Additional Cruise Data

Timber location: While cruising, we classify the tract into different stand types. Different stand types result from a variety of direct and distinct factors, including water/drainage conditions, soil differences, past disturbances, etc. Timberlands has chosen to show various stand types by delineating them by color on aerial photographs. This gives the owner a basic understanding of what type of timber is located in each area and the ground conditions.

Growth and Productivity: Timberland normally makes visual observations or actual tree borings to determine tree growth. A normal report to an owner includes comments and recommendations for each stand type relative to growth. Recommendations can be made as to what silvicultural action should be taken to improve growth or site productivity.

Cruising results in a timber estimate. The accuracy level of this estimate is determined by a variety of factors:

1.) The experience and expertise of the forester. The cruiser must be a highly trained individual who knows and understands everything from how to operate a compass to a thorough knowledge of timber markets.
2.) The size of the tract or area to be cruised to the percentage cruised used.
3.) The method of cruising and the method of sampling.
4.) The accuracy of recording the plot data itself.
5.) The accuracy of acreage determination. Acreages may be determined by available maps, by actual mapping or by aerial photographs. Boundary location and accurate acreages are essential for cruising accuracy.
6.) Underbrush conditions

Sawtimber tree volumes used in timber cruises are generally taken directly from a USDA (Forest Service) publication titled *Tables for Estimating Board-Feet Volume of Timber*. This publication includes volumes in Doyle, Scribner and International Rules by Form Class. Other volume tables are used when reporting volumes in tons. Form Class is a measurement of tree taper and is the percentage ratio between the diameter, inside bark, at the top of the first 16 foot log and DBH.

Summary

Cruising requires highly trained, experienced personnel, planning expertise, accurate recording and a great amount of walking. The type and percentage of cruise is normally dependent on its purpose; a cruise conducted for management planning does not require the intensity or accuracy level that a cruise for a sale requires.

Every owner should know how much timber is on his or her land, where it is located and its productivity level. If you do not know these things, consider getting a Registered, Consulting Forester to cruise your timber and develop a Forest Management Plan for you. If Timberlands Unlimited may be of service to you in implementation of a Management plan or in any of your forestry needs, please give us a call.

YOU SHOULD KNOW WHAT YOU OWN!

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CRUISING:

Forest Inventory

Timberlands Unlimited

What is cruising?

Cruising is the science and art of determining timber volumes on a certain area of land. The objective of a cruise is to obtain a good estimate of how many thousand board feet or tons of timber might be on a tract. All forest owners should know how much timber is standing on their land, where that timber is located, the relative size, age and maturity of the timber and the basic capability of the land. Cruising can determine all of these items for land owners.

There are several basic methods of cruising, including line-plot, strip, prism, visual and 100% tally. We most often use the prism-plot method, employing variable plots, especially on smaller size timber. Prior to entering the woods, we systematically plan on aerial photographs the appropriate number of samples for the tract. The percentage or intensity of a cruise that is performed is determined by the acreage of the tract, the purpose of the cruise, timber types and landowner objectives. The percentage of the cruise generally determines the accuracy of the estimate.

For management purposes, a ten percent (10%) cruise is normally sufficiently accurate. For timber sales, a twenty percent to one hundred percent (20% - 100%) cruise is usually required. Normally, we use 100% cruises for relatively small acreages and/or extremely high value old growth timber.

Timber Volumes

Timber volumes can be expressed in terms of board feet or tons. There are three basic log rules used in board feet measurements: Doyle, Scribner and International. We normally compute pine sawtimber volumes in each of these three rules for reporting purposes, while hardwood sawtimber is usually only computed in the Doyle Rule. Different buyers use different rules; consequently, prices for timber by the unit differ as well. Smaller size timber (pine plylogs, chip-n-saw, and pulpwood) can be measured and reported in cords. Today, weight in tons (1 ton = 2000 pounds) is the most common measurement of various timber volumes.

Log Rules and Measurements

Since the timber industry uses three different log rules, it is important to understand the basis of each. A board foot is a board one foot square and one inch thick. Log rules attempt to estimate the yield of lumber (board feet) that can be obtained from a log or standing tree. Tons are the most common unit of measure today.

Doyle Rule: This rule is over 150 years old. Although it underestimates the content of small logs (the sizes most common today) and overestimates large logs, it is widely used today. It is a formula rule based on the diameter and length of a given log. Hardwood sawtimber volumes are most often quoted in the Doyle Log Rule.

Scribner Rule: Scribner is almost as old as the Doyle Rule and is considered to be more consistent. It was based on diagramming the boards that could be sawed from logs instead of relying on a formula. Pine sawtimber is most often quoted in this rule.

International Rule: This is considered the most consistent of the three rules. It includes reasonable allowances for log taper, saw kerf and slabbing to square the log.

Cord: This is equal to 128 cubic feet or a stack of wood 4' tall, 4' wide and 8' long. Most cords are measured by weight (TONS) today.

Tree Size: Every tree on each plot is recorded by DBH (Diameter Breast Height - 4 1/2 feet above normal ground level), by specie and by merchantable height. When tree volumes are computed, Timberlands develops timber volumes based on species and products. This data gives owners an idea of their timber sizes and volumes for each specie and product (sawtimber, pulpwood, etc.).