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FORESTRY REPORT
for
THE EVERGREEN STATE COLLEGE

SUBMITTED BY
PROFESSIONAL FORESTRY SERVICES, INC.
OLYMPIA, WASHINGTON
JACK E. WINN, PRESIDENT
MICHAEL D. JACKSON, VICE-PRESIDENT

January 9, 1975

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ADDENDA

Enclosure I
Map Exhibit I
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Forest Glossary

INTRODUCTION

In accordance to our proposal of November 8, 1974, Professional Forestry Services, Inc. hereby submits a forestry report as to the feasibility of forest management, along with forest market and stumpage values.

Primary considerations were:

- A. Present condition of forest types.
- B. Aesthetics, environment and ecological standards.
- C. Feasibility of harvesting timber on a salvage and selective silvicultural basis to increase quality of stand and improve aesthetic environmental conditions.
- D. Ecological and environmental natural study areas.

SUMMARY

A field analysis and forestry report has been completed on The Evergreen State College property. The following is a summary of our major findings and recommendations:

A. There are 13 vegetative and forest types varying in species, age, size and stocking. Many of the forest types were logged prior to purchase for the college site.

B. The appraised fair market value of merchantable timber is estimated to be \$322,700.

C. Four different management areas are identified in the report:

1. Forest Management Area
2. Buffer Zone Areas
3. Ecological Study and Trail Area
4. Present Experimental Structures, Project Site and Preserve.

D. Salvage and silvicultural selective thinnings should conform to guidelines of the college for aesthetic, environmental and ecological standards.

E. Within the Forest Management Area a program of salvage and silvicultural selective harvesting could return an estimated \$50,000 to the college over the period of 1975 through 1980.

FORESTRY REPORT FOR THE EVERGREEN STATE COLLEGE

I. General Location and Present Description of Property

The Evergreen State College property is located three to four miles northwest of Olympia in Thurston County, Washington. The property consists of approximately 965 acres, with approximately 3,000 feet of waterfront along Eld Inlet. Many of the parcels purchased by the State of Washington within the property boundary were logged prior to purchase. Even though approximately 75% of the property is forested many areas consist mainly of a mixture of poor quality red alder, big leaf maple, unmerchantable red cedar, Douglas fir and hemlock left during logging in the 1950s and 1960s. Present areas within the ownership boundary are:

- A. The main campus area, associated buildings, right-of-way and parkway (205 acres).
- B. Mixed alder, maple and scattered conifer species (256 acres).
- C. Good quality alder and conifer (253 acres).
- D. Poorly stocked logged-over or open areas (251 acres).

II. Legal Description

The legal description is not included in the report as the outer boundary of the property has been surveyed and the property corners are well marked. The map base used for Map Exhibit I and II in the report was furnished by the college.

III. Field Work Procedure

Preliminary field work was accomplished using an enlargement of a map base furnished by the college.

- A. Recent contact aerial photos (September, 1973) were purchased from the Washington State Department of Natural Resources.

B. Photos were sectionized using U. S. Geological Quadrangles, enlarged to a scale of 1" = 1,000'.

C. Preliminary forest types were indicated on the aerial photos using a stereo multiscopes in preparation of sampling the various forest types.

D. Each forest type was sampled as to species, age, size, volume, grade, and stocking. One-fifth acre circular plots were used and indicated in the field with orange ribbon. Each forest type was cruised separately.

E. At each sample plot trees 4" in diameter and larger were tallied by specie and diameter size. Merchantable height was considered on trees 10" DBH (diameter breast height) and larger.

1. All merchantable conifer was cruised and graded in 32' log lengths to a minimum top of 6".

2. All merchantable red alder was cruised in 30' log lengths. Logs were separated as to sawlog (8" top diameter and larger) and pulpwood (5-7" top diameter). Big leaf maple and black cottonwood were tallied for tree count, but not included in the volume total. Both species were very minor in merchantable volume and value. Aesthetically, maple and cottonwood are desirable species.

3. Small trees and pulpwood were graded and cruised as pee wee logs (6-7" top diameter) and are shown in the appraisal on a cunit* basis.

F. Acreage for each forest type was determined by using the dot grid method on the final forest type map (Map Exhibit I).

* cunit = 100 cubic feet of solid volume

IV. Forest Type Description

The following is a summary of various forest types that presently exist on the college property.

Forest Type No.	Forest Type Description	Acres Rounded
①	Most merchantable timber was logged in the 1950s. Remaining volume primarily in red alder, 2-16" DBH (diameter breast height) and big leaf maple clumps and scattered trees 8-30" DBH. Age varies from 20-50 years. Remaining volume of conifer species primarily in red cedar (8-36" DBH) with scattered western hemlock (10-24" DBH) and Douglas fir (10-32" DBH). Age varies from 40-75 years. Stocking of all species varies from 40-70%.	100
②	Primarily 40-45 year old red alder, 8-18" DBH, 100% stocking. Excellent quality hardwood. Big leaf maple, 4-18" DBH mixed with alder. A few scattered 80 year old Douglas fir, 20-38" DBH.	110



Forest Type ②. Red alder in foreground is 16.7" DBH. Mixture of alder and maple.



DF 26" DBH. Example of snowbreak
in scattered Douglas fir in Forest
Type (2).



DF 38" DBH in Forest Type (2). Hemlock reproduc-
tion around base of tree.

③

Primarily 20-25 year old red alder, 4-10" DBH, 80-100% stocking. A few scattered western hemlock, red cedar and Douglas fir, 12-24" DBH. Good understory western hemlock and red cedar reproduction in portion of forest type.

14

④

Mixed 10-15 year old red alder and western hemlock reproduction, 2-6" DBH, 70-100% stocking. Scattered overstory western hemlock and Douglas fir, 10-18" DBH.

9



Condition of overstory conifer along road between Forest Type ④ and ⑤. Looking southerly.

⑤

Mixed 70-90 year old Douglas fir, 8-20" DBH and western hemlock, 8-16" DBH, 70% stocking. Openings have good hemlock and Douglas fir reproduction 3-8' in height. Some trees have previously been marked with blue paint for thinning.

15

⑥

Primarily 35-40 year old Douglas fir, 2-20" DBH, 70-100% stocking. Existing mortality in forest type due to *Poria weirii* (root rot). A few scattered overstory residual Douglas fir, 16-22" DBH. Some patches of red alder, 8-12" DBH.

65



Mortality along southwest edge of Forest Type ⑤. Douglas fir 20" DBH, 20" DBH, and 16" DBH are salvageable at present. Approximately 1,000 board feet, with a present stumpage value of \$90-\$100.



Douglas fir in Forest Type ⑥ showing deteriorating crowns due to root rot.

Forest Type No.	Description	Acres Rounded
⑦	Primarily 35-45 year old Douglas fir, 6-20" DBH, 60-70% stocking. Scattered red alder, 8-12" DBH and big leaf maple, 14-30" DBH. Light mortality due to root rot.	33
⑧	Primarily 35-45 year old Douglas fir, 6-22" DBH, 90-100% stocking. Root rot is a real problem in areas of this forest type.	30



Douglas fir mortality in Forest Type ⑧ due to root rot. Trees are not salvagable because of size and length of time since they died.

⑨	Primarily poor quality 10-25 year old red alder, 2-10" DBH, 50-70% stocking. Scattered wet areas in forest type. Conifer reproduction exists but is scattered and quite spindly. Scattered red cedar, 6-24" DBH, and big leaf maple clumps throughout forest type.	93
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Wet swampy areas in Forest Type ② and ⑨.

⑩	Open areas. Poorly stocked with commercial species. Heavy grass in some areas.	42
⑪	Mixed 10-20 year old Douglas fir, 0-10" DBH, 60-70% stocking with non-commercial Pacific madrone, 2-6" DBH. Heavy salal ground cover.	6
⑫	Primarily mixed red alder 6-24" DBH, and big leaf maple 6-24" DBH, with scattered patches of Douglas fir, 10-28" DBH, red cedar, 8-36" DBH and western hemlock-grand fir, 10-24" DBH. Most of merchantable timber was logged in 1950s. Age and stocking is quite variable throughout type. Hardwoods are generally 40-60 years old and conifer is 50-80 years old. Stocking of all species is 70-80%.	127
⑬	Areas logged during 1950s and 1960s. Very little merchantable volume remaining. Primarily mixed red alder and big leaf maple, 2-12" DBH with scattered Douglas fir and red cedar 8-18" DBH. Stocking is 10-30%. Scattered reproduction of Douglas fir and red cedar, 10% stocked.	116
⑭	Present campus area and other buildings and grounds.	153
	Roads and parkways	52
TOTAL ACRES		965

V. Log Markets, Utilization and Prices

Log markets and prices are affected by many variables in the forest industry. Some explanation is needed to illustrate the problems in marketing forest products harvested from forested property.

A. Log Markets -- The markets for forest products consist of the following:

1. Domestic markets in Olympia, Tacoma, Shelton, Centralia and Chehalis.
2. Overseas export markets in Japan and Korea.
3. Canadian export markets

Products affected by these markets are:

1. Logs for lumber
2. Poles and piling
3. Peeler logs for plywood
4. Pulpwood for chips
5. Furniture logs (alder and maple logs)

B. Utilization -- Utilization varies depending mainly upon the present market condition, specie, and type of product being harvested. During good market conditions logs may provide economic return down to 3" top diameter. Small utilizer mills have been available that purchase logs 8' in length with a 4" top. One mill has purchased pulpwood (4 feet in length) by the pickup load. Pee wee logs have been purchased on a ton and/or cunit basis with top diameter of the logs down to 4".

All mills have somewhat different specifications for logs purchased. Generally hardwood sawlogs are purchased in multiples of 8' or 10', while preferred lengths for domestic conifer sawlogs are 26' through 40'. On the export market most sawlog purchases

must average 32' to 34' in length, with a high percentage of logs 40' in length. Top diameter specifications for logs (diameter inside bark at small end) are extremely variable on some log markets. One mill may purchase logs down to a 4" top diameter, while another is only interested in logs with top diameters of 10" and larger. Before any contract to harvest timber from a property, log specifications as to diameter and length and type of products must be determined.

C. Log Market Prices -- Log prices vary depending mainly upon the market conditions, species, and product specifications. Log market prices are available from log buyers employed by the various mills. At the present time log prices are down 20-30%. Some mills are not presently making outside purchases of logs. This present slump in the market is primarily due to the decline in housing starts. Characteristically the market prices in the forest industry can be very erratic during certain periods, comparable to the variations in daily stock market quotations.

The market prices for logs used in this report are an average of those experienced by Professional Forestry Services, Inc., on similar property with similar timber products, during the last half of 1974.

VI. Logging Costs

Logging costs are variable, depending on size of products, amount of volume, size of area, type of equipment required, amount of roads required, etc. The following logging costs are based on experience of Professional Forestry Services, Inc. on operations with similar timber products.

A. Logging cost is estimated as follows for sawlogs:

Falling & bucking	\$ 8.00 per M
Yarding & loading	16.50 per M
Hauling	15.00 per M
Roads & landing cleanup	1.00 per M
Additional cleanup along parkways & buffer zones	3.50 per M
Profit & loss	<u>6.00 per M</u>
	\$50.00 per M

B. Logging cost for hardwood pulp:

Log purchase price X 80% = logging cost

C. Logging cost for pee wee (6-7" tops) conifer logs:

Log purchase price X 50% = logging cost

VII. Timber Volume Summary and Stumpage Valuation

Enclosure I summarizes the timber volumes and stumpage valuation. Stumpage is defined as "the value of timber as it stands uncut" or the log market price minus the logging cost.

Stumpage sales are conducted using one of the following methods:

- A. Sealed bid
- B. Oral bid
- C. Negotiation

Preparation for stumpage sales requires, but is not limited to, the following:

- A. Layout of sale area combining the landowner's objective with the professional forester's recommendations.
- B. Marking of trees on a silvicultural or salvage basis.
- C. Approval of a forest practice application by the Washington State Department of Natural Resources.
- D. Cruise and valuations of timber to be sold.
- E. Negotiation of any additional right-of-way needed across adjacent land.

F. Preparation of a sample logging contract explaining all requirements of timber sale.

Merchantable volume in trees located within the main campus area (Forest Type 14) was not cruised or included in the valuation summary. These trees or islands of trees were considered as part of the landscaped campus grounds.

The following summary includes all merchantable timber in Forest Types 1 through 13 :

TOTAL TIMBER VALUATION = \$322,700.

VIII. Types of Management Areas

During the field examination of the property the feasibility of harvesting timber in the various forest types was determined. Based on field examination and the need for ecological and environmental study areas four broad management areas are recommended as shown on Map Exhibit II. Recommendations as to harvesting were made considering the aesthetic and environmental values along with the condition of the forest types.

A. Forest Management Area -- It is recommended that harvest operations should include salvage of dead and dying trees, silvicultural selective harvesting in mature alder, and silvicultural thinning of Douglas fir. All trees should be marked for removal prior to any harvesting operations.

B. Buffer Zone Area -- It is recommended that any harvesting be restricted to salvage of dead and dying trees, and removal of danger trees along roads, parkways and walkways. This type of harvesting could be done in conjunction with harvesting in the Forest Management Areas.

C. Ecological Study and Trail Area -- It is recommended that harvest operations be restricted to salvage of dead and dying

trees and other danger trees in conjunction with trail layout or development of various study areas.

D. Present Experimental Structures, Project Site and Preserve -- No harvesting is recommended.

The condition of the trees remaining within the main campus area should be considered on a continuous basis. Any removal of these trees should be done only upon approval of the Board or a designated person after recommendation by a professional forester.

IX. Projected Returns from Silvicultural Selective Harvesting Within The Forest Management Areas

It is the opinion of Professional Forestry Services, Inc. that harvesting within the area designated as "Forest Management Area" could return \$50,000 through a program of salvage and silvicultural selective harvesting over the period of 1975 through 1980. Thereafter projected returns could be approximately \$12,000 to \$15,000 on an average annual basis, depending upon market conditions.

X. Other Observations

A. Approximately 100 acres within the "Forest Management Area" was logged in the late 1960s. The area should be considered with the idea of salvaging remaining volume and planting the area back to a commercial species.

B. The open areas within the "Buffer Zone Areas" could be planted with commercial species. The raising of Christmas trees or returning the area to commercial timber production are two possibilities.

C. Danger trees along the parkways, walkways and parking areas have been mentioned in the report. Special emphasis should be on dangerous snags or dead trees. Also upon alder, which is a relatively short-lived tree. Alder is also subject to heavy snow-

break, as was the case during the recent snowstorm. Alder close to power lines and buildings are, in many cases, a dangerous combination.

D. There are areas within Forest Types ⑥ and ⑦ that have an understory of desirable brush (evergreen huckleberry and salal) that may be considered on a brush leasing basis.

A D D E N D A

ENCLOSURE I

TIMBER VOLUME - VALUATION SUMMARY

Forest Inventory for
PROJECT The Evergreen State College

TRACT NO.

ACRES 965+

DESCRIPTION Parts of Sections 5, 6, & 7, T 18N, R 2W, W.M., and Parts of Section 31, T 19N, R 2W, W.M., Thurston County

(NUMBER OF TREES) or (TIMBER VOLUME PER M-LOG SCALE) or (LINEAL FEET) or (CUBIC FEET)

SPECIES	DBH	6	8	10	12	14	16	18	20	22	24	26	28	30+	TOTAL	GRADE	MARKET PRICE	LOGGING COST	STUMPAGE PER X	NET MBF	TOTAL \$
Douglas fir		5820	5620	5340	4050	3470	1970	1240	500	220	160	110	90	40	28,630	DF	\$170/M	\$50.00/M		8	\$ 960
Red Cedar		160	140	440	650	540	260	420	500	590	670	280	110	210	4,970	DF	\$150/M	\$50.00/M		440	\$ 44,000
Hemlock-White fir		320	560	520	610	400	370	60	330	60	70	40			3,340	DF	\$120/M	\$50.00/M		1,090	\$ 76,300
Red Alder		6570	6720	7740	5590	3410	1690	520	100		70				32,410	WH	\$150/M	\$50.00/M		130	\$ 13,000
Big Leaf maple		1780	1790	1980	1560	890	790	360	340	310	260	50		140	10,250	WH	\$120/M	\$50.00/M		180	\$ 12,600
Black cottonwood		4	2	2							1	2	1	2	14	WH	\$ 44/Cunit	50% of Self Price		250	\$ 22,000
																RC	\$110/M	\$50.00/M		750	\$ 45,000
																RA	\$100/M	\$50.00/M		970	\$ 48,500
																RA 8"+	\$ 28/Cunit	80% of Self Price		3,900	\$ 5,600
Total Trees		14654	14832	16022	12460	8710	5080	2600	1770	1180	1231	482	201	392	79,614	Pulp	\$ 28/Cunit	80% of Self Price		21,840	\$ 21,840

FOREST DESCRIPTION: Approximately 75% of property is forested. Of the forested area 30% is mixed red alder-maple & maple clumps, 20% is primarily Douglas fir, 35-45 years old & associated species, 35% is primarily red alder-maple & scattered conifer, and 15% is primarily 40-45 year old red alder.

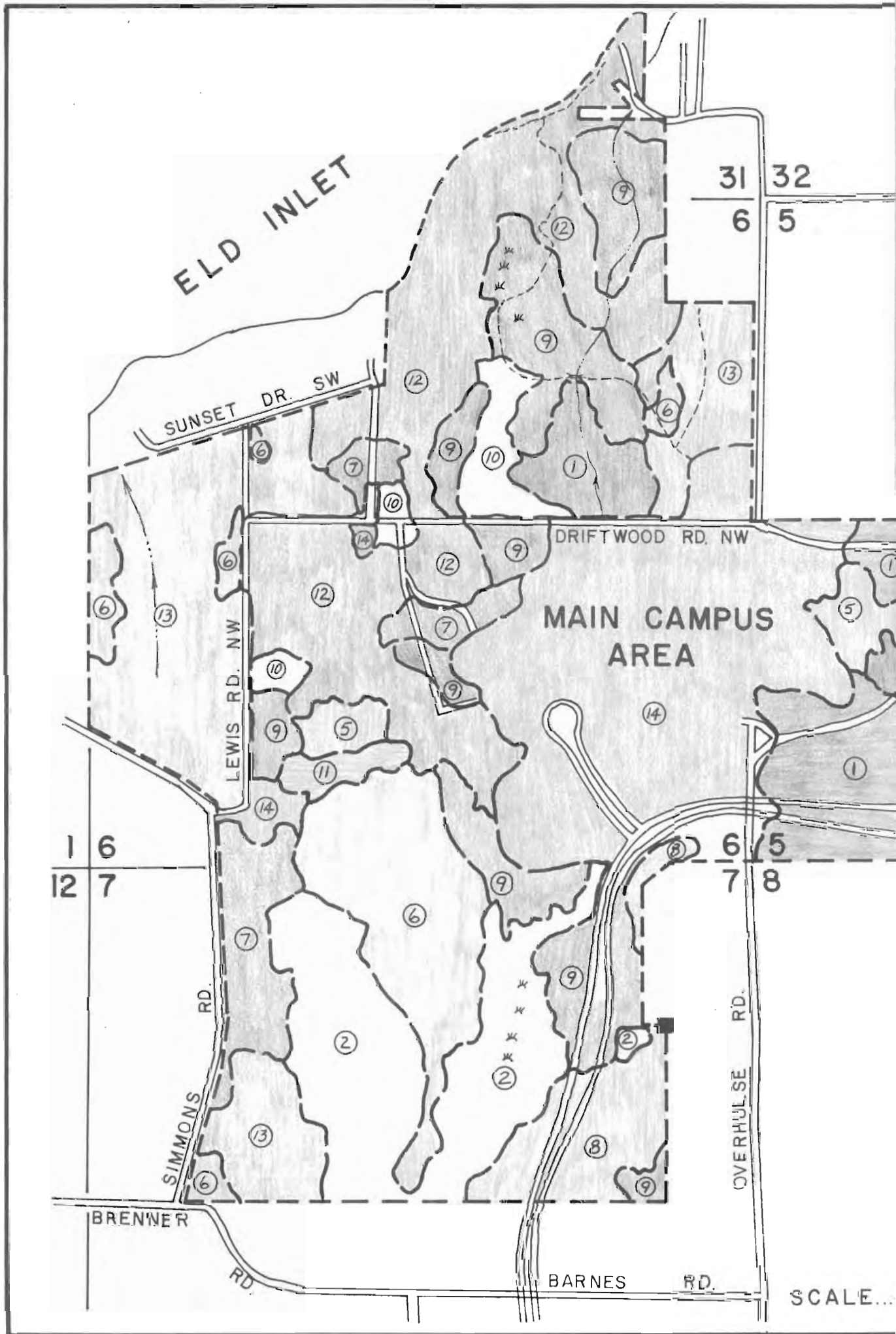
LOGGING CONDITIONS: Approximately 90% of property is suitable to rubber tired skidder equipment. Majority of ground is suitable to summer & fall logging only.

MARKETS: Olympia, Shelton & Centralia-Chehalis area. Log prices are generally 20-30% down at present. Prices used reflect those experienced on similar type timber & property in the last half of 1974.

GENERAL REMARKS: NOTE: RA = 2.5 cunits per M DF-WH = 2.5 cunits per M Pee Wee, 6-7" tops, generally

DF	2,538	M.B.F.	\$176,260.00
WH	410	M.B.F.	31,100.00
RC	750	M.B.F.	45,000.00
RA 8"+	970	M.B.F.	48,500.00
RA Pulp	1,560	M.B.F.	21,840.00
TOTAL	7,028	TOTAL	\$322,700.00

APPRAISER: Professional Forestry Services, Inc. P. O. Box 145 Olympia, Washington 98507 DATE: 1/6/75





32 | 33

5 | 4

LEGEND:

- TYPE LINES =
- TYPE NUMBERS =
- OWNERSHIP BDY. =
- ROADS =
- FENCES =
- CON. MON. E.S.C. =
- TRAIL =
- STREAM =
- SWAMPY =

PHOTOGRAPHY:

MT-72 FLOWN 9-2-73
9-3-73

18 - 25A: 34 - 37
18 - 26A: 39 - 41

5 | 4
8 | 9

FOREST TYPE MAP

THE EVERGREEN STATE COLLEGE

PARTS OF SECTION 5, 6, 7 T 18 N R 2 W
SECTION 31 T 19 N R 2 W

THURSTON COUNTY WASH.

PROFESSIONAL FORESTRY SERVICES INC.

JACK WINN - PRESIDENT MIKE JACKSON - VICE-PRES.

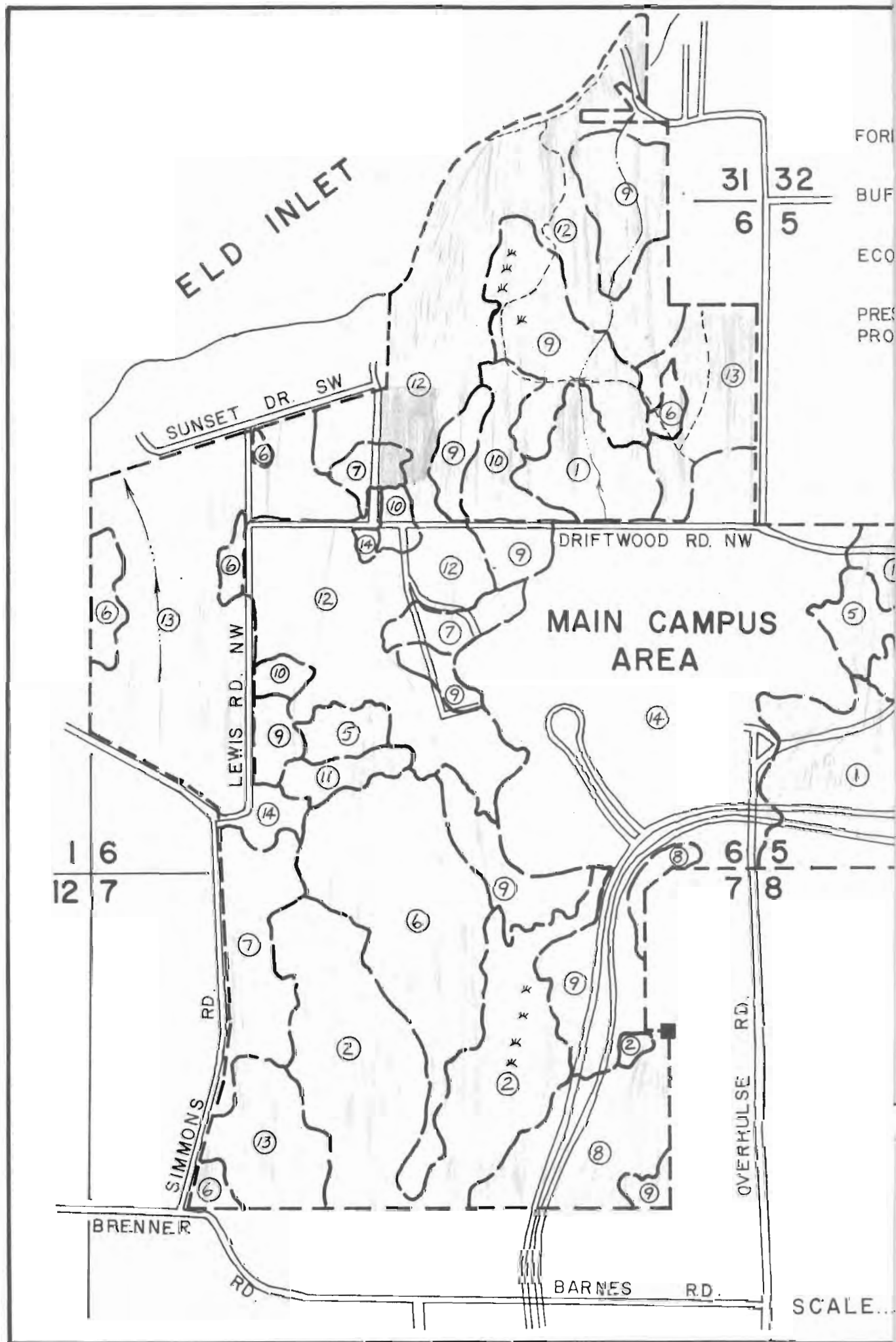
P.O. BOX 145

OLYMPIA, WASHINGTON

98507

DATE... 1-3-75

= 1,000'



ELD INLET

SUNSET DR. SW

DRIFTWOOD RD. NW

MAIN CAMPUS AREA

LEWIS RD. NW

SIMMONS RD.

BRENNER RD.

BARNES RD.

OVERHULSE RD.

31	32
6	5

1	6
12	7

6	5
7	8

SCALE...

MAP EXHIBIT II

ST MANAGEMENT AREA

ER ZONE AREAS

OGICAL STUDY AND TRAIL AREA

ENT EXPERIMENTAL STRUCTURES
ECT SITE AND PRESERVE

32 | 33
5 | 4



LEGEND:

TYPE LINES = ~ ~ ~

TYPE NUMBERS = ②

OWNERSHIP BDY. = - - -

ROADS = = =

FENCES = x x x

CON. MON. E.S.C. = ■

TRAIL = - - -

STREAM = ~ ~ ~

SWAMPY = x x x

PHOTOGRAPHY:

MT-72 FLOWN 9-2-73
9-3-73

18 - 25A: 34 - 37

18 - 26A: 39 - 41

5 | 4
8 | 9

FOREST TYPE MAP

THE EVERGREEN STATE COLLEGE

PARTS OF SECTION 5, 6, 7 T 18 N R 2 W
SECTION 31 T 19 N R 2 W

THURSTON COUNTY WASH.

PROFESSIONAL FORESTRY SERVICES INC.

JACK WINN - PRESIDENT MIKE JACKSON - VICE-PRES.

P.O. BOX 145

OLYMPIA, WASHINGTON

98507

DATE... 1-3-75

"= 1,000'

FOREST GLOSSARY

Reference: Terminology of Forest Science, Technology, Practice & Products, 1971, published by the Society of American Foresters, Washington, D. C.

Reference Number

- 71-72 AERIAL PHOTO COVERAGE - The systematic record(ing) of terrestrial surfaces by aerial photography, a series of overlapping flight strips being combined into a block of photographs.
- 85 AGE - Of a forest crop or stand, the mean age of the trees comprising it. NOTE: In practice, in even-aged or regular forests, etc. the mean age of dominant and sometimes also co-dominant trees is taken.
- 87 AGE CLASS - One of the intervals, commonly 10 years, into which the age range of tree crops (and sometimes other vegetation) is divided for classification or use.
- 89 AGE CLASS DISTRIBUTION - The location and/or proportionate representation of different age classes in a forest.
- 193 ANNUAL (GROWTH) LAYER - A growth layer produced in one year.
- 241 ASPECT - The direction towards which a slope faces - Exposure.
- 268 AT THE STUMP - At the level where the stems are severed from the stump, when specifying diameters in sales of standing timber. NOTE: Local custom as to stump height governs in cases of litigation.
- 623 BOLE - A tree stem once it has grown to substantial thickness.
- 680 BREAST HEIGHT - On standing trees, a standard height from ground level for recording diameter, girth, or basal area.
- 788- BUTT - 1. The base of a tree stem.
789 2. butt-end, bottom end, lower end. The basal end of a log - Butt Log.
- 799 BUTT LOG - The lowest log from a bole, i.e. the first log above the stump.
- 805 BUTT ROT - Any decay or rot developing in, and sometimes characteristically confined to, the base or lower stem of a tree.

- 908 CATFACE - A defect on the surface of a tree or log resulting from a wound where healing has not re-established the normal cross-section.
- 1064 CLEAR CUTTING - (silviculture/management) Strictly, the removal of the entire standing crop.
- 1114-
1115 CO-DOMINANT - 1. (ecology/silviculture) Species in a mixed crop that are about equally numerous and vigorous.
2. (silviculture) One of the four main crown classes recognized on a basis of relative status and condition in the crop, more particularly for establishing thinning grades for pure regular crops; the trees have their crowns in the upper canopy but are less free than the dominants and freer and taller than the dominateds.
- 1150 COMMERCIAL FOREST LAND - Forest land (capable of) bearing merchantable timber, currently or prospectively accessible, and not withdrawn from such use.
- 1151 COMMERCIAL FORESTRY - The practice of forestry with the object of producing timber and other forest produce as a business enterprise.
- 1229 CONK - 1. A fructification of a wood-destroying fungus, which projects to some degree beyond the substrate.
NOTE: Originally applied to such conspicuous fructifications ("brackets") as those of the genera Fomes and Polyporus on trees.
2. A sterile, projecting, fungus growth that resembles a fructification.
- 1287 CONTROL POINTS - Surveyed points on the ground that provide a framework on which further survey operations may be based, e.g. vertical control points for contour surveys.
- 1330 COPPICING - Cutting (broadleaved) trees close to ground level with a view to their producing coppice shoots.
- 1380 COVER CROP - In general, any crop, natural or introduced, that protects land from erosion by forming a living vegetative cover.
- 1421 CROP TREE - Any tree forming or selected to form, a component of the final crop.
- 1464-
1465 CROWN - The upper part of a tree or other woody plant, carrying the main branch system and foliage, and surmounting at the crown base a more or less clean stem.
NOTE: In some species and under certain conditions, however, no such distinction is recognizable; at one extreme the stem may persist through all the branching, at the other it may have no separate identity, being totally lost by ramification

- 1491 CRUISE - A survey to locate and estimate the quantity of timber on a given area according to species, size, quality, possible products or other characteristics.
- 1507 CUBIC FOOT - A unit of volume measure, strictly of true volume measure.
- 1510-
1511 CULL - 1. (general) Any item of production, e.g. trees, logs, lumber, picked out for relegation or rejection because it does not meet certain specifications, e.g. as regards usable or on-grade content. NOTE: Used mainly with reference to inferior nursery stock - culled forest,
2. (management) The deduction made from gross timber volume to adjust for defect. NOTE: In a standing tree the cull expressed as a % of the tree's gross volume is termed the cull factor.
- 1516 CUNIT - A unit of stacked wood containing 100 feet³ of solid volume
- 1639-
1645 DECAY - 1. In wood, its decomposition by fungi and other micro-organisms (i.e. organic decay), resulting in softening, progressive loss of strength and weight, and often in changes of texture and color. NOTE: (1) Wood decay terminology lacks precision but two stages of decay are commonly recognized, viz. incipient (= early, initial) and final (= complete, late) and sometimes also intermediate and advanced (= destruction) stages. (2) The terms decay and rot are more or less interchangeable, though rot generally implies a more advanced and obvious stage, and as it designates both causal organism and its effect, is the key term for specifying types, i.e. dry rot, soft rot
2. Decaying or decayed wood
- 1663 DEFECT - In timber, any feature (whether intrinsic, e.g. knots, or developing later, e.g. decay, splits, bad sawing) that lowers its utility and/or commercial value and may therefore lead to its relegation to a lower grade or its rejection as a cull. NOTE: (1) Whether a particular feature is classed as a blemish, imperfection or defect depends on the relevant specifications or grading rules, or the purpose for which the timber is intended. (2) A sound defect is one free from decay
- 1828-
1829 DOMINANT - 1. (ecology/silviculture) Generally, an individual or species of the upper layers of the canopy. 2. (silviculture) More particularly, one of the 4 main crown classes recognized, on a basis of relative status and condition in the crop, for establishing thinning grades for pure regular crops; the trees have their crowns in the uppermost layers of the canopy and are largely free-growing

- 1861-1862 DOWNTREE - Any tree that is lying on the ground, whether uprooted, stem-broken or deliberately cut. NOTE: Collective term down timber
- 2344 FIRE SCAR - A healing or healed-over injury, caused or aggravated by fire, on a woody plant
- 2450 FOREST COVER - All woody growth occupying the ground in a forest, as distinct from the ground cover.
- 2456 FORESTER - A general term for anyone engaged in the profession of forestry
- 2493 FORESTRY - Generally, a profession embracing the science, business and art of creating, conserving, and managing forests and forest lands (i.e. a forest estate) for the continuing use of their resources, material or other
- 2507-2508 FOREST TYPE - 1. Generally, a category of forest or forest land, actual or potential
2. More particularly, a category of forest defined by its vegetation (particularly its composition) and/or locality factors
- 2941 HARDWOOD - A conventional term for the timber of broad-leaved trees, and the trees themselves, belonging to the botanical group Angiospermae
- 2983-2984 HEIGHT CLASS - 1. Any of the intervals into which a range of e.g. tree heights may be divided for classification and use
2. Also the actual trees, etc. falling into such an interval
- 3177 INCREMENT - The increase in girth, diameter, basal area, height, volume, quality or value of individual trees or crops
- 3179-3180 INCREMENT BORER - An auger-like instrument with a hollow bit and an extractor, used mainly to extract thin radial cylinders of wood (increment cores = increment borings) from trees having annual growth rings, so as to determine increment and age, but also, in wood preservation, the depth of penetration of the preservative
- 3455 LEADER - The terminal, i.e. topmost shoot, characteristic of the growth of certain plants or trees
- 3584 LOG-SCALE BOARD FOOT - A unit of measure of the content of a log or run of logs in board feet, determined by means of a log rule
- 3650 MAIN STORY - The most important and often the highest stratum in storied high forest
- 3671 MARKET VALUE - Of a forest, the price that could be obtained by selling it as it stands

- 3726 MEAN ANNUAL INCREMENT - The total increment up to a given age divided by that age. NOTE: The m.a.i. for a whole rotation is termed the final m.a.i.
- 3759 MERCHANTABLE - Commercial, marketable, saleable
- 3846 MISTLETOE - A flowering plant of the family Loranthaceae, parasitic on trees and other woody plants
- 3850 MIXED STAND - Of a forest crop or stand, composed of two or more species; by convention, generally to the extent of 20% of species other than the principal one, based on numbers, basal areas or volumes.
- MORTALITY (TREES) - Trees that have died from natural causes, insects, root rot diseases or stand conditions
- 4147 OVERSTORY - That portion of the trees, in a forest of more than one story, forming the upper or uppermost canopy layer
- 4281 PERIODIC INCREMENT - The increment during any specified period, commonly 10 or 20 years
- 4727 RANDOM SAMPLE - A sample selected in such a manner that all possible samples of the same size have an equal chance of being chosen
- 4833 REFORESTATION - Re-establishment of a tree crop on forest land
- 4843 REGENERATION - The renewal of a tree crop, whether by natural or artificial means
- 4850 REGENERATION AREA - The area selected, normally in a working plan or working scheme, for regeneration
- 4896 RESIDUAL - A general term for a quantity remaining after some other quantity has been subtracted, as may occur in a variety of contexts (i.e. trees that remain on an area after an earlier logging)
- 4993- ROTATION - The planned number of years between the for-
4995 mation or regeneration of a crop or stand and its final cutting at a specified stage of maturity. NOTE: The age at harvesting (= cutting age, felling age) is termed the rotation age when it coincides with the rotation, and the removal age when it does not
- 5052 SAMPLE PLOT - A plot of forest chosen as representative of a much larger area
- 5122 SCALE - To measure timber (individually or collectively) and fuelwood (stacked). NOTE: The person who measures is termed a scaler

- 5134 SCARIFICATION - (silviculture) Loosening the top soil of open areas, or breaking up the forest floor, in preparation for regenerating by direct seeding or natural seedfall
- 5165 SCRIBNER RULE - A diagram log rule, one of the oldest in existence, which assumes 1 inch boards and a $\frac{1}{4}$ inch kerf, makes a liberal allowance for slabs, and disregards taper; the official rule of the Forestry Branch, Department of Resources and Development, Canada, and also in many parts of the USA
- 5182- SECOND GROWTH - A loose term for
5184- 1. young stands
 2. smaller trees left after a cutting
 3. residual trees available for another logging on the same area
- 5418 SITE QUALITY - A loose term denoting the relative productivity of a site for a particular tree species.
- 5513 SNOWBREAK (= snowbreakage) - i.e. the breaking of tree stems or branches by snow
- 5723 STAND DENSITY - A quantitative measure of tree stocking, expressed either relatively as a coefficient, taking normal numbers, basal area or volume (from yield table data) as unity, or absolutely, in terms of number of trees, total basal area, or volume, per unit area
- 5872 STRATIFICATION - Subdivision of a population into strata, i.e. blocks, as a preliminary to sampling, each of which is more homogeneous in respect of the variable being measured than the population as a whole
- 5941- STUMPAGE - 1. Standing timber as viewed by an exploiter
5942 2. = stumpage value. The value of timber as it stands uncut, in terms of an amount per unit of volume or weight.
- 5995 SUPPRESSED - = subordinate. One of the four main crown classes recognized on a basis of relative status and condition in the crop, more particularly for establishing thinning grades for pure regular crops; the trees have their crowns in the lower layers of the canopy, the leading shoots are not free, and the trees are growing very slowly
- 6028 SWAMP - Generally, a more or less permanently wet, uncultivated tract whose soil has a considerable percent of vegetable matter
- 6071 TAPER - The decrease in thickness, generally in terms of diameter, of a tree stem or log from the base upwards
- 6461 UNDERGROWTH - A loose term generally comprising both the herbaceous cover and the lower shrubs, and even the lowest trees, under a forest canopy

- 6564- VOLUME TABLE - A table showing, for one or more species,
6570 the average cubic contents of trees (tree volume table) or logs (log volume table) for one or more dimensions (single-entry (= single-variable) or multiple-entry volume tables), generally thickness or else thickness and height or length (total height or timber height for trees, length for logs) plus some measure of taper. NOTE: the terms regional volume table and local volume table imply different geographical scales of collection, or selection, of the data, and of their applicability
- 6685- WINDFALL - 1. A tree or trees thrown or their stems
6686 broken off or other parts (branches, foliage, fruit, etc) blown down by the wind
2. = blowdown. Any area on which (many of) the trees have been thrown or broken by the wind
- 6696- WINDTHROW - 1. Uprootal by the wind
6697 2. Also a tree or trees so uprooted
- 6737 WORKING PLAN AREA - The area covered by a single working plan; the largest forest management unit
- 6787- YIELD DETERMINATION - The calculation, more directly by
6788 volume regulation, less directly by area regulation, of the amount of forest produce (the yield) that may be harvested, annually or periodically, from a specified area over a stated period, in accordance with the objects of management
- 6796 YIELD TABLE - A table showing for one or more species the growth pattern of a managed even-aged stand, derived from measurements at regular intervals covering its useful life; it includes mean diameter (generally d.b.h.) and height, number of stems, and standing volume per unit area, and may further include e.g., volume of thinnings, main-crop or total-volume

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