PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF LANDS, FORESTS, AND WATER RESOURCES

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

REPORT

of the

FOREST SERVICE

YEAR ENDED DECEMBER 31

1963

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in right of the Province of British Columbia.
1964

VICTORIA, B.C., February, 1964.

To Major-General the Honourable GEORGE RANDOLPH PEARKES,
V.C., P.C., C.B., D.S.O., M.C.,
Lieutenant-Governor of the Province 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 1963.

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 1963.

R. G. McKEE,
Deputy Minister of Forests.

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REPORT OF THE FOREST SERVICE, 1963

CHIEF FORESTER'S REPORT

The problem of greatest concern to the British Columbia Forest Service in 1963, and one that received its continual attention, was utilization. The subject is tremendous in scope and significance. It involves not only the imposition of pulpwood harvesting economies on top of existing sawlog economies in many public sustained-yield units, but also the salvage of small, previously wasted logs in all the forests—a trend which could ultimately increase the Province's potential yield of marketable wood to a large extent and give further impetus to the surging forest industry in the Central Interior of the Province, an area in which a number of pulpmills are in the investigative stages.

Already, with new utilization standards still little more than a concept, the growth of the Interior forest economy is staggering. In 1945, only 19 per cent of the total Provincial scale came from the Interior. In 1962 it was 41 per cent, and last year an imposing 44.7 per cent of a total scale of 1,473,423,371 cubic feet.

The scale, due largely to a combination of weather and market conditions, set a new record for the whole Province, 9.7 per cent above the previous high for 1962. As a corollary, the value of all forest production reached a new high of $850,000,000, some 6 per cent higher than the previous year.

In short, 1963 ended most successfully and prospects for 1964 indicated that we might anticipate tremendous new developments in the forest-forest industry complex.

The Forest Service, in the last 12 months, continued to make great forward strides toward the objective of complete sustained-yield management of the forests entrusted to it and to supply the raw material required to make these developments possible.

The Surveys and Inventory Division completed unit surveys for seven public sustained-yield units, bringing to 46 the number on which second, more exact resource studies have been finished. These unit and maintenance surveys, done with Federal financial assistance, are really the second step in the Continuous Forest Inventory and are an indispensable prerequisite to realistic evaluation and disposal of the forest resource.

Two more new public sustained-yield units were established—the Okanagan and the Takla—and 13 others were included in the second pulpwood harvesting area, awarded to Kamloops Pulp and Paper Company Limited. Altogether more than 60,000,000 acres, approximately half the commercial forest land in the Province, are now committed to working plans. They have a total annual allowable cut of 917,586,000 cubic feet, which is 62 per cent of the total scale for 1963.

As the area of regulated forest increases, the demands on the Service increase accordingly. During the year the Reforestation Division supplied 14,280,000 seedlings for planting, and with the acquisition of a 52-acre addition to the Duncan nursery should soon reach a sustained annual production of 25,000,000. But the new figure is already short of anticipated requirements.

The same continuing pressure, the result of both expansion and intensification, afflicts other divisions. In 1963 Engineering Services rushed to complete 54 miles of main haul-road in the Parsnip River drainage and 50 miles in the continuing programme of forest-development roads. Since 1950 that programme has made

some 2,500,000 acres of forest land accessible to industry, but as logging becomes more concentrated in the central and northern portions of the Province, more and more development roads are needed. Meanwhile the forest districts' requests for urgently required protection access is unabated.

The year was a comparatively good one from the protection standpoint. Although there were 35 per cent more fires than in 1962, nearly half of them were caused by lightning strikes. Inclement weather, the expanded aerial attack system, and mobile suppression crews combined to keep most of them to a small size. Some 46,000 acres were burned over, and damage to forest-cover and other property was $534,000. Both figures are well below average. The cost of fire-fighting was $440,000, roughly a quarter of the average for the last 10 years. The average cost per fire was 17.6 per cent less than for 1962.

The pages of this Report devoted to the Forest Management Division add to the feeling of accomplishment that marked 1963. Although management foresters, like others, were harassed by the pressure of increased work—more timber sales, emergency wind-throw and bark beetle stand disposal, more stand treatment—they were able to report substantially increased revenue from timber sales, a 16-per-cent increase in water-borne lumber exports, and high prices for dressed lumber and logs which are expected to continue into 1964. These improved economic conditions were reflected in an average stumpage price of $3.36 per hundred cubic feet, compared to $3.01 in 1962, and even then the figure was distorted by the unusually large volume of low stumpage salvage sales.

In a brief summary of highlights, it is impossible to mention in any detail the work of all divisions. However, such vital parts of the Service as Grazing, which integrates millions of acres of pasture land with forestry activities in a fine example of the multiple-use concept, and Research, on whose achievements the ultimate sucessful intensification of forestry practices largely depends, are not forgotten, nor are the service divisions—Legal, Accounting, Public Information and Education, and Personnel. The work of all is vital and interdependent; to all is due the success, the cohesiveness, and the morale of the Forest Service.

Perhaps morale is the cause of the awareness and care that resulted in the Service's 1963 record for safety, a matter on which, for reasons of self-interest as well as Government policy, a steady pressure is maintained. Last year was the second in succession which was not marred by a fatal accident, the second to show a large reduction in Workmen's Compensation Board awards—$132,000 in 1961, $101,000 in 1962, and only $42,000 in 1963—and the second to show a marked decrease in man-days lost. All in all, it was a commendable accomplishment in a commendable year.

F. S. McKINNON,
Chief Forester.

FOREST SURVEYS AND INVENTORY DIVISION

FIELD PROGRAMME

Forest inventories were completed for seven public sustained-yield units during 1963. These included Chilliwack and Harrison in the Vancouver Forest District, Shuswap in the Kamloops Forest District, Fernie and Kettle in the Nelson Forest District, and Terrace and part of the Dean in the Prince Rupert Forest District. Decay and growth-study programmes were continued in several others. Financial assistance was again received from the Government of Canada according to the agreement for forest inventory implemented under the *Department of Forestry Act.*

Several other forest-inventory projects were completed. A major project in the Prince George Forest District involved an intensive forest inventory of the Schedule B lands contained within Pulpwood Harvesting Area No. 1. The Division was also involved with regeneration surveys and taxation cruises in selected areas in the Vancouver Forest District.

Forest Classification and Sampling

Some 8,700,000 acres were classified and sampled during the 1963 field season. In addition to the projects outlined above, an area lying to the south of the Kettle Public Working Circle and the Kiteen River Block were surveyed in conjunction with the Kettle Public Working Circle and the Terrace Public Sustained-yield Unit respectively. Another 3,600,000 acres were sampled in Block 1 of the Dean Public Sustained-yield Unit in order to bring it up to unit survey standard.

A total of 2,788 multi-plot samples was established by Division personnel during 1963, and another 120 were received under co-operative agreements with other agencies.

Experimental sampling with the wedge prism was continued, and over 400 double samples were established in nine separate forest associations.

One Bell 47 G-3B helicopter on a four-month charter was involved in forest classification and sampling in most of the 1963 project areas. The smaller Hughes 269A was used to complete the forest classification in the Stum Public Sustained-yield Unit. In general, the performance of these machines was found quite satisfactory for the duties to which they were assigned. Tape recorders were again used to advantage in this programme of low-level reconnaissance.

During periods of low hazard it was possible to make use of the forest-protection contract helicopter on several occasions. This was especially helpful on the rugged Harrison and Terrace projects, where it assisted in providing a more uniform distribution of samples over the more inaccessible areas.

Growth

An expanded growth programme in 1963 resulted in the establishment of 140 permanent growth plots in three Coast public sustained-yield units, distributed as follows: Yale, 103; Chilliwack, 31; and Harrison, 6. One-third were located in Douglas fir-hemlock types and the balance in pure Douglas fir. Conditions sampled were as follows: Ages from 41 to 100 years, sites ranging from good to low with the majority in the medium and poor class, and elevations from 300 to 3,800 feet. It is anticipated that this approximate schedule will be maintained for a number of years, with the first remeasurement due 10 years after initial-plot establishment.

Over the year there was increased co-operation in growth studies between the Division and private agencies, particularly concerning the pooling and exchange of basic field data. One such agency has been the Tree Farm Forestry Committee.

The following are some of the basic field procedures that are practised by the Division:—

(1) Single circular plots of one-fifth acre size, with variations of one-quarter and one-eighth acre are allowed to obtain about 100 living trees.

(2) All living trees 3.6 inches d.b.h. and greater are tagged at breast height with permanent round plastic numbered tags secured by 2½-inch aluminum nails. A 4½-foot stick is used to locate tagging height.

(3) Each plot centre is marked by a permanent aluminum stake. Plot circumference is carefully measured and is marked by string, and all line trees are checked by tape. For tagging and recording, 8 to 12 stringed segments are established.

(4) Items recorded are tree number, species, d.b.h., tree class, quality class, pathological remarks, ground cover, stand age, stand height, and small-tree count of stems 0.6 to 3.5 inches d.b.h.

(5) Ages are based on 10 dominant and (or) codominant trees of the major species.

(6) Number of tree heights per plot depends on the number of plots per map type or stratum. Each stratum must have 30 heights for each major species.

Other field work included the remeasurement of seven experimental plots comprising 45 sub-plots in the Kitimat and Terrace Public Sustained-yield Units. All existing experimental growth and yield plots in the Province now have at least one remeasurement. The period of initial-plot establishment was from 1921 to 1949 and involved 141 experimental plots containing a total of 737 sub-plots.

Net (less decay) mean annual increments were calculated for major growth types in 14 public sustained-yield units. Similar information is now available on a total of 46 units. As additional sample information becomes available, many of these growth-type increments will be modified.

Calculation of gross increments, which were completed for Zone 3, are now ready for printing and will be issued as a supplement to Forest Survey Note No. 6 in 1964.

During the year 37 requests for growth information were received and processed.

Loss-factor Project

Decay studies were continued in three public sustained-yield units in 1963. The number of trees felled and measured included 884 trees on 32 sample plots in the Soo Public Sustained-yield Unit, 169 trees on 8 sample plots in the Yale Public Sustained-yield Unit, and 1,257 trees on 44 sample plots in the Hazelton Public Sustained-yield Unit.

The studies will continue in the Soo and Yale Public Sustained-yield Units in 1964, with helicopters flying field crews into previously inaccessible areas.

Diameter-class loss factors, which were published for mature hemlock and balsam in the Kitwanga Public Sustained-yield Unit, will be used in the recompilation of the 1961 Kitwanga unit survey report.

The 1963 inventory of the Terrace Public Sustained-yield Unit will be compiled, using local diameter-class loss factors which were based on data collected within the boundaries of this unit by this Division and the Forest Pathology Branch of the Canada Department of Forestry.

New zonal loss factors for the Province are being calculated from the 34,250 trees which were felled and measured by the Division since 1953.

Special Field Projects

An intensive forest inventry of the Schedule B lands of Pulpwood Harvesting Area No. 1 was completed during the year, and some 1,600,000 acres of Crown land were classified and sampled. All mature forest types were designated as being primarily sawlog or primarily pulpwood, based on the definition set forth in the original contract for Pulpwood Harvesting Area No. 1.

At the request of the Department of Finance, the Division continued the programme of inspection of Crown-granted timber land on Vancouver Island. A total of 812 ¼-acre sample plots was established during the examination of 5,910 acres for the purpose of real-property assessment and taxation.

In conjunction with the Harrison forest inventory project, a regeneration survey of the sustained-yield unit's logged and burned areas was completed. Approximately 28,000 acres were examined, and a report has been submitted to the Reforestation Division.

OFFICE PROGRAMME

Forest Mapping

Increased map production in 1963 resulted in the completion of 462 interim base maps and 479 final forest-cover maps. The latter covered 13,400,000 acres, of which 86 per cent were at 20-chains-to-1-inch scale. Mapping of all the 1963 field projects is in progress.

Published maps are now available for 40 public sustained-yield units, including Block 2 of the Dean Public Sustained-yield Unit, as shown on the key map.

In response to requests received from various public and private agencies, 14,300 maps were distributed.

Area and Volume Summaries

Eight unit survey reports were issued for those areas completely surveyed during the previous year. They included the Arrowhead, Big Bar, Dean (Block 2), Nechako, Salmo, Salmon Arm, Texada Island, and the Yale Public Sustained-yield Units. As outlined on the key map, a total of 40 forest survey reports is now available. Furthermore, maps and reports are still obtainable for the previous maintenance survey of the Chilliwack Public Sustained-yield Unit, resurveyed in 1963 to a unit standard.

Planimetry of unit survey maps exceeded 10,500,000 acres. Further to this, some 400 map-area and map-volume statements were printed, completing the map area-volume figures for the above survey reports. Work is now in progress on the 1963 project areas.

Sixty requests were received requiring statistical summaries, to be used mainly for management planning and access-road development. They involved a total area of 18,000,000 acres and a net timber volume exceeding 27 billion cubic feet.

All of the 2,908 Provincial samples established during the field season have been compiled on the basis of the 1962 Standard Cubic Foot Volume Tables. Of these, 51 were contributed by the Nelson Forest District and 69 by private concerns. The Provincial total, 1953 to 1963, inclusive, stands at 26,243, exclusive of permanent growth plots, and prints of any compiled sample statement in cubic feet per acre are available upon request.

The effect on volumes per acre in sample compilation from assigning height by height-diameter curves rather than by the present Hmax-Dmax system is being tested. Several thousand sample-tree measurements in Zone 6 have been trans-

ferred to punch cards, enabling the construction of both computer and hand-drawn height-diameter curves, segregated by species composition and age-class. Results will be compared against various unit survey reports.

In the latter part of 1963 significant changes in I.B.M. equipment were made in the Data Processing Division, Department of Industrial Development, Trade, and Commerce, which processes all headquarters divisions' punch-card requirements. The installation included an I.B.M. 1401 data-processing card system with 4,000 positions of core storage and a 1620 electronic computer system with 60,000 positions of core storage, the latter replacing the Government pool 650 computer. For the above, the complete installation included a 1402 and 1622 card read-punch, a 1403 printer, and a 1623 storage unit.

Considerable time has been expended by the Division in rewriting programmes required by the new equipment. To date, the processing of some prepared data indicates faster results, improved presentation, and more flexibility than obtained previously.

Mensuration Studies

In 1963 increased scope was provided in the duties of the Division's forest mensurationist, allowing progressive studies to be made in specific sampling and classification techniques and requirements. One study was reviewed on the effect on average-volume-per-acre estimates by combining mature age-classes, and another on the number of samples required to meet the accuracy objective of a unit survey standard.

At present, work is progressing on the results of over 400 wedge prism double samples completed in the 1963 project areas. This sampling system has already proven beneficial in forest classification, but the application to survey volume requirements for Division use is yet to be determined.

Further studies are anticipated concerning the feasibility of developing the 70-mm. low-elevation photography from helicopters for both forest typing and sampling purposes.

BRITISH COLUMBIA FOREST SERVICE
FOREST SURVEYS AND INVENTORY DIVISION

MAINTENANCE SURVEYS (1958-1960)

1. Babine
2. Barkley
3. Big Valley
4. Bowron
5. Cape Scott
6. Carp
7. Cottonwood
8. Creston
9. Crooked
10. Kyuquot
11. Lac la Hache
12. Longworth
13. Morice
14. Naver
15. Niskonlith
16. Purden
17. Quesnel Lake
18. Redonda
19. Robson
20. Sayward
21. Sechelt
22. Spallumcheen
23. Stuart
24. Williams Lake
25. Willow River

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.W.C.--S.Y.U.; a maintenance survey report.

UNIT SURVEYS (1961+)

COMPLETED (1961-62 fieldwork)

1. Arrowhead
2. Big Bar
3. Dean-Blk 2
4. Kitwanga
5. Narcosli
6. Nechako
7. Nicola
8. Salmo
9. Salmon Arm
10. Seymour
11. Smithers
12. Texada

*IN PROGRESS (1963 fieldwork)

13. Westlake
14. Windermere
15. Yale
16. Chilliwack
17. Dean-Blk 1
18. Fernie
19. Harrison
20. Kettle
**21. P.H.A. 1(B)
22. Shuswap
23. Stum
24. Terrace

AVAILABLE INFORMATION

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

*Mapping and compilation in progress.
**Special Sale Area (oic 2811/62)

BRITISH COLUMBIA
DEPARTMENT OF LANDS AND FORESTS

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 31 DECEMBER 1963

FOREST RESEARCH DIVISION

Details of the research programme for 1963 will appear in the annual Forest Research Review.

EXPERIMENT STATIONS

At the Cowichan Lake Experiment Station a small research nursery was cleared and fenced, office and laboratory accommodation expanded, and construction of a soil-shed started. This development is part of a plan to consolidate all phases of the tree-breeding programme—seed-processing, raising of seedlings, and plantations at the experiment station—and provide facilities for other studies that may be initiated in the future. Soil mixtures for nursery seed-beds are being investigated as part of this development.

Maintenance of the Aleza Lake Experiment Station as a research centre has become increasingly expensive over the years, and latterly this has tended to restrict development of the regional research programme. It was decided to close down the station for the next decade and direct the funds and effort thus saved to the regional studies. The area will continue to be managed by the district on a sustained-yield basis, and it is hoped to continue silvicultural investigations, but on a more restricted scale.

During the year an infestation of spruce bark beetle *Dendroctonus obesus* caused serious mortality throughout the Aleza Lake reserve, particularly on the alluvial flats adjacent to the Bowron River. Efforts are being made to salvage, through timber sales, the worst areas of infestation.

DATA-PROCESSING

Technical assistance was provided several divisions in solving sampling and scaling problems. These are usually special or unique problems arising out of a particular development or associated with a particular industry. For instance, pulpwood harvesting licences create a new inventory problem associated with the classification of stands for sawlog and pulpwood use.

The best computer formats for the various scale formulæ continues to be an important investigation carried on in association with the Vancouver Forest District.

In co-operation with the Surveys and Inventory Division, several complex mensurational problems were, and are being, studied. These involve point sampling, growth estimates, and photogrammetry.

Within the Division, specific programmes were investigated and adapted. In particular, the tree-breeding project introduced some new problems in statistical analysis.

FIELD PROGRAMME

Severe deer browsing occurred on a Douglas fir provenance trial at Jennis Bay. This is worthy of mention because browsing occurred in midsummer when alternative food supplies are abundant and usually more attractive to deer than conifer foliage, and also because Jennis Bay is situated far beyond the areas where severe browsing had previously been noticed in Coastal British Columbia.

Plans are being developed for comprehensive provenance studies of Coastal Douglas fir and of Interior white spruce. A considerable amount of field data was obtained during the past summer on Douglas fir sites. In the Interior, white spruce stands were examined and sampled for detailed study of cone and needle characteristics. In co-operation with the University of British Columbia, growth-

chamber investigations have been conducted on seedling characteristics of various provenances.

With respect to the tree-breeding programme, cruising for plus trees was continued in higher-elevation stands on Vancouver Island and the Mainland, and 51 new trees were registered. The fifth Plus Tree Week was held at Pitt River, and 23 members of the Forest Service, the University, and industry took part. Grafting was started in the Forest Service high-elevation Douglas fir seed orchard at Campbell River.

A detailed analysis of the breeding programme for Coastal Douglas fir was completed, with a view to confirming future plans and how they may be implemented. A major decision was to separate tree-breeding research from the more routine phases of plus-tree cruising and clone-bank and seed-orchard establishment.

A considerable amount of data from the progeny tests is now being processed by computer programming, with the object of establishing estimates of hereditability.

In 1962 a study was initiated to determine the performance of four types of Douglas fir planting stock on high-site land prone to rapid brush invasion. If potential brush sites are planted immediately following logging and burning, and stock can grow rapidly without a planting check, such lands may be successfully rehabilitated. While the plots will not be established until 1965, seedlings are now being grown to provide 1+2, 2+1, 2+0 spring-sown and 2+0 autumn-sown seedling and transplant stock for this trial.

In the Prince Rupert Forest District the major activity was again centred on lodgepole pine, with the establishment of a regeneration study in cut-over stands. A spacing study with western hemlock was established with wilding stock.

Direct-seeding studies in the Kamloops Forest District were encouraging. The main limiting factors were rodents and climate. The results suggest that losses due to rodents, particularly on Douglas fir, may be controlled by a combination of seed treatment and seeding technique. The study will be repeated in 1963. Planting studies with Douglas fir and Engelmann spruce aim to determine the effect of season of planting, and aspect, on the survival of different classes of planting stock. The field work for a study of the classification of forest land based on landform, soil, and plant associations, undertaken in co-operation with the Canada Departments of Agriculture and of Forestry, of an area near Quilchena was completed. A start was made on a second area near McGillivray Lake, in which the British Columbia Department of Agriculture and the Canada Department of Forestry are co-operating with the Forest Service.

A long-term study of the influence of time on the effectiveness of scarified seed-beds is nearing completion in the Prince George Forest District.

Results of preliminary direct-seeding studies in the Nelson Forest District were highly variable. In 1962 a mixture of Engelmann spruce, Douglas fir, western white pine, and western hemlock was sown near Revelstoke. After one growing season, average stocking was 69 per cent by milacres with 1,768 seedings per acre—mostly white pine and Douglas fir. At Cedar Creek, in a similar study based on spot sowing, germination, regardless of species, was very erratic.

For details of research projects active in 1963, and of publications and unpublished reports, *see* Table Nos. 11 and 12 in the Appendix.

REFORESTATION DIVISION

FOREST NURSERIES

The year was marked by exceptionally good seedling growth in all nurseries, both Coast and Interior. This was in part a reflection of the weather pattern, which followed closely that of 1962. Precipitation was light during the first quarter. The growing season was generally cloudy and cool, and soil moisture remained above normal. Heavy rains during the autumn made lifting trees difficult. Although snow cover was light, the lack of extreme temperatures resulted in only negligible losses from frost.

Germination in newly sown beds was generally good and subsequent growth excellent, particularly in the Interior nurseries. Although diseases seemed more prevalent, with all nurseries reporting some losses, in no case were these severe. Personnel from the Forest Biology Laboratory, Canada Department of Forestry, investigated all reported cases of disease, and in some cases recommended changes in nursery technique.

A record total of 3,790 seed-beds was sown. At the end of the year these contained an estimated 23,354,000 one-year seedlings. An additional 1,360,000 seedlings were transplanted.

The increasing production of transplants was made possible largely by the development of co-operative nurseries. The first of these, which was developed at the Brannan Lake Boys' School, now produces approximately half a million transplants annually. Crews from the Attorney-General's Department forestry camps and Haney Correctional Institution are also producing an increasing number at transplant sites in the Chilliwack Public Sustained-yield Unit and at Haney.

The addition to the Duncan nursery, south of the Silver Bridge over the Cowichan River.

Transplanted trees are in heavy demand for planting on brushy sites, where their additional size and vigour provide a better chance of establishment in the face of heavy competition. The excessive amount of hand labour involved in the production of such trees in a regular nursery nearly doubles the cost in comparison to normal 2-year-old seedlings.

A total of 14,280,000 trees of all age-classes shipped from all nurseries for field planting considerably exceeded the record of 11,000,000 established the previous year. (*See* Table No. 21 in the Appendix.)

The highlight of the year was the purchase of a 52-acre farm at Duncan. While this is separate from the old nursery, it is near enough so that the two can be operated as one with consequent economies in buildings, equipment, and personnel. The soil in the new fields is the same fertile Chemainus series as in the old one, but appears to be much better drained. This increase in nursery area should permit a sustained nursery production of close to 25,000,000 trees annually for the Province.

FOREST TREE SEED

There was no Province-wide seed crop of any forest tree species in 1963. However, collections for special purposes totalled 655 bushels, of which the majority was lodgepole pine from the Prince George Forest District. Minor quantities of spruce were collected in order to carry out tests on extraction equipment. The extraction of cones collected in 1962 yielded 77 kilograms of seed. Spruce seed collected in 1962 was of little value owing to the depredations of cone and seed insects. This appears to confirm the futility of collecting cones during poor or medium crop years.

At the Duncan seed centre, some 380 germination tests were carried out as part of the programme to maintain accurate and up-to-date information on seed in storage. Several tests were carried out to check extraction equipment and improve germination techniques.

A total of 56 requests involving 357 seed-lots was handled, and a large percentage of these requests was from other countries. In all, 433.5 kilograms of seed were prepared and shipped to nurseries for routine sowing. Seed-bed counts and field germination data are now being analysed for possible adjustments of sowing factors. As nursery practices and irrigation equipment improve germination and growth, the sowing rates must be adjusted to prevent overstocking in the seed-beds.

Present stock of Forest Service and company seed on hand is 4,883 kilograms (10,742 pounds), of which about 70 per cent is Coast Douglas fir.

The seed centre staff co-operated actively with the Research Division on two experiments involving white spruce provenance, and with the Federal Pathological Laboratory on another experiment in seed-bed density. Twenty-six morphological analyses were completed.

There are now seven seed production areas (all Douglas fir) in the Vancouver Forest District. Development of these areas, 37 acres in all, was continued in 1963. Some areas were thinned to the required density, and all were fertilized at the time of bud-breaking. Future emphasis will be on the location and development of high-elevation production areas on the Mainland.

It is now estimated that the seed requirements for planting in the public sustained-yield units alone in the Vancouver Forest District exceed 250 kilograms per year. This will necessitate periodic cone collections equivalent to over 1,000 bushels annually.

In the Interior, 10 seed production areas (six of which are spruce) have been developed, covering 28.6 acres. Chemical fertilizer was applied to over 20 acres

during the year. Three more potential spruce areas have been located for future development.

At the Campbell River seed orchard, the area developed to date was cultivated and weeded, and over 2,000 feet of drain tile was laid to improve drainage.

Under the guidance of the Research Division, 417 grafts were made in the spring from 37 selected clones. Survival was very good at the end of the first growing season, and what mortality there was, was due mainly to death of rootstocks. Approximately one-third of the ramets were damaged by unknown causes, but since healthy buds had already been formed, the damage will probably be outgrown. Five thousand trees were transplanted at Duncan to provide additional rootstock.

RECONNAISSANCE AND SURVEY WORK

The Reforestation Division again co-operated with the Surveys and Inventory Division this year on a regeneration survey of the Harrison Public Sustained-yield Unit. Supplementing and intensifying the regular inventory survey in this area secured information of value to the Reforestation Division concerning 28,000 acres of logged-over lands.

A Reforestation Division crew carried out a regeneration survey of the neighbouring Yale Public Sustained-yield Unit. Of 67,000 acres classified as not satisfactorily restocked on inventory maps, 25,000 were examined and 6,400 assessed as not stocked and plantable. Much of this offers a difficult planting chance due to slash, brush, topography, etc. It is significant that of this 6,400 acres, 67 per cent is above 2,500 feet in elevation. The balance of the 67,000 acres which was not examined is mainly high-elevation low site burns which were considered economically unplantable. An additional 4,650 acres intensively surveyed in the Soo and Redonda Public Sustained-yield Units revealed 1,560 acres of not satisfactorily restocked land which could be planted.

PLANTING

Weather during both the spring and fall planting seasons was excellent on the Coast, and the cool cloudy summer should make for good survival. However, mild weather lasting well into the fall constituted a problem in that nursery planting stock, particularly at Green Timbers, was slow to harden off. This caused a necessary delay in the commencement of fall projects and will likely necessitate scheduling of more projects in the spring.

Two projects of interest were carried out on the Coast in co-operation with the Research Division. The first of these involved species trials and a small Douglas fir provenance trial at Jennis Bay in the Broughton Public Sustained-yield Unit. Its purposes were: (*a*) Investigate the economic feasibility of planting on these northern units, (*b*) determine the most suitable species for the heavier soil types close to the coast, and (*c*) determine which source of Douglas fir is best suited to these units.

The second was a large-scale spacing test for Douglas fir. Since planters' wages are constantly increasing and spacing has a very large bearing both on the cost of establishment and final quality of the planted trees, it is most essential to have sound information on the effect of these factors on plantation economics.

The programme in the Interior districts continues on a modest scale, with the primary emphasis being on collecting information and securing experience. As hazard-abatement practices increase on current sales, there is a growing tendency to concentrate on planting the more productive sites there.

The total planting effort for the Province continues to expand. All agencies together planted 14,218,000 trees on 38,830 acres, which is again a record. Industry planted more than twice the number of trees the Forest Service was able to with the funds available. (*See* Table No. 22 in the Appendix.)

PERMANENT IMPROVEMENTS

The newly cleared field at the Green Timbers nursery was improved by the installation of a sub-surface drainage system using 18,000 feet of 4-inch drain tile. The greatly improved condition of the field that was retiled last year proves the value of such an expenditure. Development of the new well was completed by installation of pumps and mains. This system has proved very efficient, and excellent coverage is provided by solid-set aluminum pipe and 14V circular sprinklers.

At Telkwa considerable grading has made it possible to utilize almost the entire site for nursery production. A building providing implement storage, utility room, washroom, and cold-storage facilities was constructed in co-operation with the Forest Management Division.

A small pump-house was constructed and a 5-horsepower electric pump installed on the upper field at the Cranbrook nursery. Approximately 3,000 cubic yards of topsoil were hauled to fill hollows and replace exposed alkaline subsoil spots. This topsoil was salvaged from a highway right-of-way relocation across a corner of the nursery property.

CO-OPERATION

As a member of the Tree Farm Forestry Committee, the Reforestation Division continued to take an active part in co-operative forestry projects. Staff members served on various panels discussing brush control and site preparation at a reforestation workshop held in May. The Division also supplied five men to take part in Plus Tree Week. In August two foresters attended the Tree Improvement Board field trip to examine seed orchards near Campbell River.

Reforestation fallers cleared 3,820 acres of snags during the year, 2,000 acres of which were a co-operative project with industry.

In the East Kootenay, Grazing Division and Reforestation Division crews carried out stand-improvement thinning in 80 acres of overstocked immature stands.

Interdepartmental Rehabilitation and Forestry Programme

There are now 500 inmates involved in the forestry programme being conducted co-operatively by the Department of the Attorney-General and the Forest Service. During 1963 two 60-man camps in the Sayward Forest and one in the Chilliwack Valley were completed and occupied.

An area of 10,000 acres near Haney was made into a forest reserve and gazetted as the Blue Mountain Forest. It will provide a work area for the trainees of the Haney Correctional Institution. A suitable forestry camp-site was located on Hutda Lake near Prince George, and an access road was constructed to it.

Inmates from the Chilliwack Valley camps constructed 2 miles of graded trail and assisted in by-passing five condemned bridges. Maintenance work continued on the access roads. Chilliwack nurseries shipped out a total of 1,036,800 trees, of which 56,000 were planted by inmates on 118 acres within the Chilliwack Public Sustained-yield Unit. A further 256,200 trees were transplanted. Over 2,000,000 trees of various age-classes are now on hand in these nurseries, and additional acreage is being developed for transplants.

A 2½-acre seed production area was established and fertilized, and a previously established area was rethinned and fertilized. Inmate crews continued rehabilitation of brush areas and cleared another 6 acres preparatory to establishing a mixed-species planting trial.

The camp sawmill produced 305,000 f.b.m. of lumber during the year, sawed 64,000 survey stakes, and produced 40,000 split cedar stakes. The sign shop prepared 50 signs.

Officer training at Chilliwack was continued by Forest Service officers, who gave active instruction to correctional officers in fire-suppression, planting, trail construction, and nursery practice. Three officers attended an organizational course at the Forest Service training-school.

In the Blue Mountain Forest, trainees from the Haney Correctional Institution converted almost 2 miles of old railway grade to truck-road, cleared brush from 4 miles of road, and cleared 6 miles of right-of-way. A suitable area was located and cleared for a transplant nursery, and 90,000 seedlings were transplanted in June. The area was then enlarged to 4 acres. Trainees commenced weeding and pruning of immature stands along main roads, and a 7-acre logged block was burned in preparation for planting. A group of 40 officers received instruction in fire suppression, and 25 attended a talk on thinning and pruning given by the Research Division. The local Ranger organized and trained a fire-suppression crew at the institution.

Snowdon Camp in the Sayward Forest was occupied early in 1960 by 60 inmates, and during the balance of the year they brushed and slashed out over 4½ miles of road, thinned 30 acres of the 1939 plantation, established a 3-acre seed production area, and planted 6,000 trees. The fire-suppression crew successfully handled four lightning fires, all in rough country.

Lakeview Camp was occupied in November by 50 trainees, who will be given training in search and rescue, wilderness survival, and fire-fighting.

Projects carried out by inmates from the Kamloops Gaol were interrupted during the year by their relocation at Rayleigh. However, during the spring, crews planted 50,000 trees on 75 acres within the Pin Burn and established a seed production area at White Lake. In the fall, a crew from the Clearwater Camp thinned another 5-acre seed production area in spruce near Sock Lake.

WORKING PLANS DIVISION

During 1963 a second pulpwood harvesting area agreement was formally signed granting an option to Kamloops Pulp and Paper Company Limited to purchase pulpwood from 13 public sustained-yield units. Two new public sustained-yield units were established. There was no change in the number of tree-farm licences.

Two new *Taxation Act* tree-farms were certified. Six new farm wood-lot licences were awarded and 10 farm wood-lots were cancelled. The managed units of the Province now include two pulpwood harvesting areas covering 22 public sustained-yield units and 60 other public sustained-yield units, altogether 82; 39 tree-farm licences; 25 out of a total of 39 taxation tree-farms which are not managed as an integral part of the tree-farm licences; and 53 farm wood-lot licences, making a total of 199 managed units.

The total area committed under working plans amounts to 60,288,296 acres of productive forest, with a total allowable annual cut of 917,586,000 cubic feet, equivalent to 62 per cent of the total Provincial scale for 1963. The following table lists the forms of units committed to forest management under working plans for sustained yield:—

Progress of Sustained-yield Programme up to 1963

Type of Managed Unit	Number of Units	Productive Area (Acres)	Allowable Annual Cut (M C.F.)
Public sustained-yield units—			
In pulpwood harvesting areas	22	12,150,125	126,870
Other public sustained-yield units	60	40,380,561	406,170
Total public sustained-yield units	82	52,530,686	533,040
Tree-farm licences	39	7,070,774	349,915
Tree-farms (excluding those in tree-farm licences)	25	672,712	34,287
Farm wood-lot licences	53	14,124	344
Totals	199	60,288,296	917,586

PULPWOOD HARVESTING AREAS

The option agreement for Pulpwood Harvesting Area No. 2 was formally ratified by Kamloops Pulp and Paper Company Limited and the Honourable the Minister of Lands, Forests, and Water Resources on November 7, 1963. Public sustained-yield units included are Adams, Barriere, Barton Hill, Botanie, Eagle, Nehalliston, Nicola, Niskonlith, North Thompson, Raft, Salmon Arm, Shuswap, and Spallumcheen.

Other areas in the Province continue to be studied by industry as potential pulpwood harvesting areas.

OTHER PUBLIC SUSTAINED-YIELD UNITS

Two other public sustained-yield units were established during the year. The Okanagan was established in the Kamloops Forest District with a productive acreage of 1,099,135 and the Takla in the Prince George Forest District with a productive acreage of 2,334,500.

A small isolated portion of the Monkman Sustained-yield Unit in the Upper Seebach Creek vicinity of the Prince George Forest District was withdrawn and reserved for the proposed extensions of Tree-farm Licences Nos. 29 and 34.

BRITISH COLUMBIA

DEPARTMENT OF LANDS AND FORESTS

HONOURABLE R. G. WILLISTON, MINISTER

Scale

40 30 20 10 0 40 80 120 160 MILES

STATUS OF SUSTAINED-YIELD FORESTRY PROGRAMME as at 31 DECEMBER 1963

PUBLIC SUSTAINED-YIELD UNITS

PULPWOOD HARVESTING AREA NO. 1

9. Big Valley
17. Carp
22. Crooked River
43. Naver
44. Nechako
51. Parsnip
70. Stuart Lake
77. Westlake
80. Willow River

PULPWOOD HARVESTING AREA NO. 2

1. Adams
6. Barriere
7. Barton Hill
11. Botanie
24. Eagle
45. Nehalliston
46. Nicola
47. Niskonlith
48. North Thompson
55. Raft
60. Salmon Arm
64. Shuswap
69. Spallumcheen

OTHER PUBLIC SUSTAINED-YIELD UNITS

2. Arrowhead
3. Ashnola
4. Babine
5. Barkley
8. Big Bar
10. Blueberry
12. Bowron
13. Broughton
14. Burns Lake
15. Canoe
16. Cape Scott
18. Chilliwack
19. Cottonwood
20. Cranbrook
21. Creston
23. Dean
25. Edgewood
26. Fernie
27. Granby
28. Harrison
29. Hazelton
30. Hecate
31. Kettle
32. Kinbasket
33. Kitimat
34. Kitwanga
35. Kyuquot
36. Lac la Hache
37. Longworth
38. Moberly
39. Monkman
40. Morice
41. Nakusp
42. Narcosli
49. Okanagan
50. Ootsa
52. Purden
53. Queen Charlotte
54. Quesnel Lake
56. Redonda
57. Rivers Inlet
58. Robson
59. Salmo
61. Sayward
62. Sechelt
63. Seymour
65. Similkameen
66. Slocan
67. Smithers
68. Soo
71. Stum
72. Takla
73. Taseko
74. Tatla
75. Terrace
76. Upper Kootenay
78. Windermere
79. Williams Lake
81. Yalakom
82. Yale

OTHER PUBLIC UNITS

S.S.A. Special Sale Area (o i c 2811/62)

K.R. Kamloops Region

TREE-FARM LICENCES

RESERVED

AWARDED

1. Eagle Lake Sawmills Limited
2. Church Sawmill Limited

T. F. L. No.	
1.	Celgar Limited
2.	Elk Falls Company Limited
3.	Pacific Logging Company Limited
4.	I. W. McDonagh
5.	Western Plywood Company 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. Ltd.
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 & 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

TREE-FARM LICENCES

No new tree-farm licences were established in 1963, but new working plans, including revised inventory figures, resulted in an increased classification of area as productive forest land of 16,583 acres and plans for improved utilization amounting to 21,474,000 cubic feet annually. These two figures are not supplementary since some productive area shown as an increase in 1962 contributes to the revised allowable cut figures which were not effective until 1963.

During the year a portion of the remote undeveloped forests north of the existing managed units was investigated by industry to determine the feasibility of applying for tree-farm licences to support new pulp-oriented integrated forest-products complexes. Celgar Limited investigated the Upper Skeena area in the Prince Rupert Forest District and Alexandra Forest Industries Ltd. studied the Finlay, Parsnip, and Peace Rivers in the Rocky Mountain Trench region of the Prince George Forest District. MacMillan, Bloedel and Powell River Limited applied for the tree-farm licence associated with the Kitimat pulp-mill, which had been placed in abeyance some years ago pending a review of the management potential of the area scheduled to be held after the end of 1963. (*See* Table Nos. 31, 32, and 33 in the Appendix.)

CERTIFIED TREE-FARMS

Two new certified tree-farms were certified in 1963, bringing the total to 39 tree-farms under the *Taxation Act*. Of these, 14 are managed as portions of tree-farm licences with a productive acreage of 291,903 acres and a total annual allowable cut of 13,136,000 cubic feet. The tree-farms not included within tree-farm licences total 25 and have a productive acreage of 672,712 acres with a total annual allowable cut of 34,287,000 cubic feet plus 386,740 Christmas trees.

FARM WOOD-LOT LICENCES

Routine activity in farm wood-lot administration resulted in six new farm wood-lots. Ten were cancelled due to change in tenure, failure to adhere to the management plan, death, and, in two cases, change of vocation by the licensee. The 53 farm wood-lots have a productive acreage of 14,124 and an annual allowable cut of 344,000 cubic feet.

PUBLIC INFORMATION AND EDUCATION DIVISION

Nineteen sixty-three was an extremely busy and vital year for the Public Information and Education Division. As was noted in the 1962 Report, that year had seen major staff changes affecting the whole structure of the Division. Last year brought a return to full activity. The Director, himself a new member, was able to visit all districts to meet Forest Service personnel, renew contacts with news-distributing media, and observe industrial operations.

In reviewing the activities of the Division as a whole, it appears that the press and radio fields were particularly active, and the Forest Service is indebted to those media for their help. The production of a new film advanced rapidly, and stress was given to the production and showing of Forest Service exhibits. The establishment of a Public Information Officer in the Prince George Forest District again proved extremely valuable.

For the Divisional staff, what appears as a matter of minor internal importance loomed as a salient feature of the year. This was the acquisition of a large, dry storage area in the nearby Forest Service garage. Up to this time, important volumes of printed matter, photographic stores, and bulky exhibits have been stored in widely separated warehouse areas.

COMMUNICATIONS MEDIA

Press and Periodicals

The 1963 season was particularly successful in the field of news dissemination. The establishment of a news clipping service late in 1962 gave the Division, for the first time, a real instrument for making accurate assessments of how releases were accepted and how widely they were published. The Division learned with some gratification that many Forest Service releases achieve very full news saturation, being published by almost every paper in the Province, daily and weekly. It might be added that although the clipping service cannot substantiate this point, a check has shown that these same releases appear on most television and radio newscasts.

The most popular and widely accepted news releases are those dealing with fire protection. These have not departed far from the pattern established many years ago. The weekly release, issued on Fridays, summarizes the Provincial fire picture, including numbers of fires and costs to date. There are also daily releases at special periods and news stories and releases covering particular aspects of the fire season or fires.

Also released to the press were stories dealing with such subjects as silviculture, reforestation, forest industries, pulpwood harvesting areas, speeches made by Forest Service personnel, exhibits, and celebrations.

Publications and Printing

The volume of work in this category showed a marked increase in 1963 due to new and important publications being issued in addition to regular editions and reprints.

Most important project included the Annual Report of the Forest Service and the Research Review. In addition, there were large and newly edited reprints of the Illustrated Forest Activities series, the career pamphlets, and the school scribblers. The latter appeared with new colour-photo covers and Forest Service crests.

In the field of new publications were the Safety Manual and the first two Management Notes. An old favourite was completely revised, given colour illustrations and a new cover, and brought to the point where final proofs have been returned to the Queen's Printer. This is the Pocket Guide to the Trees and Shrubs of British Columbia.

As an indication of the demand for Forest Service publications, 800 requests were received and filled from school students alone.

Radio, Television, and Theatre

The Division's educational activities in 1963 again included the use of radio, television, and theatre advertising to emphasize forest-fire protection.

Five sets of 35-mm. protection slides were prepared and used on six television stations in the Province. These slides were telecast approximately 200 times between July 1 and September 10, 1963.

The Province's 27 radio stations were supplied with a prepared take which contained 10 individual 30-second announcements. Copy for special hazard flashes to be used during periods of high hazard was also prepared and supplied to all stations. In all, 2,731 announcements were broadcast during the standard schedule, May 1 to September 10, 1963.

Approximately 250,000 persons viewed a 35-mm. film trailer projected in 33 commercial theatres.

In addition to the scheduled paid and unpaid protection announcements on radio and television stations, staff officers prepared copy and (or) participated in numerous special-event programmes. A daily forest-fire report over one Victoria station was continued.

SIGNS, POSTERS, AND EXHIBITS

With the co-operation of stores, auto courts, private camp-sites, etc., more than 11,000 protection posters were displayed.

The Service's highway sign crew was active for the 10th consecutive year, repainting 106 "Keep B.C. Green—Use Your Ashtray" signs. In addition, 181 new standard Forest Service signs were produced, bringing to 789 the number now on display.

In conjunction with the Reforestation Division, a portable exhibit was constructed and used in numerous fall fairs and exhibitions. The special 50th anniversary exhibit also received wide use, but is now going to be removed from circulation due to excessive wear. The Service's permanent exhibit in the British Columbia Building, Pacific National Exhibition, Vancouver, was maintained.

A miniature replica of the special hazard-rating sign was produced in quantity for use in automobiles during 1964.

PHOTOGRAPHY

Still and Motion-picture Production

During the year, production of black-and-white prints totalled 11,587, a slight increase over the previous year's record total. The Engineering Services Division received most of these prints.

Production of negatives, both black and white, and colour, in large format and roll film, continued to increase. The photographic library had 307 negatives added to its file, excluding those taken by Engineering Services personnel, which are now catalogued separately. The 35-mm.-slide library received 91 additions, and nu-

merous duplicates of file slides were made for various lecture and display purposes. Use of the slide collection is increasing, and the use of duplicates for extended loans allows a master copy to remain on file. A start has been made on forming a collection of 2¼ transparencies, which can be used for display as well as for projection purposes.

"The Man in the Tower," a 24-minute training film on the lookoutman, was completed during the year and is now in the film library.

Motion-picture coverage was given to a demonstration of helicopter and monsoon-bucket use in fire-fighting, 400 feet of film being used. With 600 feet of film, the procedure used in painting the "Keep B.C. Green—Use Your Ashtray" highway signs was filmed. This footage will be edited into a silent training sequence for instruction of future road sign-painting crews.

Slash-burning in the Nimpkish area, part of a 16-mm. film being made.

The major motion-picture undertaking of the year was the production of 4,000 feet of film for an informational and training film on slash-burning. Most of it was taken in the Nimpkish and Lake Cowichan areas of Vancouver Island. This production had reached the editing stage by the end of the year. At the same time, extensive 35-mm.-slide coverage was given, and from a total of 130 slides the basic material for an illustrated lecture will be selected. Sequence colour stills on the progression of some slash burns were also taken.

Proof copies of photographs added to the photographic library continue to be sent to the districts at six-month intervals, resulting in increased use of the library by district personnel.

During the year the District Information Officer in Prince George edited some 1962 footage into an informational silent film on slash-burning and planting, and nearly completed a second on scarification and silviculture.

FILM LIBRARY

The year 1963 began with 152 films in the library, showing once again an increase of 12 films over 1962.

A total of 150 of these films was loaned out to the public. The total audience was down in 1963 from 1962 due to the decrease in school lecturing. (*See* Table No. 141 in the Appendix.)

It is planned to repeat the circulation of the film catalogue to the schools at the beginning of 1964 to stimulate the activity of the library.

All officers of the Division, as well as school lecturers, gave many film and lecture programmes to schools, service clubs, church groups and Parent-Teacher Associations.

Once again the films from the library were used to train inmates of British Columbia correctional institutions in fire-fighting and reforestation, as well as related forestry subjects. Other prisons as far away as Saskatchewan also used the library for rehabilitation programmes, and the armed forces used it in their national defence programme.

For the first time a selection of Forest Service films was shown during the summer at trailer parks throughout the Province, and this proved most successful. It was done by the Division's highway sign-painting crew and was therefore carried out without additional cost.

The Division continued to provide safety shows, and, with the addition of a new safety film, this was a successful enterprise.

SCHOOL LECTURE PROGRAMME

The school lecture programme has declined from a peak of three full-time lecturers to two who are only able to devote part of their time to it—one working out of the Victoria headquarters and one out of the Prince George District office. Despite this, 151 lectures were given in 74 different schools to a total of 15,240 students.

Both school lecturers on their trips seek opportunities to address service clubs and other community groups. Including these, and talks by other members of the Division, some 45 non-school lectures were given. The content of these talks varied widely of course, but basically they covered the importance of the forests to the economy and the need for public co-operation in the management and conservation measures that are being undertaken.

LIBRARY

For the first time in many years the librarian visited the Prince George District office and the Forest Service training-school at Surrey to reorganize their libraries. It is hoped that in the future the district and training-school libraries can be visited at more frequent intervals.

With the use of the Xerox 914 copier, the library staff has been able to give a much improved service to our borrowers by the copying of a great deal of material. This enables the original to remain on the shelves and the copy to be retained for reference by the forester concerned.

Press clippings on forest subjects are now being supplied to all forest districts, as well as being circulated through the Service at Victoria. This gives an over-all picture of the industry in British Columbia.

There has been an increase in inter-library loans, up to 174 items, over 152 last year, borrowed from libraries all across Canada and the United States. This service is much appreciated by the foresters.

FOREST MANAGEMENT DIVISION

Relatively good logging weather, a light fire season, and good markets during 1963 all combined to produce yet another record year for production and revenue from British Columbia's forests.

The total scale for all products was 1,473,000,000 cubic feet (8,676,000,000 board-feet). This figure surpasses last year's record by over 130,100,000 cubic feet, or 9.7 per cent. The significant factor of the total increase is that the increase in the Interior was three times that of the Coast, whereas in 1962 the increase occurred in almost the reverse manner. This is reflected in the percentage of scale from the Coast as against that from the Interior. With the exception of 1962, the Interior has been showing a steady gain on the proportion of the total production, and in 1963 it rose from 42 to 45. (*See* Table No. 53 in the Appendix.)

By species, Douglas fir continued to head the list of wood scaled. Four hundred and two million cubic feet were scaled during the year, compared to 338,000,000 cubic feet of hemlock, 274,000,000 cubic feet of spruce, and 186,000,000 cubic feet of cedar. Hemlock showed the greatest volume increase, but spruce showed the greatest percentage rise.

A breakdown of the scale by species into cut by Coast and Interior brings some interesting facts to light. The volume of Douglas fir scaled in the Interior just topped the Coast. The production of spruce in the Interior was over seven times that of the Coast. Conversely, the scale of hemlock on the Coast was seven times that of the Interior. The production of fir on the Coast dropped 7,000,000 cubic feet, while increasing by 13,000,000 in the Interior. Spruce in the Interior showed the greatest volume increase of all species, Coast and Interior.

While the total scale of all products rose by nearly 10 per cent, the proportion from timber sales and other temporary alienations remained the same at approximately 81 per cent. Timber sales were the main source of production, contributing 50 per cent of the total scale. The scale from tree-farm licences was approximately 14 per cent.

For a number of years it has been noted that the data contained in Table No. 3 (now Table No. 51) in the Appendix of the Forest Service Annual Report were duplicated in the table "Net Value of the Forest Industry" in the publication "British Columbia Forest Industry Statistics," compiled by the Bureau of Economics and Statistics. As the same sources were being approached for much of the same information by the two departments and basically the same data were being presented in the two reports, it was decided to use the table compiled by the Bureau of Economics and Statistics. The figures for 1962 and 1963 are shown as estimates because data are not complete for approximately two years. Nevertheless the figures are sufficiently accurate to give a definite trend. During the past few years there has been a very marked increase in value, rising from $625,000,000 to an estimated $850,000,000 in the last five years.

The record over-all production for the Province was reflected in the water-borne lumber shipments, amounting to 2,149,000,000 board-feet, a 16-per-cent increase over 1962. While the United States and the United Kingdom continued to be the largest buyers of British Columbia lumber and showed substantial increases over previous years, the most notable increase in shipments was to Japan. Two hundred and seventy-eight million board-feet were shipped to Japan, compared to 107,000,000 the previous year and a mere 1,500,000 in 1960.

The export of logs also took an upswing in 1963, exceeding the 1962 total by nearly 20,000,000 board-feet, but failed to reach the 100,000,000 mark of 1961.

Hemlock increased its lead over other species to 45 per cent with 42,000,000 feet, while spruce shipments were half this figure and balsam half of that.

The number of timber sales cruised during the year remained about the same as for the last two years, at 1,862. However, acreage and volume of saw-timber increased appreciably, and the average size of sales increased from 328 acres to 385. The number of sales awarded rose from 1,991 in 1962 to 2,183.

While the increase in number of sales awarded was moderate, the increase in estimated revenue took a very significant jump, from $18,959,259 in 1962 to $26,194,611, the highest since 1959.

Competition for sales remained much the same, with the percentage of sales bid in at less than two times the upset price rising two points. Eighty-eight and seven-tenths per cent of the sales put up for public competition were sold at upset stumpage. On a few occasions when sales were bid at more than double the upset stumpage, the Honourable the Minister accepted protests from the recognized applicants and cancelled the sales under authority of section 17 (7) of the *Forest Act*.

PEACE RIVER FLOOD BASIN

The year saw considerable timber-sale activity in the proposed Peace River flood basin, with a total of 28 sales being awarded. These sales covered 48,144 acres, for a volume of 68,137,000 cubic feet. At the close of the year a further five sales were being advertised, and these, together with areas cruised but not yet advertised, covered 65,747 acres and 92,335,000 cubic feet of merchantable timber. Thus, including seven sales sold prior to 1963, a total area of 116,829 acres has been cruised, carrying 166,044,000 cubic feet of timber. Some areas still remain to be cruised, but the bulk of the area has now been covered.

WIND-THROW

In the latter part of 1962 the Lower Mainland experienced heavy gales, including " Frieda," and severe blow-down occurred in some areas. Damage was particularly heavy in the Yale Public Sustained-yield Unit around Hope. Owing to the severity of the blow-down, the areas most affected were declared salvage areas under section 27 of the *Forest Act,* and the timber sold at reduced stumpage rates to encourage early and quick removal of the downed trees to forestall loss by decay and beetles. Thirty timber sales involving blow-down were sold during the year, for a total volume of 15,500,000 cubic feet, and more were expected in the early part of the new year. In the Prince George Forest District, heavy losses from wind-throw were also experienced, and sales involving 425,000 cubic feet were processed.

SPRUCE BARK BEETLE

In the Prince George Forest District the spruce bark beetle presented the greatest threat to loss of merchantable volumes in standing timber. During the winter of 1962/63, beetle infestations were reported on by industry, the Canada Department of Forestry, and Forest Service personnel, and joint meetings were held to discuss the situation. The infestations were mapped from the air by the Federal Department, and, using these maps, Forest Service personnel carried out ground checks. As a result, several areas were declared as salvage areas under section 27 of the *Forest Act,* and a total of 15 timber sales was processed for a volume of 14,500,000 cubic feet. The infestations occurred along a relatively narrow strip from McLeod Lake in the north to Lightning Creek in the south. The heaviest attack occurred in the Purden Lake Public Sustained-yield Unit, where 11 sales were processed.

Spruce bark beetle attacks of varying intensity have also occurred throughout the white spruce stands of the Prince Rupert Forest District, with heaviest infestations in the Babine Lake, Ootsa Lake, and Hazelton areas. Where possible, logging activity is being directed into infested timber, as in the Prince George District.

ADMINISTRATION OF MANAGED UNITS

In 1963 the total cut from the management units listed in the Working Plans section of this Report was 112 per cent of the sum of their approved allowable cuts, and this volume represented 70 per cent of the total cut from the whole Province.

From experience the use of timber-sale cruise volumes as a basis for allowable cut control for sustained-yield units had proved unsatisfactory due to certain inherent weaknesses. It was therefore decided to use actual scale volumes rather than timber-sale cruise estimates for budgeting purposes. However, at the request of the logging industry, implementation of the proposed system was given a six-month moratorium to allow industry to study the proposals and submit its recommendations.

Two more public sustained-yield units were turned over to management for administration. The Okanagan was the last unmanaged area in the Kamloops Forest District, and in Prince George Forest District the Takla has pushed management boundaries still farther north.

The second pulpwood harvesting area was established during the year, centring on Kamloops, and it contains 13 of the adjacent public sustained-yield units. Also three of the managed units in Pulpwood Harvesting Area No. 1 were gazetted as pulpwood harvesting forest reserves. This is the term now given to forest reserves within pulpwood harvesting areas. The areas gazetted under this new designation are the Carp, Stuart, and Willow Public Sustained-yield Units.

Another record cut was established on tree-farm licences, amounting to 365,000,000 cubic feet, which is 5 per cent over the sum of their approved allowable cuts.

MARKET PRICES AND STUMPAGE TRENDS

Lumber Prices

The selling prices for dressed lumber that were reported to the Forest Service by the mills in the Interior of the Province were generally higher than those reported in 1962.

The relatively high prices at year-end reflect a firming-up in the demand for lumber in the North American market that is expected to continue into 1964. The market outlook at year-end was reported to be very good.

1963 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	140,405	$58.92	214,074	$64.02	219,272	$66.04	173,615	$60.32
Spruce	185,702	57.00	308,329	60.12	321,514	59.52	240,002	57.86
Cedar	11,501	54.31	12,902	57.98	11,701	63.42	10,113	59.92
White pine	4,221	96.13	6,136	96.22	6,282	98.20	4,306	99.18
Yellow pine	640	56.86	6,486	59.52	7,899	59.22	3,446	53.91

Log Prices

The log prices reported from transactions in the Vancouver log market started to rise in the second quarter of 1963 and continued to rise all year. This increase in

prices is largely a reflection of the improvement in demand for the sawlog and peeler-grade material.

Log prices at the year-end had reached their highest level since 1956 and were still climbing.

1963 Quarterly Average Log Prices per M B.M. (Vancouver Market)

No. 3 GRADE

Species	Jan.–Mar.	Apr.–June	July–Sept.	Oct.–Dec.
Fir	$59.48	$61.11	$61.83	$61.63
Cedar	33.96	37.18	39.66	42.44
Hemlock	40.85	44.65	45.65	46.55
Balsam (pulp)	32.62	33.61	36.79	37.51
Spruce	38.45	42.51	43.94	47.37
White pine	43.99	44.93	43.47	43.58

ALL GRADES

Fir	$73.57	$73.85	$73.66	$78.68
Cedar	41.69	42.47	46.18	48.55
Hemlock	43.55	46.18	47.14	48.07
Balsam	40.22	42.69	44.55	45.27
Spruce	46.96	54.78	56.77	59.87
White pine	50.53	50.91	49.54	49.65

Stumpage Prices

Appraised stumpage prices were considerably higher during 1963 following the improvement in log and lumber prices.

The weighted average stumpage price per hundred cubic feet for all species for the Coast regions was $5 and for the Interior $2.88. The average of stumpage prices bid for all species on timber sales in the Province during 1963 was $3.36 per hundred cubic feet, in comparison with $3.01 for 1962. The comparable figures for the years 1958, 1959, 1960, and 1961 were $4.03, $3.88, $3.53, and $2.53.

The real increase in the upset rates for conventional sawlog sales is distorted in a comparison of yearly average prices which reflect the depressed prices for the volumes that are sold at " salvage value only " rates. The volume sold in this type of sale is increasing each year, both in the Interior, where the decadent hemlock-cedar stands are being opened up, and in other areas as the limitations imposed by sustained-yield regulations make this type of material more attractive. The impact of this type of sale is reflected in the averages that follow and in the " Price Range " column of Table No. 67 in the Appendix.

The average stumpage price for all species, excluding " salvage value only " rates, was $5.25 per hundred cubic feet for the Coast and $3.22 for the Interior, which combines for an average of $3.69 per hundred cubic feet for the Province.

Sliding-scale Adjustments

The stumpage rate payable for each species on a timber sale or cutting permit is subject to adjustment under a sliding-scale formula each time the average price of logs or lumber changes by at least 15 per cent from the selling price on which the current rates were based. There were 4,801 adjustments under this provision during 1963—2,910 in the Coast zones, where the stumpage is tied to the Vancouver log market, and 1,891 in the Interior zones, where the stumpage is tied to the average market value of dressed lumber.

As a result of the general increase in average log and lumber selling prices, most adjustments served to increase the stumpage rates payable. There were only 240 downward adjustments, all for species in appraisal zones in the Northern Interior, where prices fell early in the first quarter then recovered.

SILVICULTURE

The programme for 1963 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 629 timber sales, principally in the Interior, received some form of treatment. This involved the treatment of 179,669 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.

Of the 179,669 acres receiving some form of treatment, 9,623 acres were treated under single-tree selection, compared with 72,944 acres in strips or patches and 90,667 acres in seed blocks 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 some 21,880 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 1963 approximately 7,459 acres were scarified.

A D7E with a U-blade scarifying in heavy slash.

Scarification appears to be achieving satisfactory results at a reasonable cost. Regeneration surveys in the Prince George Forest District over areas scarified in 1960, 1961, and 1962 averaged 58.9 per cent stocked quadrats. The stocking of spruce resulting from the 1959 scarification programme in the same district was reported in the 1961 Annual Report as 53 per cent stocked quadrats. The results of the 1960 and 1961 programmes in the Kamloops Forest District indicate 64.2 per cent stocked quadrats.

The cost of scarifying 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 $10 per acre is the average. The average cost of scarifying 4,233 acres in the Prince George Forest District was $10.32 per acre, compared with $7.90 per acre for 483 acres in the Nelson Forest District.

Prior to 1963 most of the scarification was done following logging. In the fall of 1962 the incidence of blow-down resulting from hurricane "Frieda" caused a change in emphasis from post- to pre-scarification.

In 1959 the first of a series of evaluation studies was initiated to determine the results of the various forms of stand treatment. At least two of these studies have now been completed, and the findings have been or will be reported in the Forest Management Note series.

The blister rust control programme, which was initiated in 1961, was expanded, and 2,100 acres were sprayed by helicopter with Phytoactin. Although no definite conclusions have been formulated, the results to date are extremely promising.

The Douglas fir bark beetle control programme mentioned in the 1962 Annual Report is now in force and has been well accepted. Unfortunately the spruce bark beetle has now replaced the Douglas fir bark beetle as the problem of major concern.

Scaling by weight at 100 Mile House.

SCALING

Coast

The scale of Coast timber was made in 1963 by an official scaling staff of 126 scalers and 451 acting official scalers. Approximately 95 per cent of the Coast volume was scaled by the official staff.

Supervision of the official staff was maintained through regular checking and training by the official supervisory staff. The Inspectors of Licensed Scalers maintained their supervision of the acting official scalers.

Examination of 71 candidates for scaling licences resulted in the issuance of 27 licences.

Preliminary studies indicated that scaling computing and billing procedures might be executed more efficiently through electronic computer systems. A forester has been assigned on a full-time basis to further investigation of this subject.

Interior

Supervision of licensed scalers was maintained by the Inspectors of Licensed Scalers in co-operation with the Ranger staffs.

Examination of 660 candidates for scaling licences resulted in the issuance of 220 licences. The Inspector staff continued with special lectures for the candidates after working-hours. Some of these lectures were given in co-operation with local School Boards in the adult education programme.

Scaling by weight was approved at two stud mills in the Cariboo. Early indications are that this method will prove popular and in certain instances more efficient than normal procedures which require individual measurement of all logs.

GRAZING DIVISION

GENERAL CONDITIONS

Conditions were generally favourable for the range live-stock industry in 1963. With the exception of limited areas only, forage production on both hay land and range was good. Stock came off the range in excellent condition. Cattle prices declined, but not disastrously. The number of stock using Crown range again set a record.

Range

Meagre precipitation during the winter of 1962/63 and early in the growing season resulted in poor range forage production. However, wet weather set in late in June, and periodic rains throughout the remainder of the growing season resulted in a remarkable recovery. Many grassland ranges remained green until freeze-up late in the fall. Total range production was above average.

The supply of range is now becoming inadequate to meet the needs of the industry in many areas.

Hay

Hay supplies proved adequate for the relatively short and mild winter of 1962/63. Owing to the frequent rainfall during the harvesting season, haying conditions were difficult in many areas in 1963. However, both the yield and quality of the crop appears generally adequate for the winter of 1963/64. A notable exception was the Peace River area, where a reduced crop necessitated a cut-back in the number of stock being wintered on some farms.

Markets and Prices

Cattle prices remained fairly strong during the first half of the year, but weakened later during the period when most of the cattle were marketed. Weighted average price received by cattlemen through the British Columbia Livestock Producers' Co-operative Association was $20.01 per hundredweight in 1963, compared to $21.20 per hundredweight in 1962, a drop of $1.19. The prices for sheep and lambs were up slightly over the previous year.

Live-stock Losses

Losses of stock on the range due to natural causes such as poisonous weeds and predatory animals appeared to be lighter than in recent years. However, the unexplained disappearance of stock from Crown range continued to increase. These losses appeared to be directly related to improved road access to range areas, and in many cases theft was suspected. Losses from stock becoming trapped in abandoned buildings on the range were also numerous.

RANGE MANAGEMENT

The principal factors affecting the management of Crown range during the year were the increasing demand for range use, further land alienations, and the mounting pressure of associated land uses. This situation requires greatly intensified supervision and management to secure maximum forage benefits, proper integration of the associated land uses, and maintenance of both the productive and protective functions of the range. The need is not being met due to both a shortage of staff and inadequate over-all land-use planning. The pressures of day-to-day administra-

tion necessary to resolve conflicts, both between graziers and with other land users, did not permit adequate attention to be given to range-management planning needed to increase forage production.

Range Surveys

Only scant attention could be given to this important activity during 1963. One small primary survey, covering approximately 46,000 acres, was carried out. Compilation of maps and reports covering field work completed in previous years was continued as time permitted. Numerous extensive range inspections were also carried out.

Range Improvements

During 1963, $52,883.68 was spent from the Range Improvement Fund. Material to the value of $9,971.12 was on hand at the beginning of the year and $16,860.92 worth at the end of the year. Net assistance to range-improvement projects from the Fund was thus $45,993.80.

The following projects, chargeable wholly or in part to the Fund, were constructed or extensively rehabilitated: 22 cattle-guards, 22 drift fences, 1 experimental plot, 3 hazard removals, 4 holding-grounds, 2 meadow improvements, 2 pasture developments, 30 stock-trails, 22 water developments, 1 brush-spraying, 1 yellow pine thinning, range seeding, and abandoned-horse disposal.

Permittees contributed extensively to the projects listed, mainly in the form of labour. Also, reflecting the growing recognition by the industry of the need for more intensive management, permittees undertook the construction of a greatly increased number of projects entirely at their own expense. During the year the following projects were authorized for construction: 3 breeding pastures, 4 cattle-guards, 3 corrals, 37 drift fences, 4 pasture enclosures, 2 holding-grounds, 1 stock-trail, and 3 water developments.

Field trials to determine the feasibility of improving range forage production were continued in 1963. One of the pasture-development projects listed above involved clearing, scarification, and seeding of an area of non-commercial forest cover. This work is expensive, but where soil quality and forage yields are sufficiently high may prove economically feasible.

The brush-spraying project involved treatment with 2,4-D of sagebrush to reduce competition with the associated forage plants. The yellow pine thinning was a continuation of the project commenced in 1962 in an effort to improve forage cover as well as timber production in an overstocked stand in the Cranbrook area. Also, a range-land drill, designed by the United States Forest Service and loaned by that agency, was used in a number of trial seedings on depleted grassland range. This machine shows considerable promise.

A total of 33,686 pounds of grass and legume seed was distributed for sowing on Crown ranges during the year, compared to 21,440 pounds distributed in 1962. Most of the seed was used on logged areas, no extensive burns requiring seeding in 1963. Except for a minor amount sown by Forest Service personnel, seeding was, as usual, undertaken by co-operating permittees, with seed, equipment, and supervision being supplied by the Service.

Following consultation with the Range Research Station, some adjustment in seed mixes was made to reduce the possibility of competition with coniferous regeneration. Examination of several of the large areas which were seeded following burns in 1960 and 1961 showed considerably more promising results than were previously evident. Several trial slash-disposal burns were carried out in the range area in 1963, both to reduce fire hazard and improve seeding opportunities.

The maintenance of cattle-guards on heavily travelled roads continued to be a problem. Additional modified designs were installed during the year in an effort to reduce upkeep.

All of the Kamloops and most of the Nelson Grazing Districts were closed to horses during the winter of 1962/63 to prevent damaging grazing during this period. Forty-six horses which remained on Crown range in contravention of the closures were removed by horse-disposal licensees.

Peace River Pastures

A major feature of Grazing Division activity in 1963 was a greatly expanded pasture-development programme in the Peace River area. This was made possible through the availability of increased funds as a result of Federal-Provincial cost-sharing agreements under the *Agricultural Rehabilitation and Development Act.* Five pasture projects were approved under this legislation. All of the sites had been selected and placed under reserve earlier.

In the current phase of development two projects involve only the construction of fencing, trails, stock-watering dugouts, and other facilities necessary to utilize the natural-forage values. Two more areas contain virtually no natural forage and involve the clearing, breaking, and seeding to domestic forage plants of some 4,000 acres currently covered by poplar, willow, and other non-commercial species. The fifth project is a combination of developed and natural pasture. All of the projects include additional land which can be developed as required in the future.

Owing to shortage of staff, the amount of planning involved, and time required for the consummation of project agreements with the Canadian Government, the bulk of the work was not commenced until October. However, by the end of the year the following work was completed: 9¼ miles of fencing, 10 stock-watering dugouts, 8½ miles of access road, 10½ miles of stock-trails, 2,453 acres cleared, and 25 acres broken and seeded. The last item represented clean-up of pilot work undertaken in past years. The present phase of the programme will require two more years to complete.

CO-OPERATION

There are now 60 local range live-stock associations approved under the *Grazing Act.* Three new associations were approved during the year, and one newly incorporated association was in the process of applying for approval at the end of the year. Close contact was maintained with these associations, which are an invaluable aid in resolving the wide variety of problems which arise in the administration of Crown range. Contact was also maintained with the British Columbia Beef Cattle Growers' Association and the British Columbia Sheep Breeders' Association on matters of industry-wide importance. A total of 166 association meetings was attended by one or more Forest Service officers during 1963.

The British Columbia Livestock Producers' Co-operative Association, the producer-owned marketing agency, continued to supply live-stock price figures necessary for the sliding scale of grazing fees. The co-operation of this agency is appreciated by the Forest Service.

Close liaison was maintained with other agencies of both the Provincial and Federal Governments associated with range or live stock. The Canada Research Stations at both Kamloops and Beaverlodge, Alta., continued to supply valuable technical information in connection with range management and development. A number of joint investigational projects were continued or extended.

Grazing officers again assisted with the University of British Columbia Faculty of Agriculture students' tour in the range area. Twenty illustrated talks on range

mangement were also presented by Grazing Division personnel to rancher groups, the Forest Service training-school, and Ranger staffs.

ADMINISTRATION

The number of stock on Crown range increased approximately 8 per cent in 1963. As such additional stock can now be accommodated only through more intensive management and supervision, the result was a tremendous increase in the administrative work load—an increase out of all proportion to the larger number of stock involved. To meet this situation it was necessary to assign a larger amount of grazing field work to Ranger staffs. Although this greater decentralization is desirable, its practicability is limited by both the pressure of other Ranger duties and the need for more training of this staff in grazing work. A light fire season in 1963 helped the situation considerably.

Grazing instruction for the current class at the training-school was increased, and the possibility of advanced instruction for the existing Ranger staff was given active consideration. There is a need for a completely rewritten Grazing Manual to meet current conditions.

Pressure for the commencement of grazing administration on wild lands in the Peace River area reached the point this year where 72 applications were received for grazing permits for 6,332 cattle, 714 horses, and 2,286 sheep. It was not possible to issue these permits, but the appointment of an additional agrologist was approved late in the year, and plans for the necessary surveys and administration commenced.

Grazing administration was also started on a limited scale in the Pemberton area of the Vancouver Forest District. There are a few meadows and sub-alpine areas in this locality which are suitable for grazing small herds of cattle for a short summer season. The potential is limited, but will be a useful adjunct to live-stock farms in the vicinity.

Grazing Permits

During 1963, 1,951 grazing permits were issued for 158,840 cattle, 5,860 horses, and 25,366 sheep, on Crown range. This is an increase of 27 permits over 1962. Cattle numbers were up 12,010 head or 8.1 per cent, sheep 1,996 head or 8.5 per cent, and horses 853 head or 17 per cent over the previous year. Both the number of permits issued and the number of cattle are the highest ever recorded. Increases were shared by all districts. (*See* Table No. 81 in the Appendix.)

Hay Permits

A total of 229 hay-cutting permits was issued authorizing the harvesting of 2,842 tons of hay from Crown range. Twenty of these permits, involving 291 tons of hay, were later cancelled where adverse conditions prevented harvesting. Hay-cutting fees remained at $1 per ton.

Special-use Permits

There are now 96 grazing special-use permits in effect in Provincial forests under the Forest Reserve Regulations. These are all special-purpose pastures. Special-use permit fees were revised upward during the year.

Grazing Fees

Grazing fees per head per month for 1963 were 21 cents for cattle, 26.25 cents for horses, and 3 cents for sheep. These fees represent an increase over 1962 of 3 cents for cattle and 3.75 cents for horses. Fees for sheep dropped ¼ cent per head

per month. Under the sliding-scale formula, the changes in fees reflect the prices received by producers the previous year.

Due to higher fees for both cattle and horses and the increased number of stock on the range, both billings and collections were up considerably over the previous year and were the highest ever recorded.

Violations and Prosecutions

Most violations of grazing regulations and permit conditions were corrected promptly when brought to the attention of the owners of the offending stock. However, it was necessary to authorize seizure on four occasions. One case of trespass was taken to Court during the year and successfully prosecuted.

ENGINEERING SERVICES DIVISION

ENGINEERING SECTION

The design and construction of forest-development roads under terms of a Federal-Provincial cost-sharing agreement continued during 1963 to form a major portion of the Engineering Services Division work. The cumulative result of the programme is that since 1950 nearly 2,500,000 acres of forest lands have been made accessible to industry.

Last year, in addition, work continued on the construction of a main haul-road in the Parsnip River valley for the extraction of timber from the pondage area of the Peace River power development, and field engineering crews carried out road location, development, and general engineering work in all five forest districts.

Continued emphasis was placed on accident prevention, and during the year eight British Columbia Safety Council awards of merit, including one bronze-on-gold, two gold, one silver, and four bronze, were earned by Engineering Section employee groups.

Development Engineering

Development engineering studies on 16 forest areas encompassing some 6,500,000 acres of forest land with a present recoverable mature timber volume of approximately 2,000,000,000 cubic feet were undertaken by five field crews.

In the Vancouver Forest District, studies were carried out in the valley of the Coldwater River and on the Coquihalla River, in the Big Silver Creek-Nahatlatch area, and along Lillooet Lake. The crew working in the Kamloops Forest District completed field work in the Barton Hills area and an area centring on the Chilcotin River. Work undertaken in the Prince Rupert Forest District included development studies on Insect Creek and on six drainages in the Rivers Inlet area—namely, Milton River, Sandell River, Johnson Creek, Allard Creek, Lockhart Gordon Creek, and Nekite River. Development engineering studies in the Prince George Forest District included work on the Halfway River drainage and on the divide between the Swift River and Cunningham Creek. Studies were carried out in the drainages of Bush River and Norns Creek in the Nelson Forest District.

In the Rivers Inlet area the 50-foot Forest Service launch "Poplar III" was used for crew transportation and accommodation. In the other areas of the Province, pack-horses, jet river craft, fixed- and rotary-winged aircraft, and conventional vehicles were used to permit crews to carry out field work in the many types of country encountered.

Road Location

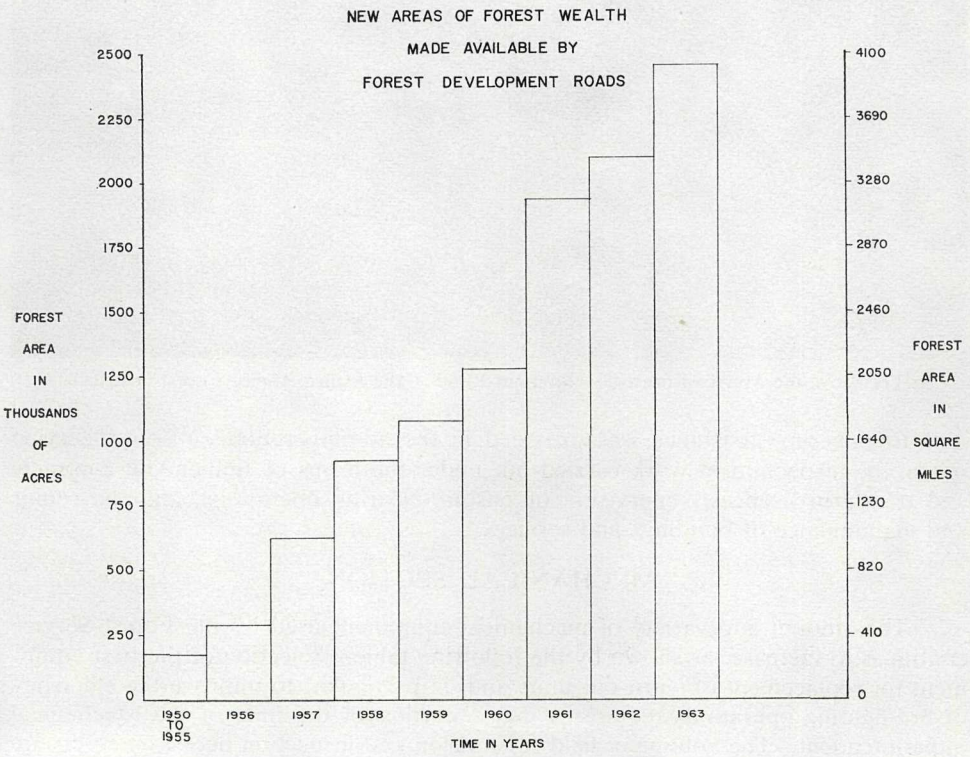
Road location was completed on 181 miles of haul-roads and 116 miles of protection access road during 1963, and in addition 20 miles of existing low-order road were surveyed for future reconstruction. (*See* Table No. 91 in the Appendix.)

Road Construction and Maintenance

The cost-sharing agreement with the Federal Government continued during 1963, and 50 miles of forest-development road were constructed. In addition, a heavy concentration of forces worked on the construction of 54 miles of road to complete a main haul-road for the extraction of merchantable timber from below flood-line in the Parsnip River drainage.

The construction of these 104 miles of road involved the clearing of 900 acres of right-of-way, the movement of 2,200,000 cubic yards of common excavation

and 145,000 cubic yards of solid rock, the installation of some 22,000 lineal feet of culvert pipe, and the erection of 24 permanent timber bridges and one local-material timber bridge. Despite an increase of 33 per cent in the amount of material moved, the actual mileage of roads completed during the year was considerably below the 1962 total of 141 miles. The movement of relatively large quantities of earth and rock under difficult construction conditions slowed progress on projects at Port Hardy and Cayoosh Creek. Several jobs in the North Central Interior of the Province were delayed by wet weather in the early summer months, but in the Parsnip River area favourable conditions prevailed and work on this project proceeded well ahead of schedule.



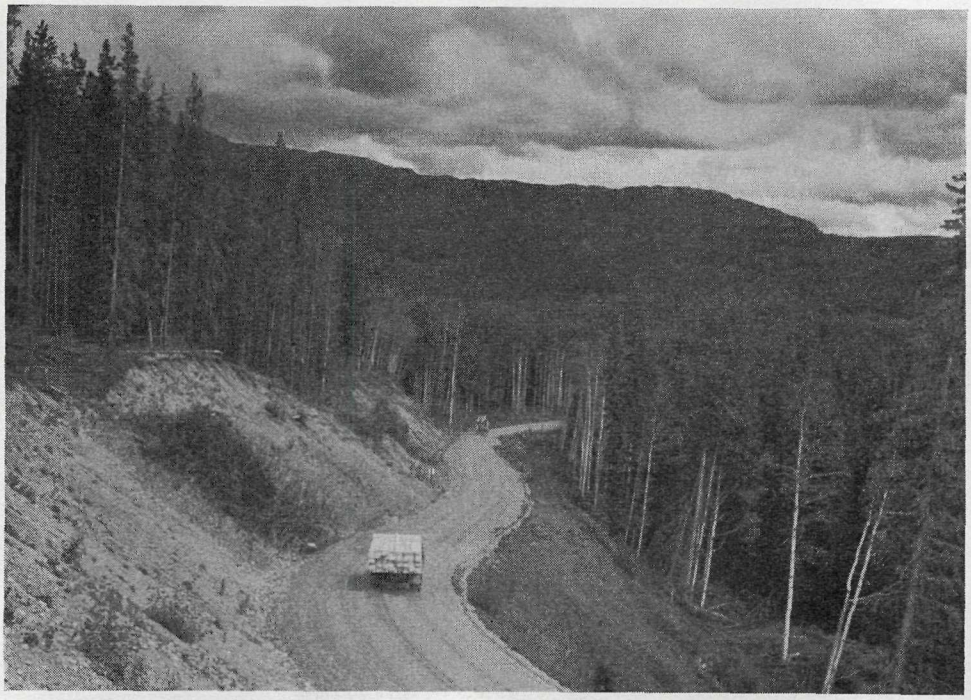
The inventory of bridges was increased by 90 per cent as a result of the year's construction programme. Of the 25 bridges erected during the year, nine were on the Parsnip River Road and six on the Kettle River Forest-development road.

Road maintenance was carried out on 670 miles of previously constructed road. Cost of this work in 1963 far exceeded that of any previous year due to extensive storm damage suffered in the autumn of 1962 and the need for additional surfacing on some of the older roads.

General Engineering

Designs, plans, and specifications were completed for 22 pressure-creosoted timber bridges, six untreated sawn-timber bridges, and substructure repairs to the Kingcome River Bridge, damaged in the fall of 1962.

A further 27 preliminary sketches and cost estimates were prepared in connection with the 1963 road reconnaissance and location programme.



Traffic on the Morice Forest-development Road in the Prince Rupert Forest District.

Engineering assistance was provided in the administration of Forest Service roads, the inspection of work carried out under the terms of timber-sale contracts and tree-farm licences, supervision of pasture-clearing operations, and the repair and maintenance of buildings and services.

MECHANICAL SECTION

The amount and variety of mechanical equipment used by the Forest Service continues to increase, as shown by the following table. Selection of the best equipment for replacement of worn-out units and, in particular, to improve the efficiency of fire-fighting operations requires a major portion of the time of the Mechanical Superintendent. The volume of field supervision and inspection necessary to ensure adequate maintenance of equipment together with instruction of operators is also growing.

In order to ease the load on the five district mechanical supervisors, each was given a qualified mechanic to assist in the inspection and training work and also to provide field assistance in the event of breakdowns, particularly to heavy equipment. These staff additions have already proved their worth. (*See* Table No. 92 in the Appendix.)

During the year, members of the staff gave two short courses of instruction in mechanics to Assistant Rangers at the Green Timbers training-school. A third course was given to the personnel of summer survey and reconnaissance parties of the Engineering Division.

BUILDING CONSTRUCTION AND DESIGN

The construction of standard Ranger station buildings for various functions throughout the Province again played a prominent part in this year's construction,

with emphasis on renovations and improvements to services for existing buildings. Increased activity by the Reforestation Division in the use of cold-storage and irrigation facilities accounted for a number of projects both completed and at the design stage.

Field time was spent in the supervision of division crews, contract inspections, and district inspections and consultations.

In addition to design work in the office, assessments were made for rental charges for the residences built and occupied during the year.

Table No. 93 in the Appendix outlines and reports on the progress of projects undertaken during the year, in addition to which 27 miscellaneous jobs were undertaken and completed. In carrying out this work, 52 contracts were awarded for various phases of sub-trade and prime work.

Marine Design

The 15-year-old 51-foot motor-vessel "Otter" was purchased early in the year from the Fish and Game Branch of the Department of Recreation and Conservation and was renamed "Poplar III." Study of this vessel showed it to be adaptable for service as an exposed-water Ranger launch, and as a result this same design with modifications is being used for the construction of a new Ranger launch to be named "Golden Spruce." It is due to enter service in 1965.

A plan was prepared and materials purchased to equip the former Harrop ferry scow as a fire-fighting landing-craft (No. 10) for Kootenay Lake.

The following small craft were purchased to replace older boats no longer considered serviceable:—

Size and Type	Used by	District or Division
8-foot fibreglass	Ranger staff	Prince George.
9-foot inflatable	Ranger staff	Prince Rupert.
11-foot inflatable (two)	Ranger staff	Prince Rupert.
13-foot inflatable	Ranger staff	Prince Rupert.
13-foot inflatable	Ranger staff	Kamloops.
12-foot aluminum	Survey crew	Engineering Division.
12-foot aluminum	Survey crew	Surveys Division.
12-foot aluminum	Ranger staff	Prince Rupert.
14-foot aluminum	Ranger staff	Prince George.
14-foot aluminum (two)	Ranger staff	Kamloops.
16-foot aluminum (three)	Ranger staff	Prince George.
16-foot aluminum	Ranger staff	Nelson.
30-foot aluminum river-boat (used)	Ranger staff	Prince Rupert.

FOREST SERVICE MARINE STATION

The staff of the Marine Station was largely engaged throughout the year making repairs and modifications to marine craft, trailers, etc., or producing special equipment required by the Service. Nevertheless, it was possible to make some significant improvements to the facilities at the plant in the interests of safety and efficiency.

Marine Work

Forty-three annual overhauls and 24 minor jobs on launches of the Forest Service fleet comprised the major part of the work completed by shipwrights and marine mechanics. Other jobs handled during the year included alterations to the "Forest Cruiser" to provide more working space for cruisers and better visibility from the wheelhouse, rebuilding the hull and engine of the "Forest Pioneer" to prepare her for operation under rugged conditions on northern lakes, replacement of

twin diesels in the " Forest Supervisor " by twin gasoline engines which give her a cruising speed of better than 20 knots, and re-engining the jet boat " J.C. 2." Minor alterations were made to the " Hecate Ranger " and to the barge used as a helicopter landing by the Forest Surveys Division. Thirty small boats, river-boats, and dinghies were repaired. New construction was limited to six 22- and 30-foot river-boats, two jet boats, and four 10-foot dinghies.

Machine-shop

Members of the staff of the small-engine repair-shop were kept busy during the year by a variety of jobs in addition to the regular overhaul work on 405 pumps, outboard motors, power-saws, and portable light plants. One hundred and twenty-five new units were tested and shipped to the districts, and 32 portable tankers, 30 hand-winches, 12 sets of lightning-arresters, 15 tree-height calipers, an experimental bentonite mixer, and a trail motor-cycle were built. In addition to the welding, plumbing, and electrical work carried out in conjunction with the repair and rebuilding of trailers, 1,700 pump and hose fittings plus 100 other miscellaneous pieces were machined from castings.

Prefabrication and Carpenter-shop

Production of new buildings, furniture, and other specialities required by the Forest Service was lower than usual. Only four lookout buildings, complete with furniture, were built. Other items included 59 pieces of office furniture; 110 boxes for pumps, outboard motors, and chain saws; 100 signs of various types; and 48 scaling-boards. However, it was possible to completely rebuild 9 house trailers and repair 4 others, as well as do a considerable amount of station improvement and maintenance work that has been needed for some time.

RADIO SECTION

New radio transmitting equipment acquired in 1963 is as follows:—

A.M.—		
Portable	22	
Fixed station (20–200 watts)	26	
Marine (60–100 watts)	3	
General service band portable	9	
General service band fixed	1	
Total A.M.		61
F.M.—		
Portable 1-watt	28	
Portable 5-watt	7	
Fixed station (60–80 watts)	10	
Fixed station (25 watts)	4	
Mobile	33	
Total F.M.		82
Total purchases, all types		143
Written off during 1963		20
Net increase		123

The above average number of units purchased reflected a programme of improving the supply of forest-protection equipment with portables and mobiles. The

general trend was toward recouping some of the losses incurred from past writing off of A.M. equipment by the purchase of a number of higher-powered A.M. units as Ranger station back-up for the F.M. system.

The planned installation of V.H.F. repeaters from Burns Lake to Terrace was not implemented pending a possible change of plan, but a repeater for the improvement of forest-protection coverage was installed on Tyce Ridge at Telkwa. In addition, Mount Hays repeater at Prince Rupert was made permanent in its new position on top of the mountain, thereby consolidating the circuit to Queen Charlotte City.

An extensive survey of forest-protection communications from Chetwynd north to Fort Nelson resulted in a concrete plan for a trunk system using five lookout locations as repeater-sites. The P.G.E. microwave circuit contracted for in 1962 was put into operation early in 1963 and has connected Prince George and Victoria satisfactorily throughout the year.

In the Kamloops Forest District a new repeater on Elephant Mountain near Ashcroft is the connecting link between the Victoria–Prince George microwave line and Kamloops. It is controlled by Kamloops headquarters by means of a remote unit on Dufferin Hill. At the same time another remote unit with forest-protection frequency was established on Dufferin Hill to increase coverage in the Kamloops area. During the summer a plan was drawn up for a complete trunk system to replace the present Kamloops repeater frequencies, with the object of making all portable and mobile units capable of working through the repeater system.

Fraser Valley communications were greatly improved by a new repeater on Sumas Mountain, which feeds Chilliwack, Hope, and Harrison Lake with solid signals. Improved forest-protection communication was reflected in the successful use of a V.H.F. portable repeater on the " Win " fire near Winslow Lake. The repeater was placed in position by helicopter and provided uninterrupted contact between the fire and Mission Ranger Station. An innovation in pre-organization was the surveying of fire-occurrence areas to determine probable portable-repeater sites which could be used on fires in 1964.

In the Nelson Forest District, Baker Mountain repeater was placed in service late in the year and gave excellent results as a replacement for Moyie Mountain. However, the nearby television pick-up station for the City of Cranbrook was interfered with by our repeater, and the unit was taken off the air pending a solution to the interference problem.

The Victoria section had a busy year with laboratory projects, including the design of an improved portable transistorized repeater of extremely low battery drain, the design of a transistorized A.M. portable to replace the Model B, improvements to commercial units, and investigation into thermo-power generators. While field work was reduced to some extent, the Peace River propogation survey and several smaller projects were completed during the summer.

FOREST PROTECTION DIVISION

WEATHER

The 1963 fire season opened with a cool, showery weather pattern throughout the Province. With the exception of a brief warm, sunny period in May, this pattern extended into July, though with numerous regional variations, and was followed by a warming and drying trend which lasted, in the southern third of the Province, until October.

The fire season was terminated by Order in Council on October 15th for that portion of the Province lying west of the Rocky Mountains.

The April Snow Bulletin indicated that snow levels ranged from below normal to well below normal throughout many of the drainages in the Province, with the greater departures from the normal being located at lower elevations.

April to mid-May weather was generally showery and cool, with precipitation ranging from 50 per cent of normal in the Queen Charlottes and parts of Vancouver Island to slightly above normal in the Northern Interior and 300 per cent of normal in the South-west Interior.

The latter part of May provided a marked brief warming period, offsetting the earlier cool weather and resulting in normal average temperatures for the month. June and July were generally showery and cooler than average.

The August-September period was marked by a warming trend. Precipitation varied considerably throughout the Province during this period and some of it was associated with heavy thunder-storm and lightning activity in the Interior.

Early October ushered in cool showery weather generally, thereby permitting early termination of the fire season.

FIRES

Occurrence and Causes

Although precipitation during the fire season exceeded the 10-year average, fire occurrence increased by 35.1 per cent over 1962, which brought the 10-year average from 1,822 to 1,922 fires per year, an increase of 5.2 per cent. This increase is attributed mainly to lightning-caused fires, which exceeded the 1962 total for this cause alone by 46 per cent. For example, in the Nelson Forest District, lightning-caused fires represented 72.8 per cent of the total number of fires for the whole season. (*See* Table Nos. 109, 110, and 111 in the Appendix.)

Cost of Fire-fighting

The Forest Service's average fire-suppression cost per fire was approximately 17.6 per cent below that of 1962. Much of this saving can be attributed to our expanded aerial attack system, particularly the use of helicopters on remote lightning fires, which were so prominent this year. For further information on fire-fighting costs *see* Table Nos. 116, 117, and 118 in the Appendix.

Damage

The number of acres burned this year compares closely with 1962. Damage to forest-cover is also comparable. Damage to forest products cut dropped considerably from the extreme high of last year, which helps to balance out the 10-year average. Damage to buildings and railway, logging, and sawmilling equipment

accounted for 88.8 per cent of the total property damage. For further details *see* Table Nos. 114, 115, 116, and 117 in the Appendix.

PROTECTION PLANNING AND RESEARCH

Fire Statistics

Plotting of 1963 forest fires on the Provincial Fire Atlas is complete, and the summary of key fire information has been entered in the fire statistics ledgers. Utilization of the Surveys and Inventory Division 2-mile black-and-white series as the base maps for the Fire Atlas and overlays has proved to be very practical and useful. As part of incorporation of the Fire Classification Atlas into the Fire Atlas, overlays to this 2-mile base were completed for the 1950–59 decade.

Coding of fire report information for mechanical-tabulation card recording has progressed to the point where primary data have been completed for the years 1950–62 and partial data for lightning fires for the years 1940–49. It is planned to expand the type of fire information to be recorded on the punched cards in order to facilitate broader research.

Protection Research

A comprehensive study is being made of the protection standards developed by other agencies to determine the most practical approach for the British Columbia Forest Service. A report is to be made in 1964.

An analysis is currently being made of the cost of precautionary measures with respect to unburned logging slash, seeking data on which to establish slash-disposal standards.

Continuing study is being made of the effectiveness of primary lookouts and the balance between air detection and the fixed-lookout system.

A study of range fires has been undertaken in co-operation with the Kamloops Forest District.

A basic card index for fire-protection references in forestry literature was completed during the year.

Visibility Mapping and Lookout Photography

One two-man visibility mapping crew was employed during the summer of 1963 examining some 53 pre-selected potential lookout points in the Vancouver, Prince Rupert, Prince George, and Nelson Forest Districts. On the basis of subsequent comparative analyses of visible area and other pertinent factors, 11 primary lookouts were recommended for establishment and 11 secondary lookouts proposed.

Utilization of the district contract helicopter for this work proved invaluable, both from the aspect of preliminary reconnaissance and in time saved in crew transport.

Lookout photographs were completed on 25 lookouts for subsequent preparation of the eight-photo panorama booklet made for established lookouts.

Fuel-moisture Indicator Sticks

Over 700 sets of the 100-gram fuel-moisture indicator (hazard) sticks were distributed in 1963, following spring field testing. Industry acquired some 440 sets.

Acknowledgment is made of the use of the kiln and other facilities of the Forest Products Laboratory at the University of British Columbia in the preparation of these sticks.

Fire-weather Records and Investigations

The Fire Danger Index tables developed by the Canada Department of Forestry, and used to some degree in four of the five forest districts, were also used by the Vancouver Forecast Office, Department of Transport, in conjunction with calculations for the fire-weather advisory and fire-hazard forecast. A copy of these numerical ratings was forwarded to Victoria, together with ratings from various Forest Service stations, for production of a Province-wide map showing estimated fire danger.

A field trip was undertaken through the Prince Rupert and Prince George Forest Districts to check weather instruments and location-sites, and to discuss Danger Index calculations with field staffs. Particular attention was paid to standards of maintenance of weather instruments, the results of which suggest that a district instrument-checker should be assigned and trained for this work.

The meteorologist, currently on educational leave at the University of Washington, undertook a revision of his 1961 low-level wind study during the summer.

Fire-suppression Crews

Sixteen suppression crews fought 201 fires throughout the three southern forest districts. Eighty-six per cent of the fires fought by these crews were held to a size less than 1 acre. Only 1 per cent of the fires fought by the suppression crews exceeded 50 acres. Some of the suppression crewmen were used at two of the air-tanker bases, and also several two-man crews were trained and used as " helitac " crews.

A statistical analysis of suppression-crew fire-fighting activities will be found in Table No. 113 in the Appendix.

Aircraft

The aircraft programme was kept to 36 aircraft, which were supplied by the same companies as in 1962. The fire season was again favourable, but the programme is credited with keeping the fires small and the damage figures low. Unfortunately one air tanker crashed and the pilot was killed during a practice drop at Smithers. *See* Table Nos. 120 and 121 in the Appendix for statistical information on the use of contract and non-contract aircraft.

Roads and Trails

The construction and maintenance of forest-protection roads and trails continued much as in previous years. The problem of maintaining the purely protection roads increases each year as additional funds for this purpose are not available. Ground access is essential for successful and economical attack on most fires. For further information *see* Table No. 102 in the Appendix.

Slash Disposal and Snag-falling

In the Vancouver Forest District the generally cool damp weather during 1963 somewhat curtailed fall slash-burning activities. Slash in some areas, particularly on north exposures, did not dry out sufficiently to permit effective burns. However, fairly good burning conditions did prevail in late summer, and many excellent broadcast burns were obtained by operators who took advantage of these earlier good conditions. Some operators on the west coast and Northern Vancouver Island burned as early as August 5th.

The trend continues to more broadcast burning and less spot burning, on the basis of effective disposal, cost, and risk. For tabular data on slash disposal in the Vancouver Forest District *see* Tables No. 104 to 108 in the Appendix.

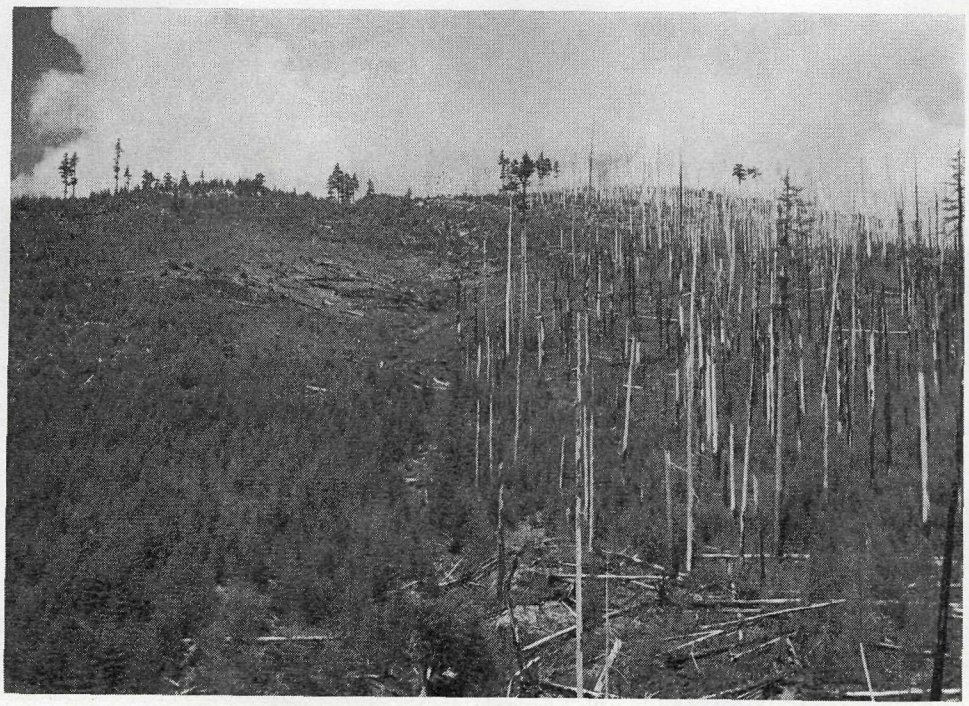
Two experimental slash burns were undertaken by Forest Service personnel in Vancouver Forest District in 1963, one involving a large area of decadent hemlock-balsam blow-down caused by typhoon " Frieda " in the fall of 1962. Use of a helicopter with a monsoon bucket for distributing diesel oil for lighting up proved very practical for the rugged conditions prevailing, but extremely high humidities and the scattered nature of the downed timber prevented successful disposal. A further attempt will be made in 1964.

On April 1st, the rate of assessment for failure to burn slash was increased by Order in Council from $7 to $12 per acre.

During the year considerable activity and interest in disposal of slash by burning prevailed in the other four forest districts. Experimental slash burns have been carried out during the past few years in the Interior, and concern has been mounting over increasing slash hazards, which have complicated the control of recent costly and extensive fires. Some 8,700 acres of slash were burned in 1963 in these districts, with Forest Service crews disposing of 3,200 acres and industry 5,500 acres.

Snag-falling Projects

Five snag-falling contracts—three in the Vancouver Forest District and two in the Kamloops Forest District—comprising 6,654 acres were awarded in 1963. The programme of reducing the fire hazard in old burned-over, but good growing sites will be expanded as funds become available.



Forest-protection snag-falling project on Vancouver Island.

Fire-law Enforcement

The very light fire season, during which only a few fire-fighters were impressed and no forest closure imposed under section 122 of the *Forest Act,* resulted in only 19 prosecutions for fire-law infractions. This is slightly more than one-third of the average for the past 10 years.

FOREST SERVICE TRAINING-SCHOOL

The second class of basic trainees (Basic Course No. 2), consisting of 20 men, graduated from the British Columbia Forest Service training-school on March 29, 1963. Forty men have now completed the three-month basic course.

The 13th class of advanced trainees (Advanced Course No. 13), consisting of 20 men, commenced September 16th. This course is similar to the Ranger Course. The name has been changed and the course shortened to six months from nine months.

Basic elements of the Ranger Course have been transferred to the basic course. Staff in thus given training in basic subjects earlier in their careers with profit to all concerned.

The balance of the original Ranger Course is given to those deserving further training for promotional purposes. It is advanced in nature and provides qualification for many positions besides Ranger. The name "advanced course," therefore, is more appropriate.

Subjects covered during the year were as follows:—

Basic Course No. 2, Spring, 1963

Subject	Days Allotted
Protection Policies and Procedures	5
Pre-suppression Studies	5½
Fire Suppression	12½
Mathematics and Survey Fundamentals	6
Management Policies and Procedures	5½
Mensuration	6
Mechanics	7½
Silviculture and Related Fields	5
Air Photos	3
Reports and Maps	2½
Examinations, visitors, and field trips	1½
Total days	60

First aid—two hours per week in evenings for nine weeks.
Typing—two hours per week.
Physical Education—one-half hour per day.

Advanced Course No. 13, First Term, Fall, 1963

Subject	Days Allotted
Botany, Dendrology, Wood Technology	6½
Construction	5½
Public Speaking	3½
Business English	4½
Survey and Mathematics	8½
Protection Policies and Procedures	8½
Forest Pathology	3½
Forest Entomology	3
Silviculture	9
Personnel Management and Safety	3

Subject	Days Allotted
Sales and Appraisal	5
Grazing	2
Fire Marshal	2
Visitors, speakers, spares, and trips	2½
Total days	63

First Aid—two hours per week in evenings for nine weeks.
Physical Education—one-half hour per day.

EXTRA COURSES AND FUNCTIONS

Training-school facilities were used for two weeks in April by the Department of Recreation and Conservation for an in-service training course. Average attendance was 35.

The usual course for lookoutmen for the Vancouver Forest District was given to 13 men from April 30th to May 3rd.

A three-day course was given to 15 correctional officers of the Corrections Branch, Department of the Attorney-General, at the school. Instruction in fire control for one day, on two separate occasions, and instruction in Forest Service organization was conducted in the field by our staff for the Department.

Training-school staff assisted with instruction and aid to the Nelson Forest District. This was a three-day course for lookoutmen and dispatchers from June 4 to 6, 1963.

The instructional staff participated in courses and lectures to various other groups, including second-year forestry students at the University of British Columbia, who were lectured on fire control (Forestry 251), on the subject "Organization for Prevention and Control (B.C. Forest Service)."

Little progress was made in developing reading courses and indoctrination course outlines. The training-school staff is now in the process of revising subject material for the major courses—basic and advanced.

The publication "Handbook on Use of Bulldozers for Fighting Forest Fires" was completed and will be available for distribution in 1964.

ACKNOWLEDGMENTS

Appreciation is expressed to speakers and lecturers and for equipment provided by the following agencies: Forest Entomology and Pathology Branch, Canada Department of Forestry; Air Division of the Surveys and Mapping Branch, Department of Lands, Forests, and Water Resources; Director of Safety, Civil Service Commission; Staff Training Officer, Civil Service Commission; Office of the Fire Marshal; Royal Canadian Mounted Police, Cloverdale Detachment; Magistrate J. Hunter, of Cloverdale; Municipal Prosecutor, Cloverdale; Forest Products Laboratory, Canada Department of Forestry; University of British Columbia; Chief Forecaster's Office, Department of Transport, Vancouver; and lecturers from other divisions and districts of the Forest Service.

ACCOUNTING DIVISION

FISCAL

The total dollar return from Forest Service business in the calendar year 1963 exceeded that of any previous year. The upward trend carried over from 1962 and continued through the year, which was favoured with a moderate fire season, lack of serious work stoppages in the industry, and a sustained improvement in the market prices for forest products. The news at the year's end that the Bill to restrict the import of Canadian lumber into the United States had been killed by presidential " pocket veto " seemed to assure continuance of favourable lumber-market conditions well into the new year.

While the total volume of timber scaled again rose to a record high with an increase of 9.7 per cent over 1962, the total of amounts charged to logging operations registered an even greater rise, increasing 12.9 per cent to $35,957,587 (*see* Table No. 142 in the Appendix). All forest districts contributed to the increase, Kamloops making the biggest gain, 28.9 per cent, with Prince George next at 20.9 per cent. The Prince Rupert, Nelson, and Vancouver Forest Districts followed with 16.4, 5.6, and 5.5 per cent respectively.

Direct forest revenue collected also increased by 12.9 per cent and reached a new record high total of $34,875,677 (*see* Table No. 141 in the Appendix). The bulk of this total derived from timber-sale stumpage, which, at $30,199,623, showed a substantial gain of 14.7 per cent. Timber-sale rentals and fees remained fairly static, rising only 0.4 per cent, but timber-sale cruising and advertising costs increased by 11.6 per cent.

Timber royalties levelled off somewhat at $2,499,842, a gain of only 2.7 per cent, reflecting a slightly increased cut from both Crown and Crown-granted royalty-bearing lands. Rentals and fees on timber licences were practically unchanged, but timber-berth and timber-lease rental and fees decreased by 12.3 and 13 per cent respectively. These reductions were probably due in part to the elimination of some logged-over areas from these old tenures as well as early payment in December, 1962, of timber-lease annual fees not due until January. Forest-protection tax declined for the second successive year, being down 4.9 per cent to $523,598, while miscellaneous collections continued their steady climb, increasing by 7.2 per cent to $173,192.

Tables showing revenue and expenditure totals for the fiscal year 1962/63 also appear in the Appendix (*see* Table Nos. 144 and 145), and details of this expenditure can be found in the statement of Public Accounts published by the Department of Finance.

Just prior to the close of the year, advice was received from the Minister of Forestry in Ottawa that Canada was prepared to extend for one year the Federal-Provincial Forestry Agreement, due to expire March 31, 1964. Canada also offered to broaden the Agreement, under which this Province receives $1,804,461 annually, by extending the classes of projects covered, as well as by removing the percentage limitation on distribution of claims between different phases of the Provincial programme.

ADMINISTRATION

No major changes occurred in Forest Service accounting policy during 1963, but a change in organization was made in headquarters administration of timber berths, timber licences, and timber leases. Administration as affecting forestry

aspects was transferred from the Comptroller's Office to the Management Division to achieve consistency with timber-sale administration. Responsibility for collection of annual carrying charges on these old tenures was undertaken by the headquarters accounts office.

In spite of the substantial increase in charges billed against operators as reported above, the outstanding accounts receivable position continued to improve, and there were few cases requiring resort to lien action to enforce payment.

The introduction of semi-monthly pay for all Provincial Civil Servants in October greatly increased the work of the expenditure sections, both district and headquarters, but the transition was accomplished with remarkably little difficulty. The expenditure situation generally was eased by the absence of a severe fire season, but the increasing emphasis on appropriation control resulted in increased demands on the time of various senior officials.

The series of mill test runs commenced in the Kamloops Forest District in 1962 were concluded, and the results are being assessed as to their value in future investigation programmes. Similar tests are planned in other districts during 1964.

PERSONNEL DIVISION

There were no major personnel changes in the Forest Service during 1963, and general administration proceeded without disruption. Staff turnover was reduced slightly, as were the number of applications for employment. The change-over of technical field-staff classifications implemented in 1962 provided a few problems involving persons in positions for which they had not qualified by examination, but these were resolved with little difficulty.

In the matter of employee relations, no formal grievances were received. One complaint from the employees' association was satisfactorily handled by the Personnel Officer. A general salary increase became effective on April 1st.

COMMUNICATIONS AND TRAINING

No District Foresters' meeting was held in 1963, but each District Forester with his assistant spent a week at headquarters consulting with various divisions on problems. Full-scale Ranger meetings were held in Vancouver and Nelson, and Ranger Zone meetings were held in Kamloops. The Engineering Services Division held meetings for district mechanical supervisors and for engineers. The Management Division held the annual meeting on scaling problems and practices. The Personnel Officer and a number of other Forest Service officers took part in vocation-day programmes sponsored by various schools, as well as the programme of instructive interviews jointly sponsored by the Victoria Chamber of Commerce and the National Employment Service.

Four men were selected for the eighth class of the Executive Development Training Plan sponsored by the Government through the University of British Columbia. This class is for employees in the Victoria and Vancouver areas and includes from the department two foresters, one engineer, and the Assistant Radio Superintendent. One employee, the Chief Accountant, graduated from the fifth class of this programme. First-aid courses for field employees continued throughout the year, as did the Civil Defence sponsored St. John Ambulance first-aid courses in Victoria. Civil defence basic-training courses continued in Victoria, and several district office employees took courses in communications and other civil defence subjects. Informal training continued for engineers-in-training and foresters-in-training.

ESTABLISHMENT, RECRUITMENT, AND STAFF TURNOVER

The permanent Civil Service establishment of the Forest Service was increased from 859 positions to 860 with the establishment of a Forest Agrologist position in the Prince George Forest District to assist in the Peace River community pasture programme and general grazing administration in the Peace River area.

During the year, 98 persons received Civil Service appointments and 72 left the permanent service. Twelve 25-year service certificates and badges were earned. There were five retirements and 53 transfers of permanent staff. Twelve graduate foresters and three engineers left the Service, and nine graduate foresters and two engineers were hired.

Turnover of Civil Service-appointed staff, including full-time casual staff, average 9.8 per cent, again down very slightly from 10 per cent last year. Kamloops Forest District suffered the greatest upheaval with 14.2 per cent, followed by Vancouver with 11.5 per cent, Prince George with 9.9 per cent, Prince Rupert with

9.6 per cent, and Nelson with 8.7 per cent; Victoria headquarters was 9.6, and the scaling staff in Vancouver was lowest with 6.8 per cent.

Professional-staff turnover was 6.7 per cent, up again from last year, and technical-staff turnover went from 3.6 per cent in 1962 to 4.0 per cent in 1963, the first increase in this group for three years. Total office-staff turnover, while down to 17.7 per cent from 19.5 per cent in 1962, is still quite high, though it is perhaps significant that 78.9 per cent of the separations in office staff involved female employees, most of whom were employed in district offices. This would indicate a need for review of selection procedures for this group. The present percentage of female employees in the clerical group remains fairly constant at 59 per cent.

The Honourable Ray Williston presenting a safety award to Terry Stringer, assistant superintendent of the Port Hardy Forest-development Road project.

There were no fatal accidents during the year, and we would like to feel that this is a direct result of an active safety programme throughout the Service. In the matter of discipline among permanent staff or during probationary periods, one person was released by Order in Council and five disciplinary suspensions were imposed, of which two were for breach of safety regulations.

Over 600 written applications for employment were processed in the Personnel Office in addition to those handled by divisional and district staffs. Promotional examinations were held for draughtsmen and mapping assistants. Oral examinations were employed at panel interviews to fill 23 positions. The Personnel Officer and assistant participated in filling 139 other positions. At the annual spring examination for Assistant Rangers, 294 candidates sat and 66 qualified. Of this number, 14 passed for reclassification, leaving 52 available for Assistant Ranger

positions. There were only 19 vacant positions for Assistant Ranger, but since this examination is now a requisite for promotion to any Technical Forest Officer 1 position, a fairly large number of the successful candidates were promoted to Technical Forest Officer 1 positions other than Assistant Ranger. This action seriously depleted the eligible list for Assistant Ranger positions on a Province-wide basis, although it did retain qualified employees in the Service who were available for transfer to Assistant Ranger positions within their district. Some districts did suffer by not having a sufficient number of qualified candidates to fill their vacancies.

CLASSIFICATIONS, SALARIES, AND WORKING CONDITIONS

Over 100 positions were reviewed for reclassification, and of these, 64 were submitted to the Civil Service Commission. Of these 59 were approved, three were rejected, and five were still under review at the year's end.

Nine employees were registered with the Association of British Columbia Foresters, three of which were already registered professional engineers. Two other employees became registered as professional engineers. Working conditions in general remained unchanged. The Civil Service Commission's review of special living allowance for northern areas continued without any definite results to date.

The safety and accident-prevention programme was actively continued and is reflecting improvement in the time-loss accident frequency rate for the Service.

PERSONNEL DIRECTORY, 1964

(As of March 31st)

VICTORIA HEADQUARTERS

R. G. McKee - - - - - - - - - Deputy Minister of Forests
F. S. McKinnon - - - - - - - - - - - - Chief Forester

L. F. Swannell - - - - - - Assistant Chief Forester i/c Operations Branch
J. S. Stokes - - - - - - - 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:

Forse, H. B. - - - - - - - - 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:

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

FOREST DISTRICTS

Vancouver Forest District

I. T. Cameron - - - - - - - - - - - - District Forester
J. A. K. Reid - - - - - - - - - - Assistant District Forester

Forest Rangers:

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

Prince Rupert Forest District

N. A. McRae - - - - - - - - - - - - District Forester
L. W. W. Lehrle - - - - - - - - - - Assistant District Forester

Forest Rangers:

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

PRINCE GEORGE FOREST DISTRICT

A. H. DIXON - - - - - - - - - - - - DISTRICT FORESTER
C. E. Bennett - - - - - - - - - - Assistant District Forester

Forest Rangers:

Weinard, R. H. (McBride); McRae, M. A. (Penny); Meents, G. E. (Prince George); Flynn, D. M. (Prince George); Ford, C. (Fort St. James); Keefe, R. R. (Quesnel); Barbour, H. T. (Dawson Creek); Amonson, D. A. (Aleza Lake); Graham, G. W. (Vanderhoof); Cosens, A. S. (Fort St. John); Griffiths, P. F. (Fort Fraser); Waller, T. G. (Summit Lake); York, G. M. (Fort Nelson); Magee, G. E. (Prince George); Hamblin, R. A. (Hixon); Pearce, F. (Quesnel); Rohn, C. (Quesnel); McQueen, L. (Chetwynd); Magee, K. W. (Hudson Hope).

KAMLOOPS FOREST DISTRICT

W. C. PHILLIPS - - - - - - - - - - - - DISTRICT FORESTER
L. B. B. Boulton - - - - - - - - - Assistant District Forester

Forest Rangers:

Hopkins, H. V. (Lumby); Williams, R. V. (Birch Island); Wittner, D. J. (Barriere); Hill, A. F. (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); Ashton, L. J. (Clinton); Hamilton, T. J. (Williams Lake); Donnelly, R. W. (Alexis Creek); Hewlett, H. C. (Kelowna); Noble, J. O. (Ashcroft); Janning, H. A. W. (Merritt); Huva, G. G. (Blue River); Collins, B. G. (Enderby); Petty, A. P. (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
M. G. Isenor - - - - - - - - - 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. G. (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); Russell, F. (Arrowhead); Haggart, W. D. (Edgewood); Benwell, W. G. (Elko); Bellmond, C. N. (Spillimacheen); Bailey, J. F. (Cranbrook West); Hamann, L. O. (Beaverdell); Webster, G. R. (Slocan City); Jackson, R. C. (Revelstoke).

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Experimental Project No.	Title	Region
364	Thinning experiments in Douglas fir	Vancouver Island.
365	Thinning experiments in Douglas fir	Vancouver Island.
368	The adaptability of tree species to forest sites	Vancouver Island.
370	Partial cutting in a mixed wet-belt type	Nelson.
384	Experimental thinning in lodgepole pine	Nelson.
428	Plantation trials	Kamloops.
433	Growth and inventory plots, Aleza Lake	Prince George.
442	Planting trials	Prince George.
468	Cone-crop studies	Kamloops.
474	Inbreeding experiments with Douglas fir	Vancouver Island.
477	A study of phenotypes in Douglas fir	Vancouver Island.
479	Plus-tree selection for Douglas fir seed orchards	Vancouver Island.
480	A co-operative seed provenance study of Douglas fir	Vancouver Island.
482	Climate and the altitudinal distribution of conifers	Vancouver Island.
483	Record of introduced species in plantations	British Columbia.
502	Plantation trials	Prince Rupert.
511	Crop tree thinning of western larch	Nelson.
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.
530	Morphological characteristics of Douglas fir and their progeny	Vancouver Island.
537	White spruce spacing study	Prince Rupert.
538	Seed dissemination and the influence of weather conditions	Vancouver Island.
541	Natural nurseries	Prince Rupert.
553	Ecological investigations in the Montane forest region	Kamloops.
554	Thinning experiments in Douglas fir	Vancouver Island.
555	Germination and survival of western hemlock and associated species	Vancouver Island.
560	A study of methods of planting ponderosa pine	Kamloops.
570	Sitka spruce spacing study	Prince Rupert.
571	Species and spacing trial	Vancouver Island.
572	Planting trials with ponderosa pine	Nelson.
573	Planting white spruce throughout the growing season	Prince George.
581	Planting study of 2+0 Douglas fir culls	Vancouver Island.
582	Cold storage of 2+0 Douglas fir in multi-wall bags	Vancouver Island.
585	Plantation studies	Vancouver Island.
586	Planting-stock comparison trials	Vancouver Island.
589	Comparison of 2+0, 2+1, and 1+2 Douglas fir on high-site lands	Vancouver Island.
590	A study of compatability of tree and grass seeding	Kamloops.
591	Regeneration study in cut-over lodgepole pine stands	Prince Rupert.
592	Direct-seeding trial, Mars Creek	Nelson.
594	Brush control, Coastal British Columbia	Vancouver Island.
595	Outplanting of different fertilized stock	Vancouver Island.
597	Planting trials with ponderosa pine, 1962	Nelson.
599	Problem analysis: Approach to provenance experimentation in Coastal Douglas fir	Vancouver Island.
600	An analysis of the breeding programme for 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.
608	The effect of texture, drainage, and stoniness on growth of Douglas fir seedlings	Vancouver Island.
609	A study of forest-land classification, Quilchena	Kamloops.
610	Geographic variation in white and Engelmann spruce	Interior.
611	Jennis Bay reforestation trials	Vancouver Island.
612	Evaluation of soil texture in seed and transplant beds, Cowichan Experiment Station nursery	Vancouver Island.
613	Western hemlock spacing study	Prince Rupert.
615	Cone and seed variation between progenies of single trees	Vancouver Island.
616	Study of regeneration problems in decadent hemlock-cedar stands	Kamloops.
617	The effect of seed-bed density on the survival and initial growth of 2+0 Douglas fir seedlings	Vancouver Island.
618	Cone production in the Interior of British Columbia	Interior.
619	Douglas fir-Engelmann spruce planting study, 1963	Kamloops.
620	A study of forest-land classification, McGillivray Lake	Kamloops.

(12) RESEARCH PUBLICATIONS, 1963

Forest Research Review for the Year Ended March, 1963.

van den Driessche, R.: Nursery Experiments with Douglas Fir. Commonwealth Forestry Review 42 (3), No. 113, 1963.

van den Driessche, R.: Partial Sterilization of Douglas Fir Seedbeds with Formalin and Chloropicrin. Forest Science 9, No. 3, 1963.

Roche, L.: The Shore Variety of *Pinus contorta*. Baileya 2, No. 1, 1963.

Prochnau, A. E.: Direct Seeding Experiments with White Spruce, Alpine Fir, Douglas Fir and Lodgepole Pine in the Central Interior of British Columbia. B.C. Forest Service Research Note 37, 1963.

Revel, J.: Improving Reforestation, the Role of Artificial Seeding. Forestry Chronicle 39, No. 2, 1963.

Warrack, G. C.: Some Observations on Thinning Forests in the Coastal Region of British Columbia. Forestry Chronicle 39, No. 2, 1963.

UNPUBLISHED MANUSCRIPT REPORTS

Arlidge, J. W. C.: An Ecological Classification of Stands for Christmas Tree Production.

Clark, M. B.: Cutting Methods in Overmature Spruce-Alpine Fir.

Hetherington, J. C.: Brush Control in Coastal British Columbia.

Proceedings of the Cowichan Lake Symposium on Forest Meteorology and Microclimate, 1962.

Revel, J.: Comparison of the Morphology of Autumn Sown and Spring Sown 1+0 Douglas Fir Seedlings.

Revel, J.: The Effect of Browsing by Columbia Black Tailed Deer and Sooty Blue Grouse on the Establishment of Conifers on Vancouver Island.

van den Driessche, R.: Continuous Autumn and Spring Sowing of Douglas Fir.

(21) NURSERY STOCK DISTRIBUTED, 1963

Nursery	Age-classes				Total for Field Planting	Total Trans-planted
	1–1	2–0	2–1 and 2–2	1–0 and 3–0		
Green Timbers	.....	4,011,100	.....	.....	4,011,100	28,100
Campbell River	14,300	4,526,300	37,500	1,500	4,579,600	105,000
Duncan	4,200	3,850,400	11,000	5,800	3,871,400	398,200
East Kootenay	.....	74,400	8,100	65,500	148,000	400,000
Chilliwack	143,600	823,700	6,900	500	1,036,800	256,200
Brannan Lake	44,400	126,100	187,800	.....	358,300	51,600
Telkwa	.....	76,000	50,000	43,500	169,500	121,000
Hixon	.....	.....	22,300	.....	11,000	.....
Kelowna	.....	83,900	.....	.....	83,900	.....
Total seedlings	206,500	13,571,900	385,700	116,800	14,280,900	1,360,100

(22) SUMMARY OF PLANTING, 1954–63

Year	Forest Service on Crown Land		Forest Service on Crown-granted Land (Forest Act, Sec. 152)		Company on Tree-farm Licences		Other Private		Total	
	Trees in Thousands	Acres	Trees in Thousands	Acres	Trees in Thousands	Acres	Trees in Thousands	Acres	Trees in Thousands	Acres
Coast										
1963[1]	2,081.3	5,379	1,592.2	3,538	6,487.3	18,463	3,130.6	9,226	13,291.4	36,606
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
1955	2,184.6	3,425	1,910.5	2,110	2,583.4	4,926	146.2	135	6,824.7	10,596
1954	5,706.5	7,165	1,093.2	1,500	2,122.8	3,422	219.2	200	9,141.7	12,287
Previously planted	78,381.2	91,935	1,645.9	1,995	11,640.5	16,871	1,708.3	2,258	93,375.9	113,059
Totals to date	93,058.1	116,251	13,294.6	22,250	51,344.7	121,648	8,893.8	21,574	166,591.2	281,723
Interior										
1963[1]	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
1955	217.3	336	.....	.....	76.0	112	17.2	19	310.5	467
1954	596.7	1,016	.....	.....	89.0	104	12.3	14	698.0	1,134
Previously planted	562.4	737	.....	.....	37.0	49	15.2	22	614.6	808
Totals to date	4,628.7	8,166	.....	.....	1,625.2	3,813	194.3	272	6,448.2	12,251
All planted to date	97,686.8	124,417	13,294.6	22,250	52,969.9	125,461	9,088.1	21,846	173,039.4	293,974
All planted this year	2,677.8	6,665	1,592.2	3,538	6,811.7	19,386	3,136.5	9,241	14,218.2	38,830

[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.	163,612	116,946	280,558	378,371	.....	.....	.....	15,000
4. Blind Channel	I. W. McDonagh	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.	86,895	54,054	140,949	189,890	357,862	316,343	674,205	13,000
10. Toba	Timberland Development Co. Ltd.	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.	66,100	640	66,740	472,670	437,429	.....	437,429	4,000
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. Macquinna	British Columbia Forest Products Ltd.	180,955	67,568	248,523	392,683	1,313,601	408,641	1,722,242	24,000
25. Naka	Rayonier Canada (B.C.) Ltd.	119,807	72,513	192,320	345,229	339,982	288,463	628,445	14,400[1]
26. Mission Municipal	The Corporation of the District of Mission	13,449	2,664	16,113	17,860	16,013	1,050	17,063	425
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.	12,141	1,249	13,390	19,165	49,828	2,624	52,452	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.	79,964	565	80,529	313,658	382,369	2,605	384,974	4,150
39. Haida	MacMillan, Bloedel and Powell River Ltd.	260,755	180,740	441,495	501,926	604,809	663,677	1,268,486	43,912[1]
Totals	.....	2,119,907	1,160,116	3,280,023	5,620,917	9,727,025	5,584,642	15,311,667	262,417
Prince Rupert Forest District									
1. Port Edward	Celgar Ltd.	721,036	11,924	732,960	1,961,399	2,564,370	54,260	2,618,630	22,000
24. Moresby	Rayonier Canada (B.C.) Ltd.	112,718	21,219	133,937	297,228	497,345	97,259	594,604	7,500[2]
25. Naka	Rayonier Canada (B.C.) Ltd.	80,207	26,294	106,501	796,033	173,946	91,200	265,146	([3])
39. Haida	MacMillan, Bloedel and Powell River Ltd.	381,037	108,902	489,939	513,731	1,146,195	523,115	1,669,310	([3])
Totals	.....	1,294,998	168,339	1,463,337	3,568,391	4,381,856	765,834	5,147,690	29,500
Prince George Forest District									
5. MacKenzie-Cariboo	Western Plywood Co. Ltd.	81,267	195	81,462	83,693	147,010	163	147,173	3,100
28. Shelley	Shelley Development Ltd.	71,635	9,633	81,268	89,538	90,018	10,039	100,057	2,800
29. Eagle Lake	Eagle Lake Sawmills Ltd.	95,593	1,224	96,817	105,912	208,847	3,835	212,682	2,000
30. Sinclair	Sinclair Spruce Lumber Co. Ltd.	71,083	.....	71,083	84,373	112,199	.....	112,199	1,073
31. McGregor	Upper Fraser Spruce Mills Ltd.	42,534	.....	42,534	45,761	102,338	.....	102,338	1,038
34. Seebach	Church Sawmill Ltd.	42,071	.....	42,071	53,858	98,630	.....	98,630	822
Totals	.....	404,183	11,052	415,235	463,135	759,042	14,037	773,079	10,833

[1] This cut is for entire area, including Prince Rupert blocks.
[2] Allowable cut to be increased to 8,200 M cubic feet effective January 1, 1964.
[3] Total allowable cut for licence shown under Vancouver Forest District.

(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. Ltd.	123,588	132	123,720	129,226	41,627	215	41,842	1,500
18. Clearwater	Clearwater Timber Products Ltd.	161,047		161,047	184,405	123,453		123,453	2,500
32. Bolean	Vernon Box & Pine Lumber Co. Ltd.	31,074	250	31,324	32,721	24,846	573	25,419	550
33. Sicamous	Shuswap Timbers Ltd.	14,565	280	14,845	22,210	27,622	567	28,189	385
35. Jamieson Creek	B.C. Interior Sawmills Ltd.	88,878		88,878	98,496	113,120		113,120	1,170[4]
Totals		681,087	2,358	683,445	776,354	722,665	1,355	724,020	10,505
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.	64,787		64,787	80,815	17,400		17,400	800
13. Bull River	Galloway Lumber Co. Ltd.	38,856		38,856	100,280	45,704		45,704	1,100
14. Spillimacheen	Crestbrook Timber 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		1,188,454	40,280	1,228,734	3,334,697	1,338,785	348,726	1,687,511	36,660
Grand totals		5,688,629	1,382,145	7,070,774	13,763,494	16,929,373	6,714,594	23,643,967	349,915

[4] Allowable cut to be increased to 1,800 M cubic feet effective January 1, 1964.

SUMMARY OF BASIC DATA FOR CERTIFIED TREE-FARMS (PRIVATE SUSTAINED-YIELD UNITS) (32)

Within Tree-farm Licences

Tree-farm Licence Number and Name	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	51,112	2,456	53,772	61,959	145	.....	3,089
12. T.F.L. No. 17	51	169	269	489	1,230	135	21	22
13. T.F.L. No. 20	26,792	45,081	13,507	85,380	93,615	104,715	4,242	4,732
14. T.F.L. No. 21	10,695	17,343	2,348	30,386	32,627	37,694	1,405	1,742
16. T.F.L. No. 22	6,519	11,849	4,446	22,814	24,719	49,622	1,285	1,285
20. T.F.L. No. 19	2,691	1,542	501	4,734	5,683	7,806	277	336
21. T.F.L. No. 39	23,969	10,673	2,216	36,858	38,213	92,623	1,663	2,202
25. T.F.L. No. 37	2,964	5,755	1,208	9,927	11,331	20,187	749	836
29. T.F.L. No. 6	2,286	1,961	425	4,672	4,964	10,680	282	530
30. T.F.L. No. 25	3,270	8,143	2,493	13,906	15,694	10,124	1,177	2,931
31. T.F.L. No. 25	10,095	10,567	2,217	22,879	26,715	42,837	2,008	2,700
Totals	89,536	164,195	32,086	285,817	316,750	376,568	13,109	20,405
Prince George Forest District								
41. T.F.L. No. 29	350	668	236	1,254	1,280	860	27	37
Nelson Forest District								
35. T.F.L. No. 23	989	3,249	90	4,328	5,157	441	.....	130
37. T.F.L. No. 13	.....	504	.....	504	504	.....	.....	20
Totals	989	3,753	90	4,832	5,661	441	.....	150
Grand totals within tree-farm licences	90,875	168,616	32,412	291,903	323,691	377,869	13,136	20,592

Not Included within Tree-farm Licences

Vancouver Forest District								
1. Thomas G. Wright	.....	244	3	247	305	.....	31	44
2. H. R. Nickson	(1)	140	25	165	180	68	9	10
4. MacMillan, Bloedel and Powell River Ltd.	43	8,448	1,253	9,744	10,347	1,269	358	430
5. Western Forest Industries Ltd.	902	20,109	3,967	24,978	27,388	1,506	.....	1,749
6. British Columbia Forest Products Ltd.	383	1,923	346	2,652	3,568	2,091	125	135
7. Victoria Plywood Ltd.	3,689	4,176	1,603	9,468	10,303	12,616	282	606
9. Robert J. Filberg	235	6,300	.....	6,535	7,566	935	100	492
10. Canadian Forest Products Ltd.	113	2,037	.....	2,150	2,561	298	30	141
15. W. J. Robertson	.....	157	.....	157	163	.....	.....	17
17. British Columbia Forest Products Ltd.	80	4,002	597	4,679	4,945	248	22	266
19. MacMillan, Bloedel and Powell River Ltd.	129,396	138,735	27,635	295,766	312,887	1,203,723	29,500	21,456
22. Merrill & Ring	.....	2,277	22	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	1,698	.....	.....	90
39. Canadian Collieries Resources Ltd.	213	27,433	4,765	32,411	34,295	347	.....	1,447
42. John C. Cowan	198	4,735	47	4,980	5,533	687	.....	250
Totals	135,252	225,520	40,659	401,431	428,048	1,223,998	30,462	27,688

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 Licence Number and Name	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	39,482	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.	.....	24,060	1,982	26,042	28,847	(1,072,896)	(174,009)	(601,500)
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	144,341	67,319	1,370	1,260
Totals	91,003	174,947	5,331	271,281	469,219	192,373 (1,640,724)	3,825 (386,740)	3,832 (1,102,150)
Grand totals not within tree-farm licences	226,255	400,467	45,990	672,712	897,267	1,416,371 (1,640,724)	34,287 (386,740)	31,520 (1,102,150)

[1] Scattered.

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								
1. Copley, G.R.	107	23	130	150	74	.....	74	3.0
5. Thompson, A. R.	70	75	145	232	31	29	60	6.0
8. Heiltkla, 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. Courchens, 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
51. Owens, S.	142	.....	142	241	251	.....	251	5.0
52. Dawson, H.	198	.....	198	202	550	.....	550	10.0
57. Mellor, J. G.	186	16	202	202	362	.....	362	7.0
58. Kokaska, A.	122	.....	122	136	576	.....	576	10.0
Totals	2,361	289	2,650	3,769	4,533	153	4,686	92.1
Prince Rupert Forest District								
28. Priest, C. V.	143	110	253	640	354	11	365	10.0
42. Nysven, K.	353	240	593	927	178	35	213	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
Totals	1,456	475	1,931	3,696	1,908	132	2,040	36.5
Prince George Forest District								
11. Shovar, J.C.	90	.....	90	106	165	.....	165	4.2
14. Macallister, J. M.	258	95	353	428	550	91	641	10.0
31. Myers, A. P.	400	.....	400	404	321	.....	321	8.0
36. Hiller, W.	292	.....	292	299	785	.....	785	10.0
38. Miller, A. B.	222	28	250	251	170	3	173	9.5
45. Lynum, M.	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
59. McCauley, H. K.	200	50	250	250	261	.....	261	5.0
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
Totals	4,041	205	4,246	4,423	7,115	100	7,215	126.6
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	144	11	155	6.2
21. Sahlstrom	125	90	215	269	155	117	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	151	249	400	6.7
69. Davidson, D. G.	564	27	591	601	443	19	462	9.4
71. Carey, F.	515	118	633	633	243	8	251	4.2
Totals	2,032	1,303	3,335	3,469	1,550	583	2,133	49.1
Grand totals	11,658	2,466	14,124	17,643	16,758	986	17,744	344.3

(41)

MOTION-PICTURE LIBRARY, 1954–63

Stock Records

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Films in library at January 1st	80	64	71	78	80	83	92	95	140[1]	145
Films withdrawn during year	24	2	3	.....	1	10	2	2	1	3
New films added during year	8	9	10	2	4	19	5	3	5	10
Films in library at December 31st	64	71	78	80	83	92	95	96	145	152
Films used during year	64	70	80	79	84	83	96	96	145	150

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

Circulation Records

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Number of loans made during year	422	429	413	455	604	468	374	344	473	955
Number of film loans during year (one film loaned one time)	1,474	1,280	1,743	1,758	1,253	1,454	749	776	957	1,926
Number of showings during year	2,664	1,998	1,909	1,956	1,775	1,622	1,217	1,085	1,490	1,146
Number of audiences—										
Adults	12,333	14,353	14,537	18,983	10,330	17,329	12,277	13,096	10,576	7,691
Children	102,013[1]	131,844[1]	157,086[1]	86,829[1]	69,316[1]	54,429[1]	90,658	57,366	76,699	64,946
Mixed	54,069	41,340	42,587	38,143	42,938	51,421	62,405	69,896	67,777	40,386
Totals	168,415[1]	187,537[1]	218,275[1]	148,124[1]	126,216[1]	123,179[1]	165,340[1]	140,358	155,052	113,023

[1] Including attendances of school lecturers.

SUMMARY OF COVERAGE BY SCHOOL LECTURERS, 1954–63

Forest District	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	Total
Vancouver—											
Number of school visits	140	203	232	10	176	108	117	57	60	28	1,131
Number of lectures given	206	352	419	11	237	162	145	113	109	64	1,818
Attendance	21,168	56,760	67,962	871	29,606	35,082	30,380	9,644	19,493	7,325	278,291
Kamloops—											
Number of school visits	5	.....	39	71	.....	47	48	3	.....	4	217
Number of lectures given	5	.....	49	86	.....	49	54	9	.....	8	260
Attendance	188	.....	5,731	10,046	.....	5,420	5,203	640	.....	1,285	28,513
Nelson—											
Number of school visits	67	.....	.....	42	.....	62	36	40	15	.....	262
Number of lectures given	88	.....	.....	60	.....	75	59	64	35	.....	381
Attendance	12,668	.....	.....	7,002	.....	9,972	5,094	5,834	2,910	.....	43,480
Prince George—											
Number of school visits	25	.....	.....	66	.....	76	5	27	21	29	249
Number of lectures given	26	.....	.....	75	.....	82	5	28	23	38	277
Attendance	1,343	.....	.....	5,671	.....	5,600	820	3,076	2,419	4,195	23,124
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	237	203	271	189	176	314	206	127	96	74	1,893
Number of lectures given	325	352	468	232	237	393	263	214	167	151	2,802
Total attendance	35,367	56,760	73,693	23,590	29,606	61,209	41,497	19,194	25,348	15,240	381,504

(43) FOREST SERVICE LIBRARY, 1954–63

Classification	Items Catalogued and Indexed										10-year Average, 1954–63
	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	
Bound volumes	62	55	37	45	48	43	39	31	29	23	41
Government reports and bulletins	246	190	179	266	177	142	123	92	113	191	172
Other bulletins and reports	92	94	170	109	159	165	200	135	140	110	138
Periodicals	124	136	151	155	133	130	115	134	151	151	138
Serials	127	141	177	214	230	302	274	375	378	370	259
References indexed	932	1,090	1,321	1,417	1,139	1,502	999	878	911	1,165	1,135

BRITISH COLUMBIA FOREST INDUSTRIES, VALUE ADDED BY MANUFACTURE, 1963

(In thousands of dollars.)

Industry	Basis: Old Standard Industrial Classification						Basis: Revised Standard Industrial Classification and New Establishment Concept					
	1954	1955	1956	1957	1958	1959	1958	1959	1960	1961	1962*	1963*
Logging industry	213,987	267,293	296,838	262,508	194,749	234,895	194,749	234,895	276,289	286,705	330,000*	360,000*
Wood industries—												
Sawmills[1]	166,673	196,774	178,630	138,873	153,726	162,382	147,203	156,247	154,165	146,394	.....	.....
Coast[1]	112,088	123,557	107,381	81,773	92,636	91,442	89,743	88,545	96,998	85,307	.....	.....
Interior[1]	54,585	73,217	71,249	57,100	61,090	70,940	57,460	67,702	57,167	61,087	.....	.....
Shingle-mills[1]	.....	.....	.....	.....	.....	.....	.....	.....	7,476	7,736	.....	.....
Sash, door, and planing mills	17,832	22,294	23,487	20,305	22,885	26,688	23,063	26,971	21,582	23,932	.....	.....
Veneer and plywood mills	32,087	37,200	42,792	33,940	37,456	38,958	38,794	40,183	36,148	35,485	.....	.....
Other wood industries[2]	5,368	5,991	6,444	6,386	6,181	7,525	5,699	6,828	7,331	4,614	.....	.....
Totals, wood industries	221,960	262,259	251,353	199,504	220,248	235,553	214,759	230,229	226,702	218,161	280,000*	290,000*
Paper and allied industries—												
Pulp and paper mills	90,057	92,140	97,236	87,890	102,420	139,734	106,557	144,545	153,573	167,296	.....	.....
Other paper and allied industries[3]	12,062	13,038	10,395	12,960	14,098	15,877	14,116	15,986	15,944	15,664	.....	.....
Totals, paper and allied industries	102,119	105,178	107,631	100,850	116,518	155,611	120,673	160,531	169,517	182,960	190,000*	200,000*
Totals, forest industries	538,066	634,730	655,822	562,862	531,515	626,059	530,181	625,655	672,508	687,826	800,000*	850,000*
Furniture industries[4]	8,093	8,518	9,302	10,090	10,543	12,255	10,593	12,109	11,194	12,000*	12,000*	12,000*

* Estimated.

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

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

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

[4] 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, Ont.

This table replaces Estimated Total Value of Forest Production, Including Loading and Freight within the Province. It does not include freight, which in past years has accounted for much of the difference between Bureau of Economics and Statistics and those of the Forest Service. For further explanation *see* written section of the Forest Management Division's report.

(52) WATER-BORNE LUMBER TRADE (IN M B.M.), 1954–63

Destination	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	10-year Average, 1954–63
Eastern Canada	5,670	3,037	4,917	2,102	5,482	10,481	9,680	8,828	11,394	5,295	6,689
Africa	145,308	188,567	145,132	181,560	139,523	94,598	142,293	75,146	70,726	110,237	129,309
Arabia	39	644	146	123	----	----	----	----	----	----	95
Australia	115,464	137,308	99,829	87,213	98,808	80,115	113,536	91,935	122,470	113,915	106,059
Belgium	4,977	3,121	2,628	5,095	10,790	4,080	21,937	31,300	22,810	34,009	14,075
Central America	----	----	----	5,330	5,349	----	----	----	----	----	1,068
Denmark, Norway, and Sweden	175	109	----	14	18	16	66	30	184	212	82
Eire	4,183	4,211	142	483	1,070	----	3,684	4,773	6,465	6,013	3,102
France	2,950	2,845	3,191	4,110	3,265	3,184	9,883	11,061	21,922	26,371	8,878
Germany	15	732	177	169	22	----	1,062	6,040	10,558	15,611	3,439
Greece	108	----	25	----	----	70	----	----	10	1	21
Hawaiian Islands	4,998	12,715	13,183	7,668	3,166	2,133	7,755	12,887	6,813	5,433	7,675
Holland	4,123	4,042	3,802	3,552	6,091	4,569	6,272	13,866	21,802	19,068	8,719
Hong Kong, China, and Formosa[1]	3,599	1,909	1,275	1,256	597	509	867	360	----	172	1,054
India	4,397	1,745	416	468	3,372	27,581	9,793	----	----	5	4,778
Israel	2,329	676	1,248	5,643	213	1,340	1,681	10,225	4,009	233	2,760
Italy	2,284	4,349	3,007	6,530	4,560	2,805	5,363	5,909	12,624	9,609	5,704
Japan	8,216	1,623	5,852	2,301	999	1,201	1,607	155,550	107,438	278,168	56,296
Korea	----	9,101	----	1,412	----	6,413	----	----	399	1,701	1,903
New Zealand	13,465	12,588	14,097	11,030	8,397	5,212	6,689	8,392	6,603	5,008	9,148
Puerto Rico	29,192	33,788	41,937	44,555	46,493	62,826	67,022	73,249	77,033	59,448	53,554
South America	648	5,756	16,541	25,503	8,816	10,178	7,743	1,187	119	83	7,657
South Sea Islands	8,402	16,140	15,339	8,147	11,841	8,068	13,414	9,970	10,477	10,042	11,184
Spain	----	----	----	----	----	----	----	----	5,373	10,156	1,553
United Kingdom	693,007	607,240	320,126	384,754	336,889	267,293	518,090	422,939	442,237	465,428	445,800
United States	509,661	345,694	283,834	275,452	602,427	595,170	714,050	838,080	876,420	963,783	600,457
West Indies	12,062	10,516	11,599	12,085	13,492	8,478	10,796	5,482	7,913	8,901	10,132
Foreign, unclassified	4,674	3,603	1,221	2,363	2,681	1,333	2,068	1,906	1,227	230	2,131
Totals	1,579,946	1,412,059	989,664	1,078,918	1,314,361	1,197,653	1,675,351	1,789,115	1,847,026	2,149,132	1,503,322

[1] Figures for 1956 and subsequent years are for Hong Kong only.

TOTAL AMOUNT OF TIMBER SCALED IN BRITISH COLUMBIA DURING YEARS 1962 AND 1963 IN F.B.M.

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

Forest District	10-year Average, 1954–63	1962	1963	Increase
Vancouver	3,538,892,563	4,093,000,614	4,246,691,460	153,690,846
Prince Rupert (C.)	419,612,916	607,098,846	640,847,064	33,748,218
Totals, Coast	3,958,505,479	4,700,099,460	4,887,538,524	187,439,064
Prince Rupert (I.)	248,047,846	287,584,416	394,162,098	106,577,682
Prince George	759,425,666	932,304,270	1,079,231,863	146,927,593
Kamloops	1,050,784,010	1,270,125,786	1,466,537,891	196,412,105
Nelson	555,064,650	727,607,714	848,361,446	120,753,732
Totals, Interior	2,613,322,172	3,217,622,186	3,788,293,298	570,671,112
Grand totals	6,571,827,651	7,917,721,646	8,675,831,822	758,110,176

TOTAL AMOUNT OF TIMBER SCALED IN BRITISH COLUMBIA DURING YEARS 1962 AND 1963 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, 1954–63	1962	1963	Increase
Vancouver	589,815,427	682,166,769	707,781,910	25,615,141
Prince Rupert (C.)	69,935,486	101,183,141	106,807,844	5,624,703
Totals, Coast	659,750,913	783,349,910	814,589,754	31,239,844
Prince Rupert (I.)	43,138,756	50,014,681	68,549,930	18,535,249
Prince George	132,074,029	162,139,873	187,692,498	25,552,625
Kamloops	182,745,045	220,891,441	255,050,068	34,158,627
Nelson	96,532,983	126,540,472	147,541,121	21,000,649
Totals, Interior	454,490,813	559,586,467	658,833,617	99,247,150
Grand totals	1,114,241,726	1,342,936,377	1,473,423,371	130,486,994

(54A)

SPECIES CUT, ALL PRODUCTS, 1963, CONVERTED TO F.B.M.

Forest District	Fir	Cedar	Spruce	Lodgepole Pine	Hemlock	Balsam	White Pine	Yellow Pine	Cypress	Larch	Hard-woods	Cotton-wood	Totals
Vancouver	1,128,746,748	842,880,774	57,064,638	84,384	1,483,295,250	653,528,334	20,358,510	25,548	51,136,878		5,965,002	3,605,394	4,246,691,460
Prince Rupert (C.)	48,165,144	102,593,208	144,150,294	660,144	279,983,580	36,810,804			2,088,048		116,640	26,279,202	640,847,064
Totals, Coast	1,176,911,892	945,473,982	201,214,932	744,528	1,763,278,830	690,339,138	20,358,510	25,548	53,224,926		6,081,642	29,884,596	4,887,538,524
Prince Rupert (I.)	1,472	29,714,039	123,134,508	80,756,490	103,046,555	49,661,606			27,824		110,734	7,708,870	394,162,098
Prince George	104,677,945	1,288,241	727,816,709	225,615,654	95,686	18,833,671	197,622			287	592,451	113,597	1,079,231,863
Kamloops	909,267,521	36,269,131	280,399,250	86,901,786	27,403,936	32,909,803	11,081,964	57,977,963		24,082,472	158,246	85,819	1,466,537,891
Nelson	170,018,386	95,873,229	253,320,879	34,800,346	122,826,457	37,674,069	32,293,414	8,791,779		92,231,788	45,776	485,323	848,361,446
Totals, Interior	1,183,965,324	163,144,640	1,384,671,346	428,074,276	253,372,634	139,079,149	43,573,000	66,769,742	27,824	116,314,547	907,207	8,393,609	3,788,293,298
Grand totals	2,360,877,216	1,108,618,622	1,585,886,278	428,818,804	2,016,651,464	829,418,287	63,931,510	66,795,290	53,252,750	116,314,547	6,988,849	38,278,205	8,675,831,822

(54B)

SPECIES CUT, ALL PRODUCTS, 1963, IN CUBIC FEET

(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	Totals
Vancouver	188,124,458	140,480,129	9,510,773	14,064	247,215,875	108,921,389	3,393,085	4,258	8,522,813		994,167	600,899	707,781,910
Prince Rupert (C.)	8,027,524	17,098,868	24,025,049	110,024	46,663,930	6,135,134			348,008		19,440	4,379,867	106,807,844
Totals, Coast	196,151,982	157,578,997	33,535,822	124,088	293,879,805	115,056,523	3,393,085	4,258	8,870,821		1,013,607	4,980,766	814,589,754
Prince Rupert (I.)	256	5,167,659	21,414,697	14,044,607	17,921,140	8,636,801			4,839		19,258	1,340,673	68,549,930
Prince George	18,204,860	224,042	126,576,819	39,237,505	16,641	3,275,421	34,369			50	103,035	19,756	187,692,498
Kamloops	158,133,482	6,307,675	48,765,087	15,113,354	4,765,902	5,723,444	1,927,298	10,083,124		4,188,256	27,521	14,925	255,050,068
Nelson	29,568,415	16,673,605	44,055,805	6,052,234	21,361,123	6,552,012	5,616,246	1,529,005		16,040,311	7,961	84,404	147,541,121
Totals, Interior	205,907,013	28,372,981	240,812,408	74,447,700	44,064,806	24,187,678	7,577,913	11,612,129	4,839	20,228,617	157,775	1,459,758	658,833,617
Grand totals	402,058,995	185,951,978	274,348,230	74,571,788	337,944,611	139,244,201	10,970,998	11,616,387	8,875,660	20,228,617	1,171,382	6,440,524	1,473,423,371

TOTAL SCALE OF ALL PRODUCTS, 1963, 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	Totals
Timber licences	924,076,548	14,147,982		15,739,757	8,705,724	35,561,214	998,231,225
Timber berths	105,871,554				19,493,432	53,352,870	178,717,856
Timber leases	90,170,532						90,170,532
Pulp leases	55,712,058	43,904,160					99,616,218
Pulp licences	20,495,058	55,706,910					76,201,968
Farm wood-lots	487,866		110,745	340,883	335,823	12,138	1,287,455
Timber sales	1,234,957,998	244,745,406	274,865,674	926,008,733	1,103,065,533	479,616,758	4,263,260,102
No mark visible	104,101,098						104,101,098
Tree-farm licences	581,529,948	219,434,880	96,334,965	63,162,301	66,141,451	174,238,030	1,200,841,575
Miscellaneous	2,520,006	6,044,886	1,939,556	15,423,696	21,898,702	6,263,544	54,090,390
Sub-totals, Crown lands	3,119,922,666	583,984,224	373,250,940	1,020,675,370	1,219,640,665	749,044,554	7,066,518,419
Federal lands	17,411,622	8,806,548	1,718,140	259,756	46,576,897	3,805,551	78,578,514
Crown grants—							
To 1887	958,732,452	13,241,814	352,538	573,591	43,862,006	5,669,845	1,022,432,246
1887–1906	64,541,616	3,599,196	298,276	272,907	29,105,902	58,504,732	156,322,629
1906–1914	14,689,896	12,972,168	5,097,640	7,990,056	31,738,304	10,084,235	82,572,299
1914 to date	71,393,208	18,243,114	13,444,564	49,460,183	95,614,117	21,252,529	269,407,715
Totals	4,246,691,460	640,847,064	394,162,098	1,079,231,863	1,466,537,891	848,361,446	8,675,831,822

TOTAL SCALE OF ALL PRODUCTS, 1963, 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	Totals
Timber licences	154,012,758	2,357,997		2,737,349	1,514,039	6,184,559	166,806,702
Timber berths	17,645,259				3,390,162	9,278,760	30,314,181
Timber leases	15,028,422						15,028,422
Pulp leases	9,285,343	7,317,360					16,602,703
Pulp licences	3,415,843	9,284,485					12,700,328
Farm wood-lots	81,311		19,260	59,284	58,404	2,111	220,370
Timber sales	205,826,333	40,790,901	47,802,726	161,044,997	191,837,484	83,411,610	730,714,051
No mark visible	17,350,183						17,350,183
Tree-farm licences	96,921,658	36,572,480	16,753,907	10,984,748	11,502,861	30,302,266	203,037,920
Miscellaneous	420,001	1,007,481	337,314	2,682,382	3,808,470	1,089,312	9,344,960
Sub-totals, Crown lands	519,987,111	97,330,704	64,913,207	177,508,760	212,111,420	130,268,618	1,202,119,820
Federal lands	2,901,937	1,467,758	298,807	45,175	8,100,330	661,835	13,475,842
Crown grants—							
To 1887	159,788,742	2,206,969	61,311	99,755	7,628,175	986,060	170,771,012
1887–1906	10,756,936	599,866	51,874	47,462	5,061,896	10,174,736	26,692,770
1906–1914	2,448,316	2,162,028	886,546	1,389,575	5,519,705	1,753,780	14,159,950
1914 to date	11,898,868	3,040,519	2,338,185	8,601,771	16,628,542	3,696,092	46,203,977
Totals	707,781,910	106,807,844	68,549,930	187,692,498	255,050,068	147,541,121	1,473,423,371

TIMBER SCALED IN BRITISH COLUMBIA DURING 1963, BY MONTHS AND FOREST DISTRICTS

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Vancouver—													
F.b.m.	108,368,094	90,959,413	120,704,556	106,328,315	120,313,014	118,887,682	113,337,583	120,761,240	97,525,267	133,591,928	116,564,247	120,361,973	1,367,703,312
Cubic feet	23,005,878	24,245,343	37,969,165	34,526,901	46,493,414	41,334,716	46,798,255	44,573,844	45,480,556	45,974,024	39,319,983	34,756,807	464,478,886
Lineal feet	525,400	418,552	872,751	435,011	691,438	610,267	868,933	837,023	706,239	1,004,910	533,215	653,214	8,156,953
Cords	3,374	6,047	5,473	4,308	7,104	6,175	2,507	6,288	6,053	4,658	4,882	5,698	62,567
All products, cu. ft.	42,067,387	40,248,281	59,421,642	53,078,742	67,858,435	63,539,484	66,776,029	66,232,473	63,004,763	69,794,018	59,801,253	55,959,403	707,781,910
Prince Rupert (C.)—													
F.b.m.	8,140,503	11,267,594	15,609,380	9,535,927	13,374,726	9,878,361	16,425,663	17,824,274	16,661,048	11,580,694	12,547,537	11,337,456	154,183,163
Cubic feet	3,388,146	5,510,154	4,183,354	4,772,250	5,854,831	7,465,374	9,028,726	12,961,620	7,081,198	8,287,070	5,908,648	5,421,371	79,862,742
Lineal feet	82,662	93,974	2,773	53,245	208,495	170,251	23,350	148,093	150,240	----	----	158,150	1,091,233
Cords	38	----	----	----	----	----	10	----	----	----	----	----	48
All products, cu. ft.	4,830,598	7,535,051	6,788,522	6,430,790	8,350,076	9,333,094	11,797,492	16,124,853	9,970,719	10,217,186	7,999,904	7,429,559	106,807,844
Prince Rupert (I.)—													
F.b.m.	2,001,329	1,120,415	1,562,582	886,189	792,228	667,602	1,107,262	1,127,612	1,291,477	961,100	918,622	658,767	13,095,185
Cubic feet	3,655,126	7,521,363	9,537,957	6,027,639	2,714,718	2,512,738	4,204,270	7,487,114	6,094,776	5,945,089	4,382,230	3,842,526	63,925,546
Lineal feet	61,680	120,695	156,780	52,720	79,215	333,560	560,955	191,795	367,785	344,206	230,545	129,905	2,629,841
Cords	196	76	2,640	186	145	52	115	336	214	126	684	15	4,785
All products, cu. ft.	4,083,273	7,791,036	10,140,771	6,239,323	2,923,508	2,883,350	4,826,953	7,854,146	6,610,152	6,376,721	4,766,223	4,054,474	68,549,930
Prince George—													
F.b.m.	5,921,244	8,939,870	7,476,669	7,693,290	2,065,638	2,758,471	4,372,230	4,808,096	4,136,601	4,641,160	4,218,804	3,387,457	60,419,530
Cubic feet	13,622,628	28,909,978	33,797,931	28,664,480	5,473,471	5,622,264	9,289,853	12,673,940	12,648,342	10,097,736	8,256,686	7,807,297	176,864,606
Lineal feet	1,780	----	27,785	10,833	14,125	30,720	37,415	53,735	4,291	41,105	42,613	13,300	277,702
Cords	36	67	38	212	195	171	170	142	65	15	79	----	1,190
All products, cu. ft.	14,657,363	30,471,487	35,122,742	30,027,585	5,861,518	6,142,103	10,095,272	13,563,055	13,377,508	10,937,213	9,030,257	8,406,395	187,692,498
Kamloops—													
F.b.m.	7,130,326	11,573,369	12,335,032	9,634,701	8,706,007	14,324,418	14,282,193	13,026,976	13,045,363	13,824,711	10,495,424	11,401,663	139,780,183
Cubic feet	16,265,373	21,858,675	21,776,469	12,897,157	10,300,607	14,022,368	23,228,994	21,169,485	21,197,539	22,168,831	24,267,015	19,012,065	228,164,578
Lineal feet	144,879	280,595	280,595	12,150	41,430	166,925	223,850	314,628	207,097	385,844	86,710	321,419	2,466,122
Cords	667	1,055	1,055	1,376	363	389	605	468	338	464	447	847	8,074
All products, cu. ft.	17,670,576	24,170,620	24,246,116	14,639,409	11,942,351	16,674,202	25,937,234	23,711,473	23,651,404	24,899,515	26,200,662	21,306,506	255,050,068
Nelson—													
F.b.m.	4,874,980	10,626,597	1,933,063	9,659,194	9,256,118	4,328,757	9,308,571	12,239,548	5,155,388	10,623,981	9,055,870	10,128,527	97,190,594
Cubic feet	9,343,314	8,481,928	10,836,745	8,840,128	9,729,723	4,210,297	7,349,627	7,383,023	13,850,276	14,880,290	14,593,384	16,999,838	126,498,573
Lineal feet	396,047	268,061	1,024,574	35,226	305,537	57,740	672,137	189,315	476,032	220,747	304,916	391,582	4,341,914
Cords	926	972	520	1,450	1,993	892	1,509	985	1,760	1,669	1,449	2,049	16,174
All products, cu. ft.	10,527,396	10,651,682	11,607,078	10,626,048	11,771,163	5,095,528	9,601,000	9,734,706	15,146,397	17,042,534	16,524,325	19,213,264	147,541,121
Totals—													
F.b.m.	136,436,476	134,487,258	159,621,282	143,737,616	154,507,731	150,845,291	158,833,502	169,787,746	137,815,144	175,223,574	153,800,504	157,275,843	1,832,371,967
Cubic feet	69,280,465	96,527,441	118,101,621	95,728,555	80,566,764	75,167,757	99,899,725	106,249,026	106,352,687	107,353,040	96,727,946	87,839,904	1,139,794,931
Lineal feet	1,212,448	1,181,877	2,365,258	599,185	1,340,240	1,369,463	2,386,640	1,734,589	1,911,684	1,996,812	1,197,999	1,667,570	18,963,765
Cords	5,237	8,217	9,726	7,532	9,800	7,679	4,916	8,219	8,430	6,932	7,541	8,609	92,838
All products, cu. ft.	93,836,593	120,868,157	147,326,871	121,041,897	108,707,051	103,667,761	129,033,980	137,220,706	131,760,943	139,267,187	124,322,624	116,369,601	1,473,423,371

VOLUME OF WOOD REMOVED UNDER RELOGGING AT REDUCED ROYALTY AND STUMPAGE, 1954–63, IN THOUSANDS OF CUBIC FEET

(57)

Year	Salvage Wood (M Cu. Ft.)	Year	Salvage Wood (M Cu. Ft.)
1954	1,888	1959	1,257
1955	1,209	1960	1,976
1956	1,795	1961	1,813
1957	3,663	1962	2,580
1958	1,427	1963	3,217

Ten-year average, 1954–63, 2,083 M cu. ft.

(58) NUMBER OF ACRES OPERATING UNDER APPROVED ANNUAL ALLOWABLE CUTS, 1954–63

Year	Tree-farm Licences		Tree-farms[1]		Christmas-tree Permits		Farm Wood-lots		Public Sustained-yield Units[3]		Total Acres
	Number	Productive Acres	Number	Productive Acres	Number	Productive Acres[2]	Number	Productive Acres	Number	Productive Acres	
1954	19	2,788,313	7	51,025	174	68,689	25	5,549	28	7,019,759	9,864,646
1955	23	4,685,492	10	60,884	209	72,603	29	6,455	33	9,328,447	14,081,278
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
Ten-year average, 1954–63	31	5,545,169	19	387,215	267	88,132	45	10,941	60	32,176,468	38,119,793

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

TOTAL SCALE OF ALL PRODUCTS FROM AREAS OPERATED UNDER APPROVED ANNUAL ALLOWABLE CUTS, 1954–63

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	
1954	19	47,631,411	7	1,130,000	174	326,106	.....	25	26,939	28	100,166,664	148,955,014
1955	23	69,715,422	10	1,834,000	209	301,319	.....	29	64,482	33	115,091,229	186,705,133
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
Ten-year average, 1954–63	31	191,185,870	19	21,476,200	267	446,429	135,307	45	147,686	60	317,801,624	530,611,380

[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.

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LOGGING INSPECTIONS, 1963

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	1,257	1,306	2,563	4,410	2,909	7,319
Prince Rupert	818	383	1,201	2,559	674	3,233
Prince George	1,628	1,749	3,377	4,601	1,060	5,661
Kamloops	2,000	1,922	3,922	3,957	945	4,902
Nelson	1,223	1,808	3,031	2,494	1,601	4,095
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
Totals, 1955	6,818	4,676	11,494	(1)	(1)	22,355
Totals, 1954	5,855	4,877	10,732	(1)	(1)	21,011
Ten-year average, 1954–63	6,822	5,597	12,419	.....	.....	24,226

1 No breakdown made prior to 1961.

TRESPASSES, 1963

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, Car-stakes	Posts	Reserved Trees		
Vancouver	141	376	1,479,802	10,314	25	.....	181	16,170	.....	48	7	$113,567.00
Prince Rupert	84	818	485,352	11,867	3,320	.....	.....	.....	.....	15	3	42,318.27
Prince George	121	615	566,293	.....	.....	.....	1,169	.....	.....	1,854	....	16,173.43
Kamloops	133	1,495	992,184	1,925	112	.....	7,553	200	.....	228	3	71,475.49
Nelson	67	457	561,697	12,295	37	.....	2,092	1,568	2,233	.....	....	13,602.56
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
Totals, 1955	499	6,098	4,218,705	458,426	1,607	963	14,100	66,975	5,607	.....	4	$212,183.49
Totals, 1954	463	5,910	4,373,368	266,856	270	5,083	14,914	119,364	9,750	....	7	$198,220.15
Ten-year average, 1954–63	552	5,840	4,140,658	212,580	2,411	1,782	13,284	149,157	8,138	985	10	$262,797.62

(62) AREAS EXAMINED BY THE FOREST SERVICE FOR MISCELLANEOUS PURPOSES OF THE LAND ACT, 1963

Forest District	Applications for Foreshore Leases		Applications to Purchase		Miscellaneous		Total	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres
Vancouver	19	279	1	69	4	45	24	393
Prince Rupert	33	793	6	277	15	2,439	54	3,509
Totals	52	1,072	7	346	19	2,484	78	3,902

(63) AREAS CRUISED FOR TIMBER SALES, 1963

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	603	99,588	223,318	58,500	3,078	.....	18,000
Prince Rupert	290	112,096	224,002	1,258,000	9,906	.....	1,800
Prince George	364	159,230	248,512	382,700	11,200	.....	177,950
Kamloops	463	254,370	385,511	978,277	5,575	.....	31,930
Nelson	142	91,415	84,633	1,210,048	2,760	.....	427,000
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
Totals, 1955	3,354	1,077,986	1,131,521	9,885,451	16,819	145,525	501,820
Totals, 1954	3,085	781,665	697,421	10,532,164	76.859	76,310	1,127.346
Ten-year average, 1954–63	2,410	784,736	1,029,926	10,555,095	32,499	54,459	1,098,813

(64) TIMBER-SALE RECORD, 1963

Forest District	Sales Made	Sales Closed	Total Sales Existing	Total Area (Acres)	Area Paying Forest-protection Tax (Acres)	Total 10-per-cent Deposit
Vancouver	609	567	1,681	586,189	543,546	$5,893,811.12
Prince Rupert	231	230	1,007	393,851	364,404	1,520,380.08
Prince George	350	323	1,198	700,097	613,382	2,314,751.66
Kamloops	365	503	1,608	1,072,521	1,034,468	3,382,074.49
Nelson	157	218	639	600,432	564,143	1,912,806.49
Totals	1,712	1,841	6,133	3,353,090	3,119,943	$15,023,823.84
Cash sales	471	.....	.....	.....	.....	.....
Total sales	2,183	.....	.....	.....	.....	.....

COMPETITION FOR TIMBER SALES AWARDED, 1963

	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	518	85.1	81	13.3	10	1.6	609	10	619	137,958	87.6	17,880	11.3	1,672	1.1	157,510
Prince Rupert	217	93.9	9	3.9	5	2.2	231	44	275	80,449	75.8	6,237	5.9	19,466	18.3	106,152
Prince George	315	90.0	27	7.7	8	2.3	350	66	416	195,347	88.3	8,378	3.8	17,406	7.9	221,131
Kamloops	331	90.7	24	6.6	10	2.7	365	189	554	196,300	91.2	11,172	5.2	7,764	3.6	215,236
Nelson	137	87.3	15	9.5	5	3.2	157	162	319	59,328	86.3	8,114	11.8	1,307	1.9	68,749
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
Totals, 1955	2,735	87.4	267	8.5	128	4.1	3,130	248	3,378	560,997	73.3	144,814	19.0	59,033	7.7	764,844
Totals, 1954	2,540	91.2	180	6.5	65	2.3	2,785	224	3,009	460,466	86.7	51,013	9.6	19,436	3.7	530,915
Ten-year average, 1954–63	1,947	89.8	154	7.1	68	3.1	2,169	286	2,455	582,694	82.3	80,324	11.3	45,545	6.4	708,563

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TIMBER SALES AWARDED BY FOREST DISTRICTS, 1963

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	619	83,655	157,509,500		154,220	13,000	4,706					38,950		$7,308,856.83
Prince Rupert	275	78,283	106,152,534		1,709,279	1,400	590		955	4,500				4,017,022.84
Prince George	416	138,067	221,131,273		196,720	244,050	502						2,180	4,833,900.53
Kamloops	554	177,172	215,236,500		597,550	89,575	3,033		200	5,300		22,000	1,000	7,839,133.85
Nelson	319	57,392	68,748,500		1,465,423	153,955	7,469					112,000		2,195,697.19
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
Totals, 1955	3,378	923,230	764,812,540	8,356,000	10,765,982	757,890	22,590	156,077	300	1,000	45,000	110,400	1,951	$40,507,422.12
Totals, 1954	3,009	693,153	530,817,905		10,210,460	1,017,098	655,670	67,275	300	7,600	15,500	95,400	235	$18,938,049.78
Ten-year average, 1954–63	2,455	673,357	708,337,382		9,872,499	833,047	80,496			8,844		216,810		$28,303,579.73

AVERAGE STUMPAGE PRICES, AS BID, BY SPECIES AND FOREST DISTRICTS, ON TIMBER SALES DURING 1963, 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.)	27,899	$11.92	$1.60–26.40	25,734	$2.72	$1.10–10.50	1,279	$4.41	$1.10– 7.80	41,563	$2.78	$1.10–10.10	22,670	$2.41	$1.10– 5.50
Vancouver (I.)	8,767	6.38	5.40– 9.80	5,243	2.60	2.60– 4.80	2,655	2.40	2.40– 3.50	10,234	3.80	3.80– 5.90	6,385	1.40	1.40
Prince Rupert (C.)	6,288	11.64	3.40–15.90	8,575	4.87	2.00– 7.00	7,252	4.22	.85– 8.20	18,545	4.11	.55– 7.10	7,168	6.07	.55–11.10
Prince Rupert (I.)	.....	.....	.....	1,146	2.48	.90– 4.50	22,059	2.31	2.00– 6.50	5,377	2.25	.90– 4.70	10,131	1.46	1.30– 4.20
Prince George	10,021	5.37	1.30– 9.50	457	1.53	1.30– 2.50	166,186	2.05	.40– 6.00	3	1.46	1.30– 1.60	3,792	1.41	.40– 2.50
Kamloops	96,309	4.73	2.40–18.20	6,741	1.60	.25– 4.60	72,077	2.82	2.00–17.00	3,639	2.09	.25– 5.60	16,902	2.43	.25–15.50
Nelson	9,001	5.29	.25– 9.70	16,609	2.11	.25– 9.70	16,732	2.50	.25– 4.40	8,485	1.56	.25– 5.65	5,734	1.53	.80– 4.10
Totals for Province	158,285	$6.44	$0.25–26.40	64,505	$2.71	$0.25–10.50	288,240	$2.36	$0.25–17.00	87,846	$3.00	$0.25–10.10	72,782	$2.43	$0.25–15.50

Forest District	White Pine			Lodgepole Pine[1]			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.)	139	$3.73	$2.90– 5.90	.....	.....	.....	.....	.....	.....	3,639	$2.85	$1.10–13.00	122,923	$4.80	$1.10–26.40
Vancouver (I.)	1,093	13.09	7.50–13.30	6	$2.40	$2.40	.....	.....	.....	204	2.54	1.50– 3.50	34,587	4.01	1.40–13.30
Prince Rupert (C.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	755	3.46	2.00– 7.00	48,583	5.52	.55–15.90
Prince Rupert (I.)	.....	.....	.....	18,567	2.03	.90– 4.40	.....	.....	.....	289	2.62	.90– 5.30	57,569	2.07	.90– 6.50
Prince George	.....	.....	.....	38,379	2.05	.40– 5.90	.....	.....	.....	2,293	1.08	.40– 3.40	221,131	2.18	.40– 9.50
Kamloops	752	14.02	3.60–17.50	14,805	2.06	.90– 5.00	1,482	$5.42	$3.60– 7.60	2,529	3.00	1.10– 7.20	215,236	3.60	.25–18.20
Nelson	1,042	10.87	8.60–16.30	3,598	2.61	.55– 3.10	7,245	5.45	2.40– 9.20	303	2.66	.20– 5.00	68,749	3.02	.20–16.30
Totals for Province	3,026	$12.13	$2.90–17.50	75,355	$2.07	$0.40– 5.90	8,727	$5.45	$2.40– 9.20	10,012	$2.51	$0.20–13.00	768,778	$3.36	$0.20–26.40

[1] Yellow pine has been replaced in this table by lodgepole pine.

(68)

AVERAGE STUMPAGE PRICES RECEIVED, BY SPECIES AND FOREST DISTRICTS, ON SAW-TIMBER ON TREE-FARM LICENCE CUTTING PERMITS ISSUED IN 1963

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	13,623	$11.40	$4.50–14.40	20,432	$2.34	$2.10– 3.40	2,352	$4.42	$1.90– 9.80	38,581	$2.66	$2.20– 5.10	18,391	$2.24	$2.00– 2.40
Prince Rupert	.....	.....	.....	3,215	1.86	1.80– 2.60	6,808	2.45	2.00– 4.80	15,556	2.07	1.90– 3.70	3,830	1.94	1.80– 2.00
Prince George	1,761	3.14	.90– 6.70	.....	.....	.....	8,137	1.89	1.30– 2.60	.....	.....	.....	383	1.07	.90– 1.80
Kamloops	4,237	2.68	.30– 5.10	76	1.25	.25– 2.30	5,502	1.82	.30– 2.10	171	1.87	.25– 3.10	647	.95	.30– 1.10
Nelson	4,009	3.63	.75– 8.70	4,313	.77	.25– 3.60	6,873	2.11	.75– 3.00	7,118	.99	.25– 5.20	1,239	1.13	.25– 2.70
Totals for Province	23,630	$7.90	$0.30–14.40	28,036	$2.04	$0.25– 3.60	29,672	$2.26	$0.30– 9.80	61,426	$2.31	$0.25– 5.20	24,490	$2.08	$0.25– 2.70

Forest District	White Pine			Yellow 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	276	$3.61	$1.80– 5.50	.....	.....	.....	.....	.....	.....	1,115	$2.39	$1.50– 4.00	94,770	$3.81	$1.50–14.40
Prince Rupert	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,497	2.95	2.00– 3.00	30,906	2.16	1.80– 4.80
Prince George	.....	.....	.....	.....	.....	.....	.....	.....	.....	601	1.88	1.20– 2.20	10,882	2.06	.90– 6.70
Kamloops	29	13.57	10.90–14.60	112	$1.71	$0.30– 2.20	421	$2.93	$0.30– 5.10	778	1.38	.30– 2.00	11,973	2.11	.25–14.60
Nelson	1,899	8.21	1.00–16.40	168	2.30	1.70– 5.50	2,435	3.86	.75– 7.80	1,115	1.62	.75– 3.00	29,169	2.33	.25–16.40
Totals for Province	2,204	$7.70	$1.00–16.40	280	$2.06	$0.30– 5.50	2,856	$3.72	$0.30– 7.80	5,106	$2.17	$0.30– 4.00	177,700	$3.06	$0.25–16.40

TIMBER CUT AND SCALED FROM TIMBER SALES, 1963

Forest District	Cubic Feet	Board-feet	Lineal Feet	Cords	Ties	Posts	Christmas Trees	Hop-poles	Stakes and Sticks	Car-stakes	Fence Rails, Palings	An-chor-blocks	Shingle Shakes	Shake Blanks
Vancouver	200,078,344	23,022,116	503,528	2,258	.....	30,364	.....	.....	.....	.....	.....	.....	4,606,027	554,931
Prince Rupert (C.)	40,173,440	.....	534,863	48	.....	.....	580	.....	.....	400	.....	.....	.....	.....
Prince Rupert (I.)	45,848,638	877,006	1,941,056	4,200	.....	4,275	.....	.....	.....	2,750	.....	.....	.....	.....
Prince George	159,283,518	8,476,403	240,742	293	1,913	71,782	.....	.....	.....	.....	.....	.....	.....	.....
Kamloops	187,540,868	13,436,735	1,860,022	5,494	.....	44,169	.....	.....	.....	.....	.....	.....	73,558	.....
Nelson	80,362,208	5,318,918	2,731,656	2,924	.....	349,697	485,057	.....	.....	2,493	88,721	.....	.....	100,896
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
Totals, 1955	360,046,248	707,975,332	10,646,201	19,839	158,748	712,813	313,820	.....	45,000	3,971	.....	610	5,966,313	1,196,178
Totals, 1954	208,475,224	1,072,985,534	9,249,681	15,214	241,579	773,939	234,277	42,632	1,240,534	1,204	.....	107	4,030,698	1,262,058
Ten-year average, 1954–63	487,318,241	315,869,394	10,657,528	15,553	130,115	641,630	393,747	11,384	129,487	4,630	11,856	76	5,862,329	1,187,797

(70) SAW AND SHINGLE MILLS OF THE PROVINCE, 1963

Forest District	Operating				Shut Down			
	Sawmills		Shingle-mills		Sawmills		Shingle-mills	
	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.	Number	Estimated Eight-hour Daily Capacity, M B.F.
Vancouver	156	8,355	51	852	52	399	2	50
Prince Rupert	190	2,251	.....	.....	61	389	2	3
Prince George	493	7,045	3	90	231	1,767	.....	.....
Kamloops	474	7,732	12	47	71	466	2	1
Nelson	228	3,956	3	14	87	469	3	11
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
Totals, 1955	2,489	28,016	72	1,804	404	2,285	3	19
Totals, 1954	2,346	25,602	57	1,108	367	2,281	13	22
Ten-year average, 1954–63	2,042	28,145	58	1,142	498	3,139	10	54

(71) EXPORT OF LOGS (IN F.B.M.), 1963

Species	Grade No. 1	Grade No. 2	Grade No. 3	Ungraded	Fuel-logs	Total
Fir	107,612	1,047,617	3,285,147	.....	13,517	4,453,893
Cedar	406,411	1,913,276	3,468,921	.....	.....	5,788,608
Spruce	1,877,378	7,223,827	12,543,218	.....	.....	21,644,423
Hemlock	762,510	4,278,085	37,011,935	.....	78,215	42,130,745
Balsam	.....	.....	.....	10,253,906	15,797	10,269,703
White pine	.....	5,797	33,676	.....	.....	39,473
Lodgepole pine	.....	.....	1,102	.....	.....	1,102
Cypress	313,502	1,051,663	4,555,989	.....	.....	5,921,154
Hardwood	.....	.....	.....	21,085	.....	21,085
Cottonwood	1,573	629,546	1,890,222	.....	.....	2,521,341
Totals, 1963	3,468,986	16,149,811	62,790,210	10,274,991	107,529	92,791,527[1]
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
Totals, 1955	906,141	7,468,949	58,863,477	16,974,165	4,754,796	88,967,528
Totals, 1954	3,948,345	19,595,544	90,691,771	17,465,267	9,274,995	140,975,922
Ten-year average, 1954-63	2,463,526	10,164,281	41,260,144	10,813,639	3,158,841	67,860,431

[1] Of this total, 51,109,835 f.b.m. were exported from Crown-granted lands carrying the export privilege; 41,681,692 f.b.m. were exported under permit from other areas.

(72) SHIPMENTS OF POLES AND OTHER MINOR PRODUCTS, 1963

Forest District and Product	Quantity Exported	Approximate Value, F.O.B.	Where Marketed		
			United States	Canada	Other Countries
Vancouver—					
Poles lin. ft.	5,424,467	$2,856,782.45	3,999,777	410,366	1,014,324
Piling "	2,207,618	742,487.45	1,760	239,848	1,966,010
Stakes and sticks "	5,800	174.00	5,800	----	----
Fence-posts pieces	2,495	748.50	2,495	----	----
Cedar shakes "	33,611,523	2,492,806.61	35,611,523	----	----
Christmas trees "	65,650	131,300.00	157,288	----	----
Prince Rupert—					
Poles lin. ft.	3,285,344	1,453,324.72	2,295,208	1,530,136	----
Fender logs f.b.m.	19,380	775.20	----	19,380	----
Boom-sticks "	66,065	2,642.60	----	66,065	----
Prince George—					
Poles lin. ft.	50,230	20,128.00	50,230	----	----
Piling "	11,510	3,222.80	----	11,510	----
Fence-posts "	44,185	11,046.25	----	44,185	----
Hewn ties pieces	1,913	1,052.15	----	1,913	----
Christmas trees "	1,350	1,080.00	----	1,350	----
Kamloops—					
Poles lin. ft.	1,845,560	590,579.20	676,000	1,169,560	----
Piling "	137,550	34,387.50	----	137,550	----
Fence-posts cords	3,320	132,800.00	----	3,320	----
Christmas trees pieces	574,923	344,953.80	558,433	16,490	----
Nelson—					
Poles and piling lin. ft.	2,194,178	1,004,568.00	1,091,495	1,102,683	----
Corral-rails "	41,024	410.00	----	41,204	----
Orchard-props "	54,000	1,890.00	54,000	----	----
Mine timbers "	42,726	5,127.00	----	42,726	----
Mine-props cords	116	893.00	----	116	----
Fence-posts "	5,600	341,600.00	966	4,634	----
Palings and pickets pieces	479,467	57,536.00	434,374	45,093	----
Cedar shakes "	752,840	120,454.00	616,510	136,330	----
Christmas trees "	1,257,000	842,190.00	1,131,300	125,700	----
Total value, 1963	----	$11,194,959.23	----	----	----
Total value, 1962	----	$11,030,814.62	----	----	----

(73) SUMMARY OF EXPORT OF MINOR PRODUCTS FOR PROVINCE, 1963

Product	Quantity	Value	Per Cent of Total Value
Poles lin. ft	10,605,601	$4,920,814.37	43.2476
Piling "	2,356,678	780,097.75	6.8560
Other poles and piling "	2,194,178	1,004,568.00	8.8289
Mine timbers "	42,726	5,127.00	.0451
Fence-posts "	44,185	11,046.25	.0971
Orchard-props "	54,000	1,890.00	.0166
Corral-rails "	41,024	410.00	.0036
Stakes and sticks "	5,800	174.00	.0015
Cedar shakes pieces	34,364,363	2,613,260.61	22.9672
Christmas trees "	1,898,923	1,319,523.80	13.2077
Palings and pickets "	479,467	57,536.00	.5057
Hewn ties "	1,913	1,052.15	.0092
Fence-posts "	2,495	748.50	.0065
Fence-posts cords	8,920	474,400.00	4.1694
Mine-props "	116	893.00	.0078
Boom-sticks f.b.m.	66,065	2,642.60	.0232
Fender logs "	19,380	775.20	.0068
Total value	----	$11,194,959.23	100.0000

(74) TIMBER MARKS ISSUED, 1954–63

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	Ten year Average, 1954-63
Old Crown grants	528	609	480	320	215	299	315	268	300	313	365
Crown grants, 1887–1906	175	218	207	108	93	103	115	121	150	125	141
Crown grants, 1906–1914	160	171	172	97	93	125	123	121	164	161	139
Section 58, *Forest Act*	485	653	655	460	362	524	517	470	589	608	532
Stumpage reservations	69	95	82	59	89	108	116	117	109	141	98
Pre-emptions	1	2	6	1	.....	.....	1	3	9	13	4
Timber berths	1	10	10	7	7	9	4	4	12	12	8
Indian reserves	30	31	46	23	9	21	15	8	20	18	22
Timber sales	2,786	3,130	2,859	2,239	1,900	1,926	2,136	2,141	1,991	2,183	2,329
Hand-loggers	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Special marks and rights-of-way	44	43	71	74	80	85	113	91	90	97	79
Pulp leases	1	6	1	1	7	1	1	5	5	.....	3
Pulp licences	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Totals	4,280	4,968	4,589	3,389	2,855	3,201	3,456	3,349	3,441	3,671	3,720
Transfers and changes of marks	780	867	873	615	598	669	794	691	809	725	742

(81) GRAZING PERMITS ISSUED

District	Number of Permits Issued	Number of Stock under Permit		
		Cattle	Horses	Sheep
Kamloops	1,285	129,832	3,921	23,991
Nelson	439	22,230	1,411	1,375
Prince George	221	6,684	528	.....
Vancouver	6	94	.....	.....
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
Totals, 1955	1,705	121,284	3,575	22,560
Totals, 1954	1,750	111,767	3,738	24,909

(91) FOREST ROAD PROGRAMME, 1963

Project	Regulation Unit	Reconnaissance Miles	Location Miles	Construction Miles
Vancouver Forest District				
Alouette Lake F.R.	Blue Mountain	.....	7.5	.....
Big Silver-Nahatlatch	Yale S.Y.U.	1	.....	.....
	Harrison S.Y.U.	5	.....	.....
Blue Mountain F.R.	Blue Mountain Forest	.....	3.5	.....
Bond Sound F.R.	Broughton S.Y.U.	.....	3.1	.....
Cheakamus Lake F.R.	Garibaldi Park and Soo S.Y.U.	.....	2.1	.....
Cheekye River F.R.	Soo S.Y.U.	.....	1.6	.....
Lillooet Lake	Soo S.Y.U.	15	.....	.....
Malaspina F.R.	Redonda S.Y.U.	.....	3.9	.....
Menzies Mountain East F.R.	Sayward S.Y.U.	.....	3.5	.....
Menzies Mountain West F.R.	Sayward S.Y.U.	.....	2.2	.....
Mohun Lake F.R.	Sayward S.Y.U.	.....	0.6	.....
McNab-Howe Sound F.R.	Sechelt S.Y.U.	.....	13.6	.....
Port Hardy F.D.R.	Cape Scott P.W.C.	.....	.....	9.4
Stella Lake F.R.	Sayward S.Y.U.	.....	12.8	.....
Texada F.R.	Sechelt S.Y.U.	.....	3.4	.....
Theodosia F.R.	Redonda S.Y.U.	.....	9.3	.....
Prince Rupert Forest District				
Allard Creek	Rivers Inlet P.W.C.	4	.....	.....
Blunt Creek F.D.R.	Smithers P.W.C.	.....	17.6	7.2
Insect Creek	Kitwanga S.Y.U.	7	.....	.....
Johnston Creek	Rivers Inlet P.W.C.	3	.....	.....
Lockhart Gordon Creek	Rivers Inlet P.W.C.	6	.....	.....
Milton River	Rivers Inlet P.W.C.	6	.....	.....
Morice River F.D.R.	Ootsa S.Y.U.	.....	.....	5.4
Nekite River	Rivers Inlet S.Y.U.	4	.....	.....
Sandell River	Rivers Inlet S.Y.U.	7	.....	.....
Smithers Landing Road	Smithers P.W.C.	.....	2.7	.....
Suskwa River F.R.	Hazelton S.Y.U.	.....	12.1	.....
Prince George Forest District				
Aleza Lake F.D.R.	Aleza Lake Forest	.....	.....	1.8
Bowron F.R.	Bowron S.Y.U.	.....	26.4	.....
Bullhead Mountain F.R.	V.C.L.	.....	3.0	.....
Gwilliam Lake F.R.	Moberly S.Y.U.	.....	18.9	.....
Halfway River	V.C.L.	20	.....	.....
Parsnip River Road	V.C.L.	.....	58.4	53.8
Swift-Cunningham	Bowron S.Y.U.	2	.....	.....
Kamloops Forest District				
Adams-Shuswap F.R.	Adams S.Y.U.	.....	14.2	.....
	Shuswap S.Y.U.	.....	8.7	.....
Ashnola River F.D.R.	Ashnola S.Y.U.	.....	13.4	6.0
Barton Hills	Barton Hills S.Y.U.	7	.....	.....
	Nicola S.Y.U.	3	.....	.....
	Similkameen S.Y.U.	2	.....	.....
Cariboo River F.R.	Quesnel Lake P.W.C.	.....	5.7	.....
Cayoosh Creek F.D.R.	Yalakom S.Y.U.	.....	.....	5.1
Chilcotin River	Taseko S.Y.U.	4	.....	.....
	Stum S.Y.U.	30	.....	.....
Hendrix Creek F.D.R.	Lac la Hache S.Y.U.	.....	.....	9.0
Horsefly River F.D.R.	Quesnel Lake P.W.C.	.....	.....	3.4
Nelson Forest District				
Akolkolex River F.D.R.	Arrowhead S.Y.U.	.....	16.1	.....
Bench Creek F.R.	Edgewood S.Y.U.	.....	7.1	.....
Bush River	Kinbasket S.Y.U.	32	.....	.....
Duncan River F.R.	V.C.L.	.....	18.9	.....
Lodgepole F.D.R.	Fernie S.Y.U.	.....	.....	2.6
Norns Creek	Salmo S.Y.U.	6	.....	.....
Windermere Creek	Windermere S.Y.U.	.....	7	.....
Totals, 1963 programme		164	297.3	103.7
Previous works		3,916	1,612.4	670.5
Totals, forest road programme 1950–63		4,080	1,909.7	774.2

F.D.R.=Forest-development road. F.R.=Forest road. P.W.C.=Public working circle.
S.Y.U.=Sustained-yield unit. V.C.L.=Vacant Crown land.

(92) FOREST SERVICE MECHANICAL EQUIPMENT, 1963

Type	Total Units, Jan. 1, 1963	Removed from Service	New Purchases	Total Units, Jan. 1, 1964
Sedans	47	11	10	46
Suburbans, station wagons, sedan deliveries	121	22	17	116
Panel deliveries	69	17	18	70
Four-wheel-drive passenger types	104	20	34	118
Four-wheel-drive pick-ups, power wagons, panel deliveries	288	46	46	288
5,000–10,000 G.V.W. pick-ups, ½ and 1 ton	172	28	30	174
14,000–24,000 G.V.W. trucks, 2, 3, and 4 tons	54	3	4	55
24,000–40,000 G.V.W. heavy-duty trucks	3	1	2	4
Fire-fighting tank-trucks	4	.....	.....	4
Total vehicles	862	148	161	875
Trail motor-cycles	26	.....	16	42
Tractors	44	2	2	44
Graders	15	.....	.....	15
Scrapers—self-propelled	4	.....	.....	4
Scrapers—not self-propelled	2	.....	.....	2
Shovels—power	2	.....	.....	2
Loaders—self-propelled	1	.....	1	2
Outboard motors	387	17	23	393
Fire-pumps—various	851	37	12	826
Fire-pumps—portable tanker	100	.....	8	108
Bean fire-fighting units—high-pressure	34	.....	.....	34
Borate mixer pumps	10	.....	.....	10
Chain saws	365	16	35	384
Lighting plants	98	4	7	101
Snow sedan—propellor-driven	1	.....	.....	1
Speeders—railway	14	.....	..	14
Trailers—low and high bed	7	.....	2	9
Trailers—dwelling, bunk-house, etc.	157	6	15	166
Trailers—miscellaneous	213	.....	32	245
Air-compressors	5	.....	4	9
Rock drills—gas-powered	8	.....	.....	8
Muskeg and snow tractors (personnel carriers)	10	.....	.....	10
Yarders	1	1	.....	.....
Crushing plants	1	.....	.....	1
Mechanical wheelbarrows	22	.....	.....	22
Welders	9	.....	3	12
Cement-mixers	6	.....	1	7
Augers—power, planting	4	1	.....	3
Fork lift trucks	1	.....	1	2

(93) BUILDING CONSTRUCTION UNDERTAKEN DURING 1963

Location	Project	Construction Agency	Progress
Carry-over of 1961/62 Programme			
Adams Lake	Mooring facilities	Own forces	Completed.
Alexis Creek	Bunk-house	Own forces	Completed.
Barriere	Addition to residence	Own forces	Completed.
Beaverdell	Residence	Own forces	Completed.
Chilliwack	Bunk-houses	Own forces	Completed.
Chilliwack	Cold-storage building	Own forces	Design completed.
Cranbrook	Pumping and irrigation	Own forces	Completed.
Cranbrook	Cold-storage extension	Own forces	Design completed.
Fort Fraser	Residence	Own forces	Completed.
Fort McLeod	Residence	Own forces	Completed.
Fort Nelson	Warehouse	Own forces	Completed.
Gold Bridge	Office and cache	Own forces	Completed.
Golden	Bunk-house	Own forces	Completed.
Green Timbers	Office renovations	Own forces	Design completed.
Green Timbers	Repair-shed, electrical	Own forces	Completed.
Green Timbers	Pumping and irrigation	Own forces	Completed.
Hudson Hope	Residence	Own forces	Completed.
Kitwanga	Electrical distribution	Contract	Work proceeding.
Kitwanga	Water supply	Own forces	Completed.
Likely	Marine ways	Own forces	Completed.
Lund	Residence	Own forces	Completed.
Merritt	Addition to office	Own forces	Completed.
Merritt	Addition to residence	Own forces	Completed.
McBride	Addition to office	Own forces	Completed.
Pemberton	Vehicle-shed	Own forces	Completed.
Prince Rupert	Mooring facilities	Contract	Design completed.
Queen Charlotte City	Residence	Own forces	Completed.
Quinsam	Addition to residence	Own forces	Completed.
Sayward Forest	Water supply	Own forces	Completed.
Smithers	Alterations to hangar	Own forces	Design completed.
Spillimacheen	Addition to residence	Own forces	Completed.
Spillimacheen	Water treatment	Own forces	Completed.
Telkwa	Cold-storage and warehouse building	Own forces	Completed.
Topley	Water-supply system	Own forces	Completed.
Vancouver	Warehouse	Own forces	Completed.
Victoria	Warehouse renovations	Own forces	Completed.
Wells	Residence	Own forces	Completed.
Williams Lake	Residence	Own forces	Completed.
1962/63 Programme			
Aleza Lake	Vehicle-repair building	Own forces	Completed.
Aleza Lake	Water-system renovations	Own forces	Work proceeding.
Beaverdell	Residence	Own forces	Work proceeding.
Burns Lake	Heating renovations	Own forces	Completed.
Chase	Office extension	Own forces	Completed.
Chatham Channel	Wharf—cathodic treatment	Own forces	Completed.
Crescent Spur	Residence	Own forces	Completed.
Dawson Creek	Paving	Contract	Completed.
Duncan	Warehouse conversion	Own forces	Design proceeding.
Duncan	Utility building	Own forces	Design proceeding.
Duncan	Pumping and irrigation	Own forces	Design proceeding.
Fort St. John	Paving	Contract	Completed.
Ganges	Garage	Own forces	Completed.
Green Timbers	Roof repairs	Contract	Completed.
Green Timbers	Irrigation extension	Own forces	Work proceeding.
Green Timbers	Cold-storage extension	Own forces	Design completed.
Green Timbers	Domestic water system	Own forces	Design proceeding.
Harrison Lake	Construction camp	Own forces	Completed.
Hazelton	Warehouse	Own forces	Completed.
Hazelton	Residence	Own forces	Completed.
Hudson Hope	Residence	Own forces	Completed.
Invermere	Office extension	Own forces	Completed.
Kettle Valley	Heating	Contract	Completed.
Kettle Valley	Office extension	Own forces	Completed.
Kitwanga	Residence	Own forces	Completed.
Likely	Boat-house extension	Own forces	Completed.
Lower Post	Office conversion	Own forces	Completed.
Lund	Float addition	Own forces	Completed.
Mesachie Lake	Office extension	Contract	Work proceeding.
Mesachie Lake	Soil-shed	Own forces	Work proceeding.

(93) BUILDING CONSTRUCTION UNDERTAKEN DURING 1963—*Continued*

Location	Project	Construction Agency	Progress
Mesachie Lake	Irrigation system	Own forces	Design proceeding.
Parsnip River	Construction camp	Own forces	Completed.
Prince Rupert	Carport	Own forces	Completed.
Quesnel	Air-conditioning	Own forces	Completed.
Salmo	Warehouse	Own forces	Completed.
Smithers	Roof repairs	Contract	Completed.
Summit Lake	Residence	Own forces	Completed.
Summit Lake	Electrical distribution	Own forces	Completed.
Topley	Building conversion	Own forces	Completed.
Vancouver	Office extension	Own forces	Completed.
Vancouver	Oil-storage building	Own forces	Completed.

(94) TRAILERS DESIGNED IN 1963

Type and Size	Used by—	District or Division
Camper unit (truck-borne), 7′ x 8′	Reconnaissance crew	Engineering Division.
Bunk-house, 8′ x 30′	Survey crew	Surveys Division.
Office and bunk-house (two), 10′ x 36′	Water-bombing crew	Kamloops.
Office and bunk-house (one), 10′ x 36′	Water-bombing crew	Prince George.
Office and bunk-house (one), 10′ x 36′	Water-bombing crew	Nelson.
Residence, 8′ x 36′	Survey supervisor	Surveys Division.
Workshop (truck-borne), 8′ x 13′	Mechanical Superintendent	Surveys Division.
Dwelling, 8′ x 16′	Fire-suppression crew	Prince George.
Camper unit (truck-borne), 7′ x 8′	Patrolman	Prince Rupert.
Dwelling, 8′ x 18′	Project crew	Nelson.
Dwelling, 8′ x 28′	Project crew	Prince Rupert.
Dwelling, 8′ x 28′	Silviculture crew	Prince Rupert.
Dwelling, 8′ x 18′	Silviculture crew	Prince George.
Dwelling, 8′ x 28′	Silviculture crew	Nelson.
Dwelling, 8′ x 18′	Silviculture crew	Prince Rupert.
Dwelling, 8′ x 14′	Cruising crew	Prince Rupert.

(101) FOREST-PROTECTION EXPENDITURE BY THE FOREST SERVICE FOR THE FISCAL YEAR 1962/63

Travelling expense	$22,035.26
Clothing and uniforms	6,001.60
Equipment rental (aircraft)	618,587.61
Equipment and machinery	260,414.66
Maintenance of buildings and grounds	273,202.62
Maintenance and operation of equipment	295,660.72
Acquisition or construction of buildings and works	185,799.29
Motor-vehicles and accessories	118,376.18
Incidentals and contingencies	23,091.87
Slash and snag disposal	74,945.76
Wages and expenses, seasonal staff	1,432,880.21
Increased protection, Peace River	231,366.22
Total	$3,542,362.00

Fire-suppression expenditure by the Forest Service for the fiscal year 1962/63 $444,057.16

(102) CONSTRUCTION OF PROTECTION ROADS AND TRAILS, 1963

	Light	Medium	Heavy	Total
	Miles	Miles	Miles	Miles
New road construction	41	56	104	201
Road maintenance	987	638	407	2,032
Total road construction and maintenance	1,028	694	511	2,233
New trail construction	46	44	32	122
Trail maintenance	122	185	56	363
Total trail construction and maintenance	168	229	88	485

(103) REPORTED APPROXIMATE EXPENDITURE IN FOREST PROTECTION BY OTHER AGENCIES,[1] 1963

Forest District	Expenditures				
	Patrols and Fire Prevention	Tools and Equipment	Fires	Improvements	Total
Vancouver	$122,866	$318,435	$202,476	$62,275	$706,052
Prince Rupert	147,450	30,750	13,800	32,300	224,300
Prince George	6,800	71,070	18,510	33,350	129,730
Kamloops	7,310	6,428	42,520	17,000	73,258
Nelson	13,984	46,085	32,562	34,720	127,351
Totals	$298,410	$472,768	$309,868	$179,645	$1,260,691
Ten-year average, 1954–63	$322,730	$429,924	$338,748	$305,951	$1,397,353

[1] Principally forest industry.

(104) SUMMARY OF SNAG-FALLING, 1963, VANCOUVER FOREST DISTRICT

		Acres
Total area logged, Vancouver Forest District, 1963		90,548
Logged in small exempted operations[1]	280	
Assessed for non-compliance, less 561 acres subsequently felled	1,359	
		1,639
Balance logged acres snagged, 1963		88,909
Snags felled, 1963, by Forest Service Protection Division	3,377	
Snags felled, 1963, by Forest Service Reforestation Division	3,660	
Total area snagged, 1963, Vancouver Forest District		7,037
Total area snagged, 1963, Interior districts		1,800
Total area snagged, 1963, all districts		8,837

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

(105) SUMMARY OF LOGGING SLASH REPORTED IN 1963, VANCOUVER FOREST DISTRICT

		Acres
Total area logged, 1963		90,548
Area covered by full hazard reports	52,649	
Covered by snag reports but exempted from slash disposal	25,432	
Covered by acreage reports only (exempted from slash and snag disposal) [1]	280	
		78,361
Slash created and not reported in 1963		12,187

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

(106) ACREAGE ANALYSIS OF SLASH DISPOSAL REQUIRED, 1963, VANCOUVER FOREST DISTRICT

	Acres of Slash		
	Prior to 1963	1963[1]	Total Acres
Broadcast burning	20,943	22,035	42,978
Spot burning	4,470	5,201	9,671
Totals	25,413	27,236	52,649

1963 reports not recommending slash disposal	25,432	
1963 slash on very small operations exempted without special examination	280	
		25,712
Total area of slash dealt with, 1963		78,361

[1] Does not include the estimated 12,187 acres (*see* Table No. 40) created too late to be dealt with in 1963.

(107) ANALYSIS OF PROGRESS IN SLASH DISPOSAL, 1963, VANCOUVER FOREST DISTRICT

		Acres
Total disposal required (*see* Table No. 39)		52,649

	Acres of Slash		
Type of Disposal	Prior to 1963	1963	Total Acres
Spring broadcast burning	75	161	236
Spring spot burning	108	----------	108
Fall broadcast burning	26,573	19,825	46,398
Fall spot burning	6,168	3,023	9,191
Total burning completed	32,924	23,009	55,933
Burning by accidental fires			1,143
Lopping, scattering, land-clearing, etc.			60
Total			57,136

Balance reported slash not yet abated[1]		*Nil*
Slash created, 1963, acres assessed		284
Plus slash created too late to be dealt with, 1963		12,187
Total area of slash carried over to 1964 for disposition[2]		12,471

[1] Caused by voluntary burning and abatement of assessed and extended areas.
[2] Does not show the acreage instructed in 1963 to be extended or assessed in 1964.
Actual area burned in spring spot burning, 18 acres.
Actual area burned in fall spot burning, 1,176 acres.
The above figures do not include 1962 slash-burn reports received too late for inclusion in 1963 Annual Report, 1,676 acres.

(108) SUMMARY OF SLASH-BURN DAMAGE AND COSTS, 1963, VANCOUVER FOREST DISTRICT

Total acres of forest-cover burned in slash fires, 1963	487
Net damage to forest-cover	$14,779.50
Net damage to cut products	242.50
Net damage to equipment and property	1,100.00
Total damage	$16,122.00

Cost of Slash Burning as Reported by Operators

	Total Cost	Acres	Cost per M B.F.	Cost per Acre
(*a*) Spring broadcast burning	$400.00	236	$0.042	$1.69
(*b*) Spring spot burning	560.00	108	.172	5.18
(*c*) Fall broadcast burning	185,164.23	46,398	.099	3.99
(*d*) Fall spot burning	14,186.23	9,191	.051	1.54

(109) FIRE OCCURRENCES BY MONTHS, 1963

Forest District	March	April	May	June	July	August	September	October	Total	Per Cent
Vancouver[1]	.....	5	66	67	44	185	51	6	424	18.1
Prince Rupert	.....	27	54	17	65	18	7	1	189	8.1
Prince George	4	3	79	63	59	81	11	8	308	13.1
Kamloops[2]	23	16	190	134	173	312	51	9	908	38.7
Nelson	9	6	29	24	123	200	119	6	516	22.0
Totals	36	57	418	305	464	796	239	30	2,345	100.0
Per cent	1.5	2.4	17.8	13.0	19.8	34.0	10.2	1.3	100.0	.....
Ten-year average, 1954–63	32	86	298	267	583	478	151	27	1,922	.....
Per cent	1.7	4.5	15.5	13.9	30.3	24.9	7.8	1.4	100.0	.....
Railroad-tie fires	.....	.....	349	69	34	36	38	2	528	.....

[1] Excludes 438 railroad-tie fires.
[2] Excludes 90 railroad-tie fires.

(110) NUMBER AND CAUSES OF FOREST FIRES, 1963

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]	140	49	12	72	17	.....	3	43	5	74	9	424	18.1
Prince Rupert	73	26	3	11	16	16	5	12	3	23	1	189	8.1
Prince George	139	36	13	16	23	24	2	16	12	20	7	308	13.1
Kamloops[2]	416	67	34	93	22	52	10	56	39	109	10	908	38.7
Nelson	376	43	3	28	4	3	4	14	3	24	14	516	22.0
Totals	1,144	221	65	220	82	95	24	141	62	250	41	2,345	100.0
Per cent	48.8	9.4	2.8	9.4	3.5	4.1	1.0	6.0	2.6	10.7	1.7	100.0	.....
Ten-year average, 1954–63	702	212	112	245	79	85	33	148	35	215	56	1,922	.....
Per cent	36.5	11.0	5.8	12.8	4.1	4.5	1.7	7.7	1.8	11.2	2.9	100.0	.....
Railroad-tie fires	.....	.....	528	.....	.....	.....	.....	.....	.....	.....	.....	528	.....

[1] Excludes 438 railroad-tie fires.
[2] Excludes 90 railroad-tie fires.

(111) NUMBER AND CAUSES OF FOREST FIRES FOR THE LAST TEN YEARS

Causes	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	Total
Lightning	116	418	497	307	1,150	184	1,166	1,426	615	1,144	7,023
Recreational (campers, etc.)	157	195	214	170	296	172	241	269	182	221	2,117
Railroads operating[1]	69	74	135	85	162	88	245	154	41	65	1,118
Smokers	120	206	281	182	478	211	257	336	162	220	2,453
Brush-burning (not railway or right-of-way clearing)	63	47	112	65	120	75	82	86	60	82	792
Range-burning	3	2	47	48	131	190	87	179	62	95	844
Road and Power-, telephone-, and pipe-line construction	11	24	73	46	18	30	36	36	35	24	333
Industrial operations (logging, etc.)	64	89	183	107	246	204	137	194	109	141	1,474
Incendiary	12	15	27	22	53	34	54	49	25	62	353
Miscellaneous known causes	79	132	213	172	310	253	271	290	183	250	2,153
Unknown causes	21	50	73	45	94	33	59	83	62	41	561
Totals	715	1,252	1,855	1,249	3,058	1,474	2,635	3,102	1,536	2,345	19,221
Railroad-tie fires	49	132	955	370	1,062	536	1,478	1,489	2,479	528	9,078

[1] Excludes 9,078 railroad-tie fires.

FIRES CLASSIFIED BY SIZE AND DAMAGE, 1963

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]	424	18.1	318	75.0	19.4	85	20.0	16.0	19	4.5	11.7	2	0.5	22.2	396	10	18
Prince Rupert	189	8.1	118	61.0	7.2	46	25.0	8.7	20	11.0	12.3	5	3.0	55.6	170	14	5
Prince George	308	13.1	158	51.3	9.6	95	30.8	17.9	53	17.2	32.7	2	0.7	22.2	267	26	15
Kamloops[2]	908	38.7	630	69.4	38.3	216	23.8	40.7	62	6.8	38.3	.....	.....	.....	863	36	9
Nelson	516	22.0	419	81.2	25.5	89	17.2	16.7	8	1.6	5.0	.....	.....	.....	498	15	3
Totals	2,345	100.0	1,643	.....	100.0	531	.....	100.0	162	.....	100.0	9	.....	100.0	2,194	101	50
Per cent	100.0	.....	70.0	.....	.....	22.7	.....	.....	6.9	.....	.....	0.4	.....	.....	93.6	4.3	2.1
Ten-year average, 1954–63	1,922	.....	1,155	.....	.....	521	.....	.....	190	.....	.....	56	.....	.....	1,700	121	101
Per cent	100.0	.....	60.0	.....	.....	27.1	.....	.....	9.9	.....	.....	3.0	.....	.....	88.4	6.3	5.3
Railroad-tie fires	528	.....	528	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[1] Excludes 438 railroad-tie fires.
[2] Excludes 90 railroad-tie fires.

(113) ANALYSIS OF SUPPRESSION-CREW FIRE-FIGHTING ACTIVITIES, 1963

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)	132	129	3	----	----	----
Over ¼ acre and up to 1 acre	46	6	35	5	----	----
Over 1 acre and up to 5 acres	14	-----	----	7	7	----
Over 5 acres and up to 50 acres	7	-----	----	----	7	----
Over 50 acres	2	-----	----	----	----	2
Totals	201	135	38	12	14	2

(114) DAMAGE TO PROPERTY OTHER THAN FORESTS, 1963[1]

Forest District	Forest Products Cut, Logs, Lumber, etc.	Buildings	Railway, Logging, and Sawmill Equipment	Miscellaneous	Total	Per Cent of Total
Vancouver	$19,585.00	$3,100.00	$128,763.00	$2,165.00	$153,613.00	68.0
Prince Rupert	210.00	56,500.00	----------	137.00	56,847.00	25.2
Prince George	70.00	4,000.00	----------	124.00	4,194.00	1.9
Kamloops	525.00	250.00	----------	407.00	1,182.00	0.5
Nelson	51.00	3,000.00	4,900.00	2,010.00	9,961.00	4.4
Totals	$20,441.00	$66,850.00	$133,663.00	$4,843.00	$225,797.00	100.0
Per cent	9.0	29.6	59.2	2.2	100.0	----------
Ten-year average, 1954–63	$81,582.00	$31,848.00	$177,997.00	$23,683.00	$315,110.00	----------
Per cent	25.9	10.1	56.5	7.5	100.0	----------

[1] Does not include intentional slash burns. (For this item *see* Table No. 108.)

(115, Part I) DAMAGE TO FOREST-COVER CAUSED BY FOREST FIRES, 1963— PART I[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	404	1,966	1,127	53,168	245	12,429
Prince Rupert	1,332	1,961	24	43,544	1,035	35,627
Prince George	522	2,047	1,705	12,199	2,590	28,888
Kamloops	590	1,351	486	12,407	1,648	24,435
Nelson	273	628	15	11,326	447	9,144
Totals	3,121	7,953	3,357	132,644[2]	5,965	110,523[2]
Per cent	6.7	100.0	42.2	43.0	12.9	35.8
Ten-year average, 1954–63	59,023	82,926	26,992	1,271,183	57,522	1,173,019
Per cent	13.0	100.0	32.5	45.8	12.6	42.3

[1] Does not include intentional slash burns. (For this item *see* Table No. 107.)

[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 10 times these figures.

(115, Part II)

DAMAGE TO FOREST-COVER CAUSED BY FOREST FIRES, 1963—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	1,143	315	.....	24,323	2,013	503	8	1	354	89	4,482	1,966	90,513
Prince Rupert	288	.....	400	7,887	23,527	5,881	90	13	20	4	26,692	1,961	92,956
Prince George	271	16	1,642	19,674	2,869	711	1,609	81	15	3	9,534	2,047	61,556
Kamloops	521	6	27	4,654	493	120	1,164	62	193	48	4,642	1,351	41,726
Nelson	89	16	2	1,183	31	51	80	4	58	16	996	628	21,724
Totals	2,312	353	2,071	57,721	28,933	7,266	2,951	161	640	160	46,346	7,953	308,475
Per cent	5.0	0.7	4.5	18.7	62.4	2.3	6.4	0.1	1.4	0.1	100.0	100.0	100.0
Ten-year average, 1954–63	11,985	976	23,254	257,629	212,866	53,495	12,158	1,761	75,953	17,099	453,737	82,926	2,774,186
Per cent	2.6	0.2	5.1	9.3	46.9	1.9	2.8	0.1	16.8	0.6	100.0	100.0	100.0

[1] Does not include intentional slash burns. (For this item *see* Table No.107.)

(116) FIRE CAUSES, AREA BURNED, FOREST SERVICE COST, AND TOTAL DAMAGE, 1963

Causes	Fire Causes		Area Burned		Forest Service Cost		Total Damage	
	Number	Per Cent	Acres	Per Cent	Cost	Per Cent	Damage	Per Cent
Lightning	1,144	48.8	16,873	36.5	$215,613	48.9	$62,670	11.7
Recreational (campers, etc.)	221	9.4	2,803	6.0	37,555	8.5	63,755	11.9
Railroads operating[1]	65	2.8	449	1.0	2,574	0.6	21,021	3.9
Smokers	220	9.4	715	1.5	23,972	5.4	13,668	2.6
Brush-burning (not railway or right-of-way clearing)	82	3.5	1,063	2.3	15,133	3.4	62,794	11.8
Range-burning	95	4.1	18,226	39.4	24,812	5.6	59,592	11.2
Road and power-, telephone-, and pipe-line construction	24	1.0	42	0.1	438	0.1	290	------
Industrial operations (logging, etc.)	141	6.0	4,906	10.5	78,772	17.9	222,050	41.5
Incendiary	62	2.6	242	0.5	8,591	2.0	4,481	0.9
Miscellaneous known causes	250	10.7	611	1.3	23,447	5.3	13,738	2.6
Unkown causes	41	1.7	416	0.9	9,977	2.3	10,213	1.9
Totals	2,345	100.0	46,346	100.0	$440,884	100.0	$534,272	100.0

[1] Excludes 528 railroad-tie fires.

(117)

COMPARISON OF DAMAGE CAUSED BY FOREST FIRES IN LAST 10 YEARS

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	Total, 10 Years
Total number of fires[1]	715	1,252	1,855	1,249	3,058	1,474	2,635	3,102	1,536	2,345	19,221
Area burned (acres)	10,309	46,694	469,648	66,724	2,065,423	273,631	285,820	1,227,159	45,617	46,346	4,537,371
Standing timber destroyed or damaged (M cu. ft.)	531	886	10,192	1,278	358,149	8,481	122,293	315,532	3,972	7,953	829,267
Amount salvable (M cu. ft.)	196	269	4,564	391	98,517	2,110	40,010	119,223	1,279	3,357	269,916
Damage to forests	$43,329	$90,971	$1,058,469	$123,032	$7,917,235	$1,342,849	$3,725,361	$12,820,694	$311,445	$308,475	$27,741,860
Damage to other forms of property	131,554	64,153	372,803	130,204	408,183	869,569	299,657	368,476	280,700	225,797	3,151,096
Total damage	$174,883	$155,124	$1,431,272	$253,236	$8,325,418	$2,212,418	$4,025,018	$13,189,170	$592,145	$534,272	$30,892,956

[1] Excludes 9,078 railroad-tie fires (*see* Table No. 44).

(118) FIRES CLASSIFIED BY FOREST DISTRICT AND COST PER FIRE OF FIRE-FIGHTING, 1963

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]	424	86,684	19.7	614.78	100	23.6	4.3	324	76.4	13.8	189	104	21	4	6
Prince Rupert	189	41,507	9.4	638.56	80	42.3	3.4	109	57.7	4.6	49	49	10	1	.....
Prince George	308	132,150	30.0	730.01	78	25.3	3.3	230	74.7	9.8	119	90	17	4	.....
Kamloops[2]	908	112,154	25.4	316.81	357	39.3	15.2	551	60.7	23.5	384	142	22	2	1
Nelson	516	68,389	15.5	274.65	153	29.6	6.5	363	70.4	15.6	227	125	10	1	.....
Totals	2,345	440,884[3]	100.0	445.33	768	.....	32.7	1,577	.....	67.3	968	510	80	12	7
Per cent	100.0	.....	.....	.....	32.7	.....	.....	67.3	.....	.....	41.3	21.8	3.4	0.5	0.3
Ten-year average, 1954–63	1,922	1,600,854	.....	.....	701	.....	.....	1,221	.....	.....	694	376	97	21	33
Per cent	100.0	.....	.....	.....	36.5	.....	.....	63.5	.....	.....	36.1	19.6	5.1	1.0	1.7

[1] Excludes 438 railroad-tie fires.
[2] Excludes 90 railroad-tie fires.
[3] Cost correct to date, subject to later revision.
Cost to other parties (632 cost fires), $338,748. Cost to Forest Service (990 cost fires), $440,884.
Detailed final costs are published one year in arrears in the table " Forest-protection Expenditures " in each Annual Report.

PROSECUTIONS, 1963

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	17	2	11	....	3	....	....	1	8	$260	....	1	8	....
Prince Rupert	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Prince George	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kamloops	1	1	....	....	....	....	....	....	1	25	....	....	....	....
Nelson	1	1	....	....	....	....	....	....	1	25	....	....	....	....
Totals	19	4	11	....	3	....	....	1	10	$310	....	1	8	....
Ten-year average, 1954–63	55	18	15	10	6	2	1	2	48	$1,425	1	1	3	2

(120)

CONTRACT FLYING, 1963

Fixed-wing Aircraft

Forest District	Base	Type of Aeroplane	Hours Flown
Vancouver	Vancouver	Beaver	386
Prince Rupert	Prince Rupert	Beaver	397
Prince George	Prince George and Fort St. John	Beaver, Otter, and Super Cub	1,117
Kamloops	Kamloops	Beaver and Otter	589
Nelson	Nelson	Beaver	500
Total			2,989

Helicopters

Forest District	Base	Type of Helicopter	Hours Flown
Vancouver	Vancouver and Campbell River	Bell	465
Prince Rupert	Terrace and Smithers	Bell and Hiller	522
Prince George	Prince George and Fort St. John	Bell and Hiller	990
Kamloops	Kamloops	Bell	538
Nelson	Nelson, Cranbrook, and Revelstoke	Bell and Hiller	500
Total			3,015

Air Tankers

Forest District	Base	Type of Aeroplane	Hours Flown
Prince Rupert	Smithers	Avenger	68
Prince George	Prince George	Avenger and Otter	36
Kamloops	Kamloops	Avenger and Otter	175
Nelson	Castlegar, Midway, and Cranbrook	Avenger	149
Total			428

(121) USE OF AIRCRAFT IN FIRE-FIGHTING (NON-CONTRACT), 1963

Fixed-wing Aircraft

Forest District	Reconnaissance		Transportation of Men and Supplies		Water Bombing		Total	
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Vancouver	58	$3,595	-----	-----	-----	-----	58	$3,595
Prince Rupert	125	6,930	15	$970	-----	-----	140	7,900
Prince George	123	4,848	126	8,935	24	$3,263	273	17,046
Kamloops	6	175	-----	-----	-----	-----	6	175
Nelson	28	889	-----	-----	-----	-----	28	889
Totals	340	$16,437	141	$9,905	24	$3,263	505	$29,605

Helicopters

Vancouver	-----	-----	84	$8,440	28	$3,014	112	$11,454
Prince Rupert	-----	-----	18	1,958	-----	-----	18	1,958
Prince George	-----	-----	91	9,910	-----	-----	91	9,910
Kamloops	4	$440	18	1,980	-----	-----	22	2,420
Nelson	-----	-----	145	16,633	-----	-----	145	16,633
Totals	4	$440	356	$38,921	28	$3,014	388	$42,375

ENROLMENT AT ADVANCED COURSE, FOREST SERVICE TRAINING-SCHOOL, 1963

(131)

Forest District	Forest Assistants, Cruisers, Etc.	Rangers	Acting Rangers	Assistant Rangers	Clerks	Total	Graduations
Class 13							
Vancouver	2	----	----	3	----	5	----
Prince Rupert	1	----	----	2	----	3	----
Prince George	----	----	----	3	----	3	----
Kamloops	2	----	----	3	----	5	----
Nelson	----	----	----	4	----	4	----
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, 1963	----	----	----	----	----	----	255

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, 1962, a six-month course is involved, spread over one year.

ENROLMENT AT BASIC COURSE, 1963

Forest District	Forest Assistants, Cruisers, Etc.	Rangers	Acting Rangers	Assistant Rangers	Clerks	Total	Graduations
Class 2							
Vancouver	1	----	----	3	----	4	4
Prince Rupert	1	----	----	3	----	4	4
Prince George	2	----	----	2	----	4	4
Kamloops	3	----	----	1	----	4	4
Nelson	----	----	----	4	----	4	4
Attendance, 1963	7	----	----	13	----	20	20
Attendance, 1962	3	----	----	17	----	20	20
Total graduates to December 31, 1963	----	----	----	----	----	----	40

Grand total of graduates, both courses, 295.

(141) FOREST REVENUE, 1959–63

	12 Months to Dec. 31, 1959	12 Months to Dec. 31, 1960	12 Months to Dec. 31, 1961	12 Months to Dec. 31, 1962	12 Months to Dec. 31, 1963	Five-year Average, 1959–63
Timber-licence rentals and fees	$362,825.25	$363,597.80	$366,600.53	$352,418.29	$357,175.79	$366,616.54
Timber-berth rentals and fees	19,910.61	18,712.81	21,929.03	19,795.95	17,361.70	19,643.18
Timber-lease rentals and fees	70,094.39	76,493.46	59,071.23	73,139.35	63,629.77	70,554.25
Timber-sale rentals and fees	435,589.31	452,788.69	480,803.23	500,208.12	502,317.68	405,528.30
Timber-sale stumpage	23,092,737.28	26,374,420.04	24,554,147.30	26,315,940.41	30,199,623.94	23,533,014.63
Timber-sale cruising and advertising	252,985.19	277,345.73	377,755.89	346,627.67	386,735.44	279,280.07
Timber royalties	1,890,590.96	2,281,028.09	2,245,313.71	2,433,175.10	2,499,842.31	2,090,339.34
Grazing permits and fees	86,506.29	101,240.36	119,876.87	137,118.26	152,200.70	97,784.06
Forest-protection tax	510,661.47	456,491.27	569,749.95	550,949.16	523,598.00	
Miscellaneous	121,287.96	121,461.72	134,824.47	161,447.52	173,192.07	133,249.23
Totals	$26,843,188.71	$30,523,579.97	$28,930,072.21	$30,890,819.83	$34,875,677.40	$26,996,009.60

(142) AMOUNTS CHARGED AGAINST LOGGING OPERATIONS, 1963

District	Royalty	Miscellaneous	Scaling Fund		Stumpage	Rentals, Cruising, Advertising, Transfer Fees	Silviculture Fund	Forest Development Fund	Total
			Scaling Expenses	Scaling Fees					
Vancouver	$1,646,640.16	$3,126.01	$220,510.85	$836,262.21	$13,325,741.69	$369,920.94		$94,566.04	$16,496,767.90
Prince Rupert	330,123.48	1,967.30	23,234.68	85,943.84	2,728,867.50	178,017.34		44,407.57	3,392,561.71
Prince George	89,665.44	1,946.00			3,816,398.30	239,157.88		300,608.79	4,447,776.41
Kamloops	171,614.82	3,261.00			7,502,932.75	298,882.33		144,403.17	8,121,094.07
Nelson	160,998.55	943.82			3,096,689.26	172,877.17		67,878.26	3,499,387.06
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
Totals, 1955	$2,352,634.46	$11,024.73	$176,151.17	$452,171.32	$19,950,410.73	$817,677.77	$891,076.65	$71,861.56	$24,723,018.39
Totals, 1954	$2,234,308.99	$10,684.10	$144,589.21	$556,779.39	$14,596,633.95	$586,983.41	$1,163,596.44	$32,785.07	$19,326,360.56
Ten-year average, 1954–63	$2,141,974.62	$12,388.94	$209,374.53	$868,279.63	$24,111,976.98	$1,007,154.15		$299,914.14	$28,888,210.97

AMOUNTS CHARGED AGAINST LOGGING OPERATIONS, FISCAL YEAR 1962/63

District	Royalty	Miscellaneous	Scaling Fund		Stumpage	Rentals, Cruising, Advertising, Transfer Fees	Silviculture Fund	Forest Development Fund	Total
			Expenses	Fees					
Vancouver	$1,639,884.86	$3,846.21	$237,099.12	$910,104.58	$12,710,083.36	$383,281.17		$82,125.24	$15,966,424.54
Prince Rupert	326,906.42	1,402.30	18,372.68	91,401.94	2,317,786.07	165,291.77		38,170.78	2,959,331.96
Prince George	76,719.56	2,100.50			3,462,100.91	196,158.55		281,880.37	4,018,959.89
Kamloops	143,586.67	4,029.50			6,267,732.16	278,629.18		186,300.61	6,880,278.12
Nelson	146,990.14	899.72[1]			2,778,033.03	192,539.76		75,372.93	3,192,036.14
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, 1956/57	$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
Totals, 1954/55	$2,316,736.11	$11,205.86	$151,213.86	$550,878.38	$15,774,317.46	$609,994.41	$1,018,909.39	$46,371.75	$20,479,627.22
Totals, 1953/54	$2,151,985.58	$9,482.88	$123,420.80	$523,584.39	$13,672,473.41	$408,143.52	$1,077,445.47		$17,966,537.05
Ten-year average, 1953/54 to 1962/63	$2,138,667.32	$12,342.27	$200,182.55	$838,866.27	$22,895,933.53	$937,331.24			$27,599,756.37

[1] Credit.

(144) FOREST REVENUE, FISCAL YEAR 1962/63

		Ten-year Average
Timber-licence rentals and fees	$358,052.11	$372,334.20
Timber-berth rentals and fees	19,656.30	18,171.58
Timber-lease rentals and fees	69,823.37	68,451.65
Timber-sale rentals and fees	507,398.62	373,103.14
Timber-sale stumpage	27,363,989.10	21,314,559.23
Timber-sale cruising and advertising	337,354.74	251,415.95
Timber royalties	2,436,224.52	2,129,285.47
Grazing permits and fees	135,743.18	82,511.08
Forest-protection tax	553,267.85	(1)
Miscellaneous	175,974.84	122,797.12
	$31,957,484.63	$24,732,629.42

1 Formerly credited to Forest Protection Fund.

(145) FOREST SERVICE EXPENDITURES, FISCAL YEAR 1962/63 1

Forest District	Salaries	Expenses	Total
Vancouver	$615,444.56	$204,412.31	$819,856.87
Prince Rupert	460,051.23	140,978.67	601,029.90
Prince George	531,135.85	126,968.28	658,104.13
Kamloops	653,463.08	175,501.57	828,964.65
Nelson	524,984.07	109,915.69	634,899.76
Victoria	606,385.50	357,717.00	964,102.50
Totals	$3,391,464.29	$1,115,493.52	$4,506,957.81
Reforestation forest nursery			575,104.50
Forest management			617,337.69
Forest research			210,108.82
Public information and education			101,372.18
Forest Service training-school			106,173.28
Grant to Canadian Forestry Association			12,500.00
Office furniture and equipment			28,355.79
Engineering services			967,787.05
Forest-development roads			2,654,684.86
Forest protection			3,542,362.00
Fire suppression			390,028.05
Forest surveys			1,077,291.61
Silviculture			1,373,206.44
Grazing Range Improvement Fund 2			56,545.23
Peace River community pastures			19,510.36
Peace River power timber salvage			622,385.89
			$16,861,711.56
Special Warrant No. 6			2,552.33
Special Warrant No. 12			5,582.00
			$16,869,845.89

1 These are all true gross expenditures.
2 Statement provided elsewhere.

(146) SCALING FUND

Surplus, April 1, 1962	$146,543.88
Collections, fiscal year 1962/63	1,289,501.80
	$1,436,045.68
Expenditures, fiscal year 1962/63	1,287,323.99
Surplus, March 31, 1963	$148,721.69
Collections, nine months, April to December, 1963	919,863.61
	$1,068,585.30
Expenditures, nine months, April to December, 1963	981,887.36
Surplus, December 31, 1963	$86,697.94

(147) GRAZING RANGE IMPROVEMENT FUND

Deficit, April 1, 1962	$18,930.61
Government contribution (section 13, *Grazing Act*)	58,188.69
	$39,258.08
Expenditures, fiscal year 1962/63	56,545.23
Deficit, March 31, 1963	$17,287.15
Government contribution (section 13, *Grazing Act*)	67,871.59
	$50,584.44
Expenditures, nine months, April to December, 1963	29,634.31
Surplus, December 31, 1963	$20,950.13

(151) DISTRIBUTION OF PERSONNEL, 1963

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 and Foresters-in-training	13	11	13	14	12	90	153
Agrologists and Agrologists-in-training	-----	-----	2	5	2	-----	9
Engineers and Enginers-in-training	-----	-----	-----	-----	-----	37	37
Forest Protection Officers	3	2	2	1	2	4	14
Supervisors of Rangers	3	2	3	3	3	-----	14
Rangers—Grades 1 and 2	34	20	29	29	29	-----	141
Superintendent of Scaling and Assistants	11	2	3	4	2	-----	22
Scalers, Official	78	3	-----	-----	1	-----	82
Scalers, Official, temporary	58	-----	-----	5	-----	-----	63
Comptroller, Accountant, and Audit Assistants	-----	-----	-----	-----	-----	7	7
Engineering, Mechanical and Radio	4	3	5	6	5	83	106
Technical Forest and Public Information Assistants	6	-----	11	15	13	37	82
Reforestation, Research, and Survey Assistants	-----	1	1	1	1	53	57
Nursery Superintendents	-----	-----	-----	-----	-----	4	4
Draughtsmen and Mapping Assistants	5	4	5	5	3	36	58
Clerks, Stenographers, and Messengers	99	26	31	29	22	118	325
Superintendent and Foremen, Forest Service Marine Station	-----	-----	-----	-----	-----	6	6
Mechanics, Carpenters, and Technicians	4	3	2	1	-----	22	32
Launch Crewmen	18	7	-----	-----	-----	2	27
Assistant and Acting Rangers	42	33	37	52	47	-----	211
Dispatchers	16	12	12	19	13	-----	72
Cruisers, Compassmen, and Silviculture Crewmen	29	41	64	58	28	-----	220
Truck, Tractor, and Equipment Operators	6	1	1	-----	2	14	24
Foremen	1	-----	3	-----	-----	34	38
Miscellaneous	1	2	2	-----	2	52	59
Totals, continuous personnel	433	175	228	249	189	616	1,890
Seasonally Employed							
Assistant and Acting Rangers	9	-----	9	1	1	-----	20
Patrolmen		1	2	4	7	-----	14
Lookoutmen	38	20	28	33	41	-----	160
Dispatchers, Radio Operators, and Clerks	11	3	4	1	8	-----	27
Fire-suppression Crewmen	52	-----	-----	60	40	-----	152
Reforestation—Snag-fallers, Planters, etc	-----	-----	25	10	-----	190	225
Cruisers and Compassmen	-----	-----	4	-----	6	-----	10
Truck, Tractor, and Equipment Operators	-----	5	5	6	5	21	42
Student and Survey Assistants and Engineering Aides	-----	-----	1	-----	-----	184	185
Silvicultural Crewmen	-----	-----	2	-----	-----	3	5
Foremen	12	1	3	2	-----	15	33
Miscellaneous	19	11	35	12	3	84	164
Totals, seasonal personnel	141	41	118	129	111	497	1,037
Totals, all personnel	574	216	346	378	300	1,113	2,927

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