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FOR 57

Understanding County Forest Property Value Assessments [1]

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Florida Statute 193.461 (Agricultural Lands, Classification and Assessment, also known as the "Greenbelt" law) empowers county property appraisers to classify and assess the value of agricultural land-- including forest land--differently from non-agricultural land. Using DOR guidelines as a basis, this document explains how forest land is assessed by county appraisers.

History

Counties in Florida assess land values and collect property taxes to finance local governments. Monies collected from property taxes in Florida are used to fund public services, schools, and the water management districts. All land in Florida was once subject to the traditional ad valorem property tax. This tax was annually assessed on the basis of the land's fair market value in highest and best use.

In 1959 the Florida legislature created a separate classification for agricultural land, including forestry. The traditional fair market appraisal for agricultural and forestry land was changed for three reasons: 1) it was inconvenient because it mandated annual assessments even though forest properties did not provide annual incomes; 2) it was not neutral because it encouraged shorter rotations or lower residual stocking; and 3) it was not equitable since it took a disproportionately large share of income from deferred timber yields. For forest land, the traditional fair market value assessment approach would reduce the incentive to produce timber. If landowners are assessed and paying taxes based on a properties' highest and best use, then it makes economic sense for them to convert rural lands into more intensive and profitable uses.

Given the importance of agriculture to the economy and environment of Florida, the legislature saw the need to moderate assessments for agricultural use, including forestry. As a result the "Greenbelt" law was instituted with the intent to provide taxation on agriculture and forestry land that makes it economically possible to continue such usage. As will be explained below, the procedure for assessing forest lands in Florida is based on current use value instead of fair market value.

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Administering Forest Lands Assessments

The assessments are administered and applied at the county level by the county property appraiser. The state's Department of Revenue (DOR) is responsible for seeing that the assessments are applied fairly and consistently. DOR reviews the Property Appraiser's assessment roll to determine whether the assessed values reflect current values. DOR provides guidelines to assist county property appraisers in assessing agricultural-forestry property. County property appraisers are not required to follow the guidelines *verbatim;* but the overall assessment ratio for their agricultural properties must be within 90% of the values determined by DOR.

Deriving Forest Land Assessments

Agricultural and forestry land, under the "Greenbelt" law, is valued based on its current use. Forest land has value because of its productivity and its ability to generate income. That's why property appraisers use an income appraisal approach. This approach capitalizes (or discounts) anticipated net timber income. Using this approach one calculates the current value of the income stream the property is expected to generate. This assessment is based on the present value of a future income or the site's "productive value." The more productive lands are assessed higher than less productive lands.

Another way to think about the income appraisal approach is that forest land value is based on the average annual growth potential from seedling to economically mature timber, also known as "annual equivalent basis". It is what the landowner would be making if a timber crop could be sold on an annual basis rather than once every 20-30 years. In other words it is roughly a fixed amount annually (in real terms), regardless of the amount of standing timber. The annual income is "capitalized" to determine the net present value of the land based on what the owner could make continuing the present management scheme forever. This is also known as discounting a future value back to the present for an infinite number of rotations. The formula for this method is simply:

$$Current\ value = \frac{income\ stream}{capitilization\ rate}$$

The income stream is the financial returns minus the management and other costs. To determine financial returns one needs the following information:

- site index,
- timber yields,
- stumpage prices,
- management, and other costs

Who determines the values that go into the formula? The county property appraiser is responsible for determining the values of the variables for every parcel of land eligible for agricultural-classified use assessment.

How does the appraiser derive values for these variables? The next sections show the steps in the process. The following example is used to highlight the appraisal approach.

In our example, a landowner who owns 80 acres applies for agriculture classification. The appraiser would usually begin by examining the tract by visiting the site and looking at maps to determine the various land uses, and what percentage of the tract is forest land. Figure 1 is a diagram of the tract the appraiser examines.

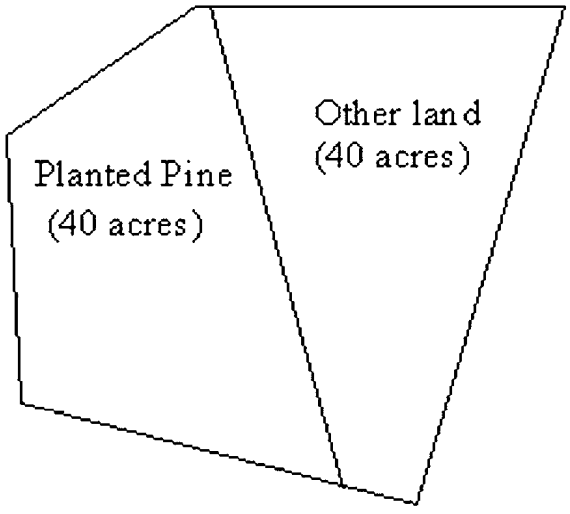

Figure 1. An example of an 80 acre tract with 40 acres in planted pine.

The appraiser determines that 40 acres is a pine plantation.

Site Index (soil productivity). Once the county property appraiser has determined the extent of the forest land, the forests are classified by site productivity. A site is productive if:

- it is capable of producing a crop of wood,
- is economically accessible, and
- is in an area which permits the production of wood.

Once a site is determined to be productive, it is further classified by its soil productivity. Generally for timber land a site index is used. A site index is an index of the average total height of the dominant tree at a certain age--usually 25 or 50 years. The higher the site index the better the soil is for growing timber. Since the assessment is based on productivity and potential income, the higher the site index, the higher will be the assessed value.

In Florida, pine is the dominant managed species and comprises most of the commercial timberland. In order to simplify the process the DOR guidelines use slash pine at age 50 as the basis for determining pine site index.

For classification purposes the forests are either pine or non-pine forests. Pine forests can be planted or natural. Figure 2 illustrates the breakdown of forest land classes:Non-pine forests can be mixed, swamp, bottomland hardwood, or non-productive lands. In the example given earlier the 40 acres of forest land is all in pine plantation with a site index of 75.

Finally, Table 1 shows what a county appraiser might use for a site index for pine forests.

Yields. Yield is the volume of wood produced. It depends on planting rate, site productivity, and survival. Yields are derived on an annual basis (total yield divided by rotation age). Tables with the site index provide annual growth increments in cords per acre per year. These tables are derived from data collected in north Florida and south Georgia. The yields are "potentially" what can be expected from

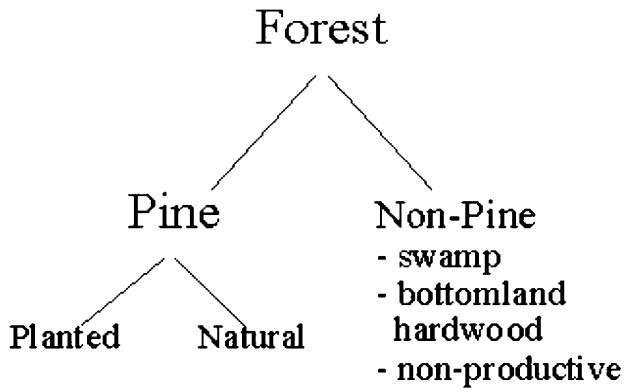

Figure 2. Breakdown of forest land classes.

Table 1. Pine Forest Type Classification

Pine Forest Type Classification	Site Index (Base 50)	Sub-Classification
Timberland I	90 and above	Natural Planted
Timberland II	80-89	Natural Planted
Timberland III	70-79	Natural Planted
Timberland IV	60-69	Natural Planted
Timberland V	50-59	Natural Planted

that site. A variety of site specific conditions could increase or decrease the actual yields.

Yield tables are different for natural pine, planted pine, and hardwoods. Also, rotation ages are different for different species. Since pine is the dominant commercial species, the guidelines suggest using 30- year rotation age for estimating pine volume. Non-pine site volumes are dependent on the sites. For example, mixed (pine-hardwood) forests are valued as if they are in stands of pine, i.e., same base rate per acre; and then they are conditioned by a factor representing the percentage of pine. In other words, no specific volume calculations are made for mixed stands. For swamp forests, however, a yield table is used.

In the example given earlier (see Figure 1), the tract is only planted pine. For the 40 acres of planted pine on site index 75, yields on a 30-year rotation are 1.10 cords/acre per year.

Stumpage prices. Stumpage is the price paid to the landowner for the value of the tree as it stands in the forest. This price must be multiplied by the volume (yield) in the value equation. Determining the price of timber decades in the future is virtually impossible. Also, prices paid for stumpage vary quite considerably throughout the State and from year to year. The guidelines suggest that the stumpage price used for pine be the fair market value of the timber sold on the open market within the county during the prior year, a number available on January 1 each year. Factors affecting stumpage prices include: patterns and size of land ownership, distances to mills, method of cutting, accessibility to site, volume harvested, quality of raw product, and other external market situations.

The stumpage price may reflect the value for all forest products. Longer grown timber such as saw or pole wood would have a higher stumpage price than pulpwood. However, usually pulpwood prices are used since this is the major forest product in Florida. Current local stumpage prices can be obtained from these sources: property owners, industry representatives, forestry consultants, timber brokers, and the Division of Forestry. Regional prices may be obtained from various commercial sources.

In the example, the stumpage prices for pulpwood in the county averaged at $36/cord for the previous year.

Forest management costs. There are two types of management costs in forest land appraisals: site improvements and annual recurring costs. Improvements are site preparation and planting. Site preparation costs can vary substantially. Least expensive would be natural regeneration. Usually, planted stands involve mechanical and/or chemical preparations which can cost as much as $300 per acre including planting. Site preparation costs also vary by soil types. Costs may be lower for counties with predominately upland sites compared to those with mostly flatwood sites where more intensive site preparation may be needed. The improvement costs are prorated (cost/rotation age).

Annual recurring costs include management, overhead, and maintenance costs to prevent insect or disease outbreaks, fire, or natural disasters. Also included are any other costs directly associated with the operation of forest lands to achieve maximum productivity.

Each county collects cost data from consultants, contractors, the Division of Forestry, industry and private forest operations. Current annual costs based on the prior calendar year are used. The amount used for expenses should be based on the typical operation (that which frequently exists or occurs in the particular situation or area under consideration). Property taxes are not included in annual management costs since they are a component of the capitalization rate (see below).

In the example, reforestation costs per acre were $180. This is divided by the 30 year rotation to equal $6 per acre per year. Total annual costs per acre are $12.50. This includes $6/acre/year reforestation costs, and $6.50/acre/year management costs.

Capitalization Rates. The capitalization rate is based on an interest rate for agricultural real estate loans, with adjustments for loan costs, stock purchase requirements, etc. It is used in the income appraisal approach to determine present worth of future value of income. The rate should approximate an expected return on the income stream. A true rate would be what the owner could receive if the land was sold and the proceeds invested. The band of investment method is used to calculate the rate. This method takes mortgage debt financing information by weighing fractional rates of mortgages and equity. The overall capitalization rate is the summation of mortgage, equity and the local millage rate. Mortgage rates are obtained from published rates of major agricultural real estate lenders in Florida. Equity is obtained by comparing equity yields from similar risk investments. The local millage rate is the individual counties *ad valorem* millage rate.

In our example, the capitalization rate is 12.75%.

Assessed Value and Property Tax. Now we have all the components of the formula needed to derive the assessed value and determine the property tax on the 40 acres of planted pines.

Recapping our example, we have compiled the following information for assessing the value of the forests on the 40 acres of planted pine:

- Site productivity. A site index of 75.
- Yield. Yield per acre per year is 1.10 cords.
- Prices. Pulpwood prices in the county were $36 per cord for the prior calendar year.
- Costs. Total costs are $12.50 per acre per year. This comes from:
    1. Local one time out-of-pocket improvement (reforestation) costs of $180/acre. This amount divided by the 30-year rotation equals $6/acre/ year.
    2. Local annual recurring management costs average $6.50 acre/year.
- Capitalization rate. The rate is 12.75%.

Applying the formula:

$$Current\ value = \frac{(yields\ x\ prices)\ -\ costs}{capitilization\ rate}$$

We get:

$$Value = \frac{(1.10\ cords/acre/yr\ x\ \$36/cord)\ -\ \$12.50/acre/yr}{0.1275}$$

$$Value = \frac{\$39.60\ -\ \$12.50}{0.1275}$$

$$Value = \$212.55/acre$$

And this result: The forest land is rounded off and valued at $210/acre. This is the taxable base.

This takes us to the final math steps, the calculation of the actual property tax. The taxing authority in the county (the county and or city commission, not the property appraiser) sets the millage rate sufficient to cover the tax dollars necessary to fund their annual budget. A mill is 1000th of one dollar (or a 10th of one cent); while the tax rate is the millage rate multiplied by the value of the acre.

After the taxing authority sets the rate, the Property appraiser calculates the amount of taxes due, and then sends the information to the tax collector.

Look at our example, assuming the millage rate is 0.020:

Property tax = 0.02 x $210 = $4.20 per acre.

For the 40 acres of planted pine in our example, the owner will be taxed $4.20 x 40 acres = $168.

Applying for Agricultural Classification

The forest landowner applies for agricultural classification at the county property appraiser's office. Each county has the power to interpret the qualification criteria somewhat differently. The appraiser will visit the site and determine whether or not the land is used for agricultural purposes. Some appraisers may request that the landowner supply a forest management plan to qualify for the classification. Some factors that the appraiser may consider are as follows:

- The length of time the land has been in the use;
- Whether the use has been continuous;
- The purchase price paid;
- Size as it relates to specific use, and;
- Whether an indicated effort has been made to care sufficiently and adequately for the land in accordance with accepted "forestry" practices. This may include reforestation or other site preparation and management activities.

Appealing an Appraisal

Markets, prices, and costs for managing forests change constantly. Furthermore, each forest is different as a result of natural conditions and past management. Forest land appraisal is complex, and each aspect of the formula and process for deriving the current use value is subject to variation. Property appraisers are required by law to make a strong effort at assessing timberland fairly and accurately.

There are time constraints: every year, the appraiser must account for changes in values, as of January 1. Annually, about August or September, the property appraiser sends a Notice of Proposed Property Taxes to all property owners. Should a landowner disagree with an appraisal, or a denial of Agricultural Classification, there is an appeal procedure to follow.

The first step in appealing is to contact the county property appraiser. Further details can be obtained from the appraiser's office, or refer to Chapter 194 in the Florida Statutes.

Conclusion

In counties where forestry or agriculture is a major land use, the Agricultural Classification does affect the tax revenue base. However, Florida's food and fiber sectors are major contributors to the economy. Also, taxes on agricultural land account for a large proportion of property tax dollars. In 1996, over 227,000 parcels in Florida received an agricultural classification. DOR reported for 1996 that total agricultural classified property values were over $8 billion. This is about one-third of the agricultural land's market value.

Florida has among the lowest forest land tax rates in the South. The Florida Legislature has committees to look at ways to improve agricultural property assessment. In addition, the Florida Forest Association has a task force to inform and educate landowners about the assessment process.

Further Information

Contact:

1)Your county property appraiser.

2)Department of Revenue
P.O. Box 3000
Property Tax Administration
Tallahassee, FL 32315-3000.

3)Florida Forestry Association
P.O. Box 1696
Tallahassee, FL 32302.