

# Glossary

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Accuracy	The nearness of a measurement to the actual value of the variable being measured.
AAC (Allowable Annual Cut)	The rate of harvest determined by the Chief Forester for Timber Supply Areas (TSA's) and Tree Farm Licences (TFL's), and by the District Manager for Woodlot Licences (WL's), and the rate of harvest specified for a licence or in a management plan.
Absolute Variation	The difference between two measurements or a standard and a measurement, disregarding the plus or minus sign (e.g., standard of 7 and measurement of 5 gives absolute variation of 2).
BAF (Basal Area Factor)	Basal Area Factor or "BAF". Prisms come in a wide variety of sizes. They are classified by "diopter" size. The size denotes the basal area per hectare that each "in" tree represents (i.e., an 8 prism which tallies 7 trees in a plot would give a basal area (in timber) of 56 m <sup>2</sup> /hectare).
Bias	<p>Measurement bias occurs when the mean of the measured values differs from the mean of the actual values.</p> <p>Sampling bias occurs when certain sampling units are more likely to be included than others (lack of randomness).</p> <p>Statistical bias occurs when the expected value of the statistic differs from the population parameter.</p>
Boring-Height	The boring-height is the distance from the ground (high-side) up the tree to where an age is taken with an increment-borer. It is always taken at dbh (1.3 m) above high-side.
Breakage	Breakage is defined as any piece broken at both ends and shorter than 3 m which results from normal falling or yarding/forwarding operations.

Breast-Height	The location on a tree where its diameter (dbh) is taken. It is located exactly 1.3 m above "high-side".
Catastrophic Losses	Damage to timber from fire, windfall, insects or disease that inflicts losses well above the norm reflected in the forest inventory for the locality or region.
Cardinal	North, South, East and West.
Closure Error	In a closed traverse, the closure error is the distance between the start and end of the traverse, divided by the length of the traverse, and is usually expressed in percent. It can also be calculated by taking the square root of the sum of the squared sum of latitudes plus the squared sum of departures. A closure error of 1 percent will result in an area error of approximately 2 percent.
Coast	Refer to the Coast Appraisal Manual for the definition of the Coast.
Coefficient of Variation (CV)	A relative measure of variation, equal to the sample standard deviation expressed as a percentage of the sample mean.
Confidence	An expression of accuracy of sample estimates, usually assessed by confidence intervals, a specified proportion of which, such as 95 percent confidence intervals, contain the true population parameters.
Count-Plot	A prism plot where only the number of "in" trees by species is noted. No individual tree measurements are taken. Enhanced count-plots have some measurements taken as required (i.e., diameters or heights).
Crown-Class	Trees are classified into four crown classes. They are dominant, co-dominant, intermediate and overtopped (see Figure 3.10).

Cutblock	A discrete area covered by a form of licence and logged according to an approved harvesting plan.
Cutting Authority Area	The authority to harvest Crown timber, as provided by the <i>Forest Act</i> .  (Cutting authority area means a Timber Sale Licence, a Licence to Cut, a Road Permit, or a cutting permit issued under a Tree Farm Licence, Forest Licence, Timber Licence or a Woodlot Licence.)
Cutting Specifications	The timber merchantability specifications in the Cutting Permit document.
DBH (Diameter Breast Height)	The outside-bark diameter of a tree taken at breast-height (1.3 m above the high side of the ground).
Decay, Waste and Breakage (DWB)	Factors to reduce the gross merchantable volume to a net utilizable volume and to approximate the provincial volume depletion due to decay, firmwood waste and breakage due to harvesting. The statutory authority to allow for DWB is in the <i>Forest Act</i> , Part 2, Section 8(8)iv.
DIB (Diameter Inside Bark)	The inside-bark diameter of a tree. It can be anywhere along the stem of the tree from the base to the top.
Diopter	One way of denoting prism "size". A value of one diopter represents a right-angled deflection of one unit per one hundred units in distance. The formula for converting diopter size to baf size (metric) is:  $\text{baf} = 10,000 / \left[ 1 + \left( \frac{200}{\text{diopters}} \right)^2 \right].$
Double-Sampling	This sampling method incorporates a second sampling procedure where only some of the characteristics of the main sampling method are noted. An example is measure and count-plots established on a cut-block. The major reason for using this method is the savings in time and therefore money because the count-plots take much less time to put in.
Endemic Losses	Damage to timber from normal populations of insects or disease that inflicts average losses over the long term for the locality or region. The forest inventory provides net merchantable volumes which reflect "endemic" (average or normal) losses.

Enhanced Count Plot	A count plot where some individual tree species measurements or specific tree attributes are measured to improve the estimate for the species or specific attributes.
Faller Selection	This timber falling technique applies to selection logging in cutting authorities where the cut and leave trees are not marked and the faller decides which trees to cut or leave. The decision is based on the partial cut prescription and safety considerations.
Fixed-Area Plot Sampling	A sampling method where a fixed amount of area is sampled in each plot within a stratum. All trees above the timber merchantability specifications are tallied regardless of their distance from plot centre. All plots within a stratum must be the same size and shape.
Forest Inventory Zone	British Columbia is segregated into 12 forest inventory zones. All commercial tree species were sampled for volume and decay by the Inventory Branch of the Ministry of Forests (now the Ministry of Sustainable Resources Management). All regions of the province were sampled and areas of similar timber types and climatic conditions were grouped into a common Forest Inventory Zone to produce DWB factors.
GPS (Global Positioning System)	A method of accurately determining or relocating a ground position using the signal from several satellites simultaneously. A small portable computer evaluates the time for each signal to reach it and then computes a three dimensional location.
High-Side	The position where the ground meets the tree on the (uphill side – side of the stump adjacent to highest ground), ignoring any root flare, obstacles, vegetation, and loose matter that has accumulated at the base of the tree.
Interior	Refer to the Interior Appraisal Manual for the definition of the Interior.
Licensee	The holder of the cutting authority area.

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Log Grade	Those log grades that are defined in the <i>Scaling Regulation</i> .
Major Species	Comprises 20 percent or more of total gross volume in a timber type, cut-block or cutting permit.
Minor Species	Comprises less than 20 percent of the total gross volume in a timber type, cut-block or cutting permit.
Mean (Mode & Median)	The "mean" of a set of measurements is the sum of all measurement values divided by the number of measurements. The "mode" of a set of measurements is the value which occurs most often or with the greatest frequency. The "median" of a set of measurements arranged in an increasing order of magnitude is the middle value (or arithmetic mean of the two middle values).
Merchantable	A segment of a tree at least 3 metres long with a top diameter inside bark that meets or exceeds the timber merchantability specifications.
Mean Absolute Variation	The arithmetic mean of a set of absolute variations.
Variation:	The difference, plus or minus, between two measurements or a standard and a measurement (e.g., standard of 7 and measurement of 5 gives variation of -2).
Mean Absolute Variation:	The arithmetic mean of a set of absolute variations.
100% Cruise	A cruise in which every tree is measured. There are no samples or estimates.
Partial Cutting	A variety of silviculture systems in which a stand may be cut to ensure regeneration. In a Partial Cutting system, only some of the trees are felled during the harvesting phase. The selection method may specify "removal" or "leave" trees. Some examples of selection criteria are diameter, species, volume, age, height, disease or other damage.
Pathological Indicators	They include conk, blind conk, scar, fork or crook, frost crack, mistletoe, rotten branch, and dead or broken top.
Percent Reduction	In reference to partial cutting, this refers to a specified percent reduction of the total cruise volume which is targeted to be left or to be cut and removed.

PRF (Plot Radius Factor)	<p>In prism cruising, each tree has its own plot radius. This is a function of tree diameter (dbh) and prism baf size. The plot radius factor (prf) times the dbh gives the appropriate plot radius for any tree.</p> <p>The prf formula is: <math>prf = 0.5 / \sqrt{baf}</math></p>
Plot Sampling	The estimation of volumes and grades by species within a cut-block from sample plot measurements, and the determination of the sampling error associated with the plot estimates.
Precision	The closeness, to each other, of repeated measures of the same quantity, expressed as Sampling Error or Standard Error of the sample estimate.
Recompilation	A second or subsequent cruise compilation with some plots added or deleted, or both.
Residual	Living trees with none of the eight pathological indicators.
Risk-Group	As the name implies, this is simply a grouping by expected "risk" or probability of average decay, waste and breakage, for volume deduction by individual tree. These take the form of from one to three "risk-groups" which are individually specified for each tree species by age and location (Forest Inventory Zone) in the Province. Each risk-group (by species and location) keys to a loss factor table with volume deductions for decay, waste, and breakage. The pathological indicators place each tree into a tree-class. Various tree-classes are grouped together into one of three risk groups which in turn determine the severity of the deductions for volume.
Sampling Error (S.E.)	<p>The expressing of the accuracy of the sampling of the cruise.</p> <p>It is calculated as a percent of an estimated mean to a desired probability.</p>
Site-Class	A set of 4 site quality classes (good, medium, poor, low) which characterize the potential growth capacity of the minerals and moisture in the soil, as measured in tree height (metres) attained at the breast-height age of 50 years.

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SD (Standard Deviation)	The Standard Deviation is the square root of variance. It characterizes dispersion of individuals about the mean and gives some idea whether most of the individuals in a population are close to the mean or spread out. On the average, about two-thirds of the unit values of a normal population will be within one standard deviation of the mean. About 95 percent will be within two standard deviations and about 99 percent within 2.6 standard deviations.
Stratum	A specified portion of a sub-population area for which separate volumes and sampling statistics are calculated. A sub-population may be made up of one or many strata. Strata are commonly known as timber types.
Stratification	The process of delineating strata boundaries within a subpopulation, where each stratum has unique characteristics such as species composition, height, stand volume or age.
Strip-Line	A ribboned line running through the forest and tied to a base-line and/or boundary at one or both ends. Cruise plots are located at regular intervals along each strip.
Stumpage Amount	This is the charge levied by the Crown for a specific volume of timber that is determined by either a scale or a cruise. The stumpage amount is determined by multiplying the stumpage rate by the volume of timber in cubic meters.
Stumpage Rate	The stumpage rate is determined in accordance with the policies and procedures approved for the forest region by the minister.
Suspect	A living tree with one or more pathological indicators.
Tie-Point	An important point from which a boundary, base-line or cruise strip is "tied" into (e.g., legal lot corner (I.P.); creek and road junction (mapped)).
Timber Supply Area	Large contiguous areas of Crown land on which an annual allowable cut is calculated.
Top-Height	The mean height of the 100 trees per hectare of largest diameter.
Tree-Class	A series of classes (nine) primarily used for age/maturity and live/dead classification. This classification puts each tree into the appropriate risk-group for volume deduction.

True	Refers to height, diameter, number, sum, plot volume, LRF, or other variable. The "true" value is determined by the Forest Service.
Variance	The mean of squared deviations of observations about a sample mean. (These deviations or differences from the mean are called residuals).
Waste	In the timber cruising compilation programme, decay, waste and breakage are deducted from the gross tree volume. The waste component is the firmwood volume associated with 5 m logs in a tree which contain less than 50 percent of their gross scale in firmwood volume. These logs are assumed to be left on the cut-block and so their remaining firmwood volume is then classified as waste.