PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF LANDS, FORESTS, AND WATER RESOURCES

HON. R. G. WILLISTON, *Minister* F. S. MCKINNON, *Deputy Minister of Forests*

REPORT

of the

FOREST SERVICE

YEAR ENDED DECEMBER 31

1965

Printed by A. SUTTON, Printer to the Queen's Most Excellent Majesty
in right of the Province of British Columbia.
1966

VICTORIA, B.C., February, 1966.

To Major-General the Honourable GEORGE RANDOLPH PEARKES,
V.C., P.C., C.B., D.S.O., M.C.
Lieutenant-Governor of British Columbia.

MAY IT PLEASE YOUR HONOUR:

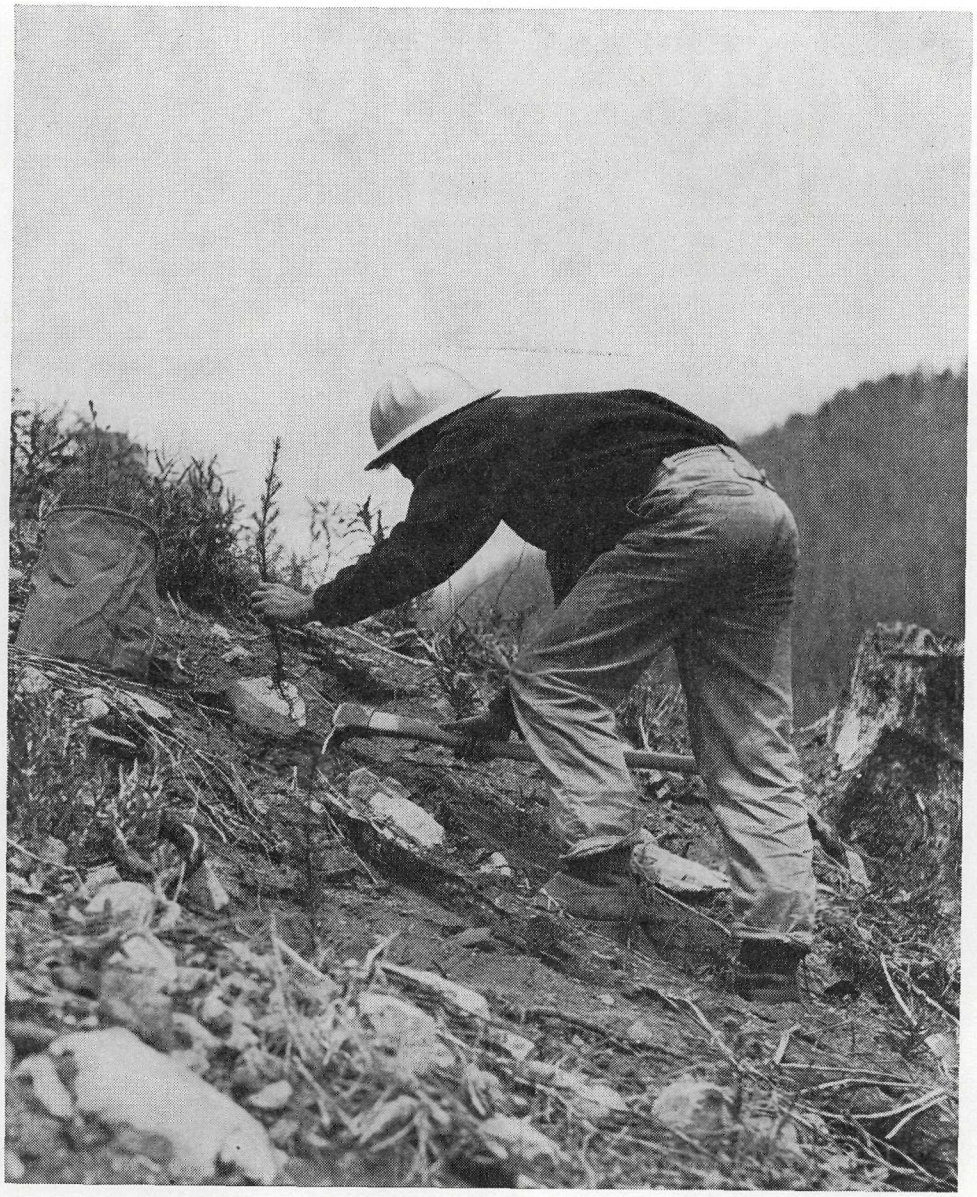
Herewith I beg respectfully to submit the Annual Report of the Forest Service of the Department of Lands, Forests, and Water Resources for the Calendar year 1965.

R. G. WILLISTON,
Minister of Lands, Forests, and Water Resources.

The Honourable R. G. Williston,
Minister of Lands, Forests, and Water Resources,
Victoria, B.C.

SIR,—There is submitted herewith the Annual Report on activities of the Forest Service during the calendar year 1965.

F. S. McKINNON,
Deputy Minister of Forests.



Planting Douglas fir seedlings in steep terrain, Robertson River valley, Cowichan Lake district.

CONTENTS

	Page
1. Chief Forester's Report	11
2. Forest Surveys and Inventory Division	13
Field Programme	13
Forest Classification and Sampling	13
Growth Studies	13
Loss-factor Studies	14
Special Field Projects	14
Operations	14
Office Programme	15
Forest Mapping	15
Area and Volume Summaries and Distribution of Information	16
3. Forest Research Division	17
Experiment Station	17
Data-processing	17
Field Programme	17
Tree Breeding and Provenance Studies	17
Nursery and Plantation Studies	18
Participation in the ARDA Programme	19
4. Reforestation Division	20
Forest Nurseries	20
Forest Tree Seed	20
Reconnaissance and Survey Work	22
Planting	22
Permanent Improvements	23
Co-operation	23
Interdepartmental Rehabilitation and Forestry Programme	24
5. Working Plans Division	26
Pulpwood Harvesting Areas	26
Pulp Harvesting Forests	28
Other Public Sustained-yield Units	28
Tree-farm Licences	28
Certified Tree-farms	28
Farm Wood-lot Licences	28

PAGE

6. Public Information and Education Division 29
Communications Media 29
Press and Periodicals 29
Publications and Printing 29
Radio and Television 30
Posters and Signs 30
Exhibits 31
Photography 31
Still Photography 31
Motion-picture Photography 32
X-ray 32
Colour Printing 32
Film Library 32
School Lecture Programme 33
Library 33

7. Forest Management Division 34
Peace River Flood Basin 34
Columbia Flood Basin 34
Spruce Bark Beetle 35
Douglas Fir Bark Beetle 35
Close Utilization 35
Market Prices and Stumpage Trends 35
Stumpage Prices 36
Silviculture 36
Scaling 38

8. Grazing Division 39
General Conditions 39
Range 39
Hay 39
Markets and Prices 39
Range Management 40
Range Improvements 40
Peace River Pastures 41

PAGE

8. Grazing Division—*Continued*
Co-operation 42
Administration 43
Grazing Permits 43
Hay Permits 43
Grazing Fees 43
Control and Enforcement 44
9. Engineering Services Division 45
Engineering Section 45
Development Engineering, Reconnaissance, and Road Location 45
Road Construction and Maintenance 45
General Engineering 46
Mechanical Section 47
Building Construction and Design 48
Marine Design and Investigation 48
Small-boat Purchases 48
Mobile Accommodation 48
Forest Service Maintenance Depot 49
Marine Work 49
Prefabrication and Carpentry Shop 49
Machine-shop 49
Transport Pool and Warehouse 49
Engineering Maintenance-shop 50
Radio Section 50
10. Forest Protection Division 52
Weather 52
Fires 52
Occurrence and Causes 52
Cost of Fire-fighting 52
Damage 52
Protection Planning and Research 53
Fire Statistics 53
Visibility Mapping and Lookout Photography 53

PAGE

10. Forest Protection Division—*Continued*
Protection Planning and Research—*Continued*
Fuel-moisture Indicator Sticks 53
Insect Control 53
Research Projects 53
Fire-suppression Crews 54
Aircraft 55
Roads and Trails 55
Slash Disposal and Snag-falling 55
Prescribed Burning, Interior Districts 56
Fire-law Enforcement 56
Forest Closures 56

11. Forest Service Training-school 57
Extra Courses and Functions 57
Acknowledgments 58

12. Accounting Division 59
Fiscal 59
Administration 60

13. Personnel Division 61
Communications and Training 61
Establishment, Recruitment, and Staff Turnover 62
Classification, Salaries, and Working Conditions 63

14. Personnel Directory, 1965 64

15. Appendix—Tabulated Detailed Statements to Supplement Report of the Forest Service 67

REPORT OF THE FOREST SERVICE, 1965

CHIEF FORESTER'S REPORT

The year 1965 was one of continued progress and achievement in nearly all aspects of forest activity in British Columbia.

The total amount of timber scaled in the Province was 1,533,112,794 cubic feet, an increase of more than 18,500,000 cubic feet or 1.2 per cent over the previous record year of 1964.

Production value also broke the 1964 record, rising to $980,000,000, an increase of $44,000,000 or 4.7 per cent. An indication of the rate of expansion of the pulp and paper industry was the fact that its production accounted for $20,000,000 of this increase.

Forest revenues followed the pattern with a financial return to the Forest Service of $47,558,411 during the calendar year. This all-time high was more than $5,000,000 above the 1964 record. Timber-sale stumpage accounted for 88.4 per cent of the total, while timber royalties, the second highest revenue category, accounted for 5.5 per cent.

Progress of the sustained-yield programme is shown by the fact that, at the end of the year, the total area committed under working plans was 79,301,951 acres of productive forest, with a total allowable annual cut of 1,120,433,000 cubic feet, which is the equivalent of 73 per cent of the total Provincial scale for 1965. The allowable annual cut in sustained yield included 100,000,000 cubic feet set up on the basis of a close utilization standard.

A considerable amount of work was carried out during the year in the organization and reorganization of various forest areas throughout the Province. Five pulpwood harvesting areas were designated, while four public sustained-yield units were proclaimed and gazetted as pulp harvesting forests. One new tree-farm licence was issued, and three new *Taxation Act* tree-farms were certified. In addition, 14 public sustained-yield units were reorganized into six larger units.

At the end of the year, the number of managed units in the Province totalled 197, including 75 public sustained-yield units, of which 41 are covered by 7 pulpwood harvesting areas (four formally ratified); 40 tree-farm licences; 31 *Taxation Act* tree-farms not included within the tree-farm licences; and 51 farm wood-lots.

Considerable progress also was made with the programme of intensive inventory of public sustained-yield units. Inclusive of 1964 field work, unit survey work now is available for 37,500,000 acres. A further 21,000,000 acres are covered by maintenance surveys. Growth, loss-factor, and volume studies continued to provide the basic information used in the compilation of inventory and the calculation of allowable cuts.

In reforestation, a record 17,809,200 trees were planted by all agencies during the year, and the steadily increasing demand for planting stock has necessitated a continuous expansion of nursery facilities.

Continuing research activities at the Forest Service experiment station, in tree breeding and provenance studies, and in nursery plantation studies were carried out in support of the reforestation programme and the general improvement of the forests.

The work of opening up our forests to industrial development continued, with engineering projects in 28 sustained-yield units. The 64 miles of road constructed during the year brought to 919 the miles constructed by the Forest Service since the beginning of its forest-development road programme in 1950, and included 23 bridges.

Work also continued on the development of navigation channels and landings within the area to be flooded by the Portage Mountain Dam, and clearing was well advanced on 5,820 acres of waterway by the end of the year.

The dry, occasionally windy summer brought a difficult fire season, which resulted in a total of 2,685 fires, a figure well above the 10-year average of 2,106. However, the 307,132 acres of forest cover burned amounted to only 64 per cent of the 10-year average of 479,525.

Damage to forest-cover totalled $5,000,000, which was $2,000,000 over the 10-year average, but well below the $8,000,000 damage of 1958 and the $13,000,000 damage of 1961.

Total use of Crown range again increased, to set a new record in this area of Forest Service responsibility. Altogether, 188,339 cattle were grazing under permit during the year, an increase of nearly 15,000 over 1964.

To safely accommodate the increased live-stock numbers, efforts were concentrated on improving management by range-users. Relations between the industry and the Forest Service remained good despite the onerous requirements necessarily imposed on permit-holders under the existing crowded range conditions.

Several amendments were made to the *Forest Act* in 1965.

Provision was made to allow application of the cost of timber sales to the timber licence as a whole, or to cutting permits issued pursuant to the licence. Cost of building primary access roads now may be offset against stumpage. Sales of pulpwood now can be made to other parties under the amendment to section 17A. Section 33 was amended to permit the sale of forest land from pulp harvesting forests.

Important changes were made in Parts V and VI, relating to timber leases and special timber licences. The main points of change were: (1) consent to transfer now is required, (2) rental rates were fixed at 50 cents per acre, and (3) a new form of licence or lease document now can be issued by the Minister as the form of a renewal.

Section 52 was amended whereby the holder of a lease or licence is no longer considered the owner for the purpose of Part VI. It is no longer necessary to obtain consent from him for a right-of-way across the lease or licence.

The rates of royalty on timber berths were amended. A regulation on the definition of pulpwood also was made.

Near the close of the year, announcement was made of the adoption of a voluntary close utilization policy, designed to ensure the complete utilization of the forest resource.

Effective on January 1, 1966, the policy was adopted following comprehensive discussions between the Forest Service and forest industry. There is general acceptance of the principle of close utilization, but it is anticipated that, because of a variety of local considerations in different areas of the Province, there will be a considerable management work load in the future to bring about successful implementation.

It is believed that the introduction of close utilization will be at least as important to the future of British Columbia's forests as was the introduction of the sustained-yield programme.

FOREST SURVEYS AND INVENTORY DIVISION

The programme of intensive inventory of public sustained-yield units continued in 1965. Inclusive of 1964 field work, unit survey information is now available for 37,500,000 acres. A further 21,000,000 acres are covered by maintenance surveys.

Growth, loss-factor, and volume studies continued. These studies provide the basic information used in the compilation of inventory and the calculation of allowable cuts. The investigation into the application of 70-mm. photography to forest sampling was carried further, and the regeneration survey started in 1964 was completed. A small party was assigned again to a cruising project for the Department of Finance.

The continuous staff employed by the Division numbered 140 and included 58 foresters, 12 technical personnel, 55 draughting and clerical staff, and 15 mechanical, warehouse, launch crew, and operations personnel. To supplement the professional and technical staff during the field season, 86 seasonal employees were engaged.

Financial assistance for the inventory programme was provided again under the Federal-Provincial Forestry Agreement.

FIELD PROGRAMME

Forest Classification and Sampling

During the 1965 field season, forest inventory field work, at the unit survey standard, was completed in the Nazko area and in six public sustained-yield units encompassing an area of 12,500,000 acres. Details of the area involved in each unit are shown in Table B outlining the production of interim base maps for this work.

In the course of this work, 2,188 multi-plot samples were established by crews of the Division. An additional 461 such samples were established on tree-farm licence areas by crews of the licensees working in co-operative arrangement with the Division. Though these latter samples may not apply to stands in areas of current field work, they can be used to supplement information on similar forest types in public sustained-yield units.

Growth Studies

In the 1965 " growth and yield " programme, 90 permanent plots were established in one Interior and three Coast public sustained-yield units. These were distributed as follows: Big Bar, 39; Chilliwack, 21; Harrison, 7; and Yale, 12. Types sampled were: 45 Douglas fir, 25 hemlock, and 20 lodgepole pine. Conditions sampled were: Ages ranging from 30 to 100 years, sites from good to low with the majority in the medium and poor class, and elevations ranging from 500 to 5,100 feet.

Production of both zonal and local volume-over-age curves was stepped up during the year to provide current data for recalculation of annual allowable cuts for regulated areas. Since there is a need for empirical yield tables based on this information, tables were produced showing yield and mean annual increment by growth type at two diameter levels. These tables for zones will be published in 1966.

Over 40 inquiries and miscellaneous requests for growth information were processed during the year.

Loss-factor Studies

To complete loss-factor work in the Yale Public Sustained-yield Unit, 2,198 trees were felled and measured on 82 sample plots. Through the addition of information collected in previous studies in the unit, measurements of 2,782 trees now are available to establish local loss factors for this unit. Ten of the 1965 sample plots were double-sampled in connection with the study of 70-mm. helicopter photography.

The Division now has measurements of 44,259 felled trees on 509 samples (2,036 plots) in various parts of the Province.

Through co-operative loss-factor work by tree-farm licensees, measurements were submitted for 1,386 trees on 16 samples.

Local taper curves for hemlock and balsam in the Soo Public Sustained-yield Unit and butt taper tables for commercial Coast tree species were published.

Special Field Projects

In the vicinity of Hope, 2,490 acres of privately held forest properties were examined on behalf of the Department of Finance for real-property assessment.

A regeneration study, undertaken in 1964 to determine the progress of natural restocking on yellow pine-fir sites near Cranbrook, was completed with the examination of a further 27,000 acres of logged or burned areas. A report on this additional area is being prepared for the Reforestation Division.

A stand-treatment cruise was completed on the 5,000-acre Rampart Demonstration Forest near Cranbrook, in which a total of 361 fiftieth-acre sample plots were established for volume.

The investigation into the application of 70-mm. photography to forest sampling continued. This time a coastal unit, the Yale Public Sustained-yield Unit, was the scene of operations. Again the results of the tests were favourable, showing that the standard error of predicting the height of an individual tree through photo measurement has increased from plus or minus 3 feet to plus or minus 4 feet.

In conjuction with photo-sampling projects, a study in the application of this method to measurement of logging waste was conducted. A 10-chain transect was established in a high-lead logged area, and all pieces of material with minimum dimensions of 4 feet in length and a 4-inch top and larger were counted, and dimensions of every fifth piece measured. Results show there is no significant difference between the number of pieces counted on the ground and on the photos, or between ground and photo measurements of piece volume. In co-operation with the Forest Products Laboratory of the Federal Department of Forestry, a similar logging-waste study was conducted near Falkland. Results of this test are still being compiled.

Operations

Field work in the Hecate and Ootsa units during 1965 necessitated extensive use of water transportation. The launch " Forest Surveyor " with a 60-foot barge served as a floating base for much of the work in the Hecate, and two 17-foot outboard cabin boats and a 14-foot boat with outboard motor were used by field crews working from this base. Much of the Ootsa unit was accessible from the Ootsa flood basin, and here a 23-foot launch, two 17-foot cabin boats, and two jet-powered river boats were used. The jet boats, with reinforced hulls, proved particularly valuable in penetrating offshore snags and debris to enable field crews to get ashore for examination of forest stands. A river boat with outboard motor was used for transportation on the Parsnip River for access to a large area of that unit.

Helicopters were used on all inventory projects for classification work in inaccessible areas and to transport sampling crews to those areas. The loss-factor crews also used helicopter transportation to remote samples. A Bell G3B and two Bell G2 helicopters were employed under contract, while other machines were chartered locally as required. Flying-time on helicopters totalled 1,000 hours. Approximately 150 hours of flying by float-equipped fixed-wing aircraft was carried out to ferry crews and equipment to remote sub-base camps on lakes in several project areas, particularly in the Nazko area west of Quesnel.

Liaison was maintained with the Air Division of the Lands Service to obtain air photography coverage for 1966 and 1967 projects. As a result, air photography was completed on an area of 18,540 square miles at a scale of 20 chains to 1 inch, and 9,350 square miles at 40 chains to 1 inch.

OFFICE PROGRAMME

Forest Mapping

Table A outlines the final forest-cover mapping, planimetry and volume estimates completed during 1965, based on the 1964 field projects. Unit survey reports, maps, and map-area and map-volume statements have been issued on all but the southern half of the Hecate Public Sustained-yield Unit. For the latter area, only maps and area statements are now available. On completion, in 1966, of compilation and mapping for the northern half of the Hecate, a unit survey report will be issued for the entire unit.

Table A.—Production of Final Forest-cover Maps for 1964 Projects

Project	Number of Maps	Scale (Chains to Inch)	Forest and Non-forest Area in Acres			Volume in M Cu. Ft. on Mature Crown Area
			Crown	Alienated	Total	
Blueberry P.S.Y.U.	130	20	2,748,392	45,327	2,793,719	1,340,487[1]
Burns Lake P.S.Y.U.	70	20	1,125,044	96,340	1,221,384	1,401,106[1]
Cranbrook P.S.Y.U.	100	20	1,826,200	243,943	2,070,148	1,264,488[1]
Hecate P.S.Y.U. (south half)	43	40	2,188,257	18,931	2,207,188	(2)
Part of Kitimat T.F.L. reserve	25	40	1,459,500	9,680	1,469,180	1,538,679[3]
Okanagan P.S.Y.U.	91	20	1,327,951	536,750	1,864,701	1,204,420[1]
Soo P.S.Y.U.	89	20	1,514,287	136,733	1,651,060	2,860,711[3]
Totals	548	—	12,189,631	1,087,749	13,277,380	—

P.S.Y.U.=public sustained-yield unit. T.F.L.=tree-farm licence.
[1] Volumes 7.1"+d.b.h. close utilization standard less decay.
[2] Not yet calculated.
[3] Volumes 9.1"+d.b.h. close utilization standard less decay.

Table B indicates the extent of base maps prepared for the 1965 field projects. With the exception of the Hecate Public Sustained-yield Unit, these areas were base-mapped from 20-chain to 1-inch air photos flown in 1964. Forest-cover mapping of these projects is now in progress, and maps and reports should be available by the fall of 1966.

Table B.—Production of Interim Base Maps for 1965 Field Work

Project	Number of Maps	Scale (Chains to Inch)	Total Estimated Acreage
Hecate Public Sustained-yield Unit (north half) [1]	45 (+13)	40 (+20)	2,515,000
Nehalliston Public Sustained-yield Unit)	23	20	385,000
Ootsa Public Sustained-yield Unit	132	20	2,810,800
Parsnip Public Sustained-yield Unit	76	20	1,487,000
Upper Kootenay Public Sustained-yield Unit	65	20	1,413,700
West Road-Nazko area [2]	107	20	2,036,700
Yalakom Public Sustained-yield Unit	86	20	1,850,000
Totals	547	—	12,498,200

[1] Includes 13 maps at 20-chain scale for part of Skeena Public Sustained-yield Unit.
[2] Extension to Narcosli Public Sustained-yield Unit and portion of Chilko Public Sustained-yield Unit.

Area and Volume Summaries and Distribution of Information

In addition to the planimetry of 13,300,000 acres required for unit survey reports, 86 inventory summaries were completed for Forest Service management planning purposes, and 152 were completed for the Lands Service which involved applications to lease or to purchase. These requests accounted for a total area of 60,000,000 acres and a net timber volume of 81,000,000,000 cubic feet.

Sales and distribution of maps and other information increased considerably over the previous year. The material included 20,700 maps, 240 survey reports, 840 volume-over-age curves, and over 8,000 sample volume statements and compartment area sheets.

All of the 2,649 Provincial samples established during the 1965 field season have been compiled on the basis of the 1962 Standard Cubic Foot Volume Tables. The Provincial total, 1953 to 1965, inclusive, stands at 30,878 exclusive of permanent growth plots, and prints of any compiled sample statement in cubic feet per acre are available at a nominal charge.

The Department of Industrial Development, Trade, and Commerce has recently installed an I.B.M. 1620 computer with two disk drives and on-line printer, plus an I.B.M. 1401 with four tape units and one disk drive. The installation will benefit the Division's data-processing by reducing sorting-time and virtually eliminating card-storage problems.

BRITISH COLUMBIA FOREST SERVICE
FOREST SURVEYS AND INVENTORY DIVISION

MAINTENANCE SURVEYS (1958-1960)

1. Babine
2. Big Valley
3. Bowron
4. Carp
5. Cottonwood
6. Creston
7. Crooked
* 8. Kingcome
9. Lac la Hache
10. Longworth
11. Morice
12. Naver
13. Niskonlith
** 14. Nootka
15. Purden
***16. Quadra
17. Quesnel Lake
18. Robson
19. Spallumcheen
20. Stuart
21. Williams Lake
22. Willow River

Mapped area includes :-
* Cape Scott
** Barkley, Kyuquot
***Redonda, Sayward, Sechelt

AVAILABLE INFORMATION

(a) Maps--majority at 1/4 mile to 1 inch; balance at 1/2 mile to 1 inch.
(b) Statements--area statement for each map.
(c) Reports--for each P.S.Y.U., a maintenance survey report.

UNIT SURVEYS (1961 +)

COMPLETED (1961-64 fieldwork)

1. Arrowhead
2. Big Bar
3. Blueberry
4. Burns Lake
5. Cranbrook
6. Dean
*7. Dewdney
8. Fernie
9. Hecate S 1/2
10. Kettle
**11. Kingcome
12. Kitimat TFL Reserve
13. Narcosli
14. Nechako
15. Nicola
16. Okanagan
***17. Quadra
18. Salmo
19. Salmon Arm
20. Shuswap
****21. Skeena
22. Smithers
23. Soo
24. Special Sale Area
25. Stum (part)
26. Westlake
27. Windermere

Mapped area includes :-
*Chilliwack, Harrison, Yale
** Seymour
*** Texada
**** Kitwanga, Terrace

AVAILABLE INFORMATION

(a) Maps--all at 1/4 mile to 1 inch except Dean Block 1, Hecate, Kitimat Reserve.
(b) Statements--area and volume statement for each map.
(c) Reports--for each P.S.Y.U. a unit survey report.

IN PROGRESS (1965 fieldwork)

28. Chilko (part)
29. Hecate N 1/2
30. Narcosli (extension)
31. Nehalliston
32. Ootsa
33. Parsnip
34. Upper Kootenay
35. Yalakom

BRITISH COLUMBIA
DEPARTMENT OF LANDS, FORESTS, AND WATER RESOURCES

HONOURABLE R. G. WILLISTON, MINISTER

Scale
40 30 20 10 0 40 80 120 160 MILES

PROGRESS OF FOREST-COVER MAPPING
BASED ON MAINTENANCE SURVEYS AND UNIT SURVEYS
OF AREAS UNDER PUBLIC MANAGEMENT
AS AT DECEMBER 31, 1965

FOREST RESEARCH DIVISION

A detailed report on the research programme for 1965 will appear in the annual Forest Research Review, compiled at the end of the fiscal year.

EXPERIMENT STATION

Unusually heavy snowfall occurred last winter, resulting in considerable damage to the clone banks at Cowichan Lake. Seventy-one per cent of the scions grafted in the spring of 1964 were torn off or so severely damaged that they had to be removed. Many of these, however, were salvaged and regrafted. In addition, scions from 32 new trees registered in 1964 were added to the clone banks, which now contain representatives of 457 clones.

In the research nursery, 8,500 1+0 seedlings from controlled Douglas fir crosses made in 1963 were transplanted. Thirty-two seed-lots, resulting from 1964 pollinations of seven trees located at Cowichan Lake with pollen from the Interior of British Columbia, Washington, Oregon, and California, produced over 20,600 seedlings in 1965 for transplanting in 1966.

One hundred and fifty provenances of white and Engelmann spruce were sown, and detailed assessments of growth behaviour made during the growing season.

The physical development of the nursery and clone bank continues. In the nursery, four new coldframes were constructed. An additional 40 acres have been cleared for the clone bank including the splitting and uprooting of old-growth stumps to prevent rootrot (*Poria weirii*) infecting newly established grafted rootstock.

DATA-PROCESSING

In the Vancouver Forest District, programmes for scale computing and billing tasks have been adapted for the newly installed I.B.M. 1440 computer.

In the research section, the total number of general programmes has been increased to nine, plus eight temporary programmes written for specific application. The data from 21 experiments were evaluated by the Victoria I.B.M. 1620 Model 2.

FIELD PROGRAMME

Tree Breeding and Provenance Studies

Plus-tree selection was continued during the summer to extend the coverage of the range of Douglas fir. Five member companies of the Tree Improvement Board co-operated in financing a selection crew to work with the Research Division. Both crews worked from the launch "B.C. Forester" throughout most of the summer, operating between Kimsquit and Sechelt. Sixty-six new trees were registered as a result of the summer's effort. During November, with the help of Prince Rupert District staff, scions were collected from 24 trees in the Bella Coola area.

The seventh Plus Tree Week, organized by the Tree Improvement Board, was held, and nine trees between Hope and Powell River were registered.

Considerable progress has been made with intraspecific crosses of Douglas fir. At the nursery stage, north-south wide crosses show up better than east-west crosses.

During the winter an X-ray unit was established in Victoria and suitable methods worked out for the assessment of spruce-seed quality by radiography.

The Douglas-fir-seed provenance study was held up by a lack of seed in 1965.

Nursery and Plantation Studies

Vancouver District

A fertilizer experiment at the Duncan B nursery showed that, in the first year, phosphates had a highly beneficial effect upon seedling height and dry weight. Mortality was reduced. Potassium had no detectable effect, and magnesium generally reduced dry weight and increased mortality.

In spite of a warm, dry spring, first-season survival and growth were excellent in two experiments comparing several classes of Douglas fir planting stock on a variety of coastal sites. Early differences between age-classes and size grades were negligible, and preliminary results suggest the overriding importance of care in handling and planting stock.

Early in June, 18,000 2-month-old Douglas fir seedlings in ½-inch plastic containers were planted in test plots in co-operation with the Reforestation Board. Aspect and shade factors strongly influenced survival, which varied from 0 to 65 per cent.

Prince Rupert District

A comprehensive lodgepole pine problem anlaysis was completed to aid in setting up a 10-year research programme dealing with this species.

A plantation study to test the relative performance of 2+1 and 3+0 white spruce on brush sites was established. Two spot-seeding studies were initiated, one on a freshly scarified area and the other within a 1965 spring burn. An extensive hemlock planting trial was established in co-operation with Celgar Company Limited (Terrace) to study the interrelations of site, season, stock, planting methods, and edaphic conditions with survival and early development.

Prince George District

Most of the season was spent on a reconnaissance of the district prior to writing a problem of analysis leading to a long-term programme. Visits were made to Grand Prairie and Hinton, Alberta, to observe regeneration problems.

Nine direct-seeding trials of spruce and lodgepole pine were established in co-operation with the district reforestation officer. One spruce spacing plot was established with replications to follow annually. A small spruce provenance trial was planted out.

A final report is being written on the influence of time on the effectiveness of scarified seed-beds. It has been noted that the effectiveness of seed-beds decreases with the passage of time after scarification, due mainly to the regrowth of vegetation. Survival on seed-beds scarified and seeded the same year was 64 per cent, while survival on those seeded, one, two, three, and four years after scarification was 43, 39, 35, and 29 per cent respectively.

Kamloops District

A comprehensive report of plantations in the Kamloops and Nelson Districts has shown a number of factors responsible for low survival in plantations. Animals, bad planting practices, poor-quality stock, soils, and lack of proper site preparation have been a few of the major causes of the low survival. Many plantations, however, have not been adversely affected by these factors, and as a result have been successful.

Nelson District

A lodgepole pine thinning study in its 11th year indicates that 80 per cent stand density (1947 yield tables) provides the greatest net increment and the lowest susceptibility to mechanical damages in the East Kootenay.

Information obtained from a single, medium hemlock seed crop suggests that (1) no appreciable amount of seed is dispersed farther than 200 feet from the seed source, (2) seed may disseminate farther upslope than downslope on southerly exposures due to mid-afternoon convection currents, and (3) distance of seed dispersal is greater in the fall than in the winter.

Participation in the ARDA Programme

A part of the ARDA programme in British Columbia is concerned with a soil survey and land-capability rating of an area between Prince George and Quesnel referred to as the Special Sale Area. This is a co-operative project with Provincial and Federal representatives participating. Mapping and rating of the land for forest and agriculture capability is completed, and a land-use report is being prepared.

Another part o fthe ARDA programme is concerned with a study of climate as it may affect the use of land for forestry or agriculture. The Research Division is responsible for establishing a network of temporary climatic stations to supplement the existing network, located mainly in urban and agricultural valleys, in order to extend climatic information to less accessible forested regions.

For details of research projects active in 1965, and if publications and unpublished reports, *see* Tables Nos. 11 and 12 in the Appendix.

REFORESTATION DIVISION

FOREST NURSERIES

As anticipated, seedling stock in Coastal nurseries was protected by a heavy snow cover during the period of low temperature which occurred early in the year. Late spring frosts caused nominal damage in most nurseries, with Green Timbers reporting heavier than normal losses early in May. At Duncan, where similar temperatures were recorded at that time, damage was prevented by the use of " solid set " irrigation equipment following advance frost warnings. This system of sprinkling enables all nursery bed areas to be irrigated at once and shows great promise in frost-damage control as well as an increase in irrigation efficiency at lower cost. The summer months were warmer and drier than in the previous three years, except for the eastern portion of the Nelson Forest District, where the East Kootenay Nursery reported above average precipitation. Some reduction in the growth of nursery stock resulted from this weather picture, especially where there were shortages of water or breakdowns in irrigation equipment. Normally the proper use of irrigation will offset rainfall deficiencies. The only frost damage reported in the autumn was at Duncan, where irrigation equipment had been removed before the 1—0 stock was completely hardened off.

The sowing of 3,781 beds in the spring completed the scheduled programme of 4,439 beds of stock for 1967 and 1968. Germination and subsequent survival of this 1—0 stock was lower than normal. At Duncan B nursery, where poor distribution and colour were noted last year, this same condition appeared. This defect is apparently overcome during the second year since 2—0 stock from the initial sowings at Duncan B has developed very well. A similar condition was noted in the seed-beds at Green Timbers, but its occurrence is only in small and scattered patches. It is worthy of note that most of the Douglas fir grown at both Duncan and Green Timbers has not been shaded, and at Duncan some of the 1—0 beds have been without sideboards as well. To date there have been no detrimental effects from this technique, and there is even some indication that hardier plants are the result. With the promise of adequate frost prevention by irrigation, it is possible that the costly and time-consuming chore of erecting side boards and shade frames may be eliminated from at least some nurseries.

In the autumn, 1,199 beds were sown mainly with spruce and hemlock to provide stock for 1968 and 1969 planting.

Weeds continued to plague the nursery programme, and weeding costs were higher than normal in most nurseries. A concentrated campaign against this nuisance is a necessity if production costs are to be lowered over the long run.

Expansion of the various co-operative nurseries continued during 1965. Details can be found in the section entitled " Interdepartmental Rehabilitation and Forestry Programme." Shipments from all nurseries in 1965 were up some 26 per cent over 1964 and established a new record of 18,165,500 trees shipped for field planting.

See Table No. 21 in the Appendix.

FOREST TREE SEED

Cone crops of all species in the Province were reported light to negligible with the exception of ponderosa pine, which throughout its range produced a medium crop. Consequently no major collections of tree seed were undertaken during the year. Small collections were made to fill special demands, and it was during this

activity that some important experience was acquired relative to the viability of cottonwood seed.

The past history of cone crops was reviewed, with the object of studying cone-crop periodicity. While the findings are not conclusive, there is now some reason to believe that collections of Coast Douglas fir during bumper crops should be large enough to provide a 13-year supply of seed. This is especially true of high-elevation provenances.

The presence of male and female strobili during the fall at all elevations in Coast Douglas fir indicates a potentially good crop of that species in 1966. A similar crop of flower buds has been reported in Coastal Washington and Oregon. While 14,000 bushels of Douglas fir cones were harvested during the last bumper crop in 1959, only 724 bushels have been gathered since, of which 65 per cent has come from seed-production areas. It is estimated that at the present time 40,000 bushels of Douglas fir cones must be collected to ensure an adequate supply of seed for Crown land in the Vancouver Forest District.

Early in the year 650 kilograms of seed were extracted from 2,934 bushels of cones collected from 127 provenances during 1964. Of this, 80 per cent is Douglas fir from the Nelson Forest District. In addition, 105 small research lots were extracted and cleaned. The 1965 collections totalled 30.5 bushels from six provenances, and these cones yielded only 2.96 kilograms of seed.

In the seed laboratory, 596 germination tests were carried out, bringing this information up to date for all seed in storage. Almost three-quarters of a ton of seed was weighed out and prepared for sowing in forest nurseries. Seed on hand for all agencies now amounts to 4,116 kilograms or approximately 4½ tons. The seed situation with regard to high-elevation Coast Douglas fir is critical for certain areas. Supplies of Interior spruce for the Prince Rupert Forest District are seriously low.

On the Coast, seed-production areas received routine fertilization applications again in 1965. Results from the 1964 fertilization programme were disappointing as, although heavy flower crops were produced, a cone crop did not materialize. In most cases the flowers aborted before bud-break. Since 1959, Coast production areas have yielded 130 pounds of Douglas fir seed. There are now 10 such areas, totalling 44 acres.

In the Interior, seed-production areas to date have generally failed to produce seed. Of the 15 plots now established, 9 are in spruce, 5 in Douglas fir, and 1 in larch. Not as much is known about the timing of fertilization in regard to reproductive-bud initiation of spruce as is known for Douglas fir. However, in 1965 some evidence was obtained indicating that flower buds in spruce may be differentiated much later than in Douglas fir. The only success in the Interior has been with two Douglas fir plots in the Kamloops Forest District. No spruce plots have yet produced artificially stimulated cone crops.

Grafting of plus-tree material in the Campbell River seed orchard continued in 1965 with 1,435 ramets being established in Field No. 2. Initial survival at the end of the first growing season was 93 per cent, but heavy snowfall in the late autumn caused an estimated 68 per cent loss due to breakage. Similar losses due to weather conditions have occurred for the last three years. In Field No. 1, the 922 ramets now established constitute the survivors of 1963 and 1964 grafting and represent a survival rate of 49 per cent. In addition to the grafting carried out in the orchard, an additional 274 spare ramets were established at Campbell River and 442 more were grafted to rootstock in the Duncan clone bank. The seed orchard was sown to grass in an effort to keep weeds to a minimum. Routine

cleaning, cultivation, and pruning were carried out. The data-recording system for the orchard was revised toward more accurate and efficient analysis of the information obtained.

RECONNAISSANCE AND SURVEY WORK

No formal regeneration surveys were carried out on the Coast during the year. However, reforestation crews assessed some 38,200 acres of cut-over and slash-burned sites in all Ranger districts. The object of this assessment was not only to locate plantable area for 1966, but also to establish some relationship between logging, burning, and plantability on which to base future reforestation planning in the Vancouver Forest District. During the years 1962 to 1964, an average of 40,200 acres of Crown land was logged annually; of this, an average of 22,100 acres was broadcast-burned, providing about 16,500 acres of plantable site each year. The current backlog of such burned and plantable site was found to be 16,000 acres, which, with an estimated 31,000 acres burned in the fall of 1965 and considered plantable, brings the Crown area to be planted in the Vancouver Forest District to 47,000 acres.

Forest Surveys and Inventory Division crews completed a study in the ponderosa pine zone of the East Kootenay on the progress of natural regeneration on lands previously classified as not sufficiently restocked. This study now has covered 150,000 acres, and a complete report is expected early in 1966. These crews also carried out a stand-treatment survey and detailed inventory of the 5,000-acre rampart demonstration area (Pasture Development No. 5).

A comprehensive re-examination of plantations in the East Kootenay was carried out in co-operation with Research Division. The object of this study was to assess plantation success in regard to the many factors which influence seedling survival and development so as to provide some insight for future planning. A similar project was completed in the Kamloops Forest District in 1964. The information from both areas is presently being assimilated into one complete report, the contents of which will be applicable to the Southern Interior in general.

PLANTING

Owing to heavy winter snow and the long drawn-out spring, planting crews throughout the Province were almost two weeks late in getting started in 1965, and some projects eventually were cancelled because of persisting snow cover. Once planting was under way, conditions remained excellent, except in the Northern Interior, where continual warm weather in May and June finally forced suspension of several projects. Fall planting operations were carried out in three of the five forest districts. On the Coast, some projects were delayed or cancelled because access roads were washed out by heavy rains. In the Interior, two projects were snowed out during the third week of October.

The demands of dam construction, pondage clearing, highway relocation, and construction projects are beginning to create a shortage of suitable labour for planting in some parts of the Province. Nevertheless, the total planting effort in 1965 set a new mark of 17,809,200 trees, of which 36 per cent was planted by the Forest Service on Crown land. Native Indians continue to be the backbone of this programme in some districts. Interior planting amounted to 2,481,200 trees, and it is noteworthy that the 10 millionth Interior tree was planted in the autumn.

See Table No. 22 in the Appendix.

Experimental plantings of Douglas fir in the Kamloops Forest District continued to investigate the effects of aspect and slope on seedling survival.

Survival examinations carried out two years after planting continue to substantiate the superior survival of spring planting in comparison with fall planting. Average survival of eight 1963 spring plantations was 88 per cent and ranged from 59 to 98 per cent. In contrast, average survival on 13 plantations established during the fall of that year was only 30.4 per cent. The long-term average survival for fall plantations is approximately 65 per cent. The poor survival for 1963 fall plantations is believed to be at least partly due to the winter weather pattern. A warm autumn at nursery elevations delayed hardening off, and early shipments of stock reached high-elevation planting-sites in less than prime condition. Much of this stock was also poorly balanced, having been the first crop from a new field in the Chilliwack Valley. Subsequent to planting, a fairly prolonged period of clear cold weather with predominently north winds occurred before any snow fell on the hills. The 50-acre plantation which was completely killed was located at over 3,000 feet in elevation in a Mainland valley oriented in a north-south direction and therefore exposed to the full sweep of freezing winds. This, coupled with the bare, frozen ground, could have completely dessicated the newly planted seedlings. The best survival of 79 per cent was secured on an area at 1,000 feet in elevation on Vancouver Island. The implications regarding planting high-elevation exposed sites on the Mainland are obvious. However, many of these sites are often snowbound until late in the spring, and delaying planting until late May or June can often be dangerous.

PERMANENT IMPROVEMENTS

Following the spring lifting of stock from Field No. 6 at the Green Timbers nursery, 6,000 feet of drain tile and a new water main for irrigation were installed. The drainage and irrigation systems on all fields at this nursery now are complete. A new office building also was constructed on the site formerly occupied by the old office, which was condemned and demolished late in 1964. The parking area was paved in conjunction with this improvement. Increased production of stock here and in the Chilliwack nurseries necessitated the construction of a new storage unit, which doubled the cold-storage capacity at Green Timbers.

At the Duncan nursery, a water main was installed to service the area to be sown in 1966. Here also, increased tree-storage facilities are required, and a start was made on a new unit in the fall. In anticipation of a large cone crop in 1966, improvements were carried out in the seed-extraction plant to permit a production rate of 300 bushels per day, rather than 250 bushels per day as in the past.

CO-OPERATION

There now is a wide variety of agencies involved in reforestation activities, and all have problems, many of which are common to some or all groups. For this reason, extensive co-operation in assessing and working on common problems is necessary. Since the Reforestation Division is largely responsible for the control of seed and the production of planting stock, its staff is involved in many co-operative activities. Participation in the Tree Improvement Board meetings and field trips continued in 1965. Reforestation staff conducted a two-day grafting course at Duncan in the spring. Experimental fertilization of young stands to acquire some knowledge of growth response was carried out in co-operation with the Federal Department of Forestry.

A growing awareness of reforestation problems prompted the Interior tree-farm foresters to devote their spring meeting to this subject. Their deliberations resulted in the establishment of a reforestation sub-committee, which immediately initiated a long-term planting experiment in which the Reforestation Division is co-operating actively. Stand-improvement treatment by Grazing and Reforestation crews was applied to 60 acres of overstocked and stagnant Ponderosa pine within Pasture Development No. 5. The area treated now totals 915 acres. On the Coast, Division snag-fallers cleared 1,792 acres of dead standing timber, including 405 acres felled in co-operation with industry.

Interdepartmental Rehabilitation and Forestry Programme

The forestry camp programme operated jointly by the Department of the Attorney-General and the Forest Service, continued to expand in all phases.

Heavy snow over the winter and restrictions during the fire season hampered work crews in some instances, but, in general, the year was very productive. In the Chilliwack Sustained-yield Unit, inmate crews maintained or assisted in the construction of 8 miles of road. They also carried out the cleaning, weeding, and clearing of 120 acres of brushed-in forest land, of which there are several thousand acres in the valley. This is a continuing project which also provides much of the camp fuel-wood. The Thurston Camp sawmill converted 222,000 board-feet of logs into lumber for new camp construction and inmate projects. The supply of suitable log material continues to be a problem. Present sources are from salvage operations along the main road, a large log jam in the Chilliwack River, and the clean-up of a blow-down area caused by hurricane " Frieda " on Vedder Mountain. Spring lifting operations in the Chilliwack nurseries were delayed by a late spring, and an all-out effort was made to meet the demand for trees by planting crews. Inmate crews planted 80,000 trees on logged and burned sites and in rehabilitated brush areas. Inmate fire-suppression crews, trained by the Forest Service, took action on four fires.

Work crews operating out of Haney Correctional Institute assisted in the construction of 3 miles of road and erected two small bridges. Inmate silvicultural crews cleaned, weeded, and pruned 250 acres of immature forest, and cleared and burned the 5-acre site for the new transplant nursery. This field was subsequently tiled and cultivated. Although no men were used directly on fire suppression, one crew constructed 7 miles of trail and two helispots in connection with a fire near Stave Lake. Arrangements were completed to salvage all merchantable log material from Alouette Lake. This should satisfy the log demand for the institution for several years.

In the Sayward Forest, the Snowdon and Lakeview Camp fire-suppression crews took action on 11 fires and spent a total of 640 man-hours manning secondary lookouts. Work crews carried out routine maintenance on 17 miles of road and constructed ½ mile of first-class trail. At the Snowdon nursery, 400,000 transplant trees were lined out, and 40 seed-beds erected and sown in the spring. A complete irrigation system was installed. During the summer, 6 acres of adjacent land were cleared and prepared to receive seedlings, and the entire area was fenced. Thinning and pruning of 140 acres of early plantation were carried out near the John Hart Dam and at Mud Lake.

Inmates of the Rayleigh Gaol near Kamloops set out 260,000 transplant trees in the nursery field during the spring and installed an irrigation system. In the fall 234 seed-beds were erected and sown under the direction of the Reforestation Division. Conversion of an old munitions blockhouse into a cold-storage unit com-

menced in the autumn. During the spring and fall, work crews thinned and cleaned up 35 acres of deciduous non-commercial tree cover, and burned the debris. Twenty acres of this were planted subsequently. In all, 35,000 trees were planted on three projects. The Rayleigh fire-suppression crew took part in eight fires during the year. Miscellaneous work projects were the manufacture of 800 small signs and the chemical treatment of 1,800 cedar posts.

In the Prince George District, inmate crews continued to work on the Hutda Lake camp-site and stockpiled merchantable timber. The boundaries of this reserve were surveyed by the Forest Service. Field projects carried out in the autumn by crews from the Prince George Gaol included the planting of 75 acres, assistance in a prescribed slash-burn, and routine maintenance of the Hixon Seed Production Area.

There was a noticeable improvement in the work habits of forestry camp crews during the year. This is attributed to the attitude of officers in charge of work parties, and to the training given the officers. Highlight of the year's programme was the success of inmate fire-suppression crews, which won praise from both the public and the Forest Service. The four co-operative nurseries operating under the rehabilitation programme during the year shipped out a total of 1,332,000 trees for field planting.

There are approximately 550 inmates available for forestry projects throughout the Province. In some instances the scope of the programme is limited by the travel distance from respective camps. District and headquarters organization is operating smoothly with increasing emphasis on field liaison. The midsummer meeting of the co-ordinating committee, held in the Chilliwack Valley, proved to be a pleasant departure from headquarters meetings and gave members an opportunity of inspecting progress in the field.

WORKING PLANS DIVISION

Six public hearings held during the year by the Honourable the Minister of Lands, Forests, and Water Resources, under authority of sections 17A and 36 of the *Forest Act,* involved the Working Plans Division in assessing essential information, acknowledging and summarizing briefs, and preparing display maps. Following the hearings, copies of the decisions were sent to all interested parties. In addition, the regular activities of sustained-yield planning were continued by the Division.

Four pulp harvesting forests were proclaimed in 1965.

The fourth pulpwood harvesting area agreement was signed, formally granting to Bulkley Valley Pulp and Timber Limited an option to purchase pulpwood from four public sustained-yield units. Three other pulpwood harvesting areas covering a total of 10 public sustained-yield units were designated, but no formal agreement had been signed by the end of the year. These were in the interest of Cariboo Pulp and Paper Company Limited, United Pulp Company Limited, and Intercontinental Pulp and Paper Company Limited. Fourteen public sustained-yield units and the unregulated areas between them were reorganized into larger units, reducing the total within the Province to 75.

One new tree-farm licence was issued, and one tree-farm licence reserve was transferred to a new applicant. Three new *Taxation Act* tree–farms were certified. One new farm wood-lot was issued but five were cancelled.

At the end of the year, the number of managed units in the Province totalled 197, including 75 public sustained-yield units, of which 41 are covered by 7 pulpwood harvesting areas (4 normally ratified); 40 tree-farm licences; 31 *Taxation Act* tree-farms not included within the tree-farm licences; and 51 farm wood-lots.

The total area committed under working plans amounts to 79,301,951 acres of productive forest, with a total allowable annual cut of 1,120,433,000 cubic feet. This is equivalent to 73 per cent of the total Provincial scale for 1965. The allowable annual cut includes 100,000,000 cubic feet set up on the basis of a close utilization standard. The following table lists the forms of forest units committed to sustained-yield management and having working plans:—

Progress of Sustained-yield Programme to 1965

Type of Managed Unit	Number of Units	Productive Area (Acres)	Allowable Annual Cut (M Cu. Ft.)		
			Sawlog Utilization	Close Utilization	Total
Public sustained-yield units—					
Inside pulpwood harvesting areas	41	32,486,969	255,140	.....	255,140
Outside pulpwood harvesting areas—					
Sawlog utilization	33	32,144,828	328,825	.....	328,825
Close utilization	1	5,150,147	.....	100,000	100,000
Total public sustained-yield units	75	69,781,944	583,965	100,000	683,965
Tree-farm licences	40	8,796,577	.....	.....	400,387
Tree-farms (excluding those in tree-farm licences)	31	709,452	.....	.....	35,754
Farm wood-lot licences	51	13,978	.....	.....	327
Totals	197	79,301,951	583,965	100,000	1,120,433

PULPWOOD HARVESTING AREAS

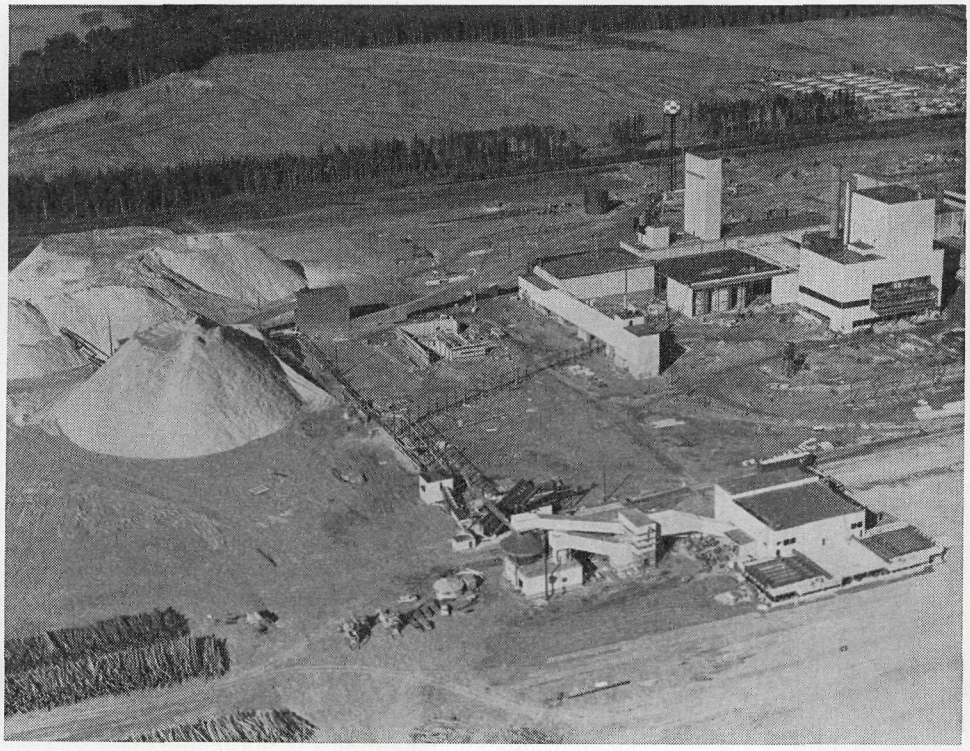
The option agreement for Pulpwood Harvesting Area No. 4 was ratified formally by Bulkley Valley Pulp and Timber Limited and the Honourable the Minister

of Lands, Forests, and Water Resources on July 14, 1965. Included are Babine, Burns Lake, Morice, and Smithers Public Sustained-yield Units.

The decision of the Honourable the Minister of March 17, 1965, designated: (*a*) the area including the Cottonwood, Narcosli, and Quesnel Lake Public Sustained-yield Units to be Pulpwood Harvesting Area No. 5; (*b*) the area including the Big Bar, Lac la Hache, Stum, Williams Lake, and Yalakom Public Sustained-yield Units to be Pulpwood Harvesting Area No. 6; and (*c*) the area including the Peace and Takla Public Sustained-yield Units to be Pulpwood Harvesting Area No. 7. His decision of May 3, 1965, designated: (*a*) the area including the Creston, Cranbrook, and Fernie Public Sustained-yield Units to be Pulpwood Harvesting Area No. 8 and (*b*) the area including the Kinbasket, Upper Kootenay, and Windermere Public Sustained-yield Units to be Pulpwood Harvesting Area No. 9.

On evidence that proper financing could be arranged, it was proposed to grant an option to purchase the pulpwood from: (*a*) Pulpwood Harvesting Area No. 5 to Cariboo Pulp and Paper Company Limited; (*b*) Pulpwood Harvesting Area No. 6 to United Pulp Company Limited; (*c*) Pulpwood Harvesting Area No. 7 to Intercontinental Pulp Company Limited; and (*d*) Pulpwood Harvesting Area Nos. 8 and 9 to the successful bidder from among Canal Development Limited, Kicking Horse Forest Products Limited, and Crow's Nest Pass Coal Company Limited. These agreements had not been formally ratified by the year's end; in fact, the latter-mentioned auction was cancelled owing to what was considered irrational bidding.

Industry continued to study other Provincial areas as proposed pulpwood harvesting areas.



The pulp and paper industry boom continued in 1965. Here, construction nears completion at the mill-site of Prince George Pulp and Paper Limited. At left are stockpiles of pulp-logs and chips. Mill was scheduled to be in operation in mid-1966.

PULP HARVESTING FORESTS

During the year, four public sustained-yield units were proclaimed and gazetted as forest reserves to be known as pulp harvesting forests. These became the Westlake, Naver, Big Valley, and Crooked River Pulp Harvesting Forests. New legislation provided for the lease or sale of lands for other use within these particular forest reserves on the recommendation of the Chief Forester.

Work is continuing to have reserved as pulp harvesting forests the remaining public sustained-yield units within pulpwood harvesting areas.

OTHER PUBLIC SUSTAINED-YIELD UNITS

Fourteen public sustained-yield units were reorganized into six larger units, which, with one exception, also were given new names. In the Kamloops Forest District, the Stum, Taseko, and Tatla units were reorganized into two units named the Chilko and Stum Public Sustained-yield Units. In the Vancouver Forest District, only the Soo Public Sustained-yield Unit remained unaltered. The other 11 units were reorganized into the Dewdney, Kingcome, Nootka, and Quadra Public Sustained-yield Units.

TREE-FARM LICENCES

The contract for Tree-farm Licence No. 40 was signed formally on February 5, 1965, granting to Skeena Kraft Limited the privilege of managing 1,410,299 acres of Crown productive forest land under sustained yield for 21 years.

MacMillan, Bloedel and Powell River Limited withdrew its interest in an area reserved for it, and, after holding a public hearing in August at Kitimat, the Honourable the Minister, in his decision of October 7, 1965, designated the same area to be reserved in the interest of Eurocan Pulp and Paper Company Limited.

Tree-farm Licences Nos. 29 and 34 were enlarged by the addition of the Upper Seebach Creek areas reserved in their interests. Preliminary steps were taken to combine Tree-farm Licences Nos. 30, 31, and 34 into one licence, but this had not been formally ratified at the year's end.

In his decision of September 27, 1965, resulting from the public hearing held in August at Victoria, the Honourable the Minister, in order to consolidate and improve operational procedure, designated certain areas to be reserved for addition to Tree-farm Licence No. 19.

CERTIFIED TREE-FARMS

Three new tree-farms were certified, bringing to 45 the number of tree-farms under the *Taxation Act*. Fourteen of these, with a productive area of 306,167 acres and a total annual allowable cut of 14,484,000 cubic feet, are managed as portions of tree-farm licences. The tree-farms not included within tree-farm licences total 31 and have a productive acreage of 709,452 with a total annual allowable cut of 35,754,000 cubic feet, plus 393,740 Christmas trees.

FARM WOOD-LOT LICENCES

One new farm wood-lot which was nearing completion in 1964 was issued, but again other commitments did not allow time to process the many applications on hand for farm wood-lots. Owing chiefly to change in ownership of the farms, five farm wood-lots were cancelled. The 51 farm wood-lots have a productive acreage of 13,978 acres and an allowable annual cut of 326,900 cubic feet.

For basic data on sustained-yield units, *see* Tables Nos. 31, 32, and 33 in the Appendix.

BRITISH COLUMBIA

DEPARTMENT OF LANDS, FORESTS, AND WATER RESOURCES

HONOURABLE R. G. WILLISTON, MINISTER

Scale

40 30 20 10 0 40 80 120 160 MILES

STATUS OF SUSTAINED-YIELD FORESTRY PROGRAMME AS AT DECEMBER 31, 1965

PUBLIC SUSTAINED YIELD UNITS (P.S.Y.U.'s)

P.S.Y.U.'s — Inside Pulpwood Harvesting Areas

P.H.A.			
NO. 1			
	9. Big Valley	40. Naver	67. Stuart Lake
	15. Carp	41. Nechako	71. Westlake
	20. Crooked River	49. Parsnip	73. Willow River
NO. 2			
	1. Adams	42. Nehalliston	55. Raft
	5. Barriere	43. Nicola	59. Salmon Arm
	6. Barton Hill	44. Niskonlith	60. Shuswap
	11. Botanie	46. North Thompson	66. Spallumcheen
	23. Eagle		
NO. 3			
	12. Bowron	36. Monkman	57. Robson
	34. Longworth	51. Purden	
NO. 4			
	4. Babine	37. Morice	64. Smithers
	13. Burns Lake		
NO. 5			
	17. Cottonwood	39. Narcosli	54. Quesnel Lake
NO. 6			
	8. Big Bar	68. Stum	75. Yalakom
	32. Lac la Hache	72. Williams Lake	
NO. 7			
	50. Peace	69. Takla	

P.S.Y.U.'s — Outside Pulpwood Harvesting Areas

2. Arrowhead	26. Finlay	52. Quadra
3. Ashnola	27. Granby	53. Queen Charlotte
7. Bell-Irving	28. Hecate	56. Rivers Inlet
10. Blueberry	29. Kettle	58. Salmo
14. Canoe	30. Kinbasket	61. Similkameen
16. Chilko	31. Kingcome	62. Skeena
18. Cranbrook	33. Lardeau	63. Slocan
19. Creston	35. Moberly	65. Soo
21. Dean	38. Nakusp	70. Upper Kootenay
22. Dewdney	45. Nootka	74. Windermere
24. Edgewood	47. Okanagan	
25. Fernie	48. Ootsa	

OTHER PUBLIC UNITS

S.S.A. - Special Sale Area (O-I-C 2811/62)

K.R. - Kamloops Region

TREE FARM LICENCES

RESERVED — Eurocan Pulp and Paper Co. Ltd.

AWARDED

T. F. L. No.	
1.	Celgar Limited
2.	Elk Falls Company Limited
3.	Pacific Logging Company Limited
4.	Fourmax Logging Limited
5.	Weldwood of Canada Limited
6.	Rayonier Canada (B. C.) Limited
7.	MacMillan, Bloedel and Powell River Limited
8.	Boundary Sawmills Ltd.
9.	S. M. Simpson Limited
10.	Timberland Development Co. Limited
11.	Olinger Lumber Company Ltd.
12.	Bendickson Logging Ltd.
13.	Galloway Lumber Company Ltd.
14.	Crestbrook Timber Ltd.
15.	Oliver Sawmills Limited
16.	Pondosa Pine Lumber Company, Ltd.
17.	Evans Products Company Limited
18.	Clearwater Timber Products Ltd.
19.	Tahsis Company, Ltd.
20.	MacMillan, Bloedel and Powell River Industries Ltd.
21.	MacMillan, Bloedel & Powell River Industries Ltd.
22.	British Columbia Forest Products Limited
23.	Celgar Limited
24.	Rayonier Canada (B. C.) Limited
25.	Rayonier Canada (B. C.) Limited
26.	The Corporation of the District of Mission
27.	British Columbia Forest Products Limited
28.	Shelley Development Limited
29.	Eagle Lake Sawmills Limited
30.	Sinclair Spruce Lumber Company Ltd.
31.	Upper Fraser Spruce Mills Limited
32.	Vernon Box & Pine Lumber Co. Ltd.
33.	Shuswap Timbers Ltd.
34.	Church Sawmill Limited
35.	B. C. Interior Sawmills Ltd.
36.	F. & R. Logging Co. Ltd.
37.	Canadian Forest Products Ltd.
38.	Empire Mills Limited
39.	MacMillan, Bloedel and Powell River Limited
40.	Skeena Kraft Limited

PUBLIC INFORMATION AND EDUCATION DIVISION

The year 1965 was, viewed in its broad general aspect, a year of normal activity without any dominating or salient events. It was a year of expanding activity, particularly in the press relations field. Stress in this area was offset to some extent by the establishment of a specific sub-unit directed toward this area of operations.

Although this Division's activities were directed, in the main, toward the public within the Provincial sphere, it is of some interest to know that Forest Service exhibits reached into far wider spheres. One exhibit was put on show in Warsaw, Poland; another in London, England. Films and exhibits should, in fact, be considered among the better ambassadors of the Forest Service. Requests for film loans were made from places such as Spain and from the emerging nations of Africa. Forest service exhibits are appearing in increasing numbers in smaller communities across the Province. Their appearance in local fairs is usually the result of some enthusiastic co-operation upon the part of the local Ranger. They provide a valuable contribution to the Service.

COMMUNICATIONS MEDIA

Press and Periodicals

Press coverage of forestry activity reached its peak during July and August. Submissions from the press clipping service indicated that British Columbia newspapers during those months devoted at least 350,000 words to the subject, not including such items as union activity. The majority of stories dealt with forest fires and were based on information, both written and verbal, provided by the Public Information and Education Division, and on reports from the forest districts and industry. An active fire-prevention press campaign was carried on in conjunction with the issuing of routine fire reports.

Throughout the year, press releases and special articles were prepared by the Division for newspapers and trade publications. Expansion of the pulp and paper industry was the object of considerable press interest, and information was provided for publications in Eastern Canada as well as British Columbia. Other written material was prepared for special events, including National Forest Products Week, and for annual publications such as the first edition of a new British Columbia forest industry year book.

Information also was provided to meet encyclopædic requirements, and those of other Provincial Government departments and of individual writers preparing articles on forestry.

In addition to the provision of information for the press and periodicals, the Division was responsible for the editing of all Forest Service publications, including the Annual Report, the Research Review, Forest Management Notes, and Protection Bulletins.

A considerable amount of time was devoted to research and the preparation of notes for speeches on Forest Service policies and activities which were given during the year to forest-industry conferences and conventions and to meetings of other interested business groups.

Publications and Printing

Printing and publishing remained one of the Division's most important duties.

The year brought an unusually high interest in the work of the Forest Service, reflected in an increased demand for explanatory material for news releases, but

above all for printed material. The contributing factors behind this interest were a severe fire season, a new school course (Business 11), the continuing expansion of the forest industrial complex, and the announcement of new policies, particularly that on close utilization.

Demands of a general nature were met by the issue of a special edition of the British Columbia Government News, dedicated to the work of the Forest Service (April 1965, Vol. 3, No. 1). This issue was widely distributed, and an effort was made to place copies in all schools. It still is being passed in considerable quantities to libraries, clubs, and to individuals, and it is planned to reissue the edition in booklet form.

Only one other publication may be described as actually new and was published in 1965. This was the prospectus for the Forest Service training-school. The series carried under the Protection Bulletin headings has been revived and Nos. 1 and 2 issued as in-service training publications. Such standard works as the Annual Report, the Research Reviews, and Management Notes were processed as usual. Again 60,000 scribblers were distributed to school-children across the Province.

Radio and Television

The severe 1965 fire season resulted in more than normal use being made of all news media. Radio and television played a major role in disseminating accurate information on the many facets associated with the season.

Reports received from the field staff indicated that radio was used with extremely favourable results, both through the paid advertising campaign and through the public service announcements provided free of charge by the various stations.

The paid advertising campaign, carried on all 30 radio stations in the Province, resulted in the broadcast of more than 3,700 30-second announcements. It is estimated that free announcements and news broadcasts accounted for an additional 6,000 announcements.

The successful use of prepared taped messages was continued. Specially written hazard flashes were available when required.

During the year, radio advertising proved itself an extremely flexible, adaptable, and fast medium with which to meet Forest Service needs.

Paid television advertising was restricted to a series of 20-second flashes carried over the Canadian Broadcasting Corporation's Provincial network. Again the public service announcements provided by the C.B.C. and other television outlets in the Province were greatly appreciated by all field personnel. Although there is no doubt that greater use should be made of this medium, limited funds and personnel have prevented the Division from taking advantage of the benefits available.

Divisional personnel participated in numerous special-event and public service programmes on radio and television. Similar services were performed by district officers as required.

POSTERS AND SIGNS

The use of posters to project Forest Service protection and management information was carefully scrutinized during the year. After consideration it was agreed to continue with the use of posters but to introduce one new design each year until all posters have been up-dated. The new design to be circulated during 1966 will deal with the high fire occurrence attributed to children playing with matches.

During the year, 11,000 posters, made up in 17 designs, were distributed. In addition, more than 10,000 miniature hazard-rating signs were issued. Introduction of the miniature hazard-rating sign for use in vehicles has met with outstanding success. The general public and many industrial organizations have accepted this

success. The general public and many industrial organizations have accepted this constant reminder of the fire hazard. A further indication of the success of the sign is its adoption by a number of other Provinces and by several States in the United States.

Forest Service sign requirements have shown a marked increase during recent years, and it has been difficult to meet all demands. After a general review of the sign programme, it was agreed to continue to maintain the seven standard Forest Service signs. All signs will be produced by the Forest Service Maintenance Depot under direction of the Division.

In addition, use of the " Keep B.C. Green—Use Your Ashtray " sign was continued for the 12th consecutive year. Numerous innovations have been introduced in an attempt to increase public interest in this programme.

During the year, 32 new signs were painted and 77 repainted, bringing the total number of signs on Provincial highways to 109.

EXHIBITS

The concentrated efforts made to draw visitors and conventions to the Province have resulted in an increasing number of requests being made for Forest Service participation in conferences, fairs, and exhibitions.

One new exhibit was constructed, and this, together with three portable displays, was entered in three major forestry conferences, three parent-teacher conventions, and six major exhibitions.

The permanent display in the Pacific National Exhibition was viewed by an estimated audience of 800,000.

In co-operation with the forest industry, the Division participated in many events associated with National Forest Products Week and National Conservation Week.

PHOTOGRAPHY

Still Photography

Print production in 1965 totalled 12,132, an increase over the previous year and an all-time record.

The staff took 484 large format negatives, 185 of these being colour, and 148 rolls of film. The photographic library added 324 black-and-white and 142 colour negatives. Proof prints were made of these and supplied to the various forest district headquarters. A total of 1,352 negatives was added to the files by the Engineering Services Division.

Increased use was again noted of the 35-mm. slide library, to which 208 slides were added. Numerous duplicate slides were supplied, or originals loaned, to many sources, including the British Columbia Institute of Technology, which borrowed 350 slides and duplicated many of them for future use. The Institute also was supplied with 284 8-by-10-inch glossy black-and-white photographs from a wide selection of file prints for use in its forestry courses.

As well as supplying black-and-white prints to the Province's news media and trade publications, black-and-white prints, colour prints, and 35-mm. slides were sent to an increasing number of users. Some of these users were: Federal Department of Forestry (library stock shots and colour brochure photographs); Mitchell Press Limited for forestry year book; Canadian Council of Resource Ministers; Universities of British Columbia, Toronto, and Pennsylvania; National Film Board; Toronto Star Weekly; Seattle Sunday Times; Macmillan Company of Canada Limited (school book department); Business and Financial Chronicle; New Scientist; and individuals from Austria to Australia.

A photographic assignment was undertaken in the early summer to supply colour photographs to the Corrections Branch of the Attorney-General's Department for use in its permanent exhibit at the Pacific National Exhibition.

Coverage was given, in both black-and-white and colour, of the planting of 1,000,000 trees by British Columbia Forest Products Ltd. planter, and special photographs were taken for the Forest Service training-school brochure.

During the early part of the year the senior staff member of the photographic section attended a course in photo-micrography held by the Federal Department of Forestry at Victoria.

The co-operation of Kamloops and Nelson Forest Districts was sought in obtaining selected colour slides to illustrate a lecture. This project was so successful that similar co-operation throughout the Province will be considered in the future.

Motion-picture Photography

In the motion-picture field the Division's film " Man on the Mountain Top " was completed and added to the film library. This film has been selected as one of four to represent Canada at the Madrid Forestry Film Festival, to be held during the 1966 World Forestry Conference.

Work was started on a new film production on forest access and is scheduled for completion in 1966. This film will deal with access for protection and management purposes, as well as harvest. So far, footage has been shot mainly in the Gold River and Peace River pondage areas.

Stock shots have been loaned to various users, including British Columbia Television Broadcasting System Limited, Fortune Films, the National Film Board, and the Department of Industrial Development, Trade, and Commerce.

X-ray

The photographic laboratory undertook the processing of X-rays for the Research Division. A total of 407 sheets was processed.

Colour Printing

During the year a colour-printing processing unit was purchased, enabling the laboratory to produce Ektacolor prints up to 11- by 14-inch size economically. After familiarization tests, the unit was put into production in December and a small number of 8- by 10-inch prints was run off to meet existing requirements.

Film Library

An increase in loans to 535 in 1965 from 483 the previous year resulted in a total audience of 112,638, compared to 107,006 in 1964.

The gain in the number of adult and child viewers was indicative of a more selective type of audience than in the past. District staffs, universities, technical schools, service clubs, and secondary and elementary schools were making much more use of the films available. Forest Service productions on loan to British Columbia House, London, showed an increased use by adult organizations and schools.

Difficulty was experienced in finding appropriate subjects for inclusion in the library. Of the 39 previewed during the year, only eight were found suitable.

See Table No. 41 in the Appendix.

SCHOOL LECTURE PROGRAMME

The school lecture programme for 1965 showed some improvement over the previous year with the advent of a new full-time lecturer. Fifty-six schools in the Vancouver, Kamloops, and Prince George Forest Districts were visited.

In addition, some 50 lectures were given to organizations other than schools. *See* Table No. 42 in the Appendix.

LIBRARY

Interlibrary loans, which were researched and completed by the staff, reached an all-time high of 206, necessitating the use of many libraries in Canada and the United States. It also has been most apparent that more and more use is being made of the literature available in the library.

The library is growing rapidly and has almost reached its maximum area expansion in its present quarters. There appears to be only enough shelf space to meet additions for one more year.

The Forest Service library staff would like to express its appreciation to the library staffs of the Provincial Library, the University of Victoria, the Canada Department of Forestry, and the Federal Department of Agriculture Research Branch at Saanichton for their splendid co-operation.

FOREST MANAGEMENT DIVISION

All forest districts reported very good logging conditions during 1965, and this, together with continued firm market prices, set the stage for yet another record production year.

The total scale for all products from all lands was 1,533,112,794 cubic feet. This represented a net increase of 18,517,618 cubic feet or 1.2 per cent. It is interesting to note that the combined production from the Vancouver Forest District and the Coast region of the Prince Rupert District showed sufficient increase (3.6 per cent) to carry an over-all decrease (1.7 per cent) in the Interior of the Province. On the other hand, while three of the Interior districts recorded a drop in production, Prince George experienced a new record high for the fourth consecutive year.

With the introduction of sustained yield to Crown lands, it was predicted that the number of sales awarded would fall off. However, it was not until 1965 that this prediction began to prove itself when the number of sales awarded dropped from 2,281 to 1,614. With a drop in the number of sales, it was also expected that the acreage per sale would increase. This has not proved out yet, and in fact the average size of awarded sale dropped in 1965.

Another predicted result of sustained yield was that the number of sawmills would drop as industry consolidated, but the capacity would increase. There has been a steady decline in the numbers, from 2,435 mills in 1956 to 1,191 in 1965. However, the average 8-hour capacity has risen from 12,000 board-feet to 23,000 board-feet.

The volume of logs exported from the Province increased 10 per cent to 58,608,-824 f.b.m., but was still very much lower than for the years 1961 and 1963. As stated last year, it is felt that this is due to the increased demand for pulp material within the Province. This same demand is also reflected in the volume of wood removed under relogging. In 1963 the volume of wood salvaged on the Coast was 3,217 M cubic feet. In 1964 it was 5,224 M cubic feet, and in 1965 it rose to 6,987 M cubic feet.

PEACE RIVER FLOOD BASIN

All merchantable timber in the flood basin, with the exception of that in the most northerly and most inaccessible portion, has been sold under timber-sale contract. Operations in the Finlay-Parsnip area did not reach the level hoped for, due in part to the uncertainty of the eventual award of one of the timber harvesting licences in the Finlay Sustained-yield Unit and then to the time required to construct sawmills and get operations organized. All signs point to high production in 1966.

The total acreage sold to date stands at 85,265, with a total volume of 127,936,-000 cubic feet. The total scaled volume to date is 26,415,000 cubic feet.

COLUMBIA FLOOD BASIN

As was reported previously, all merchantable timber to be flooded by the Mica Dam has been sold under timber-sale contract. Operations progressed during 1965, and the total volume removed and scaled during the year was 4,402,000 cubic feet.

Logging of timber to be flooded by the Duncan Dam also progressed during 1965. Total volume of flood timber logged during the year was 553,000 cubic feet.

The programme started in 1964 of selling timber to be flooded by the High Arrow Dam continued throughout 1965, and a volume of 705,000 cubic feet was scaled.

SPRUCE BARK BEETLE

The spruce bark beetle infestation that the Prince George Forest District experienced during 1963 and 1964 abated to a considerable degree in 1965. Surveys of attack areas indicated light attacks in 1965, and new attacks were mainly extensions of existing attacked areas.

DOUGLAS FIR BARK BEETLE

It was reported that mortality of over-wintering broods of the Douglas fir bark beetle in sample trees in the Cariboo was 35 per cent. This unusually heavy mortality may have been an important factor in the reduced number of trees attacked in 1965. Nevertheless, beetle kill still poses a serious threat, and everything is being done to sell attacked stands and to include conditions in all contracts within the general beetle attack area to reduce breeding-grounds.

CLOSE UTILIZATION

Close utilization was undoubtedly one of the most discussed subjects during 1965 by both the logging industry and the Forest Service. While there was only a limited number of existing timber sales that went on to close utilization logging on a trial basis, policy had been firmed up by the end of the year so that, as of January 1, 1966, both new and existing sales could be logged to close utilization standards if so elected by the licensee.

While close utilization in the forest is still in its infancy, it is already well on its way in the sawmill. All districts are reporting a great upsurge in the shipment of chips to pulp-mills, which in turn results from an increase in the number of sawmills with barkers and chippers. In 1964, when records were started, there were 82 barkers and 97 chippers. By the end of 1965, these numbers had risen to 161 and 144, or approximately 70 per cent.

MARKET PRICES AND STUMPAGE TRENDS

The selling prices for dressed lumber as reported to the Forest Service by mills in the Interior of the Province and for logs on the Coast as reported for the Vancouver log market by the British Columbia Loggers' Association generally held at the high 1964 level.

The market outlook at the end of the year was reported to be good. However, on the Coast there were indications that supply was catching up with demand and prices for some grades and species (for example, cedar) were softening.

1965 Uncorrected Quarterly Average Dressed-lumber Prices (Interior)

Species	Jan.–Mar.		Apr.–June		July–Sept.		Oct.–Dec.	
	Basis M B.M.	Average Price	Basis M B.M.	Average Price	Basis M B.M.	Average Price	Basis M B.M.	Average Price
Fir-larch	124,895	$62.22	173,484	$64.12	185,310	$65.52	148,225	$62.75
Spruce	220,818	61.13	294,791	62.10	296,950	62.05	271,503	60.36
Cedar	20,172	60.37	21,273	60.79	17,757	63.97	14,575	59.60
White pine	3,263	98.45	6,477	97,65	6,725	89.75	4,780	102.11
Yellow pine	4,203	61.62	7,215	57.47	9,588	61.86	3,962	64.39

1965 Quarterly Average Log Prices per M B.M. (Howe Sound Market)

No. 3 GRADE

Species	Jan.–Mar.	Apr.–June	July–Sept.	Oct.–Dec.
Fir	$66.37	$66.60	$66.40	$66.59
Cedar	55.30	55.10	52.85	48.90
Hemlock	59.70	60.63	60.04	57.97
Balsam	48.30	49.99	49.98	49.04
Spruce	57.81	57.06	55.63	56.11
White pine	45.01	46.20	44.02	43.51

ALL GRADES

Fir	$80.94	$80.26	$79.03	$80.82
Cedar	61.85	61.10	57.78	54.94
Hemlock	61.13	62.35	61.59	59.57
Balsam	58.58	59.47	58.45	56.67
Spruce	66.61	65.40	65.28	66.37
White pine	50.10	52.40	49.25	48.54

Stumpage Prices

The average stumpage price bid for Crown timber sales, including those sales which were sold at " salvage value only " rates, increased slightly in 1965 to $4.20 per 100 cubic feet. The comparable average figures for the years 1960, 1961, 1962, 1963, and 1964 were $3.53, $2.53, $3.01, $3.36, and $4.09 respectively.

The real increase in stumpage prices, however, was much greater. The actual increase is hidden because of the drop in the volume sold in the Vancouver Forest District Coast region. The weighted average selling price per 100 cubic feet for all species for the Coast region was $8.24, up from $6.18 in 1964. For the Interior, the weighted average selling price per 100 cubic feet was $3.49, up from $3.29 in 1964.

The average stumpage price for all species excluding " salvage value only " rates was $8.25 per 100 cubic feet for the Coast, up 28 per cent from $6.43 in 1964, and $3.81 for the Interior, up 6 per cent from $3.59 in 1964.

Because log and dressed-lumber selling prices were comparatively stable, there were only 899 upward adjustments and one downward adjustment in the rates payable under existing timber-sale contracts under provision of the sliding scale procedure.

See Table No. 67 in the Appendix.

SILVICULTURE

The programme for 1965 included stand treatment, field studies, and road location.

Following the trend established in past years, the principal activities were in the field of stand treatment. All districts were active in this field, and some 500 timber sales, principally in the Interior, received some form of treatment. This involved the treatment of 118,403 acres.

Stands were generally treated to attain either natural regeneration or increment, or, in some cases, a combination of both. The cutting methods most frequently employed were single-tree selection, strips, groups, patches, or single seed-trees.

Although natural regeneration is dependent on several interrelated factors, a satisfactory seed-bed and a suitable seed source can be regarded as prime requisites.

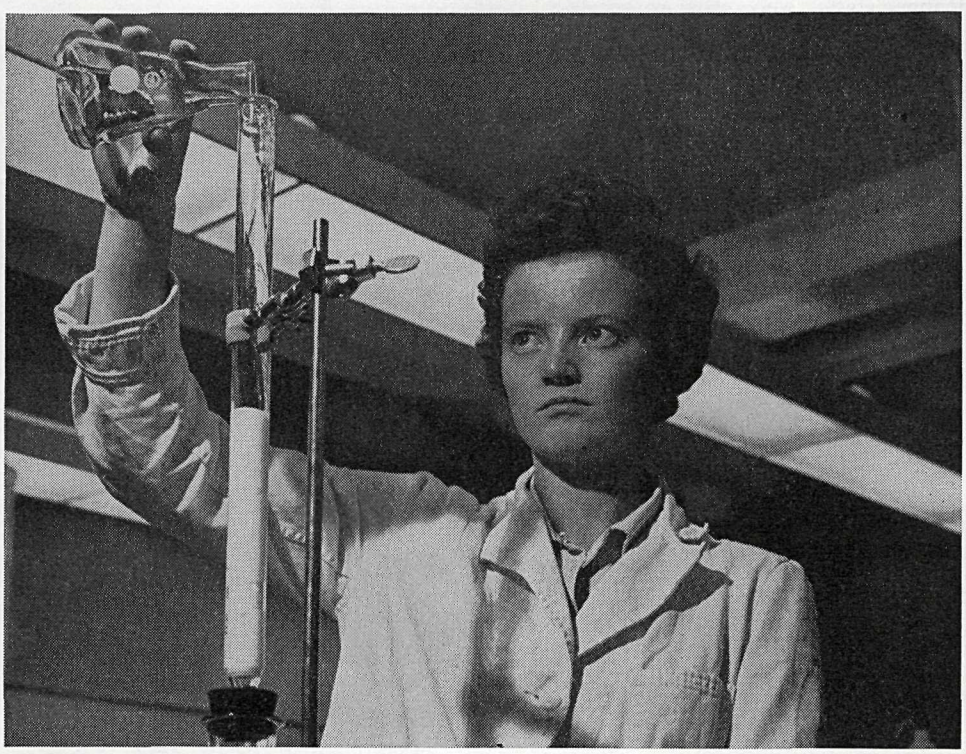
The preparation of a satisfactory seed-bed may require either burning or scarification. The past few years have seen an increase in this phase of the programme. To date, 49,993 acres have been scarified in the Prince George Forest District, and similar programmes have been developed in the Nelson, Kamloops, and Prince Rupert Forest Districts. During 1965, some 15,530 acres were scarified.

Scarification is providing satisfactory results at a reasonable cost. Surveys in the Prince George Forest District, based on 6,549 acres, indicate an average stocking of 49 per cent.

The cost of scarification varies from area to area and from year to year, depending on the physical factors of the area and the prevailing weather conditions. However, experience over the past few years indicates that the majority of areas can be scarified for $10 to $12 per acre.

Prior to 1963 most of the scarification was carried out following logging. This is changing and there is a trend to pre-scarification.

A full discussion on scarification is contained in Forest Management Note No. 4, published in 1965. The Forest Management Note series, which was initiated in 1963, has proven popular, and it has been necessary to reprint the entire series. It is anticipated that two further Management Notes will be published during 1966: one, "The Results of Stand Treatment Following Seed-tree Marking in Dry Belt Fir Types"; the other, "Some Observations on the Behaviour of Blister Rust Cankers on Western White Pine Following Foliar Application of Polyamidostreptin."



Bio-assay of white pine blister rust. It is anticipated a Forest Management Note on the subject of blister rust cankers on western white pine will be published by the Forest Service in 1966.

SCALING

Coast

The official scaling staff continued in its duties as provided by the *Forest Act* in scaling timber cut west of the Cascades. The major part of the Coast scale was made by the official staff and the minor part by acting official scalers. Detailed statistics of the staff's activities are available from the annual scaling report prepared by the Superintendent of Scaling at Vancouver.

Scaling examinations were held during the year for the staff and public. A total of 58 new scaling licences was issued to successful candidates. A special examination was held towards the end of the year for a group of students from the British Columbia Institute of Technology.

Installation of an I.B.M. 1440 processing unit was completed late in the year. It is planned that the scale will be computed and billed through this medium early in 1966.

The trend toward marshalling logs at large sorting and booming grounds continued and increased during the year.

Weight scaling was introduced at one operation to determine the scale of segregated close utilization wood.

Interior

The greater part of the Interior scale continued to be made in accordance with the licensed-scaler system supervised by the Inspectors of Licensed Scalers and the Ranger staffs.

Scaling licences were issued to 140 successful candidates of the licensed-scaler examinations. A total of 20 examinations was held throughout the Interior during the year.

Introduction and administration of sample scaling techniques occupied a large part of the Inspectors' time during the year. Weight scaling, which is one form of sample scaling, was in use at 20 operations.

GRAZING DIVISION

GENERAL CONDITIONS

From the physical standpoint, 1965 was a fairly successful year for the ranching industry. Range forage production and hay conditions were generally good. The winter of 1964/65 was prolonged, with heavy snowfall and moderately low temperatures. This combined with the less than average quality and quantity of the 1964 hay crop, resulted in many herds being in below normal condition at the commencement of the grazing season. Losses were not particularly severe, but many cattle were slow in recovering from the rigours of winter. Some did not appear to be in good condition as late as the end of the grazing season.

The industry continues to experience economic difficulties. Although average prices rose slightly from the low levels reached the previous year, they are still poor. Further, unrealistic prices have been paid for commercial ranching enterprises in recent years, and many ranches appear to be overcapitalized. Returns to capital are very low or non-existent in some instances. Many ranches are changing hands for this reason, but often at further inflated prices.

The number of cattle on Crown range reached a new record high during the year. However, range sheep production dropped drastically, and use of Crown range by sheep is now relatively insignificant.

Range

A cool, dry spring delayed and reduced forage growth during this period. Droughty conditions persisted through June in most areas, but, later, summer rains and favourable temperatures greatly increased forage production. Forest summer ranges were better than average. Lower-elevation ranges made very good to excellent recovery for fall grazing. Extremely mild conditions persisted until the end of the year, permitting later than average grazing on both ranges and hay aftermath which had been reserved for this purpose.

Poisonous weeds and predatory animals caused some difficulties on Crown range, but losses were not above normal. Highway and railroad acidents involving live stock continued to be a major problem. Considerable fencing was undertaken by permittees with Department of Highways assistance, with the Forest Service participating in some cases, in an effort to reduce stock losses from this cause.

Hay

Hay production was above average in both quality and quantity in most areas. This, combined with mild weather conditions persisting to the end of the year, leaves the industry in a good position with respect to winter feed. There is, however, growing evidence that winter-feed quality must be generally improved to ensure an adequate level of nutrition and good stock condition at spring turnout.

Markets and Prices

Cattle prices made an appreciable gain toward the end of the year, after the bulk of British Columbia marketings were completed. The weighted average price received by cattlemen through the British Columbia Live stock Producers' Co-operative Association was $17.30 per hundredweight, compared to $16.69 in 1964, a rise of 61 cents. Prices for sheep and lambs were also up slightly over 1964 levels.

RANGE MANAGEMENT

The productive potential of a range is determined by factors such as soil quality and climate, largely beyond the control of man. However, within certain limits, the amount of the forage produced which can be safely grazed without reducing the productive capacity of any part of that range depends to a considerable degree upon the level of management applied. Destruction of this easily damaged resource can be avoided by taking the purely negative course of simply restricting utilization to a level consistent with existing range and live-stock management practices. With the growing demand for range forage, this is no longer sufficient and the level of management must be improved. An administrative agency, with adequate staff, can regulate live-stock numbers and broad seasons of use. However, the more refined features of management cannot be enforced. They can be achieved only by enlightened range users and in the light of the economics involved. As most Crown ranges have a potential for greater use under improved management, a concerted effort to work more closely with range users was continued in various forms during the year.

Considerable instruction in range-management subjects was given Rangers, both singly and in groups, thus placing these key field officers in a better position to influence range users, with whom they are in close contact. Talks on range management, illustrated by coloured slides, were presented at numerous live-stock association meetings. A considerable number of joint Forest Officer-permittee range inspections were carried out. In several cases, all range users on the unit involved participated. Observation indicated that this continuing effort is resulting in many permittees becoming more range-management conscious. However, it is also evident that the amount of this work that is required to achieve full benefits is beyond the capacity of the existing staff.

Range readiness studies and utilization checks were continued during the year. However, the pressure of day-to-day administration prevented an adequate level of range management and development planning. Numerous extensive range inspections were carried out as a basis for dealing with current administration problems. Detailed surveys were carried out in the Beatton-Doig, Groundbirch, and Bear Mountain pasture reserves as a guide for future development programmes in these areas.

Range Improvements

During 1965, $75,344.40 was spent from the Range Improvement Fund. Material to the value of $12,159.45 was on hand at the beginning of the year. Material valued at $10,351.34 remained on hand and not assigned to projects at the end of the year. Actual assistance to the range-improvement programme from the Fund thus was $77,152.51, the highest of any year to date.

The following projects, chargeable wholly or in part to the Fund, were constructed or extensively rehabilitated: 32 cattle-guards, 55 drift fences, 3 experimental plots, 1 holding-ground, 1 meadow improvement, 1 mud-hole fence, 1 pasture development, 4 stock bridges, 27 stock trails, 20 water developments, 1 yellow pine thinning, and numerous range-seedings.

Permittees also contributed extensively to most of the projects listed above, mainly in the form of labour. In addition, the following projects were authorized for construction entirely at permittee expense: 3 breeding-pastures, 5 cattle-guards, 4 corrals, 33 drift fences, 1 general-purpose enclosure, 2 holding-grounds, 1 holding-pasture, 11 stock trails, and 2 water developments. These are considerably fewer

than the number of projects undertaken entirely at permittee expense the previous year.

The range-seeding programme was further increased in 1965, a total of 49,655 pounds of grass and legume seed being used, compared to 42,114 pounds in 1964. Most of this seed was sown on areas denuded of ground cover in the course of logging and similar activity on Crown range. Two forest burns, within which the ground cover of forage plants had been destroyed, were seeded from the air. The range-land drill, acquired late in 1964, was used to seed 1,166 acres of depleted grassland at a cost of approximately $5 per acre. Although the drill has definite limitations under the conditions which exist on Crown range, it appears that it can be used satisfactorily on considerable areas requiring seeding. With the exception of the aerial and range-land drill seedings, most of the actual seeding was undertaken by co-operating permittees, with seed, equipment, and such supervision as was possible being supplied by the Forest Service.

Seeding such as reported above continues to be the most feasible means by which range forage production can be increased by artificial means. However, observations were continued to determine the results of previous field trials involving clearing, scarification, and seeding of selected areas of non-commercial forest-cover, spraying of brush-infested ranges, and thinning of overstocked forest stands. These practices continue to show promise, but areas suitable for such treatment on Crown range are not large, and costs will have to be considerably reduced before they can be applied generally.

On the other hand, there is a considerable potential for safely increasing the utilization of existing natural forage through improved live-stock management on the range. Such improved management necessitates the construction of fencing, water developments, and trails. The bulk of the range-improvement projects reported above are of this type. A number of measures to reduce the cost and improve the durability of these structural range improvements were investigated and several trial projects were undertaken during the year. Also, approximately 2,000 treated cedar posts were prepared by prisoners at the Clearwater Camp. This activity, which not only helps reduce the cost of projects, but also provides constructive labour for the inmates, is expected to continue and expand.

Peace River Pastures

The year 1965 was the third and final year of the expanded pasture-development programme in the Peace River area under Federal-Provincial cost-sharing agreements pursuant to the *Agricultural Rehabilitation and Development Act*. Work carried out involved breaking and seeding of domestic pasture grasses and legumes on 2,100 acres of land which had been cleared the previous year, together with the construction of 9 miles of boundary fence, corral facilities, and access roads on the Beatton-Doig Pasture. A minor amount of fencing was completed on the Bear Mountain Pasture. Expenditures under ARDA totalled $45,366.50 during the year. In addition, $15,614.55 of unmatched Provincial funds was spent on the maintenance of pre-existing improvements and for the installation of additional facilities not covered by ARDA agreements.

There are now six pasture-development projects in the Peace River area with extensive improvements. Three of these, the Bear Mountain, Sunset Prairie, and Umbach Pastures, contain only structural improvements designed to facilitate use of the existing natural forage. The fourth, the Groundbirch Pasture, contains 600 acres of developed pasture for early- and late-season grazing in conjunction with

extensive areas of natural forage. Each of the remaining two pastures, Cecil Lake and Beatton-Doig, contains approximately 2,100 acres of improved pasture, which will provide the bulk of the grazing on these units. The first four of the above pastures were available for full operation in 1965, and light use was commenced on the Cecil Lake Pasture. The Beatton-Doig Pasture will be ready for light use in 1966.

These six pastures now contain a total of 4,800 acres of improved pasture, 83½ miles of fence, 67 stock-watering dugouts, 18 miles of road and 42 miles of stock trails with minor culverts and bridges, 3 major sets of holding-corrals, and 2 cabins.

During the last three years $239,409.29, of which the Federal Government contributed approximately 50 per cent, has been spent on the above work under ARDA agreements. An additional $77,778.39 of Provincial funds has also been spent, mainly before the ARDA development programme. A portion of the unmatched Provincial expenditures has been for maintenance and operation. No ARDA funds have been spent on the Umbach Pasture.

During 1965, 59 permittees grazed 1,919 cattle and 28 horses on pasture-development projects, compared with 43 permittees and 1,280 cattle in 1964. When full production of the newly developed pasture is reached, these units should support at least 5,000 cattle.

CO-OPERATION

Contact with range live-stock associations continued to be the principal means by which the necessary liaison between the Forest Service and range users was maintained. There are now 65 associations approved under the *Grazing Act,* three new associations having been recognized during the year. The boundaries of several association areas were amended during the year, mainly to include formerly unorganized areas. A total of 171 local association meetings was attended by one or more Forest Officers to discuss the various problems involved in the use of Crown range. A number of additional meetings were held with informal groups of range users.

Both the British Columbia Beef Cattle Growers' Association and the British Sheep Breeders' Co-operative Association remained active. Particularly close contact was maintained with the former organization, a number of meetings with the directors being held to discuss matters of industry-wide importance. The British Columbia Livestock Producers' Co-operative Association again supplied the live-stock price figures necessary for the sliding scale of grazing fees. This producer-owned marketing agency continues to be a reliable source of information on range live-stock prices, having sold approximately 43½ million pounds of beef animals during the year.

The Forest Service continued to enjoy excellent co-operation from the Canada Research Station in Kamloops in connection with a number of range-management problems which that agency has under study. Unfortunately, the activities of this station have been somewhat curtailed through loss of personnel. Grazing officers again participated in a number of events associated with the ranching industry, including meetings of the American Society of Range Management, the University of British Columbia Faculty of Agriculture students' tour, and several meetings sponsored by the Department of Agriculture. Co-operative field inspections were made with several other Government agencies in an effort to solve problems arising from conflicting land uses.

ADMINISTRATION

Continuing the trend in recent years, use of Crown range again increased in 1965. To safely accommodate such increased use of already crowded ranges necessitates an intensification of management and supervision out of all proportion to the greater use. Further, the need for closer supervision does not stem from greater grazing use alone. Other and often conflicting uses of the same land, such as for watershed, timber production, general recreation, and wildlife purposes, are also increasing rapidly. During the year numerous requests by alternate user groups to reduce or completely eliminate range use were received and investigated. Developing settlements and greater highway traffic also conflict with range use and require a great deal of attention to minimize the impact on the ranching industry. All of these factors greatly increased the administrative work load in 1965, and the existing staff was insufficient to carry out an adequate level of administration.

Administration of Crown range in the Peace River area, outside of pasture-development projects, was intensified in 1965. Ninety permittees were authorized to graze 9,094 cattle, 966 horses, and 2,000 sheep on these unimproved ranges, more than doubling use authorized in 1964, the first year of general grazing administration in this area.

During the year further study was given to methods of improving procedures to cope with the increased work load. The grazing regulations and fee structure were also reviewed, with final action pending at the end of the year.

Grazing Permits

During 1965, 2,218 grazing permits were issued authorizing the depasturing of 188,339 cattle, 6,677 horses, and 12,509 sheep on Crown ranges. This is an increase of 114 permits over 1964. Cattle numbers were up 14,662 head, or 8½ per cent, and horses 446 head, or 7 per cent, over the previous year. Sheep under permit dropped by 9,969 head, a startling 44 per cent. Both the number of permits issued and the number of cattle are at a new record highs. However, sheep numbers were at the lowest figure recorded in 45 years of grazing administration.

Expressed as animal unit months, the equivalent of one mature cow on the range for one month, total use authorized for all classes of stock amounted to 864,416 animal unit months. This represented an increase of 41,405 animal unit months, or 5 per cent, over the previous year. The fact that this percentage is less than the increase in the number of cattle and horses reported above is due to shortened grazing periods on some ranges, as well as to the reduction in the use of Crown range by sheep.

Hay Permits

The harvesting of hay from natural meadows on Crown range declined considerably in 1965, due in part to poor growth but also to the fact that many of the better meadows formerly cut under permit are now being leased or purchased for agricultural development. This trend, together with other factors, will ultimately result in all of the larger and better meadows coming under private control, with the smaller or poorer meadows being used almost exclusively for grazing. During the year under review, 178 hay-cutting permits were issued, authorizing the harvesting of 1,976 tons of hay.

Grazing Fees

Grazing fees per head per month in 1965 were 16 cents for cattle, 20 cents for horses, and 3¼ cents for sheep. These fees represent a drop from those charged

in 1964 of 4 cents for cattle and 5 cents for horses. Fees for sheep were up ¼ cent. As fees are related to prices received by producers the previous year, these changes reflect the poor market conditions existing in 1964.

In spite of greater use of Crown range, total billings were lower due to the considerably reduced fees.

Control and Enforcement

In view of the more intensive use being made of Crown range, it is increasingly important that authorized seasons of use, numbers of stock, and other grazing permit conditions be rigidly enforced. This is necessary to ensure that range and associated resources are not destroyed, and to protect those permittees who do comply from unfair competition. Both the bulk of permittees who comply with the regulations and other interested groups, such as natural history societies and fish and game clubs, are becoming more insistent in this respect.

The extensive nature of the Crown range, together with complicated land-ownership patterns and the existence of many part-time ranching operations, makes adequate control extremely difficult. More intensive regulation is required than is possible with existing staff. In an effort to control the situation, numerous stock counts were carried out during the year. A number of cattle and horses grazing in trespass were removed from the range. No prosecutions were undertaken.

ENGINEERING SERVICES DIVISION

ENGINEERING SECTION

The construction of forest-development roads under the Federal-Provincial cost-sharing agreement continued, but road maintenance, special access projects, and engineering work directly connected with Management Division activities constituted a larger proportion of the engineering programme.

Work commenced in May and continued to the end of the year on the construction of road access from Upper Campbell Lake to Gold River. Engineering and site-preparation work associated with the development of navigation channels and landings in the area to be flooded by the Portage Mountain Dam continued throughout the year.

In addition to the continuing development engineering, reconnaissance, and road-location programme, field engineers carried out a number of investigations connected with appeals under Part VI of the *Forest Act*, and with timber-sale administration and district projects.

Development Engineering, Reconnaissance, and Road Location

Four senior engineers were employed on development engineering work in various parts of the Province. In the Prince Rupert Forest District a comprehensive study was made for development of the enlarged Skeena Public Sustained-yield Unit, and a preliminary investigation covered the new Bell-Irving Public Sustained-yield Unit. In Kamloops Forest District, parts of the Nicola and Ashnola Public Sustained-yield Units were covered with development studies, and preliminary work was carried out in Block 2 of the Quesnel Lake Public Sustained-yield Unit for administrative and protection access. In the Vancouver Forest District, access into Maimen Creek near Hope, into the upper Lillooet River drainage, into the Homathko River valley, and into Clowhom River was reconnoitred. Work in the Nelson Forest District included route reconnaissance into Albert Creek, Jumping Creek, Twin Creek, Rendell Creek, Blackfoot-Quinn Creeks, and Sage Creek.

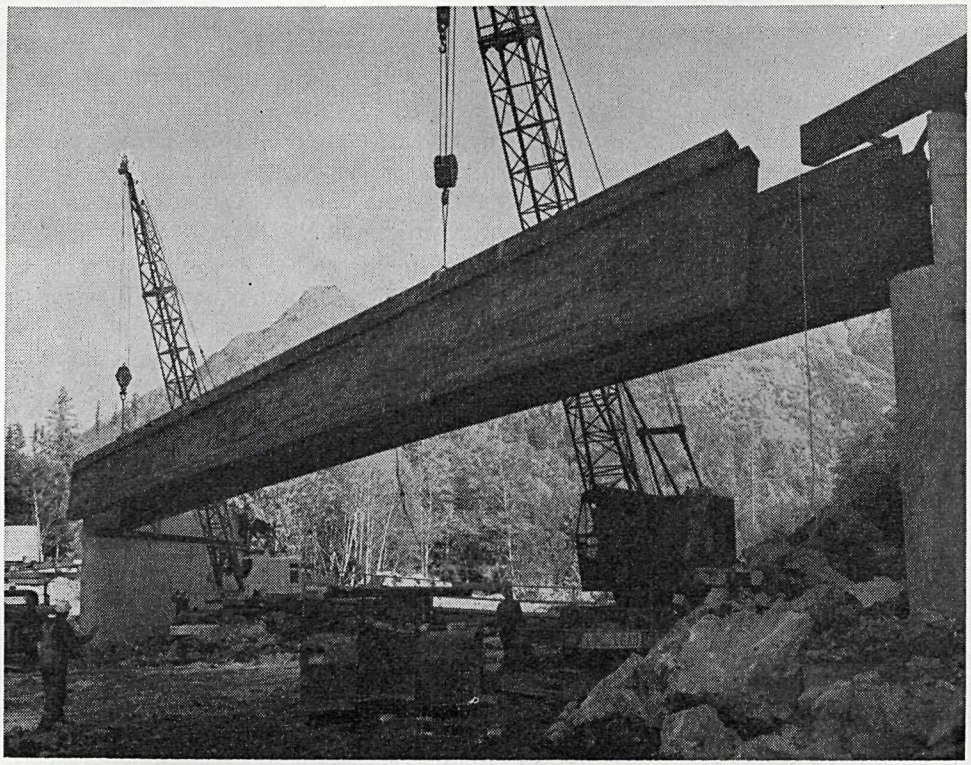
During the field season, 194.7 miles of forest road were located and flagged on the ground. In addition, control survey and large-scale photogrammetric mapping were carried out by the Topographic Division of the Lands Branch for 50 miles of route corridor for the proposed Chilcotin South Forest Road. Detailed map location and design were completed for the first 16 miles of the road. Open range land and light forest-cover made this method feasible and far superior and cheaper than conventional survey procedures.

Efforts continued to develop new techniques and to adapt survey methods to changing requirements. Prior to the field season, party chiefs were given training in air-photo interpretation for road layout, and most field parties worked on photo locations completed before commencing work on the ground.

Road Construction and Maintenance

Construction of 63.9 miles of new road on 13 projects was completed during the year, and maintenance continued on 855 miles of previously constructed road.

New construction involved site preparation of 516 acres of right-of-way, movement of 1,650,000 cubic yards of common excavation and 102,000 cubic yards of solid rock, installation of 13,200 lineal feet of culvert, and erection of 22 bridges.



Placing glue-laminated timber I-beams during erection of Slesse Creek Bridge.

Weather throughout the summer months was generally favourable for construction, and a number of jobs left unfinished in 1964 because of bad weather were completed. Other major projects undertaken included extension of the Kispiox River Road into an area of beetle infestation, construction of a loop road to accommodate increased traffic generated by new timber-conversion plants and related services being built in the vicinity of Morfee Lakes, and a start on the construction of a road to provide access from Upper Campbell Lake into the Gold River drainage.

Of the 22 bridges built during the year, 11 were permanent timber structures. The largest of these are a 100-foot single span across the Akolkolex River south of Revelstoke, a 115-foot structure with multiple spans across the Sweetin River on the Kispiox River Road, and a 165-foot multiple-span structure across Slesse Creek on the Chilliwack River Road. The Slesse Creek Bridge has a main span of 120 feet, using the longest glue-laminated timber girders fabricated to date for the Forest Service.

See Table No. 91 in the Appendix.

General Engineering

Designs, plans, and specifications were completed for 16 pressure-creosoted glue-laminated bridges. One of these, the Slesse Creek Bridge on the Chilliwack Forest Development Road, is the first Forest Service bridge to use glulam girders of I-beam section. During the year the design load for new bridges in the Interior of the Province was increased from 45 tons to 90 tons.

Engineering work continued in the area to be flooded by the Portage Mountain Dam. In sections of the Parsnip and Finlay drainages where partially submerged trees could impede navigation, the initial selection and layout of some 200 miles of waterway covering 32,000 acres has been completed, and clearing is in various stages of completion on 5,820 acres. This includes 2,500 acres treated by the Le Tourneau tree-crusher which was moved into the area late in 1964.

MECHANICAL SECTION

The motor-vehicle fleet increased from 888 to 905 units during 1965. Increased protection for northern districts accounted for about half of this number, and the remainder were normal increments due to new positions and increased requirements. The number of station wagon types was reduced, whereas that of pick-up trucks increased noticeably.

In the heavy-construction equipment category, a total of seven tractors was purchased. Six of these were in the 100–120-horsepower range (flywheel) and four were power-shift models. Four were equipped with the power-tilt feature for the bulldozer blade, whereas two of the machines were gear-drive models without the power-tilt feature. The seventh machine was a 235-horsepower (flywheel) model with power-shift and power-tilt. Finally in the crawler-tractor field, two 160-horsepower (flywheel) units were on order but had not yet been received. These machines are power-shift models with hydraulic tilting U-blades and double-drum cable-control units instead of the customary winch. A wheeled farm tractor was also purchased for the Reforestation Division for use in its East Kootenay tree nursery section.

Two four-wheel-drive four-wheel-steer graders were obtained—one for Kamloops Forest District and one for Prince George Forest District. A small maintainer grader was purchased for the Reforestation Division, which, together with a similar model, provides two units of the same type for use on Vancouver Island. A third four-wheel-drive four-wheel-steer grader was on order for Prince Rupert Forest District as this particular type of grader appears to be eminently suited to work on Forest Service lookout trails and fire access roads.

A particularly active fire year was responsible for the purchase of at least six forestry-type fire-fighting pumps, and routine purchasing added 28 more, of which two were of the heavy-duty trailer-mounted style. Also purchased was a variety of domestic water-supply, camp-protection, nursery-irrigation pumps and bentonite-handling pumps, totalling 18 in all.

The trail motor-cycle continues to be recognized as a very useful addition to the fleet, and 28 units, including seven of local manufacture, were added during the year.

One hundred and seventeen chains saws were purchased, of which 69 were for the Protection Division. The remainder was shared between the Reforestation, Survey, and Engineering Divisions. Chain saws of all makes are becoming much lighter and more powerful.

Of 33 outboard motors added this year, 18 were 33-horsepower or over, and the balance was composed of 18-, 9-, and 3-horsepower models. There is a definite trend toward the electric starter and electric gear shift, which gives a marked advantage in certain circumstances, although perhaps not necessary in all cases.

See Table No. 92 in the Appendix.

A promotional system is being worked out to provide more incentive to those of non-permanent status and to take care of future moves of personnel. The usual

instructional courses in mechanical maintenance were held at the training-school—one in the spring and one in the fall. Other instruction was given by district supervisors, particularly in the spring, to acquaint newcomers with the use of fire-pumps and allied equipment. Seven men in the Engineering Section received a short course in trailer-towing. This instruction is given annually and is handled by the Engineering transport pool from the Forest Service Maintenance Depot in Vancouver.

BUILDING CONSTRUCTION AND DESIGN

Sixteen major projects started in 1964 were finished during the year, and a further 44 major projects undertaken, the majority of which were completed. It is becoming increasingly important to satisfy the living-accommodation requirements of the field staff and, for this reason, nine new residences were constructed and two prefabricated buildings were enlarged for family accommodation. Expansion of the work of the Reforestation Division also is reflected in various projects, such as cold-storage buildings and irrigation systems undertaken at various tree nurseries. Ninety-eight contracts for prime and sub-contract work were awarded, and 52 other miscellaneous jobs were handled, as well as a continuing load of assessment and consultation services.

The decision to establish a district headquarters at Williams Lake resulted in a great deal of time and effort being expended on site investigations, preliminary building layouts, and design of special features. The preparation of detailed drawings and specifications was carried out by an outside architect. However, when tenders were called, all bids received were judged unrealistically high and were refused. Alternate means of providing the necessary office and warehouse space are now being investigated. Due to the heavy work load mentioned above, routine inspections of buildings for maintenance purposes suffered. This is a recurring problem that is becoming increasingly significant.

During the year, 25 major additions and numerous papers were added to the Division technical library.

MARINE DESIGN AND INVESTIGATION

In consultations with the staff of the Forest Service Maintenance Depot, engine replacements were selected for seven diesel-powered craft and one powered by gasoline.

Marine advisory services were given to various districts and divisions, and to the Scaling Commission and Safety Committee, covering activities ranging from marine radar installations on the coast to specialized river transportation by barge and tug in the Peace pondage area behind Portage Mountain Dam.

Small-boat Purchases

Seven stock-model aluminum boats, 14 and 16 feet in length, were purchased for use by Ranger staffs. In addition, three sturdy inflatable boats were brought for use by Rangers and cruising crews and for use in conjunction with aircraft.

Mobile Accommodation

Fourteen house trailers ranging in length from 14 to 40 feet were designed and put out to tender for construction by three commercial firms. These trailers are used by fire-suppression crews, cruising crews, Ranger staffs, air-tanker crews, construction crews, and families in remote areas.

FOREST SERVICE MAINTENANCE DEPOT

Reorganization in the internal administration and functional control of the Forest Service Maintenance Depot was carried out early in 1965. The most significant physical change having immediate effect was the installation of a depot communication system. Other changes primarily in the administrative area and aimed at close integration of existing services also are having the desired effect of measurably increasing efficiency and economy of production.

Marine Work

The marine ways were occupied 64 times, with 40 complete launch refits and 21 minor overhauls being carried out. The major projects included the re-engining of four craft, most notable being M.V. " Syrene I " and M.V. " Alpine Fir." The engine requirements, evolved from factors such as age and parts availability, were needed to ensure dependable power under adverse operating conditions. Highlight of new construction work was that carried out on the 50-foot Ranger vessel M.V. " Golden Spruce." The hull was planked and construction is proceeding according to schedule. Small-boat construction continued with six river boats completed for distribution to various parts of the Province. Other work accomplished included the repair of some 36 river boats, barges, and small boats.

Prefabrication and Carpentry Shop

The remodelling, renovation, and general maintenance of Porta-buildings and trailers was programmed in an effort to increase line production. This programme has allowed a significant increase in units handled as a total of 26 Porta-buildings and trailers were rebuilt, modified, or reconditioned. In addition, other items produced in quantity included 150 signs of various types, 96 scaling boards, five lookout buildings, 45 pieces of office furniture, and 345 boxes and crates.

The normal function of the five-man carpentry crew has the added load of depot maintenance and improvement. This year the crew completed the fencing project and the removal of a large tree which was causing some concern as a hazard to power supply-lines. Finally, the closing-in of the warehouse for protection of stored equipment was completed, thus allowing additional working space and drive-through wall storage for efficiency of handling.

Machine-shop

The regular work load in the small-engine repair-shop was at its near peak capacity with 440 pumps, light plants, outboard engines, chain saws, and trail motorcycles overhauled, crated, and shipped. In addition, 214 new units were tested and shipped to the districts. The machine-shop also produced and assembled finished items from castings, which included 100 paper-punches, 25 propane brush-burning torches, 25 log-scale computers, 1,800 hose, pump, and valve fittings, and miscellaneous items. To complete the major portion of this work load, the usual service in welding, plumbing, and electrical work was supplied in part to the trailer rebuilding and repair programme.

Transport Pool and Warehouse

Transportation service was supplied to 16 engineering projects, to all five forest districts, and to several other Forest Service agencies. The transport pool operates three 30-ton tractor-trailer combination diesel trucks and two 5-ton gasoline trucks.

The total distance travelled was approximately 160,000 miles, in which 300 hauling assignments, totalling 3,000 tons, were completed, and included the movement of 12 bridges from Vancouver fabricating plants. These jobs ranged a course from the Flathead in the south-eastern part of the Province to projects on Vancouver Island at Gold River, to north of Hazelton on the Upper Kispiox River. Included with this function of transport, the warehouse handled, stocked, conditioned, and repaired all items of construction equipment for various Engineering Services Division projects. Warehousing in general experienced a build-up in items handled with the addition of tents and other equipment for conditioning, repairs, and storage.

Engineering Maintenance-shop

The function of the engineering workshop is primarily to maintain and service the transport pool fleet. In conjunction with this regular work load, complete overhauls were carried out on 35 half-ton trucks. Extensive repairs were made to heavy equipment, including graders, tractors, shovels, rollers, loaders, light plants, compressors, and rock drills.

RADIO SECTION

Two hundred and forty-seven radio transmitting units of all types were purchased during the year, compared with 147 during 1964. The greater part of new radio equipment consisted of very high frequency (F.M.) portables and mobiles of the all-transistor type. The percentage of radio-equipped Ranger, Assistant Ranger, and supervisory cars increased considerably during the year, but nearly all districts expressed a need for more mobiles as soon as possible. Throughout 1965, amplitude modulated (A.M.) transmission was hampered by continuous interference from teletype and facsimile stations on most Forest Service channels. To date no satisfactory replacement frequencies have been obtained from the Department of Transport.

The Vancouver Forest District during the year expanded the preparation of pre-organization maps showing the location of and coverage from sites suitable for the use of portable V.H.F. repeaters. Where these repeaters have been employed, the 24-hour-a-day reliability resulting from not having to depend on propogation conditions surpassed the best previously experienced A.M. fire communications. A new type of A.M. remote receiver was successfully tested at Squamish, and F.M. was extended to Ranger stations north of Campbell River, where teletype again supplemented radio circuits between Campbell River and Vancouver.

The F.M. repeater trunk system installed in 1964 between Burns Lake and Terrace was completed to Prince Rupert during the summer by means of repeaters on McLean Mountain and Mount Hays. Ninety-watt mobile-type A.M. transmitters were used for the first time at fire base stations in the Prince Rupert Forest District with considerable success.

F.M. was extended to Fernie, but all attempts to connect Fernie to its lookouts by means of either F.M. or A.M. proved relatively unsuccessful. A propogation survey was carried out in the Mica Creek area with the object of determining F.M. repeater-sites for a circuit between Mica Creek and Nelson. Plans were made for the establishment of the first repeater on Mount Sibley in 1966 to give mobile coverage on the Big Bend Road.

The use of thermo-generators to provide power for repeaters was initiated in the Prince George Forest District with installations on Longworth and Skog Mountains supplying communication to McBride and Finlay Forks. This type of power supply was not too successful, but improvements have been designed for use in 1966.

Kamloops Forest District changed its F.M. repeater system to trunk operation, permitting mobiles to work through the repeaters, thereby greatly increasing mobile

range and coverage. The lease of a repeater on Avola Mountain from Canadian National Telegraphs was arranged, and the repeater is expected to be in operation before the end of the current year, giving reliable communication to North Thompson Ranger stations for the first time.

Research work by the Victoria section included redesign of transmitters to prevent the radiation of harmonics, investigation into the failure of thermo-generators, design of special equipment to meet unforeseen situations such as the A.M.-F.M. remote system at Squamish, and the design of a low-drain battery repeater for use with thermo-generators.

Currently in progress is the testing of single sideband transmission, the eventual legal replacement for A.M. Following some changes in the receiving equipment used in the investigation of "sferics" during 1964, further tests were carried out with no measurable success during the past fire season.

FOREST PROTECTION DIVISION

WEATHER

The stage was set for the 1965 fire season with March being one of the sunniest and driest on record. Below normal precipitation continued into April for most of the Province

May was generally cool with slightly less than normal rainfall. June was dry over the whole of the Province, with the few stations that reported above normal rainfall recording most of that in one or two days.

The temperatures in July averaged close to normal in spite of an extremely warm period during the last 10 days. For the most part, rainfall continued below normal.

Most of the Province received less than normal precipitation during August. In part of the Vancouver Forest District a forest closure was in effect from July 31st to August 4th.

The weather in September was generally dry, particularly in the Coastal regions, although the Chilcotin and East Kootenay areas reported more than normal precipitation.

Strong winds were a significant factor in all districts and were instrumental in the escape of several logging slash burns.

Lightning activity appears to have been close to normal. Some difficulty was experienced with dry lightning-storms, particularly in the northern half of the Province.

FIRES

Occurrence and Causes

The dry, occasionally windy summer resulted in more than the average number of fires and in several serious " escape " slash fires in the late summer. The total of 2,685 fires recorded was well above the 10-year average of 2,106. Lightning again leads as the individual cause, accounting for some 37.2 per cent of the total number of fires.

See Tables Nos. 103, 104, and 105 in the Appendix.

Cost of Fire-fighting

Average fire-suppression cost to the Forest Service was $2,041 per cost fire, compared to $295 the previous year. The cost of suppression to the Forest Service of $2,539,800 and other agency costs of $1,245,800 totalled $3,785,600. This is $1,475,500 above the 10-year average.

See Tables Nos. 109, 110, and 111 in the Appendix.

Damage

The area of forest-cover burned, at 307,132 acres, is only 64 per cent of the 10-year average of 479,525 acres. The damage to forest-cover increased almost $2,000,000 over the 10-year average but was far less than the damage sustained in the fire years of 1958 and 1961.

See Tables Nos. 107, 108, and 110 in the Appendix.

PROTECTION PLANNING AND RESEARCH

Fire Statistics

A start was made during 1965 on coding of fire data for punched cards on an expanded three-card-per-fire basis, and it is planned to continue and increase this programme during 1966.

Visibility Mapping and Lookout Photography

A crew of two men, both experienced university students, undertook the combined work of visibility mapping and lookout photography. Emphasis was on visibility mapping in the earlier part of the season, with 20 possible lookout points being completed.

Thirty sets of the panoramic lookout photographs were taken, part of the continuing programme of providing photographic sets for newly established lookouts and for up-dating older photography on long-established lookouts.

Fuel-moisture Indicator Sticks

Following spring field testing, 883 sets of the 100-gram fuel-moisture indicator sticks were distributed to industry and the Canada Department of Forestry, as well as for our own use. This represented an increase of 24 per cent in distribution over 1964.

The stick-fabrication procedures at the Forest Products Laboratory at Vancouver were streamlined to markedly reduce the amount of manual weighing processes, resulting in higher production for a shorter period.

The co-operation of the laboratory in allowing use of the kiln and facilities and providing assistance of the staff is acknowledged.

Insect Control

No individual or co-operative spray projects were undertaken during 1965. A small co-operative cost-sharing survey project was directed against the hemlock needle miner in North-west Vancouver Island.

In recognition of the potential of the balsam woolly aphid, a general survey was organized in the spring and is continuing, in co-operation with the Canada Forest Research Laboratory staff. This is the first time that the Protection Division has directly undertaken an insect survey of this type. Instructional training in identification techniques in the field and laboratory were given by the Research Laboratory specialists, and office and laboratory space was provided in the building. Sampling areas to date have been Vancouver Island and the Lower Mainland.

A senior advisory committee and a technical planning committee on the balsam woolly aphid have been established, representing the Federal and Provincial Forest Services and the forest industry.

Research Projects

The experimental window-tinting programme, inaugurated in 1964, was expanded in 1965, with 28 lookouts, 5 Ranger stations, and an air-tanker base completed. The primary purpose of glare modification and a resultant temperature reduction appears to be successful and has been well received.

The experimental " sferics " programme in lightning detection was continued. A second receiver was developed, and the two receivers operated during the month of July in the Cranbrook-Golden area. Lightning activity was widespread during this period, and much data were gathered. Problems of monitoring the lightning strikes by the operators of these receivers were evident where widespread lightning

Investigating for balsam woolly aphid in a continuing general survey being made in co-operation with the Federal Forest Research Laboratory at Victoria. This is the first time the Forest Protection Division has undertaken an insect survey of this type.

activity was present, and further research will continue. Although most of the recorded data have yet to be analysed, it is felt that large single storms can be tracked with the present equipment.

Equipment evaluation and development, emergency ration packs, plasticizing, smoke simulation, safety devices, among others, are some of the continuing projects of research studies.

Fire-suppression Crews

Sixteen suppression crews were again employed in the three southern forest districts and fought a total of 316 fires. Sixty-six per cent of the fires fought by these crews were held to 1 acre or less. Several crewmen were attached to various Ranger and forest district headquarters to assist with air-tanker operations and other suppression work.

Under a new programme in the northern districts at Prince Rupert and Prince George, 36 initial-attack crewmen were organized in units of two to eight men.

These units were used as "helitack" crews, air-tanker base crews, and ordinary fire-suppression crews. This programme was a very important factor in keeping many fires in the unpopulated, isolated regions to a relatively small size.

Indians were employed wherever possible, but a degree of reorganization of crews became necessary when some crewmen left to attend stampedes. Also, some difficulty was encountered when Indian crewmen were requested to go to the more northern areas without their families. It is proposed to continue trying to use Indian crewmen knowing that some problems will develop.

Aircraft

The place occupied by aircraft in all phases of fire suppression was significant last season. The number of aircraft on contract was increased by two, for a total of 40 machines. The two additional aircraft, Canso air tankers, were used in the northern districts with success.

The light aircraft used for detection turned in an impressive list of first reports, contributing greatly to the detection system.

The Avenger air tankers flew out their contract for the first time, achieving a high degree of success on the fires attacked.

Helicopters and Beaver-type aircraft maintained the high standard of performance that has characterized their operations.

See Tables Nos. 113 and 114 in the Appendix.

Roads and Trails

The programme of road and trail construction and maintenance continued in a normal manner. As roads and trails are an essential part of economic fire suppression, the programme should be expanded.

See Table No. 116 in the Appendix.

Slash Disposal and Snag-falling

(Vancouver District)

The weather during the late summer of 1965 was the most favourable for slash-burning experienced in many years. Burning commenced in late August and early September. Excellent results were obtained, and most of the burning was completed by September 15th. Of an estimated 100,000 acres logged during 1965, 84,000 acres were burned, including 52,000 acres of slash created in previous years. A further 3,000 acres were burned by accidental fires earlier in the season.

Comparatively moderate fire seasons and marginal fall slash-burning weather during the previous three years had engendered an attitude of complacency, and instead of mopping up the fires as soon as slash had been consumed, they were left to be extinguished by the fall rains, which usually commence about September 15th. These rains failed to materialize on schedule, and when the slash-burning advisory from the Dominion Weather Office forecast north-west winds of 30 to 35 miles per hour on September 20th, numerous spots were still smouldering around the margins of the burned areas. On September 21st the winds arrived as predicted and were compressed in some of the larger valleys into gales of 40 to 50 miles per hour. Many serious "escape" fires resulted. By the time these fires were under control again, they had covered an additional 14,500 acres.

The total damage resulting from the "escapes" reached an unprecedented figure of $277,000. However, a large portion of the mature timber killed or damaged will be salvable for sawlogs. The poor burning weather in past seasons left a sufficient volume of fuel in some planted areas to support the spread of a hot fire and resulted in several hundred acres of immature trees being destroyed.

Although the damage caused by these " escape " fires and the cost of suppressing them was very high, there is no doubt that these " escapes " and the numerous accidental fires which occurred earlier in the year were less serious and extensive than they would have been if the slash-burning programme of previous years had not eliminated the build-up of large unbroken areas of slash.

It has been found that spot burning is not nearly as effective as broadcast burning for preventing serious reburns in later years. Consequently spot burning was scheduled for only 3.2 per cent of the areas required to be burned in 1965, as compared to 33 per cent in 1962.

During the year, 5,857 acres of snags were felled under " major " contracts, with an additional 140 acres being felled on " minor " projects. A small Reforestation Division crew on loan to Protection during slack periods accounted for a further 480 acres of snags.

Prescribed Burning, Interior Districts

The increasingly large areas of unbroken slash caused by the expansion of clear-cut logging in the Interior and northern forest districts in recent years is a matter of grave concern to both Forest Service and logging-industry officials. A few broadcast burns were carried out by both parties over the past few years, but these were mainly of an experimental nature.

Acreage of Slash Burned in 1965

Forest District	Industry	Forest Service	Total
	Acres	Acres	Acres
Prince Rupert	2,300	2,490	4,790
Prince George	2,150	520	2,670
Kamloops	1,578	1,075	2,653
Nelson	3,251	4,682	7,933
Totals	9,279	8,767	18,046

Expansion of the Interior pulp harvest will greatly accelerate the increase of clear-cut areas of extremely hazardous slash. Broadcast burning is the most effective method of reducing this hazard, and a greatly expanded burning programme is required in the Interior if the large and costly fires, similar to those which originated in slash in recent years, are to be avoided.

A graphic example of the need to reduce slash areas was shown during the fall in one prescribed slash burn in the North Central Interior. Unusually strong, dry winds caused the fire to escape the guards into old slash, and resulted in a troublesome fire even at that late time of year. Damage to forest-cover was relatively light however, although some equipment was lost.

FIRE-LAW ENFORCEMENT

As 1965 was a heavier fire season than had been experienced during the past several years, prosecutions under Part XI of the *Forest Act* also increased, there being a total of 30 informations laid. This represented 62.5 per cent of the 10-year average.

FOREST CLOSURES

There was only one forest closure imposed this season under section 122 of the *Forest Act*. This was a general closure in six zones of the Vancouver Forest District from July 31st to August 4th, inclusive. Zones 1, 2, 7, 8, 9, and 10 were affected.

FOREST SERVICE TRAINING-SCHOOL

The fourth and fifth classes of basic trainees (Basic Courses Nos. 4 and 5), consisting of 20 men each, graduated April 9 and December 17, 1965, respectively. Graduates from the basic course now total 100.

Subjects covered during the year for both courses were as follows:—

Basic Course No. 4, Spring 1965, and Basic Course No. 5, Fall 1965

	Days Allotted
Forest Protection Policies and Procedures	4
Forest Management Policies and Procedures	6½
Pre-suppression Studies	7
Fire Suppression	13
Forest Measurements	7½
Mathematics	2½
Forest Surveying	5½
Silviculture	3
Mechanical Equipment Maintenance and Operation	10
Photogrammetry	3
Opening, closing, examinations, clean-up	3
Total days	65

First Aid: Two hours per week in evenings for 9 weeks.
Typing: One hour per week for 13 weeks.
Physical Education: One-half hour per day.
See Tables Nos. 131 and 132 in the Appendix.

EXTRA COURSES AND FUNCTIONS

Training-school facilities were used for two weeks in April, 1965, by the Department of Recreation and Conservation for an in-service training course. Average attendance was 30 men for 12 days.

The usual course for lookoutmen for the Vancouver Forest District was given to 11 men, May 4th to 7th. Ten proved satisfactory and were employed, effective May 4th.

Three two-day sessions of instruction were given to a total of 53 men from the Forest Service staff of scalers. The purpose was to give these men an appreciation of the Forest Service, its organization, and phases of Forest Service activity. The sessions were held January 13th and 14th, January 20th and 21st, February 9th and 10th.

The school facilities were used by the Surveys and Inventory Division for three two-day sessions, May 6th and 7th, May 10th and 11th, and May 12th and 13th, during which 90 summer field employees were instructed.

One three-day session of instruction was given to 14 Gaol Service officers attached to the Attorney-General's Department. The three-day course, which included instruction on the major phases of Forest Service work and its organization, was designed to promote a better understanding in the interest of co-operation between departments. The course was held March 9th to 11th.

The reading course on the *Forest Act* was brought up to date.

Subject outlines and lesson plans were further developed.

Our staff assisted with instruction at various courses, institutions, and meetings throughout the Province. Included were courses at the University of British Columbia, the Northern Interior Fire Control Course, and a Parks Branch meeting at Manning Park.

ACKNOWLEDGMENTS

Appreciation is expressed to speakers and lecturers and to the following agencies for equipment provided: Air Division of the Surveys and Mapping Branch, Department of Lands, Forests, and Water Resources; University of British Columbia; Weldwood of Canada Limited; Burnaby Parks and Recreation Commission; and Surrey Municipality. Appreciation also is expressed to lecturers from other divisions and districts of the Forest Service.

ACCOUNTING DIVISION

FISCAL

The financial return to the Forest Service in 1965 again exceeded expectations in spite of only a minor increase in the total scale of wood harvested. The additional revenue was due mainly to higher stumpage prices received on timber cut from timber sales and tree-farm licence cutting permits, which was a direct reflection of the continued good prices being obtained by the industry for its forest products. This favourable situation persisted throughout the year, but there was some indication at its close that some effect might be felt from a " tightening " money market in the new year.

The total of amounts charged to logging operations increased by a substantial 10.9 per cent to yet another new record of $49,902,240 (*see* Table No. 142 in the Appendix). By districts the largest increase, 28 per cent, was registered in the Prince Rupert Forest District, followed by Prince George, Vancouver, and Nelson with 14.1, 13.8, and 11.1 per cent respectively. Kamloops Forest District showed a decline of 8.2 per cent.

Forest revenue recorded a higher percentage increase than the amounts charged, 12.8 per cent, and the total of $47,558,411 (*see* Table No. 141 in the Appendix) was also a new all-time high. Timber-sale stumpage, which constitutes the bulk of the revenue, rose by 12.9 per cent to $42,031,437, and the related item, timber-sale rentals and fees, increased by 49.9 per cent. The latter was mainly due to an increase in rental to 50 cents per acre by regulation pursuant to the *Forest Act*. A similar increase by Statute in the rental payable on timber licences and timber leases accounted for gains of 98.7 and 25.9 per cent respectively in these categories. Rentals and fees collected from timber berths declined by 3.9 per cent as the rates remained unchanged, and areas are steadily being eliminated from these tenures as cutting progresses. Timber-sale cruising and advertising declined by a surprising 33.16 per cent, the apparent result of a reduction from 2,282 in 1964 to 1,614 in 1965 in the number of timber sales awarded.

Timber royalties, the second-highest revenue category, remained almost unchanged, recording an increase of only 0.7 per cent to a total of $2,629,476. This was to be expected as this revenue is derived from the cut on Crown-granted lands and the old licence and lease tenures. Areas are eliminated from the latter tenures as the timber is liquidated, and new licences of this type no longer are issued.

Forest-protection tax collections increased moderately by 6.9 per cent to $559,007, and miscellaneous revenue, continuing an upward trend, rose by 30.1 per cent to $273,738. Bidding fees of approximately $34,000 are included in the miscellaneous category, as are charges for publications issued which were raised to cover higher printing costs. Grazing permits and fees increased by 8.4 per cent, exactly offsetting the decline in 1964.

Financial tables on a fiscal-year basis for the period ended March 31, 1965, also appear in the Appendix (*see* Tables Nos. 143, 144, and 145), and details of expenditure can be found in the Public Accounts, published by the Department of Finance.

The Federal-Provincial Forestry Agreement, which expired March 31, 1965, was replaced by a new two-year agreement terminating March 31, 1967. The amount claimable by the Province from Canada remained unchanged at $1,804,461, and only minor alterations were made in the terms and conditions.

ADMINISTRATION

The Accounting Division as a whole experienced its busiest year on record. In addition to coping with the increase in volume indicated in the financial tables, all sections were subject to increased pressure resulting from policy changes originating in other divisions of the Forest Service, the Department of Finance, and the Civil Service, Superannuation, and Purchasing Commissions.

Major effects of changes in Management Division timber-sale administration were felt by the timber-sale and revenue sections of the headquarters accounts office. The introduction of new tenures in connection with the expansion in pulp-mill construction and preparation for the advent of the close utilization policy, effective January 1, 1966, required planning of new routines in recording and accounting. These changes also had a similar effect on each district office.

Changes in personnel appointment action procedure, income-tax adjustments, and the expected inclusion of the Provincial Civil Service in the Canada Pension Plan combined to put extreme pressure on the pay desk of the headquarters accounts office, and on district and divisional pay clerks.

Additional though relatively minor changes were made in the expenditure accounting structure with the approval of Treasury Board in a further effort to achieve flexibility and reduce paper work.

As time permitted, the survey of office methods in the Forest Service begun by the Accounting Division in 1964 was continued, and further recommendations were submitted to the Chief Forester for consideration late in the year.

A concerted drive on delinquent accounts receivable was instituted early in the spring, and, in spite of the increase in billing, all districts were able to report considerable progress toward the goal of maintaining all accounts on a current basis.

The investigating section of the Comptroller's Office was kept fully occupied, concentrating mainly on mill cost studies and lumber prices analyses for the appraisal section of the Management Division. Investigations also were conducted in conjunction with the five district offices.

No changes in the organization or personnel establishment of the Accounting Division were made, the extra work load being carried with the addition only of the usual summer temporary typing help.

PERSONNEL DIVISION

On June 30, 1965, Mr. R. G. McKee officially retired as Deputy Minister of Forests to assume full-time duties as Chairman of the Provincial Government Purchasing Commission. As a result, Mr. F. S. McKinnon, Chief Forester, was appointed Deputy Minister, and Mr. L. F. Swannell, Assistant Chief Forester, was appointed Chief Forester. Subsequent transfers and promotions resulted in a new Assistant Chief Forester, a new Forester in charge of Forest Protection, and new District Foresters in four of the five forest districts. The Working Plans Division was combined with the Forest Surveys and Inventory Division under the general administration of the Forester in charge of Surveys and Inventory. Legislative approval was given for the establishment of the Cariboo Forest District with headquarters at Williams Lake. At the close of the year this district was not yet operational, although some time had been spent in the Personnel Office in the preparation of organization charts to adequately staff the new district. A new series of technician grades was set up by the Civil Service Commission and included, in addition to engineering technicians, the two senior draughting employees in this department.

In the matter of employee relations, the newly appointed Chief Forester and the Personnel Officer met with a representative committee of the Society of British Columbia Forest Officers to discuss matters of Departmental policy concerning this group. There were no formal grievances, and one inquiry from the British Columbia Government Employees' Association was resolved at the Departmental level between the Personnel Officer and a representative from the association. A general salary increase involving all employees became effective April 1st.

COMMUNICATIONS AND TRAINING

No formal meeting of District Foresters was held in Victoria, but the District Forester and Assistant District Forester from each of three districts spent a week in Victoria discussing specific problems with the various headquarters divisions concerned. Full-scale Ranger meetings were held in Vancouver and Nelson Forest Districts, while limited Ranger zone meetings were held in the Kamloops, Prince George, and Prince Rupert Forest Districts. The Forest Surveys and Inventory Division held its annual pre-season meeting for field foresters, and held a pre-season training session at Green Timbers for its summer field staff. The Engineering Services Division, in addition to its annual meeting of engineers, also held meetings in Victoria for district mechanical supervisors and district and headquarters radio technicians. The Foresters in charge of Forest Management in the district offices came to Victoria in a group and met with headquarters Forest Management staff to discuss policies and procedures involving close utilization. The Forest Agrologists from Nelson, Prince George, and Kamloops met with the Director of Grazing in Kamloops to discuss common problems in range management.

The Personnel Officer and Assistant Personnel Officer took part in several vocation-day programmes at various schools in the Victoria area and the Lower Mainland as did a number of other Forest Officers. The Forest Service was also represented on a programme of instructive interviews for graduating secondary-school students jointly sponsored by the Victoria Chamber of Commerce and the National Employment Service.

Two men were selected for the 10th class of the course in Public Administration under the Government's Executive Development Training Plan. Unfortunately one man dropped out before the course started, and the Service is represented in this

class by a Forest Protection Officer from Prince George. Class X is for candidates from the Interior of the Province. Two employees, both foresters, graduated from the seventh class of the programme and received Diplomas in Public Administration from the University of Victoria, the first of this programme to be granted by that institution. A correspondence course in Basic Public Administration of one-year duration was commenced by the Civil Service Commission. Four employees from the senior clerical staff of the Forest Service at Victoria, Vancouver, Kamloops, and Nelson enrolled and subsequently graduated. Class 2 of this basic course commenced in the fall, and the Forest Service was represented by one employee from Victoria, one from Vancouver, and one from the Forest Service training-school. A number of field employees continued to take first-aid courses at various levels, but the trend in this area appears to be toward the industrial first-aid certificate. The Civil Defence Organization sponsored St. John Ambulance first-aid courses in Victoria to the benefit of several Forest Service employees. Arrangements were made with the Chief Warden of Civil Defence to endeavour to have such courses slanted to field conditions which would be more beneficial to our staff. Informal training continued for junior engineers and junior foresters.

ESTABLISHMENT, RECRUITMENT, AND STAFF TURNOVER

The permanent Civil Service establishment of the Forest Service was increased from 863 to 881, an increase of 18 positions, which included a Technical Forest Officer 4 as an additional Ranger Supervisor in the Prince Rupert Forest District and a Forest Protection Officer 2 in the Prince George Forest District to be responsible for increased protection in northern areas. The remaining 16 positions were new positions of various classifications set up as a nucleus for the new Cariboo Forest District.

During the year, 160 persons obtained Civil Service appointments and 156 left the Service. Eleven Forest Service 25-year certificates and badges were earned, and 23 employees were guests of the Government at a luncheon where they were awarded a certificate in recognition of 25 years' service with the Provincial Government Service. There were seven retirements and 63 transfers of permanent staff. Six graduate foresters and six engineers left the Service, and 15 graduate foresters and one engineer were hired.

Turnover of Civil Service-appointed staff, including full-time casual staff, was 12.4 per cent, up from 11.6 per cent in 1964. The Prince George Forest District suffered the greatest disruption with 17 per cent, followed by Vancouver and Victoria headquarters with 14.5 and 13.4 per cent respectively. Kamloops and Prince Rupert Forest Districts followed closely with 13.3 and 12.2 per cent respectively. Vancouver Scaling had a 9.9-per-cent staff turnover. Nelson Forest District was lowest at 6.3 per cent.

Professional-staff turnover dropped back to 6.7 per cent from 7.5 per cent in 1964. Technical-staff turnover went from 7.6 per cent in 1964 to 6.8 per cent, but this figure gives a false impression of improvement since it does not include a large number of junior technical field positions not covered in these statistics. Considerable disruption was felt in the office staff, which suffered a turnover of 22.8 per cent for the Service as a whole, as compared to 18 per cent in 1964. Kamloops and Prince George Forest Districts suffered the greatest turnover in this group at 35.2 and 33.3 per cent respectively. In general, the greatest number of people left the Service for better salaries.

There were no fatal accidents during the year involving employees, but one contract snag-faller was killed on duty and the workmen's compensation claim was

chargeable to the Department. In the matter of discipline, while no employees were released by Order in Council, there were 15 disciplinary suspensions. A number of these suspensions were made because the employees concerned failed to observe accident-prevention regulations with regard to personal protective equipment. No annual statutory increases were withheld, but one employee, due for promotion after two years' satisfactory service, had his promotion withheld for a period of six months.

There were 602 written applications for employment processed by the Personnel Office, in addition to those handled by the district offices and divisional staffs. Promotional examinations were held as usual by the Civil Service Commission for draughtsmen and mapping assistants, resulting in the promotion and reclassification of a number of staff members who qualified. Oral examinations were employed at panel interviews to fill 27 positions. The Personnel Officer and Assistant Personnel Officer participated in the filling of 135 other positions. Two hundred and twenty-six candidates sat the annual spring examination for Technical Forest Officer 1, and 65 qualified. Of the candidates writing 160 were presently on the staff of the Forest Service. Of the 65 who qualified, 22 qualified for regrade in their present duties only. This left only 43 to fill the 36 vacant positions, and some of these men were not available for employment. As a result, the individual districts, with the exception of Kamloops, were unable to fill all their vacancies and therefore had to draw on the excess in the Kamloops Forest District. As a result of this shortage of candidates, it was necessary before the end of the year to employ a number of Acting Assistant Rangers to fill the existing vacancies.

CLASSIFICATION, SALARIES, AND WORKING CONDITIONS

Including the classification of technician, which was established by the Civil Service Commission, there were 105 reclassifications requested, of which 81 were approved and 11 rejected. At the end of the year, 13 were still under review.

Eight employees were registered as professional foresters and four as professional engineers. Working conditions in general remain unchanged. While no decision has been received yet on the study on special living allowance for northern areas, it is understood the Civil Service Commission is continuing and broadening this study.

The accident-prevention programme received a setback in that there were 382 accidents, of which 169 were time loss. The previous year showed only 237 accidents, of which 78 were time loss, but it should be noted that, for statistical purposes, commencing on January 1, 1965, time-loss accidents were counted where the period of absence was at least one full working-day, as opposed to three full working-days in previous reports. This change in statistical recording was not, however, a major factor in the increase as there were very few time-loss accidents in which the period of absence was less than three days. There was a particularly heavy fire season, and of the 169 time-loss accidents, 75 were suffered by fire-fighters and seven by temporary tree-planters. In 1964, these two categories had one accident each. However, with the continuously employed staff there were 87 time-loss accidents in 1965, as compared to 75 during 1964. In 1965 the time-loss accidents jumped from 33 per cent of the total accidents to 44.3 per cent of the total. It is also worth noting that, while the time-loss accident frequency in 1964 was 16.8 accidents per million man-hours worked, in 1965 it was 31.1 accidents per million man-hours worked. However, districts and divisions are actively engaged in accident prevention with the hope that these figures can be reduced in the future.

PERSONNEL DIRECTORY, 1965

(As of December 31st)

VICTORIA HEADQUARTERS

F. S. McKinnon - - - - - - - - - Deputy Minister of Forests
L. F. Swannell - - - - - - - - - - - - - Chief Forester
J. S. Stokes - - - - - - - - Assistant Chief Forester i/c Operations Branch
I. T. Cameron - - - - - - - Assistant Chief Forester i/c Planning Branch

Staff Division Heads:

Cooper, C. - - - - - - - - - - - - - Forest Counsel
Hicks, W. V. - - - - - - - - - - - Departmental Comptroller
Park, S. E. - - - - - - - - - - - Director, Public Information
McKeever, A. E. - - - - - - - - - - - - Personnel Officer

Operations Branch Division Heads:

W. C. Phillips - - - - - - - - Forester i/c Protection Division
Greggor, R. D. - - - - - - Forester i/c Engineering Services Division
Hughes, W. G. - - - - - - - - Forester i/c Management Division
Pendray, W. C. - - - - - - - - - Director, Grazing Division
Robinson, E. W. - - - - - - Forester i/c Forest Service Training-school

Planning Branch Division Heads:

Young, W. E. L. - - Forester i/c Surveys and Inventory and Working Plans Division
Silburn, G. - - - - - - - - - Forester i/c Reforestation Division
Spilsbury, R. H. - - - - - - - - Forester i/c Research Division

FOREST DISTRICTS

Vancouver Forest District

H. B. Forse - - - - - - - - - - - - - District Forester
J. A. K. Reid - - - - - - - - - - - Assistant District Forester

Forest Rangers:

Lorentsen, L. H. (Chilliwack); McDaniel, R. W. (Hope); Wilson, R. S. (Harrison Lake); Nelson, J. N. (Mission); Mudge, M. H. (Port Moody); Carradice, J. H. (Squamish); Chamberlin, L. C. (Sechelt); Northrup, K. A. (Pender Harbour); Hollinshead, S. B. (Powell River); Hannah, M. (Lund); Archer, W. C. (Thurston Bay East); Stefanac, G. (Thurston Bay West); Doerksen, V. J. (Chatham Channel); Teindl, A. J. (Echo Bay); Moss, R. D. (Port McNeill); Neighbor, M. N. (Port Hardy); Carr, W. S. (Campbell River); Antonelli, M. W. (Courtenay); Norbirg, H. (Parksville); Howard, W. G. (Nanaimo); Sykes, S. J. (Duncan); Bertram, G. D. (Ganges); Jones, R. W. (Langford); Thomas, R. W. (Lake Cowichan); Haley, K. (Alberni); Doerksen, H. G. (Tofino); Gill, D. E. (Pemberton).

Prince Rupert Forest District

H. M. Pogue - - - - - - - - - - - - - District Forester
Lehrle, L. W. - - - - - - - - - - - Assistant District Forester

Forest Rangers:

Simmons, C. F. (Ocean Falls); Brooks, T. (Queen Charlotte City); Hamilton, H. D. (Prince Rupert); Gorley, O. J. (Terrace); vacant (Kitwanga); Crosby, D. N. (Hazelton); Hawkins, R. M. (Smithers); Lindstrom, W. C. (Telkwa); Berard, R. K. (Houston); Mould, J. (Pendleton Bay); Mastin, T. (Burns Lake); Harvie, T. (Bella Coola); Pement, A. T. (Southbank); Dodd, G. F. (Lower Post); Jaeger, J. F. (Topley).

Prince George Forest District

N. A. McRae - - - - - - - - - - - - District Forester
Young, W. - - - - - - - - - - - - Assistant District Forester

Forest Rangers:

Ward, J. G. (McBride); McRae, M. A. (Valemount); Meents, G. E. (Prince George East); Gibbs, T. R. (Prince George North); Ford, C. (Fort St. James); Keefe, R. R. (Quesnel); Barbour, H. T. (Dawson Creek); Amonson, D. A. (Aleza Lake); Graham, G. W. (Vanderhoof); Espenant, L. G. (Fort St. John); Griffiths, P. F. (Fort Fraser); Waller, T. G. (Summit Lake); York, G. M. (Fort Nelson); Magee, G. E. (Prince George West); Wallin, D. F. (Hixon); Hewitt, E. W. (Quesnel); Rohn, K. (Quesnel); McQueen, L. (Chetwynd); Magee, K. W. (Hudson Hope).

Kamloops Forest District

A. H. Dixon - - - - - - - - - - - - District Forester
Boulton, L. B. B. - - - - - - - - - - Assistant District Forester

Forest Rangers:

Hopkins, H. V. (Lumby); Ivens, J. H. (Birch Island); Wittner, D. J. (Barriere); vacant (Kamloops South); Paquette, O. (Chase); Gibson, C. L. (Salmon Arm); Jones, G. G. (Sicamous); Cameron, A. G. (Lillooet); Kuly, A. (Vernon); Scott, E. L. (Penticton); Baker, F. M. (Princeton); Petty, A. P. (Clinton); Hamilton, T. J. (Williams Lake); Donnelly, R. W. (Alexis Creek); Hewlett, H. C. (Kelowna); Noble, J. O. (Ashcroft); Pearce, F. (Merritt); Huva, G. G. (Blue River); Collins, B. G. (Enderby); Schmidt, J. T. (100 Mile North); Weinard, J. P. (Kamloops North); Craig, V. D. (Horsefly); Monteith, M. E. (100 Mile South).

Nelson Forest District

J. R. Johnston - - - - - - - - - - - - District Forester
Isenor, M. G. - - - - - - - - - - - Assistant District Forester

Forest Rangers:

Taft, L. G. (Invermere); Humphrey, J. L. (Fernie); Anderson, S. E. (Golden); Gierl, J. B. (Cranbrook East); Ross, A. I. (Creston); Allin, G. B. (Kaslo); Benwell, G. L. (Lardeau); Robinson, R. E. (Nelson); Jupp, C. C. (New Denver); Raven, J. H. (Nakusp); Wood, H. R. (Castlegar); Reid, E. W. (Grand Forks); Uphill, W. T. (Kettle Valley); Cartwright, G. M. (Canal Flats); Benwell, W. G. (Arrowhead); Loomer, I. M. (Edgewood); Russell, P. F. (Elko); Bellmond, C. N. (Spillimacheen); Bailey, J. F. (Cranbrook West); Hamann, L. O. (Beaverdell); Webster, G. R. (Slocan City); Jackson, R. C. (Revelstoke).

APPENDIX

TABULATED DETAILED STATEMENTS TO SUPPLEMENT THE REPORT OF THE FOREST SERVICE

CONTENTS

RESEARCH DIVISION

TABLE No.		PAGE
11.	Tabulation of Research Projects Active in 1965	72
12.	Research Publications, 1965	73

REFORESTATION DIVISION

21.	Nursery Stock Distributed, 1965	73
22.	Summary of Planting, 1956–65	74

WORKING PLANS DIVISION

31.	Summary of Basic Data for Tree-farm Licences (Private Sustained-yield Units)	75
32.	Summary of Basic Data for Certified Tree-farms (Private Sustained-yield Units)	77
33.	Summary of Basic Data for Farm Wood-lot Licences (Private Sustained-yield Units)	79

PUBLIC INFORMATION AND EDUCATION DIVISION

41.	Motion-picture Library, 1956–65	80
42.	Summary of Coverage by School Lecturers, 1956–65	81
43.	Forest Service Library, 1956–65	82

FOREST MANAGEMENT DIVISION

51.	Value Added by Manufacture, 1965	83
52.	Water-borne Lumber Trade (in M B.M.), 1956–65	84
53.	Total Amount of Timber Scaled in British Columbia during Years 1964 and 1965: (A) in F.B.M., (B) in Cubic Feet	85
54.	Species Cut, All Products, 1965: (A) in F.B.M., (B) in Cubic Feet	86
55.	Total Scale, All Products, 1965 (Segregated by Land Status and Forest Districts): (A) in F.B.M., (B) in Cubic Feet	87
56.	Timber Scaled in British Columbia during 1965 (by Months and Forest Districts)	88
57.	Volume of Wood Removed under Relogging at Reduced Royalty and Stumpage, 1956–65, in Thousands of Cubic Feet	89
58.	Number of Acres Operating under Approved Annual Allowable Cuts, 1956-65	90
59.	Total Scale of All Products from Areas Operated under Approved Annual Allowable Cuts, 1956–65	91

TABLE NO. PAGE

60. Logging Inspections, 1965 ... 92
61. Trespasses, 1965 ... 93
62. Areas Examined by the Forest Service for Miscellaneous Purposes of the Land Act, 1965 ... 94
63. Areas Cruised for Timber Sales, 1965 ... 94
64. Timber-sale Record, 1965 ... 95
65. Competition for Timber Sales Awarded, 1965 ... 96
66. Timber Sales Awarded by Forest Districts, 1965 ... 97
67. Average Stumpage Prices as Bid, by Species and Forest Districts, on Timber Sales during 1965, per C C.F. Log Scale ... 98
68. Average Stumpage Prices Received, by Species and Forest Districts, on Saw-timber on Tree-farm Licence Cutting Permits Issued in 1965 99
69. Timber Cut and Scaled from Timber Sales, 1965 ... 100
70. Saw and Shingle Mills of the Province, 1965 ... 101
71. Export of Logs (in F.B.M.), 1965 ... 102
72. Shipments of Poles and Other Minor Products, 1965 ... 103
73. Summary of Export of Minor Products for Province, 1965 ... 103
74. Timber Marks Issued, 1956-65 ... 104

GRAZING DIVISION

81. Grazing Permits Issued ... 104

ENGINEERING SERVICES DIVISION

91. Forest Road Programme, 1965 ... 105
92. Forest Service Mechanical Equipment, 1965 ... 106

FOREST PROTECTION DIVISION

101. Forest-protection Expenditure by the Forest Service for the Fiscal Year 1964/65 ... 107
102. Reported Approximate Expenditure in Forest Protection by Other Agencies, 1965 ... 107
103. Fire Occurrences by Months, 1965 ... 108
104. Number and Causes of Forest Fires, 1965 ... 108
105. Number and Causes of Forest Fires for the Last 10 Years ... 109
106. Fires Classified by Size and Damage, 1965 ... 110
107. Damage to Property Other than Forests, 1965 ... 111
108. Damage to Forest-cover Caused by Forest Fires, 1965—Parts I and II ... 111
109. Fire Causes, Area Burned, Forest Service Cost, and Total Damage, 1965 113
110. Comparison of Damage Caused by Forest Fires in Last 10 Years ... 114
111. Fires Classified by Forest District and Cost per Fire of Fire-fighting, 1965 115

TABLE NO. PAGE

112. Prosecutions, 1965 116
113. Contract Flying, 1965 117
114. Use of Aircraft in Fire-fighting (Non-contract), 1965 117
115. Analysis of Suppression-crew Fire-fighting Activities, 1965 118
116. Construction of Protection Roads and Trails, 1965 118
117. Summary of Snag-falling, 1965, Vancouver Forest District 119
118. Summary of Logging Slash Reported in 1965, Vancouver Forest District 119
119. Acreage Analysis of Slash Disposal Required, 1965, Vancouver Forest District 119
120. Analysis of Progress in Slash Disposal, 1965, Vancouver Forest District 120
121. Summary of Slash-burn Damage and Costs, 1965, Vancouver Forest District 120

TRAINING-SCHOOL

131. Enrolment at Advanced Course, 1965 121
132. Enrolment at Basic Course, 1965 122

ACCOUNTING DIVISION

141. Forest Revenue, 1956–65 122
142. Amounts Charged against Logging Operations, 1965 123
143. Amounts Charged against Logging Operations, Fiscal Year 1964/65 124
144. Forest Revenue, Fiscal Year 1964/65 125
145. Forest Service Expenditures, Fiscal Year 1964/65 125
146. Scaling Fund 125
147. Grazing Range Improvement Fund 126
148. Peace River Power Timber Salvage 126

PERSONNEL DIVISION

151. Distribution of Personnel, 1965 127

(11) TABULATION OF RESEARCH PROJECTS ACTIVE IN 1965

Experimental Project No.	Title	Region
368	The Adaptability of Tree Species to Forest Sites	Vancouver Island.
418–469	Thinning Experiments in Douglas Fir	Vancouver Island.
474	Inbreeding Experiments with Douglas Fir	Vancouver Island.
476	Pollination Techniques for Douglas Fir	Vancouver Island.
479	Plus-tree Selection for Douglas Fir Seed Orchards	Vancouver Island.
482	Climate and the Altitudinal Distribution of Conifers	Vancouver Island.
502	Plantation Trials	Prince Rupert.
513	Intra- and Inter-specific Crosses within the Genus *Pseudotsuga*	Vancouver Island.
517	Thinning Studies in Ponderosa Pine	Kamloops.
528	Influence of Time on the Effectiveness of Scarified Seed-beds	Prince George.
541	Natural Nurseries	Prince Rupert.
549	Spacing Trials	Prince George.
554	Thinning Experiments in Douglas Fir	Vancouver Island.
570	Sitka Spruce Spacing Study	Prince Rupert.
576	Land Classification in Relation to Reforestation	Vancouver Island.
589	Comparison of 2+0, 2+1, and 1+2 Douglas Fir on High-site Lands	Vancouver Island.
591	Regeneration Study in Cut-over Lodgepole Pine Stands	Prince Rupert.
594	Brush Control, Coastal British Columbia	Vancouver Island.
597	Planting Trials with Ponderosa Pine	Nelson.
599	Problem Analysis: Approach to Provenance Experimentation in Coastal Douglas Fir	Vancouver Island.
602	Lodgepole Pine Problem Analysis	Prince Rupert.
603	Study of Some Hand-planting Methods in White Spruce	Prince Rupert.
605	Determination of the Optimum Season for Direct Seeding	Nelson.
606	Direct Seeding of Douglas Fir and Engelmann Spruce	Kamloops.
607	Ponderosa Pine Spacing Trials	Nelson.
613	Western Hemlock Spacing Study	Prince Rupert.
614	The Use of the Herbicide Tordon to Control Bracken	Vancouver Island.
616	Study of Regeneration Problem in Decadent Hemlock-Cedar Stands	Kamloops.
618	Cone Production in the Interior of British Columbia	Nelson.
619	Douglas Fir-Engelmann Spruce Planting Study, 1963	Kamloops.
623	The Growth Behaviour of Interior Spruce in the Nursery	Prince George.
624	Geographic Variation in Spruce Cone Scale Morphology	Prince George.
625	The Survival and Initial Growth of Various Types of Douglas Fir Planting Stock	Vancouver Island.
626	Engelmann Spruce Planting Trials, 1964	Nelson.
628	Forest-land Classification, Bear Creek	Okanagan.
629	Classification of Soil Capability for Forestry	Prince George.
631	Planting Trials of Douglas Fir, 1964–65	Kamloops.
632	Exploratory Direct Seeding Trials in the Wet Belt Type of the Southern Interior	Kamloops.
637	Seed Dispersal and Natural Regeneration in the Columbia Forest Zone	Nelson.
638	Seeding Trials	Prince George.
639	Regeneration and Reforestation Practice	Prince George.
640	Requirements of Douglas Fir Seedlings for P, K and Mg.	Vancouver Island.
641	Dry Matter Production and Growth Periodicity in Four Western Species	Vancouver Island.
642	Nursery Experiment with Different Nitrogen Sources	Vancouver Island.
643	Nutrient Analysis in Plantation Trees	Vancouver Island.
644	Bullet Planting with Douglas Fir, Preliminary Trial, 1965	Vancouver Island.
645	Variation in Nutrient Concentration within and between Trees, and Estimation of Nutrient Uptake	Vancouver Island.
646	Field Test of 40 Provenances of White and Engelmann Spruce	Vancouver Island.
647	Investigation of Factors Influencing Pollen Production in Douglas Fir: 1, Effect of Growth Regulators upon Reproductive Bud Initiation	Vancouver Island.

(12) RESEARCH PUBLICATIONS, 1965

Austin, K. (1965): Two Devices for Speeding Morphological Assessment of Nursery Stock. U.S.D.A. Tree Planters' Notes No. 71.

Hetherington, J. C. (1964): Brush Control in Coastal British Columbia, B.C. Forest Service Research Note No. 38.

——— (1965): The Dissemination, Germination and Survival of Seed on the West Coast of Vancouver Island from Western Hemlock and Associated Species. B.C. Forest Service Research Note No. 39.

Orr-Ewing, A. L. (1965): Inbreeding and Single Crossing in the Douglas fir. Forest Science 11:3:279–290.

Revel, J. (1965): Effect of Method and Density of Sowing on Douglas Fir Seedlings. U.S.D.A. Tree Planters' Notes No. 72.

Spilsbury, R. H., *et al.* (1965): A Cooperative Study of the Classification of Forest Land. Proc. Second North American Forest Soils Conference, Corvallis, Oregon.

PAPERS

Clark, M. B. (1964): Regeneration Methods in Interior of British Columbia. Proc. Reforestation Co-ordinating Committee, Western Forestry and Conservation Association.

Revel, J. (1964): Planting Study of 2+0 Culls. Proc. Reforestation Co-ordinating Committee, Western Forestry and Conservation Association.

Warrack, G. C. (1964): Thinning Effects in Red Alder. Annual meeting of the Northwest Hardwood Association.

UNPUBLISHED MANUSCRIPT REPORTS

Armit, D.: Silvics and Silvicultural Management of Lodgepole Pine Stands in the North Central Region of British Columbia—A Problem Analysis.

Clark, M. B.: Planting Stock Survival in the Kamloops and Nelson Forest Districts.

Illingworth, K.: Direct Seeding Trial, Mars Creek.

Orr-Ewing, A. L.: A Visit to Tree Breeding Centres in Europe, 1962.

Revel, J.: Planting Study of 2+0 Douglas Fir Culls.

——— Cold Storage of 2+0 Douglas Fir in Multi-wall Bags.

——— Comparison of Four Age Classes of Douglas Fir Planting Stock on Various Sites.

(21) NURSERY STOCK DISTRIBUTED, 1965

Nursery	Age-classes				Total for Field Planting	Total Trees Transplanted
	2—0	1—0 and 3—0	1—1 and 1—2	2—1 and 2—2		
Green Timbers	7,678,300	11,200	———	105,000	7,794,500	112,000
Duncan	4,311,900	62,000	———	131,900	4,506,000	225,200
Brannen Lake	———	———	14,000	284,800	298,800	251,100
Campbell River	2,341,900	———	———	41,000	2,382,900	———
Snowdon	———	———	———	150,500	150,500	404,000
Chilliwack	573,300	———	———	122,400	695,700	624,000
Haney	———	———	———	476,000	476,000	637,000
East Kootenay	442,500	49,500	124,500	105,700	722,200	465,700
Rayleigh	———	———	———	9,400	9,400	249,800
Aleza-Hixon	71,900	———	———	317,300	389,200	440,400
Telkwa	467,000	16,000	54,000	148,000	685,000	284,000
Kelowna	55,300	———	———	———	55,300	———
Totals	15,942,100	138,900	192,500	1,892,000	18,165,500	3,693,200

(22) SUMMARY OF PLANTING, 1956–1965

Year	Forest Service on Crown Land		Forest Service on Crown-granted Land (Forest Act, Sec. 152)		Company on Tree-farm Licences		Other Private		Totals	
	Trees in Thousands	Acres	Trees in Thousands	Acres	Trees in Thousands	Acres	Trees in Thousands	Acres	Trees in Thousands	Acres
Coast										
1965[1]	3,208.5	8,749	628.0	1,453	7,038.5	20,742	4,432.5	13,023	15,307.5	43,967
1964	1,172.4	3,267	1,165.3	3,247	6,917.4	20,395	3,720.6	10,886	12,975.7	37,795
1963	2,080.0	5,413	1,592.2	3,538	6,487.3	18,463	3,130.6	9,226	13,290.1	36,640
1962	1,202.8	2,703	1,758.2	4,240	4,903.1	14,536	1,792.3	5,015	9,656.4	26,494
1961	330.0	770	563.3	1,508	4,549.6	14,399	1,120.4	3,145	6,563.3	19,822
1960	137.1	318	1,261.7	2,299	5,110.2	15,161	131.1	338	6,640.1	18,116
1959	856.5	1,482	1,575.2	2,932	4,614.1	11,540	398.5	914	7,444.3	16,868
1958	887.5	915	1,894.4	2,128	4,955.4	11,438	102.5	129	7,839.8	14,610
1957	305.7	448	.....	.....	2,971.4	7,399	65.9	84	3,343.0	7,931
1956	984.9	1,711	.....	.....	1,406.9	3,493	78.8	130	2,470.6	5,334
Previously planted	86.272.3	102,525	4,649.6	5,605	16,346.7	25,219	2.073.7	2,593	109,342.3	135,942
Totals to date	97.437.7	128,301	15,087.9	26,950	65,300.6	162,785	17,046.9	45,483	194,873.1	**363,519**
Interior										
1965[1]	1,755.9	5,423	.....	.....	615.4	2,735	130.4	382	2,501.7	8,540
1964	1,076.8	2,913	.....	.....	199.5	968	45.2	120	1,321.5	4,009
1963	596.5	1,286	.....	.....	324.4	923	5.9	15	926.8	2,224
1962	566.1	1,171	.....	.....	346.2	1,007	.....	.....	912.3	2,178
1961	409.6	1,010	.....	.....	248.0	625	0.5	1	658.1	1,636
1960	198.4	357	.....	.....	187.8	416	.....	.....	386.2	773
1959	777.5	1,320	.....	.....	81.9	114	10.2	14	869.6	1,448
1958	475.3	638	.....	.....	82.2	181	12.4	18	569.9	837
1957	168.6	216	.....	.....	47.6	93	80.9	113	297.1	422
1956	228.9	293	.....	.....	105.1	189	39.7	56	373.7	538
Previously planted	1,376.4	2,089	.....	.....	202.0	265	44.7	55	1,623.1	2,409
Totals to date	7,630.0	16,716	.....	.....	2,440.1	7,516	342.9	774	10,440.0	25,014
All planted to date	105,067.7	145,017	15,087.9	26,950	67,740.7	170,301	17,389.8	46,257	205,313.1	388,533
All planted this year	4,964.4	14,172	628.0	1,453	7,653.9	23,477	4,562.9	13,405	17,809.2	52,507

[1] Subject to correction due to incomplete returns.

SUMMARY OF BASIC DATA FOR TREE-FARM LICENCES (PRIVATE SUSTAINED-YIELD UNITS)

Tree-farm Licence Number and Name	Licensee	Productive Area (Acres)			Total Area (Acres)	Total Mature Volume (M Cu. Ft.)			Allowable Annual Cut (M Cu. Ft.)
		Crown	Private	Total		Crown	Private	Total	
Vancouver Forest District									
2. Duncan Bay	Elk Falls Co. Ltd.	162,864	112,678	275,542	376,639	.....	.....	.....	22,114
4. Blind Channel	Fourmax Logging Co. Ltd	4,360	.....	4,360	4,616	4,755	.....	4,755	260
6. Quatsino	Rayonier Canada (B.C.) Ltd.	196,092	114,453	310,545	432,274	983,512	461,939	1,445,451	25,800
7. Salmon River	MacMillan, Bloedel and Powell River Ltd.	88,484	52,465	140,949	189,890	357,862	316,343	674,205	13,000
10. Toba	Timberland Development Co.	87,355	611	87,966	574,065	355,375	1,816	357,191	3,300
12. Hardwicke	Bendickson Logging Ltd.	17,572	2,801	20,373	23,207	33,109	7,862	40,971	1,330
17. Knight Inlet	Evans Products Co. Ltd.	69,790	640	70,430	492,538	428,476	.....	428,476	5,500
19. Tahsis	Tahsis Co. Ltd.	164,180	27,541	191,721	398,122	785,190	156,532	941,722	12,400
20. Tofino	MacMillan, Bloedel & Powell River Industries Ltd.	232,921	142,939	375,860	428,099	1,425,130	712,591	2,137,721	27,500
21. Alberni	MacMillan, Bloedel & Powell River Industries Ltd.	283,268	266,604	549,872	636,463	1,890,558	1,988,283	3,878,841	49,270
22. Maquinna	British Columbia Forest Products Ltd.	182,059	87,354	269,413	413,573	1,313,601	408,641	1,722,242	24,500
25. Naka	Rayonier Canada (B.C.) Ltd.	103,130	80,610	183,740	355,717	459,838	203,708	663,546	12,400
26. Mission Municipal	Corporation of the District of Mission	13,707	2,727	16,434	18,884	17,830	789	18,619	800
27. Nitinat	British Columbia Forest Products Ltd.	26,274	3,729	30,003	34,724	172,542	20,307	192,849	2,400
36. Cordero	F. & R. Logging Co. Ltd.	12,254	7,660	19,914	24,075	46,365	3,422	49,787	870
37. Nimpkish	Canadian Forest Products Ltd.	124,207	104,499	228,706	457,895	574,961	551,909	1,126,870	20,400
38. Squamish	Empire Mills Ltd.	99,099	535	99,634	541,175	505,759	555	506,314	5,400
39. Haida	MacMillan, Bloedel and Powell River Ltd.	247,821	193,674	441,495	1,009,617	604,809	663,677	1,268,486	43,912[1]
Totals		2,115,437	1,201,520	3,316,957	6,411,573	9,959,672	5,498,374	15,458,046	271,156
Prince Rupert Forest District									
1. Port Edward	Celgar Ltd.	876,906	15,105	892,011	2,184,070	3,000,270	38,230	3,038,500	35,000
24. Moresby	Rayonier Canada (B.C.) Ltd.	114,426	20,450	134,876	281,411	454,878	69,763	524,641	8,200
25. Naka	Rayonier Canada (B.C.) Ltd.	98,636	39,444	138,080	778,191	299,298	132,723	432,021	2,000
39. Haida	MacMillan, Bloedel and Powell River Ltd.	332,890	157,049	489,939	752,607	1,146,195	523,115	1,669,310	(2)
40. Skeena	Skeena Kraft Ltd.	1,410,299	.....	1,410,299	3,968,744	2,826,247	.....	2,826,247	22,000
Totals		2,833,157	232,048	3,065,205	7,965,023	7,726,888	763,831	8,490,719	67,200
Prince George Forest District									
5. MacKenzie Cariboo	Western Plywood Co. Ltd.	81,267	195	81,462	84,191	147,010	163	147,173	3,100
28. Shelley	Shelley Development Ltd.	82,213	180	82,393	91,666	107,203	.....	107,203	2,800
29. Eagle Lake	Eagle Lake Sawmills Ltd.	126,415	1,224	127,639	142,296	209,499	314	209,813	2,265
30. Sinclair[3]	Sinclair Spruce Lumber Co. Ltd.	71,005	.....	71,005	84,373	109,683	.....	109,683	1,073
31. McGregor[3]	Upper Fraser Spruce Mills	42,488	.....	42,488	45,761	97,488	.....	97,488	1,038
34. Seebach[3]	Church Sawmill Ltd.	57,197	.....	57,197	72,205	115,926	.....	115,926	1,000
Totals		460,585	1,599	462,184	520,492	786,809	477	787,286	11,276

[1] This cut is for entire area including Prince Rupert blocks.
[2] Total allowable cut for licence shown under Vancouver Forest District.
[3] Tree-farm Licence Nos. 29, 30, and 34 are in the process of amalgamation into an enlarged Tree-farm Licence No. 30.

(31) SUMMARY OF BASIC DATA FOR TREE-FARM LICENCES (PRIVATE SUSTAINED-YIELD UNITS)—*Continued*

Tree-farm Licence Number and Name	Licensee	Productive Area (Acres)			Total Area (Acres)	Total Mature Volume (M Cu. Ft.)			Allowable Annual Cut (M Cu. Ft.)
		Crown	Private	Total		Crown	Private	Total	
Kamloops Forest District									
9. Okanagan (West)	S. M. Simpson Ltd.	171,395	1,536	172,931	189,696	353,123	.....	353,123	3,600
15. Inkaneep	Oliver Sawmills Ltd.	90,540	160	90,700	119,600	38,874	.....	38,874	800
16. Monte Lake	Pondosa Pine Lumber Co.	123,588	132	123,720	129,226	41,627	215	41,842	1,500
18. Clearwater	Clearwater Timber Products Ltd.	167,708	.....	167,708	183,972	182,028	.....	182,028	3,700
32. Bolean	Vernon Box & Pine Co. Ltd.	32,395	.....	32,395	33,800	27,775	.....	27,775	610
33. Sicamous	Shuswap Timbers Ltd.	19,682	.....	19,682	20,719	30,129	.....	30,129	385[4]
35. Jamieson Creek	B.C. Interior Sawmills Ltd.	88,878	.....	88,878	98,496	173,518	.....	173,518	2,900
Totals		694,186	1,828	696,014	775,509	847,074	215	847,289	13,495
Nelson Forest District									
3. Little Slocan	Pacific Logging Co. Ltd.	100,085	.....	100,085	196,625	52,879	.....	52,879	2,000
8. Boundary Creek	Boundary Sawmills Ltd.	89,530	.....	89,530	111,010	59,620	.....	59,620	1,260
11. Carmi	Olinger Lumber Co. Ltd.	76,294	.....	76,294	79,404	79,222	.....	79,222	1,400
13. Bull River	Galloway Lumber Co. Ltd.	54,329	503	54,832	100,783	37,873	.....	37,873	1,100
14. Spillimacheen	Crestbrook Timbers Ltd.	67,925	3,790	71,715	308,294	54,622	7,011	61,633	1,500
23. Arrow Lakes	Celgar Ltd.	827,271	36,490	863,761	2,537,673	1,108,560	341,715	1,450,275	30,000
Totals		1,215,434	40,783	1,256,217	3,333,789	1,392,776	348,726	1,741,502	37,260
Grand totals		7,318,799	1,477,778	8,796,577	19,006,386	20,713,219	6,611,623	27,324,842	400,387

[4] In 1966 cut will increase to 455 M cu. ft. as approved in Working Plan No. 2.

SUMMARY OF BASIC DATA FOR CERTIFIED TREE-FARMS (PRIVATE SUSTAINED-YIELD UNITS)

(32)

Within Tree-farm Licences

Tree-farm Number and Licensee	Productive Area (Acres)				Total Area (Acres)	Mature Volume (M Cu. Ft.)	Present Allowable Cut (M Cu. Ft.)	Estimated Productive Capacity (M Cu. Ft.)
	Mature	Immature	N.S.R. and N.C.C.	Total				
Vancouver Forest District								
8. T.F.L. No. 2	204	54,629	1,478	56,311	64,752	.....	.....	3,273
12. T.F.L. No. 17	51	179	259	489	1,230	135	21	22
13. T.F.L. No. 20	26,792	45,667	12,780	85,239	93,468	77,268	4,653	4,728
14. T.F.L. No. 21	10,695	17,397	2,279	30,371	32,638	37,041	1,405	1,738
16. T.F.L. No. 22	6,731	12,212	4,461	23,404	24,719	44,515	1,285	1,285
20. T.F.L. No. 19	2,251	1,982	501	4,734	5,683	4,353	277	336
21. T.F.L. No. 39	24,442	12,194	2,179	38,815	40,312	95,206	1,777	2,321
25. T.F.L. No. 37	2,964	6,179	784	9,927	11,331	15,730	749	836
29. T.F.L. No. 6	2,193	2,268	723	5,184	5,480	10,259	282	896
30. T.F.L. No. 25	3,333	13,817	3,691	20,841	26,071	9,615	2,000	2,355
31. T.F.L. No. 25	10,315	11,429	2,732	24,476	28,312	45,892	2,008	2,896
Totals	89,971	177,953	31,867	299,791	333,996	340,014	14,457	20,686
Prince George Forest District								
41. T.F.L. No. 29	123	702	429	1,254	1,280	331	27	37
Nelson Forest District								
35. T.F.L. No. 23	868	3,473	277	4,618	5,447	6,072	.....	130
37. T.F.L. No. 13	.....	504	.....	504	504	.....	.....	20
Totals	868	3,977	277	5,122	5,951	6,072	.....	150
Grand totals within tree-farm licences	90,962	182,632	32,573	306,167	341,227	346,417	14,484	20,873

Not Included within Tree-farm Licences

Vancouver Forest District								
1. Thomas G. Wright	231	18	3	252	310	.....	31	45
2. H. R. Nickson	(1)	165	.....	165	180	68	9	10
4. MacMillan, Bloedel and Powell River Ltd.	10	9,219	515	9,744	10,347	747	358	430
5. Western Forest Industries Ltd.	854	22,506	2,249	25,609	28,054	1,221	.....	1,788
6. British Columbia Forest Products Ltd.	468	1,805	188	2,461	3,569	2,294	125	185
7. Victoria Plywood Ltd.	3,689	4,406	1,373	9,468	10,303	11,695	282	606
9. Robert J. Filberg	235	4,741	1,559	6,535	7,566	935	100	492
10. Canadian Forest Products Ltd.	113	2,037	.....	2,150	2,561	.....	30	141
15. W. J. Robertson	.....	157	.....	157	163	.....	.....	17
17. British Columbia Forest Products Ltd.	1,986	16,670	2,965	21,621	22,283	8,399	783	1,666
19. MacMillan, Bloedel and Powell River Ltd.	129,460	139,244	27,635	296,339	313,479	1,105,704	29,500	21,456
22. Merrill & Ring	.....	2,274	25	2,299	2,458	.....	.....	197
23. W. & W. Holdings Ltd.	.....	779	231	1,010	1,010	.....	.....	111
24. Merrill & Ring-Canadian Properties, Inc.	.....	1,888	10	1,898	1,947	59	.....	175
28. Merrill & Ring-Canadian Properties, Inc.	.....	749	.....	749	788	.....	.....	67
32. Savary Island Hotels Ltd. and A. B. Christopher	(1)	106	.....	106	106	151	5	5
34. Robert J. Filberg	.....	1,282	155	1,437	1,699	.....	.....	90
39. Canadian Collieries Resources Ltd.	213	28,390	4,202	32,805	34,706	347	.....	1,470
42. John C. Cowan	198	4,735	47	4,980	5,533	348	.....	250
44. Friedrich W. Fuerst zu Wied	189	1,161	985	2,335	2,476	160	16	180
45. Erbprinz Von Hohenzollern	255	657	178	1,090	1,090	160	65	60
47. Merrill & Ring-Canadian Properties, Inc.	1,812	4,358	87	6,257	6,465	640	430	511
Totals	139,713	247,347	42,407	429,467	457,093	1,132,928	31,734	29,952

[1] Scattered.

SUMMARY OF BASIC DATA FOR CERTIFIED TREE-FARMS (PRIVATE SUSTAINED YIELD UNITS)—*Continued*

(32)

NOT INCLUDED WITHIN TREE-FARM LICENCES—*Continued*

Tree-farm Number and Licensee	Productive Area (Acres)				Total Area (Acres)	Mature Volume (M Cu. Ft.)	Present Allowable Cut (M Cu. Ft.)	Estimated Productive Capacity (M Cu. Ft.)
	Mature	Immature	N.S.R. and N.C.C.	Total				
Nelson Forest District								
26. Kirk Ltd.	96	16,999	.....	17,095	22,362	(488,762)	(194,235)	(427,375)
27. The Crow's Nest Pass Coal Co. Ltd.	25,457	77,301	3,349	106,107	236,807	35,708	1,510	1,543
33. Elkhorn Ranch and Emerald Christmas Tree Co.	.....	2,931	.....	2,931	3,230	(79,066)	(18,496)	(73,275)
36. J. Hofert Ltd.	.....	23,978	1,982	25,960	28,755	(1,072,896)	(174,009)	(651,050)
38. William T. Joyce Co.	31,646	848	.....	32,494	33,632	85,572	945	1,029
40. Kootenay Lake Logging Co.	33,804	52,808	.....	86,612	139,341	66,839	1,370	1,260
43. Donald D. MacDonald	370	4,480	613	5,463	6,061	6,413	88	200
46. Blue and Gold Estates Ltd.	96	1,928	219	2,243	2,375	4,606	77	90
48. Ernest Boker	.....	1,080	.....	1,080	1,260	(45,000)	(7,000)	(11,000)
Totals	91,469	182,353	6,163	279,985	473,823	199,138 (1,685,724)	3,990 (393,740)	4,122 (1,162,700)
Grand totals not within tree-farm licences	231,182	429,700	48,570	709,452	930,916	1,332,066 (1,685,724)	35,724 (393,740)	34,074 (1,162,700)

Numbers in parentheses are Christmas trees.

SUMMARY OF BASIC DATA FOR FARM WOOD-LOT LICENCES (PRIVATE SUSTAINED-YIELD UNITS) (33)

Farm Wood-lot Number and Licensee	Productive Area (Acres)			Total Area (Acres)	Total Mature Volume (M Cu. Ft.)			Allowable Annual Cut (M Cu. Ft.)
	Crown	Private	Total		Crown	Private	Total	
Vancouver Forest District								
5. Thompson, A. R.	70	75	145	232	31	29	60	6.0
8. Heikkila, E.	135	8	143	159	35	.....	35	1.0
17. Wells, G. E.	101	38	139	199	86	32	118	6.0
22. Kirkelund, P.	70	.....	70	92	66	.....	66	2.6
26. Dawson, C.	190	7	197	274	640	.....	640	9.0
34. Morris, F.	174	62	236	494	419	11	430	6.5
40. Courchene, R. O.	122	8	130	223	72	8	80	2.5
41. Jones, T. E. D.	29	.....	29	69	143	.....	143	2.0
43. Evans, L. W.	235	14	249	304	374	40	414	5.0
44. Wilson, M. R.	152	.....	152	282	195	.....	195	4.0
46. Williams, G. C.	75	38	113	189	316	33	349	8.0
49. Fall, J. S. T.	253	.....	253	321	343	.....	343	4.5
52. Dawson, H.	198	.....	198	202	550	.....	550	10.0
57. Mellor, J. G.	186	16	202	202	362	.....	362	7.0
78. Pickard, G. T.	115	19	134	138	106	.....	106	8.0
Totals	2,105	285	2,390	3,380	3,738	153	3,891	82.1
Prince Rupert Forest District								
28. Priest, C. V.	274	110	384	782	567	11	578	8.5
42. Nysven, K.	353	240	593	927	178	36	214	8.0
66. Grainger, B. H.	321	37	358	824	616	82	698	6.2
70. Burt, A. H.	343	.....	343	480	372	.....	372	4.0
73. Sprigler, L. F.	296	88	384	825	388	4	392	8.3
77. Hewett, H. F.	336	.....	336	350	387	.....	387	6.2
Totals	1,923	475	2,398	4,188	2,508	133	2,641	41.2
Prince George Forest District								
14. Macallister, J. M.	258	95	353	428	550	91	641	10.0
38. Miller, A. B.	222	28	250	251	170	3	173	9.5
45. Douglas, E. C.	283	.....	283	302	186	.....	186	6.0
47. Sanford, J.	154	3	157	166	263	6	269	5.5
53. Hiller, B.	240	.....	240	240	648	.....	648	10.0
54. Teichman, O.	240	.....	240	240	645	.....	645	10.0
55. Kienzle, C. W.	240	.....	240	240	642	.....	642	10.0
61. Kaska, M. G.	245	29	274	274	332	.....	332	5.0
63. Walsh, G. D.	218	.....	218	226	427	.....	427	7.0
67. Higdon, J. and K.	289	.....	289	290	381	.....	381	4.5
68. Aiken, E. F.	225	.....	225	256	429	.....	429	7.0
74. Caron, L. A.	202	.....	202	202	540	.....	540	9.0
75. Lavally, E. L.	243	.....	243	249	370	.....	370	5.9
76. Paley, W. J.	138	53	191	193	387	.....	387	7.0
79. Windt, T. E.	281	3	284	286	271	5	276	4.4
80. Ochsner, M.	192	11	203	271	418	.....	418	6.5
Totals	3,670	222	3,892	4,114	6,659	105	6,764	117.3
Kamloops Forest District								
3. Myers, J. A.	236	.....	236	260	286	.....	286	8.0
9. Black, W.	142	110	252	276	27	18	45	4.5
29. Hankey, A.	154	48	202	326	127	.....	127	4.0
30. Kershaw, R. T.	320	.....	320	160	112	.....	112	6.0
48. Durrell, J. M.	499	.....	499	540	865	.....	865	10.0
72. Law, D. A.	417	36	453	724	235	.....	235	7.5
Totals	1,768	194	1,962	2,286	1,652	18	1,670	40.0
Nelson Forest District								
7. Bombini, S.	98	147	245	254	98	24	122	4.9
18. Siska, C.	176	13	189	195	153	2	155	3.4
21. Sahlstrom, G. O.	126	90	216	270	176	96	272	6.0
60. Stevenson, J., and Boyd, R. A.	162	147	309	333	123	46	169	6.2
62. Braisher, O.	154	382	536	567	193	109	302	5.5
65. Johnson, B. P.	238	379	617	617	160	240	400	6.7
69. Davidson, D. G.	564	27	591	601	443	19	462	9.4
71. Carey, F. H.	515	118	633	633	243	8	251	4.2
Totals	2,033	1,303	3,336	3,470	1,589	544	2,133	46.3
Grand totals	11,499	2,479	13,978	17,438	16,146	953	17,099	326.9

(41)

MOTION-PICTURE LIBRARY, 1956–65

Stock Records

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Films in library at January 1st	71	78	80	83	92	95	140[1]	144	151	148
Films withdrawn during year	3	———	1	10	2	2	1	3	9	12
New films added during year	10	2	4	19	5	3	5	10	6	33
Films in library at December 31st	78	80	83	92	95	96	144	151	148	169
Films used during year	80	79	84	83	96	96	145	150	142	164

[1] Previously listed as number of subjects only. Now includes multiple prints.

Circulation Records

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Number of loans made during year	413	455	604	468	374	344	473	955	483	535
Number of film loans during year (one film loaned one time)	1,743	1,758	1,253	1,454	749	776	957	1,926	990	1,070
Number of showings during year	1,909	1,956	1,775	1,622	1,217	1,085	1,490	1,146	1,115	1,535
Number of audiences—										
Adults	14,537	18,983	10,330	17,329	12,277	13,096	10,576	7,691	10,511	16,069
Children	157,086[1]	86,829[1]	69,316[1]	54,429[1]	90,658	57,366	76,699	64,946	64,057	80,333
Mixed	42,587	38,143	42,938	51,421	62,405	69,896	67,777	40,386	32,438	17,236
Totals	218,275[1]	148,124[1]	126,216[1]	123,179[1]	165,340[1]	140,358	155,052	113,023	107,006	112,638

[1] Including attendances of school lecturers.

SUMMARY OF SCHOOL LECTURE COVERAGE, 1956–65

Forest District	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	Total
Vancouver—											
Number of school visits	222	10	176	108	117	57	60	28	9	50	847
Number of lectures given	419	11	237	162	145	113	109	64	33	72	1,365
Attendance	67,962	871	29,606	35,082	30,380	9,644	19,493	7,325	3,450	8,644	212,457
Kamloops—											
Number of school visits	39	71	.....	47	48	3	.....	4	13	3	228
Number of lectures given	49	86	.....	49	54	9	.....	8	42	3	300
Attendance	5,731	10,046	.....	5,420	5,203	640	.....	1,285	6,150	500	34,975
Nelson—											
Number of school visits	.....	42	.....	62	36	40	15	.....	.....	.....	195
Number of lectures given	.....	60	.....	75	59	64	35	.....	.....	.....	293
Attendance	.....	7,002	.....	9,972	5,094	5,834	2,910	.....	.....	.....	30,812
Prince George—											
Number of school visits	.....	66	.....	76	5	27	21	29	.....	3	227
Number of lectures given	.....	75	.....	82	5	28	23	38	.....	5	256
Attendance	.....	5,671	.....	5,600	820	3,076	2,419	4,195	.....	715	22,496
Prince Rupert—											
Number of school visits	.....	.....	.....	21	.....	.....	.....	13	.....	.....	34
Number of lectures given	.....	.....	.....	25	.....	.....	.....	41	.....	.....	66
Attendance	.....	.....	.....	5,135	.....	.....	.....	2,435	.....	.....	7,570
All districts—											
Number of school visits	271	189	176	314	206	127	96	74	22	56	1,531
Number of lectures given	468	232	237	393	263	214	167	151	75	80	2,280
Total attendance	73,693	23,590	29,606	61,209	41,497	19,194	25,348	15,240	9,600	9,859	308,310

(43)

FOREST SERVICE LIBRARY, 1956–65

Classification	Items Catalogued and Indexed										10-year Average, 1956–65
	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	
Bound volumes	37	45	48	43	39	31	29	23	30	41	37
Government reports and bulletins	179	266	177	142	123	92	113	191	146	158	159
Other bulletins and reports	170	109	159	165	200	135	140	110	92	73	135
Periodicals	151	155	133	130	115	134	151	151	151	151	142
Serials	177	214	230	302	274	375	378	370	380	419	319
References Indexed	1,321	1,417	1,139	1,502	999	878	911	1,165	1,263	1,371	1,197

BRITISH COLUMBIA FOREST INDUSTRIES, VALUE ADDED BY MANUFACTURE, 1956–65

(In thousands of dollars.)

Industry	Basis: Old Standard Industrial Classification				Basis: Revised Standard Industrial Classification and New Establishment Concept							
	1956	1957	1958	1959	1958	1959	1960	1961	1962	1963[1]	1964*	1965*
Logging industry	296,838	262,508	194,749	234,895	194,749	234,895	276,289	286,705	351,522	364,000	380,000*	395,000*
Wood industries—												
Sawmills[2]	178,630	138,873	153,726	162,382	147,203	156,247	154,165	148,387	183,883	209,511	.....	.....
Coast[2]	107,381	81,773	92,636	91,442	89,743	88,545	96,998	86,465	95,272	108,611*	.....	.....
Interior[2]	71,249	57,100	61,090	70,940	57,460	67,702	57,167	61,922	88,611	100,900*	.....	.....
Shingle-mills[2]	.....	.....	.....	.....	.....	.....	7,476	7,791	8,615	13,116	.....	.....
Sash, door, and planing mills	23,487	20,305	22,885	26,688	23,063	26,971	21,582	24,132	27,305	27,307	.....	.....
Veneer and plywood mills	42,792	33,940	37,456	38,958	38,794	40,183	36,148	35,485	43,844	51,793	.....	.....
Other wood industries[3]	6,444	6,386	6,181	7,525	5,699	6,828	7,331	4,649	4,655	5,125	.....	.....
Totals, wood industries	251,353	199,504	220,248	235,553	214,759	230,229	226,702	220,444	268,302	306,852	316,000*	325,000*
Paper and allied industries—												
Pulp and paper mills	97,236	87,890	102,420	139,734	106,557	144,545	153,573	167,296	177,220	191,136	.....	.....
Other paper and allied industries[4]	10,395	12,960	14,098	15,877	14,116	15,986	15,944	15,664	17,221	19,267	.....	.....
Totals, paper and allied industries	107,631	100,850	116,518	155,611	120,673	160,531	169,517	182,960	194,441	210,403	240,000*	260,000*
Totals, forest industries	655,822	562,862	531,515	626,059	530,181	625,655	672,508	690,109	814,265	881,255	936,000*	980,000*
Furniture industries[5]	9,302	10,090	10,543	12,255	10,593	12,109	11,194	11,004	11,431	11,500*	11,500*	11,500*

* Estimated.

[1] Preliminary.

[2] Shingle-mills included with sawmills up to 1960.

[3] Includes the hardwood flooring industry, wooden-box factories, the coffin and casket industry, and the miscellaneous wood industries.

[4] Includes asphalt-roofing manufacturers, paper-bag manufacturers, manufacturers of corrugated boxes, manufacturers of folding cartons and set-up boxes, and miscellaneous paper converters.

[5] The furniture industries are no longer considered a forest industry, but are included here for reference.

Sources: Bureau of Economics and Statistics, Victoria, B.C., and Dominion Bureau of Statistics, Ottawa, Ontario.

(52) WATER-BORNE LUMBER TRADE (IN M B.M.), 1956–65

Destination	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	10-year Average, 1956–65
Eastern Canada	4,917	2,102	5,482	10,481	9,680	8,828	11,394	5,295	6,057	727	6,496
Africa	145,132	181,560	139,523	94,598	142,293	75,146	70,726	110,237	84,470	124,276	116,798
Australia	99,829	87,213	98,808	80,115	113,536	91,935	122,470	113,915	106,166	126,045	104,003
Belgium	2,628	5,095	10,790	4,080	21,937	31,300	22,810	34,009	37,596	30,272	20,052
Central America	----	5,330	5,349	----	----	----	----	----	----	----	1,068
China	----	----	----	----	----	----	----	----	147	----	15
Eire	142	483	1,070	----	3,684	4,773	6,465	6,013	7,223	6,179	3,603
France	3,191	4,110	3,265	3,184	9,883	11,061	21,922	26,371	38,744	61,397	18,313
Germany	177	169	22	----	1,062	6,040	10,558	15,611	14,155	13,482	6,128
Greece	25	----	----	70	----	----	10	1	1,059	129	129
Hawaiian Islands	13,183	7,668	3,166	2,133	7,755	12,887	6,813	5,433	3,483	3,946	6,647
Holland	3,802	3,552	6,091	4,569	6,272	13,866	21,802	19,068	20,789	21,920	12,173
Hong Kong	1,275	1,256	597	509	867	360	----	172	300	302	564
India	416	468	3,372	27,581	9,793	----	----	5	----	----	4,163
Israel	1,248	5,643	213	1,340	1,681	10,225	4,009	233	919	1,272	2,678
Italy	3,007	6,530	4,560	2,805	5,363	5,909	12,624	9,609	8,706	16,917	7,603
Japan	5,852	2,301	999	1,201	1,607	155,550	107,438	278,168	204,439	207,811	96,536
Korea	----	1,412	----	6,413	----	----	399	1,701	----	----	992
Middle East	146	123	----	----	----	----	----	----	----	3,128	340
New Zealand	14,097	11,030	8,397	5,212	6,689	8,392	6,603	5,008	6,236	6,957	7,862
Puerto Rico	41,937	44,555	46,493	62,826	67,022	73,249	77,033	59,448	87,994	61,213	62,177
Scandinavia	----	14	18	16	66	30	184	212	242	53	83
South America	16,541	25,503	8,816	10,178	7,743	1,187	119	83	100	147	7,042
South Sea Islands	15,339	8,147	11,841	8,068	13,414	9,970	10,477	10,042	10,794	14,697	11,279
Spain	----	----	----	----	----	----	5,373	10,156	2,517	14,095	3,214
United Kingdom	320,126	384,754	336,889	267,293	518,090	422,939	442,237	465,428	695,196	535,894	438,884
United States	283,834	275,452	602,427	595,170	714,050	838,080	876,420	963,783	932,313	1,179,632	726,116
West Indies	11,599	12,085	13,492	8,478	10,796	5,482	7,913	8,901	12,494	8,541	9,978
Foreign, unclassified	1,221	2,363	2,681	1,333	2,068	1,906	1,227	230	570	413	1,401
Totals	989,664	1,078,918	1,314,361	1,197,653	1,675,351	1,789,115	1,847,026	2,149,132	2,282,709	2,439,445	1,676,337

TOTAL AMOUNT OF TIMBER SCALE BILLED IN BRITISH COLUMBIA DURING THE YEARS 1964 AND 1965 IN F.B.M.

(53A) (All products converted to f.b.m.)

Forest District	10-year Average, 1956–65	1964	1965	Increase	Decrease	Net Increase
Vancouver	3,700,196,468	4,392,978,408	4,489,965,270	96,986,862		
Prince Rupert (C.)	477,415,018	577,798,368	659,941,062	82,142,694		
Totals, Coast	4,177,611,486	4,970,776,776	5,149,906,332	179,129,556		
Prince Rupert (I.)	290,052,168	412,424,707	402,968,493		9,456,214	
Prince George	891,511,310	1,165,780,823	1,210,468,621	44,687,798		
Kamloops	1,180,332,607	1,449,044,609	1,358,088,653		90,955,956	
Nelson	659,259,226	918,011,046	908,545,897		9,465,149	
Totals, Interior	3,021,155,311	3,945,261,185	3,880,071,664		65,189,521	
Grand totals	7,198,766,797	8,916,037,961	9,029,977,996			113,940,035

TOTAL AMOUNT OF TIMBER SCALE BILLED IN BRITISH COLUMBIA DURING THE YEARS 1964 AND 1965 IN CUBIC FEET

(Conversion factors: Coast—6 f.b.m.=1 cu. ft.; Interior—5.75 f.b.m.=1 cu. ft.)

(53B) (All products converted to cubic feet.)

Forest District	10-year Average, 1956–65	1964	1965	Increase	Decrease	Net Increase
Vancouver	616,699,411	732,163,068	748,327,545	16,164,477		
Prince Rupert (C.)	79,569,170	96,299,728	109,990,177	13,690,449		
Totals, Coast	696,268,581	828,462,796	858,317,722	29,854,926		
Prince Rupert (I.)	50,443,855	71,726,036	70,081,477		1,644,559	
Prince George	155,045,445	202,744,491	210,516,282	7,771,791		
Kamloops	205,275,236	252,007,758	236,189,331		15,818,427	
Nelson	114,653,778	159,654,095	158,007,982		1,646,113	
Totals, Interior	525,418,314	686,132,380	674,795,072		11,337,308	
Grand totals	1,221,686,895	1,514,595,176	1,533,112,794			18,517,618

(54A)

SPECIES CUT, ALL PRODUCTS, 1965, CONVERTED TO F.B.M.

Forest District	Fir	Cedar	Spruce	Lodgepole Pine	Hemlock	Balsam	White Pine	Yellow Pine	Cypress	Larch	Hard-woods	Cotton-wood	Total
Vancouver	1,185,788,730	910,935,192	77,963,982	741,702	1,519,582,722	706,519,284	23,780,952	3,600	55,020,978		5,803,788	3,824,340	4,489,965,270
Prince Rupert (C.)	40,494,276	107,475,936	160,726,104	172,980	282,605,358	47,918,220			6,004,650		42,462	14,501,076	659,941,062
Totals, Coast	1,226,283,006	1,018,411,128	238,690,086	914,682	1,802,188,080	754,437,504	23,780,952	3,600	61,025,628		5,846,250	18,325,416	5,149,906,332
Prince Rupert (I.)		30,000,723	116,849,355	89,798,958	113,918,925	49,091,511	86				39,612	3,269,323	402,968,493
Prince George	111,522,509	1,305,589	837,854,281	228,642,045	11,862	28,049,972	139,438				123,493	2,819,432	1,210,468,621
Kamloops	742,953,492	45,979,702	324,446,970	112,704,393	29,527,803	39,642,679	11,646,706	40,978,272		9,798,425	357,702	52,409	1,358,088,653
Nelson	153,774,924	124,044,026	322,389,315	35,200,942	100,057,665	59,513,409	23,567,743	7,529,389		82,242,187	12,109	214,188	908,545,897
Totals, Interior	1,008,250,925	201,330,040	1,601,539,921	466,346,338	243,516,255	176,297,571	35,353,973	48,507,661		92,040,612	532,916	6,355,452	3,880,071,664
Grand totals	2,234,533,931	1,219,741,168	1,840,230,007	467,261,020	2,045,704,335	930,735,075	59,134,925	48,511,261	61,025,628	92,040,612	6,379,166	24,680,868	9,029,977,996

SPECIES CUT, ALL PRODUCTS, 1965, IN CUBIC FEET

(54B)

(Conversion factors: Coast—6 f.b.m.=1 cu. ft.; Interior—5.75 f.b.m.=1 cu. ft.)

Forest District	Fir	Cedar	Spruce	Lodgepole Pine	Hemlock	Balsam	White Pine	Yellow Pine	Cypress	Larch	Hard-woods	Cotton-wood	Total
Vancouver	197,631,455	151,822,532	12,993,997	123,617	253,263,787	117,753,214	3,963,492	600	9,170,163		967,298	637,390	748,327,545
Prince Rupert (C.)	6,749,046	17,912,656	26,787,684	28,830	47,100,893	7,986,370			1,000,775		7,077	2,416,846	109,990,177
Totals, Coast	204,380,501	169,735,188	39,781,681	152,447	300,364,680	125,739,584	3,963,492	600	10,170,938		974,375	3,054,236	858,317,722
Prince Rupert (I.)		5,217,517	20,321,627	15,617,210	19,811,987	8,537,654	15				6,889	568,578	70,081,477
Prince George	19,395,219	227,059	145,713,788	39,763,834	2,063	4,878,256	24,250				21,477	490,336	210,516,282
Kamloops	129,209,303	7,996,470	56,425,560	19,600,764	5,135,270	6,894,379	2,025,514	7,126,656		1,704,074	62,209	9,132	236,189,331
Nelson	26,743,465	21,572,874	56,067,707	6,121,903	17,401,333	10,350,158	4,098,738	1,309,459		14,302,989	2,106	37,250	158,007,982
Totals, Interior	175,347,987	35,013,920	278,528,682	81,103,711	42,350,653	30,660,447	6,148,517	8,436,115		16,007,063	92,681	1,105,296	674,795,072
Grand totals	379,728,488	204,749,108	318,310,363	81,256,158	342,715,333	156,400,031	10,112,009	8,436,715	10,170,938	16,007,063	1,067,056	4,159,532	1,533,112,794

TOTAL SCALE OF ALL PRODUCTS BILLED IN 1965 IN F.B.M. (SEGREGATED BY LAND STATUS AND FOREST DISTRICTS)

(55A)

Land Status	Vancouver	Prince Rupert (Coast)	Prince Rupert (Interior)	Prince George	Kamloops	Nelson	Total
Special timber licences	963,414,168	17,669,676		6,288,482	17,824,672	18,780,477	1,023,977,475
Timber berths	99,039,228				56,910,930	38,810,775	194,760,933
Timber leases	117,372,462						117,372,462
Pulp leases	37,862,418	10,608,684					48,471,102
Pulp licences	14,457,636	51,387,954					65,845,590
Hand-loggers' licences	32,292						32,292
Farm wood-lots	443,988		307,102	456,930	125,862	163,294	1,497,176
Timber sales	1,257,450,450	276,314,904	286,073,684	1,034,259,595	943,407,801	509,596,407	4,307,102,841
No mark visible	205,181,784						205,181,784
Tree-farm licences	606,114,780	238,213,392	92,226,912	83,967,129	68,380,052	210,650,939	1,299,553,204
Miscellaneous	2,751,006	10,012,998	3,393,058	17,831,630	35,875,314	5,706,519	75,570,525
Sub-totals, Crown lands	3,304,120,212	604,207,608	382,000,756	1,142,803,766	1,122,524,631	783,708,411	7,339,365,384
Federal lands	24,146,688	24,205,950	1,058,287	31,504	37,104,813	1,808,364	88,355,606
Crown grants—							
To 1887	972,612,234	291,300		792,488	40,848,219	13,648,447	1,028,192,688
1887–1906	56,705,382	4,163,568	294,118	231,569	22,336,749	61,136,490	144,867,876
1906–1914	22,133,430	2,963,010	2,760,357	7,138,165	32,406,281	15,653,800	83,055,043
1914 to date	110,247,324	24,109,626	16,854,975	59,471,129	102,867,960	32,590,385	346,141,399
Totals	4,489,965,270	659,941,062	402,968,493	1,210,468,621	1,358,088,653	908,545,897	9,029,977,996

TOTAL SCALE OF ALL PRODUCTS BILLED IN 1965 IN CUBIC FEET (SEGREGATED BY LAND STATUS AND FOREST DISTRICTS)

(55B) (Conversion factors: Coast—6 f.b.m.=1 cu. ft.; Interior—5.75 f.b.m.=1 cu. ft.)

Land Status	Vancouver	Prince Rupert (Coast)	Prince Rupert (Interior)	Prince George	Kamloops	Nelson	Total
Special timber licences	160,569,028	2,944,946		1,093,649	3,099,943	3,266,170	170,973,736
Timber berths	16,506,538				9,897,553	6,749,700	33,153,791
Timber leases	19,562,077						19,562,077
Pulp leases	6,310,403	1,768,114					8,078,517
Pulp licences	2,409,606	8,564,659					10,974,265
Hand-loggers' licences	5,382						5,382
Farm wood-lots	73,998		53,409	79,466	21,889	28,399	257,161
Timber sales	209,575,075	46,052,484	49,751,945	179,871,234	164,070,922	88,625,462	737,947,122
No mark visible	34,196,964						34,196,964
Tree-farm licences	101,019,130	39,702,232	16,039,463	14,602,979	11,892,183	36,634,946	219,890,933
Miscellaneous	458,501	1,668,833	590,097	3,101,153	6,239,185	992,438	13,050,207
Sub-totals, Crown lands	550,686,702	100,701,268	66,434,914	198,748,481	195,221,675	136,297,115	1,248,090,155
Federal lands	4,024,448	4,034,325	184,050	5,479	6,453,011	314,498	15,015,811
Crown grants—							
To 1887	162,102,039	48,550		137,824	7,104,038	2,373,643	171,766,094
1887–1906	9,450,897	693,928	51,151	40,273	3,884,652	10,632,433	24,753,334
1906–1914	3,688,905	493,835	480,062	1,241,420	5,635,875	2,722,400	14,262,497
1914 to date	18,374,554	4,018,271	2,931,300	10,342,805	17,890,080	5,667,893	59,224,903
Totals	748,327,545	109,990,177	70,081,477	210,516,282	236,189,331	158,007,982	1,533,112,794

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Vancouver—													
F.b.m.	63,938,679	65,145,597	117,411,908	164,340,877	153,134,764	178,859,161	125,338,997	124,440,620	145,583,014	128,185,897	152,005,448	144,034,772	1,562,419,734
Cubic feet	11,883,359	25,471,156	37,434,497	37,631,730	40,560,057	49,504,187	43,331,871	49,735,999	44,210,131	43,790,991	52,013,179	43,321,283	478,888,440
Lineal feet	312,281	209,612	357,776	327,080	433,161	636,194	463,537	543,523	1,076,061	359,185	676,413	538,193	5,933,016
Cords	3,903	4,114	1,469	7,659	4,109	8,000	5,069	4,053	1,980	4,731	3,699	4,199	52,985
All products, cu. ft.	23,135,128	36,857,885	57,414,344	65,917,202	66,716,069	80,430,142	64,945,416	71,252,740	69,474,271	65,843,165	78,221,128	68,120,055	748,327,545
Prince Rupert (C.)—													
F.b.m.	946,410	10,313,076	14,720,860	13,557,275	10,174,073	6,974,452	5,233,420	6,342,430	7,946,324	9,384,942	7,056,508	9,985,518	102,635,288
Cubic feet	2,824,840	6,172,656	7,003,206	7,042,377	6,772,474	7,933,144	8,159,217	9,587,230	8,804,199	8,067,367	10,640,735	9,041,763	92,049,208
Lineal feet	26,220	228,675	95,095	31,558	127,816	151,793	58,607	1,451	109,740	45,855	210,130	22,960	1,109,900
Cords												33	33
All products, cu. ft.	3,002,240	8,063,008	9,528,003	9,325,592	8,564,015	9,209,397	9,075,408	10,645,389	10,210,891	9,665,915	11,974,417	10,725,902	109,990,177
Prince Rupert (I.)—													
F.b.m.	1,228,977	1,172,758	1,688,691	2,974,964	954,536	565,399	914,661	1,106,440	666,295	1,098,953	612,397	740,000	13,724,071
Cubic feet	5,809,333	8,900,167	10,278,704	9,753,255	2,842,736	2,784,806	3,689,032	3,551,100	5,549,019	4,878,745	4,514,960	3,155,562	65,707,419
Lineal feet	34,575	48,590	51,350	140,955	187,115	208,455	117,260	403,050	322,050	15,005	459,330	107,290	2,095,025
Cords	1,472	249		1,892	429	20	583	371	10	33	359	90	5,508
All products, cu. ft.	6,166,730	9,160,506	10,604,651	10,527,764	3,181,839	3,039,515	3,982,631	4,066,156	5,905,671	5,079,386	4,994,704	3,371,924	70,081,477
Prince George—													
F.b.m.	5,630,575	4,249,244	3,359,313	4,030,148	853,198	775,350	1,374,158	1,247,036	1,436,758	2,151,760	1,589,433	1,867,866	28,564,839
Cubic feet	21,460,770	29,982,757	35,092,740	35,503,459	9,513,137	5,022,556	9,189,263	12,279,743	14,263,444	13,691,606	11,014,605	8,068,980	205,083,060
Lineal feet	7,075	120	3,400	3,335	111,876	16,919	42,425	69,615	31,230	89,058	96,054	44,080	515,187
Cords	57	47	95	100	180	132	165	182	41	29	30	3	1,061
All products, cu. ft.	22,450,778	30,726,625	35,688,859	36,216,869	9,762,207	5,182,579	9,476,570	12,567,031	14,540,822	14,135,502	11,341,229	8,427,211	210,516,282
Kamloops—													
F.b.m.	8,349,282	7,769,645	11,815,690	9,267,930	5,485,382	9,957,927	12,389,915	8,831,269	9,974,156	9,454,457	8,713,775	8,096,100	110,105,528
Cubic feet	17,530,305	19,565,131	26,181,015	15,827,115	9,297,477	9,304,649	19,812,906	19,184,962	20,120,892	18,811,990	20,643,942	18,389,364	214,669,748
Lineal feet	232,925	44,360	327,308	124,435	47,605	216,555	198,670	286,695	235,163	345,030	274,183	239,060	2,571,989
Cords	154	140	296	231	313	352	470	562	1,008	580	829	566	5,501
All products, cu. ft.	19,168,948	20,961,851	28,481,815	17,546,345	10,316,804	11,233,276	22,150,935	20,989,712	22,121,507	20,766,076	22,435,539	20,016,523	236,189,331
Nelson—													
F.b.m.	8,947,932	9,090,586	7,836,352	8,385,182	6,121,697	5,847,335	5,301,624	2,532,208	7,078,243	3,895,313	9,835,535	7,815,745	82,687,752
Cubic feet	8,919,382	12,441,609	11,767,865	10,222,560	13,757,172	6,309,139	6,078,288	9,201,708	11,637,861	13,281,391	18,623,687	18,289,103	140,529,765
Lineal feet	108,452	10,420	232,655	207,108	387,936	228,896	254,804	218,967	326,450	619,244	514,588	363,072	3,472,592
Cords	1,028	65	779	215	1,208	655	670	753	239	668	615	454	7,349
All products, cu. ft.	10,634,310	14,030,895	13,374,966	11,856,771	15,174,654	7,536,449	7,244,219	9,880,079	13,137,217	14,419,291	20,755,426	19,963,705	158,007,982
Totals—													
F.b.m.	89,041,855	97,740,906	156,832,814	202,556,376	176,723,650	202,979,624	150,552,775	144,500,003	172,684,790	154,171,322	179,813,096	172,540,001	1,900,137,212
Cubic feet	68,427,989	102,533,476	127,758,027	115,980,496	82,743,053	80,858,481	90,260,577	103,540,742	104,585,546	102,522,090	117,451,108	100,266,055	1,196,927,640
Lineal feet	721,528	541,777	1,067,584	834,471	1,295,509	1,458,812	1,135,303	1,523,301	2,100,694	1,473,377	2,230,698	1,314,655	15,697,709
Cords	6,614	4,615	2,639	10,097	6,239	9,159	6,957	5,921	3,278	6,041	5,532	5,345	72,437
All products, cu. ft.	84,558,134	119,800,770	155,092,638	151,390,543	113,715,588	116,631,358	116,875,179	129,401,107	135,390,379	129,909,335	149,722,443	130,625,320	1,533,112,794

VOLUME OF WOOD REMOVED UNDER RELOGGING AT REDUCED ROYALTY AND STUMPAGE, 1956–65, IN THOUSANDS OF CUBIC FEET

(57) (1956–63—Vancouver Forest District only. 1964–65—Vancouver and Prince Rupert.)

Year	Salvage Wood (M Cu. Ft.)	Year	Salvage Wood (M Cu. Ft.)
1956	1,795	1961	1,813
1957	3,663	1962	2,580
1958	1,427	1963	3,217
1959	1,257	1964	5,224
1960	1,976	1965	6,987

Ten-year average, 1956–65: 2,994 M cu. ft.

(58) NUMBER OF ACRES OPERATING UNDER APPROVED ANNUAL ALLOWABLE CUTS, 1956–65

Year	Tree-farm Licences		Tree-farms[1]		Christmas-tree Permits		Farm Wood-lots		Public Sustained-yield Units		Total Acres
	Number	Productive Acres	Number	Productive Acres	Number	Productive Acres[2]	Number	Productive Acres	Number	Productive Acres	
1956	23	4,680,846	11	61,041	221	76,457	37	8,320	47	21,667,410	26,417,617
1957	23	4,871,237	15	305,193	283	80,651	44	10,488	58	28,820,776	34,007,694
1958	27	5,349,773	26	499,681	277	83,500	53	13,108	61	32,389,893	38,252,455
1959	36	5,851,979	26	503,200	279	83,210	50	12,059	64	34,606,543	40,973,781
1960	37	6,081,496	25	507,581	294	89,224	52	12,375	72	40,257,302	46,858,754
1961	39	7,017,594	22	545,164	282	96,478	50	11,993	78	46,203,742	53,778,493
1962	39	7,054,191	22	665,666	306	106,966	57	14,940	80	48,940,122	56,674,919
1963	39	7,070,774	25	672,712	346	123,538	53	14,124	82	52,530,686	60,288,296
1964	39	7,146,685	28	682,553	348	119,911	55	14,950	83	60,960,307	68,804,495
1965	40	8,796,577	31	709,452	352	120,065	51	13,978	75	69,781,944	79,301,951
Ten-year average, 1956–65	34	6,392,115	23	515,224	299	98,000	50	12,633	70	43,615,872	50,535,845

[1] Exclusive of tree-farms incorporated into tree-farm licences.
[2] Also included in productive acres under public sustained-yield units.

TOTAL SCALE OF ALL PRODUCTS FROM AREAS OPERATED UNDER APPROVED ANNUAL ALLOWABLE CUTS, 1956–65

Year	Tree-farm Licences		Tree-farms[1]		Christmas Trees			Farm Wood-lots		Public Sustained-yield Units		Total[3] (Cubic Feet)
					Permits		Other Sources[2] (Number of Trees)					
	Number	Cubic Feet	Number	Cubic Feet	Number	Number of Trees		Number	Cubic Feet	Number	Cubic Feet	
1956	23	121,869,721	11	862,000	221	430,447	3,403	37	92,124	47	188,463,981	311,287,826
1957	23	125,622,175	15	23,527,000	283	498,286	2,500	44	70,116	58	207,892,534	357,111,825
1958	27	144,260,543	26	27,593,000	277	408,874	2,700	53	139,396	61	254,876,246	426,869,185
1959	36	178,742,435	26	30,308,000	279	398,504	297,691	50	205,676	64	312,048,987	521,305,098
1960	37	241,410,459	25	32,683,000	294	495,697	349,513	52	92,168	72	385,200,000	659,385,627
1961	39	279,917,294	22	27,842,000	282	434,796	323,254	50	244,577	78	454,029,600	762,033,471
1962	39	337,057,599	22	35,678,000	306	552,512	153,618	57	277,701	80	527,054,000	900,067,300
1963	39	365,631,639	25	33,305,000	346	617,753	220,393	53	263,678	82	633,193,000	1,032,393,317
1964	39	350,806,403	28	34,543,000	348	511,726	395,168	55	253,552	83	607,641,611	993,244,566
1965	40	374,062,274	31	39,587,737	352	509,876	207,643	51	216,486	75	687,492,876	1,101,359,373
Ten-year average, 1956–65	34	251,938,054	23	28,592,874	299	485,847	195,588	50	185,547	70	425,789,284	706,505,759

[1] Exclusive of tree-farms incorporated into tree-farm licences.
[2] Includes Christmas trees cut from tree-farm licences, tree-farms, and farm wood-lots.
[3] Total Christmas-tree cut is not shown.

(60)

LOGGING INSPECTIONS, 1965

Forest District	Type of Tenure Operated			Number of Inspections Made		
	Timber Sales	Leases, Licences, Crown Grants, and Other Tenures	Total	Timber Sales	Other Tenures	Total
Vancouver	1,176	1,734	2,910	3,363	2,328	5,691
Prince Rupert	803	419	1,222	2,749	860	3,609
Prince George	1,606	2,142	3,748	6,122	841	6,963
Kamloops	1,892	1,289	3,181	3,229	1,235	4,464
Nelson	754	930	1,684	2,406	1,101	3,507
Totals, 1965	6,231	6,514	12,745	17,869	6,365	24,234
Totals, 1964	6,557	6,560	13,117	17,789	13,311	31,100
Totals, 1963	6,926	7,168	14,094	18,021	7,189	25,210
Totals, 1962	7,079	6,645	13,724	18,602	6,353	24,955
Totals, 1961	7,088	6,463	13,551	18,330	6,242	24,572
Totals, 1960	7,249	5,120	12,369	(1)	(1)	26,151
Totals, 1959	6,273	4,898	11,171	(1)	(1)	26,912
Totals, 1958	5,936	4,341	10,277	(1)	(1)	23,802
Totals, 1957	7,503	5,940	13,443	(1)	(1)	25,253
Totals, 1956	7,492	5,841	13,333	(1)	(1)	22,038
Ten-year average, 1956–65	6,833	5,949	12,782	----------	----------	25,423

[1] No breakdown made prior to 1961.

TRESPASSES, 1965

Forest District	Number of Cases	Area Cut Over (Acres)	Quantities Cut								Number of Resulting Seizures	Assessment in Dollars
			Cubic Feet	Lineal Feet	Cords	Ties	Christmas Trees	Cedar Shakes	Posts, Car Stakes	Reserved Trees		
Vancouver	97	453	1,769,499	35,495	7	.....	498	25,290	.....	.....	.....	$115,585.11
Prince Rupert	63	373	777,487	7,760	54	.....	.....	.....	.....	.....	.....	38,949.25
Prince George	118	653	836,421	1,506	.....	.....	.....	.....	75	524	.....	31,745.08
Kamloops	118	1,145	364,535	8,800	57	.....	4,497	.....	.....	56	4	35,001.53
Nelson	40	1,893	345,916	39,895	.....	.....	8,209	.....	.....	.....	1	17,876.00
Totals, 1965	436	4,517	4,093,758	93,546	118	.....	13,204	25,290	75	580	5	$239,156.97
Totals, 1964	464	2,488	3,023,375	56,250	305	.....	6,724	453,238	900	2,988	11	$284,797.47
Totals, 1963	546	3,761	4,085,328	36,401	3,494	.....	10,995	17,938	2,233	2,145	13	$257,136.75
Totals, 1962	524	4,210	4,174,109	78,879	790	2,125	8,141	57,600	3,412	1,048	7	$217,146.45
Totals, 1961	517	4,953	3,531,505	141,904	2,319	.....	9,239	164,415	179	1,038	10	$190,547.22
Totals, 1960	533	4,588	3,438,931	129,420	1,339	73	11,698	67,865	900	2,702	11	$240,494.65
Totals, 1959	627	6,668	2,841,015	117,043	5,814	3,473	26,398	133,363	7,149	2,922	13	$221,192.64
Totals, 1958	513	6,435	4,100,971	126,127	608	2,661	14,897	21,924	765	.....	13	$221,931.11
Totals, 1957	668	8,032	4,949,784	386,520	6,545	2,071	7,666	664,569	22,814	.....	15	$380,057.83
Totals, 1956	630	7,744	5,692,862	384,231	1,321	1,367	14,794	177,559	28,573	.....	5	$489,065.90
Ten-year average, 1956–65	546	5,340	3,993,164	155,023	2,265	1,177	12,376	178,376	6,700	1,342	10	$274,152.70

(62) AREAS EXAMINED BY THE FOREST SERVICE FOR MISCELLANEOUS PURPOSES OF THE LAND ACT, 1965

Forest District	Applications for Foreshore Leases		Applications to Purchase		Miscellaneous		Total	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres
Vancouver	14	166	1	253	3	258	18	677
Prince Rupert	26	460	13	774	11	825	50	2,059
Totals	40	626	14	1,027	14	1,083	68	2,736

(63) AREAS CRUISED FOR TIMBER SALES, 1965

Forest District	Number Cruised	Acreage	Saw-timber (M C.F.)	Pit-props, Poles, and Piles (Lin. Ft.)	Shingle-bolts and Cord-wood (Cords)	Railway Ties (No.)	Car Stakes, Posts, Shakes, etc. (No.)
Vancouver	442	89,967	323,123	800	2,801	.....	4,000
Prince Rupert	200	44,528	90,817	115,000	900	.....	3,000
Prince George	245	94,374	169,424	200,000	1,850	.....	18,100
Kamloops	313	132,188	181,569	2,158,000	2,065	.....	38,000
Nelson	157	135,197	187,062	176,600	.....	.....	924,000
Totals, 1965	1,357	496,254	951,995	2,650,400	7,616	.....	987,100
Totals, 1964	1,709	661,821	1,107,428	2,944,004	25,154	.....	478,520
Totals, 1963	1,862	716,699	1,165,976	3,887,525	32,519	.....	656,680
Totals, 1962	1,871	615,500	921,710	18,508,084	19,340	.....	564,865
Totals, 1961	1,892	720,144	1,027,243	7,687,920	14,798	24,000	1,395,285
Totals, 1960	2,122	767,351	1,142,479	8,807,614	29,050	13,809	1,405,370
Totals, 1959	2,317	681,550	877,370	7,387,960	27,753	26,875	1,124,400
Totals, 1958	1,922	609,563	890,285	8,772,888	24,316	34,430	1,146,719
Totals, 1957	2,582	781,748	1,171,283	16,099,489	39,254	95,209	1,149,133
Totals, 1956	3,089	1,095,150	1,273,970	13,981,856	44,287	128,432	1,916,510
Ten-year average, 1956–65	2,072	714,578	1,052,974	9,072,774	26,409	32,276	1,082,458

(64) TIMBER-SALE RECORD, 1965

Forest District	Sales Made	Sales Closed	Total Sales Existing	Total Area (Acres)	Area Paying Forest-protection Tax (Acres)	Total 10-per-cent Deposit
Vancouver	371	499	1,603	592,894	553,232	$6,382,295.40
Prince Rupert	134	221	956	395,729	365,366	1,677,674.04
Prince George	258	322	1,178	656,947	575,191	2,659,923.29
Kamloops	309	335	1,617	983,386	943,114	3,760,217.87
Nelson	184	154	694	620,661	580,260	2,085,746.83
Totals	1,256	1,531	6,048	3,249,617	3,017,163	$16,565,857.43
Cash sales	358	.....	.....	.....	.....	.....
Total sales	1,614	.....	.....	.....	.....	.....

(65) COMPETITION FOR TIMBER SALES AWARDED, 1965

	By Number of Sales									By Volume, Sawlogs Only (M Cu. Ft.)						
	Bid at Upset Stumpage		Bid Less than Two Times the Upset Price		Bid More than Two Times the Upset Price		Total Number (Cash Sales Excluded)	Cash Sales	District Totals (Cash Sales Included)	Bid at Upset Stumpage		Bid Less than Two Times the Upset Stumpage		Bid More than Two Times the Upset Stumpage		Total Volume
	Number	Per Cent	Number	Per Cent	Number	Per Cent				Volume	Per Cent	Volume	Per Cent	Volume	Per Cent	
Vancouver	351	94.6	14	3.7	6	1.7	371	.....	371	64,678	92.8	3,875	5.5	1,169	1.7	69,722
Prince Rupert	129	96.3	4	2.9	1	.8	134	35	169	45,270	88.9	2,478	4.9	3,150	6.2	50,898
Prince George	251	97.3	6	2.3	1	.4	258	27	285	161,037	97.9	2,985	1.8	582	.3	164,604
Kamloops	294	95.2	7	2.3	8	2.5	309	213	522	170,185	98.6	893	.5	1,464	.9	172,542
Nelson	169	91.9	7	3.8	8	4.3	184	83	267	101,100	99.4	155	.2	438	.4	101,693
Totals, 1965	1,194	95.1	38	3.0	24	1.9	1,256	358	1,614	542,270	96.9	10,386	1.8	6,803	1.3	559,459
Totals, 1964	1,723	90.9	142	7.5	31	1.6	1,896	385	2,281	798,105	88.9	69,136	7.7	30,685	3.4	897,926
Totals, 1963	1,518	88.7	156	9.1	38	2.2	1,712	471	2,183	669,382	87.1	51,781	6.7	47,615	6.2	768,778
Totals, 1962	1,523	90.7	118	7.0	38	2.3	1,679	312	1,991	544,893	88.3	56,863	9.2	15,200	2.5	616,956
Totals, 1961	1,715	92.3	85	4.6	57	3.1	1,857	282	2,139	795,853	91.1	39,578	4.5	38,102	4.4	873,533
Totals, 1960	1,659	90.0	117	6.4	67	3.6	1,843	295	2,138	539,999	78.6	74,569	10.8	72,753	10.6	687,321
Totals, 1959	1,683	87.4	139	7.2	104	5.4	1,926	234	2,160	530,298	71.7	108,941	14.7	100,104	13.6	739,343
Totals, 1958	1,720	90.5	110	5.8	70	3.7	1,900	245	2,145	552,647	81.0	93,346	13.7	36,134	5.3	682,127
Totals, 1957	2,074	92.6	120	5.4	45	2.0	2,239	305	2,544	567,378	91.6	42,735	6.9	9,247	1.5	619,360
Totals, 1956	2,303	87.9	248	9.5	69	2.6	2,620	239	2,859	605,031	75.4	139,594	17.4	57,827	7.2	802,452
Ten-year average, 1956–65	1,711	90.4	127	6.7	54	2.9	1,893	313	2,205	614,586	84.8	68,693	9.4	41,447	5.8	724,726

TIMBER SALES AWARDED BY FOREST DISTRICTS, 1965

Forest District	No. of Sales	Acreage	Saw-timber (Cu. Ft.)	Saw-timber (F.B.M.)	Poles and Piling (Lin. Ft.)	No. of Posts	No. of Cords	No. of Ties	No. of Christmas Trees	No. of Car Stakes	No. of Blasting-sticks	No. of Cedar Shakes	No. of Fence Rails and Palings	Estimated Revenue
Vancouver	371	40,586	69,722,000		13,800	1,000	12,569			2,000				$5,663,217.70
Prince Rupert	169	27,521	50,898,500		124,495		676		150	3,700				1,980,657.70
Prince George	285	89,763	164,604,500			12,420	397						300	5,968,112.00
Kamloops	522	142,505	172,542,600		1,317,441	84,550	1,906			7,500			14,358	6,429,199.06
Nelson	267	84,475	101,694,101		444,427	330,950	1,218					540,860		3,635,831.85
Totals, 1965	1,614	384,850	559,461,701		1,900,163	428,920	16,766		150	13,200		540,860	14,658	$23,677,018.31
Totals, 1964	2,281	606,588	897,925,974		6,985,755	249,998	34,438		387	11,500		504,600	500	$37,209,392.28
Totals, 1963	2,183	534,569	768,778,307		4,123,192	501,980	16,300		1,155	9,800		172,950	3,180	$26,194,611.24
Totals, 1962	1,991	437,864	616,956,200		15,700,256	439,058	12,696			10,442		272,000	220,930	$18,959,259.42
Totals, 1961	2,139	746,644	873,533,841		9,898,830	1,046,724	22,988		725	7,750		332,758	2,000	$22,599,089.53
Totals, 1960	2,138	612,482	687,324,482		7,190,459	397,328	20,934	32,849	425	17,850		850,000	1,870	$24,872,154.78
Totals, 1959	2,160	642,682	739,347,750		5,795,626	1,295,896	13,088	45,580		7,000		162,000	400	$29,823,289.07
Totals, 1958	2,145	617,467	682,221,469		8,696,222	958,690	11,822	35,334	100	13,300		20,900	900	$20,517,298.67
Totals, 1957	2,544	655,310	617,155,900		12,743,369	1,116,375	16,659	165,210		10,500	3,000	80,330		$24,680,864.98
Totals, 1956	2,859	870,171	802,425,430		13,600,600	799,427	12,214	150,581		3,200		71,360		$55,943,757.66
Ten-year average, 1956–65	2,205	610,863	724,513,105		8,663,447	723,440	17,791			10,454		300,776		$28,447,673.59

(67)

AVERAGE STUMPAGE PRICES, AS BID, BY SPECIES AND FOREST DISTRICTS, ON TIMBER SALES DURING 1965, PER HUNDRED CUBIC FEET LOG SCALE

Forest District	Douglas Fir			Cedar			Spruce			Hemlock			Balsam		
	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.
Vancouver (C.)	10,825	$14.92	$2.50–31.60	18,183	$6.61	$2.40–16.20	898	$7.32	$3.60–12.40	23,933	$7.43	$0.55–21.00	11,303	$6.33	$0.55–18.40
Vancouver (I.)	324	6.80	6.80	423	3.10	3.10	.....	.....	.....	139	7.90	7.90	4	2.50	2.50
Prince Rupert (C.)	3,102	9.31	3.80–14.00	3,900	7.41	2.80–17.00	2,481	7.84	3.10–17.30	5,412	10.36	2.90–18.60	325	3.74	2.80–10.90
Prince Rupert (I.)	.....	.....	.....	869	2.36	2.20– 2.50	9,346	2.17	0.20– 6.10	7,304	1.93	0.20– 4.20	10,860	1.02	0.20– 3.20
Prince George	10,059	5.58	0.25–10.10	93	2.25	2.25	116,197	3.69	0.40– 8.20	23	0.25	0.25	5,260	2.50	0.25– 3.80
Kamloops	111,359	4.22	0.60–10.10	4,079	2.43	0.25– 5.50	27,983	2.62	0.70– 9.00	2,337	2.76	0.25– 4.10	5,304	1.56	0.25– 3.00
Nelson	14,881	4.60	0.20– 9.10	15,841	2.89	0.20–10.05	30,844	3.21	0.25– 4.95	11,023	2.90	0.20– 5.70	11,534	1.89	0.30– 2.90
Totals for Province	150,550	$5.23	$0.20–31.60	43,388	$4.80	$0.20–17.00	187,749	$3.45	$0.20–17.30	50,171	$5.74	$0.20–21.00	44,590	$2.85	$0.25–18.40

Forest District	White Pine			Lodgepole Pine			Larch			Other Species			All Species		
	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.
Vancouver (C.)	76	$4.25	$3.00–14.60	21	$3.00	$3.00	.....	.....	.....	3,592	$5.45	$0.55–21.00	68,831	$8.11	$0.55–31.60
Vancouver (I.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	4.20	4.20	891	5.19	2.50– 7.90
Prince Rupert (C.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	83	3.97	2.80–13.80	15,303	8.82	2.80– 6.10
Prince Rupert (I.)	.....	.....	.....	7,022	1.90	0.20– 4.90	.....	.....	.....	195	2.83	0.20– 5.50	35,596	1.73	0.20– 6.10
Prince George	.....	.....	.....	32,084	3.23	0.40– 5.80	.....	.....	.....	888	1.99	0.25– 7.50	164,604	3.67	0.25–10.10
Kamloops	666	11.42	8.60–15.20	15,520	2.26	0.60– 7.40	652	$4.19	$2.40–10.00	4,641	2.80	0.60– 6.70	172,541	3.63	0.25–15.20
Nelson	2,580	13.10	0.25–16.70	3,217	2.85	0.30– 4.00	10,965	4.49	0.20– 9.70	809	2.65	0.20– 3.80	101,694	3.55	0.20–16.70
Totals for Province	3,322	$12.57	$0.25–16.70	57,864	$2.79	$0.20– 7.40	11,617	$4.47	$0.20–10.00	10,209	$3.66	$0.20–21.00	559,460	$4.20	$0.20–31.60

AVERAGE STUMPAGE PRICES RECEIVED, BY SPECIES AND FOREST DISTRICTS, ON SAW-TIMBER ON TREE-FARM LICENCE CUTTING PERMITS ISSUED IN 1965

Forest District	Douglas Fir			Cedar			Spruce			Hemlock			Balsam		
	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.
Vancouver	12,028	$14.73	$3.20–19.10	21,153	$9.05	$3.30–13.50	2,277	$7.49	$3.50–11.60	39,695	$8.30	$3.40–11.30	21,684	$7.21	$3.30– 9.70
Prince Rupert (C.)	.....	.....	.....	2,627	2.97	2.80– 3.90	6,011	4.09	2.90– 8.50	12,015	3.67	2.90– 8.80	1,056	2.60	2.60
Prince Rupert (I.)	.....	.....	.....	1,917	2.36	2.20– 2.80	1,980	2.42	2.20– 2.80	6,879	2.25	2.20– 2.70	1,693	2.03	2.00– 2.60
Prince George	1,496	2.68	0.90– 8.20	.....	.....	.....	10,968	2.79	1.30– 5.00	.....	.....	.....	610	1.65	0.90– 3.00
Kamloops	4,117	4.71	0.30– 8.10	38	2.37	1.80– 2.40	4,783	2.21	0.30– 3.80	15	3.40	3.40	745	1.15	0.30– 2.60
Nelson	3,395	4.32	0.25– 9.20	3,819	0.83	0.25– 3.90	7,452	2.35	0.70– 3.50	3,476	0.80	0.25– 4.40	1,409	1.40	0.25– 2.10
Totals for Province	21,036	$10.23	$0.25–19.10	29,554	$7.01	$0.25–13.50	33,471	$3.14	$0.30–11.60	62,080	$6.31	$0.25–11.30	27,197	$6.10	$0.25– 9.70

Forest District	White Pine			Lodgepole Pine			Larch			Other Species			All Species		
	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.	Volume M C.F.	Price per C C.F.	Price Range per C C.F.
Vancouver	336	$4.37	$2.60– 7.00	.....	.....	.....	.....	.....	.....	1,163	$5.68	$2.80–12.00	98,336	$8.94	$2.60–19.10
Prince Rupert (C.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,983	2.91	2.90– 3.10	25,692	3.54	2.80– 8.80
Prince Rupert (I.)	.....	.....	.....	53	$2.30	$2.00– 2.70	.....	.....	.....	214	3.00	3.00	12,736	2.28	2.00– 3.00
Prince George	.....	.....	.....	243	2.24	0.90– 4.50	.....	.....	.....	.....	.....	.....	13,317	2.71	0.90– 8.20
Kamloops	2	0.90	0.90	1,757	1.75	0.30– 3.50	256	$4.90	$2.00– 5.70	110	2.35	0.30– 2.40	11,823	3.00	0.30– 8.10
Nelson	933	9.38	0.25–16.40	498	1.98	0.50– 3.70	1904	4.43	0.25– 9.20	12	2.43	0.25– 3.60	22,898	2.55	0.25–16.40
Totals for Province	1,271	$8.04	$0.25–16.40	2,551	$1.85	$0.30– 4.50	2,160	$4.50	$0.25– 9.20	5,482	$3.49	$0.25–12.00	184,802	$6.12	$0.25–19.10

(69)

TIMBER CUT AND BILLED FROM TIMBER SALES, 1965

Forest District	Cubic Feet	Board-feet	Lineal Feet	Cords	Ties	Posts	Christmas Trees	Hop Poles	Stakes and Sticks	Car Stakes	Fence Rails, Palings	Anchor Blocks	Shingle Shakes	Shake Blanks
Vancouver	205,848,649	8,278,998	433,705	6,243	.....	4,468	.....	.....	.....	243	.....	.....	4,795,873	315,421
Prince Rupert (C.)	45,451,154	401	798,129	33	.....	.....	150	.....	.....	.....	.....	.....	.....	.....
Prince Rupert (I.)	48,774,018	.....	869,985	3,969	.....	.....	.....	.....	.....	3,950	.....	.....	.....	.....
Prince George	179,060,072	2,815,896	361,093	64	.....	45,501	.....	.....	.....	.....	.....	.....	.....	.....
Kamloops	162,172,232	1,433,030	1,815,582	2,951	.....	21,446	.....	.....	.....	959	.....	.....	.....	.....
Nelson	87,215,202	669,834	1,454,177	1,316	.....	128,602	448,235	.....	.....	4,302	.....	.....	.....	79,698
Totals, 1965	728,521,327	13,198,159	5,732,671	14,576	.....	200,017	448,385	.....	.....	9,454	.....	.....	4,795,873	395,119
Totals, 1964	729,684,953	42,643,124	5,840,321	19,047	.....	403,435	483,002	.....	.....	3,302	9,260	.....	6,379,921	728,183
Totals, 1963	713,287,016	51,131,178	7,811,867	15,217	1,913	500,287	485,637	.....	.....	5,643	88,721	.....	4,679,585	655,827
Totals, 1962	645,464,932	71,557,831	7,803,821	11,621	625	530,504	354,763	11,818	.....	6,210	29,840	.....	4,678,254	503,049
Totals, 1961	575,338,601	117,488,982	10,403,972	8,362	25,761	564,443	500,764	9,496	.....	6,873	.....	.....	4,622,529	776,010
Totals, 1960	574,578,669	95,002.548	9,065,920	9,071	97,639	504,996	397,353	35,800	.....	4,056	.....	.....	7,323,265	644,490
Totals, 1959	539,033,503	99,187,243	6,756,635	9,551	114,056	709,633	339,598	10,738	.....	2,448	.....	22	6,214,428	986,461
Totals, 1958	441,192,089	160,011,288	7,935,015	8,641	48,419	667,907	479,657	.....	.....	2,298	.....	18	3,546,527	922,900
Totals, 1957	392,306,642	281,403,429	25,475,664	44,489	304,329	844,246	562,658	3,360	9,335	11,640	.....	.....	11,618,566	3,890,503
Totals, 1956	423,459,495	501,950,576	11,426,509	13,529	308,076	607,528	268,945	.....	.....	1,954	.....	.....	5,943,124	1,040,496
Ten-year average, 1956–65	576,286,723	143,357,436	9,825,239	15,410	90,082	553,300	432,076	7,121	933	5,388	12,782	4	5,980,207	1,054,304

SAW AND SHINGLE MILLS OF THE PROVINCE, 1965

Forest District	Operating						Shut Down			
	Sawmills				Shingle-mills		Sawmills		Shingle-mills	
	Number	Estimated Eight-hour Daily Capacity, M B.F.	Number of Attached Chippers[1]	Number of Attached Barkers[1]	Number	Estimated Eight-hour Daily Capacity, M B.F.	Number	Estimated Eight-hour Daily Capacity, M B.F.	Number	Estimated Eight-hour Daily Capacity, M B.F.
Vancouver	151	7,984	89	69	43	766	54	166	---	---
Prince Rupert	144	2,040	8	8	---	------	49	233	3	15
Prince George	368	7,023	20	20	---	------	231	1,669	---	---
Kamloops	375	7,227	33	36	11	32	56	260	3	3
Nelson	153	3,367	11	11	9	22	88	575	3	8
Totals, 1965	1,191	27,641	161	144	63	820	478	2,903	9	26
Totals, 1964	1,417	28,865	97	82	61	680	513	3,035	6	18
Totals, 1963	1,541	29,339	---	---	69	1,003	502	3,490	9	65
Totals, 1962	1,627	28,234	---	---	33	591	512	3,217	14	92
Totals, 1961	1,778	29,025	---	---	60	917	559	3,613	9	49
Totals, 1960	1,938	29,432	---	---	44	950	558	3,381	17	93
Totals, 1959	2,005	28,280	---	---	65	1,138	587	3,975	6	23
Totals, 1958	2,010	27,694	---	---	56	1,141	586	4,007	9	37
Totals, 1957	2,255	26,752	---	---	58	1,390	514	3,124	10	121
Totals, 1956	2,435	29,080	---	---	66	1,381	390	2,013	8	15
Ten-year average, 1956-65	1,820	28,434	---	---	57	1,001	520	3,276	10	54

[1] Figures not available prior to 1964.

(71) EXPORT OF LOGS (IN F.B.M.), 1965

Species	Grade No. 1	Grade No. 2	Grade No. 3	Ungraded	Fuel-logs	Total
Fir	.....	97,405	126,818	.....	.....	224,223
Cedar	15,549	52,391	184,672	.....	32	252,644
Spruce	1,724,226	5,017,118	9,225,970	2,095,000	.....	18,062,314
Hemlock	727,595	3,082,723	18,011,529	.....	13,362	21,835,209
Balsam	.....	.....	.....	6,323,069	1,256	6,324,325
Lodgepole pine	.....	.....	515	.....	.....	515
Cypress	887,854	2,431,946	7,327,954	.....	.....	10,647,754
Hardwood	.....	.....	.....	617	.....	617
Cottonwood	.....	84,618	969,312	207,293	.....	1,261,223
Totals, 1965	3,355,224	10,766,201	35,846,770	8,625,979	14,650	58,608,824[1]
Totals, 1964	3,748,377	14,590,533	30,789,610	3,740,863	84,834	52,954,217
Totals, 1963	3,468,986	16,149,811	62,790,210	10,274,991	107,529	92,791,527
Totals, 1962	3,773,734	11,215,447	46,151,663	13,143,092	696,436	74,980,372
Totals, 1961	9,216,534	28,611,982	48,009,763	12,202,800	3,311,119	101,352,198
Totals, 1960	1,391,803	5,351,398	20,872,330	11,805,419	890,260	40,311,210
Totals, 1959	486,685	2,601,653	19,608,208	3,999,901	1,839,030	28,535,477
Totals, 1958	734,991	3,727,452	16,164,689	3,715,124	3,762,411	28,104,667
Totals, 1957	524,180	3,987,443	22,016,291	5,625,910	3,421,354	35,575,178
Totals, 1956	183,859	2,933,129	27,433,037	12,929,722	3,530,479	47,010,226
Ten-year average, 1956–65	2,688,437	9,993,505	32,968,257	8,606,380	1,765,810	56,022,390

[1] Of this total, 38,753,555 f.b.m. were exported from Crown-granted lands carrying the export privilege; 19,855,269 f.b.m. were exported under permit from other areas.

(72) SHIPMENTS OF POLES AND OTHER MINOR PRODUCTS, 1965

Forest District and Product	Quantity Exported	Approximate Value, F.O.B.	Where Marketed		
			Canada	United States	Other Countries
Vancouver—					
Poles lin. ft.	4,086,623	$2,338,724.22	3,265,039	348,055	473,529
Piling "	759,039	425,448.00	99,083	10,370	649,586
Stakes and sticks "	45,925	1,377.75	----	45,925	----
Cedar shakes pieces	25,911,110	2,159,250.00	89,010	25,705,100	117,000
Christmas trees "	23,257	52,328.25	----	23,257	----
Fence-posts "	2,300	690.00	----	2,300	----
Prince Rupert—					
Poles lin. ft.	3,161,475	1,201,360.50	1,264,590	1,896,885	----
Prince George—					
Poles lin. ft.	82,045	45,124.75	10,100	71,945	----
Piling "	3,475	3,231.75	3,475	----	----
Mine timbers "	1,891	406.00	----	1,891	----
Cedar posts pieces	19,592	5,877.60	19,592	----	----
Christmas trees "	941	1,882.00	----	941	----
Kamloops—					
Cedar poles lin. ft.	881,540	282,092.80	498,015	383,525	----
Poles and piling "	8,435	2,108.75	8,435	----	----
Posts cords	5	200.00	5	----	----
Christmas trees pieces	333,641	200,184.60	7,824	325,817	----
Nelson—					
Poles and piling lin. ft.	2,388,121	1,216,477.00	1,092,259	1,245,862	----
Mine timbers "	68,634	17,159.00	68,634	----	----
Palings and pickets "	447,464	4,475.00	21,198	426,266	----
Orchard-props "	29,050	872.00	----	29,050	----
Corral rails "	53,920	539.00	53,920	----	----
Fence-posts cords	1,491	52,185.00	862	629	----
Mine-props "	34	272.00	34	----	----
Cordwood "	8	128.00	8	----	----
Christmas trees pieces	1,173,066	791,069.00	187,691	985,375	----
Cedar shake blanks "	394,547	59,182.00	59,910	334,637	----
Hewn ties "	128	282.00	128	----	----
Total value, 1965	----	$8,862,926.97	----	----	----
Total value, 1964	----	$9,591,006.43	----	----	----

(73) SUMMARY OF EXPORT OF MINOR PRODUCTS FOR PROVINCE, 1965

Product	Quantity	Value	Per Cent of Total Value
Poles lin. ft.	8,211,683	$3,867,302.27	43.6346
Piling "	762,514	428,679.75	4.8368
Other poles and piling "	2,346,556	1,218,585.75	13.7493
Mine timbers "	70,525	17,565.00	0.1982
Palings and pickets "	447,464	4,475.00	0.0505
Stakes and sticks "	45,925	1,377.75	0.0155
Orchard-props "	29,050	872.00	0.0098
Corral rails "	53,920	539.00	0.0061
Cedar shakes pieces	25,911,110	2,159,250.00	24.3627
Shake blanks "	394,547	59,182.00	0.6677
Christmas trees "	1,521,446	1,045,463.85	11.7959
Fence-posts "	21,892	6,567.60	0.0741
Hewn ties "	128	282.00	0.0032
Fence-posts cords	1,496	52,385.00	0.5911
Mine-props "	34	272.00	0.0031
Cordwood "	8	128.00	0.0014
Total value	----	$8,862,926.97	100.0000

(74) TIMBER MARKS ISSUED, 1956–65

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	10-year Average, 1956–65
Old Crown grants	480	320	215	299	315	268	300	313	356	328	319
Crown grants, 1887–1906	207	108	93	103	115	121	150	125	148	150	132
Crown grants, 1906–1914	172	97	93	125	123	121	164	161	164	172	139
Section 58, *Forest Act*	655	460	362	524	517	470	589	608	672	649	551
Stumpage reservations	82	59	89	108	116	117	109	141	149	133	110
Pre-emptions	6	1	——	——	1	3	9	13	7	8	5
Timber berths	10	7	7	9	4	4	12	12	9	14	9
Indian reserves	46	23	9	21	15	8	20	18	27	24	21
Timber sales	2,859	2,239	1,900	1,926	2,136	2,141	1,991	2,183	2,281	1,614	2,127
Special marks and rights-of-way	71	74	80	85	113	91	90	97	121	153	98
Pulp leases	1	1	7	1	1	5	5	.....	.....	3	2
Pulp licences	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
Totals	4,589	3,389	2,855	3,201	3,456	3,349	3,441	3,671	3,934	3,248	3,513
Transfers and changes of marks	873	615	598	669	794	691	809	725	802	740	732

(81) GRAZING PERMITS ISSUED

District	Number of Permits Issued	Number of Stock under Permit		
		Cattle	Horses	Sheep
Kamloops	1,316	144,555	3,708	9,157
Nelson	502	22,743	1,302	1,044
Prince George	394	20,869	1,637	2,308
Vancouver	6	172	30	.....
Totals, 1965	2,218	188,339	6,677	12,509
Totals, 1964	2,104	173,677	6,231	22,478
Totals, 1963	1,951	158,840	5,860	25,366
Totals, 1962	1,924	146,830	5,007	23,370
Totals, 1961	1,825	132,749	4,985	21,309
Totals, 1960	1,726	127,148	4,504	19,460
Totals, 1959	1,683	124,425	4,377	20,604
Totals, 1958	1,571	122,489	4,169	20,927
Totals, 1957	1,640	128,978	3,886	20,693
Totals, 1956	1,776	127,182	3,667	22,310

(91) FOREST ROAD PROGRAMME, 1965

Project	Regulation Unit	Reconnaissance	Location	Construction
		Miles	Miles	Miles
Vancouver Forest District				
Clowhom Lake	Quadra P.S.Y.U.	8	----	----
Gold Fiver F.R.	Nootka P.S.Y.U.	----	24.0	7.2
Homathko River	Quadra P.S.Y.U.	1	----	----
Joffre Creek	Soo P.S.Y.U.	----	10.0	----
Lillooet River	Soo P.S.Y.U.	43	----	----
Maimen Creek	Dewdney P.S.Y.U.	3	----	----
West Harrison F.R.	Dewdney P.S.Y.U.	----	1.3	0.4
Prince Rupert Forest District				
Bell-Irving	Bell-Irving P.S.Y.U.	37	----	----
Blunk Creek F.D.R.	Smithers P.S.Y.U.	----	----	0.3
Fiddler Creek	Skeena P.S.Y.U.	----	12.2	----
Hankin Lookout	Smithers P.S.Y.U.	----	17.6	----
Kispiox River F.D.R.	Skeena P.S.Y.U.	19	----	12.0
Kitwanga F.R.	Skeena P.S.Y.U.	----	22.0	----
Kwinnamass	Hecate P.S.Y.U.	5	----	----
Owikeno Lake F.D.R.	Rivers Inlet P.S.Y.U.	----	----	4.6
Skeena	Skeena P.S.Y.U.	48	----	----
Prince George Forest District				
McLeod–Tsilcoh North F.R.	Carp P.S.Y.U.	----	15.9	----
Parsnip West F.D.R.	Finlay P.S.Y.U.	----	11.8	11.8
Kamloops Forest District				
Ashnola River F.D.R.	Ashnola P.S.Y.U.	----	----	4.2
Cayoosh Creek F.D.R.	Yalakom P.S.Y.U.	----	----	6.5
Chilcotin South F.R.	Stum P.S.Y.U.	----	16.0	----
Deception Creek	Lac la Hache P.S.Y.U.	33	----	----
East Barriere F.D.R.	Barriere P.S.Y.U.	----	----	0.6
Joffre Creek F.R.	Yalakom P.S.Y.U.	----	6.3	----
McNulty–Shinnish	Similkameen P.S.Y.U.	6	----	----
	Ashnola P.S.Y.U.	19	----	----
	Okanagan P.S.Y.U.	6	----	----
Minch–Maiden F.R.	Big Bar P.S.Y.U.	----	13.3	----
North Barriere F.D.R.	Barriere P.S.Y.U.	----	----	1.6
Quesnel Lake	Quesnel Lake P.S.Y.U.	112	----	----
Scottie–Hihium F.R.	Big Bar P.S.Y.U.	----	15.5	----
Spius–Prospect	Nicola P.S.Y.U.	70	----	----
Nelson Forest District				
Akolkolex River F.D.R.	Arrowhead P.S.Y.U.	----	----	1.0
Albert Creek	Arrowhead P.S.Y.U.	8	----	----
Beaverfoot	Kinbasket P.S.Y.U.	3	----	----
Blackfoot–Quinn	Upper Kootenay P.S.Y.U.	15	----	----
	Cranbrook P.S.Y.U.	16	----	----
Flathead–Sage F.D.R.	Fernie P.S.Y.U.	----	15.6	4.5
Greely Creek	Arrowhead P.S.Y.U.	----	8.6	----
Jumping Creek	Arrowhead P.S.Y.U.	7	----	----
Kettle River F.D.R.	Kettle P.S.Y.U.	36	----	9.2
Twin Creek	Arrowhead P.S.Y.U.	9	----	----
Worthington–Burrell Creek	Granby P.S.Y.U.	----	20.6	----
Totals, 1965 programme		504	210.7	63.9
Previous works		4,357	2,122.4	854.6
Totals, forest road programme, 1950–65		4,861	2,333.1	918.5

F.D.R.=Forest-development road. F.R.=Forest road. P.S.Y.U.=Public sustained-yield unit.

(92) FOREST SERVICE MECHANICAL EQUIPMENT, 1965

Type	Total Units, Jan. 1, 1965	Removed from Service	New Purchases	Total Units, Jan. 1, 1966
Sedans	50	4	5	51
Station wagons and sedan deliveries	115	31	22	106
Panel deliveries	73	8	10	75
Four-wheel-drive passenger types	127	15	19	131
Four-wheel-drive pick-ups and panel deliveries	283	50	51	284
5,000–10,000 G.V.W. pick-ups, ½ and 1 ton	179	15	32	196
14,000–24,000 G.V.W. trucks, 2, 3, and 4 tons	54	4	5	55
24,000–40,000 G.V.W. heavy-duty trucks	5	2	2	5
Fire-fighting tank trucks	2	.....	.....	2
Total vehicles	888	129	146	905
Trail motor-cycles	65	.....	28	93
Tractors	43	12	8	39
Snow and muskeg tractors (personnel-carriers)	10	1	.....	9
Snow toboggans—various types	2	.....	3	5
Graders	18	1	3	20
Scrapers—self-propelled	4	.....	.....	4
Scrapers—not self-propelled	2	.....	.....	2
Shovels—power	2	.....	1	3
Loaders—self-propelled	3	.....	2	5
Outboard motors	406	23	33	416
Fire-pumps—various	772	44	32	760
Fire-pumps—portable tanker	125	.....	.....	125
Bean fire-fighting units—high pressure	34	.....	.....	34
Borate mixer pumps	10	.....	3	13
Pumps—water supply	62	.....	15	77
Chain saws	377	69	126	434
Lighting plants	103	.....	6	109
Speeders—railway	13	.....	.....	13
Trailers—low and high bed	8	1	1	8
Trailers—dwelling and bunk-house	163	5	10	168
Trailers—miscellaneous	284	3	8	289
Air-compressors	11	.....	4	15
Range-land drill	1	.....	.....	1
Rock drills—gas-powered	8	.....	.....	8
Crushing plants	1	.....	.....	1
Mechanical wheelbarrows	20	.....	.....	20
Welders	12	.....	.....	12
Cement-mixers	7	.....	.....	7
Augers—power, planting	3	.....	.....	3
Snow-ploughs—walking	.....	.....	1	1
Rollers—compaction	4	.....	.....	4
Fork-lift trucks	2	.....	.....	2

(101) FOREST-PROTECTION EXPENDITURE BY THE FOREST SERVICE FOR THE FISCAL YEAR 1964/65

Travelling expense	$29,675.32
Clothing and uniforms	34,688.12
Equipment rental (aircraft)	605,293.88
Equipment and machinery	437,022.71
Maintenance of bulidings and grounds	284,545.07
Maintenance and operation of equipment	328,137.19
Acquisition or construction of buildings and works	229,744.29
Motor-vehicles and accessories	119,559.63
Incidentals and contingencies	20,646.77
Slash and snag disposal	55,901.03
Wages and expenses, seasonal staff	1,529,134.72
Increased protection, Peace River	176,193.99
Insect control	18,766.66
Total	$3,869,309.38
Fire-suppression expenditure by the Forest Service for the fiscal year 1964/65	$129,242.02

(102) REPORTED APPROXIMATE EXPENDITURE IN FOREST PROTECTION BY OTHER AGENCIES,[1] 1965

Forest District	Expenditures				
	Patrols and Fire Prevention	Tools and Equipment	Fires	Improvements	Total
Vancouver	$123,128	$522,905	$673,770	$78,200	$1,398,003
Prince Rupert	85,000	72,000	379,000	38,500	574,500
Prince George	8,900	27,800	53,761	14,200	104,661
Kamloops	1,600	10,500	36,461	6,500	55,061
Nelson	18,223	59,887	102,816	97,636	278,562
Totals	$236,851	$693,092	$1,245,808	$235,036	$2,410,787
Ten-year average, 1956–65	$334,094	$504,281	$454,250	$327,673	$1,620,298

[1] Principally forest industry.

(103) FIRE OCCURRENCES BY MONTHS, 1965

Forest District	March	April	May	June	July	August	September	October	Total	Per Cent
Vancouver[1]	4	4	48	155	204	95	82	5	597	22.2
Prince Rupert	----	8	36	39	124	126	83	4	420	15.6
Prince George	----	5	80	86	104	98	14	1	388	14.5
Kamloops[2]	3	22	182	148	297	125	30	14	821	30.6
Nelson	----	16	37	38	272	78	12	6	459	17.1
Totals	7	55	383	466	1,001	522	221	30	2,685	100.0
Per cent	0.3	2.0	14.3	17.4	37.3	19.4	8.2	1.1	100.0	----
Ten-year average, 1956–65	33	92	330	290	667	507	157	30	2,106	----
Per cent	1.6	4.4	15.6	13.8	31.6	24.1	7.5	1.4	100.0	----
Railroad-tie fires	----	----	518	529	840	914	373	19	3,193	----

[1] Excludes 2,922 railroad-tie fires.
[2] Excludes 271 railroad-tie fires.

(104) NUMBER AND CAUSES OF FOREST FIRES, 1965

Forest District	Lightning	Recreational (Campers, etc.)	Railroads Operating	Smokers	Brush-burning (Not Railway or Right-of-way Clearing)	Range-burning	Road and Power-, Telephone-, and Pipe-line Construction	Industrial Operations (Logging, etc.)	Incendiary	Miscellaneous Known Causes	Unknown Causes	Total	Per Cent of Total Fires in Province
Vancouver[1]	67	132	17	129	23	----	5	92	15	101	16	597	22.1
Prince Rupert	188	54	11	41	12	1	30	35	1	43	4	420	15.5
Prince George	162	40	9	22	26	41	19	22	6	38	3	388	14.4
Kamloops[2]	276	68	28	88	20	150	33	55	----	93	10	821	31.0
Nelson	307	21	24	30	8	1	2	19	2	34	11	459	17.0
Totals	1,000	315	89	310	89	193	89	223	24	309	44	2,685	100.0
Per cent	37.2	11.7	3.4	11.5	3.4	7.2	3.4	8.3	0.9	11.4	1.6	100.0	----
Ten-year average, 1956–65	777	222	112	256	84	111	40	162	40	243	59	2,106	----
Per cent	36.9	10.5	5.3	12.2	4.0	5.3	1.9	7.7	1.9	11.5	2.8	100.0	----
Railroad-tie fires	----	----	3,193	----	----	----	----	----	----	----	----	3,193	----

[1] Excludes 2,922 railroad-tie fires.
[2] Excludes 271 railroad-tie fires.

(105) NUMBER AND CAUSES OF FOREST FIRES FOR THE LAST 10 YEARS

Causes	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	Total
Lightning	497	307	1,150	184	1,166	1,426	615	1,144	277	1,000	7,766
Recreational (campers, etc.)	214	170	296	172	241	269	182	221	144	315	2,224
Railroads operating[1]	135	85	162	88	245	154	41	65	51	89	1,115
Smokers	281	182	478	211	257	336	162	220	129	310	2,566
Brush-burning (not railway or right-of-way clearing)	112	65	120	75	82	86	60	82	66	89	837
Range-burning	47	48	131	190	87	179	62	95	79	193	1,111
Road and power-, telephone-, and pipe-line construction	73	46	18	30	36	36	35	24	11	89	398
Industrial operations (logging, etc.)	183	107	246	204	137	194	109	141	81	223	1,625
Incendiary	27	22	53	34	54	49	25	62	45	24	395
Miscellaneous known causes	213	172	310	253	271	290	183	250	178	309	2,429
Unknown causes	73	45	94	33	59	83	62	41	59	44	593
Totals	1,855	1,249	3,058	1,474	2,635	3,102	1,536	2,345	1,120	2,685	21,059
Railroad-tie fires	955	370	1,062	536	1,478	1,489	2,479	528	365	3,193	12,455

[1] Excludes 12,455 railroad-tie fires.

(106)

FIRES CLASSIFIED BY SIZE AND DAMAGE, 1965

Forest District	Total Fires		Under ¼ Acre			¼ to 10 Acres			Over 10 to 500 Acres			Over 500 Acres in Extent			Damage		
	Number	Per Cent of Total Fires in Province	Number	Per Cent of Total Fires in District	Per Cent of Total Fires in This Class	Number	Per Cent of Total Fires in District	Per Cent of Total Fires in This Class	Number	Per Cent of Total Fires in District	Per Cent of Total Fires in This Class	Number	Per Cent of Total Fires in District	Per Cent of Total Fires in This Class	Under $100	Between $100 and $1,000	Over $1,000
Vancouver[1]	597	22.2	400	67.0	23.8	140	23.5	19.6	48	8.0	19.8	9	1.5	20.9	515	27	55
Prince Rupert	420	15.6	266	63.0	15.8	102	24.0	14.2	44	11.0	18.0	8	2.0	18.6	362	28	30
Prince George	388	14.5	182	47.0	10.8	122	31.0	17.1	61	16.0	25.0	23	6.0	53.5	320	38	30
Kamloops[2]	821	30.6	453	55.2	26.9	291	35.4	40.6	74	9.0	30.3	3	0.4	7.0	635	153	33
Nelson	459	17.1	381	83.0	22.7	61	13.3	8.5	17	3.7	6.9	.....	.....	0.0	438	13	8
Totals	2,685	100.0	1,682	.....	100.0	716	.....	100.0	244	.....	100.0	43	.....	100.0	2,270	259	156
Per cent	100.0	.....	62.6	.....	.....	26.7	.....	.....	9.1	.....	.....	1.6	.....	.....	84.5	9.6	5.9
Ten-year average, 1956–65	2,106	.....	1,273	.....	.....	568	.....	.....	206	.....	.....	59	.....	.....	1,844	147	115
Per cent	100.0	.....	60.4	.....	.....	27.0	.....	.....	9.8	.....	.....	2.8	.....	.....	87.6	7.0	5.4
Railroad-tie fires	3,139	.....	3,139	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[1] Excludes 2,922 railroad-tie fires.
[2] Excludes 217 railroad-tie fires.

(107) DAMAGE TO PROPERTY OTHER THAN FORESTS, 1965[1]

Forest District	Forest Products Cut, Logs, Lumber, etc.	Buildings	Railway, Logging, and Sawmill Equipment	Miscellaneous	Total	Per Cent of Total
Vancouver	$206,747	$13,000	$147,594	$11,360	$378,701	66.8
Prince Rupert	20,139	1,172	23,150	25,550	70,011	12.3
Prince George	52,858	27,500	19,580	9,334	109,272	19.3
Kamloops	1,530	125	----------	74	1,729	0.3
Nelson	3,647	1,800	2	2,000	7,449	1.3
Totals	$284,921	$43,597	$190,326	$48,318	$567,162	100.0
Per cent	50.2	7.7	33.6	8.5	100.0	-----
Ten-year average, 1956–65	$112,117	$36,296	$190,542	$28,433	$367,388	-----
Per cent	30.6	9.9	51.8	7.7	100.0	-----

[1] Does not include intentional slash burns (for this item *see* Table 121).

(108) DAMAGE TO FOREST-COVER CAUSED BY FOREST FIRES, 1965—PART 1[1]

Forest District	Merchantable Timber				Immature Timber	
	Net Area Killed	Total Volume Killed	Salvable Volume of Timber Killed	Net Stumpage Loss	Net Area Killed	Present Value
	Acres	M Cu. Ft.	M Cu. Ft.	$	Acres	$
Vancouver	4,900	37,164	28,815	610,832	3,745	174,017
Prince Rupert	30,124	24,305	6,406	1,130,291	43,503	1,099,338
Prince George	28,977	47,147	2,428	907,449	38,240	811,770
Kamloops	2,068	4,739	3,191	105,128	3,039	60,333
Nelson	452	1,230	32	29,133	219	8,319
Totals	66,521	114,585	40,872	2,782,833[2]	88,746	2,153,777[2]
Per cent	21.6	100.0	35.7	53.5	28.9	41.4
Ten-year average, 1956–65	65,604	94.274	31,044	1,548,451	65,853	1,379,807
Per cent	13.7	100.0	32.9	47.1	13.7	42.0

[1] Does not include intentional slash burns (for this item *see* Table 121).

[2] The dollar value of losses in merchantable and immature timber represents only stumpage loss to the Crown. Actual payroll loss to the Province is ten times these figures.

(108, Part II)

DAMAGE TO FOREST-COVER CAUSED BY FOREST FIRES, 1965—PART II[1]

Forest District	Not Satisfactorily Restocked				Non-commercial Cover		Grazing or Pasture Land		Non-productive Sites		Grand Totals		
	Logged, Not Burned	Logged and Burned	Old Burn (Not Logged)	Damage	Area Burned	Damage	Area Burned	Damage	Area Burned	Damage	Area	Quantity	Damage
	Acres	Acres	Acres	$	Acres	$	Acres	$	Acres	$	Acres	M Cu. Ft.	$
Vancouver	3,098	645	80	31,654	2,728	765	21	2	1,558	387	16,775	37,164	817,657
Prince Rupert	2,507	96	2	36,539	7,466	2,900	74	4	3,238	803	87,010	24,305	2,269,875
Prince George	2,857	1	9,243	135,100	87,665	21,857	13,816	680	12,277	3,043	193,076	47,147	1,879,899
Kamloops	1,231	34	101	21,929	911	121	1,161	60	236	50	8,781	4,739	187,621
Nelson	24	102	5	1,809	616	154	61	3	11	3	1,490	1,230	39,421
Totals	9,717	878	9,431	227,031	99,386	25,797	15,133	749	17,320	4,286	307,132	114,585	5,194,473
Per cent	3.2	0.3	3.1	4.4	32.3	0.5	5.0	0.1	5.6	0.1	100.0	100.0	100.0
Ten-year average, 1956–65	12,930	1,058	23,630	279,981	220,692	55,388	12,618	1,760	77,140	17,396	479,525	94,274	3,282,783
Per cent	2.7	0.2	5.0	8.6	46.0	1.6	2.6	0.1	16.1	0.6	100.0	100.0	100.0

[1] Does not include intentional slash burns (for this item *see* Table 121).

(109)

FIRE CAUSES, AREA BURNED, FOREST SERVICE COST, AND TOTAL DAMAGE, 1965

Cause	Fire Causes		Area Burned		Forest Service Cost		Total Damage	
	Number	Per Cent	Acres	Per Cent	Cost	Per Cent	Damage	Per Cent
Lightning	1,000	37.2	257,634	83.8	1,737,982	68.4	4,178,867	72.6
Recreational (campers, etc.)	315	11.7	4,883	1.6	89,016	3.5	74,655	1.3
Railroads operating[1]	89	3.4	404	0.1	4,607	0.2	21,714	0.3
Smokers	310	11.5	3,325	1.2	53,925	2.1	105,262	1.8
Brush-burning (not railway or right-of-way clearing)	89	3.4	404	0.1	8,046	0.3	13,315	0.2
Range-burning	193	7.2	15,006	4.8	37,211	1.5	27,077	0.5
Road and power-, telephone-, and pipe-line construction	89	3.4	420	0.1	34,140	1.3	13,807	0.2
Industrial operations (logging, etc.)	223	8.3	17,545	5.7	240,049	9.5	1,128,375	19.6
Incendiary	24	0.9	48	0.1	1,632	0.1	639	0.1
Miscellaneous known causes	309	11.4	6,629	2.2	291,931	11.5	190,664	3.3
Unknown causes	44	1.6	834	0.3	41,241	1.6	7,260	0.1
Totals	2,685	100.0	307,132	100.0	2,539,780	100.0	5,761,635	100.0

[1] Excludes 3,193 railroad-tie fires.

(110) COMPARISON OF DAMAGE CAUSED BY FOREST FIRES IN LAST 10 YEARS

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	Total, 10 Years
Total number of fires[1]	1,855	1,249	3,058	1,474	2,635	3,102	1,536	2,345	1,120	2,685	21,059
Area burned (acres)	469,648	66,724	2,065,423	273,631	285,820	1,227,159	45,617	46,346	7,746	307,132	4,795,246
Standing timber destroyed or damaged (M cu. ft.)	10,192	1,278	358,149	8,481	122,293	315,532	3,972	7,953	306	114,585	942,741
Amount salvable (M cu. ft.	4,564	391	98,517	2,110	40,010	119,223	1,279	3,357	117	40,872	310,440
Damage to forests	$1,058,469	$123,032	$7,917,235	$1,342,849	$3,725,361	$12,820,694	$311,445	$308,475	$25,793	$5,194,473	$32,827,826
Damage to other forms of property	372,803	130,204	408,183	869,569	299,657	368,476	280,700	225,797	151,338	567,162	3,673,889
Total damage	$1,431,272	$253,236	$8,325,418	$2,212,418	$4,025,018	$13,189,170	$592,145	$534,272	$177,131	$5,761,635	$36,501,715

[1] Excludes 12,455 railroad-tie fires (*see* Table 105).

FIRES CLASSIFIED BY FOREST DISTRICT AND COST PER FIRE OF FIRE-FIGHTING, 1965

Forest District	Total Fires	Total Forest Service Cost			Extinguished without Cost			Cost Money to Extinguish							
		Dollars	Per Cent	Average Expenditure per Cost Fire (Dollars)	Number	Per Cent of Total Fires in District	Per Cent of Total Fires in Province	Number	Per Cent of Total Fires in District	Per Cent of Total Fires in Province	Cost Less than $100 per Fire	Cost $100 to $1,000 per Fire	Cost over $1,000 to $5,000 per Fire	Cost over $5,000 to $10,000 per Fire	Cost over $10,000 per Fire
Vancouver[1]	597	236,535	9.3	1,383.25	174	29.1	6.5	423	70.9	15.7	230	117	40	17	19
Prince Rupert	420	821,000	32.3	2,639.87	109	26.0	4.1	311	74.0	11.6	102	135	45	11	18
Prince George	388	1,000,315	39.4	4,203.00	87	22.2	3.2	301	77.8	11.2	118	115	43	8	17
Kamloops[2]	821	342,203	13.5	1,024.56	362	44.1	13.5	459	55.9	17.1	273	153	26	2	5
Nelson	459	139,727	5.5	735.41	126	27.5	4.7	333	72.5	12.4	159	152	18	1	3
Totals	2,685	2,539,780[3]	100.0	2,041.62	858	.....	32.0	1,827	.....	68.0	882	672	172	39	62
Per cent	100.0	.....	.....	.....	32.0	.....	.....	68.0	.....	.....	32.8	25.0	6.4	1.5	2.3
Ten-year average, 1956–65	2,106	1,855,938	.....	.....	733	.....	.....	1,373	.....	.....	753	442	114	24	40
Per cent	100.0	.....	.....	.....	34.8	.....	.....	65.2	.....	.....	35.8	21.0	5.4	1.1	1.9

[1] Excludes 2,922 railroad-tie fires.
[2] Excludes 271 railroad-tie fires.
[3] Cost correct to date subject to later revision.
Cost to other parties (901 cost fires), $1,245,808. Cost to Forest Service (1,244 cost fires), $2,539,780.
Detailed final costs are published one year in arrears in the table "Forest-protection Expenditures" in each Annual Report.

(112)

PROSECUTIONS, 1965

Forest District	Information Laid	Burning without Permit	Refusing to Render Assistance in Fire-fighting	Contravening a Forest Closure	Failing to Maintain Proper Fire-protection Equipment	Failing to Control and Extinguish Fire	Failing to Fall Snags and Remove Debris in Accordance with Regulations	Miscellaneous Offences	Fines		Served Sentence in Gaol	Suspended Sentence	Cases Dismissed	Cases Withdrawn
									Number	Amount				
Vancouver	7	—	1	1	2	—	—	3	7	$250	—	—	—	—
Prince Rupert	12	2	9	—	1	—	—	—	11	410	—	—	1	—
Prince George	4	1	3	—	—	—	—	—	4	100	—	—	—	—
Kamloops	7	2	—	—	4	—	—	1	7	200	—	—	—	—
Nelson	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals	30	5	13	1	7	—	—	4	29	$960	—	—	1	—
Ten-year average, 1956–65	48	15	15	8	6	1	1	2	43	$1,282	1	1	3	2

(113) CONTRACT FLYING, 1965

FIXED-WING AIRCRAFT

Forest District	Base	Type of Aeroplane	Hours Flown
Vancouver	Vancouver	Beaver	558
Prince Rupert	Smithers	Super Cub	835
Prince George	Prince George and Dawson Creek	Otter, Cessna, Super Cub	1,302
Kamloops	Kamloops	Super Cub, Beaver	1,582
Nelson	Nelson	Beaver	401
Total			4,678

HELICOPTERS

Forest District	Base	Type of Helicopter	Hours Flown
Vancouver	Vancouver and Campbell River	Hillers 12E	495
Prince Rupert	Smithers	Hillers 12E	511
Prince George	Prince George and Fort St. John	Hillers 12E	2,035
Kamloops	Kamloops and Williams Lake	Bell 47G3	618
Nelson	Nelson and Cranbrook	Bell G3B, Hillers 12E	567
Total			4,226

AIR TANKERS

Forest District	Base	Type of Aeroplane	Hours Flown
Prince Rupert	Smithers and Prince George	Avenger and Canso	386
Prince George	Prince George	Canso	357
Kamloops	Kamloops	Avenger and Cessna	450
Nelson	Cranbrook	Avenger and Cessna	177
Total			1,370

(114) USE OF AIRCRAFT IN FIRE-FIGHTING (NON-CONTRACT), 1965

FIXED-WING AIRCRAFT

Forest District	Reconnaissance		Transportation of Men and Supplies		Water Bombing		Total	
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Vancouver	48	$3,334	----	----	----	----	48	$3,334
Prince Rupert	387	19,560	1,420	$101,166	153	$35,545	1,960	156,271
Prince George	587	32,423	380	28,496	113	27,470	1,080	88,389
Kamloops	1	10	8	597	----	----	9	607
Nelson	40	1,655	----	----	----	----	40	1,655
Totals	1,063	$56,982	1,808	$130,259	266	$63,015	3,137	$250,256

HELICOPTERS

Vancouver	13	$1,516	78	$8,565	2	$150	93	$10,231
Prince Rupert	56	5,692	725	74,059	73	8,085	854	87,836
Prince George	16	1,857	551	77,911	----	----	567	79,768
Kamloops	----	----	53	7,732	----	----	53	7,732
Nelson	----	----	41	5,265	----	----	41	5,265
Totals	85	$9,065	1,448	$173,532	75	$8,235	1,608	$190,832

(115) ANALYSIS OF SUPPRESSION-CREW FIRE-FIGHTING ACTIVITIES, 1965

Size of Fire When Attacked	Number of Fires	Subsequent Spread (by Number of Fires)				
		¼ Acre or Less	Over ¼ Acre to 1 Acre	Over 1 Acre to 5 Acres	Over 5 Acres to 50 Acres	Over 50 Acres
Spot (up to ¼ acre)	166	157	8	1	---	---
Over ¼ acre and up to 1 acre	44	6	32	5	1	---
Over 1 acre and up to 5 acres	58	1	4	43	10	---
Over 5 acres and up to 50 acres	42	---	---	3	34	5
Over 50 acres	6	---	---	---	---	6
Totals	316	164	44	52	45	11

(116) CONSTRUCTION OF PROTECTION ROADS AND TRAILS, 1965

	Light	Medium	Heavy	Total
	Miles	Miles	Miles	Miles
New road construction	28	82	59	169
Road maintenance	413	410	154	977
Totals, road construction and maintenance	441	492	213	1,146
New trail construction	16	19	20	55
Trail maintenance	76	22	13	111
Totals, trail construction and maintenance	92	41	33	166

(117) SUMMARY OF SNAG-FALLING, 1965, VANCOUVER FOREST DISTRICT

		Acres
Total area logged, 1965, Vancouver Forest District		99,694
Logged in small exempted operations[1]	325	
Assessed for non-compliance, less 210 acres subsequently felled	383	
		708
Balance logged acres snagged, 1965		98,986
Snags felled, 1965, by Forest Service Protection Division	5,997	
Snags felled, 1965, by Forest Service Reforestation Division	480	
		6,477
Total area snagged, 1965		105,463

[1] Exemption granted under subsection (3) of section 116 of the *Forest Act*.

(118) SUMMARY OF LOGGING SLASH REPORTED IN 1965, VANCOUVER FOREST DISTRICT

		Acres
Total area logged, 1965		99,694
Area covered by full hazard reports	65,400	
Covered by snag reports but exempted from slash disposal	11,456	
Covered by acreage reports only (exempted from slash and snag disposal)[1]	325	
		77,181
Slash created and not reported in 1965		22,513

[1] Exemption granted under subsection (3) of section 116 of the *Forest Act*.

(119) ACREAGE ANALYSIS OF SLASH DISPOSAL REQUIRED, 1965, VANCOUVER FOREST DISTRICT

	Acres of Slash		
	Prior to 1965	1965[1]	Total Acres
Broadcast burning	27,725	35,575	63,300
Spot burning	631	1,469	2,100
Totals	28,356	37,044	65,400

1965 reports not recommending slash disposal	11,456	
1965 slash on very small operations exempted without special examination	325	
		11,781
Total area of slash dealt with, 1965		77,181

[1] Does not include the estimated 22,513 acres (*see* Table 120) created too late to be dealt with in 1965.

ANALYSIS OF PROGRESS IN SLASH DISPOSAL, 1965, VANCOUVER FOREST DISTRICT

(120)

	Acres
Total disposal required (*see* Table 119)	65,400

Type of Disposal	Acres of Slash Prior to 1965	Acres of Slash 1965	Total Acres	
Spring broadcast burning	613	366	979	
Spring spot burning	37	211	248	
Fall broadcast burning	49,658	30,930	80,588	
Fall spot burning	1,929	904	2,833	
Total burning completed	52,237	32,411	84,648	
Burning by accidental fires			3,098	
Lopping, scattering, land-clearing, etc.			*Nil*	
Total				87,746
Balance reported slash not yet abated				
Slash created, 1965, acres assessed				207
Plus slash created too late to be dealt with, 1965				22,513
Total area of slash carried over to 1966 for disposition				22,720

Actual area burned in spring spot burning, 31 acres.

Actual area burned in fall spot burning, 423 acres.

The above figures do not include 1964 slash-burn reports received too late for inclusion in 1964 Annual Report, 4,194 acres.

SUMMARY OF SLASH-BURN DAMAGE AND COSTS, 1965, VANCOUVER FOREST DISTRICT

(121)

Total acres of forest-cover burned in slash fires, 1965	14,471
Net damage to forest-cover	$162,984.32
Net damage to cut products	90,553.15
Net damage to equipment and property	23,500.00
Total damage	$277,037.47

Cost of Slash Burning as Reported by Operators

	Total Cost	Acres	Cost Per M B.F.	Cost Per Acre
(*a*) Spring broadcast burning	$6,270.00	979	$0.16	$6.40
(*b*) Spring spot burning	685.00	248	.09	2.76
(*c*) Fall broadcast burning	429,160.27	80,588	.13	5.33
(*d*) Fall spot burning	10,957.09	2,833	.13	3.87

ENROLMENT AT ADVANCED COURSE, FOREST SERVICE TRAINING-SCHOOL, 1965

(131)

Forest District	Forest Assistants, Cruisers, Etc.	Rangers	Acting Rangers	Assistant Rangers	Clerks	Total	Graduates
Vancouver	—	—	—	—	—	—	—
Prince Rupert	—	—	—	—	—	—	—
Prince George	—	—	—	—	—	—	—
Kamloops	—	—	—	—	—	—	—
Nelson	—	—	—	—	—	—	—
Attendance, 1965	—	—	—	—	—	—	—
Attendance, 1964	5	—	—	15	—	20	20
Attendance, 1963	5	—	—	15	—	20	—
Attendance, 1962	3	—	—	17	—	20	20
Attendance, 1961	3	—	—	17	—	20	—
Attendance, 1960	4	—	—	17	—	21	21
Attendance, 1959	4	—	—	17	—	21	—
Attendance, 1959	—	—	—	21	—	21	21
Attendance, 1958	—	—	—	21	—	21	—
Attendance, 1957	4	—	—	26	—	30	30
Attendance, 1956	4	—	—	26	—	30	—
Attendance, 1956	3	—	—	18	—	21	21
Attendance, 1955	3	—	—	18	—	21	—
Attendance, 1954	—	—	—	20	—	20	20
Attendance, 1953	—	—	—	21	—	21	—
Attendance, 1953	—	—	—	20	—	20	20
Attendance, 1952	—	—	—	20	—	20	—
Attendance, 1951	—	3	3	15	—	21	21
Attendance, 1950	—	3	3	15	—	21	21
Attendance, 1949	—	3	2	16	—	21	—
Attendance, 1948	—	4	2	12	2	20	20
Attendance, 1947	—	8	—	12	—	20	20
Attendance, 1946	—	2	9	9	—	20	20
Total graduates to December 31, 1965	—	—	—	—	—	—	275

NOTE.—Since 1949/50 until 1962 the course was of nine months' duration, spread over 1½ years. From 1946 to 1949, and commencing with Class 13, 1963, a six-month course is involved, spread over one year.

ENROLMENT AT BASIC COURSE, FOREST SERVICE TRAINING-SCHOOL, 1965

(132)

Forest District	Forest Assistants, Cruisers, Etc.	Rangers	Acting Rangers	Assistant Rangers	Clerks	Total	Graduates
Class 4							
Vancouver	----	----	----	4	----	4	4
Prince Rupert	1	----	----	2	----	3	3
Prince George	1	----	----	3	----	4	4
Kamloops	1	----	----	3	----	4	4
Nelson	----	----	----	5	----	5	5
Reforestation	----	----	----	----	----	----	----
Research	----	----	----	----	----	----	----
Surveys	----	----	----	----	----	----	----
Class 4 totals	3	----	----	17	----	20	20
Class 5							
Vancouver	2	----	----	2	----	4	4
Prince Rupert	2	----	----	2	----	4	4
Prince George	3	----	----	1	----	4	4
Kamloops	1	----	----	3	----	4	4
Nelson	1	----	----	3	----	4	4
Reforestation	----	----	----	----	----	----	----
Research	----	----	----	----	----	----	----
Surveys	----	----	----	----	----	----	----
Class 5 totals	9	----	----	11	----	20	20
Attendance, 1965	12	----	----	28	----	40	40
Attendance, 1964	6	----	----	14	----	20	20
Attendance, 1963	7	----	----	13	----	20	20
Attendance, 1962	3	----	----	17	----	20	20
Total graduates to December 31, 1965	----	----	----	----	----	----	100

Grand total of graduates, advanced and basic courses, 375.

FOREST REVENUE, 1961–65

(141)

	12 Months to Dec. 31, 1961	12 Months to Dec. 31, 1962	12 Months to Dec. 31, 1963	12 Months to Dec. 31, 1964	12 Months to Dec. 31, 1965	10-year Average, 1956–65
Timber-licence rentals and fees	$366,600.53	$352,418.29	$357,175.79	$362,707.84	$720,919.31	$400,600.86
Timber-berth rentals and fees	21,929.03	19,795.95	17,361.70	15,639.09	15,024.33	18,743.45
Timber-lease rentals and fees	59,071.23	73,139.35	63,629.77	68,446.06	86,230.58	71,581.47
Timber-sale rentals and fees	480,803.23	500,208.12	502,317.68	510,469.54	765,651.17	478,194.05
Timber-sale stumpage	24,554,147.30	26,315,940.41	30,199,623.94	37,221,058.19	42,031,437.70	28,034,173.52
Timber-sale cruising and advertising	377,755.89	346,627.67	386,735.44	487,503.76	325,847.00	316,566.32
Timber royalties	2,245,313.71	2,433,175.10	2,499,842.31	2,610,292.87	2,629,476.11	2,151,441.11
Grazing permits and fees	119,876.87	137,118.26	152,200.70	139,313.50	151,079.95	111,139.39
Forest-protection tax	569,749.95	550,949.16	523,598.00	522,672.70	559,007.55	----
Miscellaneous	134,824.47	161,447.52	173,192.07	210,330.47	273,738.16	161,301.25
Totals	$28,930,072.21	$30,890,819.83	$34,875,677.40	$42,148,434.02	$47,558,411.86	$31,743,741.42

AMOUNTS CHARGED AGAINST LOGGING OPERATIONS, 1965

District	Royalty	Miscellaneous	Scaling Fund		Stumpage	Rentals, Cruising, Advertising, Transfer Fees	Silviculture Fund	Forest Development Fund	Total
			Scaling Expenses	Scaling Fees					
Vancouver	$1,823,350.68	$3,342.65	$295,511.08	$1,375,963.76	$22,229,103.84	$385,357.44		$297,026.53	$26,409,655.98
Prince Rupert	287,980.52	4,153.54	29,822.55	150,150.75	4,745,760.77	192,082.89		95,971.72	5,505,922.74
Prince George	96,110.62	1,752.54			5,411,496.26	291,254.04		249,010.48	6,049,623.94
Kamloops	237,647.78	2,233.50			6,644,341.31	387,427.41		266,784.02	7,538,434.02
Nelson	154,245.92	1,537.55			3,967,017.83	264,282.90		11,519.87	4,398,604.07
Totals, 1965	$2,599,335.52	$13,019.78	$325,333.63	$1,526,114.51	$42,997,720.01	$1,520,404.68		$920,312.62	$49,902,240.75
Totals, 1964	$2,589,142.31	$9,757.95	$291,333.62	$1,141,321.90	$38,793,044.73	$1,381,881.96		$764,452.07	$44,970,934.54
Totals, 1963	$2,399,042.45	$11,244.13	$243,745.53	$922,206.05	$30,470,629.50	$1,258,855.66		$651,863.83	$35,957,587.15
Totals, 1962	$2,331,987.94	$8,727.97	$255,562.68	$1,006,764.72	$26,467,054.86	$1,224,600.21		$543,310.69	$31,838,009.07
Totals, 1961	$2,135,102.82	$19,504.27	$219,118.42	$995,399.98	$23,463,080.72	$1,235,002.32		$753,233.75	$28,820,442.28
Totals, 1960	$2,384,420.55	$10,724.64	$248,440.15	$1,259,004.69	$27,664,393.40	$1,103,354.27		$294,341.53	$32,964,679.23
Totals, 1959	$1,883,849.42	$10,321.39	$208,296.71	$1,013,297.52	$23,129,628.91	$1,020,645.57		$198,716.67	$27,464,756.19
Totals, 1958	$1,656,522.86	$13,720.12	$169,517.28	$788,929.53	$20,385,679.74	$970,108.77		$139,091.73	$24,123,570.03
Totals, 1957	$1,888,013.14	$15,930.85	$212,273.83	$909,138.97	$26,163,387.79	$939,036.10		$131,384.09	$30,259,164.77
Totals, 1956	$2,153,863.65	$12,007.20	$216,050.36	$779,104.15	$28,828,870.26	$915,277.46	$316,796.43	$182,552.57	$33,404,522.08
Ten-year average, 1956–65	$2,202,128.07	$12,495.83	$238,967.22	$1,034,128.20	$28,836,348.99	$1,156,916.70		$457,925.95	$33,970,590.60

(143)

AMOUNTS CHARGED AGAINST LOGGING OPERATIONS, FISCAL YEAR 1964/65

District	Royalty	Miscellaneous	Scaling Fund		Stumpage	Rentals, Cruising, Advertising, Transfer Fees	Silviculture Fund	Forest Development Fund	Total
			Scaling Expenses	Scaling Fees					
Vancouver	$1,727,051.34	$4,350.04	$262,012.41	$1,042,454.46	$20,432,516.01	$398,385.63		$224,346.94	$24,091,116.83
Prince Rupert	313,128.92	1,654.33	25,332.00	106,341.99	3,829,557.51	186,865.99		89,540.07	4,552,420.81
Prince George	90,585.78	586.54			4,915,234.22	252,890.89		242,727.38	5,502,024.81
Kamloops	245,387.68	1,966.54			7,141,225.68	319,062.24		227,276.38	7,934,898.52
Nelson	152,619.89	1,643.40			4,083,896.75	218,335.37		33,218.15	4,489,713.56
Totals, 1964/65	$2,528,753.61	$10,200.85	$287,344.41	$1,148,796.45	$40,402,430.17	$1,375,540.12		$817,108.92	$46,570,174.53
Totals, 1963/64	$2,397,693.04	$10,103.02	$243,758.31	$933,939.47	$31,559,368.71	$1,271,232.39		$641,330.15	37,057,425.09
Totals, 1962/63	$2,334,087.65	$10,478.79	$255,471.80	$1,001,506.52	$27,535,735.53	$1,215,900.43		$663,849.93	$33,017,030.65
Totals, 1961/62	$2,249,635.97	$18,336.53	$230,395.08	$1,006,719.97	$23,748,697.80	$1,256,074.86		$703,412.40	$29,213,272.61
Totals, 1960/61	$2,259,260.15	$11,752.91	$229,465.79	$1,174,335.71	$25,525,797.36	$1,123,343.86		$294,095.37	$30,618,051.15
Totals, 1959/60	$2,090,089.97	$10,073.48	$222,233.43	$1,097,022.68	$25,972,797.12	$1,027,388.60		$276,543.16	$30,696,148.44
Totals, 1958/59	$1,724,335.77	$10,278.72	$189,733.59	$857,356.03	$21,039,523.86	$980,609.33		$139,682.23	$24,941,519.53
Totals, 1957/58	$1,876,624.77	$18,418.04	$200,348.04	$890,547.82	$24,860,333.41	$930,780.33		$137,679.66	$28,914,732.07
Totals, 1965/57	$2,100,595.60	$12,817.18	$223,110.65	$825,245.69	$29,544,636.65	$917,775.18		$176,767.56	$33,800,948.51
Totals, 1955/56	$2,283,321.72	$10,578.36	$176,432.52	$461,466.54	$21,285,022.76	$903,301.94	$1,114,131.62	$115,441.08	$26,349,696.54
Ten-year average, 1955/66 to 1964/65	$2,184,439.82	$12,303.79	$225,829.36	$939,693.69	$27,147,434.34	$1,100,194.70		$396,591.05	$32,117,899.91

(144) FOREST REVENUE, FISCAL YEAR 1964/65

		Ten-year Average
Timber-licence rentals and fees	$353,401.33	$368,314.78
Timber-berth rentals and fees	15,321.88	17,443.12
Timber-lease rentals and fees	68,277.30	69,453.94
Timber-sale rentals and fees	518,588.91	430,177.81
Timber-sale stumpage	38,844,855.03	25,377,262.91
Timber-sale cruising and advertising	466,439.97	304,914.77
Timber royalties	2,578,660.67	2,189,085.97
Grazing permits and fees	164,971.41	97,468.53
Forest-protection tax	519,824.40	(1)
Miscellaneous	245,879.72	148,786.12
	$43,776,220.62	$29,002,907.95

1 Formerly credited to Forest Protection Fund.

(145) FOREST SERVICE EXPENDITURES, FISCAL YEAR 1964/65

Salaries	$3,796,831
Expenses	1,053,738
Reforestation and forest nurseries	686,522
Forest management	704,371
Forest research	223,150
Public information and education	116,848
Forest Service training-school	121,512
Grant to Canadian Forestry Association	17,500
Office furniture and equipment	27,948
Engineering services	454,602
Forest-development roads	2,766,611
Forest protection	3,869,308
Fire suppression	129,242
Forest surveys	1,218,426
Silviculture	1,561,099
Grazing Range Improvement Fund[1]	66,946
Peace River community pastures	7,785
	$16,822,439
Less contribution from Federal Government	1,823,284
Total	$14,999,155

1 Statement provided elsewhere.

(146) SCALING FUND

Deficit, April 1, 1964	$27,988.35
Collections, fiscal year 1964/65	1,394,461.48
	$1,366,473.13
Expenditures, fiscal year 1964/65	1,574,990.15
Deficit, March 31, 1965	$208,517.02
Collections, nine months, April to December, 1965	1,440,308.45
	$1,231,791.43
Expenditures, nine months, April to December, 1965	1,321,079.10
Deficit, December 31, 1965	$89,287.67

(147) GRAZING RANGE IMPROVEMENT FUND

Deficit, April 1, 1964	$4,535.08
Government contribution (section 13, *Grazing Act*)	79,310.98
	$74,775.90
Expenditures, fiscal year 1964/65	66,947.35
Surplus, March 31, 1965	$7,828.55
Government contribution (section 13, *Grazing Act*)	82,485.70
	$90,314.25
Expenditures, nine months, April to December, 1965	49,477.23
Surplus, December 31, 1965	$40,837.02

(148) PEACE RIVER POWER TIMBER SALVAGE

Expenditures, fiscal year 1964/65	$593,686.00
Recovered from British Columbia Hydro and Power Authority	593,686.00
Balance	*Nil*

(151) DISTRIBUTION OF PERSONNEL, 1965

Personnel	Vancouver	Prince Rupert	Prince George	Kamloops	Nelson	Victoria	Total
Continuously Employed							
Deputy Minister, Chief Forester, and Assistant Chief Foresters	-----	-----	-----	-----	-----	4	4
Division Foresters	-----	-----	-----	-----	-----	8	8
Directors of Grazing and Public Information	-----	-----	-----	-----	-----	2	2
Forest Counsel and Personnel Officers	-----	-----	-----	-----	-----	3	3
District Foresters and Assistant District Foresters	2	2	2	2	2	-----	10
Foresters	13	9	12	14	11	100	159
Agrologists and Agrologists-in-training	-----	-----	2	5	2	-----	9
Engineers	-----	-----	-----	-----	-----	32	32
Forest Protection Officers	3	2	3	1	2	4	15
Technical Forest Officers	91	72	95	128	119	28	533
Superintendent of Scaling and Assistants	13	2	3	3	3	-----	24
Scalers, Official	66	3	-----	-----	1	-----	70
Scalers, Official, temporary	79	-----	-----	9	-----	-----	88
Comptroller, Accountant, and Audit Assistants	-----	-----	-----	-----	-----	7	7
Engineering, Mechanical and Radio	6	5	5	5	5	43	69
Public Information Officers	-----	-----	-----	-----	-----	2	2
Public Information Assistants	-----	-----	-----	-----	-----	1	1
Reforestation, Research, and Survey Assistants	-----	1	-----	-----	-----	34	35
Nursery Superintendents	-----	2	-----	-----	-----	1	3
Draughtsmen and Mapping Assistants	5	5	5	5	3	26	49
Clerks, Stenographers, and Messengers	92	33	35	31	24	116	331
Superintendent and Foremen, Forest Service Maintenance Depot	-----	-----	-----	-----	-----	10	10
Mechanics, Carpenters, and Technicians	4	2	9	-----	3	49	67
Launch Crewmen	18	8	-----	-----	-----	2	28
Forest Assistants	39	22	57	55	32	25	230
Truck, Tractor, and Equipment Operators	7	2	3	3	2	6	23
Foremen	1	25	-----	-----	-----	32	58
Miscellaneous	-----	2	2	2	3	72	81
Totals, continuous personnel	439	197	233	263	212	607	1,951
Seasonally Employed							
Technical Forest Officers	10	3	12	2	-----	19	46
Patrolmen	2	1	1	-----	6	-----	10
Lookoutmen	38	21	31	33	41	-----	164
Dispatchers, Radio Operators, and Clerks	6	1	5	5	9	1	27
Fire-suppression Crewmen	54	18	20	63	44	-----	199
Reforestation—Snag-fallers, Planters, etc.	3	-----	20	28	9	515	575
Truck, Tractor, and Equipment Operators	-----	4	9	3	4	50	70
Student and Survey Assistants and Engineering Aides	-----	-----	-----	-----	-----	93	93
Forest Assistants	3	6	2	-----	8	79	98
Foremen	8	1	-----	12	1	37	59
Miscellaneous	16	3	26	2	74	109	230
Totals, seasonal personnel	140	58	126	148	196	903	1,571
Totals, all personnel	579	255	359	411	408	1,510	3,522

Printed by A. SUTTON, Printer to the Queen's Most Excellent Majesty
in right of the Province of British Columbia.
1966

2,260-266-2443