

GEORGIA DEPARTMENT OF REVENUE

LOCAL GOVERNMENT SERVICES

DIVISION



Timber Regulations

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Revised August 2017



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Introduction

In 2004, the Rules and Regulations of the State of Georgia were revised to include language which detailed more definitively the considerations and steps that a Board of Assessors and the appraisal staff must adhere to in the construction of schedules to be used in the valuation of Rural Land. Some of the more important items related to the valuation of Rural Land and addressed in the regulations include:

1. revised definitions
2. time period from which sales are to be used
3. use of sales outside of county boundaries
4. definitive list of property characteristics to be maintained
5. extraction of timber value from sales
6. calculation of size adjustments
7. determination of size adjustments through absorption methodology

The following pages contain State Rules and Regulations Chapter 560-11-10 which is most often referred to as the Appraisal Procedures Manual (APM). The remaining portion of the manual provides insight into the application of the Rules and Regulations found in the APM.



Chapter 560-11-10 Appraisal Procedures Manual 560-11-10-.01 – 560-11-10-.10

560-11-10-.01 Purpose and Scope

(1) Purpose

This appraisal procedures manual has been developed in accordance with Code section 48-5-269.1 which directs the Revenue Commissioner to adopt by rule, subject to Chapter 13 of Title 50, the "Georgia Administrative Procedure Act," and maintain an appropriate procedural manual for use by the county property appraisal staff in appraising tangible real and personal property for ad valorem tax purposes.

(2) Specific procedures

In order to facilitate the mass appraisal process, specific procedures are provided within this Chapter which are designed to arrive at a basic appraisal value of real and personal property. These specific procedures are designed to provide fair market value under normal circumstances. When unusual circumstances are affecting value, they should be considered. In all instances, the appraisal staff will apply Georgia law and generally accepted appraisal practices to the basic appraisal values required by this manual and make any further valuation adjustments necessary to arrive at the fair market values.

(3) Board of tax assessors

The county board of tax assessors shall require the appraisal staff to observe the procedures in this manual when performing their appraisals. The county board of tax assessors may not adopt local procedures that are in conflict with Georgia law or the procedures required by this manual. The county board of tax assessors must consider the appraisal staff information in the performance of their duties. In each in-stance, however, the assessment placed on each parcel of property shall be the assessment established by the county board of tax assessors as provided in Code section 48-5-306.

(4) Other appraisal procedures

The appraisal staff may use those generally accepted appraisal practices set forth in the Uniform Standards of Professional Appraisal Practice, published by the Appraisal Foundation, and the standards published by the International Association of Assessing Officers, as they may



be amended from time to time, to the extent such practices do not conflict with this manual and Georgia law.

560-11-10-.02 Definitions

(1) Definitions.

When used in this Chapter, the definitions found in this Rule shall apply.

(a) Absorption rate

"Absorption rate" means the rate at which the real estate market can absorb real property of a given type.

(b) Appraiser

"Appraiser" means a member of the county appraisal staff, who serves the board of tax assessors and whose position was created pursuant to Part 1 of Article 5 of Chapter 5 of Title 48 of the Official Code of Georgia Annotated. This term does not limit its meaning to a single appraiser and may mean one or more members of the county appraisal staff.

(c) Basic cost approach

"Basic cost approach" means a cost approach procedure, used in the mass appraisal of personal property, which uses standard estimates of the most common factors affecting the value of such property. The basic cost approach is intended to provide a uniform estimate of personal property value.

(d) Depreciation

"Depreciation" means the loss of value due to any cause. It is the difference between the market value of a structural improvement or piece of equipment and its reproduction or replacement cost as of the date of valuation. Depreciation is divided into three categories, physical deterioration, functional obsolescence, and economic obsolescence. Depreciation may be further characterized as curable or incurable depending upon the difficulty or practicality of restoring the lost value through repair or maintenance.

(e) Economic life

"Economic life" means the period during which property may reasonably be expected to perform the function for which it was designed or intended.



(f) Economic obsolescence

"Economic obsolescence" means a form of depreciation that measures a loss of value from negative influence external to the real or personal property. It results when the desirability or useful life of real or personal property is impaired due to forces such as changes in optimum use, legislative enactment that restricts or impairs productivity, and changes in supply and demand relationships. Economic obsolescence is normally incurable.

(g) Effective age

"Effective age" means the age of an improvement to property as compared with other property performing like functions. It is the actual age less the age that has been taken off by face-lifting, structural reconstruction, removal of functional inadequacies, modernization of equipment, and similar repairs and overhauls. It is an age that reflects a true remaining life for the property, taking into account the typical life expectancy of buildings or equipment of its class and usage.

(h) Fair market value

"Fair market value" means fair market value as defined in Code section 48-5-2 (3).

(i) Final assessment

"Final assessment" means the assessed value of real property as stated on the Annual Notice of Assessment as approved by the Board of Assessors. Amendments to "Final assessment" for real property are prohibited absent a clerical error or some other lawful basis; and in the case of personal property, the appraisal staff has completed its audit of the personal property pursuant to Rule 560-11-10-.08(4)(d) within the three year statute of limitations.

(j) Functional obsolescence

"Functional obsolescence" means a form of depreciation that measures a loss of value from a design deficiency or appearance in the market of a more innovative design. Some functional obsolescence may be curable and some functional obsolescence may be incurable.

(k) Inventory

"Inventory" means goods held for sale or lease or furnished under contracts for service; also, raw materials, work in process or materials used or consumed in a business.

(l) Large acreage tract

"Large acreage tract" means a rural land tract that is greater in acreage than the small acreage break point.



(m) Mass appraisal

"Mass appraisal" means the process of valuing a universe of properties as of a given date using standard methodology, employing common data and allowing for statistical testing.

(n) Most Recent Arm's Length Sale

As referenced in OCGA 48-5-2(3), transactions must occur prior to the statutory date of valuation to be eligible for the value limitations imposed in 48-5-2(3). Furthermore, where the exchange of property is defined as an arm's length transaction, the sum of the value of the exchanged real estate property components, land and improvements, in the year following the property exchange shall not exceed the transaction's sale price adjusted for non-real estate values such as but not limited to, timber, personal property, etc. The adjustment to the value of the real estate shall remain in effect for at least the digest year following the transaction. With respect to changes in the exchanged real estate property components since the time of exchange (sale date), the value of new improvements, value of additions to existing improvements (footprint of exchanged structure has been altered), major remodeling or renovations to existing structures (footprint of exchanged structure has not been altered), and adjustments to land due to consolidation of tracts, new surveys, zoning changes, land use changes, etc. shall be added to the sales price adjusted values. In the event an exchanged real estate property structure is renovated or re-modeled, the term major shall be construed such that both the property owner and BOA would reasonably conclude a major renovation/remodeling has occurred. If either party, acting reasonably, could debate that the renovation/remodeling effort was not major in nature, the renovation/remodeling effort does not qualify and shall not be added to the sales price adjusted values. Any modifications made to the exchanged real estate property after the sale date that result in a lower value of the exchanged property shall be considered in the final valuation of property for the digest.

(o) Original cost

"Original cost" means, in the case of machinery, equipment, furniture, personal fixtures, and trade fixtures in the hands of the final user, all the direct costs associated with acquiring, transporting and installing such property at the site where it is to be used. This includes the cost of the property to the property owner, the cost of transporting the property to its present site, the cost of any on-site assembly or customized modification of the property, the cost of installing the property, the cost of installing personal fixtures and trade fixtures necessary for the proper operation of the property, and any sales or use tax paid on the property. Original cost is equivalent to original cost new if the property owner was the first to put the personal property into service.



(p) Original cost new

"Original cost new" means, in the case of machinery, equipment, furniture, personal fixtures, and trade fixtures in the hands of the final user, all the direct costs associated with acquiring, transporting and installing such property at the site where it is to be used. This includes the historical cost of the property at the time it was first put into service new, the cost of transporting the property to its present site, the cost of any on-site assembly or customized modification of the property, the cost of installing the property, the cost of installing personal fixtures and trade fixtures necessary for the proper operation of the property, and any sales or use tax paid on the property. Original cost new is equivalent to original cost if the property owner was the first to put the personal property into service.

(q) Paired sales analysis

"Paired sales analysis," means the comparing of the sale prices of similar properties, some with and some without a particular characteristic, in order to determine what portion of the difference in sales price might be attributable to such characteristic.

(r) Personal fixtures

"Personal fixtures" means personal property that has been set-up or installed on land or in a building or in a group of buildings and is not permanently attached to such land or buildings. A consideration for whether personal property is a personal fixture is whether its removal would cause significant damage to such property or to the real property on which it has been set-up or installed. The term personal fixtures shall not include trade fixtures. Personal fixtures are classified as personal property. Examples of personal fixtures are desks, shelving, display cases and gondolas.

(s) Personal property

"Personal property" means tangible personal property that may be seen, weighed, measured, felt, or touched or which is in any other manner perceptible to the senses. Personal property shall include trade fixtures. For the purposes of this Rule, personal property shall not include the capital stock of all corporations; money, notes, bonds, accounts, or other credits, secured or unsecured; patent rights, copyrights, franchises, and any other classes and kinds of property defined by law as intangible personal property.

(t) Physical deterioration

"Physical deterioration" means a form of depreciation that measures the loss of utility of real or personal property over time from wear and tear, age, and exposure to the elements. Some physical deterioration may be curable and some physical deterioration may be incurable.



(u) Ready market

"Ready market," means a market, possibly global, where exchanges of machinery, equipment, personal fixtures and trade fixtures occur with such regularity and under such conditions as to provide a reliable measure of fair market value. Five conditions that may indicate a ready market are: the items of personal property being sold within the market are reasonable substitutes for each other; there are an adequate number of buyers and sellers of the personal property in the market, no one of whom can measurably affect price; there is an absence of artificial restraints and unusual incentives in the market; the item of personal property is reasonably free to be moved where it will receive the greatest return and buyers are reasonably free to buy where the price is lowest; and buyers and sellers are knowledgeable and informed about market conditions.

(v) Real estate

"Real estate" means the physical parcel of land, improvements to the land, improvements attached to the land, real fixtures and appurtenances such as easements.

(w) Real fixtures

"Real fixtures" means personal property that has been installed or attached to land or a building or group of buildings and is intended to remain permanently in its place. A consideration for whether personal property is a real fixture is whether its removal would cause significant damage to such property or to the real property to which it is attached. The term real fixtures shall not include trade fixtures. Real fixtures are classified as real property. Examples of real fixtures are plumbing, heating and cooling, and lighting fixtures.

(x) Real property

"Real property" means the bundle of rights, interests, and benefits connected with the ownership of real estate. Real property does not include the intangible benefits associated with the ownership of real estate, such as the goodwill of a going business concern.

(y) Replacement cost

"Replacement cost" for real property means the cost required to construct a similar structure with like utility as the subject property using modern design, materials, and workmanship. Replacement cost for personal property means the current cost of a similar new item having the nearest equivalent utility as the subject property.



(z) Reproduction cost

"Reproduction cost" for real property means the cost required to construct an identical or exact replica structure of the subject property. Reproduction cost for personal property means the current cost of duplicating an identical new item.

(aa) Residual value

"Residual value" means the value of personal property that is at the end of its normally expected economic life but still in use.

(bb) Rural land

"Rural land" means any land that that normally lies outside corporate limits, planned subdivisions, commercial sites, and industrial sites.

(cc) Salvage value

"Salvage value" means the value of personal property that is at the end of its normally expected economic life and has been taken out of use.

(dd) Small acreage break point

"Small acreage break point" means the point, expressed as a number of acres, at which the slope of a trend line, drawn through the plotted qualified sales of rural land on a graph, reflects a distinct and pronounced change. Such graph uses the dollars per acre on the vertical axis and numbers of acres on the horizontal axis. The small acreage break point should show the point below which the market factors of accessibility and desirability of the land primarily influence value, and above which the productivity of the soil and suitability for timber growth primarily influence value.

(ee) Small acreage tract

"Small acreage tract" means a rural land tract that is equal to or smaller in acres than the small acreage break point.

(ff) Tax situs

"Tax situs" means the location of personal property for ad valorem tax purposes.

(dd) Trade fixtures

"Trade fixtures" means fixtures that are owned and temporarily installed or attached to a rented space or building by a tenant and used in conducting a business. For personal property



to be classified as trade fixtures the lease or rental agreement has to show intent for the fixtures to be removed by the owner at the termination of the lease. Fixtures that revert to the landlord when the lease is terminated are not trade fixtures. Property shall not be classified as a trade fixture when the cost of removal, or damage that removal would cause to the realty, or to the fixture itself, clearly indicates that a tenant is unlikely to remove such fixture at the termination of the lease. Trade fixtures shall be classified as personal property.

(hh) Transitional real property

"Transitional real property" means any real property that is undergoing a change in use, such as residential, agricultural, commercial, or industrial, and has not been firmly established in its new use. Change in use may be evidenced by recent zoning changes, purchase by a known developer, affidavits of intent, or close proximity to property exposed to these market factors.

(ii) Trend

"Trend" means an observable tendency of behavior such as stable economic direction over extended periods despite temporary fluctuations.

560-11-10-.09 Real Property Appraisal

(1) Real property - Introduction

The appraisal staff shall follow the provisions of this Rule when performing their appraisals of real property. Irrespective of the valuation approach used, the result of any appraisal of real property by the appraisal staff shall conform to the definition of fair market value.

(a) General valuation procedures.

The appraisal staff shall consider the sales comparison, cost, and income approaches in the appraisal of real property. The degree of dependence on any one approach will change with the availability of reliable data and type of property being appraised. The appraisal staff may express the final fair market value estimate to the board of tax assessors in numbers that are rounded to the nearest hundred dollars.

(b) Real property identification.

The appraisal staff shall identify real property, determine its taxability, and classify it for addition to the county ad valorem tax digest in accordance with this subparagraph.



1. Distinguishing real property.

The appraiser shall be required to correctly identify real property and distinguish it from personal property where the proper valuation procedures, as set forth in this Rule, may be followed.

(i) Real property examples.

As used in this Rule, real property shall be that property defined in Rule 560-11-10-.02(1)(w). This Rule shall provide illustrations to assist the appraiser in the proper interpretation of the definition. However, these illustrations should not be construed in a manner that conflicts with the definition. Examples of real property are tangible items such as land, all improvements attached to land, real fixtures, and leasehold interests in real property.

(ii) Identification of real fixtures.

When property the appraiser believes to be a real fixture has not been returned by the landlord, the appraiser shall require the landlord to produce their lease agreement and shall carefully review the agreement before making their recommendation to the board of tax assessors regarding the classification and taxability of the property in question. The appraiser shall inform the landlord that they may redact, at their option, any information relating to the payments that are required by the lease agreement.

2. Assessment date.

Code section 48-5-10 provides that each return by a property owner shall be for property held and subject to taxation on January 1 of the tax year. The appraisal staff shall base their decisions regarding the taxability, uniform assessment, and valuation of real property on the circumstances of such property on January 1 of the tax year for which the assessment is being prepared. When real property is transferred to a new owner or converted to a new use, the circumstances of such property on January 1 shall nevertheless be considered as controlling.

3. Classification.

The appraisal staff shall classify real property as provided in Rule 560-11-2-.21 for inclusion in the county tax digest. Real property may be further stratified and categorized as appropriate for aggregating comparable properties for an appraisal.

(2) Return of real property.

In accordance with Code section 48-5-299 (a), the appraisal staff, on behalf of the board of tax assessors, shall investigate diligently and inquire into the property owned in the county, for the purpose of ascertaining what real and tangible personal property is subject to taxation in the



county and to require the proper return of the property for taxation. The appraisal staff shall make such investigation as may be necessary to determine the value of any property upon which for any reason all taxes due the state or the county have not been paid in full as required by law. In all cases where taxes are assessed against the owner of property, the appraisal staff shall prepare a proposed assessment on the property according to the best information obtainable.

(a) Information sources.

The appraisal staff should develop and maintain information sources for the discovery of unreturned real property.

(b) Returns.

The county appraisal staff shall review the returns in accordance with policies and procedures set by the county board of tax assessors consistent with Georgia law and this Rule. Each year, after the deadline for filing returns, the appraisal staff shall secure the returns from the official responsible for receiving returns on or before the tenth day following such deadline.

1. New returns.

Department of Revenue form PT-50R is authorized for use by property owners when returning real property. No other form shall be provided for this purpose to property owners by the county official responsible for receiving returns unless previously approved in writing by the Revenue Commissioner.

2. Automatic returns.

In accordance with Code section 48-5-20, the appraisal staff shall deem any property owner that does not file a return by the deadline as returning for taxation the same property as was returned or deemed to have been returned in the preceding tax year at the same valuation as the property was finally determined to be subject to taxation in the preceding year.

3. Real estate transfer declaration forms.

The Department of Revenue has established Form PT-61 for owners to declare the real estate transfer tax due when property is transferred from one owner to another. The appraisal staff shall review all PT-61 forms filed with the clerk of superior court to discover new owners of property and to ascertain if their property has been returned for taxation. When a property owner acquires real property by transfer in the preceding tax year and does not file a return on such property for the current tax year, the appraisal staff shall follow the procedures of this



subparagraph to determine if the newly acquired property has been properly returned for taxation.

(i) When real estate transfer tax declaration form properly completed.

For the purposes of subparagraph (2)(b)(3) of this Rule, the PT-61 form shall be deemed properly completed when all applicable information required by the instructions on the form has been entered on the form, it has been signed by the new owner and filed in quadruplicate with the clerk of superior court. A PT-61 form shall not be deemed properly completed when the appraisal staff determines any of the required information on the form is omitted, false, or misleading.

(ii) When transferred property deemed returned.

When a property owner acquires by transfer real property that has not been subdivided from the preceding tax year, and such owner properly completes a real estate transfer tax PT-61 form and pays any real estate transfer tax that may be due as provided in Article 1 of Chapter 6 of Title 48 of the Code, the appraisal staff shall deem the owner as having returned the property acquired by transfer at the same value finally determined to be applicable to such property for the preceding year.

(iii) When transferred property deemed unreturned.

The appraisal staff shall not deem as returned any property:

- (I) That is an improvement made since January 1 of the preceding tax year to property that has been transferred;
- (II) That has been transferred and for which the real estate transfer tax PT-61 form has not been properly completed;
- (III) That has been transferred and for which the real estate transfer tax PT-61 form has not been filed with the clerk of superior court on or before the deadline for returning property in the year following the year the property is transferred; and
- (IV) That has been transferred and for which the real estate transfer tax has not been paid.

(c) Reassessments.

The appraisal staff may not recommend to the board of tax assessors a reassessment of the same real property for which a final assessment has already been made by the board. For the purposes of this subsection, the appraisal staff shall presume that a final assessment on real property includes both the land and any improvements to the land.



1. Recently appealed real property.

The appraisal staff shall observe the provisions of Code section 48-5-299 (c) and this subparagraph before recommending a change to the assessment of real property that was the subject of an appeal on either the immediately preceding tax digest or the next immediately preceding tax digest. Such property shall be designated in the appraisal staff's records as recently appealed property for the two tax years following the year of the appeal. This subparagraph shall not apply when such property has been returned by the taxpayer at a value different from the appeal-established value.

(i) Changing assessment of recently appealed real property.

In the two tax years following an appeal, the appraisal staff may not recommend an increase of assessment for the sole purpose of changing the valuation established or decision rendered in an appeal to the board of equalization, hearing officer, arbitration, or superior court. Rather a new appraisal must be accompanied by an on-site inspection to determine the occurrence of any substantial additions, deletions, or improvements to such property, errors in the appraisal staff's records or material factors that substantially affect the current fair market value of such property since the appeal was heard that established the value of the property. The appraisal staff may recommend, consistent with the provisions of this subparagraph, to the board of tax assessors a change of assessment on the property that was the subject of the appeal when an appraisal based on current market conditions indicates the value has changed substantially from the value established by the recent appeal. Such appraisal shall be accompanied by a written statement attesting to the fact that an appraiser has conducted the required on-site inspection of the subject property and setting forth the reasons why the appraiser believes that a change of assessment is authorized under Code section 48-5-299 (c) and this subparagraph. The written statement shall attest to at least one of the following: substantial additions, deletions, or improvements to such property has occurred since January 1 of the appeal year; an error has been discovered in the property records regarding the description or characteristics of the subject property; or an occurrence of other material factors that substantially affect the current fair market value of the subject property. With respect to the term 'substantial'; when making determinations of whether to increase a recently appealed property the appraiser shall consider the subject property components since the time of appeal (appeal hearing date), such as the value of new improvements, value of additions to existing improvements (footprint of exchanged structure has been altered), major remodeling or renovations to existing structures (footprint of ex-changed structure has not been altered), and adjustments to land due to consolidation of tracts, new surveys, zoning changes, land use changes. In the event an appealed property is renovated or remodeled, the term 'substantial' shall be construed such that both the property owner and BOA would reasonably conclude a major renovation/remodeling has occurred. Any modifications made to the appealed property



after the appeal hearing date that result in a lower value of the appealed property shall be considered in the final valuation of property for the subsequent January 1 assessment.

(d) Collecting and maintaining property information.

The appraisal staff shall keep a record of information relevant to the ownership and valuation of all real property in the county and shall follow the procedures in this subparagraph when collecting and maintaining such real property data.

1. Description of property information.

The type of information the appraisal staff shall maintain includes, but is not limited to, property ownership, location, size, use, physical characteristics, sales prices, construction costs, rents, and operating expenses to the extent such information is available. The appraisal staff shall, consistent with this subparagraph, recommend to the board of tax assessors a uniform policy regarding the information to be included in their records.

(i) Geographic information.

Cadastral maps or computerized geographic information systems are to be maintained by the appraisal staff for all real property located in the county. In the event the county governing authority has established a separate mapping office and the maps maintained by such office conform to the requirements of this subparagraph, the appraisal staff may provide relevant information to such mapping office and still be in compliance with this subparagraph. Minimum mapping specifications shall include the following: all streets and roads plotted and identified; property lines delineated for each real property parcel; unique parcel identifier for each parcel; and physical dimensions or acreage estimate for each parcel. The appraisal staff shall use the parcel identifiers to link the real property records to the maps. The appraisal staff shall notify the Revenue Commissioner of all proposed changes to existing parcel-numbering systems before implementing such changes.

(ii) Sales information.

The appraisal staff shall maintain a record of all sales of real property that are available and occur within the county. The appraisal staff should also familiarize themselves with overall market trends within their immediate geographical area of the state. They should collect and analyze sales data from other jurisdictions having market and usage conditions similar to their county for consideration when insufficient sales exist in the county to evaluate a property type, especially large acreage tracts. The Real Estate Transfer Tax document, Department of Revenue Form PT-61, shall be a primary record source. However, the appraisal staff may also review deeds of transfer and security deeds recorded in the Office of the Superior Court Clerk, and probated wills recorded in the Office of the Probate Judge to maintain a record of relevant



information relating to the sale or transfer of real property. Records required to be maintained shall include at a minimum the following information: map and parcel identifier; sale date; sale price; buyer's name; seller's name; deed book and page number; vacant or improved; number of acres or other measure of the land; representativeness of sale using the confirming criteria provided in Rule 560-11-2-.56 (1)(d); any income and expense information reasonably available from public records; property classification as provided in Rule 560-11-2-.21, and; when available, the appraised value for the tax year immediately following the year in which the sale occurred.

(iii) Property characteristics.

The appraisal staff shall maintain a record of real property characteristics. This record shall include, but not be limited to, sufficient property characteristics to classify and value the property. In addition, the following criteria may be considered when determining which characteristics should be gathered and maintained: factors that influence the market in the location being considered; requirements of the valuation approach being employed; digest classification and stratification; requirements of other governmental and private users; and marginal benefits and costs of collecting and maintaining each property characteristic.

(iv) Land and location characteristics.

The appraisal staff shall maintain a record of the land and location characteristics. The record should include, but not be limited to, zoning, use, legal or deed restrictions on use, covenants, parcel shape and size, neighborhood and other locational characteristics such as view, topography, and corner influence, proximity to recreational bodies of water, nuisances and similar external influences.

(v) Improvement characteristics.

The appraisal staff shall maintain a record of the characteristics of the improvements to land. The record shall include, but not be limited to, the size, actual use, design, construction quality, construction materials, age and observed condition.

2. Collecting property information.

The appraisal staff shall, consistent with the policies of the board of tax assessors and this subparagraph, physically inspect properties when necessary to gather the information required by Rule 560-11-10-.09(2)(d).



(i) Field inspections.

The appraisal staff shall develop and present to the board of tax assessors for approval procedures that provide for periodic field inspections to identify properties and ensure that property characteristics information is complete and accurate. The procedures shall include guidelines for the physical inspection of the property by either appraisers or specially trained data collectors. The format should be designed for standardization, consistency, objectivity, completeness, easy use in the field, and should facilitate later entry into a computer assisted mass appraisal system, when one is used. When interior information is required, the procedures shall include guidelines on how and when to seek access to the property along with alternative procedures when such access is not permitted or feasible.

3. Maintaining property characteristics information.

The appraisal staff shall systematically update the property characteristics information in response to changes brought about by new construction, new parcels, remodeling, demolition, and destruction. The appraisal staff shall physically measure and update their records to reflect all such changes to real properties in the county.

4. Records retention schedules.

The appraisal staff shall develop, in accordance with the provisions of Code section 50-18-99, records retention schedules for each series of documents maintained in their office and have such schedules approved by the board of tax assessors before submitting the schedules to the State Records Committee for official approval pursuant to Code section 50-18-92.

(i) Building permits.

In counties that issue building permits, no appraisal shall be based solely on declarations of proposed construction cost made by the person obtaining such building permits.

(ii) Aerial photographs.

New aerial photographs should be compared to previous aerial photographs, if such photographs exist, to discover new or previously unrecorded construction.

(iii) Field review frequency.

All real property parcels should be physically reviewed at least once every three years to ascertain that property information records are current.



(3) Land valuation.

The appraisal staff shall estimate land values by use of the sales comparison or income approach to value as provided in this subparagraph giving preference to the sales comparison approach when adequate land sales are available. The appraisal staff shall identify and describe the property, collect site-specific information, make a study of trends and factors influencing value and obtain a physical measurement of the site. Once the subject is analyzed, the appraisal staff shall classify the land for valuation. Once land values have been estimated, such appraisals should be regularly reviewed and updated.

(a) Land analysis and stratification.

The appraisal staff shall appraise land separately from the improvements both to consider the trends and factors affecting each and to arrive at a separate assessment for the digest. In no event, however, may the separate appraisals of the land and improvements exceed the fair market value of the land and improvements when considered as a whole. For appraisal purposes, land shall be separated into different categories based on its use and sales within the market.

1. Site analysis.

The appraisal staff shall utilize the trends and factors affecting the value of the subject property, such as its accessibility and desirability. The existing zoning, existing use, existing covenants and use restrictions in the deed and in law shall be considered. The other factors the appraiser may consider include, but are not limited to, environmental, economic, governmental, and social factors. Site-specific information that may be considered includes, but is not limited to, location, frontage, width, depth, shape, size, topography, landscaping, slope, drainage, hydrology, off-site improvements, soil condition, oil productivity, and the quality of access.

2. Market research and verification.

The appraisal staff shall build and maintain an up-to-date file system of qualified sales as provided in Rule 560-11-10-.09(2)(d)(1)(ii). Other preferred information to be considered is the motivations of the buyer and seller, as obtained from actual interviews of the parties to the sales. Adjustments to the sales to be considered by the appraiser include, but are not limited to, time of sale; location; physical characteristics; partial interest not conveyed; trades or exchanges included; personal property included; leases assumed; incomplete or unbuilt community property; atypical financing; existing covenants; deed restrictions; environmental, economic, governmental and social factors affecting the sale property and the subject parcel. These adjusted qualified sales may then be used to appraise the subject property.



(b) Acreage tract valuation.

The appraisal staff shall determine the small acreage break point to differentiate between small acreage tracts and large acreage tracts and develop or acquire schedules for the valuation of each. When this small acreage break point cannot easily be determined, the appraisal staff shall recommend to the board of tax assessors a reasonable break point of not less than five acres nor more than twenty-five acres. The base land schedules should be applicable to all land types in a county. The documentation prepared by the appraisal staff should clearly demonstrate how the land schedule is applied and explain its limitations.

1. Small acreage tract valuation schedule.

After the appraisal staff has performed the site analysis, as provided in Rule 560-11-10-.09(3)(a)(1), they shall analyze the market to identify groups of comparable properties that may be combined in the valuation process, as provided in Rule 560-11-10-.09(4)(b)(3). The appraisal staff shall then analyze the sales to establish a representative base price per acre, and adjustment factors for reflecting value added by the characteristics discovered in the site analysis. Using such base value and the adjustment factors, the appraisal staff shall develop the small acreage schedule for all acreage levels through the small acreage break point.

2. Large acreage tract valuation schedule.

After the appraisal staff has performed the site analysis, as provided in Rule 560-11-10-.09(3)(a)(1), they shall analyze the market to identify groups of comparable properties that may be combined in the valuation process, as provided in Rule 560-11-10-.09(4)(b)(3). The appraisal staff shall then analyze the sales to establish a representative benchmark price per acre, and adjustment values for reflecting incremental value associated with different productivity levels, sizes, and locations, as discovered in the site analysis. Using such benchmark values and adjustment values, the appraisal staff shall develop the large acreage schedule for all acreage levels above the small acreage break point.

(i) Land productivity values.

The appraisal staff should analyze sales of large acreage tracts to extract the value of all improvements, crop allotments, standing timber, and any other factors that influence the value above the base land value. The appraisal staff should then stratify the sales into two categories of open land and woodland. The base land values should be further stratified into up to nine productivity grades for each category of land, with grade one being the best, using the productivity classifications of the United States Department of Agriculture Natural Resources Conservation Service, where available. Where soil productivity information is not available, the appraisal staff may consult with the local United States Department of Agriculture Natural Resources Conservation Service Supervisor. Alternately, the appraisal staff may use any



acceptable means by which to determine soil productivity grades including, but not limited to, aerial and infrared photography, historical soil productivity information, and present use. The appraisal staff should analyze sales within the strata and determine benchmark values for as many productivity grades as possible. The missing strata values are then determined by extrapolating between grades. In the absence of sufficient benchmark values, a system of productivity factors may be developed from crop or timber production based on ratings provided by the United States Department of Agriculture Natural Resources Conservation Service.

(ii) Pond values.

The appraisal staff should analyze sales of large acreage tracts containing ponds to extract the value of ponds. The appraisal staff should develop up to three grades of ponds based upon the quality of construction with regard to the dam, the amount of tree clearing within the pond body, and the nature of the waterline around the pond.

(iii) Location and size adjustments.

The appraisal staff should plot sales on an index map of the county where trends in sales prices based on size and location may be analyzed. From this analysis, the appraisal staff should develop adjustments for each homogeneous market area, which are based on a tract's location within the county. Within each identified homogeneous market area, sales should also be analyzed to develop adjustment factors for ranges of tract sizes where the market reflects a relationship between the value per acre and the number of acres in a tract. Such factors should be calculated to the fourth decimal place and should extend from the small acreage break point to the tract acreage point where size no longer appears to have a significant impact on the price paid per acre. The appraiser should select an acreage point between these two points that represents a typical agricultural use tract size and assign it an index factor value of 1.0000. Such adjustments should be supported by clearly identifiable changes in selling prices per acre. Finally, large acreage tracts that have sold within the most recent 24 months, unless no such sale has occurred in which case the look back period should be 48 months, should be appraised using the schedule of adjustment factors and a sales ratio study performed to test for uniformity and conformity of the schedule to Rule 560-11-2-.56, and if the schedule thus conforms, the adjustments shall then be applied to all other large acreage tracts that are within the scope of the schedule being tested.

(iv) Adjustments for absorption

When insufficient large tract sales are available to create a reliable schedule of factors, the appraisal staff may use comparable sales to develop values for the size tracts for which comparables exist, and then adjust these values for larger tracts by (1) estimating a rate of



absorption for the smaller tracts for which data exists, (2) dividing the large tract into smaller, marketable sections, (3) developing a sales schedule with estimated income by year reflecting the absorption rate and the value characteristics of each of the smaller tracts, (4) discounting the income schedule to the present using an appropriate discount rate, and (5) summing the resulting values to arrive at an estimated value for the property.

(v) Standing Timber Value Extraction

When determining the market value of land underlying standing timber, where such standing timber is taxed in accordance with Code section 48-5-7.5, the appraiser shall not rely exclusively on the sales prices of such land that has recently had the timber harvested. Rather he or she shall also consider sales of land with standing timber after the value of such standing timber has been determined in accordance with this subparagraph and deducted from the selling price.

(l) Determine timber value from buyer and seller.

For all types of timber, the value of the standing timber on recently sold land should be determined from reliable information from the buyer and seller clearly segregating the value of the standing timber from the underlying land. In the absence of such information, the appraiser may use one of the following methods to determine the value of the standing timber if in his or her judgment the results are reasonably consistent with other sales where buyer and seller information is known:

I. Calculate value of merchantable timber.

For all types of merchantable timber, the value of the standing timber may be determined by multiplying estimated volumes by product class, such as softwood and hardwood pulpwood, chip and saw logs, saw timber, poles, posts, and fuel wood, of timber on the property by prices for each product class as obtained from the table of weighted average prices paid for harvested timber applicable to the year during which the sale occurred and prepared by the Commissioner pursuant to paragraph (g) of Code section 48-5-7.5. For the purposes of this subparagraph, merchantable timber shall include stands that have been in production for more than fifteen years. Estimated volumes by product class may be obtained by one of the following methods: reliable information from the buyer or seller or from specially trained data collectors who have estimated volumes from a visual on-site inspection or from an aerial survey.

II. Calculate value of pre-merchantable planted pine timber.

For pre-merchantable planted pine timber, the value of the standing timber may be determined by estimating the value of the timber at the age of merchantability and then prorating this value to the actual age of the pre-merchantable stand. The appraiser may arrive at this estimate using the following steps:



A. For each applicable timber product class, multiply the estimated tons of timber volume yield per acre for each product class at the age of merchantability times the locally prevailing timber price per ton of such product classes. Sum the individual results of the timber product class calculations into a single result.

(A) In the absence of reliable locally prevailing timber price per ton information, the appraiser may use timber price per ton from the table of weighted average prices paid for harvested timber prepared by the Commissioner pursuant to paragraph (g) of Code section 48-5-7.5.

(B) In the absence of specific yield information to the contrary, the appraiser may estimate timber volume yields at an average yield of 52.2 tons per acre or preferably by using the land productivity classifications established by Rule 560-11-10-.09(3)(b)(2)(i) and the following tables of estimated yields of fully stocked planted timber stands at age fifteen, and then adjusting the yields according to the actual stocking density of the timber stand.

<u>Loblolly Pine – Lower Coastal Plain</u>					
Georgia Tax Productivity Rating	Georgia Tax Adjusted Site Index Range	Site Index Used For Growth Projections	Tons/Acre @ Age 15	Pulpwood	Chip-n-Saw
1	90 – 101	96	139	125	14
2	85 – 89	87	110	99	11
3	81 – 84	83	98	88	10
4	80	80	90	81	9
5	75 – 79	77	81	73	8
6	70 – 74	72	69	66	3
7	60 – 69	65	53	51	2
8	10 – 59	45	19	19	0
9	0 - 9	0	0	-	-



<u>Loblolly Pine – Upper Coastal Plain</u>					
Georgia Tax Productivity Rating	Georgia Tax Adjusted Site Index Range	Site Index Used For Growth Projections	Tons/Acre @ Age 15	Pulpwood	Chip-n-Saw
1	90 – 101	96	129	116	13
2	85 – 89	87	103	93	10
3	81 – 84	83	93	84	9
4	80	80	85	77	8
5	75 – 79	77	78	70	8
6	70 – 74	72	67	63	4
7	60 – 69	65	52	49	3
8	10 – 59	45	18	18	0
9	0 - 9	0	0	-	-

<u>Loblolly Pine – Piedmont</u>					
Georgia Tax Productivity Rating	Georgia Tax Adjusted Site Index Range	Site Index Used For Growth Projections	Tons/Acre @ Age 15	Pulpwood	Chip-n-Saw
1	90 – 101	96	123	111	12
2	85 – 89	87	98	88	10
3	81 – 84	83	88	79	9
4	80	80	81	73	8
5	75 – 79	77	74	66	8
6	70 – 74	72	62	59	3
7	60 – 69	65	48	46	2
8	10 – 59	45	17	17	0
9	0 - 9	0	0	-	-



<u>Slash Pine – Lower Coastal Plain</u>					
Georgia Tax Productivity Rating	Georgia Tax Adjusted Site Index Range	Site Index Used For Growth Projections	Tons/Acre @ Age 15	Pulpwood	Chip-n-Saw
1	90 – 101	96	155	139	16
2	85 – 89	87	114	103	11
3	81 – 84	83	98	88	10
4	80	80	87	78	9
5	75 – 79	77	77	69	8
6	70 – 74	72	61	58	3
7	60 – 69	65	42	40	2
8	10 – 59	45	11	11	0
9	0 - 9	0	0	-	-

<u>Slash Pine – Upper Coastal Plain</u>					
Georgia Tax Productivity Rating	Georgia Tax Adjusted Site Index Range	Site Index Used For Growth Projections	Tons/Acre @ Age 15	Pulpwood	Chip-n-Saw
1	90 – 101	96	150	135	15
2	85 – 89	87	113	102	11
3	81 – 84	83	99	89	10
4	80	80	87	78	9
5	75 – 79	77	77	69	8
6	70 – 74	72	62	59	3
7	60 – 69	65	43	41	2
8	10 – 59	45	12	12	0
9	0 - 9	0	0	-	-



(C) In the absence of reliable local information on typical timber product class volume yields at the age of merchantability, the appraiser may assume that 90% of the timber will be pulpwood and 10% will be chip-n-saw.

B. Multiply the result in subparagraph A. by the number of acres of pre-merchantable timberland.

C. Deduct from the result in subparagraph B. the normal cost to establish a timber stand on cut over woodland, which shall be known as the base value. Normal cost may be determined from planters, local site preparation and planning contractors and other reliable sources.

D. Divide the result in subparagraph C. by the age of merchantability to determine the average annual timber growth value. In the absence of reliable local information to the contrary, the age of merchantability shall be fifteen years.

E. Multiply the result in subparagraph D. by the actual age of the standing timber to arrive at the value of the accumulated timber growth.

F. Add back the base value deducted in subparagraph C. to the result in subparagraph E. to yield the total value of the pre-merchantable standing timber.

III. Determine value of other pre-merchantable timber.

For types of pre-merchantable timber other than planted pine, the value of the standing timber may be determined from the best information available. In the absence of local reliable information to the contrary, the value of other pre-merchantable timber may be estimated as follows:

A. Natural stands less than five years of age should be assigned no value.

B. Natural pre-merchantable stands five years of age and older should be valued in the same manner as planted pine timber is valued, except the appraiser should make no adjustments for the base cost of establishing the timber stand; yields for natural pine stands should be estimated at fifty percent of the volume determined for a planted pine stand; and yields for hardwood stands should be estimated at forty percent of the value determined for a planted pine stand.



48-5-7.5 Assessment of standing timber; penalty for failure to timely report; effect of reduction of property tax digest; supplemental assessment

(a) Standing timber shall be assessed for ad valorem taxation only once and such assessment shall be made following its harvest or sale as provided for in this Code section. Such timber shall be subject to ad valorem taxation notwithstanding the fact that the underlying land is exempt from taxation, unless such taxation is prohibited by federal law or treaty. Such timber shall be assessed at 100 percent of its fair market value and shall be taxed on a levy made by each respective taxing jurisdiction according to such 100 percent fair market value. Such assessment shall be made in the county where the timber was grown and shall be taxable by that county and any other taxing jurisdiction therein in which the timber was grown.

(b) For purposes of this Code section, the term "sale" of timber shall mean the arm's length, bona fide sale of standing timber for harvest separate and apart from the underlying land and shall not include the simultaneous sale of a tract of land and the timber thereon.

(c) Lump sum sales.

(1) Where standing timber is sold, in an arm's length, bona fide sale, by timber deed, contract, lease, agreement, or otherwise to be harvested within a three-year period after the date of the sale and for a lump sum price, so much of said timber as will be harvested within three years shall be assessed for taxation as of the date of the sale. The fair market value of such timber for purposes of ad valorem taxation shall be the lump sum price paid by the purchaser in the arm's length, bona fide sale. Any timber described in any sale instrument which is not harvested within three years after the date of the sale shall later be assessed for taxation following its future harvest or sale. Ad valorem taxes shall be payable by the seller and shall be calculated by multiplying the 100 percent fair market value of the timber times the millage rate levied by the taxing authority on tangible property for the previous calendar year. Immediately upon receipt by the seller of the purchase price, the seller shall remit to the purchaser the amount of ad valorem tax due on the sale, in the form of a negotiable instrument payable to the tax collector or tax commissioner. Such negotiable instrument shall be remitted by the purchaser to the tax collector or tax commissioner not later than five days after receipt of the tax from the seller. A purchaser failing to make such remittance shall be personally liable for the tax. With said remittance, the purchaser shall present to the board of tax assessors and to the tax collector or tax commissioner a report of the sale showing the lump sum sales price of the standing timber, the date of sale, the addresses of the seller and purchaser, and the location of the standing timber in the county. The tax collector or tax commissioner shall collect from the purchaser the seller's negotiable instrument in payment of the tax; and a receipt showing payment of the tax shall promptly be delivered by the tax collector or tax commissioner to the seller.

(2) Upon request of the purchaser, the tax collector or tax commissioner shall enter upon or attach to the instrument conveying the standing timber a certification that the ad valorem tax



has been paid, the date, and the amount of the tax. The certificate shall be signed by the tax collector or tax commissioner or his deputy. The purchaser may then present the instrument together with the certificate to the clerk of superior court of the county or counties in which the standing timber is located, who shall then file the instrument for record. The ad valorem tax levied under this subsection on lump sum sales of standing timber shall be paid to the tax collector or tax commissioner prior to and as a prerequisite to the filing for record of the instrument with the clerk of superior court, and the clerk shall not be permitted to file the instrument for record unless the instrument discloses on its face the proper certificate showing that the tax has been paid; and the certificate shall be recorded with the instrument.

(d) Unit price sales.

(1) Any person purchasing standing timber, in an arm's length, bona fide sale, by timber deed, contract, lease, agreement, or otherwise by unit prices shall furnish a report to the seller and the county board of tax assessors within 45 days after the end of each calendar quarter. The report shall show the total dollar value of standing timber paid to the seller and the volume, in pounds, if available, or measured volume, of softwood and hardwood pulpwood, chip and saw logs, saw timber, poles, posts, and fuel wood harvested. Such report shall include such data through the last business day of the calendar quarter, the names and addresses of the seller and the purchaser, and the location of the harvested timber. A copy of such report shall also be furnished by the seller to the tax assessors within 60 days after the end of the calendar quarter. The fair market value of such timber for purposes of ad valorem taxation shall be the total dollar values paid by the purchaser in the arm's length, bona fide sale. Ad valorem taxes shall be payable by the seller in the unit price sales transaction as provided in subsection (h) of this Code section and shall be calculated by multiplying the 100 percent fair market value of the timber times the millage rate levied by the taxing authority on tangible property for the previous calendar year.

(2) Reports to the tax assessors shall be confidential, shall not be revealed to any person other than authorized tax officials, and shall be exempt from disclosure under Article 4 of Chapter 18 of Title 50.

(e) Owner harvests. Owners of real property in this state who harvest standing timber from their own lands shall report the volume, in pounds, if available, or measured volume, of softwood and hardwood pulpwood, chip and saw logs, saw timber, poles, posts, and fuel wood harvested through the last business day of each calendar quarter from said lands to the tax assessors within 45 days after the end of each calendar quarter. Such reports shall also identify the location of the tract from which the standing timber was harvested. The fair market value of such timber for purposes of ad valorem taxation shall be as determined under subsection (g) of this Code section. Ad valorem taxes shall be paid by the landowner as provided in subsection (h) of this Code section and shall be calculated by multiplying the 100 percent fair market value



of the timber times the millage rate levied by the taxing authority on tangible property for the previous calendar year.

(f) Other sales and harvests. Every sale and every harvest of timber not previously taxed (excepting only a sale not for harvest within three years) shall be a taxable event. If any such sale or harvest is not a reportable taxable event described under subsection (c), (d), or (e) of this Code section, such timber shall be subject to ad valorem taxation under this subsection; and such sale or harvest shall be reported and taxed under the provisions of subsection (c), (d), or (e) of this Code section, whichever is most nearly applicable.

(g) The commissioner, after consultation with the State Forestry Commission, shall provide the tax assessors of each county with the weighted average price paid, in pounds and measured volume, during each calendar year for softwood and hardwood pulpwood, chip and saw logs, saw timber, poles, posts, and fuel wood in each county or multicounty area within 60 days of the end of each calendar year. The most recent weighted average prices provided by the commissioner shall be applied by the tax assessors to the volume of wood removals reported as provided in this Code section to determine the fair market value of timber harvested other than under a taxable lump sum sale or taxable unit price sale.

(h)(1)(A) Based on the reports and data provided under subsections (d), (f), and (g) of this Code section, the tax collector or tax commissioner shall on a quarterly basis mail tax bills for sales and harvests other than lump sum sales. Ad valorem taxes on such sales and harvests shall be payable by the landowner within 30 days of receipt of the bill from the tax collector or tax commissioner.

(B) Based upon the reports and data provided under subsections (e) and (g) of this Code section, ad valorem taxes for owner harvests shall be payable by the landowner to the tax collector or tax commissioner within 45 days after the end of each calendar quarter.

(2) Any ad valorem tax or penalty which is not timely paid as provided in this Code section shall bear interest at the rate specified in Code Section 48-2-40 from the due date. Unpaid taxes, penalty, and interest imposed under this Code section shall constitute a lien against the property of the person responsible for payment of such tax and shall be collected in the same manner as other unpaid ad valorem taxes are collected.

(i) The millage rate applicable at the time of sale or the time of harvest of standing timber shall be the millage rate levied by the taxing authority on tangible property for the preceding calendar year.



(j) Any person who fails to timely make any report or disclosure required by this Code section shall pay a penalty of 50 percent of the tax due, except that if the failure to comply is unintentional and the report or disclosure is filed within 12 months after the due date the amount of the penalty shall be 1 percent for each month or part of a month that the report or disclosure is late.

(k) Forms for reports required by this Code section shall be supplied to each county by the department.

(l)(1) In any county in which the ad valorem taxation of timber pursuant to this Code section reduces the total property tax digest of such county for tax year 1992 by more than 20 percent of the amount of the total property tax digest of such county for the immediately preceding taxable year, such digest shall be supplemented as follows:

(A) The difference between the total property tax digest for the county and the total property tax digest less the total assessed value of standing timber removed from the digest shall be calculated;

(B) The difference calculated under subparagraph (A) of this paragraph shall be reduced by the fair market value of sold or harvested timber; and

(C) If the amount calculated under subparagraph (B) of this paragraph is more than 20 percent of the amount of the total property tax digest of such county for the immediately preceding taxable year, the resulting amount shall be assigned and taxed on a levy made by the tax officials of such county in a pro rata manner against the land underlying the standing timber so removed from the digest.

(2) Where a digest is so supplemented for tax year 1992, it shall be supplemented in subsequent years as follows:

(A) For tax year 1993, such supplemental assessment shall be in an amount equal to 75 percent of the supplemental assessment received for tax year 1992;

(B) For tax year 1994, such supplemental assessment shall be in an amount equal to 50 percent of the supplemental assessment received for tax year 1992;

(C) For tax year 1995, such supplemental assessment shall be in an amount equal to 25 percent of the supplemental assessment received for tax year 1992; and

(D) For tax year 1996 and future tax years, no supplemental assessment shall be received.



(m)(1) Any supplemental assessment added to a digest pursuant to subsection (l) of this Code section shall not be included in the calculation of the equalized adjusted school property tax digest under Code Section 48-5-274 for the purpose of calculating the required local five mill share for school funding purposes under Code Section 20-2-164.

(2) The fair market value of timber harvested or sold added to a digest pursuant to this Code section shall be included in the calculation of the equalized adjusted school property tax digest under Code Section 48-5-274 for the purpose of calculating the required local five mill share for school funding purposes under Code Section 20-2-164.

HISTORY: Code 1981, § 48-5-7.5, enacted by Ga. L. 1991, p. 1903, § 6; Ga. L. 1995, p. 792, §§ 1-6; Ga. L. 2000, p. 618, § 96; Ga. L. 2017, p. 774, § 48/HB 323.

NOTES: THE 2017 AMENDMENT, effective May 9, 2017, part of an Act to revise, modernize, and correct the Code, substituted "State Forestry Commission" for "Georgia Forestry Commission" near the beginning of the first sentence of subsection (g).

Chapter 12 Timber

560-11-5-.01 Forms.

(1) The Commissioner shall prepare and furnish a form, herewith adopted and designated as PT-283T, to be used by purchasers and sellers of standing timber to report taxable sales or harvests under this Chapter. Reports of unit price sales filed with the local county authorities shall be confidential, shall not be revealed to any persons other than authorized tax officials, and shall be exempt from disclosure under Article 4 of Chapter 18 of Title 50 of the Official Code of Georgia.

(2) The Commissioner shall prepare and furnish a form, herewith adopted and designated as PT-283TQ, to be used by purchasers when filing with the Commissioner the composite quarterly report required by Regulation 560-11-5-.05(2), of all purchases of standing timber by lump sum sales reflecting total volumes and total prices paid for the various timber product classes purchased during the preceding calendar quarter.

(3) A computer generated form PT-283T and form PT-283TQ may be used by any person reporting timber sales and harvests if the computer generated forms provide the necessary information and have been approved by the Commissioner.

(4) All form PT-283T reports and all approved computer generated PT-283T reporting forms filed with the county tax collector or tax commissioner and the board of tax assessors shall be retained for a period of three years after the date of receipt after which these may be disposed of consistent with any records disposition standards adopted by the appropriate authority of the county.



Authority O.C.G.A. Secs. 48-2-12, 48-5-2, 48-5-7.4, 48-5-7.5.

History. Original Rule entitled "Forms" adopted. F. Jan. 21, 1992; eff. Feb. 10, 1992. Repealed: New Rule of same title adopted. F. Jan. 27, 1998; eff. Feb. 16, 1998.

560-11-5-.02 Definitions.

(1) For the purpose of implementing O.C.G.A. Section 48-5-7.5 and these regulations, the following terms are defined to mean:

(a) "Applicable millage rates" shall mean the millage levied by the taxing authority on tangible property for the preceding calendar year.

(b) "Sale" of standing timber shall mean the arm's length, bona fide sale of standing timber for harvest separate and apart from the underlying land and shall not include the simultaneous sale of a tract of land and the standing timber thereon.

(c) "Standing timber" shall be defined to include softwood and hardwood pulpwood, chip and saw logs, saw timber, poles, posts, and fuel wood. Such term shall not include any of the following:

1. Orchard trees, ornamental or Christmas trees;
2. By-products of standing timber such as straw, cones, leaves or turpentine;
3. By-products of harvesting such as bark or stumps that are not included in the consideration between buyer and seller in lump sum or unit price sales; or
4. Fuel wood harvested by the owner from his own property which is used exclusively for heating purposes within the premises occupied by said owner.

(d) "Timber product classes" shall be defined as follows: 1) softwood pulpwood, 2) hardwood pulpwood, (3) softwood chip-n-saw, 4) softwood saw timber, 5) hardwood saw timber, 6) softwood poles, 7) softwood posts, 8) hardwood posts, 9) softwood fuel wood chips, 10) hardwood fuel wood chips, 11) softwood fuel wood firewood and 12) hardwood fuel wood firewood.

(e) "Total property tax digest" means the total net assessed value to which the levy for maintenance and operations purposes shall be applied, and consists of all taxable tangible real and personal property appearing on the county tax digest for the applicable tax year including motor vehicle property, mobile home property and property of railroad and public utility companies.

Ga. L. 1937-38, Ex. Sess. p. 77 (Ga. Code Sec. 48-2-12); Ga. L. 1991, p. 1903 (Ga. Code Sec. 48-5-7.4).

HISTORY. Original Rule entitled "Definitions" adopted. F. Jan. 21, 1992; eff. Feb. 10, 1992.

REPEALED: New Rule, same title, adopted. F. Jan. 29, 1996; eff. Feb. 18, 1996.



560-11-5-.03 Taxable Timber Sales and Harvests.

(1) Where standing timber is sold by timber deed, contract, lease, agreement, or otherwise to be harvested within a three-year period after the date of the sale and for a lump sum price, the standing timber to be harvested within said three-year period shall be assessed for taxation as of the date of the sale. The tax shall be levied based upon the total lump sum price paid by the purchaser in an arm's length bona fide sale.

(a) Ad valorem taxes shall be assessed as of the date of the sale and shall be payable by the seller who shall remit the amount of the taxes due to the purchaser in the form of a negotiable instrument payable to the tax collector or tax commissioner. The purchaser shall remit the seller's negotiable instrument to the tax collector or tax commissioner within five business days after receipt from the seller along with a report of the sale using form PT-283T or a computer generated form PT-283T as approved by the Commissioner, and the tax collector or tax commissioner shall promptly deliver a receipt to the seller showing the tax has been paid. The purchaser shall be personally liable for the tax if he does not remit the seller's negotiable instrument as required or if he fails to collect the negotiable instrument from the seller and in any event he shall remit the taxes due to the tax collector or tax commissioner within five business days of the date of the sale. With said remittance, a copy of the report form PT-283T or a computer generated form PT-283T as approved by the Commissioner, shall also be furnished by the purchaser to the board of tax assessors.

(b) Any standing timber described in any sale instrument which is not harvested within three years after the date of the sale shall later be assessed for taxation following its future harvest or sale. In the event it is later harvested by the original purchaser, the board of tax assessors shall use the table of values prescribed by the Commissioner in Regulation 560-11-5-.05(1), and the taxes shall be paid by the original purchaser; otherwise, upon its sale or harvest after three years, the procedures for taxation shall be according to the manner in which such timber is sold or harvested.

(c) The ad valorem taxes on lump sum sales shall be paid to the tax collector or tax commissioner prior to and as a prerequisite for the filing for record with the clerk of superior court any instrument conveying the standing timber upon which taxes are due and payable, and no such instrument shall be recorded unless it has entered upon or attached thereto a certificate from the tax collector or tax commissioner showing that the taxes have been paid.

(2) Where standing timber is sold, in an arm's length, bona fide sale, by timber deed, contract, lease, agreement, or otherwise by unit prices, the purchaser shall furnish to the seller and to the board of tax assessors a report form PT-283T or a computer generated form PT-283T as approved by the Commissioner, reflecting the total dollar value paid to the seller as well as the individual volumes of timber harvested identified by timber product classes. The report shall cover all timber harvested through the last business day of the immediately preceding calendar quarter and it shall be furnished to the seller and the board of tax assessors within 45 days after the end of the calendar quarter during which the timber is harvested. A copy of the report PT-283T or a computer generated form PT-283T as approved by the Commissioner shall also be



furnished by the seller to the board of tax assessors within 60 days after the end of each calendar quarter.

(a) Ad valorem taxes shall be payable to the tax collector or tax commissioner as specified by Regulation 560-11-5-.04(3) based upon the fair market value of the harvested timber which shall be the total dollar values paid by the purchaser in the arm's length, bona fide sale.

(3) Where standing timber is harvested by the owner of such timber from his own land, the owner shall, within 45 days after the end of the calendar quarter, file with the board of tax assessors a report form PT-283T or a computer generated form PT-283T as approved by the Commissioner of the volumes harvested through the last business day of the calendar quarter.

(a) Ad valorem taxes on owner harvest timber shall be payable to the tax collector or tax commissioner within 45 days after the end of the calendar quarter, based upon the fair market value of the harvested timber which shall be the total dollar values calculated using the average standing timber price schedule specified by Regulation 560-11-5-.05(1).

(4) Every sale and every harvest of standing timber occurring on or after January 1, 1992 that has not been previously taxed shall be a taxable event, with the exception of those sales of standing timber not to be harvested within three years. Where standing timber is sold or harvested (excepting only a sale not for harvest within three years) in any manner which is not a reportable taxable event under these Regulations as a lump sum sale, a unit price sale, or an owner harvest, such timber shall be subject to ad valorem taxation. Any such sale or harvest shall be reported and taxed under whichever provisions of this Regulation is most nearly applicable.

(a) Where, at the time of harvest, the standing timber owner does not own the underlying land and has not acquired such timber under a taxable lump sum or unit price sale, as would be the case where timber has been acquired prior to January 1, 1992, the harvest of such timber shall be a taxable event and shall be treated as an owner harvest, with the exception that the reporting requirement and the payment of taxes due shall be the responsibility of the owner of the standing timber instead of the underlying landowner.

Authority O.C.G.A. Secs. 48-2-12, 48-5-2, 48-5-7.4, 48-5-7.5.

History. Original Rule entitled "Taxable Timber Sales and Harvest" adopted. F. Jan. 21, 1992; eff. Feb. 10, 1992. Repealed: New Rule of same title adopted. F. Jan. 29, 1996; eff. Feb. 18, 1996.

Repealed: New Rule of same title adopted. F. Jan. 27, 1998; eff. Feb. 16, 1998.

560-11-5-.05 Average Standing Timber Price Schedule.

(1) Within 60 days after the end of each calendar year, the Commissioner shall provide the board of tax assessors of each county with a table of the weighted average prices paid for the various timber product classes in each county or region of the State. In preparing this table of standing timber values, the Commissioner, so far as is reasonable and applicable, shall consider reports received by the Department of prices paid, as well as information prepared by and recommendations received from the Georgia Forestry Commission. The Commissioner may also



consider commercially available sources of average sales prices. The most recent table of standing timber values furnished by the Commissioner shall be used by the board of tax assessors to determine the fair market value of harvested timber subject to taxation for taxable events other than taxable lump sum sales or taxable unit price sales. Taxpayer appeals of such determinations by the board of tax assessors shall be made and decided in the same manner as other ad valorem tax assessment appeals are made and decided pursuant to O.C.G.A. Section 48-5-311.

(2) In addition to the filing with appropriate county authorities of reports of standing timber harvests and sales, purchasers shall, within 45 days after the end of the quarter, file with the Commissioner composite quarterly reports, using form PT-283TQ, of all purchases by county of standing timber by lump sum sales and unit price sales reflecting total volumes and total prices paid for the various timber product classes purchased during the preceding calendar quarter. Such quarterly reports shall not be subject to the penalty provisions of O.C.G.A. Section 48-5-7.5. Such quarterly reports shall be subject to the confidentiality provisions of O.C.G.A. Section 48-2-15.

Ga. L. 1937-38, Ex. Sess. p. 77 (Ga. Code Sec. 48-2-12); Ga. L. 1991, p. 1903 (Ga. Code Sec. 48-5-7.4).

HISTORY. Original Rule entitled "Average Standing Timber Price Schedule" adopted. F. Jan. 21, 1992; eff. Feb. 10, 1992. REPEALED: New Rule, same title, adopted. F. Jan. 29, 1996; eff. Feb. 18, 1996.

560-11-5-.06 County Digest Timber Supplement.

Where the total property tax digest for any county for tax years 1992 through 1995 is so affected by the new method of ad valorem taxation of standing timber that a supplement to the digest is authorized by O.C.G.A. Section 48-5-7.5, the supplemental assessment shall be assessed and taxes shall be levied against the land underlying the standing timber so removed from the digest. The supplemental assessment shall be assessed against each such property in a pro rata manner based upon the value of standing timber on each such property that was removed from the digest.

Ga. L. 1937-38, Ex. Sess. p. 77 (Ga. Code Sec. 48-2-12); Ga. L. 1991, p. 1903 (Ga. Code Sec. 48-5-7.4). HISTORY. Original Rule entitled "County Digest Timber Supplement" adopted. F. Jan. 21, 1992; eff. Feb. 10, 1992.



Appraisal Procedures Manual – Rural Land

The regulations above are referred to generally as the Appraisal Procedures Manual (APM). These regulations govern the appraisal process for real and personal property and should be considered as binding as any State statute. The discussion in Course IV-B with regard to the APM will concentrate on the aspects of the regulation that are dedicated to the appraisal of rural land.

Following are some of the important Rural Land appraisal/property definitions contained with the regulation:

560-11-10-.02 Definitions.

- (a) Absorption rate
"Absorption rate" means the rate at which the real estate market can absorb real property of a given type.
- (bb) Rural land.
"Rural land" means any land that normally lies outside corporate limits, planned subdivisions, commercial sites, and industrial sites.
- (l) Large acreage tract.
"Large acreage tract" means a rural land tract that is greater in acreage than the small acreage break point.
- (ee) Small acreage tract.
"Small acreage tract" means a rural land tract that is equal to or smaller in acres than the small acreage break point.

The APM directly addresses issues surrounding the analysis, stratification and valuation procedures for various categories of rural land. Following are the code sections addressing these areas:

560-11-10-.09(2)(d)1 Description of property information

- (ii) - Sales information
 - Appraisal staff shall maintain a record of all real property sales that occur within the county
 - Staff should become familiar with market trends within the immediate geographical area
 - Sales should be gathered from other jurisdictions when insufficient sales exist in the county for a particular property type, especially large tract sales
 - PT61, deeds of transfer, security deeds and probated wills shall all be a relevant source of information regarding sales
 - The following minimum information should be maintained for each sale:
 - Map id
 - Sale date



- Sale price
 - Buyer's and seller's name
 - Deed book/page number
 - Notes as to whether parcel was vacant or improved at the time of the sale
 - Acres or other land measure
 - Representativeness of sale (qualified or not)
 - Income and expense data reasonably available from public records
 - Appraised value of property from tax year immediately following year of sale
- (iii) - Property characteristics
- A record of real property characteristics shall be maintained
 - Characteristics shall include, but not be limited to, adequate data to classify and appraise the property
 - Additional property characteristics may be gathered and maintained if available and necessary
- (iv) – Land and location characteristics
- Land and location characteristics shall be recorded and maintained
 - Records shall include but not be limited to
 - Zoning
 - Use
 - Legal or deed restrictions on use
 - Covenants
 - Parcel shape and size
 - Neighborhood
 - Other location influences, such as
 - View
 - Topography
 - Corner influence
 - Proximity to recreational bodies of water
 - Nuisances and similar external influences

560-11-10-.09(3) Land Valuation

(a) – Land analysis & stratification

- Land and improvements shall be appraised separately
 - Sum of the land value and improvement value shall not exceed the fair market value of the property
 - Land shall be categorized according to use and sales within the market
- 1 – Site analysis



- Trends and factors affecting the value of the property shall be utilized in the appraisal of such. Such trends and factors may include but not be limited to
 - Existing zoning
 - Existing use
 - Existing covenants and use restrictions in the deed and in law
 - Environmental, economic, governmental and social factors
 - Location, frontage, width, depth, shape, size, topography, landscaping, slope, drainage, hydrology, off-site improvements, soil condition, soil productivity and quality of access
- 2 – Market research and verification
 - An up-to-date file system of qualified sales shall be maintained by the appraisal staff
 - Qualified sales shall be used to appraise subject properties
- 2(b) – Acreage Tract Valuation
 - A small acre break point shall be determined to differentiate between small and large tracts
 - When small acre break point cannot be determined, the appraisal staff shall recommend a reasonable breaking point between 5 and 25 acres, inclusive
 - Separate base land schedules shall be developed for small and large tracts
 - Documentation explaining the procedures employed shall be maintained
- (b)1 – Small Acre Tract Valuation Schedule
 - Base price per acre shall be established
 - Adjustment factors for adding value based on property characteristics shall be established
 - Small acre tract schedule shall be established for acre levels up to the small acre break point
- (b)2 – Large Acre Tract Valuation Schedule
 - Benchmark value shall be established
 - Factors and incremental values shall be established for different productivity levels, sizes and locations
 - Benchmark values and adjustments shall be used to develop large acreage schedule which shall be applied to all comparable parcels with acreage above small acre break



■ (b)2(i) – Land Productivity Values

- Large acreage tract sales should be analyzed for the purpose of extracting the value of items that affect value above the base land value
- Following are typical items the appraiser should look for
 - Improvements
 - Crop allotments
 - Standing timber
 - Any other factors
- Sales should be stratified into two categories of land, open and wooded
- Base land values for open land and woodland should be stratified into up to 9 different productivity grades
 - Grade one represents the most productive land type
 - Grades should be based on US Department of Agriculture Natural Resources Conservation Service (NRCS) soil productivity in counties where classifications are available
 - In counties where classifications are not available, the county may
 - Consult with NRCS supervisor for the purpose of obtaining information concerning soil classifications within the county. Information may be related to the existence of preliminary work that is available or any other data concerning soil classifications that would assist the county in the grading process of the land
 - Other means of determining soil classifications in the absence of NRCS data are
 - ❖ Aerial and infrared photography
 - ❖ Historical soil productivity information
 - ❖ Present use of land
- Sales should be analyzed for each strata (land category) and benchmark values determined for each productivity grade, as possible
- In the absence of a benchmark value for a grade, the value should be extrapolated from known values determined for other productivity grades
- If insufficient benchmark values exist, a system of productivity factors may be developed from crops or timber productivity ratings provided by NRCS

■ (b)2(ii) – Pond Values

- Pond values should be extracted from sales
- Appraiser should establish up to 3 grades of ponds within the schedule
- Pond grades shall be based on
 - Quality of construction with regard to the dam
 - Amount of tree clearing within the body of the pond
 - Nature of the waterline around the pond



■ (b)2(iii) – Location & Size Adjustments

- Sales should be plotted on a county index map for the purpose of detecting market trends based on size and location
- Homogeneous market areas within the county should be defined based on the market trends
- Value adjustments for each homogeneous area should be developed
- Size adjustments within each homogeneous area should be developed where the market indicates a relationship between the number of acres and value per acre of the property
 - Size factors should be calculated to the 4th decimal place
 - Size factors should extend from the small acre break point to the acreage level where sales indicate that size is no longer a consideration
 - A base tract size shall be established and assigned a factor of 1.0000
 - All size adjustments shall be clearly identifiable changes in selling prices per acre
- Valuation schedules shall be applied to parcels that have sold within the last 24 months, unless adequate sales are not available. In cases where adequate sales are not available, the look-back period shall be 48 months.
- Sales ratio study shall be performed on the sales to test for uniformity and conformity as spelled out in Rule 560-11-2-.56
- Should the schedule conform, the schedules shall be applied to all parcels categorized as large tracts

■ (b)2(iv) – Adjustments for absorption

- Used when insufficient large tract sales are available to create a reliable schedule of size factors
- Size factors shall be developed for tracts where adequate sales exist
- For tracts that are of a size where there is insufficient sales data, the appraiser may adjust the values of the larger tracts using the following procedure
 - Estimate a rate of absorption for the smaller tracts for which data exists
 - Divide the larger tract into smaller marketable sections
 - Develop a sales schedule with estimated income by year reflecting the absorption rate and the value characteristics of the smaller tracts
 - Discount the income schedule to the present using an appropriate discount rate
 - Sum the resulting values for each year to arrive at an estimated value for the property

■ (b)2(v) – Standing Timber Value Extraction

- Appraiser shall not rely solely on the sales of “cut-over” tracts of land



- Sales of tracts with standing timber should also be considered when the value of the standing timber can be determined
- (b)2(v)(I) – Determine timber value from buyer and seller
 - When available and reliable, the appraiser should use the timber value obtained from the buyer and/or seller of the tract of land
 - When buyer/seller information is not available the appraiser may use one of the following methods to determine the value of the standing timber if in his/her judgement the results are consistent with other sales where buyer/seller information is known
 - (b)2(v)(I)I – Calculate value of merchantable timber
 - Timber stands older than 15 years shall be considered as merchantable timber
 - Merchantable timber shall be categorized into the following product classes
 - ❖ Softwood and hardwood pulpwood
 - ❖ Chip and saw logs
 - ❖ Saw timber
 - ❖ Poles
 - ❖ Posts
 - ❖ Fuel wood
 - Volume estimates by product class may be obtained by one of the following methods
 - ❖ Reliable information from buyer and/or seller
 - ❖ Information obtained from specially trained data collectors who have estimated volumes from a visual on-site inspection or from an aerial survey
 - Value of merchantable timber is determined by multiplying the estimated volumes by product class by prices obtained from the table of weighted average prices paid for harvested timber applicable to the year of the sale and prepared by the Commissioner pursuant to code section 48-5-7.5
 - (b)2(v)(I)II – Calculate value of pre-merchantable planted pine timber
 - For pre-merchantable planted pine timber, the value of the timber may be determined by estimating the value of the timber at the age of merchantability and then prorating the value to the actual age of the pre-merchantable stand
 - To calculate the value of the pre-merchantable pine timber, the appraiser should follow the steps below:



- ❖ (1) Multiply the estimated tons of timber volume yield per acre for each product class (pulpwood and chip-n-saw) at age 15 times the product's local timber price per ton.
 - If no local timber prices can be obtained, the appraiser may use the timber price per ton for the appropriate product class from the Table of Owner Harvest Timber Values that is prepared by the Commissioner.
 - In the absence of yield information, the appraiser may determine yields by
 - ⇒ estimating timber volume yields at an average of 52.2 tons per acre, adjust for stocking density and assume that 90% of the volume is pulpwood and 10% is chip-n-saw or
 - ⇒ using Conservation Use land productivity classifications and the tables of estimated yields contained within this section and adjust for stocking density
- ❖ (2) Sum the results of the timber product class calculations into a single result
- ❖ (3) Multiply the result in Step 2 by the number of acres of pre-merchantable pine timberland
- ❖ (4) Deduct from the result in Step 3 the normal cost to establish a timber stand on cut-over woodland. The calculated value shall be known as the base value.
 - Normal cost for establishing timber stands may be obtained from planters, local site preparation and planning contractors and other reliable sources
- ❖ (5) Divide the result in Step 4 by the age of merchantability, 15 years in the absence of reliable local information, to determine the average annual timber growth value
- ❖ (6) Multiple the result in Step 5 by the actual age of the standing timber to arrive at the value of the accumulated timber growth
- ❖ (7) Add the base value from step 4 to the result in Step 6 to produce the total value of the pre-merchantable pine timber



- (b)2(v)(I)II – Calculate value of other pre-merchantable timber
 - Value may be determined by the best information available
 - In the absence of reliable local information, the appraiser may estimate the value by
 - ❖ Assigning no value to stands less than 5 years of age
 - ❖ Natural pre-merchantable timber stands 5 years and older should have their value estimated in the same manner as pre-merchantable planted pine timber with the exception of no adjustment for the cost of establishing a timber stand
 - Natural pine stands should be estimated at 50% of the volume determined for planted pine stands
 - Hardwood stands should be estimated at 40% of the value determined for a planted pine stand

Table of Owner Harvest Timber Values (2017)

The tables of Owner Harvest Timber Values as defined in Code section 48-5-7.5 are created by the Revenue Commissioner after consultation with the Georgia Forestry Commission. The tables containing weighted average price paid for the various timber categories are to be prepared within 60 days of the end of each calendar year.

The tables of Owner Harvest Timber Values can be printed and/or downloaded from the following site:

https://dor.georgia.gov/sites/dor.georgia.gov/files/related_files/document/LGS/Property%20Tax%20Digest/Table_of_Owner_Harvest_Timber_Values_2017.pdf

The tables are available on the Department of Revenue's website from current year through 48 months prior current years and contain timber values for all counties. When working with the APM Regulations presented above, the appraiser should take caution and use the timber values from the proper year.



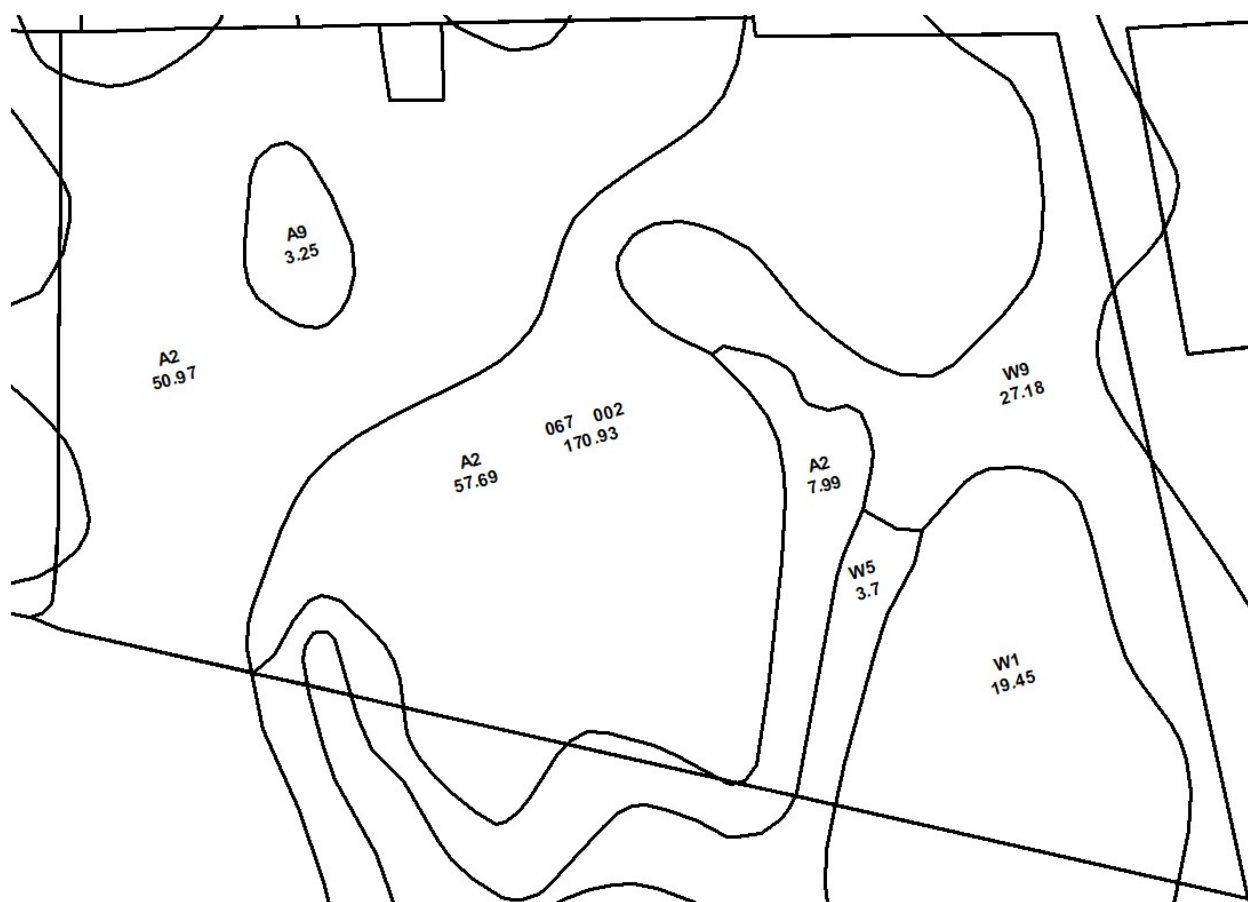
For the purpose of this class, we will use the timber prices for Burke County from the Table of Owner Harvest Timber Values below.

BURKE	2017	
Product Type	Softwood \$/Ton	Hardwood \$/Ton
Pulpwood	13.32	8.71
Chip-N-Saw	19.68	*****
SawTimber	27.07	31.26
Poles	49.85	*****
Posts	19.29	*****
Fuelchips	4.45	*****
Firewood	*****	6.07



Soil Types & Productivity Ratings for Conservation Use Method

Soil types, also known as soil symbols, are used to identify the various soils found in the State. Soil types are defined and delineated on soil maps as seen below. The parcel must be located on the soil map and the acreage associated with each of the soil type delineations within the parcel boundaries measured when extracting pre-merchantable timber values under the Conservation Use method.





Below is a soil conversion chart which lists the soil types and the associated productivity ratings for agricultural and woodland use. The table provides the information which is necessary to comply with the extraction of pre-merchantable timber values under the Conservation Use method. The table containing the information is comprised of columns labeled as follows:

1. Soil Type – This is the soil symbol which is found on the soil map. In many cases, identical soil types are found but due to the nature of the soil, the type symbols will represent varying degrees of productivity. A soil type/symbol will be consistent within a county. If any variations occur, it will be between counties.
2. Cnty No – The column labeled, Cnty No, identifies the counties in which the soil type is located. The county is denoted by a number which represents the position of the county in an alphabetical array of Georgia counties (see Appendix for county listing with associated numbers). This column is used to distinguish soils with the same symbol from each other. Using an excerpt from the soil table with the soil type 102C2 as an example, the soil type is listed 3 times. The first listing would be used in any county where 102C2 soil was found *EXCEPT* for counties 039 (Crawford) and 133 (Taylor). The woodland productivity rating in all counties except for Crawford and Taylor would be 4. In Crawford and Taylor counties the woodland productivity rating would be 5. Selecting the incorrect Soil Type row could result in an error in a timber value calculation.

Soil Type	Cnty No	Soil Composition	Soil Description	Agric Prod	Wood Prod
102C2		TALBOTT	SILT LOAM, 6 TO 10	5	4
102C2	039	PACOLET	SILT LOAM, 6 TO 10	5	5
102C2	133	PACOLET	SILT LOAM, 6 TO 10	5	5

3. The third column, Soil Composition, identifies the broad category to which the soil belongs.



4. The Soil Description column, fourth column from the left, provides additional information regarding the soil makeup and slope. Silt Loam, Clay, etc. will be common terminology found in the Soil Description. In addition, the general slope of the land with the soil type assignment will be found after the soil makeup. In the example above, the 102C2 in all 3 cases has a general slope of 6% to 10%. A slope of 0% is flat.
5. The Agric Prod column contains the productivity rating for openland, such as, cultivated, orchards and pasture. The rating is based on generally accepted productivity numbers (bushels per acre, pounds per acre, etc.), capability class assignments and consideration for flooding.
6. The Wood Prod column contains the productivity rating for woodland. The rating is based on site index values which are adjusted for equipment limitations and seedling mortality.

Since the time of the table's construction in 1992, new soils have been identified in counties that did not have soil maps at that time or counties where new soil surveys have been conducted. Soil types not found in the table can be assigned productivity ratings based on procedures described in the Soils Rating for Conservation Use section of the manual. The NRCS (Natural Resource Conservation Service) has been in the process of updating and creating soil symbol information throughout the state of Georgia within recent years. As a result, new soil conversion data may be available for some, if not all counties state wide. If a county seeks to perform a revaluation for rural land or uses the Conservation Use method for estimating timber values it is imperative that the county have up to date soil class conversion data.



Soil Ratings for Conservation Use and FLPA

The following pages contain procedures, data and productivity tables that were used in the rating of soils for conservation use. Many of the ideas used in the soil ratings were a result of discussions and work with Soil Conservation Service (SCS) personnel. Steve Lawrence, assistant state soil scientist, provided many hours of work and numerous suggestions for the establishment of the soil productivity ratings. The SCS was most generous with their time and computer facilities to produce many soil listings from which data was obtained.

It is also acknowledged that Dennis Martin, Georgia Forestry Commission, brought forth ideas used in establishing the site index ranges for woodland. His suggestions were directly incorporated into the rating procedures for woodland.

The various modifiers used throughout the rating process were results of discussions with individuals knowledgeable in their respective fields or based upon information derived from a history of sales study.

Cultivated Land

A corn yield or a projected corn yield was used to rate soils for cultivated land. A projected corn yield was used in the absence of a corn yield. Factoring the soil's soybean yield by 2.6 arrived at the projected corn yield. If no soybean yield was available, 1.94 to give a projected corn yield factored the soil's wheat yield.

The multiplier of 2.6 was derived from the relationship of corn yield to soybean yield in the 1562 occurrences where it could be established. The multiplier of 1.94 for wheat yield was established based upon 535-corn yield to wheat yield relationships.

Three criteria were used to set up the Productivity Ratings for cultivated land, corn yield or projected corn yield, soil capability class, and flood rating. The table below lists the criteria and the associated rating.



<u>Corn Yield</u>	<u>Cap Class</u>	<u>Flood Rating</u>	<u>Productivity Rating</u>
125 <= CY <= 160	1 – 4	NONE*	1
125 <= CY <= 160	1 – 4	O / F**	2
110 <= CY <= 124	1 – 4	NONE	2
110 <= CY <= 124	1 – 4	O / F	3
100 <= CY <= 109	1 – 4	NONE	3
100 <= CY <= 109	1 – 4	O / F	4
85 <= CY <= 99	1 – 4	N / A***	4
70 <= CY <= 84	1 – 4	N / A	5
55 <= CY <= 69	1 – 4	N / A	6
40 <= CY <= 54	1 – 4	N / A	7
N / A	5 – 6	N / A	8
N / A	7 – 8	N / A	9

*None - Soils are not subject to flooding or rarely flood.

** O / F - Soils are flooded on an occasional to frequent basis.

*** N / A - Not Applicable.

Pasture Land

AUM values or Animal Unit Months were used to rate soils according to their pasture productivity. In cases where AUM data was missing, a projected AUM value was established by defining a relationship between corn yields and AUM of $.0986 [((\text{AUM}/\text{CORN YIELD})) / \# \text{ of occurrences where data was present}]$. The .0986 was then multiplied by the corn yield to produce a projected AUM value. Since flooding does not adversely affect pastureland, no adjustment was made for a flood rating.

The following table was used to rate soils for pastureland.

<u>AUM</u>	<u>Cap Class</u>	<u>Productivity Rating</u>
11.0 <= AUM <= 12.0	1 – 4	1
9.5 <= AUM <= 10.9	1 – 4	2
8.0 <= AUM <= 9.4	1 – 4	3
7.0 <= AUM <= 7.9	1 – 4	4
6.0 <= AUM <= 6.9	1 – 4	5
5.0 <= AUM <= 5.9	1 – 4	6
3.5 <= AUM <= 4.9	1 – 4	7
1.0 <= AUM <= 3.4	1 – 4	8
N / A	5 - 6	8
0.0 <= AUM <= 0.9	N / A	9
N / A	7 - 8	9



Woodland

A loblolly pine site index or slash pine site index was used in the establishment of soil ratings for woodland. The site index was adjusted for various factors, such as seedling mortality and equipment limitation. Below are the adjustments made for the listed criteria.

Seedling Mortality

Slight(S) = 1.00

Moderate(M) = .95

Severe(V) = .80

Equipment Limitation

Slight(S) = 1.00

Moderate(M) = .90

Severe(V) = .70

No adjustment was made for flooding. "Equipment Limitations" and "Seedling Mortality" factors accounted for flooding problems. The following table was used to rate soils for woodland.

Adj Site Index (SI)	Productivity Rating
90 <= SI <= 101	1
85 <= SI <= 89	2
81 <= SI <= 84	3
80 == SI == 80	4
75 <= SI <= 79	5
70 <= SI <= 74	6
60 <= SI <= 69	7
10 <= SI <= 59	8
0 <= SI <= 9	9



Non Irrigated Yields for Crop and Pasture
Burke County Soil Survey

The report below is contained within the NRCS download information. Yields below are for non-irrigated soils. Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.

Nonirrigated Yields by Map Unit Component

Burke County, Georgia

[Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil. This report shows only the major soils in each map unit]

Map symbol and soil name	Land capability	Com	Pasture	Soybeans	Wheat	
		<i>Bu</i>	<i>AUM</i>	<i>Bu</i>	<i>Bu</i>	
BoA: Bonifay	3s	50	—	24	—	
BoC: Bonifay	4s	45	—	24	—	
BoD: Bonifay	6s	—	—	—	—	
CaB2: Carnegie	3e	67	—	31	—	
CaC2: Carnegie	4e	55	—	28	—	
CC: Chastain	6w	—	—	—	—	
Tawcaw	6w	—	—	—	—	
ChA: Chipley	3s	50	—	20	—	
CnA: Clarendon	2w	125	—	45	45	
CoB: Cowarts	2e	71	—	26	40	

* (AUM) Animal-Unit-Month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.



Additional reporting information for Agricultural class soils is also needed in order to perform the conversion. Below is a report which indicates the potential for flooding on soils found within a county.

Water Features

Burke County, Georgia

[Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absent an entry indicates that the feature is not a concern or that data were not estimated. This report shows only the major soils in each map unit]

Map symbol and soil name	Hydrologic group	Surface runoff	Months	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequen
				<i>Ft</i>	<i>Ft</i>	<i>Ft</i>				
BoA: Bonifay	A	---	January	4.0-5.0	4.5-5.5	---	---	None	---	None
			February	4.0-5.0	4.5-5.5	---	---	None	---	None
			March	4.0-5.0	4.5-5.5	---	---	None	---	None
BoC: Bonifay	A	---	January	4.0-5.0	4.5-5.5	---	---	None	---	None
			February	4.0-5.0	4.5-5.5	---	---	None	---	None
			March	4.0-5.0	4.5-5.5	---	---	None	---	None
BoD: Bonifay	A	---	January	4.0-5.0	4.5-5.5	---	---	None	---	None
			February	4.0-5.0	4.5-5.5	---	---	None	---	None
			March	4.0-5.0	4.5-5.5	---	---	None	---	None
CaB2: Carnegie	C	Low	Jan-Dec			---	---	None	---	None
CaC2: Carnegie	C	Low	Jan-Dec			---	---	None	---	None



Forestland Productivity
Burke County Soil Survey

Below is the report used to obtain the Site Index for Loblolly pine timber for soil types found within a county. The site index is further adjusted for seedling mortality and equipment limitation using the factor adjustments on the previous pages. The absence of an entry indicates that information was not available.

Forestland Productivity

Burke County, Georgia

[This report shows only the major soils in each map unit]

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			<i>Cu ft/ac</i>	
BoA:				
Bonifay	Blackjack oak	—	0	Loblolly pine, Longleaf pine, Slash pine
	Loblolly pine	85	114	
	Longleaf pine	69	100	
	Post oak	—	0	
	Slash pine	85	157	
	Turkey oak	—	0	
BoC:				
Bonifay	Blackjack oak	—	0	Loblolly pine, Longleaf pine, Slash pine
	Loblolly pine	85	114	
	Longleaf pine	69	100	
	Post oak	—	0	
	Slash pine	85	157	
	Turkey oak	—	0	
BoD:				
Bonifay	Blackjack oak	—	0	Loblolly pine, Longleaf pine, Slash pine
	Loblolly pine	85	114	
	Longleaf pine	69	100	
	Post oak	—	0	
	Slash pine	85	157	
	Turkey oak	—	0	
CaB2:				
Carnegie	Loblolly pine	86	129	Loblolly pine, Longleaf pine, Slash pine
	Longleaf pine	72	86	
	Slash pine	86	157	
CaC2:				
Carnegie	Loblolly pine	86	129	Loblolly pine, Slash pine
	Longleaf pine	72	86	
	Slash pine	86	157	



Seedling Mortality on Forestland (GA)

Burke County, Georgia

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The columns that identify the rating class and limiting features show no more than five limitations for any given soil. The soil may have additional limitations. This report shows only the major soils in each map unit]

Map symbol and soil name	Pct. of map unit	Potential for seedling mortality	
		Rating class and limiting features	Value
BoA:			
Bonifay	100	Low	
BoC:			
Bonifay	100	Low	
BoD:			
Bonifay	100	Low	
CaB2:			
Carnegie	80	Low	
CaC2:			
Carnegie	80	Low	
CC:			
Chastain	65	High Wetness	1.00
Tawcaw	35	High Wetness	1.00
ChA:			
Chipley	95	Low	
CnA:			
Clarendon	100	Low	
CoB:			
Cowarts	80	Low	



Forestland Planting and Harvesting

Burke County, Georgia

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The columns that identify the rating class and limiting features show no more than five limitations for any given soil. The soil may have additional limitations. This report shows only the major soils in each map unit]

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BoA: Bonifay	100	Moderately suited Sandiness	0.50	Moderately suited Sandiness	0.50	Moderately suited Sandiness	0.50
BoC: Bonifay	100	Moderately suited Sandiness	0.50	Moderately suited Slope Sandiness	0.50 0.50	Moderately suited Sandiness	0.50
BoD: Bonifay	100	Moderately suited Sandiness	0.50	Moderately suited Slope Sandiness	0.50 0.50	Moderately suited Sandiness	0.50
CaB2: Carnegie	80	Well suited		Well suited		Well suited Dusty	0.03
CaC2: Carnegie	80	Poorly suited Stickiness; high plasticity index	0.75	Poorly suited Stickiness; high plasticity index Slope	0.75 0.50	Well suited Dusty	0.03
CC: Chastain	65	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Lowstrength Dusty	0.50 0.20
Tawcaw	35	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Lowstrength Dusty	0.50 0.20



Soil Type Productivity Rating Calculation Examples

Using the information above, calculate the woodland soil productivity rating for the soil type identified as BoA (Bonifay).

- Site Index (Loblolly Pine) = 85
- Seedling Mortality = Slight
- Equipment Limitation = Moderate
- Adjusted Site Index = Site Index * Seed Mort Factor * Equip Limit Factor
- Adjusted Site Index = $85 * 1.00 * .90$
- Adjusted Site Index = 76.50 or 77
- Woodland Productivity Rating for BoA soil = 5 (per lookup in Woodland Productivity Rating Chart)

Using the information above, calculate the woodland soil productivity rating for the soil type identified as CaC2 (Carnegie).

- Site Index (Loblolly Pine) = 86
- Seedling Mortality = Slight
- Equipment Limitation = Slight
- Adjusted Site Index = Site Index * Seed Mort Factor * Equip Limit Factor
- Adjusted Site Index = $86 * 1.00 * 1.00$
- Adjusted Site Index = 86
- Woodland Productivity Rating for CaC2 soil = 2 (per lookup in Woodland Productivity Rating Chart)



Soil Type Productivity Rating Calculation Exercises

1. What woodland productivity rating would be assigned to a soil if the adjusted site index was 83?
2. What woodland productivity rating would be assigned to a soil if the adjusted site index was 95?
3. What woodland productivity rating would be assigned to a soil if the adjusted site index was 10?
4. Using the information above, calculate the woodland soil productivity rating for the soil type identified as BoC (Bonifay).
5. Using the information above, calculate the woodland soil productivity rating for the soil type identified as BoD (Bonifay).
6. Using the information above, calculate the woodland soil productivity rating for the soil type identified as CaB2 (Carnegie).



Building Large Tract Base Schedules – Extraction of Timber Values

After all sales of rural land have been gathered and qualified, the appraiser must extract the value of all non-land items from the sales price. Non-land items will include but not be limited to, improvements, crop quotas or allotments, timber, personal property, etc.

In some situations, the appraiser may determine that the harvest value of timber had no bearing on the sales price. These situations will normally occur when the tract is not of a size where timber production would be a viable option. Usually, where timber production is not a viable option, the presence of trees does impact the value from an aesthetic standpoint and should be considered when assigning desirability codes.

In all cases where the market value of the standing timber contributed to the sales price, the appraiser must obtain the value of the timber and deduct it from the sales price. As discussed earlier in the course with regard to Rule 560-11-10-.09(3)(b)(2)(v) Standing Timber Value Extraction, there are two options available for obtaining the value of the timber:

- Reliable information from the buyer/seller
- Calculation of timber value based on volume and pricing information

The appraiser may consult with the buyer and or seller of the property concerning the consideration of value given to the standing timber in the property transaction. The consultation may take place by mail, phone or direct discussion with the party. A recording of the date and method of consultation should be made by the appraiser.

If a timber cruise has been made by a registered forester, the appraiser should ask for a copy of the cruise and inform the buyer/seller that the information will be held in strict confidentiality. Should the buyer/seller prefer to not provide the cruise but does provide the value of the timber from the cruise, the appraiser should accept the cruise value but make notes as to why a copy of the cruise is not available. If a cruise is not available and a timber value is provided, the appraiser must use his/her judgement as to the reliability of the information.

In all cases where information is provided by the buyer and seller, it would be prudent for the appraiser to perform a field visit to the property to gather information for validation of the value provided by the buyer/seller. Digital photographs and visual observations would be sufficient to validate the timber value provided by the buyer/seller.



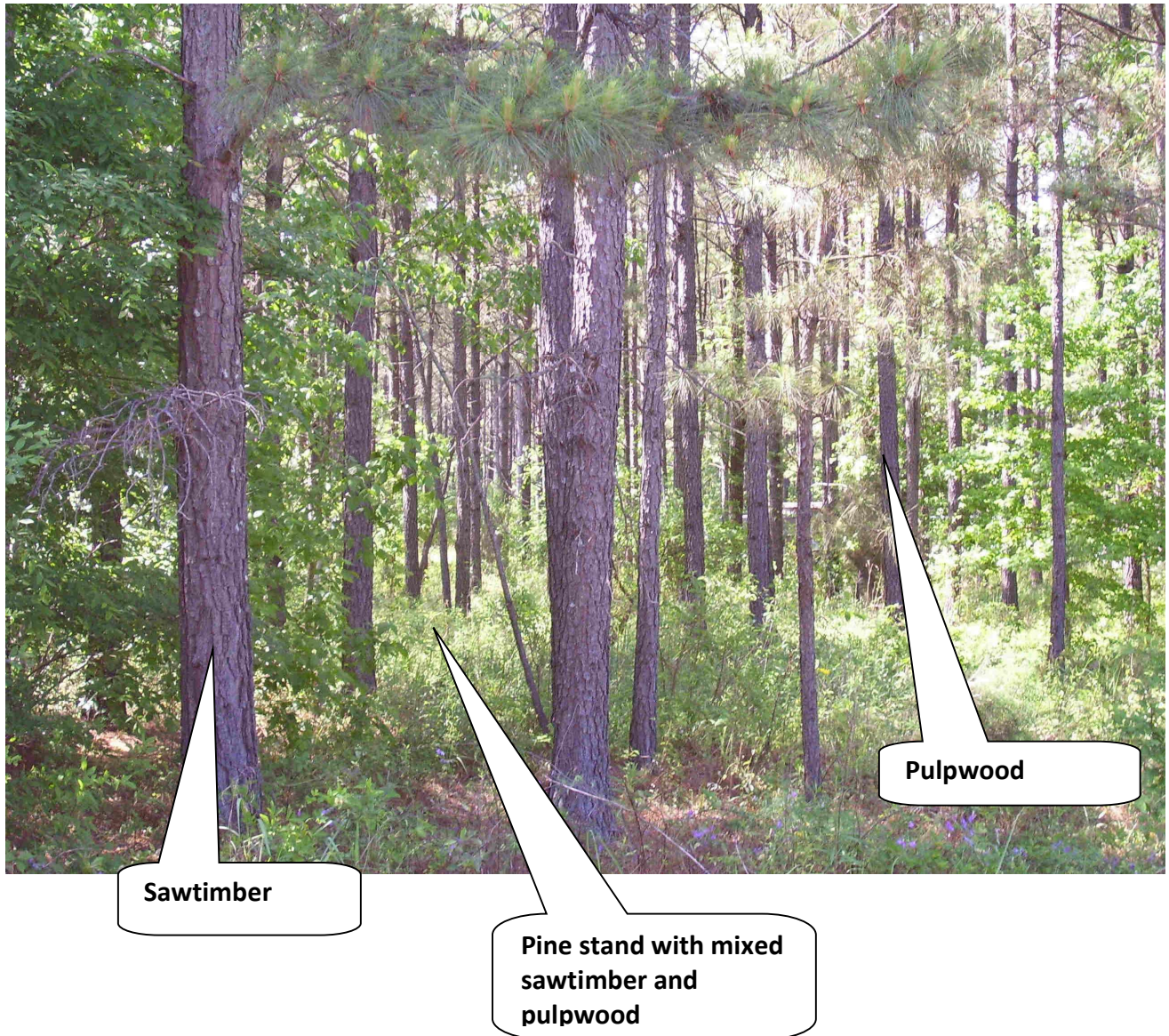
If the appraiser visit a property that has sold within the last 6 months where the buyer has reported a timber value of \$100,000 and discover what is shown in the photo below, the reported timber value should be questioned by the appraiser.



Cut-over with 2 year old natural reproduction. Pine tops have lost all needles and show advanced rotting.



However, if the observation made is as shown in the photo below, the appraiser should feel reasonably comfortable in accepting the information concerning the timber value.





If the timber value reported is zero but the following is observed upon inspection of the property, the appraiser may consider extracting a pre-merchantable timber value using the procedures outlined in the appraisal procedures manual.





Additional examples of what may be found in on-site visits to property are shown in the following photos.







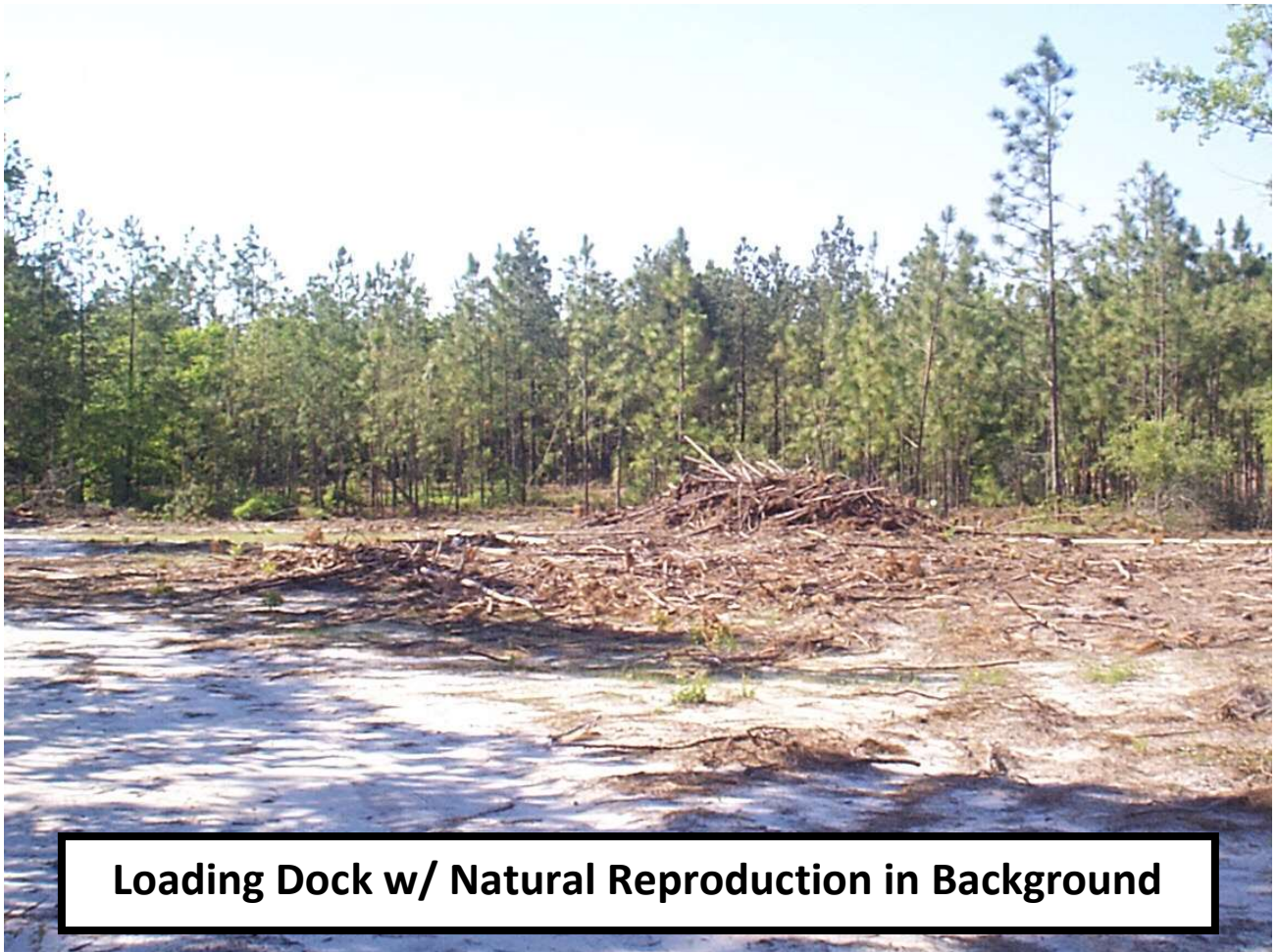




Planted Chip-n-Saw



Natural Pulpwood Stand



Loading Dock w/ Natural Reproduction in Background



**Natural Reproduction (pre-merchantable)
3 to 4 years old**



Pine Pulpwood



Pine/Hardwood Mix (minimal timber value)



Sawtimber with Pulpwood



Parcel w/ Site Prep



Site Prep Gone Bad



9 Month Old Planted



If the timber consideration is not available from the buyer/seller or the appraiser desires to confirm the information that was provided in the consultation, the timber value may be calculated using the valuation methods defined in Rule 560-11-10-.09(3)(b)2(v)(I). As prescribed in the aforementioned Rule, the appraiser should calculate the value of all product classes of merchantable timber (trees 15 years and older) and the value of all pre-merchantable timber and sum both values to obtain the total timber value.

In order to calculate the value of merchantable and pre-merchantable timber, the appraiser will be required to gather data with regard to the volume of the timber product classes and the pricing that corresponds to the time of the sale. Volume information may come from the buyer/seller or a party trained in the gathering of such information. Pricing information can come from the local market or from the Table of Owner Harvest Timber Value as prepared by the Revenue Commissioner on an annual basis. The Table of Owner Harvest Timber Values from the year that precedes the sale should be used. The appraiser should ensure that local pricing information is as close as possible to the date of the sale due to the fluctuation in timber prices.

When working with the pre-merchantable timber valuation forms in addition to volumes, the appraiser must also gather information regarding the age of the pre-merchantable timber stand and stocking density. A "timber stand" can be defined as a group of trees exhibiting basically the same characteristics with regard to the manner of planting, species and age.

The age of the stand can be obtained from the buyer, seller or forester. In the absence of information from other sources, the appraiser may estimate the age of the stand by dividing the height of the trees by:

- **Natural Stand – 2 feet**
- **Planted Stand – 3 feet**

A calculation using the method above is shown below:

Tree Height = 16 feet

- **Natural Stand age = 8 years (16 / 2)**
- **Planted Stand age = 5.33 or 5 years (16/3)**



The average height of a timber stand can be obtained from the buyer, seller, or forester. In the absence of height information measurements can be determined using a tape measure, electronic measuring device, or by measuring tree and yardstick shadows and applying the following formula.

Must be done at 10 AM, 2 PM or 4 PM

Place yardstick next to tree and measure the shadow of the yardstick

Measure shadow of the tree or trees within the stand

Apply the following formula

$X / \text{tree shadow} = 3\text{ft} / \text{yard stick shadow}$

Tree Shadow = 60 inches

Yard Stick Shadow = 12 inches

X 3

-- = --

60 12

$60 \times 3 = 180 / 12 = 15\text{ft}$

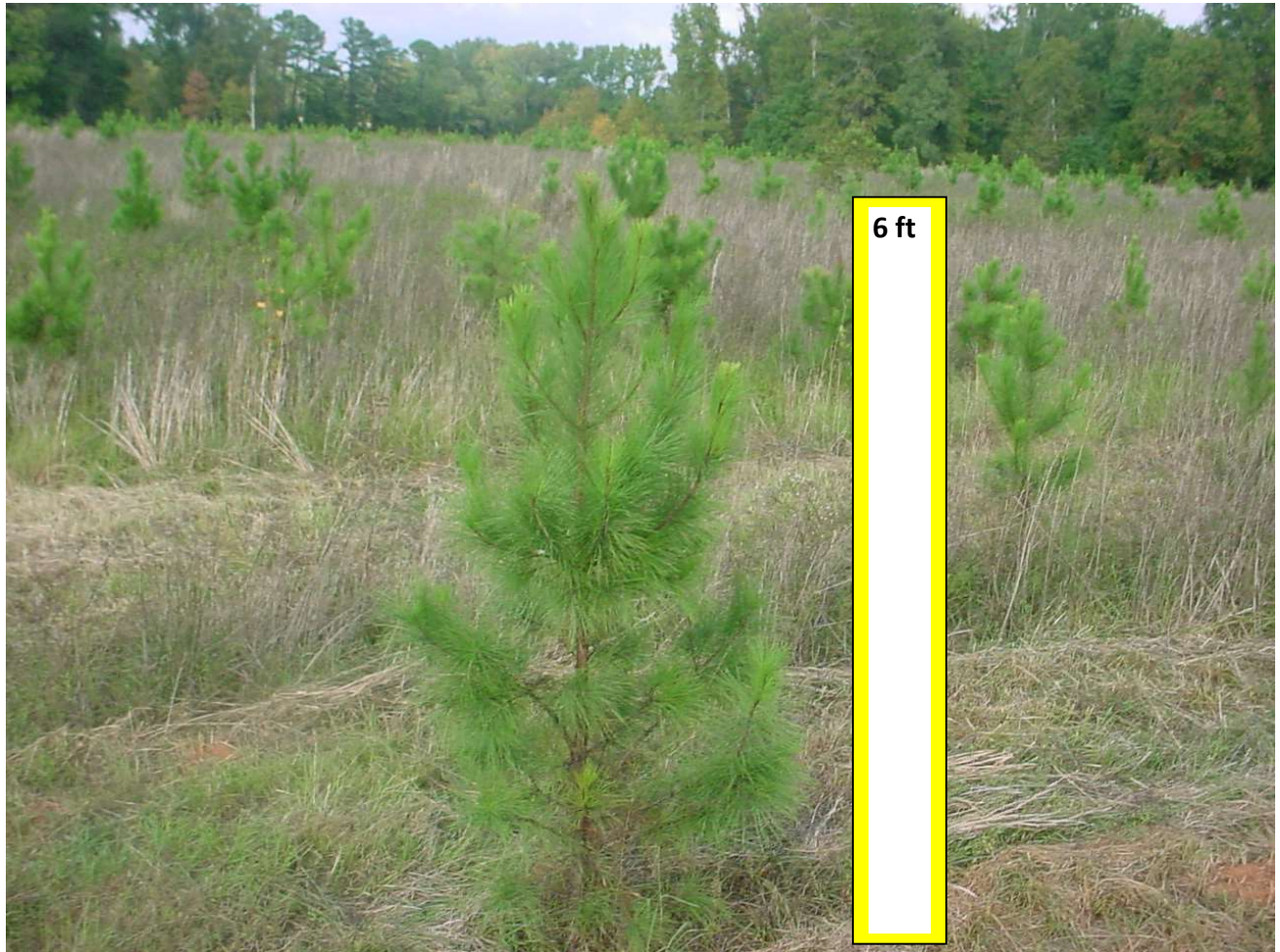
Planted 15ft/3ft per year = 5 years old

Natural 15ft/2ft per year = 7.5 years old (or 7 years old)



Estimating the Age of a Tree Exercises

1. Estimate the age of the above planted pine stand based on the photo below.





2. Estimate the age of a planted pine stand using shadow measurements:

$X / \text{tree shadow} = 3\text{ft} / \text{yard stick shadow}$

Tree Shadow = 90 inches

Yard Stick Shadow = 12 inches

3. Estimate the age of a natural pine stand using shadow measurements:

$X / \text{tree shadow} = 3\text{ft} / \text{yard stick shadow}$

Tree Shadow = 110 inches

Yard Stick Shadow = 16 inches

4. Estimate the age of a planted pine stand using shadow measurements:

$X / \text{tree shadow} = 3\text{ft} / \text{yard stick shadow}$

Tree Shadow = 125 inches

Yard Stick Shadow = 15 inches



Following is an example of planted pines which are about 7 to 8 years old.



Aerial photo of stand above





In addition to the age of the pre-merchantable stand, the appraiser must also gather information as to the stocking density of the trees. Stocking density relates to the pattern in which the trees are planted and the percentage of trees that have survived. The standard stocking or planting pattern varies depending on the tree species and the preferences of the forester or landowner. Typical patterns are 10' x 6' which is 10 feet between rows and 6 feet between trees in the row. This provides 726 trees per acre ($43,560 / 60 = 726$). Another pattern that is used with the newer faster growing trees is 12' x 6' which puts 605 trees per acre in the ground. Some foresters prefer a 10' x 8' planting pattern with 545 trees per acre. Stocking density is basically the survival rate of the trees and can be determined by dividing the number of living trees by the number of trees that would be present based on the planting pattern within an area. The planting pattern and stocking density will best be determined from an onsite visit and observations from aerial photos.

For example, if a planting pattern of 10' x 6' was found in a stand of trees and it was determined that on the average 30 trees per acre had died, the stocking density could be calculated in the following manner:

1. **Square ft. per tree = $10 \times 6 = 60$**
2. **Trees per acre = $43,560 \div 60 = 726$**
3. **Trees present = $726 - 30 = 696$**
4. **Stocking Density = $696 \div 726 = .96$ (or 95% stocking density)**

The planted pines below would represent a 100% stocking density.

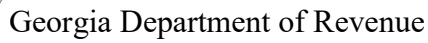




The photo below represents something less than 100% stocking density (approximately 80%) due to the high mortality rate of the planted pines. Notice the missing pines in the planting pattern.



The stocking density for natural regeneration is 50% for pine stands and 40% for hardwood. These densities are specified in the APM. (560-11-10-.09-(3)- (b)-2-(v)-(I)-III-B)



After a dry spring, 300 stems per acre are all that survived in a 6 x 8 planting pattern. What is the Stocking Density?

$$6 \times 8 = 48 \text{ (sq ft per tree)}$$

$$43,560 / 48 = 908 \text{ trees/acre}$$

$$300 / 908 = .3304 \text{ (30\% stocking density)}$$

Stocking Density Exercises

1. If a typical acre of a planted pine stand contains 550 trees and the planting pattern is 6 x 10, what would be the stocking density of the stand?
2. Determine the stocking density of a stand with a planting pattern of 12' x 6' where on the average 15 trees per acre are missing.



Timber Extraction

After the volume, age, stocking density and pricing information are obtained, the appraiser may use forms similar to the ones on the following pages to calculate the timber value for the sale.

Computer generated forms that simulate the calculations in the forms below should be created when possible. The computer forms, once the formula and procedures have been validated, increase the efficiency and reduce the potential for calculation errors.

In addition to valuing pre-merchantable timber for value extraction, a value will need to be determined for stands of trees that have reached the age of merchantability (older than 15 years). There are no "magic formulae" or definitive steps such as with pre-merchantable timber in determining the value of merchantable timber. The knowledge and expertise of an individual trained in collecting timber information should be utilized when merchantable timber is present. A cruise which is defined as an estimation of the volume and value of timber is a preferred means of obtaining the value of merchantable timber.

Merchantable timber can be assigned to one of the 3 major categories, pulpwood, chip-n-saw and sawtimber. Many natural stands will have a mix of all 3 categories. Planted stands of timber due to the fact that the trees were planted at the same time will be of one category but over time will evolve into the next higher merchantable category.

1. Pulpwood – Trees between 4 to 8 inches dbh (Diameter Breast Height – 4.5 ft. above forest floor on uphill side of tree)
2. Chip and Saw – Trees between 9 to 12 inches dbh
3. Sawtimber – Tree with dbh above 12 inches

In addition to the 3 major categories above, merchantable timber may also fall into one of the categories listed below:

1. Poles
2. Posts
3. Fuel Chips
4. Firewood



Timber Calculation Worksheets

The following pages contain worksheets that may assist the appraiser in determining the value of timber to be extracted from the sales price. The worksheets are designed to follow the directions provided in the APM for the process of timber extraction.

Worksheets are provided for each category of timber and a summary of the timber value. The following worksheet examples are provided:

1. **Merchantable Timber** – The worksheet contains rows with the timber product classes listed in the Table of Owner Harvest Timber Values and columns for volumes, prices and value calculations.
2. **Pre-merchantable Planted Pine** – The worksheet would be used on stands of planted pine whose age is less than the age of merchantability. The worksheet follows the steps outlined in the APM for the value calculation of this timber type
3. **Pre-merchantable Pine (Natural)** – The worksheet is the same as the Pre-merchantable Planted pine with the exception of the stocking density of 50% being inserted and the cost of establishing the stand being removed per the APM.
4. **Pre-merchantable Hardwood (Natural)** – The worksheet is the same as the natural planted pine sheet with the exception of the stocking density being set at the prescribed 40% level.
5. **Timber Value Summary** – The value of all timber present on the parcel can be summarized using this worksheet.
6. **Productivity Volume** – This worksheet would be used when the appraiser determines that the best means to obtain the volume of the Pre-merchantable timber is by the Conservation Use Productivity method in the APM.



Timber Valuation Worksheet - Merchantable Timber				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Volume (Tons)	Unit Price	Value	
Softwood Pulpwood				
Softwood Chip-n-Saw				
Softwood Sawtimber				
Softwood Poles				
Softwood Posts				
Softwood Fuelchips				
Hardwood Pulpwood				
Hardwood Sawtimber				
Hardwood Firewood				
Total Merchantable Timber Value				
Information Supplied by:				



Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood				
Chip-n-Saw				
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Total Value (Total Value/Acre x Acres)				
Cost (Cost of Establishing Stand / Acre * Acres)				
Base Value (Total Value – Cost)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Accumulated Timber Growth (Average Annual Timber Growth * Age of Stand)				
Total Accumulated Value (Accumulated Timber Growth + Cost)				
Information Supplied by:				



Timber Valuation Worksheet - Pine Pre-Merchantable (Natural)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood			.50	
Chip-n-Saw			.50	
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Base Value (Total Value/Acre x Acres)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Value of Accumulated Growth (Avg Annual Timber Growth * Age of Stand)				
Information Supplied by:				



Timber Valuation Worksheet - Hardwood Pre-Merchantable (Natural)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood			.40	
Chip-n-Saw			.40	
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Base Value (Total Value/Acre x Acres)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Value of Accumulated Growth (Avg Annual Growth * Age of Stand)				
Information Supplied by:				



Timber Value Summary	
Map ID:	Date:
Timber Type	Value
Merchantable	
Pine Pre-Merchantable (Planted)	
Pine Pre-Merchantable (Natural)	
Hardwood Pre-Merchantable	
Total Value of all Timber Types	



The following worksheet can be used as a guide to generate the volume of pre-merchantable timber stands that are being valued with productivity ratings and the Productivity – Timber Yield charts found in Rule 560-11-10-.09(3)(b)2(v)(I)II. A separate worksheet should be compiled for the various timber types and age of stand categories that are present on a parcel. The volume entries for pulpwood and chip-n-saw are found in the Productivity-Timber Yield charts.

The % of Stand Ac column is calculated based on the acres within the productivity rating divided by the total acres with the timber type-age stand. For example, if a planted pine stand contained 20 acres of 6 year old Slash pine with 5 acres in a Productivity Class of 2, the % of Stand Acreage calculation would be $5 \div 20 = .25$ or 25%.

The Wt. PW Vol (weighted pulpwood volume) and the Wt. CS Vol (weighted chip-n-saw volume) columns will contain the weighted volumes for pulpwood and chip-n-saw within the productivity rating. Using the 25% of Stand Acreage within Productivity Class 2 for the Slash pine, if the pulpwood tons/acre is 90 tons and the chip-n-saw tons/acre is 10, the weighted volume values would be calculated as follows:

$$\text{Wt. PW Vol} = 90 * .25 = 22.50$$

$$\text{Wt. CS Vol} = 10 * .25 = 2.50$$

The summation of the weighted volume columns would be placed in Total Volume. The Total Volume is then used in the pre-merchantable timber calculation.



Productivity-Volume Worksheet					
Map ID:			Acres:	Date:	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2					
3					
4					
5					
6					
7					
8					
9					
Total Volume					

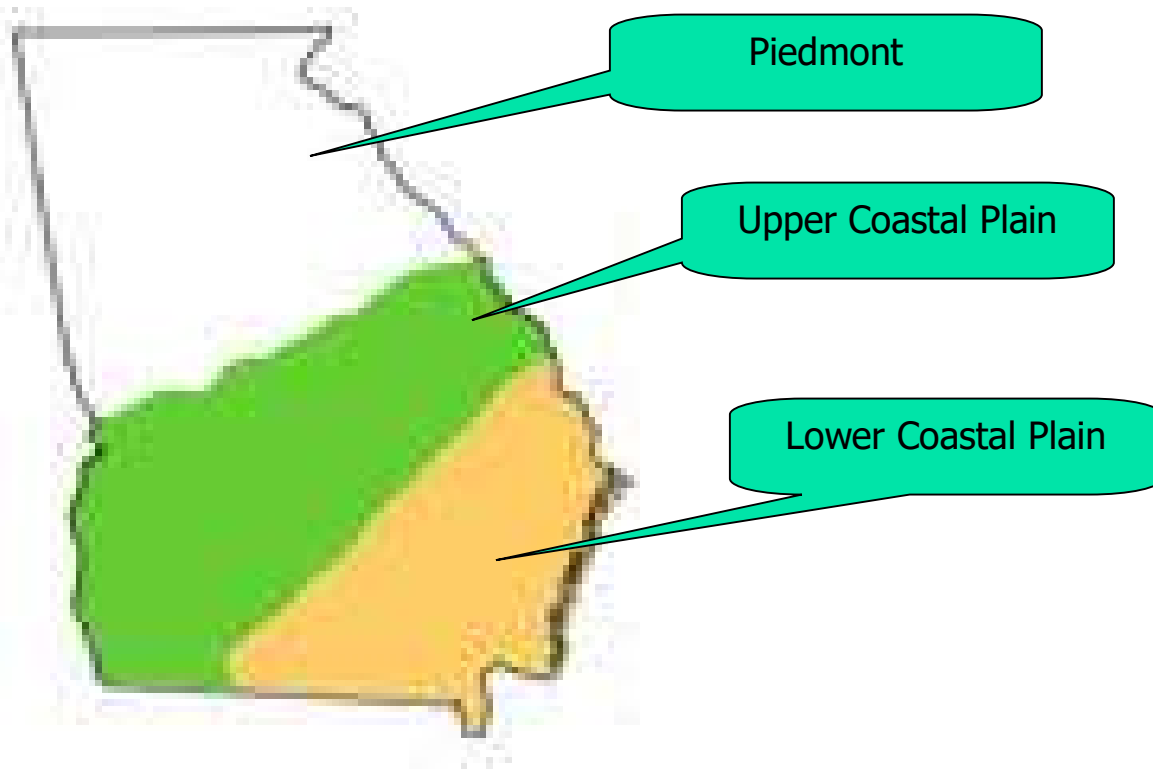


When using the Conservation Use Productivity ratings, additional information regarding which of the 3 major geographical regions the county is located within and the type of pine trees planted is required in order to correctly value the pre-merchantable timber. A county along the division line of two of the geographical regions may have some sales located in one regions and other sales located in the second region.

For the purpose of timber value extraction, the State is divided into 3 primary geographical regions:

1. Piedmont – basically the portion of the State above the Fall Line
2. Upper Coastal Plain – bounded on the north by the Fall Line and extends south to Florida and east to the lowest terrace that borders the Atlantic Ocean and the coastal islands and salt marshes
3. Lower Coastal Plain - includes the actual coastal area of the state and the Sea Islands, as well as the Okefenokee Swamp

The following map shows the general divisions of the 3 geographical regions:





In addition to being able to correctly identify the geographical region, the appraiser must also be able to determine the species of pine tree that has been planted. The identification of the species of pine tree is critical so the proper yield table can be used in the timber value calculation.

In the Piedmont area, Loblolly pines are the only species found in the yield table. For the Upper Coastal Plain and the Lower Coastal Plain, yield tables for Loblolly pine and Slash pine are available.

Below are photographs of the two species of pines that an appraiser must select from:



Loblolly Pine



Slash Pine



Tree Characteristics of Loblolly Pine:

- Height at maturity:
Typical: 25 to 33 m (90 to 110 ft.)
Maximum: 49.7 m (163 ft.)
- Diameter at breast height at maturity:
Typical: 90 to 120 cm (36 to 48 in)
Maximum: 140 cm (56 in)
- Crown shape: broadly conical; dense
- Stem form: often slightly crooked or swept
- Branching habit: long and spreading; well-developed limbs

Loblolly Pine is the most important and widely cultivated timber species in the southern United States. Because it grows rapidly on a wide range of sites, it is extensively planted for lumber and pulpwood. This tree is dominant on 11.7 million hectares (29 million acres) and comprises over half of the standing pine volume in the south. A medium lived tree, loblolly matures in about 150 years, with select trees reaching 300 years in age. Sonderegger pine ([*Pinus × sondereggeri* H.H. Chapm.](#)) is a natural hybrid between loblolly pine and longleaf pine ([*Pinus palustris* Mill.](#)), and occurs throughout the southeast.



Tree Characteristics of Slash Pine:

Slash pine is a common associate of loblolly pine (*Pinus taeda*). The length and number of needles per fascicle, cones, and bark can be used to differentiate them. Slash pine has "brooms" of needles at the ends of rough twigs. Needles may be 5" to 11" long and are borne 2 to 3 to a fascicle. Cones range from 5" to 8" in length. Loblolly has 3 needles per fascicle that are 6" to 10" long. Loblolly cones are 3" to 6" long, but they are light reddish-brown and persist for three years of growth. Also, loblolly cones are far pricklier than slash pine cones. Bark of slash pine has large, flat, orange-brown plates. Loblolly bark is thick and divides into irregular, dark brown scaly blocks.

Identifying Characteristics	
Size/Form:	Slash pine is a medium to large tree that reaches heights of 80' to 115' tall. It has crown characterized by a round top and "brooms" of needles at the ends of the branches.
Leaves:	The needles are borne in sheathed fascicles of two or three, spirally arranged, and persistent. The needles are 5" to 11" long.
Fruit:	The fruit is a woody cone that is 5" to 8" long. It is dark brown. At the tip of the scales is a small, out-curved spine.
Bark:	The orange-brown bark is scaly and has plates.
Habitat:	It grows in the infertile soils of sandhills, flatwoods, and near wet lowlands, such as swamps and ponds.



In addition to valuing pre-merchantable timber for value extraction, a value will need to be determined for stands of trees that have reached the age of merchantability (16 years and older). There are no “magic formulae” or definitive steps such as with pre-merchantable timber in determining the value of merchantable timber. The knowledge and expertise of an individual trained in collecting timber information should be utilized when merchantable timber is present. A cruise which is defined as an estimation of the volume and value of timber is a preferred means of obtaining the value of merchantable timber.

Merchantable timber can be assigned to one of the 3 major categories, pulpwood, chip-n-saw and sawtimber. Many natural stands will have a mix of all 3 categories. Planted stands of timber due to the fact that the trees were planted at the same time will be of one category but over time will evolve into the next higher merchantable category.

- **Pulpwood – Trees between 4 to 8 inches dbh (Diameter Breast Height – 4.5 ft. above forest floor on uphill side of tree)**
- **Chip and Saw – Trees between 9 to 12 inches dbh**
- **Sawtimber – Tree with dbh above 12 inches**



Timber Valuation – Example 1

Map ID 022-009 is a 600 acre tract of rural land which sells for \$850,000. All indications are that the sell is qualified. However, upon inspection of the parcel, the appraiser notes that there is a considerable amount of timber present on the property. Efforts to contact the buyer and seller have produced no information with regard to timber values or volumes.

The county contracts with a registered forester who upon a visit to the property and the use of aerial photography concludes that the following timber volumes and acres are present. The forester, also, states that the stocking density of the pre-merchantable stands is average and the cost of establishing planted timber stands is about \$130 per acre.

Merchantable Timber	
Timber Type	Tons
Pine Pulpwood	200
Pine Chip-n-Saw	1500
Pine Sawtimber	6300
Hardwood Sawtimber	550

Pre-Merchantable Timber		
Timber Type	Age	Acres
Pine	7	60.00
Pine	12	25.00

The appraiser must now determine the value of the timber that is to be deducted from the sales price. Use the Table of Owner Harvest Timber Values provided in the manual for Burke County.



Timber Valuation Worksheet - Merchantable Timber				
Map ID: 022-009			Date: 06/30/17	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Volume (Tons)	Unit Price	Value	
Softwood Pulpwood	200	13.32	2,664	
Softwood Chip-n-Saw	1500	19.68	29,520	
Softwood Sawtimber	6300	27.07	170,541	
Softwood Poles				
Softwood Posts				
Softwood Fuelchips				
Hardwood Pulpwood				
Hardwood Sawtimber	550	31.26	17,193	
Hardwood Firewood				
Total Merchantable Timber Value			219,918	
Information Supplied by:				



Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID: 022-009			Date: 06/30/17	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood	(52.2 * .90) 47	13.32	1.00	626
Chip-n-Saw	(52.2 * .10) 5.0	19.68	1.00	98
Total Value/Acre (Pulpwood + Chip-n-Saw)				724
Acres of Pre-Merch				60.00
Total Value (Total Value/Acre x Acres)				43,440
Cost (Cost of Establishing Stand / Acre * Acres) (60 * 130)				7,800
Base Value (Total Value – Cost)				35,640
Age of Merch (15 is default; local conditions take precedence)				15
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				2,376
Age of Stand (in years)				7
Accumulated Timber Growth (Average Annual Timber Growth * Age of Stand)				16,632
Total Accumulated Value (Accumulated Timber Growth + Cost)				24,432
Information Supplied by:				



Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID: 022-009			Date: 06/30/17	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood	(52.2 * .90) 47	13.32	1.00	626
Chip-n-Saw	(52.2 * .10) 5.0	19.68	1.00	98
Total Value/Acre (Pulpwood + Chip-n-Saw)				724
Acres of Pre-Merch				25
Total Value (Total Value/Acre x Acres)				18,100
Cost (Cost of Establishing Stand / Acre * Acres) (25 * 130)				3,250
Base Value (Total Value – Cost)				14,850
Age of Merch (15 is default; local conditions take precedence)				15
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				990
Age of Stand (in years)				12
Accumulated Timber Growth (Average Annual Timber Growth * Age of Stand)				11,880
Total Accumulated Value (Accumulated Timber Growth + Cost)				15,130
Information Supplied by:				



Timber Value Summary	
Map ID: 022-009	Date: 06/30/17
Timber Type	Value
Merchantable	219,918
Pine Pre-Merchantable (Planted)	39,562
Pine Pre-Merchantable (Natural)	
Hardwood Pre-Merchantable	
Total Value of all Timber Types	259,480

**Timber Valuation – Example 2**

Map ID 022-010 is a 200 acre tract of rural land which sells for \$300,000. All indications are that the sell is qualified. Upon inspection of the parcel, the appraiser notes that the entire 200 acres is planted pine. Efforts to contact the buyer and seller have produced no information with regard to timber values or volumes but the seller did state that the age of the Loblolly planted pine stand is 5 years.

The county has soil maps and has determined the following with regard to productivity ratings and acreage. Information from a forester states that Burke County is in the Upper Coastal Plain region, the stocking density of the pre-merchantable Loblolly stand is average and the cost of establishing planted timber stands is about \$130 per acre.

Productivity Rating	Acres
2	80
5	100
8	20

The appraiser must now determine the value of the timber that is to be deducted from the sales price. Use the Table of Owner Harvest Timber Values provided in the manual for Burke County and the land productivity rating-timber yield table provided in Rule 560-11-10-.09(3)(b)2(v)(I)II.

Productivity-Volume Worksheet					
Map ID: 022-010			Acres: 200.00	Date: 06/30/17	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
2	93	10	80 acs – 40%	37.20	4.00
5	70	8	100 acs – 50%	35.00	4.00
8	18	0	20 acs – 10%	1.80	0.00
Total Volume				74.00	8.00



Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID: 022-010			Date: 06/30/17	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood	74.00	13.32	1.00	985
Chip-n-Saw	8.00	19.68	1.00	157
Total Value/Acre (Pulpwood + Chip-n-Saw)				1142
Acres of Pre-Merch				200.00
Total Value (Total Value/Acre x Acres)				228,400
Cost (Cost of Establishing Stand / Acre * Acres)				26,000
Base Value (Total Value – Cost)				202,400
Age of Merch (15 is default; local conditions take precedence)				15
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				13,493
Age of Stand (in years)				5
Accumulated Timber Growth (Average Annual Timber Growth * Age of Stand)				67,465
Total Accumulated Value (Accumulated Timber Growth + Cost)				93,465
Information Supplied by:				



Timber Value Summary	
Map ID: 022-010	Date: 06/30/17
Timber Type	Value
Merchantable	
Pine Pre-Merchantable (Planted)	93,465
Pine Pre-Merchantable (Natural)	
Hardwood Pre-Merchantable	
Total Value of all Timber Types	93,465



Timber Valuation – Exercise 1

Map ID 030-012 is a 400 acre tract of rural land which sells for \$765,000 in Burke County. All indications are that the sell is qualified. However, upon inspection of the parcel, the appraiser notes that there is a considerable amount of timber present on the property. Efforts to contact the buyer and seller have produced no information with regard to timber values or volumes.

The county contracts with a registered forester who upon a visit to the property and the use of aerial photography concludes that the following timber volumes and acres are present. The forester, also, states that the stocking density of the Loblolly pre-merchantable stands is 80% and the cost of establishing planted timber stands is about \$110 per acre. Burke Co is located in the Upper Coastal Plain region of the State.

Merchantable Timber	
Timber Type	Tons
Pine Pulpwood	400
Pine Chip-n-Saw	2200
Pine Sawtimber	7600
Hardwood Sawtimber	1100

Pre-Merchantable Pine – 8 years old	
Productivity Rating	Acres
2	5
4	8
5	12

Pre-Merchantable Pine – 14 years old	
Productivity Rating	Acres
3	10
6	14



Timber Valuation Worksheet - Merchantable Timber				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Volume (Tons)	Unit Price	Value	
Softwood Pulpwood				
Softwood Chip-n-Saw				
Softwood Sawtimber				
Softwood Poles				
Softwood Posts				
Softwood Fuelchips				
Hardwood Pulpwood				
Hardwood Sawtimber				
Hardwood Firewood				
Total Merchantable Timber Value				
Information Supplied by:				



Productivity-Volume Worksheet					
Map ID:			Acres:	Date:	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2					
3					
4					
5					
6					
7					
8					
9					
Total Volume					



Productivity-Volume Worksheet					
Map ID:			Acres:	Date:	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2					
3					
4					
5					
6					
7					
8					
9					
Total Volume					



Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood				
Chip-n-Saw				
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Total Value (Total Value/Acre x Acres)				
Cost (Cost of Establishing Stand / Acre * Acres)				
Base Value (Total Value – Cost)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Accumulated Timber Growth (Average Annual Timber Growth * Age of Stand)				
Total Accumulated Value (Accumulated Timber Growth + Cost)				
Information Supplied by:				



Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood				
Chip-n-Saw				
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Total Value (Total Value/Acre x Acres)				
Cost (Cost of Establishing Stand / Acre * Acres)				
Base Value (Total Value – Cost)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Accumulated Timber Growth (Average Annual Timber Growth * Age of Stand)				
Total Accumulated Value (Accumulated Timber Growth + Cost)				
Information Supplied by:				



Timber Value Summary	
Map ID:	Date:
Timber Type	Value
Merchantable	
Pine Pre-Merchantable (Planted)	
Pine Pre-Merchantable (Natural)	
Hardwood Pre-Merchantable	
Total Value of all Timber Types	



Timber Valuation – Exercise 2

Map ID 031-014 is a 200 acre tract of rural land which sells for \$350,000 in Burke County. All indications are that the sell is qualified. However, upon inspection of the parcel, the appraiser notes that there is a considerable amount of timber present on the property. Efforts to contact the buyer and seller have produced no information with regard to timber values or volumes.

The county contracts with a registered forester who upon a visit to the property and the use of aerial photography concludes that the following timber volumes and acres are present. The forester, also, states that the stocking density of the Loblolly pre-merchantable stands is 100%. The cost of establishing planted timber stands is about \$250 per acre. Burke Co is located in the Upper Coastal Plain region of the State.

Merchantable Timber	
Timber Type	Tons
Pine Pulpwood	250
Pine Chip-n-Saw	1800
Pine Sawtimber	1400
Hardwood Sawtimber	450

Loblolly Pre-Merchantable Pine – 12 years old	
Productivity Rating	Acres
1	3
5	15

Natural Regeneration – Loblolly – 16 ft. Height	
Productivity Rating	Acres
6	31



Based on a sampling of a one acre plot of planted Slash pine, it is determined that on the average 75 trees have died per acre. The planting pattern for these trees is 10' rows with 8' feet between the trees. Calculate the value of timber to be extracted from the sales price.

Slash Pre-Merchantable Pine – 7 years old	
Productivity Rating	Acres
2	18
4	21



Timber Valuation Worksheet - Merchantable Timber				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Volume (Tons)	Unit Price	Value	
Softwood Pulpwood				
Softwood Chip-n-Saw				
Softwood Sawtimber				
Softwood Poles				
Softwood Posts				
Softwood Fuelchips				
Hardwood Pulpwood				
Hardwood Sawtimber				
Hardwood Firewood				
Total Merchantable Timber Value				
Information Supplied by:				



Productivity-Volume Worksheet					
Map ID:			Acres:	Date:	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2					
3					
4					
5					
6					
7					
8					
9					
Total Volume					



Productivity-Volume Worksheet					
Map ID:			Acres:	Date:	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2					
3					
4					
5					
6					
7					
8					
9					
Total Volume					



Productivity-Volume Worksheet					
Map ID:			Acres:	Date:	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2					
3					
4					
5					
6					
7					
8					
9					
Total Volume					



Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood				
Chip-n-Saw				
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Total Value (Total Value/Acre x Acres)				
Cost (Cost of Establishing Stand / Acre * Acres)				
Base Value (Total Value – Cost)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Accumulated Timber Growth (Average Annual Timber Growth * Age of Stand)				
Total Accumulated Value (Accumulated Timber Growth + Cost)				
Information Supplied by:				



Timber Valuation Worksheet - Pine Pre-Merchantable (Natural)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood				
Chip-n-Saw				
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Total Value (Total Value/Acre x Acres)				
Cost (Cost of Establishing Stand / Acre * Acres)				
Base Value (Total Value – Cost)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Accumulated Timber Growth (Average Annual Timber Growth * Age of Stand)				
Total Accumulated Value (Accumulated Timber Growth + Cost)				
Information Supplied by:				



Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood				
Chip-n-Saw				
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Total Value (Total Value/Acre x Acres)				
Cost (Cost of Establishing Stand / Acre * Acres)				
Base Value (Total Value – Cost)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Accumulated Timber Growth (Average Annual Timber Growth * Age of Stand)				
Total Accumulated Value (Accumulated Timber Growth + Cost)				
Information Supplied by:				



Timber Value Summary	
Map ID:	Date:
Timber Type	Value
Merchantable	
Pine Pre-Merchantable (Planted)	
Pine Pre-Merchantable (Natural)	
Hardwood Pre-Merchantable	
Total Value of all Timber Types	



Rural Land – Determination of Location/Size Factors for Large Parcels

The base land values that were calculated for large tracts were a result of analyzing the market for the typical agricultural tract and determining the use values for such properties. The values that were calculated should contain little or no adjustment for location and size. However, within any county there will be parcels with acreage above the small acre break point but less than the standard agricultural parcel acreage. Typically, these parcels require adjustments for location and size to generate the property's Fair Market Value.

The lack of size/location adjustments in a rural land schedule can result in the following situation where the small acre break point exists and the large tract land schedule is applied. The value of a 25.00 acre small parcel with an accessibility/desirability code of 3C is 25,000 (25 * 1,000/acre). The value of a 26 acre parcel that has 10 acres of Class II open land and 16 acres of Class W3 woodland is 11,800. The value difference of 13,200 dollars is difficult to explain to a taxpayer since the lower valued parcel is the larger of the two.

A more definitive means of determining the need for such adjustments would be through a sales-assessment ratio study. A ratio study performed on the 15 sales that were used to derive the large tract base land values would produce the following statistics:

Median = .3951
COD = .0205
PRD = 1.0015

If the sales of the 10 smaller agricultural tracts on the following pages are introduced into the study, the statistics are as follows:

Median = .3818
COD = .1107
PRD = .9397

The statistics above indicate that the rural land large tract schedule is producing the correct assessment level with acceptable uniformity but the schedule contains bias toward the smaller tracts which is known as progressivity. In other words, the larger parcels would have the higher ratios. If the sales were arrayed by size, it would be obvious as to this fact.

The progressivity of the rural land schedule, in this case, is due to the lack of a component of fair market value which is an adjustment/factor for size and location. The size/location adjustment would fall under the category of "any other factors deemed pertinent in arriving at fair market value" as defined in Georgia Code Section 48-5-2.



The sales price of Sale #16 below is 27,000 with an accessibility assignment of 3. The appraised value of the land using the rural land base schedule is 22,900 as calculated below.

Classification	Acres	\$/Acre	Value
II	25.00	700	17,500
W2	18.00	300	5,400
Land "Use" Value			22,900

The value difference of 4,100 between the sales price and the Use Value can be attributed to size and location influences. In the business of mass appraisal, the value difference is best defined as a factor that can be easily applied to hundreds, perhaps thousands of parcels.

The size/location adjustment factor would be 1.1790 and would be calculated by dividing the residual land sales price by the land use value. The steps for the factor calculation are as follows:

Residual Land Price = Sales Price – Non-Land Value

Loc/Size Adj = Res Land Price / App Use Value (round to 4 decimal positions)

Accessibility assignments should be based on the location of the parcel within the county and the accessibility areas defined in the small parcel market analysis. Factors for all sales should be calculated and placed in an accessibility/desirability table at the proper acre level and accessibility code point such as in the example below using Sale #16.



Accessibility					
Acre Level	1	2	3	4	5
26.00					
27.00					
28.00					
29.00					
30.00					
31.00					
32.00					
33.00					
34.00					
35.00					
36.00					
37.00					
38.00					
39.00					
40.00					
41.00					
42.00					
43.00			1.1790		
44.00					
45.00					
46.00					
47.00					
48.00					
49.00					
50.00					

After all size/location adjustments are calculated, the appraiser should establish a benchmark point in the table and then use sales that occur at the same acre level but consecutive adjacent accessibility areas in order to calculate an accessibility factor. Acreage factors will be calculated using the formula for variance.



Accessibility					
Acre Level	1	2	3	4	5
26.00					1.3557/1.4439
27.00					
28.00		1.7411			
29.00					
30.00					
31.00					
32.00					
33.00					
34.00				1.2667	
35.00	1.6250	1.5137			
36.00					
37.00					
38.00			1.2977		
39.00					
40.00					
41.00					
42.00					
43.00			1.1790		
44.00					
45.00					
46.00					
47.00					
48.00				0.9000	
49.00	1.2255				
50.00					

The sample transitional table above represents rural land sales between the small acre break point and the standard agricultural tract acreages. The factors keyed are attributable to those parcels size and location within the county. A benchmark can be found by identifying sales that have occurred within the same accessibility area at the same acre level within the table. Two sales have occurred in accessibility area 5 at the 28 acre level. Using these two sales the appraiser could consider a benchmark of 1.4000.

An accessibility factor can be calculated using sales that occur at the same acre level within the transitional table but consecutive adjacent accessibility locations. Two sales have occurred at the 35 acre level with 1 and 2 consecutive adjacent accessibility locations. An accessibility factor can be calculated as follows:

Factor at lesser accessibility / Factor at better accessibility
1.5137 / 1.6250 = .9315



To calculate an acreage factor the appraiser will need to use the formula for variance as there are no sales that occurred within the same accessibility location with consecutive adjacent acre intervals

Variance

After the benchmark and location/accessibility factor/s have been determined the appraiser should then develop an acreage factor. The acreage factor will be determined using a formula know as variance because most counties will not have sales within the transitional table that are consecutive/adjacent acre intervals. The formula for variance is shown below.

$$(X/Y)^{(B-A)}$$

X = Factor at Higher Acre Level

Y = Factor at Lower Acre Level

A = Lower Acre Level

B = Higher Acre Level

Example from Transitional Table sales within accessibility location 2:

$$(1.5137/1.7411)^{(35-28)}$$

Once the benchmark, accessibility factor, and acreage factor have been derived the appraiser should apply them to the transitional schedule extending the factors throughout the accessibility/desirability table for tracts above the small acre break point. See completed example table.

**Large Tract Transitional Table**

Acre Level	Accessibility				
	1	2	3	4	5
26.00	1.8595	1.7321	1.6135	1.5030	1.4000
27.00	1.8223	1.6975	1.5812	1.4729	1.3720
28.00	1.7859	1.6635	1.5496	1.4434	1.3446
29.00	1.7501	1.6303	1.5186	1.4146	1.3177
30.00	1.7151	1.5977	1.4882	1.3863	1.2913
31.00	1.6808	1.5657	1.4585	1.3585	1.2655
32.00	1.6472	1.5344	1.4293	1.3314	1.2402
33.00	1.6143	1.5037	1.4007	1.3048	1.2154
34.00	1.5820	1.4736	1.3727	1.2787	1.1911
35.00	1.5504	1.4442	1.3452	1.2531	1.1672
36.00	1.5193	1.4153	1.3183	1.2280	1.1439
37.00	1.4890	1.3870	1.2920	1.2035	1.1210
38.00	1.4592	1.3592	1.2661	1.1794	1.0986
39.00	1.4300	1.3320	1.2408	1.1558	1.0766
40.00	1.4014	1.3054	1.2160	1.1327	1.0551
41.00	1.3734	1.2793	1.1917	1.1100	1.0340
42.00	1.3459	1.2537	1.1678	1.0878	1.0133
43.00	1.3190	1.2286	1.1445	1.0661	0.9931
44.00	1.2926	1.2041	1.1216	1.0448	0.9732
45.00	1.2668	1.1800	1.0992	1.0239	0.9537
46.00	1.2414	1.1564	1.0772	1.0034	0.9347
47.00	1.2166	1.1333	1.0556	0.9833	0.9160
48.00	1.1923	1.1106	1.0345	0.9636	0.8976
49.00	1.1684	1.0884	1.0138	0.9444	0.8797
50.00	1.1450	1.0666	0.9935	0.9255	0.8621

Using Absorption Methodology in Rural Land Schedules

In most counties, parcels of rural land exist that are larger than the typical size agricultural tract that sales. These “super-sized” parcels may range from 400 to 500 acres and up to thousands of acres depending upon the county. Typically, there are few sales to no sales of these type tracts. Consequently, the appraiser is left without any real guidelines as to how to make size adjustments to these parcels.

In the absence of adequate sales to develop size adjustments for the “super-sized” parcels, the APM provides the appraiser with a means of arriving at size adjustments through absorption methodology. The appraiser should remember that this methodology is used only when adequate sales of rural large tracts are not available to provide market indications of size factors.

In Rule 560-11-10-.02(1)(a), an absorption rate is defined as the rate at which the real estate market can



absorb real property of a given type. In this situation, the appraiser is concerned with the rate at which a large tract of land can be absorbed by the market if it is divided into smaller marketable units and then determining the present worth of the property by discounting the future worth of the parcel to present day dollars.

Rule 560-11-10-.09(3)(b)(2)(iv) provides the methodology by which the appraiser shall determine the rate of absorption and apply the rate to the valuation process. The Rule states

“When insufficient large tract sales are available to create a reliable schedule of factors, the appraisal staff may use comparable sales to develop values for the size tracts for which comparables exist, and then adjust these values for larger tracts by (1) estimating a rate of absorption for the smaller tracts for which data exists, (2) dividing the large tract into smaller, marketable sections, (3) developing a sales schedule with estimated income by year reflecting the absorption rate and the value characteristics of each of the smaller tracts, (4) discounting the income schedule to the present using an appropriate discount rate, and (5) summing the resulting values to arrive at an estimated value for the property.”

Each step of developing an absorption rate as outlined in the Rule above will be discussed on the following pages.

The **initial step** in the process is to estimate a rate of absorption for the smaller tracts for which data exists and to define a standard size for agricultural tracts. This can be translated as determining the number of smaller marketable units that are generally sold each year and the average size of the tracts. The number of smaller marketable units may be obtained in the following manner:

1. The “true” agricultural tracts should be arrayed by acreage.
2. From the array of agricultural tracts the appraiser should select an acreage level where the largest number of sales have occurred. Due to the limited number of sales, the acreage level may actually be an acreage range, not a specific number of acres. For example, the appraiser may select a range of 150 to 250 acres with an average acreage level of 200 acres. The average acreage level will be termed the standard agricultural marketable tract. In some situations, a period of time extending beyond 1 year may need to be used to provide the appraiser with a clear indication of the standard size for agricultural tracts.
3. The rate of absorption will be the number of sales that occur at the acre level or acreage range. If more than one year is used to draw the conclusion, the appraiser should average the number of sales over the number of years to produce a yearly rate.



The **second step** of the process is dividing the large tract into smaller, marketable units. In the fee appraisal process, each parcel to be appraised that is larger than the standard marketable unit would need to be analyzed. However, considering the volume of parcels that must be appraised each year in mass appraisal, the appraiser must take a different approach. Consequently, the large tract will be identified as the largest non-exempt, non-utility parcel in the county. The large tract should then be divided into smaller marketable units by dividing the acreage in the large tract by the total acres of the standard agricultural marketable tracts which produces the number of marketable sections.

For example, if the largest parcel in the county is 5,000 acres and the standard agricultural marketable tract is 200 acres with 5 such standard agricultural parcels sold each year, the appraiser would determine the total acres of the standard agricultural marketable tract by multiplying the standard agricultural marketable acreage by the number for standard agricultural parcels sold. ($200 * 5 = 1000$).

The total standard agricultural acres would then be divided into the acreage of the large tract to generate the number of years expected to sell off the large tract ($5000 \div 1000 = 5$). This will be known as the sell-off period.

The **third step** in the absorption process is to develop a sales schedule with estimated income by year reflecting the absorption rate and the value characteristics of each of the smaller tracts. In other words, the appraiser should determine the value of the smaller marketable agricultural units. Since the result of the absorption process will be applied to all large tracts across the county, the appraiser may determine the composition of the standard agricultural tract in the county and apply that to the county's rural base land schedule to generate the value of the smaller marketable agricultural units.

For example, if the standard agricultural tract composition is 60 % woodland and 40 % open land and the value of the woodland is \$1100 per acre and open land is \$1500 per acre, the value of the standard agricultural marketable acreage (1000 acres) can be calculated as follows:

$$\text{Open Land value} = \text{std mkt acres} * \% \text{Open} * \text{avg open value} = 1000 * .40 * 1500 = 600,000$$

$$\text{Woodland value} = \text{std mkt acres} * \% \text{Wood} * \text{avg wood value} = 1000 * .60 * 1100 = 660,000$$

$$\text{Total value} = \text{Open Land value} + \text{Woodland value} = 600,000 + 660,000 = 1,260,000$$

Step four of the absorption process involves discounting the income schedule to the present using an appropriate discount rate. This can be translated as determining the present worth of the standard agricultural marketable units for each year with a discount rate. The discount rate can be defined as the rate of return that most buyers would expect from an investment in rural land. In the absence of that information, the appraiser may inquire of local lending institutions as to the typical rate for borrowing funds to purchase rural land properties.

In our example, the sell-off period is 5 years as calculated in Step 2 and the value of the standard marketable acreage as determined in Step 3 is 1,260,000. The discount rate is 7%. The value of the standard marketable acreage must be discounted for each year of the sell-off period.



The present value of a future income stream can be calculated with the following formula:

$$PV = FV \div (1 + i)^n$$

Where PV = present value, FV = future value, i = discount rate, and n = the year of the income stream for which the present value is sought. For example, if we were looking for the present value of the standard marketable acreage in the fourth year of the sell-off period, the present value formula would be applied in the manner below:

$$PV = 1,260,000 \div (1 + .07)^4$$

$$PV = 1,260,000 \div 1.07^4$$

$$PV = 1,260,000 \div 1.3108$$

$$PV = 961,248$$

Following is a table containing the present worth value for each year of a standard 5,000 acre tract.

Year	Value	Rate	Present Value
0	1,260,000	7.00	1,260,000
1	1,260,000	7.00	1,177,570
2	1,260,000	7.00	1,100,533
3	1,260,000	7.00	1,028,535
4	1,260,000	7.00	961,248

The **fifth step** in the absorption process is summing the resulting values to arrive at an estimated value for the property. This can be stated as totaling the present value for each year to produce the total discounted value of the large tract.



The table below contains the sum of the present values for the 5,000 acre tract.

Year	Value	Rate	Present Value
0	1,260,000	7.00	1,260,000
1	1,260,000	7.00	1,177,570
2	1,260,000	7.00	1,100,533
3	1,260,000	7.00	1,028,535
4	1,260,000	7.00	961,248
Total Value			5,527,886

The process above could be applied to all large tracts of rural land. However, that would require the appraiser to be more specific as to the composition of the subject properties and the calculations would have to be done hundreds of times. With the use of composition and value standards for the county, a **sixth step** can be added to the process whereby the information derived from this process can be used to create a size factor for the large tract which through interpolation can be applied to all parcels that are categorized as rural land and have acreage above the standard agricultural tract size. The size factor should be integrated into the county's accessibility/desirability table.

The size adjustment is calculated by dividing the per acre value of the large tract by the per acre value of the standard agricultural marketable tract. The steps to perform this calculation are as follows:

- Value of std mkt tract of 200 acres = $(200 * .60 * 1100) + (200 * .40 * 1500) = 252,000$
- Value of 5,000 acre tract = 5,527,886
- Size Adj = \$ per ac of large tract / \$ per ac of std tract
- Size Adj = $1,106 / 1,260$
- Size Adj = .8778

The size factor would be added to the accessibility/desirability table as in the example below:



Acres	Factor
50.00	1.4335
100.00	1.0554
200.00	1.0000
5000.00	.8778

Using an interpolation routine such as the one below, size factors could be determined for all acreage levels. The formula for the interpolation of size factors is

$$(((A - L) / (U - L)) * (UV - LV)) + LV$$

- A = acre level where size factor is needed
- L = lower acre level in schedule within acre range of A
- U = upper acre level in schedule within acre range of A
- LV = Factor at L acre level
- UV = Factor at U acre level

If the size factor for a 1500 acre tract is needed, the calculations would take place as follows:

- $(((A - L) / (U - L)) * (UV - LV)) + LV$
- $(((1500 - 200) / (5000 - 200)) * (.8778 - 1.0000)) + 1.0000$
- $((1300 / 4800) * -.1222) + 1.0000$
- $(.2708 * -.1222) + 1.0000$
- $-.0331 + 1.0000 = .9669$

The size factors would be applied to the “use” values of the agricultural parcels to generate the Fair Market Value of the land. The “use” values are calculated by applying the base land schedule to the acreage associated with each use/productivity rating classification within the parcel.

In the example above, the size factor was calculated for the entire county without regard to accessibility



areas. Considering the size of the large tracts, the appraiser may find this to be acceptable. However, if sales indicate a need to calculate a different size factor for each accessibility area, the appraiser may do so keeping in mind that the value of the standard marketable agricultural acreage must be adjusted for location.



Absorption Exercise

Develop a size factor for large agricultural tracts within a county where the following determinations were made:

- 5 parcels sold each year within an acre range of 100 to 200 acres (60% wooded / 40% open)
- Wooded acres sell for 1500/ac ; Open 2000/ac
- 2500 acres is largest agricultural parcel
- 8 % is expected rate of return



Interpolation Fair Market Value Exercise

Calculate the value of an 800 acre agricultural tract which is 80% open and 20% wooded. The value of the open land is 2000 per acre; the woodland value is 1500 per acre. The accessibility/desirability table that is to be used is as follows:

Acres	Factor
50.00	1.4335
100.00	1.0554
150.00	1.0000
2500.00	.8347



Appendix
County Listing

Co #	County	Co #	County	Co #	County	Co #	County
001	APPLING	043	DECATUR	085	LAMAR	127	STEPHENS
002	ATKINSON	044	DEKALB	086	LANIER	128	STEWART
003	BACON	045	DODGE	087	LAURENS	129	SUMTER
004	BAKER	046	DOOLY	088	LEE	130	TALBOT
005	BALDWIN	047	DOUGHERTY	089	LIBERTY	131	TALIAFERRO
006	BANKS	048	DOUGLAS	090	LINCOLN	132	TATTNALL
007	BARROW	049	EARLY	091	LONG	133	TAYLOR
008	BARTOW	050	ECHOLS	092	LOWNDES	127	STEPHENS
009	BEN HILL	051	EFFINGHAM	093	LUMPKIN	128	STEWART
010	BERRIEN	052	ELBERT	094	MACON	129	SUMTER
011	BIBB	053	EMANUEL	095	MADISON	130	TALBOT
012	BLECKLEY	054	EVANS	096	MARION	131	TALIAFERRO
013	BRANTLEY	055	FANNIN	097	MCDUFFIE	132	TATTNALL
014	BROOKS	056	FAYETTE	098	MCINTOSH	133	TAYLOR
015	BRYAN	057	FLOYD	099	MERIWETHER	134	TELFAIR
016	BULLOCH	058	FORSYTH	100	MILLER	135	TERRELL
017	BURKE	059	FRANKLIN	101	MITCHELL	136	THOMAS
018	BUTTS	060	FULTON	102	MONROE	137	TIFT
019	CALHOUN	061	GILMER	103	MONTGOMERY	138	TOOMBS
020	CAMDEN	062	GLASCOCK	104	MORGAN	139	TOWNS
021	CANDLER	063	GLYNN	105	MURRAY	140	TREUTLEN
022	CARROLL	064	GORDON	106	MUSCOGEE	141	TROUP
023	CATOOSA	065	GRADY	107	NEWTON	142	TURNER
024	CHARLTON	066	GREENE	108	OCONEE	143	TWIGGS
025	CHATHAM	067	GWINNETT	109	OGLETHORPE	144	UNION
026	CHATTAHOOCHEE	068	HABERSHAM	110	PAULDING	145	UPSON
027	CHATTOOGA	069	HALL	111	PEACH	146	WALKER
028	CHEROKEE	070	HANCOCK	112	PICKENS	147	WALTON
029	CLARKE	071	HARALSON	113	PIERCE	148	WARE
030	CLAY	072	HARRIS	114	PIKE	149	WARREN
031	CLAYTON	073	HART	115	POLK	150	WASHINGTON
032	CLINCH	074	HEARD	116	PULASKI	151	WAYNE
033	COBB	075	HENRY	117	PUTNAM	152	WEBSTER
034	COFFEE	076	HOUSTON	118	QUITMAN	153	WHEELER
035	COLQUITT	077	IRWIN	119	RABUN	154	WHITE
036	COLUMBIA	078	JACKSON	120	RANDOLPH	155	WHITFIELD
037	COOK	079	JASPER	121	RICHMOND	156	WILCOX
038	COWETA	080	JEFF DAVIS	122	ROCKDALE	157	WILKES
039	CRAWFORD	081	JEFFERSON	123	SCHLEY	158	WILKINSON
040	CRISP	082	JENKINS	124	SCREVEN	159	WORTH
041	DADE	083	JOHNSON	125	SEMINOLE		
042	DAWSON	084	JONES	126	SPALDING		



Timber Valuation Worksheets

Timber Valuation Worksheet - Merchantable Timber				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Volume (Tons)	Unit Price	Value	
Softwood Pulpwood				
Softwood Chip-n-Saw				
Softwood Sawtimber				
Softwood Poles				
Softwood Posts				
Softwood Fuelchips				
Hardwood Pulpwood				
Hardwood Sawtimber				
Hardwood Firewood				
Total Merchantable Timber Value				
Information Supplied by:				



Productivity-Volume Worksheet					
Map ID:			Acres:	Date:	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2					
3					
4					
5					
6					
7					
8					
9					
Total Volume					



Productivity-Volume Worksheet					
Map ID:			Acres:	Date:	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2					
3					
4					
5					
6					
7					
8					
9					
Total Volume					



Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood				
Chip-n-Saw				
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Total Value (Total Value/Acre x Acres)				
Cost (Cost of Establishing Stand / Acre * Acres)				
Base Value (Total Value – Cost)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Accumulated Timber Growth (Average Annual Timber Growth * Age of				
Total Accumulated Value (Accumulated Timber Growth + Cost)				
Information Supplied by:				



Timber Valuation Worksheet - Pine Pre-Merchantable (Natural)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood			.50	
Chip-n-Saw			.50	
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Base Value (Total Value/Acre x Acres)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Value of Accumulated Growth (Avg Annual Timber Growth * Age of Stand)				
Information Supplied by:				



Timber Valuation Worksheet - Hardwood Pre-Merchantable (Natural)				
Map ID:			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood			.40	
Chip-n-Saw			.40	
Total Value/Acre (Pulpwood + Chip-n-Saw)				
Acres of Pre-Merch				
Base Value (Total Value/Acre x Acres)				
Age of Merch (15 is default; local conditions take precedence)				
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				
Age of Stand (in years)				
Value of Accumulated Growth (Avg Annual Growth * Age of Stand)				
Information Supplied by:				



Timber Value Summary	
Map ID:	Date:
Timber Type	Value
Merchantable	
Pine Pre-Merchantable (Planted)	
Pine Pre-Merchantable (Natural)	
Hardwood Pre-Merchantable	
Total Value of all Timber Types	



Timber Valuation- Exercise 1

Timber Valuation Worksheet - Merchantable Timber				
Map ID: 030-012			Date: 07/25/17	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Volume (Tons)	Unit Price	Value	
Softwood Pulpwood	400	13.32	5,328	
Softwood Chip-n-Saw	2200	19.68	43,296	
Softwood Sawtimber	7600	27.07	205,732	
Softwood Poles				
Softwood Posts				
Softwood Fuelchips				
Hardwood Pulpwood				
Hardwood Sawtimber	1100	31.26	34,386	
Hardwood Firewood				
Total Merchantable Timber Value			288,742	
Information Supplied by:				



Timber Valuation – Exercise 1

Productivity-Volume Worksheet					
Map ID: 030-012 (8 yr. old stand)			Acres: 25.00	Date: 07/25/17	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2	93	10	20	18.60	2.00
3					
4	77	8	32	24.64	2.56
5	70	8	48	33.60	3.84
6					
7					
8					
9					
Total Volume				76.84	8.40



Timber Valuation – Exercise 1

Productivity-Volume Worksheet					
Map ID: 030-012 (14 yr. old stand)			Acres: 24.00	Date: 07/25/17	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2					
3	84	9	10.00 acs - 42	35.28	3.78
4					
5					
6	63	4	14.00 acs – 58	36.54	2.32
7					
8					
9					
Total Volume				71.82	6.10



Timber Valuation – Exercise 1

Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID: 030-012 (8 yr. old stand)			Date: 07/25/17	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood	76.84	13.32	.80	819
Chip-n-Saw	8.40	19.68	.80	132
Total Value/Acre (Pulpwood + Chip-n-Saw)				951
Acres of Pre-Merch				25.00
Total Value (Total Value/Acre x Acres)				23,775
Cost (Cost of Establishing Stand / Acre * Acres)				2,750
Base Value (Total Value – Cost)				21,025
Age of Merch (15 is default; local conditions take precedence)				15
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				1,402
Age of Stand (in years)				8
Accumulated Timber Growth (Average Annual Timber Growth * Age of				11,216
Total Accumulated Value (Accumulated Timber Growth + Cost)				13,966
Information Supplied by:				



Timber Valuation – Exercise 1

Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID: 030-012 (14 yr. old stand)			Date: 07/25/17	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood	71.82	13.32	.80	765
Chip-n-Saw	6.10	19.68	.80	96
Total Value/Acre (Pulpwood + Chip-n-Saw)				861
Acres of Pre-Merch				24.00
Total Value (Total Value/Acre x Acres)				20,664
Cost (Cost of Establishing Stand / Acre * Acres)				2,640
Base Value (Total Value – Cost)				18,024
Age of Merch (15 is default; local conditions take precedence)				15
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				1202
Age of Stand (in years)				14
Accumulated Timber Growth (Average Annual Timber Growth * Age of				16,828
Total Accumulated Value (Accumulated Timber Growth + Cost)				19,468
Information Supplied by:				



Timber Valuation – Exercise 1

Timber Value Summary	
Map ID: 030-012	Date: 07/25/17
Timber Type	Value
Merchantable	288,742
Pine Pre-Merchantable (Planted)	13,966 + 19,468 = 33,434
Pine Pre-Merchantable (Natural)	
Hardwood Pre-Merchantable	
Total Value of all Timber Types	322,176



Timber Valuation - Exercise 2

Timber Valuation Worksheet - Merchantable Timber				
Map ID: 031-014			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Volume (Tons)	Unit Price	Value	
Softwood Pulpwood	250	13.32	3,330	
Softwood Chip-n-Saw	1800	19.68	35,424	
Softwood Sawtimber	1400	27.07	37,898	
Softwood Poles				
Softwood Posts				
Softwood Fuelchips				
Hardwood Pulpwood				
Hardwood Sawtimber	450	31.26	14,067	
Hardwood Firewood				
Total Merchantable Timber Value			90,719	
Information Supplied by:				



Timber Valuation - Exercise 2

Productivity-Volume Worksheet					
Map ID: 031-014			Acres: 18.00		Date:
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1	116	13	17	19.72	2.21
2					
3					
4					
5	70	8	83	58.10	6.64
6					
7					
8					
9					
Total Volume				77.82	8.85



Timber Valuation - Exercise 2

Productivity-Volume Worksheet					
Map ID: 031-014			Acres: 31.00	Date:	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2					
3					
4					
5					
6	63	4	100	63	4
7					
8					
9					
Total Volume				63	4



Timber Valuation - Exercise 2

Productivity-Volume Worksheet					
Map ID: 031-014			Acres: 39.00	Date:	
	Volume – Tons/Acre				
Productivity	Pulpwood	Chip-n-Saw	% of Stand Ac	Wt. PW Vol	Wt. CS Vol
1					
2	102	11	46	46.92	5.06
3					
4	78	9	54	42.12	4.86
5					
6					
7					
8					
9					
Total Volume				89.04	9.92



Timber Valuation - Exercise 2

Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID: 031-014			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood	77.82	13.32	1.00	1,037
Chip-n-Saw	8.85	19.68	1.00	174
Total Value/Acre (Pulpwood + Chip-n-Saw)				1,211
Acres of Pre-Merch				18
Total Value (Total Value/Acre x Acres)				21,798
Cost (Cost of Establishing Stand / Acre * Acres) (250 x 18)				4,500
Base Value (Total Value – Cost)				17,298
Age of Merch (15 is default; local conditions take precedence)				15
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				1,153
Age of Stand (in years)				12
Accum Timber Growth (Average Annual Timber Growth * Age of Stand)				13,836
Total Accumulated Value (Accumulated Timber Growth + Cost)				18,336
Information Supplied by:				



Timber Valuation - Exercise 2

Timber Valuation Worksheet - Pine Pre-Merchantable (Natural)				
Map ID: 031-014			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood	63	13.32	.50	420
Chip-n-Saw	4	19.68	.50	39
Total Value/Acre (Pulpwood + Chip-n-Saw)				459
Acres of Pre-Merch				31
Total Value (Total Value/Acre x Acres)				14,229
Cost (Cost of Establishing Stand / Acre * Acres)				0
Base Value (Total Value – Cost)				14,229
Age of Merch (15 is default; local conditions take precedence)				15
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				949
Age of Stand (in years) (16' / 2' per yr.)				8
Accumulated Timber Growth (Average Annual Timber Growth * Age of Stand)				7,592
Total Accumulated Value (Accumulated Timber Growth + Cost)				7,592
Information Supplied by:				



Timber Valuation - Exercise 2

Timber Valuation Worksheet - Pine Pre-Merchantable (Planted)				
Map ID: 031-014			Date:	
Buyer/Seller Value:				
<i>Estimated Value Calculations</i>				
Product Class	Vol(Tons)/Acre	Unit Price	Stocking Density	Value
Pulpwood	89.04	13.32	.85	1,008
Chip-n-Saw	9.92	19.68	.85	166
Total Value/Acre (Pulpwood + Chip-n-Saw)				1,174
Acres of Pre-Merch				39
Total Value (Total Value/Acre x Acres)				45,786
Cost (Cost of Establishing Stand / Acre * Acres) (250 x 39)				9,750
Base Value (Total Value – Cost)				36,036
Age of Merch (15 is default; local conditions take precedence)				15
Average Annual Timber Growth (Base Value ÷ Age of Merchantability)				2,402
Age of Stand (in years)				7
Accum Timber Growth (Average Annual Timber Growth * Age of Stand)				16,814
Total Accumulated Value (Accumulated Timber Growth + Cost)				26,564
Information Supplied by:				



Timber Valuation - Exercise 2

Timber Value Summary	
Map ID:	Date:
Timber Type	Value
Merchantable	90,719
Pine Pre-Merchantable (Planted)	$(18,336 + 26,564) = 44,900$
Pine Pre-Merchantable (Natural)	7,592
Hardwood Pre-Merchantable	
Total Value of all Timber Types	143,211



Fair Market Value Exercise

- Open Land = $800 * .80 = 640$ acres
- Woodland = $800 * .20 = 160$ acres
- Open Land Value = $640 * 2000 = 1,280,000$
- Woodland Value = $160 * 1500 = 240,000$
- Total Use Value = $1,520,000$
- Size Adjustment:
- $((A - L) / (U - L)) * (UV - LV) + LV$
- $((800 - 150) / (2500 - 150) * (.8347 - 1.0000)) + 1.0000$
- $((650 / 2350) * -.1653) + 1.0000$
- $(.2766 * -.1653) + 1.0000$
- $-.0457 + 1.0000$
- $.9543$
- $FMV = 1,520,000 * .9543 = 1,450,536$