowners, the majority ranked non-economic benefits above economic benefits. They are not eager to sell their land for a profit or for development purposes. Having an estate to pass onto heirs, enjoyment of green space and a homesite are their favored benefits.

To determine factors that affect a covenant holder’s future land value expectations, a series of logistic regressions were run.

First, we defined a new response variable, Index. For each land use benefit, each respondent originally ranked its importance from 1 to 5. Based on the median response of each benefit, we re-ranked the response as three levels: low importance (Index = -1), median importance (Index = 0), high importance (Index=1). That is,

If ranking < median → Index = -1
ranking = median → Index = 0
ranking > median → Index = 1

That is, rather than ranking benefit as 1-5 level, the 1-5 was recorded as -1, 0, or +1. Now we have responses, which are -1, 0, or 1.

However if median is equal to 1 or 5, then the 1-5 level was recoded as 0 and 1.

Next we defined five predictor candidates: Age, Income, and Education level, size of land parcel, and region (North Georgia and South Georgia). For Age, Income, Education level, size of land parcel factors, since there are so many categories for each of them, we re-categorized them into fewer levels to simplify the model.

Below is a detailed description of these five factors:

If Age < 45 years old then code Age = 1,

Else if 45 <= Age < 65 years old then code Age = 2,

Else if Age >= 65 years old then code Age = 3.

If Income <= $40,000 then code Income = 1,

Else if $40,000 < Income <= $80,000 then code Income = 2,

Else if Income > $80,000 then code Income = 3.

If Education level is lower than college, then code Education = 1,

Else if Education level is college or above level, then code Education = 2.

If Region = 1, it means land parcel located in North Georgia,

Region = 2, it means land parcel located in South Georgia.

If land parcel <= 100 acres, then code size = 1,
Else if land 100 acres < land parcel <= 300 acres, then code size = 2,

Else if land parcel > 300 acres, then code size = 3.

Next, the Stepwise selection option was used in the PROC LOGISTIC procedure to select factors (Age, Income, Education, Region and Size) that met the 0.05 significance level for entry into the model (sle=0.05 and sls=0.05). The stepwise selection results are shown in table 16.

Table 16 Predicators affecting future land use expectations in logistic model

<table>
<thead>
<tr>
<th><strong>Land value expectations</strong></th>
<th><strong>Significant Predictors</strong></th>
<th><strong>Response Variable</strong></th>
<th><strong>Model</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in land value</td>
<td>Size(-*), Income(+**)</td>
<td>-1, 0, 1</td>
<td>Cumulative Logistic Regression</td>
</tr>
<tr>
<td>Sell for development</td>
<td>Income(+*)</td>
<td>0, 1</td>
<td>Binomial Logistic Regression</td>
</tr>
<tr>
<td>Sell for a profit</td>
<td>Income(+ **)</td>
<td>0, 1</td>
<td>Binomial Logistic Regression</td>
</tr>
<tr>
<td>Timber production</td>
<td>Size(+<strong>), Age(+</strong>), Education(+<strong>), Region(+</strong>)</td>
<td>-1, 0, 1</td>
<td>Cumulative Logistic Regression</td>
</tr>
<tr>
<td>Farming or ranching</td>
<td>Education(-*), Region(+**)</td>
<td>-1, 0, 1</td>
<td>Cumulative Logistic Regression</td>
</tr>
<tr>
<td>Recreation</td>
<td>Education(+**</td>
<td>-1, 0, 1</td>
<td>Cumulative Logistic Regression</td>
</tr>
<tr>
<td>Residency</td>
<td>Education(-**), Region(-)*</td>
<td>0, 1</td>
<td>Binomial Logistic Regression</td>
</tr>
<tr>
<td>Leasing for hunting/fishing</td>
<td>Size(+**), Education(+*)</td>
<td>0, 1</td>
<td>Binomial Logistic Regression</td>
</tr>
<tr>
<td>Leasing of property</td>
<td>Region(+**)</td>
<td>0, 1</td>
<td>Binomial Logistic Regression</td>
</tr>
<tr>
<td>Enjoyment of green space</td>
<td>Region(-**)</td>
<td>0, 1</td>
<td>Binomial Logistic Regression</td>
</tr>
<tr>
<td>An estate to pass onto heirs</td>
<td>Age (+*)</td>
<td>0, 1</td>
<td>Binomial Logistic Regression</td>
</tr>
</tbody>
</table>

+ Means positive effect on ranking importance  * Means significant at alpha=0.01 level
- Means negative effect on ranking importance  * Means significant at alpha=0.05 level
The best logistic models we obtained were the following:

1) Cumulative Logistic Model for land value expectation—Increase in land value:

\[
\begin{align*}
\ln\left(\frac{P_1}{1 - P_1}\right) &= -0.2331 + estimator_1 \times \text{Size} + estimator_2 \times \text{Income} \\
\ln\left(\frac{P_1 + P_2}{1 - P_1 - P_2}\right) &= 0.4775 + estimator_1 \times \text{Size} + estimator_2 \times \text{Income}
\end{align*}
\]

Where \(P_1\) means the probability of low importance in this expectation
\(P_2\) means the probability of median importance in this expectation
\(P_3 = 1 - P_1 - P_2\) means the probability of high importance in this expectation

\[
\begin{align*}
estimator_1 &= \begin{cases} 
-0.3272 & \text{Parcel size } \leq 100 \text{ acres} \\
0.0198 & \text{Parcel size between 100 and 300 acres} \\
0.3074 & \text{Parcel size } > 100 \text{ acres}
\end{cases}
\end{align*}
\]

\[
\begin{align*}
estimator_2 &= \begin{cases} 
0.2586 & \text{Income } \leq 40,000 \\
0.1713 & \text{Income between } 40,000 \text{ and } 80,000 \\
-0.4299 & \text{Income } > 80,000
\end{cases}
\end{align*}
\]

2) Binomial Logistic Model for land value expectation—Sell for development:

\[
\ln\left(\frac{P}{1 - P}\right) = 1.7651 + estimator_1 \times \text{Income}
\]

Where \(P\) means the probability of high importance in this expectation
\(1-P\) means the probability of low importance in this expectation

\[
\begin{align*}
estimator_1 &= \begin{cases} 
-0.4261 & \text{Income } \leq 40,000 \\
0.00993 & \text{Income between } 40,000 \text{ and } 80,000 \\
0.41617 & \text{Income } > 80,000
\end{cases}
\end{align*}
\]

3) Binomial Logistic Model for land value expectation—Sell for a profit:
\[
\ln\left(\frac{P}{1-P}\right) = 0.1076 + \text{estimator1} \times \text{Income}
\]

Where P means the probability of high importance in this expectation

1-P means the probability of low importance in this expectation

\[
\text{estimator1} = \begin{cases} 
-0.3179 & \text{Income} \leq \$40,000 \\
-0.1129 & \text{Income between} \$40,000 \text{ and} \$80,000 \\
0.4308 & \text{Income} > \$80,000 
\end{cases}
\]

4) Cumulative Logistic Model for land value expectation—Timber production:

\[
\ln\left(\frac{P_1}{1-P_1}\right) = -1.0585 + \text{estimator1} \times \text{Size} + \text{estimator2} \times \text{Age} + \text{estimator3} \times \text{Education + estimator4} \times \text{Re}gion
\]

\[
\ln\left(\frac{P_1+P_2}{1-P_1-P_2}\right) = -0.2209 + \text{estimator1} \times \text{Size} + \text{estimator2} \times \text{Age} + \text{estimator3} \times \text{Education + estimator4} \times \text{Re}gion
\]

Where P1 means the probability of low importance in this expectation

P2 means the probability of median importance in this expectation

P3=1-P1-P2 means the probability of high importance in this expectation

\[
\text{estimator1} = \begin{cases} 
0.5848 & \text{Parcel size} \leq 100 \text{ acres} \\
0.1722 & \text{Parcel size between} 100 \text{ and} 300 \text{ acres} \\
-0.757 & \text{Parcel size} > 100 \text{ acres} 
\end{cases}
\]

\[
\text{estimator2} = \begin{cases} 
0.3034 & \text{Age} < 45 \\
0.1066 & \text{Age between} 45 \text{ and} 65 \\
-0.410 & \text{Age} \geq 65 
\end{cases}
\]

\[
\text{estimator3} = \begin{cases} 
0.3153 & \text{Education level lower than college} \\
-0.3153 & \text{Education level equal to or high than college} 
\end{cases}
\]
estimator_4 = \begin{cases} 
0.4722 & \text{Land parcel located in North Georgia} \\
-0.4722 & \text{Land parcel located in South Georgia} 
\end{cases}

5) Cumulative Logistic Model for land value expectation—Farming or Ranching:

\[
\ln\left(\frac{P_1}{1 - P_1}\right) = -0.3932 + estimator_1 \times Education + estimator_2 \times Region \\
\ln\left(\frac{P_1 + P_2}{1 - P_1 - P_2}\right) = 0.2255 + estimator_1 \times Education + estimator_2 \times Region
\]

Where P1 means the probability of low importance in this expectation

P2 means the probability of median importance in this expectation

P3=1-P1-P2 means the probability of high importance in this expectation

estimator_1 = \begin{cases} 
-0.1827 & \text{Education level lower than college} \\
0.1827 & \text{Education level equal to or high than college} 
\end{cases}

estimator_2 = \begin{cases} 
0.3474 & \text{Land parcel located in North Georgia} \\
-0.3474 & \text{Land parcel located in South Georgia} 
\end{cases}

6) Cumulative Logistic Model for land value expectation—Recreation:

\[
\ln\left(\frac{P_1}{1 - P_1}\right) = -0.4906 + estimator_1 \times Education \quad \ln\left(\frac{P_1 + P_2}{1 - P_1 - P_2}\right) = 0.3534 + estimator_1 \times Education
\]

Where P1 means the probability of low importance in this expectation

P2 means the probability of median importance in this expectation

P3=1-P1-P2 means the probability of high importance in this expectation

estimator_1 = \begin{cases} 
0.4115 & \text{Education level lower than college} \\
-0.4115 & \text{Education level equal to or high than college} 
\end{cases}
7) Binomial Logistic Model for land value expectation—Residency:

\[ \ln\left( \frac{P}{1-P} \right) = 0.0779 + \text{estimator}_1 \times \text{Education} + \text{estimator}_2 \times \text{Region} \]

Where \( P \) means the probability of high importance in this expectation

1-\( P \) means the probability of low importance in this expectation

\[
\text{estimator}_1 = \begin{cases} 
0.3256 & \text{Education level lower than college} \\
-0.3256 & \text{Education level equal to or high than college} 
\end{cases}
\]

\[
\text{estimator}_2 = \begin{cases} 
0.2937 & \text{Land parcel located in North Georgia} \\
-0.2937 & \text{Land parcel located in South Georgia} 
\end{cases}
\]

8) Binomial Logistic Model for land value expectation—leasing of hunting/fishing rights:

\[ \ln\left( \frac{P}{1-P} \right) = -0.9110 + \text{estimator}_1 \times \text{Size} + \text{estimator}_2 \times \text{Education} \]

Where \( P \) means the probability of high importance in this expectation

1-\( P \) means the probability of low importance in this expectation

\[
\text{estimator}_1 = \begin{cases} 
-0.5618 & \text{Parcel size} \leq 100 \text{ acres} \\
-0.1346 & \text{Parcel size between 100 and 300 acres} \\
0.6964 & \text{Parcel size} > 100 \text{ acres} 
\end{cases}
\]

\[
\text{estimator}_2 = \begin{cases} 
-0.2438 & \text{Education level lower than college} \\
0.2438 & \text{Education level equal to or high than college} 
\end{cases}
\]

9) Binomial Logistic Model for land value expectation—leasing of property:

\[ \ln\left( \frac{P}{1-P} \right) = -0.9369 + \text{estimator}_1 \times \text{Region} \]

Where \( P \) means the probability of high importance in this expectation

1-\( P \) means the probability of low importance in this expectation
10) Binomial Logistic Model for land value expectation—Enjoyment of green space:

\[ \ln\left(\frac{P}{1-P}\right) = -0.0239 + estimator1 \times Region \]

Where P means the probability of high importance in this expectation

1-P means the probability of low importance in this expectation

\[ estimator1 = \begin{cases} 
-0.4062 & \text{Land parcel located in North Georgia} \\
0.4062 & \text{Land parcel located in South Georgia} 
\end{cases} \]

11) Binomial Logistic Model for land value expectation—an estate to pass onto heirs:

\[ \ln\left(\frac{P}{1-P}\right) = -0.8857 + estimator1 \times Age \]

Where P means the probability of high importance in this expectation

1-P means the probability of low importance in this expectation

\[ estimator1 = \begin{cases} 
0.3508 & \text{Land parcel located in North Georgia} \\
-0.3508 & \text{Land parcel located in South Georgia} 
\end{cases} \]

\[ estimator1 = \begin{cases} 
-0.4954 & Age < 45 \\
0.0770 & Age \text{ between 45 and 65} \\
0.4184 & Age \geq 65 
\end{cases} \]

Based on the results obtained above, as for the significant factors affecting their land value expectation, landowners’ income is significant in predicting the importance of expectations 1) increase in land value, 2) sell for development, and 3) sell for a profit. Wealthy people are more eager to invest and make a profit from their land.

Land parcel size is a significant factor in predicting the importance of expectations 1)
increase in land value, 2) timber production, and 3) leasing of hunting/fishing rights. A larger land parcel can be managed more economically and is more suitable for activities that required larger land size.

Well-educated landowners are more likely to be involved in timber production, recreation and leasing of hunting/fishing rights and would take greater advantage of the amenities their land provided than less-educated ones. However, landowners with less education are more likely to be involved in agricultural management of their land and would like to use their land for residency purposes.

Land parcels located in South Georgia are more likely to be involved in agricultural or forest management or property leasing than those in North Georgia. In North Georgia, landowners are more enjoy the green space their land provides and are more likely to be a resident on their lands.

Older respondents are more concerned about having an estate to pass onto heirs. Thus, a program such as CUVA helps meet these particular concerns regarding generational transfers of assets.

D) Traditional Owners VS. New Owners

We defined the number of years that landowner have owned their land as duration. Table 17 shows the results of a series of correlation test for factors related to duration.

The correlation between duration and the land parcel size showed a significantly positive correlation with p-value<0.0001. This indicates that respondents who had obtained land more recently tended to own smaller tracts.
Duration and the way they acquired the land parcel are also significantly correlated (P-value=0.0399), which indicated respondents who purchased their land tended to own land more recently. The longer the owners had owned their lands, the more likely they had acquired their land through inheritance.

The correlations between duration and income, education and residency are all highly negatively correlated with p <0.0001, p=0.0127 and p=0.0236 respectively. Thus, the longer owners had their land, the more likely that they did not earn much, were less educated, and lived on a farm or rural area. Many of these landowners (54%) are “new” owners who have bought their land in the last twenty years. Lived in town or city, new owners are well-educated and earned more than traditional owners. Analysis regarding these two groups of owner should go further to distinguish their land management and land use expectation.

Table 17 Correlation between duration and acreage, income, education, residency status and the way the land acquired.

<table>
<thead>
<tr>
<th></th>
<th>Size</th>
<th>The way land Acquired</th>
<th>Income</th>
<th>Education</th>
<th>Residency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration</strong></td>
<td>+**</td>
<td>+*</td>
<td>-**</td>
<td>-*</td>
<td>-*</td>
</tr>
<tr>
<td><strong>P-Value</strong></td>
<td>&lt;0.0001</td>
<td>0.0399</td>
<td>&lt;0.0001</td>
<td>0.0127</td>
<td>0.0236</td>
</tr>
</tbody>
</table>

+ Means positively correlated
- Means negatively correlated
** Means significant at alpha=0.01 level
* Means significant at alpha=0.05 level

E) CUVA Effect on Land Use Decision

We ran a logistic regression using the stepwise selection option to find out which factors are
significant in predicting covenant holders’ land use decision if the tax savings from the CUVA program were not available. Here the candidate factors are exactly same as those in section C.

The model we found is: $\ln\left(\frac{P}{1-P}\right) = 0.7359 + estimator1*Region$

Where $P$ is the probability that respondents would not change their land use decisions

$1-P$ is the probability that respondents would change their land use decisions

$$estimator1 = \begin{cases} -0.2374 & \text{Land parcel located in North Georgia} \\ 0.2374 & \text{Land parcel located in South Georgia} \end{cases}$$

In terms the CUVA’s effect on land use decisions, landowners in North Georgia were more likely to change their land use or sell their land than those in South Georgia if the tax savings from the CUVA program were not available. The likely reason for this is that the CUVA utilization has been particularly intense in North Georgia as the area with relatively high development pressures. Property values have increased rapidly, along with property taxes, which results in a greater difference between current use value and developed used value. When the tax savings are not available, landowners in North Georgia thus face a greater financial pressure to sell their land. Taxes in South Georgia counties are substantially lower than in North. Thus the tax savings are less critical. The result indicates that use-value assessment may be more effective in altering land-use decisions on areas under higher development pressure.

We also ran a logistic regression using stepwise selection option to find out the factors significant in predicting whether the CUVA program alters covenant holders’ land management decision. Again, the candidate factors are exactly same as those in section C.
The best model is: \[ \ln\left(\frac{P}{1-P}\right) = 2.7887 + estimator1 \times Age \]

Where P is the probability that respondents would not alter their land management

\[ 1-P \] is the probability that respondents would alter their land management

\[ estimator1 = \begin{cases} 
0.3322 & \text{Age < 45} \\
-0.7214 & \text{Age between 45 and 65} \\
0.3892 & \text{Age \geq 65} 
\end{cases} \]

Based on the model above, we found that younger and older respondents tended to have a higher probability of not altering their land management. However, respondents in their middle age respondents tended to alter their land management because of the CUVA program. Nevertheless, relatively little management change was observed.
CHAPTER SIX
CONCLUSION

The primary objective of this study was to determine covenant holders’ overall satisfaction with the CUVA program, including future land value expectations, and land management decisions initiated since their enrollment. The clearest finding is that covenant holders are quite happy to receive the tax savings offered by the program and they are quite satisfied with CUVA, which is evidenced by the covenant holders’ willingness to renew their covenant. They are continually willing to keep land at its current use in exchange for a tax break and only 5% intended to opt out of the program. The results of this study show a program that is growing in importance and use. By 2002, the program has been extremely well received by landowners with more than 80,000 covenants representing greater than 7 million acres enrolled in the program.

The majority of landowners (63%) owned land parcel size larger than 50 acres representing totally 107,724 acres and lived on a farm or in rural area. 80% of landowners managed their land under individuals and only 15% managed their land under family corporation or partnership. They are well-educated with an average annual income between $50,000 and $60,000. In addition, many of these landowners are “new”, in the sense that they have bought their land in the last twenty years.

Common management activities since their entering the CVUA program are farming/ranching, tree planting and timber harvesting. The correlations between management activities and parcel size, landowner’s age, income level, the region of tract located showed that
parcel size, region and income were positively correlated with most of the management activities and age was only negatively correlated with three activities.

With respect to landowner’s future land value expectations, landholders placed a higher value on the non-economic benefits from their land than the economic benefits. They are not eager to sell their land for a profit or for development purposes. They enjoy the green space provided by their lands and keep the land as an estate to pass onto heirs. We also found significant factors that affect the land value expectations. They are parcel size, landowner’ age, income level, education level, and the region of tract located.

Regarding the potential environmental benefits provided by land enrolled in the CUVA program, the results were not significant given the relatively low productivity of land and majority of tract were in the 10 to 24 acres class. Though it is argued that the productivity rating may be a poor proxy for environmental value of a tract, these tracts enrolled were not large enough to be operational production purposes and did not potentially provide enough habitat area for wildlife and other uses.

Furthermore, many of these landowners (54%) are “new” owners who have bough their land in the last twenty years. They were well-educated, lived in town or city, and earned more than traditional owners. Analysis regarding these two groups of owner should go further to distinguish their land management and land use expectation and to better understand how differences in land use expectation between traditional owners and “new” owners are impacting their land use decisions.

Most of landowners did not change their management practices because of CUVA and would
not change their land use or sell their land if the tax savings from CUVA are not available. These decisions are significantly affected by the region of tract and landowners’ age. Thus, we found that the CUVA program is not a major factor affecting land use decisions and the reduction in property taxes has much less effect on land use. This is consistent in the findings of early literature that differential assessment programs by themselves are not sufficient to change land use decisions. Demographic and personal factors, development expectations, primary sources of income, and the extent of local ownership may be more critical on land use decisions. Use-value assessment only has a marginal impact on land use and does not appear to be capable of substantially altering the timing or pattern of development and differential assessment alone does not constitute an effective long term commitment to farmland and forestland protection.

Generally speaking, the use value property taxation of the CUVA Program is a necessary component in maintaining rural landscape of active farms and productive forestland in Georgia. The benefits derived by farmland owners and forestland owners from the program are reflected in their popularity across the state. Yet, this current use-value program can only do so much for farmers and foresters. Product prices, production costs, the overall health of the economy, foreign competition, and the prices of land for housing and commercial uses are all important influences on the business decisions of farmers and foresters. Clearly, the CUVA program alone is not sufficient to guarantee the long-term economic viability of farmlands and forestlands.

However, it may be not necessary to completely stop land use conversion. The CUVA program would be more effective if implemented in conjunction with other land-use regulations, such as zoning, state grants, transfer of development rights, and purchase of development rights.
In addition to use-value assessment taxation's questionable ability to prevent farmland and forestland conversion, there is also concern that the policy is inequitable. Though the fiscal impact of the program has received the most attention, the survey of CUVA covenant holders neglected this issue. With the limited information provided here, apparently this will be the biggest missing issue of the research. And we only know that the study of the first five-year implementation of CUVA illustrated this by showing that tax shifts as a result of use-value assessment taxation were relatively small (Newman, et al., 2000).

The primary purposes of the CUVA program were to ease development pressure and save green space. However, the exclusion of industrial timberlands compromises the purposes. While in other states, industrial timberlands are treated as the same as other ownerships, they are assessed by the FMV and are excluded from the CUVA assessment in Georgia. This discriminating policy on large industrial timberland owners may put Georgia under a competitively disadvantageous situation. The provisions for getting into this program should be relaxed and extended to improve its effectiveness.

In addition, the administration of CUVA by county tax assessors is a major concern of landowners. Respondents did list a number of concerns about the program’s administration but most focused on difficulties in entering the program, rather than its usefulness. Apparently, with more widely utilization of CUVA across the state, county tax assessors play important roles and should be improved in the execution of their duties in the future.

Since the large majority of landowners in Georgia have no special training or enough source of information to allow them to effectively determine how to pay the legal minimum property
taxes, this study may be a good source of information for landowners to find out a way to reduce their property taxes and maintain their land in current use.
References


Boldt, Rebecca. 2002. Impact of Use Valuation on Agricultural Land Values and Property Taxes. Wisconsin Department of Revenue, Division of Research and Policy.


Appendix A: Survey Questionnaire

INSTRUCTIONS: Please answer the following questions. Answering the questions should not take more than fifteen minutes. All responses will remain confidential. Thank you for your help.

START HERE

1. Do you own or have a financial interest in the parcel of land identified on the cover letter?
   - Yes
   - No Thank you for your time. Please return the questionnaire leaving the rest of the answers blank.

2. Is this parcel of land currently in the Conservation Use Valuation Assessment (CUVA) program?
   - Yes (Skip to 3)
   - No

   A. Was the covenant terminated due to a breach of your contract?
      - Yes (Go to part B.)
      - The covenant lapsed after 10 yrs. (Skip to 3)
      - No - Was never enrolled in the program
         (Please excuse our mistake and return the questionnaire.)

   B. Why was your CUVA covenant terminated?
      - Change in ownership
      - Death of a party to the covenant
      - Sold for development
      - Sold for a non-qualifying use
      - Changed to a non-qualifying use
      - Financial hardship
      - Health issues
      - Other (Please specify_______________)
3. In what year did you acquire this land parcel? _____ (Year)

4. How did you acquire your land parcel?
   - Purchase
   - Inheritance
   - How long has the property been owned by your family? _____ Years
   - Other (Please specify _____________________________)

5. Which of the following ownership categories best describes your landholding?
   - Individual (including joint husband and wife)
   - Family corporation
   - Partnership (LP, LLP)
   - Club or association
   - Other (Please specify _____________________________)

6. What is your residency status with regards to this property?
   - It is my primary residence
   - It is my secondary residence
   - I do not have a residence on the property, I own it for other uses

7. How did you first learn of the CUVA program?
   - Friend or neighbor
   - Family member
   - Newspaper or magazine
   - Georgia Forestry Commission
   - University of Georgia Extension Service
   - Tax assessors’ office
   - Natural Resource Conservation Service (NRCS)
   - Georgia Forestry Association
   - Farm Bureau
   - Other (Please specify _____________________________)

INSTRUCTIONS: The next 7 questions relate to your experience regarding the use and management of the land parcel.

8. If the tax savings from the CUVA program were not available, would you have had to change your land use or sell your land?
9. Have you been approached by developers to sell your land since enrolling in CUVA?

☐ Yes
☐ No

10. Did the CUVA program cause you to alter the management of your land?

☐ Yes  ➔ Please explain _____________________________
☐ No
__________________________
__________________________
__________________________

11. What management actions have you performed since entering CUVA? (Please check all that apply)

☐ Tree planting
☐ Timber production
☐ Timber harvesting
☐ Pine straw collection
☐ Farming or ranching practices
☐ Leasing of hunting or fishing rights
☐ Leasing of property
☐ Wildlife management
☐ Residency
☐ Conserve green space
☐ Other (Please specify _________________________________)

12. The following is a list of possible benefits that you might expect from your land over the next 10 years. Please specify their level of importance by circling a number to the right ranging from (1) to (5), where “1” indicates the benefit is not at all important to you, and “5” indicates the benefit is very important to you. If it is somewhat less than very
important, circle “4,” etc. (Please mark a response for each item under each question)

<table>
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<tr>
<th>Importance</th>
<th>a. Increase in land value</th>
<th>b. Sell for development purposes</th>
<th>c. Sell for a profit</th>
<th>d. Timber production</th>
<th>e. Farming or ranching</th>
<th>f. Recreation</th>
<th>g. Residency</th>
<th>h. Leasing of hunting or fishing rights</th>
<th>i. Leasing of property</th>
<th>j. Enjoyment of green space</th>
<th>k. An estate to pass onto heirs</th>
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</tbody>
</table>

13. If you have been farming on this land, what crops or livestock have you produced in the last 5 years? (Please check all that apply)

- [ ] Do not farm
- [ ] Livestock
- [ ] Poultry
- [ ] Cotton
- [ ] Peanuts
- [ ] Corn
- [ ] Wheat
- [ ] Tobacco
- [ ] Soybeans
- [ ] Hay
- [ ] Pasture
- [ ] Vegetables
- [ ] Fallow
- [ ] Other (please list ______________________________________)

14. If you have harvested timber for sale from your property, in what year did you last harvest timber? _________ (Year)
INSTRUCTIONS: The following 6 questions ask about your overall satisfaction with the CUVA program.

15. What do you like about the CUVA program?
   (Please check all that apply)
   - Tax relief
   - Limits on property tax increases
   - Heirs are not encumbered by the covenant
   - Provides more equitable tax treatment of rural lands
   - Protection of green space
   - Ability to practice uses that would otherwise be financially difficult to continue
   - Other (Please specify ________________________________)

16. What do you dislike about the CUVA program?
   (Please check all that apply)
   - Difficulty gaining entry into the program
   - Signing a contract with the government
   - Limited management activities
   - Contract time was too short
   - Contact time was too long
   - Penalties for breaking contract are too high
   - Penalties for breaking contract are too low
   - Limited acreage allowed in program
   - Other (Please specify ________________________________)

17. Did you experience any difficulty entering your land parcel into the CUVA program?
   - Yes ➡ Please explain ________________________________
   - No ________________________________

18. Did you appeal the assessed value of your land in any of the 5 years prior to enrolling in CUVA?
19. Please indicate your overall level of satisfaction with the CUVA program?

☐ Completely satisfied
☐ Somewhat satisfied
☐ Neither satisfied nor dissatisfied
☐ Somewhat dissatisfied
☐ Completely dissatisfied

20. Will you renew your CUVA contract when it expires?

☐ Yes
☐ No → Please explain ________________________________

21. Do you have additional parcels of land in the CUVA program?

☐ Yes → How Many _____ Total Acres ______
☐ No

22. Do you have other land parcels in the Agricultural Preferential Program?

☐ Yes → How Many _____ Total Acres ______
☐ No

23. How many total acres of land do you own in Georgia? _____ Acres

24. Are these acres dispersed across multiple counties?

☐ Yes
☐ No
25. How many of these acres are eligible for CUVA? _____ Acres

26. Did you elect to keep a portion of your eligible land out of the CUVA program?

☐ Yes → Please explain _____________________________

☐ No _____________________________

INSTRUCTIONS: The following 8 questions are asked to ensure proper classification to the above questions by categories such as age, occupation, and income. Please be as accurate as possible. If you need space to expand on any of your answers, use the space at the end of the questionnaire. Again, your answers are strictly confidential and only statistical tabulations will be published. No information that could identify you, as an individual will ever be published.

If more than one person owns your CUVA land parcel, then the following questions should be answered by the primary decision maker.

27. What is your age?

☐ under 25
☐ 25-34
☐ 35-44
☐ 45-54
☐ 55-64
☐ 65-74
☐ 75 and over

28. What is your primary occupation?

_____________________________________________ Occupation

29. What is the approximate annual gross income of your household?

☐ $10,000 or less
☐ $10,001 to $20,000
☐ $20,001 to $35,000
30. What is the highest level of education that you have attained?

- Less than high school graduate
- High school graduate
- Vocational / technical school
- Some college
- College graduate
- Post-graduate education

31. Where is your primary residence located?

- Farm
- Rural area, not a farm
- Town (under 10,000 inhabitants)
- Small city (10,000 to 100,000 inhabitants)
- Large city (over 100,000 inhabitants)

32. What is your marital status?

- Married
- Single
- Divorced
- Widowed

33. Would you be willing to participate in an in-depth, follow-up interview with a researcher regarding this survey? (Your identity would remain confidential in any published survey results)

- Yes Please write your address and phone number
- No in the spaces provided at the end of the questionnaire.

34. Do you wish to receive a copy of the results of this survey?
Yes  Please fill in your address and phone number below
No

I am providing my name and address in order to

☐ Indicate my willingness to participate in a follow-up survey
☐ Receive a copy of the survey results
☐ Both

Name:  ___________________________________________________
Address: __________________________________________________
Daytime phone:  ____________________________________________
Signature:  _________________________________________________

Thank you for taking the time to complete this survey. Your responses are very important to us. Please feel free to include any comments below.

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
Appendix B: Cover Letter

September 9th, 2002

«Name»
«Address»
«City», «State». «Zip»
Property Parcel #  «Parcel»   # Acres «Acres»

With the arrival of the 10th anniversary for the Conservation Use Valuation Assessment (CUVA), the University of Georgia's Warnell School of Forest Resources is performing a study titled, “An Evaluation of Georgia's Conservation Use Valuation Assessment Program.” The study's primary aim is to determine covenant holders' overall satisfaction with the CUVA, including future expectations, land management practices, and other information.

We are contacting a random sample of covenant holders across the state to complete a short survey to help in the evaluation of the program. With information obtained from your county's tax assessor's office, it is our understanding that the land parcel identified above is either currently or was previously enrolled in the CUVA program. Results from the survey will be used to evaluate how well the CUVA program is meeting your needs and what if any policy changes are necessary. The data received will be compiled and assimilated into a report on the program and its impacts on Georgia.

This is a voluntary survey in which your answers will be kept completely confidential. The results will be used for statistical purposes only in which no individual's answers can be identified. All identifying information will be destroyed after the study is completed. We hope you will take a few minutes to share your experience and opinions on the enclosed survey. If for some reason you prefer not to respond, please let us know by returning the blank questionnaire in the enclosed stamped envelope.

We have enclosed a small token of appreciation as a way to let you know how grateful we are for your input to our research.

We appreciate your effort in contributing to the best possible outcome of the survey. Please feel free to contact either David Newman (706-542-7649) or Dawn Black (706-542-4298) with any questions you may have regarding this study. We may also be contacted via e-mail at dnewman@arches.uga.edu or dblack@forestry.uga.edu.

Thank you in advance for your cooperation and we look forward to hearing from you soon.

Sincerely yours,
Appendix C: reminder postcard

September 17th, 2002

Last week a questionnaire was mailed to you regarding your experience with the Conservation Use Valuation Assessment (CUVA) Program. Your name was drawn randomly from a list of covenant holders throughout the state.

If you have already completed and returned the questionnaire, please accept our sincere appreciation. If not, please do so today. We need your input so that we can determine how well the CUVA program is meeting the needs of covenant holders and the people of Georgia.

If you did not receive a questionnaire, or if it was misplaced, please call us at 706-542-4298 and we will promptly mail a replacement to you.

David H. Newman
Professor

Dawn L. Black
Research Coordinator
Appendix D: appreciation letter

January 2, 2003

Dear Georgia Covenant Holder;

Recently, you participated in a survey of CUVA (Conservation Use Valuation) covenant holders, conducted by the University of Georgia's Warnell School of Forest Resources. In response to the survey, you expressed an interest in receiving a copy of the results of the study. We are writing you to inform you that the results are in and are attached with this letter. Please note that all responses reported are for statistical purposes only in which no individual's answers can be identified.

A total of 1320 surveys were mailed to a random sample of covenant holders throughout the state and we are pleased to report that we received an overwhelming response rate of 61%. The results from the survey are largely self-explanatory. The clearest finding is that you, the covenant holders are generally happy to have a tax-reduction program like the CUVA that you could take advantage of. While there are a number of concerns that you raise regarding the program's administration, the value of the program is apparent. Be assured, that the sentiments that you have expressed will be passed on to the Department of Revenue. The final page contains a compilation of selected comments from the surveys. These comments were selected because they represent the most common opinions of the covenant holders that were expressed to us.

Over the coming months, we will be performing further statistical analyses of the results; however, we want to inform you that all identifying information will be destroyed after the study is completed. We truly appreciate your valuable responses, as they made our study a success!

Best wishes in the New Year and thank you once again for your participation.

Sincerely yours,

David H. Newman   Dawn L. Black
Professor        Research Coordinator

For questions or problems about your rights please call or write: Chris A. Joseph, Ph.D., Human Subjects Office, University of Georgia, 606A Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-6514; E-Mail Address IRB@uga.edu.
Appendix E: selected comments

I wish county tax offices would have a better attitude towards people who want in the program!

I appreciate the tax break I receive from this program.

CUVA is Vital to farm operations of all kinds. I don't know what farmers would have done without it, especially in rapidly developing areas.

CUVA is valuable for land preservation except that taxes that are established in the beginning of joining CUVA. Taxes should remain the same throughout the term and not increase.

There is too much red tape to keep you out of the CUVA program or to kick you out.

Letting county tax assessors administer the program is a mistake because they discourage the program.

I believe this program is very important and should be continued.

I would like more background information such as; what uses the land can be put to. For example, timber will soon need harvested.

Our local tax assessor's office is either incapable or unwilling to provide accurate information regarding covenant eligibility or penalties involved in breaking contracts.

In 1996, my brother and I sold some land that is still used as farming; however, we were penalized over $3000 for breaking the contract.

We stayed out of CUVA till reassessments in 1999 caused annual expenses to exceed annual income. The tax savings alone caused the negative cash flow to change to a positive cash flow.

Someone needs to completely explain the “do's & don'ts” of CUVA.

The splitting of large parcels should be allowed so that some parcels can be in the program and some out. Heirs should be able to opt out of the program upon receipt of the property.

CUVA is great for someone in our position. We would like to keep the area around us in its natural state but land prices and taxes are rising so rapidly.

Uncaring profit driven developers are steadily ruining our remaining large tracts of land and have no regard to how bad they chop-up our county!
I was very happy to hear about this program and immediately checked into it. The program was all gain for me, as I did not plan to sell any property.

I do not like only being able to enter the program in Jan. or Feb. of each year.

I am happy with the benefits CUVA provides but not with the assessors. They raise taxes so high that people have to sell land to pay taxes.

Any savings in ad valorem tax is offset by increase in school tax!

The tax break is especially nice since the Pine Beetle hit us hard last year.