PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF LANDS AND FORESTS

HON. R. G. WILLISTON, *Minister* DR. C. D. ORCHARD, *Deputy Minister of Forests*

# REPORT

of

# THE FOREST SERVICE

YEAR ENDED DECEMBER 31ST

1956

VICTORIA, B.C.
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VICTORIA, B.C., February, 1957.

*To the Honourable* FRANK MACKENZIE ROSS, C.M.G., M.C., LL.D.,
*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 and Forests for the calendar year 1956.

R. G. WILLISTON,
*Minister of Lands and Forests.*

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

SIR,—There is submitted herewith the Annual Report on activities of the Forest Service during the calendar year 1956.

C. D. ORCHARD,
*Deputy Minister and Chief Forester.*

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# REPORT OF THE FOREST SERVICE

## Introduction and Legislation

Through the courtesy of the Forest Biology Division, Science Service, Canada Department of Agriculture, this Report again contains submissions from the Victoria units of that organization on forest-insect and forest-disease conditions in British Columbia.

Legislation affecting the "Forest Act" and its administration was all of a minor nature. Section 17 was amended to establish a different basis for using part of the revenue from timber for silvicultural purposes, to the basis which previously applied. A minor change established that logs once scaled need not be scaled again. Other changes were incorporated, correcting existing errors in phrasing and providing regulations governing roads. Orders in Council were passed setting up scaling regulations and governing the picking of cones for seed extraction.

## Forest Surveys and Inventory

The sixth year of work on forest-inventory compilation in co-operation with the Canadian Government under the Canada Forest Act was completed. Forest surveys covered 64,245,000 acres, employing crews utilizing every available form of transport—including helicopters—engaged in forest classification, conventional sampling, volume and decay analysis, and double sampling by the establishment of ground plots coincident with photo- or prism-measured plots.

To date the Division has measured 24,900 trees for volume analysis and 23,020 for decay analysis. Loss-factor studies—for example, losses due to breakage in felling and extraction operation—were continued and a preliminary table is included in the report. Forest classification was completed for most of the Province north of the 56th parallel. Work commenced on a library of stereograms. Extensive production of forest-cover and other maps was accomplished. Development of compilation systems by electronic punch cards was continued.

Fifteen forest-resources bulletins were completed, together with a number of other publications. Progress was made in the development and application of inventory techniques and forest survey standards. Fifteen timber-sale surveys were made and six areas examined for the Surveyor of Taxes.

## Forest Research

At the two experiment stations new construction and maintenance were carried out for the station staffs, supplemented during the months of July and August by Youth Training Programme enrollees. The Cowichan Station was visited by a number of individuals and organizations for whom field-trips were arranged.

At the Aleza Lake Station, two timber sales were completed and two more prepared and put up for auction. All seedlings from the nursery at this station were transplanted in the spring. Four trial plantations were established in the area. There was a heavy spruce cone-crop in the region, and 350 bushels of cones were collected throughout various Ranger districts.

Twenty permanent growth-and-yield plots were remeasured; thirty-three thinning plots remeasured; four thinning plots established; and a series of nine climatic stations were established at elevations from 1,700 to 5,050 feet to facilitate an ecological study on the conditions which determine the altitudinal distribution of native conifers. Studies were continued on rodent-control and direct seeding of Douglas fir.

A new seed registration system was introduced. Progress was made in the development of a Douglas fir seed-orchard and the study of suitable grafting techniques. Seed collections were made for a provenance trial of Douglas fir seeds.

Other studies included the effects of slash-burning on soil productivity; examination of the health and vigour of exotic plantations comprising eighty introduced species; of factors affecting reproduction of Interior species; and the classification of several lodgepole pine stands.

Altogether the Division is engaged on forty active research projects. Five publications were produced during the year.

## Reforestation

The unseasonably cold weather of the previous November continued to affect operations of the Division adversely. Frost and snow killed both 1–0 and 2–0 stock at the three Coast nurseries, in proportions ranging from 25 to 90 per cent. The East Kootenay nursery fared better.

Seed-beds were sown in the spring for 7,000,000 seedlings in 1958, but cold and rain in June resulted in poor germination and high weeding costs on the Coast. Thirty thousand Douglas fir and spruce seedlings were shipped to the Prince George Forest District for experimental planting by the Research Division.

The Douglas fir cone-crop on the Coast was good at low altitudes but poor at higher levels. A small quantity of western hemlock cones was collected. In the East Kootenays the cone-crop of all species was a failure. A seed-orchard was established at Duncan on land adjoining the nursery purchased for the purpose.

Total plantings by both Government and industry during the year totalled 2,799,200 trees on 5,846 acres. Projects at Great Central Lake and Salmon River were completed after several years' work. Examinations showed good survival on 1955 spring-planted areas on Vancouver Island but poor survival of fall plantings. In the Interior, 1,955 plantings were below average survival.

A residence for the superintendent was built on the Kootenay nursery. A two-story seed-extraction plant was built at the Duncan nursery. Six miles of abandoned logging-railway grades were converted to truck-roads and 123 miles of road maintained. Snags were felled on 4,040 acres in four different areas.

## Parks and Recreation

Increase in camping interest and camp use outpaced facilities available in many areas. Estimated park attendance during the year totalled 1,900,000 camper-days.

Field work comprised assessment of new park areas, shore-line reconnaissances, studies of the effect of developments in highways and land use on existing parks, recreational use of forest management licences and forest reserves, as well as other studies.

Major efforts during the year were centred on Champion Lakes and Okanagan Lake Parks. Accommodation at the latter point is planned for eighty camping parties and 1,500 picnickers. A park-site at Scotch Creek on Shuswap Lake was acquired to provide facilities urgently needed in that area. Matheson Lake Park was established near Victoria. Enrollees under the Youth Training Programme were employed on many projects throughout the park system.

At the end of the year there were 112 Provincial parks with a total area of 8,132,237 acres.

## Working Plans

The primary function of the Division is to study proposals for sustained-yield forest-management units of all types of tenure and to make recommendations based on those studies.

The awarding of forest management licences was in abeyance throughout the year pending the submission of the report of the Royal Commission on Foresty. New applications received during the period bring the total pending to 136.

Fourteen new sustained-yield units were established and cut ledgers set up. Four additional tree-farms were certified, and this form of forest management now numbers nineteen. Eight new farm wood-lot licences brought the total of these to thirty-seven.

## Public Relations and Education

As funds for this phase of Forest Service functions continued limited, no new major project was undertaken. Newspaper advertising was again omitted. An accelerated programme of motion-picture production and photographic work was possible with the addition of one continuing casual employee to the staff. The film-lending library showed an audience increase of over 30,000 compared to the previous year.

Approximately the same volume of editing and publication production was accomplished, but a steadily increasing demand kept stocks at low ebb and necessitated numerous reprintings.

The radio broadcasting programme was unchanged, but there was increased use of Service-produced films on television.

Highway protection signs were increased by about 15 per cent, and other types of signs also increased. Camping was featured in the Service exhibit at the Pacific National Exhibition.

Good progress was made in establishing reference libraries in the district offices, with Prince Rupert and Nelson Districts being organized during the year. The work load in the Victoria library nevertheless continued to increase. The lecture programme in the schools was extended.

## Forest Management

The aggregate cut increased by 34,753,708 cubic feet to a new record of 1,068,733,441 cubic feet, but estimated values of production declined by slightly over $3,000,000 due to lower unit values for lumber. Increased pulp and paper, plywood, and pole and piling production was insufficient to offset the drop on lumber. Lumber exports to the United Kingdom and other continental markets continued to decline. Seventy-four per cent of the cut was derived from Crown lands, with 66 per cent of that total originating on timber sales.

Douglas fir was the leading species cut, at 413,313,593 cubic feet (39 per cent), followed by hemlock, 213,655,797 cubic feet (20 per cent); spruce, 152,169,071 cubic feet, (14 per cent); and cedar, 145,738,047 cubic feet (also 14 per cent). It will be noted that the spruce-cut has, for the first time, outstripped that of cedar.

Timber sales cruised numbered 3,089, comprising over 1,000,000 acres and 1⅛ billion cubic feet. Timber sales awarded numbered 2,859, with a record footage of 800,000,000 cubic feet. At the year's end 8,738 sales were extant, covering 3,218,820 acres, with guarantee deposits amounting to over $14,000,000.

Lumber prices in the Interior were high at the outset of the year but dropped in the later months. Log prices on the Coast remained high throughout. Average of stumpage prices during the year was above those of 1955.

The cut on forest management licences was 104,000,000 cubic feet, and on Crown forest under sustained-yield management by the Forest Service, 188,000,000 cubic feet.

Funds from the Silviculture Vote were expended on stand treatment of 78,500 acres of timber sales, slash-disposal on 528 acres, and numerous other projects.

## Grazing

The Forest Service has been responsible for the administration of Crown range for thirty-eight years, and the demand for range forage in 1956 was higher than in any previous year. Regulation and control of Crown range in the Peace River area was initiated and increased and attention given to ranges near Quesnel.

Permits for grazing and hay reached a record total of 1,776, and the number of stock under permit was also a record. Grazing fees were down about 8 per cent due to lower live-stock prices. Fee collections were excellent.

Grazing surveys covered 782,761 acres, bringing the total acreage surveyed since 1945 to nearly 8,000,000 acres. Expenditures of the Division on range improvements were $35,000, in addition to projects financed by the stockmen. Increased range seeding was a major feature of the year's work. Chemical and biological control of goatweed was continued. An intensive programme of wild-horse control was undertaken in the winter of 1955–56, 446 unwanted animals being eliminated.

There are forty-nine local range-livestock associations operating under the " Grazing Act," and they held 136 meetings during the year. Forest officers attended 118 of these.

The winter of 1955–56 was extremely long and severe, and feeding conditions were difficult. This resulted in stock being in poor condition in the spring and pressure for early turnout. Forage and haying conditions during the year were generally good to excellent. Ranch labour is becoming increasingly scarce, and many small ranches are amalgamating to form larger units, while some marginal ranches have been abandoned.

Cattle prices declined during the year to less than half of the record 1951 figures. Despite this, shipments were heavy due to the necessity of reducing inventories and meeting financial commitments. Lamb prices declined slightly, but wool prices advanced.

## Engineering Services

The work of the Engineering Section of the Division was highlighted by the effort made to increase the rate of road construction and thereby alleviate the pressing need for forest-development roads in a number of public working circles. Funds available amounted to more than $2,000,000, or approximately twice the record figure of the previous year. It was, therefore, possible to award four contracts, involving a total of 41.5 miles of new construction, in addition to work previously contracted on the Naver road (10.23 miles), and the continued employment of two construction crews. Unfortunately, the contractors did not construct at the rate hoped for, due to other commitments, and more than half of the 30 miles of road built during the year was by the Department's own crews.

Activities of the Mechanical, Structural, Marine, and Radio Sections remained at a high level, but with no outstanding events to report. Equipment purchases added forty-six units to the Department's fleet of 772 vehicles of all types at the beginning of the year. Other purchases included twelve heavy earth-moving units and 168 fire-pumps, outboard motors, and similar pieces of motorized equipment. The building programme of the Structural Section ranged from float renewals at Thurston Bay and Alert Bay to a seed-extraction plant at the Duncan nursery. Included were twelve contracts for offices, warehouses, and residences on Ranger stations. Although a heavy load of boat-repair work, including thirty-eight complete launch overhauls, restricted new boat construction somewhat, the 34-foot Assistant Ranger launch " Pacific Yew " was completed, a sister ship 95 per cent completed, and a new type of 40-foot Ranger launch was framed by the Marine Station. The construction of nine 30-foot portable offices and bunk-houses of new design by the prefabricating subsection of the station is also worthy of note. These buildings are to be used in place of conventional trailers. The attention of the Radio Section continued largely on surveys conducted for the purpose of establishing a very high-frequency radio network which will reduce the load and, ultimately, largely replace

present installations. Increasing interference on the medium frequencies, due to heavy traffic and adverse weather conditions together with changes in Department of Transport regulations, necessitates a modernization programme which will extend over the next five years at least.

## Forest Protection

After three years with fire-hazards below average, 1956 was an extremely bad year, with the highest number of fires, 2,850, ever recorded. Conditions were moderately severe in the three southern districts and poor in Prince Rupert and Prince George, particularly at the beginning of the season. Service fire-fighting costs amounted to $469,116, and the area burned was 469,648 acres. Railways operating caused 39 per cent and lightning 18 per cent of all fires.

Two crews secured photographs for seven lookouts, and sixty-six potential lookout points were mapped for visibility. Field work for protection planning was done on three public working circles. Twenty miles of new protection access road was built and 13 miles of prior work improved.

Records and investigations of fire weather were continued with expansion of the fire-weather reporting network and the distribution of 591 sets of fuel-moisture indicator sticks, 391 to industrial operators. The "build-up" index tested in the Vancouver District showed promise.

Sixteen suppression crews fought 181 fires and held 91 per cent of those to 5 acres or less. Honorary Fire Wardens numbered 919, and 1,313 Fire Prevention Officers in industrial employ were appointed.

The acreage logged in the Vancouver District was the largest on record, and slash-burning was hampered by unsuitable weather. Snag-falling by Protection and Reforestation Divisions combined cleared 7,437 acres.

There were 105 prosecutions, the majority for infraction of forest closures. In all, twelve closures were proclaimed for varying periods throughout the year. Seven aircraft were used for a total of 2,478 hours under contract during the year.

## Forest-insect Investigations

An informal committee, representing the Canadian and British Columbia Governments and industry, was formed to deal with the black-headed budworm outbreak on Vancouver Island. Currently this constitutes a major threat to the forests, covering about 3,000 square miles. Control by spraying is almost completely effective.

One-year-cycle spruce budworm now has infested 450 square miles around Lillooet, but intensity of defoliation and egg population has decreased. The two-year-cycle spruce budworm has heavily defoliated spruce-balsam stands on about 1,000 square miles around Babine Lake.

Other important insect enemies now active are the Douglas fir beetle, mountain pine beetle, spruce bark-beetle, pine-needle scale on ponderosa pine, ambrosia-beetle, and Douglas fir needle-miner.

## Forest-disease Investigations

Greater awareness of the pathological problems affecting second growth prompted increasing survey activities in plantations and young forests. Collections of diseased material submitted for examination numbered 5,074. There was a marked reduction in the incidence of foliage diseases. The severity of the previous winter caused foliage mortality, particularly to yellow pine.

There are indications that the use of older seed with reduced viability and slower emergence results in increased pre-emergence damping off. Yellow laminated root-rot of Douglas fir was investigated, and indications are that root deterioration may reach an advanced stage before symptoms appear in the crown. Analyses following root excava-

tions of western white pine show severe reduction of absorptive root systems and considerable destruction of structural elements where pole-blight symptoms are evident in the crowns.

Studies were commenced of die-back in young Douglas fir on Vancouver Island and the adjacent Mainland. The frequency and importance of decay in injuries caused by logging were studied in the Prince George region. Further studies were made of winter-damaged fir near Lac la Hache. Other projects included investigation of rate and nature of deterioration in spruce and balsam in the Prince George area, and in the Douglas fir-yellow pine type in the Kamloops and Nelson Forest Districts; a reanalysis of data on decay in balsam and hemlock in the Kitimat area; and a study of hemlock forests on the west coast of Vancouver Island.

## Forest Ranger School

The eighth class in attendance at the School completed the course in April, and the ninth class commenced their studies in September. The number of enrollees was increased from twenty or twenty-one to thirty. This change necessitated adjustments in times allotted to courses and in instructional personnel. As a trial, a course in typewriting has been added to the curriculum and several courses further revised. Twenty lookoutmen were given a five-day course in the spring.

The Service's Ranger School was established in January, 1946, to provide better grounding in basic procedures and enhance the knowledge of forestry essential in the light of more complex and intensive practice. Originally giving six-month courses, the programme now has been expanded to a nine-month course.

## Forest Accounts

The volume and value of business exceeded any previous year with revenue totalling over $30,000,000. Timber-sale stumpage showed the greatest increase due to higher average prices and a record cut. Softer markets and credit restrictions toward the end of the year introduced a downward trend in stumpage rates and selling prices, requiring adjustments of sliding-scale stumpage rates. Centralizing of expenditure accounting was completed by April 1st.

## Personnel

The year under review was an exceedingly busy one, with a high proportion of the Division's efforts being expended on salary negotiations, reclassifications, grievances, and kindred matters. The Personnel Officer visited offices in four of the five forest districts and the Ranger School in the course of his duties and attended a number of Forest Service meetings and conferences in addition to some outside conventions on personnel and office management. Two new Ranger districts were created.

Three senior employees were selected for the Executive Development Training Plan sponsored by the Government, and a number of others attended special short training sessions.

The permanent establishment of the Service was increased by fifty-six persons: 204 received Civil Service appointments and 125 permanent employees left the Service. Permanent staff turnover during the year averaged 14.3 per cent, with turnover of clerical and draughting staff in the Prince George District reaching 48.1 per cent.

Adjustments were accomplished in the classifications and salaries of many subordinate positions, particularly in the technical field, which resulted in some inconsistencies in senior salary ranges.

There were 649 applications received for enrolment in the Youth Training Programme, and funds permitted the employment of 239 of these youths in twenty-two crews scattered throughout the Province.

# FOREST SURVEYS AND INVENTORY

## INTRODUCTION

The Division completed the sixth year of work, during which financial assistance from the Canadian Government aided the forest-resources survey according to the specifications of the Agreement for Inventory implemented under the Canada Forest Act. This was made possible by an extension of the original Agreement for a further five-year period. Both the initial inventory phase and maintenance of inventory were included in the Agreement. To date, the main emphasis in field and office work has been on initial inventory, but the necessity for maintaining the inventory on an up-to-date basis has always been recognized. Completion of the initial inventory phase will mark the beginning of inventory maintenance, which is an essential, continuous process of comprehensive forest inventory, based on the use of high-quality air photographs, forest classification, and a definitive sampling plan. This maintenance process is designed to provide reliable annual estimates of standing forest volumes, forest growth, and forest depletion. The first two years of the extended Agreement will be utilized to complete the initial phase of forest inventory and the remaining three years to start the task of inventory maintenance. A feature of the extended Agreement is that, on expiry, it is subject to renewal on terms and conditions then to be determined.

Since the inception of the original Agreement, air photography, interim maps, and the required field work have been accomplished for most areas in the Province. Continued forest mapping and sampling work in 1957 will fill in the remaining data necessary for the forest-resources presentation to be made in 1958 on completion of the initial phase of the Provincial inventory.

### Forest Surveys

In the 1956 field season, 341 persons were employed on the work which, when compilations are completed, will provide maps and forest data of the following areas:—

| | Acres |
|---|---|
| Liard drainage (Liard, Kechika, Fort Nelson) | 30,723,000 |
| Peace drainage (Peace, Pine, Parsnip, Omineca, Finlay, Halfway, Beatton, Kiskatinaw) | 29,152,000 |
| Fraser drainage (Takla Lake) | 881,000 |
| Other coastal drainages (Skeena, Sustut, Stikine) | 3,404,000 |
| Special cruises (timber sales, taxation) | 85,000 |
| Total | 64,245,000 |

### Forest Inventory

The year proved to be a very successful one in regard to work accomplished in Provincial inventory and special projects. Forester supervisors, operating from field headquarters in each forest district, controlled the various phases of field work. A network of seventy S.P.F. portable radios kept field crews in operational contact with the field headquarters, which were equipped with L.R.T. sets. On the Coast, three launches equipped with M.R.T. sets were in touch with field crews using S.P.F. portables. The Victoria headquarters radio, operating on a daily schedule with the Kamloops and Green Timbers L.R.T. sets, was in continual contact with all phases of field operations and work progress in the Province.

Field crews were transported by car, boat, aeroplane, and helicopter to expedite the work. The nature of field work was diverse, as in previous years, and included forest classification, conventional sampling, volume and decay analysis, and double sampling by the establishment of ground plots coincident with photo- or prism-measured plots.

Flying-time during the year totalled 1,017 hours. This total resulted from 403 hours used in forest classification, 240 hours of helicopter flying used in forest-sampling work in the Northern Interior, and 374 hours used for routine transportation of field crews in various parts of the Province.

The co-operation of the Topographic Division in providing air transportation for field crews in some areas of the Northern Interior materially assisted inventory progress.

## FOREST SAMPLING

During the year, 16,520 sample plots were established. Of this total, 6,200 plots were in the Prince George region, and approximately one-half of these were established north of the 55th parallel of latitude. The total number of sample plots now on hand, for the estimation of volume and other forest values in the Province, is 127,000. Of this total, approximately 1,000 plots are from other agencies.

Particularly noteworthy was the proven usefulness of the helicopter for shuttling sampling crews throughout forest areas in the Northern Interior that were otherwise extremely difficult of access. Use of this aircraft resulted in significant savings in time and money, and facilitated a very satisfactory scattering of samples in the regions concerned.

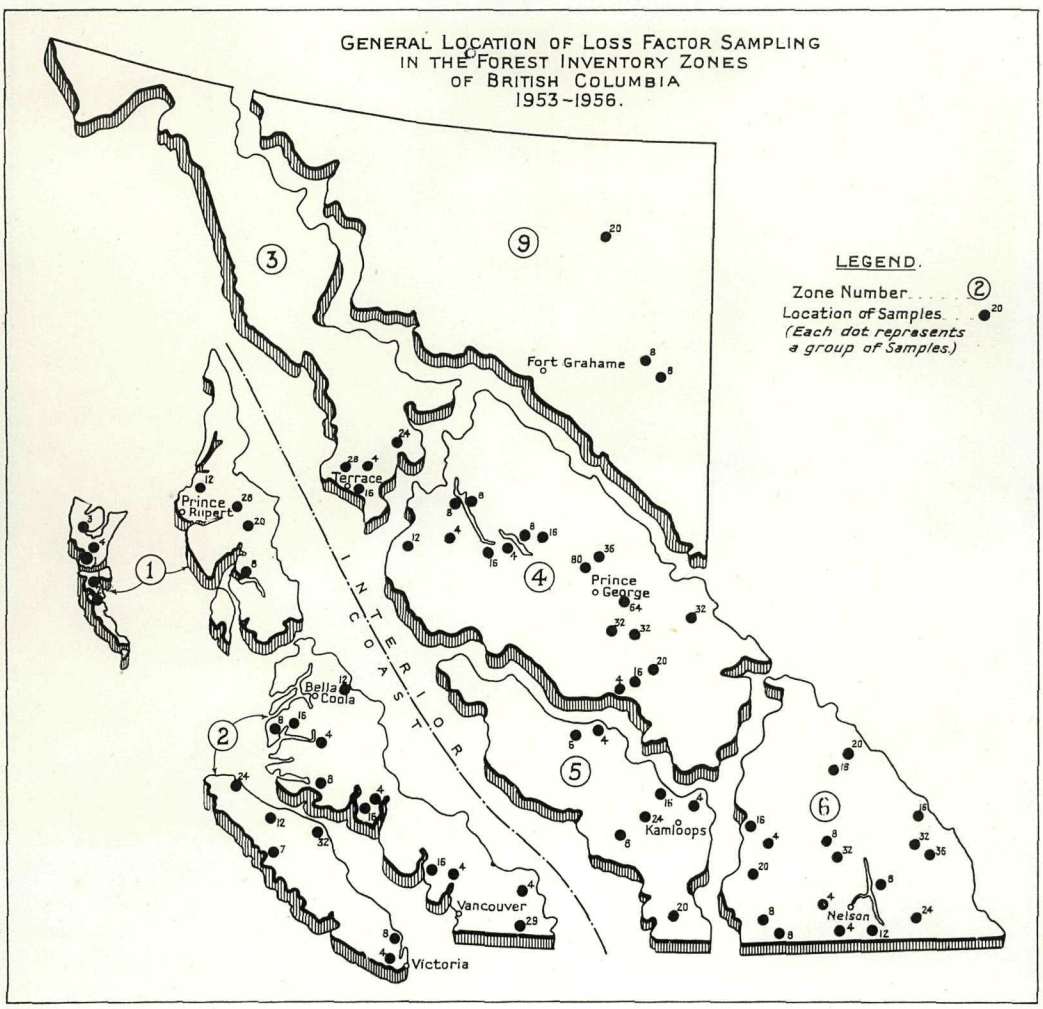
The helicopter was invaluable in forest sampling operations in remote areas.

Sampling by the measurement of photo plots on air photographs, at a scale of 1:15,840, was continued during the year, and in nine different areas a total of 6,235 photo volume plots were measured, and 450 double-sample ground plots were established.

Analysis of these data is now being carried out, and the preliminary results indicate that photo volume sampling is applicable to a wide range of forest conditions. Studies will be continued in this regard.

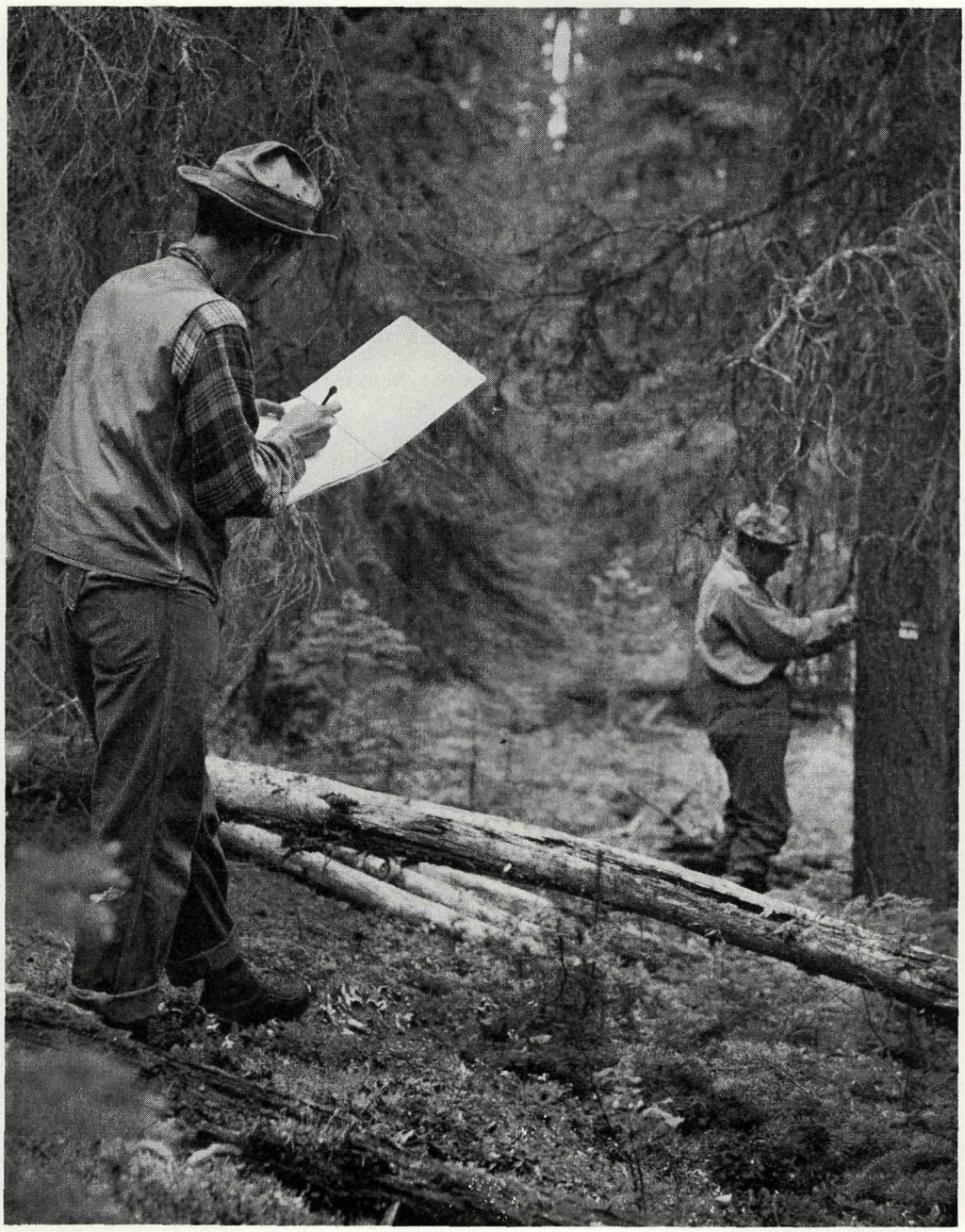
In continuation of the volume-table and loss-factor studies essential in Provincial inventory, during the year 3,320 trees were felled and measured for volume analysis and 4,620 trees were felled and measured for decay analysis. The numbers of trees measured for volume and decay analysis by this Division since 1953 now total 24,900 and 23,020 respectively. The majority of the trees felled were measured for both volume and decay analysis; hence these are not independent totals. Data for an additional 5,500 trees, made available by other agencies, have also been analysed since the inception of the study. During the year the 1955 interim cubic-foot volume tables were extended to provide suitable tables for the needs of special cruises carried out by the Division. The resulting multiple cubic-foot volume tables present gross volumes to close utilization standards suitable for cruising by 2-inch d.b.h. and 10-foot height classes. Butt-taper tables were made for Interior Douglas fir and lodgepole pine at the request of management officers. These tables are for use in stump cruising and related activities. Similar tables are under construction for all Interior species.

Growth plots were established in various parts of the Province as part of the plan for providing growth estimates by sub-zones, zones, and Province.



In 1956, loss-factor studies, including preliminary field studies of losses due to breakage in felling and extraction operations and wastage of sound wood resulting from current sawlog utilization practices, were continued for the requirements of Provincial inventory.

Prior to 1956, volume estimates were obtained by the application of broad, regional loss factors which were derived from preliminary sampling. These flat factors were not considered to be sufficiently reliable due to the great variation in losses between individual trees and between forest stands. In 1956, to meet the need for initial Provincial inventory statements and survey-unit net-volume estimates, loss factors were developed for application on the basis of tree species, pathological class, and d.b.h. class. It is considered that these loss factors, which are being applied in Provincial inventory and survey units, provide a more adequate control of the variation in local stand losses. Interim diameter-class loss factors for the coniferous-tree species are presented in tables included in this Report. The general location of loss-factor sampling to 1956 is shown in the diagrammatic map preceding these tables.



Careful measurement and recording of sampling areas are a key-note of forest inventory.

# INTERIM DIAMETER-CLASS NET VOLUME FACTORS[1] APPLICABLE TO PROVINCIAL INVENTORY GROSS CUBIC-FOOT VOLUME SUMMARIES[2] FOR THE CONIFEROUS TREE SPECIES OF BRITISH COLUMBIA.

FOREST SURVEYS AND INVENTORY DIVISION[3]

BRITISH COLUMBIA FOREST SERVICE, 1957

[1] Net-volume factors indicate the percentage of gross cubic-foot volume recoverable, minor forest products excluded, when allowances are made for the losses shown. These factors have been derived as averages for all stand ages 81 years and over, and for all sites and stand conditions sampled.

[2] Net factors are applicable to gross cubic-foot volume summaries compiled on the basis of close, intermediate, or rough utilization standards.

[3] Derived from loss-factor studies carried out by Forest Surveys and Inventory Division in the Coast and Interior regions in the period 1953–55.

## NOTES APPLICABLE TO TABLES ON FOLLOWING PAGES

Coast: All factors under this heading are applicable to Zones 1 and 2.

Interior: All factors under this heading are applicable to Zones 3, 4, 5, 6, and 9.

Decay: These factors provide allowance for the actual volume of decayed wood only.

Decay, Waste, and Breakage: These factors provide allowance for actual decay losses plus the sound-wood waste resulting from the arbitrary culling of logs greater than 66 per cent defective and trees greater than 50 per cent defective based on a minimum log length of 16 feet, plus primary falling breakage.

T.C. 1: These factors are applicable to trees in Tree Class 1; that is, trees bearing no visible signs of decay.

T.C. 2: These factors are applicable to trees in Tree Class 2; that is, trees bearing one or more of the following visible signs of decay—conks, scars, fork, pronounced crook, frost crack, mistletoe trunk infections, rotten branches, dead or broken top.

The data for yellow cedar are incomplete. However, for practical purposes the factors shown for western red cedar are considered applicable to yellow cedar.

*Douglas Fir*

| D.B.H. Class | COAST (Basis: 610 Trees) | | | | INTERIOR (Basis: 2,220 Trees) | | | |
|---|---|---|---|---|---|---|---|---|
| | Decay | | Decay, Waste, and Breakage | | Decay | | Decay, Waste, and Breakage | |
| | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 |
| 4 | .99 | .95 | .89 | .81 | 1.00 | .96 | .90 | .83 |
| 6 | .99 | .95 | .89 | .81 | 1.00 | .96 | .90 | .83 |
| 8 | .98 | .95 | .87 | .81 | .99 | .95 | .89 | .81 |
| 10 | .98 | .95 | .87 | .81 | .99 | .95 | .89 | .81 |
| 12 | .98 | .95 | .87 | .81 | .99 | .95 | .89 | .81 |
| 14 | .98 | .95 | .87 | .81 | .98 | .95 | .87 | .81 |
| 16 | .98 | .95 | .87 | .81 | .98 | .94 | .87 | .79 |
| 18 | .98 | .94 | .87 | .79 | .98 | .94 | .87 | .79 |
| 20 | .98 | .94 | .87 | .79 | .98 | .93 | .87 | .77 |
| 22 | .97 | .94 | .85 | .79 | .98 | .92 | .87 | .75 |
| 24 | .97 | .94 | .85 | .79 | .98 | .92 | .87 | .75 |
| 26 | .97 | .94 | .85 | .79 | .98 | .92 | .87 | .75 |
| 28 | .97 | .93 | .85 | .77 | .98 | .92 | .87 | .75 |
| 30 | .97 | .93 | .85 | .77 | .98 | .93 | .87 | .77 |
| 32 | .97 | .93 | .85 | .77 | .98 | .95 | .87 | .81 |
| 34 | .97 | .92 | .85 | .75 | .98 | .96 | .87 | .83 |
| 36 | .96 | .91 | .83 | .73 | .98 | .96 | .87 | .83 |
| 38 | .96 | .91 | .83 | .73 | .98 | .96 | .87 | .83 |
| 40 | .96 | .90 | .83 | .71 | .98 | .96 | .87 | .83 |
| 42 | .96 | .89 | .83 | .69 | .98 | .96 | .87 | .83 |
| 44 | .96 | .88 | .83 | .67 | .98 | .96 | .87 | .83 |
| 46 | .95 | .88 | .81 | .67 | .98 | .96 | .87 | .83 |
| 48 | .95 | .87 | .81 | .66 | .98 | .96 | .87 | .83 |
| 50 | .95 | .86 | .81 | .64 | .98 | .96 | .87 | .83 |
| 52 | .95 | .85 | .81 | .62 | .98 | .96 | .87 | .83 |
| 54 | .95 | .84 | .81 | .60 | .98 | .96 | .87 | .83 |
| 56 | .94 | .84 | .79 | .60 | .98 | .96 | .87 | .83 |
| 58 | .94 | .83 | .79 | .58 | .98 | .96 | .87 | .83 |
| 60 | .94 | .82 | .79 | .56 | .98 | .96 | .87 | .83 |

## *Western Red Cedar*

| D.B.H. Class | COAST (Basis: 769 Trees) | | | | INTERIOR (Basis: 1,447 Trees) | | | |
|---|---|---|---|---|---|---|---|---|
| | Decay | | Decay, Waste, and Breakage | | Decay | | Decay, Waste, and Breakage | |
| | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 |
| 4 | .98 | .94 | .87 | .79 | .96 | .93 | .83 | .77 |
| 6 | .98 | .93 | .87 | .77 | .96 | .89 | .83 | .69 |
| 8 | .98 | .91 | .87 | .73 | .95 | .86 | .81 | .64 |
| 10 | .97 | .90 | .85 | .71 | .95 | .83 | .81 | .58 |
| 12 | .97 | .89 | .85 | .69 | .94 | .80 | .79 | .53 |
| 14 | .97 | .83 | .85 | .58 | .93 | .78 | .77 | .49 |
| 16 | .97 | .81 | .85 | .55 | .91 | .75 | .73 | .44 |
| 18 | .96 | .80 | .83 | .53 | .90 | .72 | .71 | .39 |
| 20 | .96 | .80 | .83 | .53 | .87 | .70 | .66 | .36 |
| 22 | .96 | .82 | .83 | .56 | .84 | .68 | .60 | .32 |
| 24 | .95 | .87 | .81 | .66 | .80 | .66 | .53 | .29 |
| 26 | .95 | .89 | .81 | .69 | .78 | .64 | .49 | .26 |
| 28 | .95 | .90 | .81 | .71 | .75 | .63 | .44 | .24 |
| 30 | .95 | .91 | .81 | .73 | .74 | .61 | .42 | .21 |
| 32 | .95 | .91 | .81 | .73 | .72 | .60 | .39 | .20 |
| 34 | .94 | .90 | .79 | .71 | .71 | .59 | .37 | .18 |
| 36 | .94 | .90 | .79 | .71 | .70 | .58 | .36 | .17 |
| 38 | .94 | .89 | .79 | .69 | .68 | .57 | .32 | .15 |
| 40 | .94 | .87 | .79 | .66 | .67 | .55 | .31 | .12 |
| 42 | .93 | .86 | .77 | .64 | .67 | .54 | .31 | .11 |
| 44 | .93 | .84 | .77 | .60 | .66 | .54 | .29 | .11 |
| 46 | .93 | .82 | .77 | .56 | .65 | .52 | .27 | .08 |
| 48 | .92 | .82 | .75 | .56 | .64 | .51 | .26 | .07 |
| 50 | .92 | .80 | .75 | .53 | .64 | .50 | .26 | .06 |
| 52 | .92 | .79 | .75 | .51 | .63 | .49 | .24 | .05 |
| 54 | .92 | .78 | .75 | .49 | .62 | .48 | .23 | .04 |
| 56 | .91 | .77 | .73 | .48 | .62 | .46 | .23 | .02 |
| 58 | .91 | .76 | .73 | .46 | .61 | .45 | .21 | .01 |
| 60 | .91 | .75 | .73 | .44 | .61 | .45 | .21 | .01 |

*Western Hemlock*

| D.B.H. Class | COAST (Basis: 1,875 Trees) | | | | INTERIOR (Basis: 1,676 Trees) | | | |
|---|---|---|---|---|---|---|---|---|
| | Decay | | Decay, Waste, and Breakage | | Decay | | Decay, Waste, and Breakage | |
| | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 |
| 4 | .99 | .96 | .89 | .83 | .99 | .97 | .89 | .85 |
| 6 | .99 | .95 | .89 | .81 | .99 | .95 | .89 | .81 |
| 8 | .99 | .94 | .89 | .79 | .98 | .94 | .87 | .79 |
| 10 | .99 | .94 | .89 | .79 | .98 | .92 | .87 | .75 |
| 12 | .98 | .93 | .87 | .77 | .97 | .90 | .85 | .71 |
| 14 | .98 | .92 | .87 | .75 | .96 | .89 | .83 | .69 |
| 16 | .97 | .91 | .85 | .73 | .95 | .87 | .81 | .66 |
| 18 | .96 | .89 | .83 | .69 | .94 | .86 | .79 | .64 |
| 20 | .94 | .87 | .79 | .66 | .93 | .84 | .77 | .60 |
| 22 | .93 | .85 | .77 | .62 | .92 | .83 | .75 | .58 |
| 24 | .91 | .84 | .73 | .60 | .91 | .82 | .73 | .56 |
| 26 | .90 | .83 | .71 | .58 | .90 | .80 | .71 | .53 |
| 28 | .89 | .82 | .69 | .56 | .90 | .79 | .71 | .51 |
| 30 | .88 | .81 | .67 | .55 | .89 | .78 | .69 | .49 |
| 32 | .88 | .80 | .67 | .53 | .88 | .77 | .67 | .48 |
| 34 | .87 | .79 | .66 | .51 | .88 | .76 | .67 | .46 |
| 36 | .87 | .78 | .66 | .49 | .88 | .75 | .67 | .44 |
| 38 | .86 | .77 | .64 | .48 | .88 | .75 | .67 | .44 |
| 40 | .86 | .77 | .64 | .48 | .87 | .75 | .66 | .44 |
| 42 | .86 | .76 | .64 | .46 | .87 | .75 | .66 | .44 |
| 44 | .86 | .76 | .64 | .46 | .87 | .75 | .66 | .44 |
| 46 | .86 | .76 | .64 | .46 | .87 | .75 | .66 | .44 |
| 48 | .85 | .75 | .62 | .44 | .86 | .75 | .64 | .44 |
| 50 | .85 | .75 | .62 | .44 | .86 | .75 | .64 | .44 |
| 52 | .85 | .75 | .62 | .44 | .86 | .75 | .64 | .44 |
| 54 | .85 | .75 | .62 | .44 | .86 | .75 | .64 | .44 |
| 56 | .85 | .75 | .62 | .44 | .86 | .75 | .64 | .44 |
| 58 | .85 | .75 | .62 | .44 | .86 | .75 | .64 | .44 |
| 60 | .85 | .75 | .62 | .44 | .86 | .75 | .64 | .44 |

*Balsam*

| D.B.H. Class | COAST (Basis: 522 Trees) | | | | INTERIOR (Basis: 2,678 Trees) | | | |
|---|---|---|---|---|---|---|---|---|
| | Decay | | Decay, Waste, and Breakage | | Decay | | Decay, Waste, and Breakage | |
| | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 |
| 4 | 1.00 | .98 | .90 | .87 | .92 | .89 | .75 | .69 |
| 6 | .99 | .97 | .89 | .85 | .91 | .87 | .73 | .66 |
| 8 | .99 | .97 | .89 | .85 | .90 | .85 | .71 | .62 |
| 10 | .99 | .96 | .89 | .83 | .89 | .82 | .69 | .56 |
| 12 | .99 | .96 | .89 | .83 | .87 | .80 | .66 | .53 |
| 14 | .99 | .96 | .89 | .83 | .85 | .78 | .62 | .49 |
| 16 | .99 | .95 | .89 | .81 | .82 | .77 | .56 | .48 |
| 18 | .98 | .94 | .87 | .79 | .80 | .76 | .53 | .46 |
| 20 | .98 | .92 | .87 | .75 | .74 | .74 | .42 | .42 |
| 22 | .97 | .91 | .85 | .73 | .73 | .73 | .41 | .41 |
| 24 | .96 | .89 | .83 | .69 | .72 | .72 | .39 | .39 |
| 26 | .96 | .87 | .83 | .66 | .71 | .71 | .37 | .37 |
| 28 | .96 | .85 | .83 | .62 | .70 | .70 | .36 | .36 |
| 30 | .95 | .84 | .81 | .60 | .70 | .70 | .36 | .36 |
| 32 | .95 | .83 | .81 | .58 | .70 | .70 | .36 | .36 |
| 34 | .95 | .82 | .81 | .56 | .70 | .70 | .36 | .36 |
| 36 | .95 | .81 | .81 | .55 | .70 | .70 | .36 | .36 |
| 38 | .94 | .80 | .79 | .53 | .70 | .70 | .36 | .36 |
| 40 | .94 | .79 | .79 | .51 | .70 | .70 | .36 | .36 |
| 42 | .94 | .79 | .79 | .51 | ---- | ---- | ---- | ---- |
| 44 | .94 | .78 | .79 | .49 | ---- | ---- | ---- | ---- |
| 46 | .94 | .78 | .79 | .49 | ---- | ---- | ---- | ---- |
| 48 | .94 | .78 | .79 | .49 | ---- | ---- | ---- | ---- |
| 50 | .94 | .78 | .79 | .49 | ---- | ---- | ---- | ---- |
| 52 | .93 | .77 | .77 | .48 | ---- | ---- | ---- | ---- |
| 54 | .93 | .77 | .77 | .48 | ---- | ---- | ---- | ---- |
| 56 | .93 | .77 | .77 | .48 | ---- | ---- | ---- | ---- |
| 58 | .93 | .77 | .77 | .48 | ---- | ---- | ---- | ---- |
| 60 | .93 | .77 | .77 | .48 | ---- | ---- | ---- | ---- |

*Spruce*

| D.B.H. Class | COAST (Basis: 351 Trees) | | | | INTERIOR (Basis: 2,695 Trees) | | | |
|---|---|---|---|---|---|---|---|---|
| | Decay | | Decay, Waste, and Breakage | | Decay | | Decay, Waste, and Breakage | |
| | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 |
| 4 | .99 | .98 | .89 | .87 | .99 | .94 | .89 | .79 |
| 6 | .99 | .98 | .89 | .87 | .99 | .93 | .89 | .77 |
| 8 | .99 | .98 | .89 | .87 | .98 | .93 | .87 | .77 |
| 10 | .99 | .97 | .89 | .85 | .98 | .92 | .87 | .75 |
| 12 | .99 | .97 | .89 | .85 | .97 | .91 | .85 | .73 |
| 14 | .99 | .97 | .89 | .85 | .97 | .90 | .85 | .71 |
| 16 | .99 | .96 | .89 | .83 | .96 | .89 | .83 | .69 |
| 18 | .99 | .96 | .89 | .83 | .96 | .88 | .83 | .67 |
| 20 | .99 | .95 | .89 | .81 | .95 | .87 | .81 | .66 |
| 22 | .99 | .95 | .89 | .81 | .94 | .85 | .79 | .62 |
| 24 | .99 | .95 | .89 | .81 | .94 | .84 | .79 | .60 |
| 26 | .99 | .94 | .89 | .79 | .93 | .83 | .77 | .58 |
| 28 | .99 | .94 | .89 | .79 | .93 | .82 | .77 | .56 |
| 30 | .99 | .93 | .89 | .77 | .92 | .80 | .75 | .53 |
| 32 | .99 | .93 | .89 | .77 | .91 | .79 | .73 | .51 |
| 34 | .99 | .92 | .89 | .75 | .91 | .78 | .73 | .49 |
| 36 | .99 | .92 | .89 | .75 | .90 | .77 | .71 | .48 |
| 38 | .99 | .92 | .89 | .75 | .90 | .76 | .71 | .46 |
| 40 | .99 | .92 | .89 | .75 | .89 | .75 | .69 | .44 |
| 42 | .99 | .92 | .89 | .75 | .89 | .74 | .69 | .42 |
| 44 | .99 | .92 | .89 | .75 | .89 | .73 | .69 | .41 |
| 46 | .99 | .92 | .89 | .75 | .88 | .73 | .67 | .37 |
| 48 | .99 | .93 | .89 | .77 | .88 | .71 | .67 | .37 |
| 50 | .99 | .93 | .89 | .77 | .87 | .71 | .66 | .37 |
| 52 | .99 | .93 | .89 | .77 | ---- | ---- | ---- | ---- |
| 54 | .99 | .93 | .89 | .77 | ---- | ---- | ---- | ---- |
| 56 | .99 | .94 | .89 | .79 | ---- | ---- | ---- | ---- |
| 58 | .99 | .94 | .89 | .79 | ---- | ---- | ---- | ---- |
| 60 | .99 | .94 | .89 | .79 | ---- | ---- | ---- | ---- |

### *White Pine*
(Basis: 157 Trees)

| D.B.H. Class | Decay | | Decay, Waste, and Breakage | |
|---|---|---|---|---|
| | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 |
| 4 | .98 | .98 | .87 | .87 |
| 6 | .98 | .97 | .87 | .85 |
| 8 | .98 | .97 | .87 | .85 |
| 10 | .98 | .96 | .87 | .83 |
| 12 | .98 | .95 | .87 | .81 |
| 14 | .98 | .94 | .87 | .79 |
| 16 | .98 | .93 | .87 | .77 |
| 18 | .98 | .91 | .87 | .73 |
| 20 | .98 | .89 | .87 | .69 |
| 22 | .98 | .87 | .87 | .66 |
| 24 | .98 | .85 | .87 | .62 |
| 26 | .98 | .83 | .87 | .58 |
| 28 | .98 | .82 | .87 | .56 |
| 30 | .98 | .80 | .87 | .53 |
| 32 | .98 | .79 | .87 | .51 |
| 34 | .98 | .78 | .87 | .49 |
| 36 | .98 | .77 | .87 | .48 |
| 38 | .98 | .76 | .87 | .46 |
| 40 | .98 | .76 | .87 | .46 |

### *Lodgepole Pine*
(Basis: 1,727 Trees)

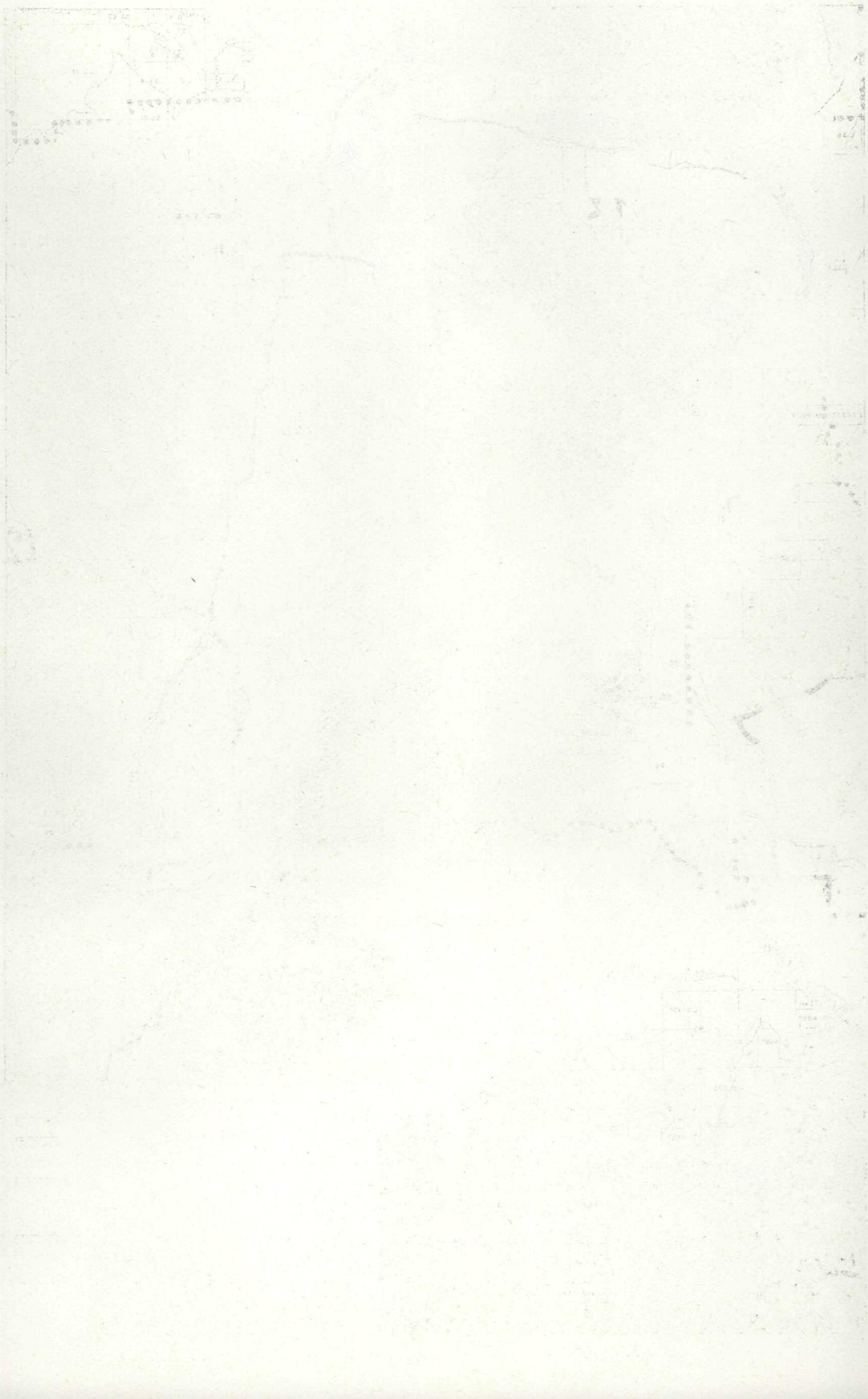
| D.B.H. Class | Decay | | Decay, Waste, and Breakage | |
|---|---|---|---|---|
| | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 |
| 4 | .98 | .95 | .87 | .81 |
| 6 | .97 | .94 | .85 | .79 |
| 8 | .96 | .93 | .83 | .77 |
| 10 | .95 | .92 | .81 | .75 |
| 12 | .93 | .91 | .77 | .73 |
| 14 | .92 | .89 | .75 | .69 |
| 16 | .91 | .88 | .73 | .67 |
| 18 | .90 | .86 | .71 | .64 |
| 20 | .89 | .85 | .69 | .62 |
| 22 | .88 | .84 | .67 | .60 |
| 24 | .87 | .82 | .66 | .56 |
| 26 | .87 | .81 | .66 | .55 |
| 28 | .86 | .80 | .64 | .53 |
| 30 | .86 | .80 | .64 | .53 |

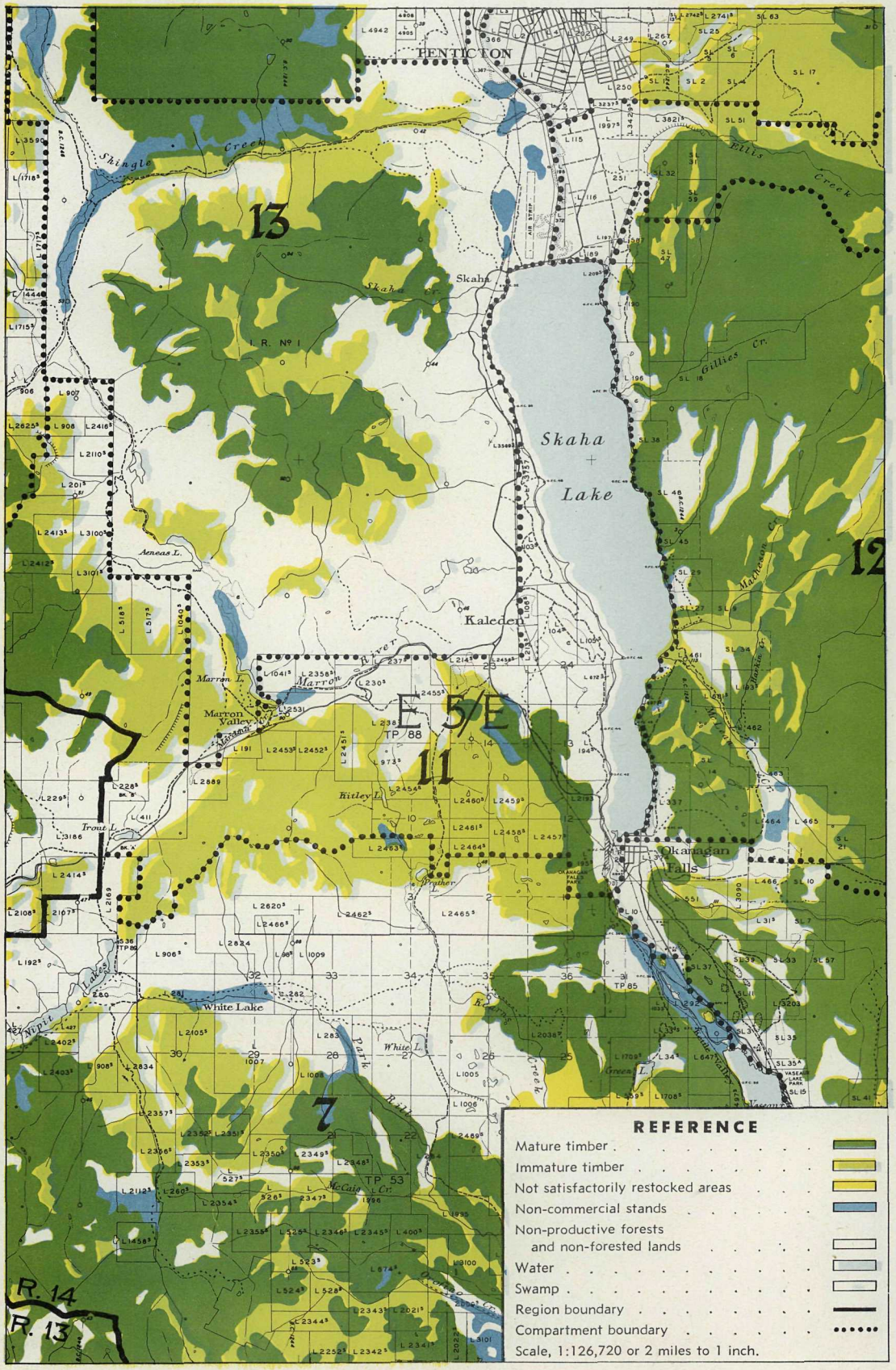
### *Yellow Pine*
(Basis: 501 Trees)

| D.B.H. Class | Decay | | Decay, Waste, and Breakage | |
|---|---|---|---|---|
| | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 |
| 4 | 1.00 | .99 | .90 | .89 |
| 6 | 1.00 | .98 | .90 | .87 |
| 8 | 1.00 | .96 | .90 | .83 |
| 10 | .99 | .95 | .89 | .81 |
| 12 | .99 | .95 | .89 | .81 |
| 14 | .99 | .96 | .89 | .83 |
| 16 | .98 | .97 | .87 | .85 |
| 18 | .98 | .97 | .87 | .85 |
| 20 | .98 | .97 | .87 | .85 |
| 22 | .98 | .97 | .87 | .85 |
| 24 | .97 | .96 | .85 | .83 |
| 26 | .97 | .95 | .85 | .81 |
| 28 | .97 | .94 | .85 | .79 |
| 30 | .96 | .92 | .83 | .75 |
| 32 | .96 | .91 | .83 | .73 |
| 34 | .96 | .89 | .83 | .69 |
| 36 | .96 | .86 | .83 | .64 |
| 38 | .95 | .84 | .81 | .60 |
| 40 | .95 | .81 | .81 | .55 |

### *Larch*
(Basis: 466 Trees)

| D.B.H. Class | Decay | | Decay, Waste, and Breakage | |
|---|---|---|---|---|
| | T.C. 1 | T.C. 2 | T.C. 1 | T.C. 2 |
| 4 | .98 | .95 | .87 | .81 |
| 6 | .98 | .95 | .87 | .81 |
| 8 | .98 | .94 | .87 | .79 |
| 10 | .98 | .93 | .87 | .77 |
| 12 | .98 | .92 | .87 | .75 |
| 14 | .98 | .91 | .87 | .73 |
| 16 | .98 | .89 | .87 | .69 |
| 18 | .98 | .88 | .87 | .67 |
| 20 | .98 | .87 | .87 | .66 |
| 22 | .98 | .86 | .87 | .64 |
| 24 | .98 | .85 | .87 | .62 |
| 26 | .98 | .83 | .87 | .58 |
| 28 | .97 | .82 | .85 | .56 |
| 30 | .97 | .81 | .85 | .55 |
| 32 | .96 | .80 | .83 | .53 |
| 34 | .96 | .79 | .83 | .51 |
| 36 | .95 | .78 | .81 | .49 |
| 38 | .95 | .78 | .81 | .49 |
| 40 | .94 | .78 | .79 | .49 |






## REFERENCE

- Mature timber
- Immature timber
- Not satisfactorily restocked areas
- Non-commercial stands
- Non-productive forests and non-forested lands
- Water
- Swamp
- Region boundary
- Compartment boundary

Scale, 1:126,720 or 2 miles to 1 inch.

## FOREST CLASSIFICATION

In 1956, forest classification by aerial observation and ground checking was completed for most of the Province north of the 56th parallel. Classification work is now practically complete in all parts of the Province for the current phase of the inventory. Forest-cover maps are in the process of construction for all areas where maps are not presently available.

Work was commenced on a library of stereograms which will provide a valuable aid to forest-type identification on air photographs and ensure a high standard of type mapping. In this project, forest types, positively identified on air photographs and on the ground, were listed for a total area of 5,446,000 acres. The objective is to produce one or more stereogram pairs of vertical air photographs of each identified forest type, accompanied by a statement of all observed, measured, and derived data concerning the type.

## PRODUCTION OF FOREST-COVER MAPS

During the year, 345 compartment base linen tracings were made and 770 compartment interim forest-cover maps were completed and distributed. Accompanying this Report is a key-map indicating areas for which compartment interim forest-cover maps at one-half mile to the inch and summaries are now available, areas for which these maps and summaries are in the course of preparation, and areas for which interim forest-cover maps at 1 mile to the inch and summaries are being prepared. Thirty-eight lithographed half-letter maps of the interim forest-cover index series were completed and distributed, and work was carried out toward the completion of fifty others. Included with this Report is a key-map showing areas for which lithographed interim forest-cover maps at 2 miles to the inch are now available and areas for which these maps are in the course of preparation. A sample portion of one lithographed map-sheet is also included.

For purposes of future inventory revision, 8,322 timber-sale, fire, management timber-inspection reports, and scale-and-royalty accounts were processed and the information filed.

The Division was instructed to make a nominal charge for all maps supplied, effective May 15th, 1956. Since this date, all cash and other types of remittances for the sale of maps have been handled directly by the Division and collections have been deposited to the Treasury daily.

## COMPILATION AND SUMMARY

In 1956 there was continued development of systems for compiling sample-plot records mechanically, by the use of electronic punch cards, to predetermined specifications as a prerequisite to the mechanical presentation of areas and volumes in any desired survey unit. A backlog of sample plots was compiled mechanically and added to existing records. During the year, tabular statements of area and volume were made for 750 compartments, together with statements for survey units containing these compartments.

## FOREST-RESOURCES BULLETINS AND OTHER PUBLICATIONS

Fifteen forest-resources bulletins, containing forest-cover maps, area and volume summaries, and forest descriptions, were completed and made available for distribution during the year. These were:—

No. 9—Naver Block Cruise Report.
No. 10—Willow Block Cruise Report.
No. 11—Morice Block Cruise Report.
No. 15—Broughton Forest Unit Survey Report.

No. 18—Chilliwack Forest Unit Survey Report.
No. 19—Fraser Canyon Forest Unit Survey Report.
No. 30—Purden Lake Forest Unit Survey Report.
No. 31—Willow River Forest Unit Survey Report.
No. 32—Naver Creek Forest Unit Survey Report.
No. 33—Cottonwood Forest Unit Survey Report.
No. 34—Williams Lake Forest Unit Survey Report.
No. 35—Kettle Forest Unit Survey Report.
No. 36—Arrowhead Forest Unit Survey Report.
No. 37—Edgewood Forest Unit Survey Report.
No. 43—Morice Forest Unit Survey Report.

Compilations were completed on another twenty-three reports which are to be published as forest-resources bulletins.

A "Consolidated Forest Survey Manual," describing methods of classification, sampling, and tabulation, was produced and is available for distribution. A survey note describing procedures in Provincial inventory and other forest surveys also was completed during the year.

## INVENTORY APPLICATIONS

Through the medium of a co-ordinating work committee, invaluable assistance was received and recommendations were made concerning desirable specifications, relative priorities, and cost estimates of special projects. In addition, requests for information, which involved standard applications of inventory data, were received and acted upon. These included presentations of data in the form of cutting-priority ratings and preliminary net-growth estimates in forest units. One such application of inventory data, a preliminary local growth estimate, is shown in the table below.

*Naver Forest Unit—Mean Annual Increment in Net Cubic Feet per Acre per Year, to Close Utilization Standards, Presented by Age-class*

| Forest Types | D.B.H. Limit | M.A.I. in Net Cubic Feet per Acre per Year | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 15 Years | 30 Years | 50 Years | 70 Years | 90 Years | 110 Years | 140 Years |
| | In. | | | | | | | |
| Fir alone or fir with balsam, spruce, lodgepole pine, and (or) deciduous species | 3.1+ | 12 | 30 | 50 | 53 | 47 | 41 | 32 |
| | 9.1+ | .... | .... | 8 | 26 | 38 | 37 | 29 |
| | 11.1+ | .... | .... | 8 | 21 | 32 | 33 | 26 |
| Spruce and balsam alone or with lodgepole pine and (or) deciduous species | 3.1+ | .... | 11 | 32 | 40 | 35 | 32 | 29 |
| | 9.1+ | .... | .... | 3 | 15 | 24 | 27 | 27 |
| | 11.1+ | .... | .... | 3 | 12 | 19 | 22 | 25 |
| Lodgepole pine alone or with deciduous species | 3.1+ | 2 | 33 | 43 | 47 | 44 | 39 | 31 |
| | 9.1+ | .... | 2 | 14 | 28 | 36 | 34 | 27 |
| | 11.1+ | .... | .... | 10 | 20 | 25 | 26 | 24 |

Other applications of inventory data, in the course of preparation, include the production of statistics and maps concerning site classification, hazard rating, reforestation possibilities, stand development, depletion, and related inventory aspects which contribute to the inventory component of management plans in forest units. These statistics and maps, presented as supplements to Unit Survey Reports, facilitate the analysis of technical data and assist other agencies in preparing the remaining components.

## TIMBER-SALE AND TAXATION SURVEYS

In 1956 fifteen timber-sale surveys were completed on a total of 80,800 acres, including a volume in excess of 270,000,000 cubic feet in trees 11.1 inches d.b.h. and

over. Six of the surveys were in the Prince Rupert Forest District and nine in the Vancouver Forest District. Six separate forest areas totalling 4,765 acres in area and containing 7,347,000 cubic feet in trees 7.1 inches d.b.h. and over were examined at the request of the Surveyor of Taxes. Five of the areas were timber licences in the vicinity of Princeton, and the sixth was a timber berth at Harrison Lake.

## FOREST-SURVEY STANDARDS

Continued study was made on desirable forest-survey standards, and appropriate revisions, modifications, and additions were made to the existing field-survey manuals. Work was carried out on the production of an office survey manual detailing all office procedures from clerical routine to complex technical methods as, for example, those relating to statistical calculations in volume and decay analyses.

## LIAISON WORK

Forest-survey personnel provided in-service assistance to management officers and other staff, in the interpretation and application of forest-survey methods and results, at meetings in all forest district offices. Over fifty special requests from forest districts and divisions were received and acted upon. These requests involved recompilation and resummation of existing maps and data in areas totalling over 6,000,000 acres and containing over 9 billion net cubic feet in trees 9.1 inches d.b.h. and above. Assistance was provided at the Ranger School in outlining forest-survey procedures and cruising methods, by field and office exercises, to the current class. Other technical advisory services were provided where required. The Division co-operated in the production of a Forest Service film depicting Forest Surveys and Inventory work. This film is valuable in the recruiting and training of new staff.

Close co-operation was also maintained with the Dominion Science Service, particularly in regard to the development of loss factors and methods of estimating forest depletion. A staff forester visited the Canada Forestry Branch offices in Ottawa to study procedures and developments in forest-inventory research, and to establish liaison with the staff there in connection with application problems.

Liaison services were also provided to forest industry and consulting foresters engaged in inventory and related projects.

## FOREST RESEARCH

During the year the first issue of an annual review of current research work was compiled. This publication is to serve as a supplement to this brief administrative report and contains technical details and results of the various projects.

The experiment stations were active during 1956, with research programmes and improvement work being carried out. A start has been made on developing facilities for a tree-breeding programme. Thirteen field parties were occupied throughout the Province, working on some thirty-eight projects. One man was on special assignment to the Management Division.

### COWICHAN LAKE EXPERIMENT STATION

At the Cowichan Lake Experiment Station, maintenance called for work on forest-extraction routes, amelioration of the planting-site in connection with the genetic programme, and thinnings and prunings of experimental areas. A start was made on a new office and warehouse building and a garage was rebuilt. The work reached its peak when ten boys were employed under the Youth Training Programme supplementing station personnel.

Visitors to the Experiment Station included members of a field meeting of the Forest Soils Committee of the Douglas fir region; a Russian forestry delegation and their British Columbia hosts; an advanced silviculture class from the University of British Columbia; and a field meeting of the Vancouver Island Section of the Canadian Institute of Forestry, at which members of the Division of Forest Biology, Science Service, Canada Department of Agriculture, explained their activities.

Another visitor was Mr. W. G. E. Brown, Forest Branch, Canada Department of Northern Affairs and National Resources, who spent several days in the field with research personnel discussing forest-site classification methods.

The seeds of a few hardwood exotics were sown at the Duncan nursery, to be eventually outplanted at the experiment station. Species included *Quercus* spp., *Castanea sativa, Æsculus hippocastanum, Acer pseudoplatanus, Fraxinus excelsior,* and *Nothofagus* spp.

### ALEZA LAKE EXPERIMENT STATION

The camp at the Aleza Lake Experiment Station, east of Prince George, was open from the middle of May to the end of October. The number of men in camp varied from twelve to thirty. A Youth Training Programme crew of ten high-school boys was employed during the months of July and August. They were engaged in cone-collecting and in cribbing the road-cuts in the vicinity of the camp. They also provided assistance in research projects.

Under the supervision of the Engineering Services Division, considerable ditching and additional gravelling to the whole length of the access road was done. A survey of the proposed West Loup Lake branch road was undertaken, and 1 mile of right-of-way for the branch road was cleared in conjunction with the logging on Timber Sale X70021.

Logging was completed on two timber sales during the year. Timber Sale X58443 constituted a regeneration felling, approximately one-half the total merchantable volume being removed, while Timber Sale X70021 constituted a heavy volume cut with reservation of an adequate residual stand.

Two further sales were prepared and put up for auction. Both were laid out for clear cutting in alternate strips. On one the cut strips were scarified, using a T.D. 6 with brush-blade prior to logging.

In the nursery all seedlings were transplanted in the spring. The Experimental Farm of the Canada Department of Agriculture in Prince George made a small plot of land available to us to accommodate the overflow of seedlings from the Aleza Lake nursery.

Four small trial plantations were established in the district. Stock used in these plantations was Engelmann spruce and Douglas fir raised in the Cranbrook nursery, plus 5,000 2–1 white spruce seedlings raised at Aleza Lake. The areas selected were representative of difficult planting conditions. At Giscome, 15 acres in an area heavily burned in 1938 and now regenerated naturally to aspen and birch were underplanted. At Pinchi Lake, an area was burned following logging in 1942. No natural regeneration occurred, and so some 9 acres of shaly clay soil were planted. The McCulloch planting auger was used here successfully. At Summit Lake, an area logged to a 12-inch d.b.h. limit was planted. Heavy slash, windfall, and brush growth made planting extremely difficult. At Aleza Lake, a fourth area of 15 acres was selected. This area also had a heavy cover of slash, windfall, and brush, but, prior to planting, strips were cleared by a T.D. 9 tractor with blade. Planting was stopped by snow but will be resumed in the spring. A small spring planting of *Betula verrucosa* was a complete failure due to sun scorch.

Two small nurseries on the access road were prepared during the summer. The first is a small " bush nursery "; the second was prepared on an area already clear of trees and stumps.

During the year there was a heavy spruce cone-crop. This crop was general over the Prince George District and was reported as being heaviest in the Peace River region. Through the co-operation of the Rangers throughout the district, a total of 350 bushels of cones were collected. The seed was extracted at Aleza Lake and shipped to the Duncan nursery for cleaning and storage.

Scarification trials were initiated during the summer. The primary objective was to test the various pieces of equipment considered suitable for the work. Equipment tried included a modification of the Ontario bush-plough, a Rome disk plough, a brush-blade, a 'dozer blade, and a special blade for the station T.D. 9 with attachable ripper teeth. A Swedish forest cultivator was ordered but did not arrive in time for use during the summer.

A number of research projects were carried out at the station and are reported later in the text. In addition, the establishment of permanent growth-plots was completed during the summer for maintaining a recurring inventory.

The Pathology Section of the Forest Biology Division, Canada Department of Agriculture, continued its study on logging-scar damage. A balsam milling study in conjunction with Timber Sale X70021 was carried out by the Canada Forest Products Laboratory.

## FIELD PROGRAMME

Twenty permanent growth-and-yield plots on the Queen Charlotte Islands were remeasured. In addition, thirty-three thinning plots at Cowichan Lake were remeasured and a second cleaning to prescribed densities undertaken in an 18-year-old plantation. Four thinning plots were established near Gold River, Vancouver Island.

An ecological study was initiated on the climatic conditions which determine the altitudinal distribution of our native conifers. A series of nine climatic stations was established from 1,700 to 5,050 feet elevation on a south exposure and up to 3,700 feet on a northern exposure. Weather records will be obtained for a number of years, and these will be analysed in terms of the adjacent forest types.

Studies were continued on rodent-control and direct seeding of Douglas fir. At the present time the effectiveness of a repellent called " Endrin " is being tested. A number of tests are now under observation, and these include broadcast seeding, aerial seeding, seed spotting with a new seeding implement, and seeding with cover-crops. These studies are being carried out in co-operation with the United States Fish and Wildlife Service and various companies in the forest industry.

In the field of genetics the main emphasis has been on the development of a Douglas fir seed-orchard and suitable grafting techniques. Further collections of seed

for a provenance trial of strains of Douglas fir from the Pacific Northwest were made by company co-operators. In collaboration with the Reforestation Division, a new seed registration system is being introduced. It will include all pertinent details relative to the collection of the cones up to the final planting out of the seedlings. The purpose is eventually to maintain a complete record of all seed collections in the Province.

Example of type of Douglas fir from which cones are collected.

Further work on the effects of slash-burning on soil productivity was undertaken. The test area has now been burned and initial soil sampling completed. Biological analyses will be made this winter and preliminary tests on erosion conducted.

In recent years there has been considerable interest in exotic trees and, as a result, a wide variety of species have been introduced as seed or seedlings for testing by a number of companies. In order to co-ordinate the information derived from these tests, the Research Division and the Canada Forest Biology Division are recording the history and examining the health and vigour of all exotic plantations. To date eighty introduced species have been recorded.

The annual record of cone production on Vancouver Island was continued. Similar records are now being kept for Interior species in the Prince George, Kamloops, and Nelson forest districts.

Factors affecting reproduction of Interior Douglas fir, spruce, ponderosa pine, hemlock, and cedar are being studied in the three Interior districts. In addition to records of cone production, seed-traps are being used to determine distance and direction of seed dissemination. Other studies deal with the influences of seed-beds and aspect in addition to rodents upon germination and survival.

A study of spruce-alpine fir stands was initiated with the objective of defining a classification which reflects the influences of site type, age, stand structure, species composition, and vigour. The purpose is to provide a uniform basis for use in describing stands.

Another study was aimed at (*a*) the establishment of a useful method of survey for appraisals of stocking and (*b*) the definition of standards of stocking for spruce-alpine fir stands. A multi-sized quadrat was employed to provide measures of the silviculturally distinctive vertical layers of these stands (regeneration, poles, and merchantable-sized trees), as well as of the conventional area-wise distribution of growing stock.

A preliminary study of the classification of lodgepole pine stands was undertaken in the Kamloops District. Emphasis was placed on ecological factors rather than on empirical methods.

A series of case-histories are under annual review to determine wind-throw and regeneration patterns occurring over the years following logging by various methods in the spruce-alpine fir region of the Kamloops Forest District.

In the Nelson District another partial cutting experiment in an 80-year-old Douglas fir, hemlock, cedar, and white pine stand was laid out to replace the previous study in which the stand was destroyed by an abnormal wind-storm. The area has yet to be logged.

## CO-OPERATION

A considerable number of inquiries on statistical analysis and inventory methods from industrial and government foresters were dealt with. Technical advice and field assistance were given private foresters relative to thinning practices. Technical advice was also given in the planning of a high-altitude seed plantation.

This year there have been an unusual number of requests for seed, pollen, and cuttings. Efforts were made to procure seed for three different provenance trials dealing with Engelmann spruce, white pine, and ponderosa pine, but success was limited as cone-crops were poor.

## TABULATION OF ACTIVE RESEARCH PROJECTS, 1956

| Experimental Plot No. | Title | Region |
|---|---|---|
| 226 | Seed production, immature stands, Cowichan Lake | Vancouver Island. |
| 274 | Seed production, mature stand, Elk Falls | Vancouver Island. |
| 343 | Thinning experiments in pure even-aged red alder stands | Vancouver Island. |
| 368 | The adaptability of tree species to forest sites | Vancouver Island. |
| 370 | Partial cutting study, Interior wet-belt forest type | Slocan Lake. |
| 371 | Cutting methods in overmature spruce-alpine fir stands | Kamloops. |
| 387 | Factors affecting reproduction of species in the Boreal forest region | Prince George. |
| 418 | Thinning experiment in pure even-aged plantation of Douglas fir | Vancouver Island. |
| 428 | Survival of spruce transplants | Kamloops. |
| 436 | Cone stimulation study, Douglas fir | Vancouver Island. |
| 438 | Effect of slash burning on soil productivity | Vancouver Island. |
| 458 | Seed production under various stand conditions | Prince George. |
| 459 | Selection of seed trees by morphological characteristics | Prince George. |
| 460 | Seed production in relation to climate | Prince George. |
| 461 | Direct seeding and rodent control, Caycuse Creek | Vancouver Island. |
| 463 | Seedfall and regeneration study, Stevens Creek | Nelson. |
| 466 | Exploratory direct seeding studies on ponderosa pine, Douglas fir, and Engelmann spruce | Kamloops. |
| 467 | Regeneration studies in spruce-alpine fir types (case-histories) | Kamloops. |
| 468 | Annual record of cone crops | Kamloops. |
| 470 | Direct seeding with cover crops and rodent control | Bear Creek. |
| 472 | Exploratory direct seeding studies | Nelson. |
| 474 | Inbreeding experiments with Douglas fir | Vancouver Island. |
| 477 | Study of site and environment in relation to cone collections | Vancouver Island. |
| 478 | Phenotypic selection in an open-grown Douglas fir stand | Vancouver Island. |
| 479 | Development of seed orchard, Duncan | Vancouver Island. |
| 480 | Co-operative seed provenance study | Vancouver Island. |
| 481 | Trial of new seeding implement, Bear Creek | Vancouver Island. |
| 482 | A study of climatic conditions in relation to the altitudinal distribution of native coastal conifers | Vancouver Island. |
| 483 | Record of plantations of exotic species throughout British Columbia | ..... |
| 485 | Preliminary classification of lodgepole pine sites | Kamloops. |
| 486 | Development of stocked-quadrat survey method for application to certain survey problems in Interior spruce types | Interior. |
| 487 | Seed dispersal study from single trees and marginal stands of Interior Douglas fir | Kamloops. |
| 488 | Composting sawdust, Duncan nursery | Vancouver Island. |
| 489 | Stand condition classification for spruce-alpine fir stands | Interior. |
| 492 | Thinning in a mixed Douglas fir stand, Gold Creek | Vancouver Island. |
| 494 | Trial of four rodent control treatments, Caycuse Creek | Vancouver Island. |
| 495 | Seed spotting, Bear Creek | Vancouver Island. |
| 496 | Aerial seeding trial, Nitinat Creek | Vancouver Island. |

## RESEARCH PUBLICATIONS

Annual Review of Forest Research, 1955.

Orr-Ewing, A. L.: Controlled Pollination Techniques for the Douglas fir. Technical Publication T. 44, Forest Science, Vol. 2, 4: 251–257.

Stewart, M.: Cost Study of Partial Cutting Treatments in Interior Wet Belt of British Columbia. B.C. Forest Service Research Note No. 32, 1956.

Warrack, G. C.: The Management of Hardwood Timber Stands. Pacific Coast Hardwoods, July and December issues, 1956.

# REFORESTATION

## FOREST NURSERIES

The effect of the unseasonable cold weather in November, 1955, continued as the dominant factor in the 1956 reforestation programme. The Campbell River nursery suffered least in respect to its 2–0 seedlings, with a loss of only 25 per cent. The 1–0 stock, which was growing on a newly broken field, did not fare so well. Although initial damage did not appear to be high, subsequent repeated freezing and thawing caused severe frost-heaving and a loss of 90 per cent of the seedlings.

The Duncan nursery, although losses in 2–0 stock were slightly heavier at 35 per cent, suffered least in the over-all picture. The 1–0 stock was able to recover very well from the additional damage caused by a late spring frost in early May, so that an estimated 60 per cent of this stock was available for planting in the fall of 1956 and spring of 1957.

The Green Timbers nursery appears to have been hit hardest, due to the unseasonably warm nights of October and early November, 1955, which prevented the seedlings from hardening off. The loss there amounts to nearly 75 per cent, as only some 45,000 of the 1,500,000 2–0 seedlings remaining in the nursery appear to be salvable as 3–0 stock. Losses in the 1–0 stock will be close to 70 per cent.

The net effect of all these losses has been to reduce the planting stock available at the three Coast nurseries for the fall of 1956 and spring of 1957 from 6,000,000 to about 2,000,000.

At the East Kootenay nursery, damage due to the November, 1955, cold snap was not severe. Spreading a fine layer of sand on the seed-beds caused the snow to melt much quicker than normally, so that lifting could be commenced in the spring some two weeks earlier than is usual. A three-bedroom residence for the nursery superintendent was completed just before the end of the year. A parcel of land adjoining the nursery was purchased during the autumn. This will provide an additional 15 acres suitable for nursery production. Clearing is well advanced and cultivation will commence as soon as possible.

Seed-beds were sown to provide 6,000,000 seedlings on the Coast and 1,000,000 in the East Kootenay. An unusually cold, wet June on the Coast resulted in a poor germination pattern and high weeding costs. At Cranbrook, however, only 5 inches of rainfall were recorded during the entire year.

The pelleting of Douglas fir seed with 2 ounces of Arasan per pound of seed gave no control of damping-off at the Coast nurseries but resulted in an average increase of 50 per cent in seedling stands at the East Kootenay nursery. The beneficial effect of cold soaking and naked stratification on ponderosa pine seed was also demonstrated by a 50-per-cent increase in seedling stands.

Testing of various types of seedlings and planting methods was continued both on the Coast and in the East Kootenay. Douglas fir and spruce totalling 30,000 seedlings were shipped to the Prince George Forest District for planting trials carried out by the Research Division.

## SEED COLLECTIONS

A two-story seed-extraction plant was completed at the Duncan nursery early in the year. Extraction equipment is currently being installed. It is expected that this plant will be able to handle Reforestation Division cone collections on the Coast as well as the cleaning of seed extracted from cones collected in other districts.

The 1956 cone-crop on Vancouver Island was better than average at low elevations but poor above 1,000 feet. A total of 1,079 bushels of Douglas fir cones were harvested below 1,000 feet and 610 bushels between 1,000 and 1,500 feet. Extraction of the seed

has not yet been completed, but seed counts made during picking would indicate a good yield. Collections of western hemlock at the 600-foot elevation yielded 24 bushels of cones.

A 5-acre tract of land adjoining the Duncan nursery was purchased for the establishment of a seed-orchard. The purpose of this orchard is to increase the supply of scarce, high-elevation Douglas fir seed, and ensure that the seedlings being used to replant barren, logged-off areas at these elevations are of the best genetic quality. A gene bank will also be established to hold scions from superior specimens of coastal Douglas fir. Eventually, seed produced from this material will provide superior strains of seedlings, even though the parent trees may have been lost through fire or logging.

The cone-crop in the East Kootenay was a failure on all species, due mainly to the November, 1955, cold snap. Twenty bushels of ponderosa pine cones were collected, which yielded 7 pounds of seed. No collection was attempted on other species.

## RECONNAISSANCE AND SURVEY WORK

One detailed regeneration survey covering 2,000 acres was completed on Vancouver Island. In the East Kootenay, survey work was confined to a reconnaissance of the Upper Moyie River valley and the Yahk River valley.

## PLANTING

The Division conducted only one planting project on the Coast during the spring. Snow delayed commencement of planting until April 10th; thereafter, the weather was sunny and warm until well after planting ceased on May 12th. Some 700,000 trees were planted on 1,200 acres. During the same period, nine different companies planted some 1,140,000 trees supplied by the Division on 2,800 acres. In the autumn the Division planted an additional 525 acres and two companies planted 720 acres.

Extremely dry conditions in the East Kootenay limited planting to 335 acres in the spring. In the Okanagan the S. M. Simpson Company Limited planted an additional 152 acres on Forest Management Licence No. 9.

Total planting throughout the Province amounted to 2,799,200 trees on 5,846 acres. (*See* page 110 of Appendix for statistics of planting over the past ten years.)

## PREPARATION OF PLANTING AREAS

The Great Central Lake and Salmon River projects were completed during the year. The camp buildings and landing-craft at Great Central were sold to the British Columbia Power Commission. Sectional buildings at the Salmon River project were dismantled and stored at Campbell River for future use.

Road crews were employed in the Sayward area and at Garibaldi Park. Six miles of old logging-grades were converted for truck use and 123 miles of existing road was maintained. Sixty lengths of corrugated steel pipe were purchased to replace old wooden culverts.

Snag-falling was carried on at Campbell River, Garibaldi Park, Pender Harbour, and Manning Park. Reforestation crews were employed on this work, and 4,040 acres were cleared of snags.

In the East Kootenay the Moyie access road was extended for another mile, and a further 3.5 miles of this road was improved. Snag-falling in this region covered 691 acres in the vicinity of Moyie River.

## PLANTATIONS

Re-examination of plots in the 1955 spring plantations on Vancouver Island indicates a survival of 87 per cent, which is well above average. Fall planting, however,

suffered considerably from the November cold snap, which did so much damage in the nurseries. Survival was reduced to 32 per cent. The 1955 spring planting of ponderosa pine in the East Kootenay has a survival of 47 per cent after one year, which is lower than average. Preliminary trials with spruce in the Moyie River valley indicate that very good survival can be expected from this species.

## PLANTATION IMPROVEMENT

At the Green Timbers Forestry Station, Scots pine was planted on several areas where exotic plantations had failed and which were subsequently cleared of brush. In September, Reforestation Division personnel, in co-operation with the Research Division, cleaned and weeded a 31-year-old exotic plantation in Garibaldi Park. Although most of the species in this plantation are doing well, none are exceeding in growth the native, naturally regenerated Douglas fir and hemlock on the same site.

In the East Kootenay 38 acres of overstocked ponderosa pine were thinned and pruned, to bring the total area of this project to 231 acres.

# PARKS AND RECREATION

Despite an intensive programme of park development, the continued upsurge of recreation-seekers outpaced facilities in many regions. Camping, in particular, increases in popularity from year to year. Studies showed that all camp-sites on Vancouver Island and on the Lower Mainland operated at over capacity for some part of the summer. Better roads and more leisure time, coupled with various publicity media, have brought Provincial parks into public focus as never before. More and more people plan their holidays around available park facilities. When these are missing in popular holiday regions, it is in the public interest to make provision through purchase of suitable land. For example, a 192-acre park with excellent beach frontage on Shuswap Lake was bought during the year. Other sites, particularly on the southern end of Vancouver Island and in the Kootenays, are under study.

The main projects this year centred on Champion Lakes and Okanagan Lake Parks. The latter effort employed the bulk of Divisional personnel and machinery.

The Division's quota under the Youth Training Programme had an enrolment of 135. Work was divided into maintenance projects in established parks and cleaning-up operations in several new ones under development.

## ADMINISTRATION

The Planning Section was supplemented by one graduate forester and the Reconnaisance and Inventory Section by a mapping assistant. For the first time in its history, Tweedsmuir Park received special attention when a supervisor and biologist were stationed there for the summer season. A regional supervisor assumed charge of the Vancouver Island parks.

## RESEARCH

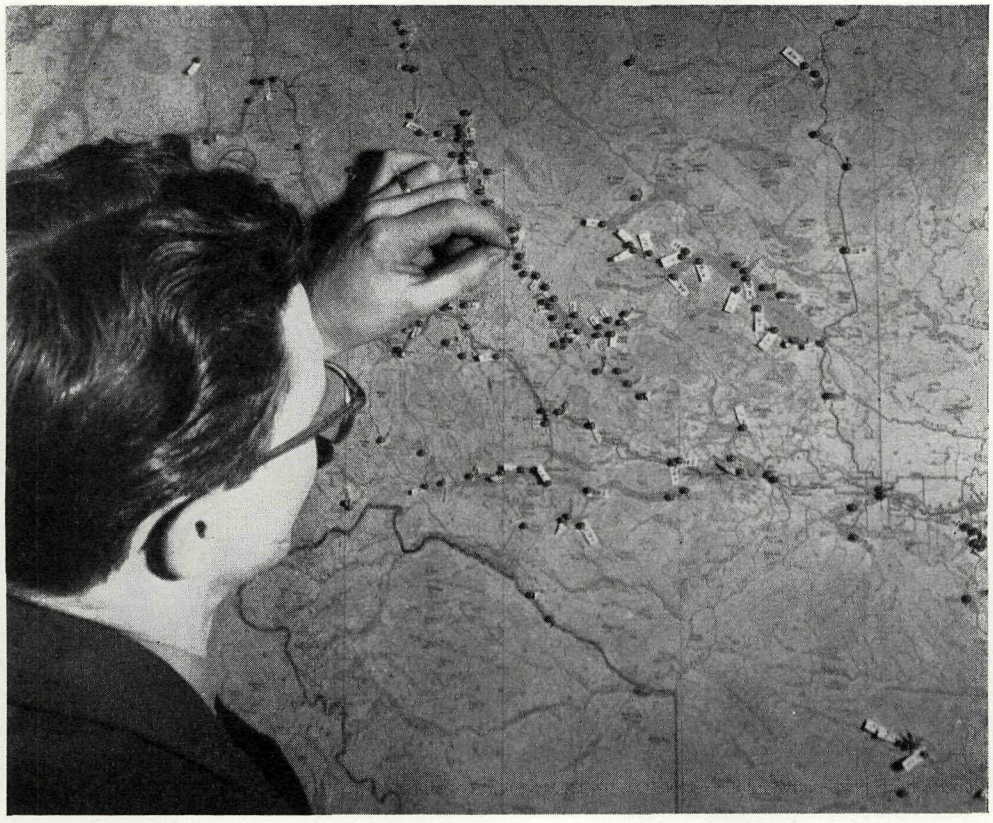
Visitor-studies were conducted at Mount Seymour, Cultus Lake, and Manning Parks. Through intensive sampling it was possible to determine recreational preferences and also estimate the probable future demand for number, location, and composition of park areas.

It is important to know the number of park visitors, and for this purpose new and more accurate methods were introduced. The public-recreation survey of the past five years is being unified and expanded. A yachting survey to provide basic data on the problems of marine parks was organized. Western Surveys-Research Limited was engaged to conduct a study into the use of park areas. Its Vancouver City sampling showed that 38 per cent of the population visited a Provincial park during 1956.

## RECONNAISSANCE AND INVENTORY

The component parks of the Greater Victoria metropolitan park system were reported on for the Capital Region Improvement Commission. A regional study of the Shuswap Lake district resulted in acquisition of an important park-site at Scotch Creek to meet current recreation-land needs. An acquisition was also completed at Matheson Lake on Southern Vancouver Island. In co-operation with the British Columbia Power Commission, areas for special treatment to enhance the recreational values of the Buttle Lake reservoir were selected on Buttle and Upper Campbell Lakes.

Some sixty-four widely scattered field projects were undertaken in the past year. These included assessment of new park proposals, shoreline reconnaissances, the study of new developments in highways and land-use affecting existing parks and reserves, evaluation of changes in the extent of public recreational use in certain management licences and forest reserves so that provision can be made to accommodate this use, and continuation of necessary field work on certain park proposals under study prior to 1956.



Every region of the Province is being methodically examined and key areas reserved.

## PLANNING

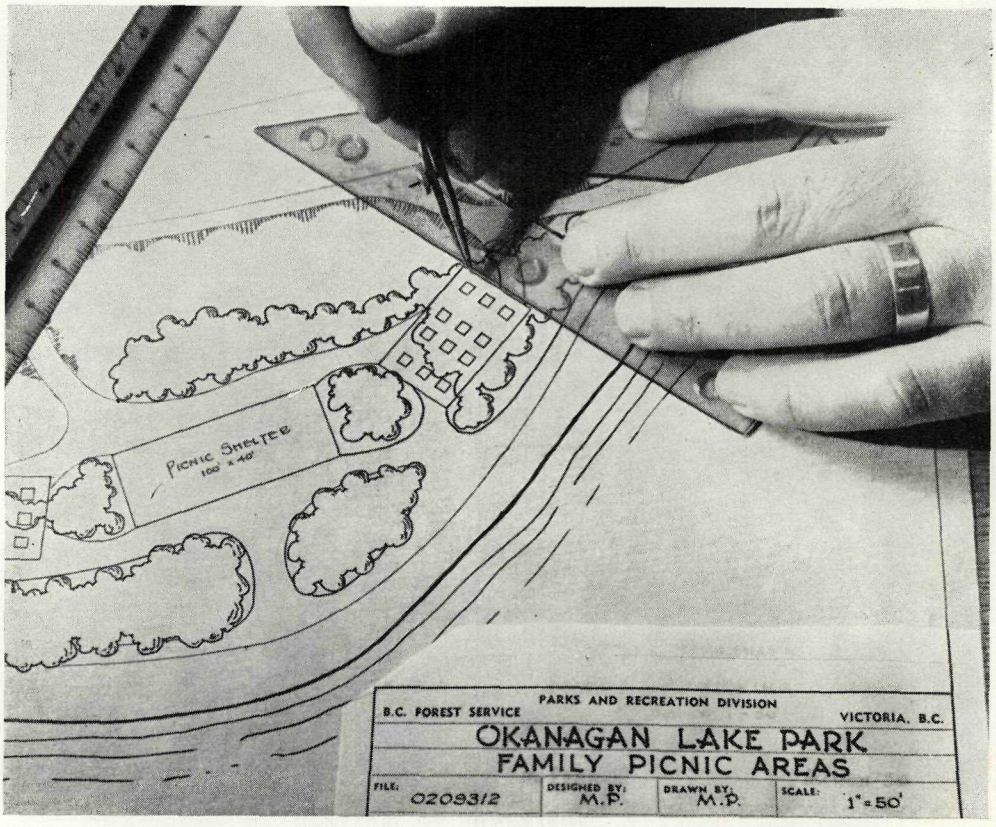
Public demand for more facilities in popular areas required further camp-site plans for Little Qualicum Falls, Englishman River, Cultus Lake, and Emory Creek Parks. Two new parks—Matheson Lake and Shuswap Lake—were mapped and are being designed for early development. Another park receiving attention was Manning, where studies were made of picknicking, and camping potential in alpine terrain. Extensive topographic mapping also was undertaken in the Cambie Camp-site-Lightning Lake area to guide potential camping layout and help in assessing the value of a proposed dam. Further planning surveys were made at Chasm and Garibaldi Parks.

## ENGINEERING AND DRAUGHTING

The development of lake- and ocean-side parks resulted in the supervision of five contracts for toilet and change-house buildings. In addition, two water systems and two residences were designed and the major share finished by contract. Other projects were the paving of roads and parking-lots by contract in Ivy Green and Manning Parks.

## WILDLIFE MANAGEMENT

Wildlife management continued to provide unusually liberal hunting regulations in Wells Gray Park and to encourage greater use of fish resources in Manning Park. A biologist spent the summer in Tweedsmuir Park carrying out extensive reconnaissance studies. Studies in environmental requirements and the compatability of wildlife with various forms of land use were continued with moose, caribou, and grizzly bear.




The final aspect of planning is the detailed design of a park.

## VANCOUVER ISLAND PARKS

Intensive maintenance programmes were carried out in all parks under direction of the regional supervisor. Visitor use continued to outpace facilities, particularly in the camping aspect. The implementation of new layout plans saw the completion of a thirty-unit camp-site in Little Qualicum Falls Park and over one-half mile of camp-site road-clearing in Englishman River Park. The Langford workshop employed two extra personnel during the summer months and increased the production of tables and fireplaces to 389 and 267 respectively. In addition, over 450 carved signs were made.

## MAINLAND PARKS

*Champion Lakes Park.*—The main access road, 6 miles in length, was completed and gravelled. The 2-mile continuation, leading to a potential campground, beach, and dam-site, was 50 per cent finished. A plan was prepared for a large camp area. The 2 miles of road called for in the plan has been brushed out, giving a total of 3½ miles of road-clearing for the year. A total of 40,000 yards of crushed material was provided for this project by contract.

*Manning Park.*—Four youth crews spent a major part of their time on the growing duties of camp-site maintenance. The jeep-road protection system was extended by a further 5 miles of new construction. Three hundred acres in the big burn were snagged and 30,000 trees planted. Extensive planning and engineering programmes were undertaken for the formulating of plans for greatly increased public park use.

*Mount Seymour Park.*—Maintenance of roads, trails, ski hills, and buildings made up the bulk of the work programme. Two youth crews looked after the picnic-sites and improved a number of trails. A new slalom run was started.

*Okanagan Lake Park.*—With the aim of complete development in a one-year period, an intensified work programme started in May. Rented machinery bolstered Divisional equipment in the impressive projects of building roads, parking-lots, and shaping a steep mountain-side into a series of wide terraces suitable for camp units. In all, 234,700 cubic yards of material was moved. In addition, some 18,000 cubic yards of topsoil was dug up and spread to facilitate the landscaping. Of the 2,700 trees to be used, 300 were planted before fall frosts. An irrigation system will service all the landscaping.

The picnic area provides parking for 385 cars and facilities for 1,500 picknickers adjacent to a fine swimming-beach. The camping area has eighty individual sites, which are expected to accommodate some 400 persons. Boat-launching facilities are provided near by.

Park administration and maintenance will be centred in a residence and basic-service buildings. The residence is now under construction on a contract basis, as are a change-house and four toilet buildings.

*Silver Star Park.*—A further 1½ miles of road was completed, with clearing and grubbing continuing for another mile.

*Tweedsmuir Park.*—A park supervisor and biologist spent the summer in reconnaissance and inventory work in the southern portion of the park. Their recommendations led to a revision of park boundaries.

*Wells Gray Park.*—A total of seventeen fires were recorded, but no more than 15 acres were damaged. The clean-up of slash on the "Cat." trail to Helmcken Falls was let under contract. A youth crew helped in trail maintenance. Two hunter-shelters were erected to aid the moose harvest.

## CHANGES IN PARK LIST, 1955

Boundary amendments were made to nine parks. King George VI Park was reclassified from Class "C" to Class "A," and Mara Recreation Park was cancelled. A total of thirty-eight Class "A" parks were created, the major share being "Land Act" reserves already developed and in use as wayside camp-sites. Some of the more important of the additions are as follows: Rosewall Creek Park, 156 acres; Shuswap Lake Park, 179.5 acres; and Matheson Lake Park, 401 acres.

The boundaries of Tweedsmuir Park were amended to include an additional 124,900 acres. This accounts for the major change in the Class "B" park total.

## PARK LIST, DECEMBER 31ST, 1956

| Classification | Number | Acreage |
|---|---|---|
| Class "A" | 76 | 1,439,368.01 |
| Class "B" | 5 | 6,159,140.00 |
| Class "C" | 30 | 3,808.75 |
| Special Act | 1 | 529,920.00 |
| Totals | 112 | 8,132,236.76 |

## RECREATION LAND RESERVES, DECEMBER 31ST, 1956

| | 1956 | Total |
|---|---|---|
| Areas reserved under the "Land Act" | 31 | 352 |
| Departmental map reserves | 114 | 478 |
| Designated recreational areas within forest reserves | 50 | 194 |
| Totals | 195 | 1,024 |
| Reservations for potential Class "A" parks[1] (included in the above totals) | 4 | 21 |

[1] The greater portion of the reserve acreages created in 1956 falls within this category, namely, 55,006.40. Of the total land reserves, 773,498.31 acres are so classed. The total area placed under reserve in 1956 was 66,545.06 acres. The grand total of recreation land reserves is 823,358.23 acres.

Wide modern roads are necessary for the safety and convenience of growing numbers of park visitors.

## PARK ATTENDANCE, 1956

Park attendance figures are computed on the basis of "park-day" use. Two campers staying in a park for three days are totalled as six "park-days" use.

*Vancouver Island Parks*

| | Day | Overnight | Total |
|---|---|---|---|
| Miracle Beach | 142,220 | 43,020 | 185,240 |
| Little Qualicum Falls | 71,113 | 9,292 | 80,405 |
| Ivy Green— | | | |
| (*a*) Twin Firs[1] | 7,000 | ..... | ..... |
| (*b*) Ivy Green | 52,000 | 5,994 | 64,994 |
| Elk Falls | 94,800 | 6,067 | 100,867 |
| MacMillan | 66,568 | ..... | 66,568 |
| Stamp Falls | 44,981 | 2,184 | 47,165 |
| Englishman River Falls | 59,059 | 2,773 | 61,832 |
| John Dean | 22,950 | ..... | 22,950 |
| McDonald | ..... | 5,209 | 5,209 |
| Cameron Lake[1] | 11,500 | ..... | 11,500 |
| Petroglyph | 2,000 | ..... | 2,000 |
| Totals | 574,191 | 74,539 | 648,730 |

*Lower Mainland Parks*

| | Day | Overnight | Total |
|---|---|---|---|
| Cultus Lake | 127,860 | 28,574 | 156,434 |
| Mount Seymour | 295,136 | ..... | 295,136 |
| Peace Arch | 156,300 | ..... | 156,300 |
| Manning Park[1] | 36,000 | 29,500 | 65,500 |
| Totals | 614,296 | 57,074 | 671,370 |

*District Sites*

| | |
|---|---|
| Kamloops District[1] | 303,000 |
| Nelson District[1] | 106,000 |
| Prince George District[1] | 50,000 |
| Prince Rupert District[1] | 25,000 |
| Total | 484,000 |

*Other Parks*

| | |
|---|---|
| Wells Gray[1] | 4,000 |
| Mount Robson[1] | 40,000 |
| Garibaldi[1] | 18,700 |
| Tweedsmuir[1] | 9,500 |
| All other areas[1] | 31,700 |
| Total | 95,900 |
| Grand total | 1,900,000 |

[1] Estimated.

Park attendance at Vancouver Island parks increased 30 per cent in 1956 without any increase in facilities. Ideal summer weather and an ever-increasing proportion of campers accounted for this growth. Campers were largely from British Columbia points. This group made up 80 per cent, visitors from the United States 15.5 per cent, and from the rest of Canada 4.5 per cent.

At Lower Mainland parks there was a sharp rise in attendance. Increased camping pressure was particularly noticed at Cultus Lake, where there was an increase of 90 per cent over last year. Camping facilities at Manning Park were used heavily during the summer months.

At both Cultus Lake and Manning Parks, parties from British Columbia camping for the first season accounted for 26 per cent of all British Columbia campers. This represents a substantial increase in the number of campers and partly accounts for the heavy use at all camp-sites during the summer of 1956.

## WORKING PLANS

The Working Plans Division is essentially a planning body with only limited administrative functions. The primary purpose of the Division is to study all proposals for sustained-yield forest management and to make recommendations based on a study of these proposals.

Its responsibilities include the review of all forest management licence, farm wood-lot licence, and tree-farm applications. It is directly concerned with the establishment of public working circles.

The award of forest management licences was suspended in 1955, pending receipt of the report of the Royal Commission on Forestry. However, a considerable number of new applications have been received since that time, and the total number on hand now stands at 136. In addition, a number of operators have signified their intent to submit formal applications at a later date.

Although forest management licence applications have been in a state of abeyance during the past year, further gains have been made in bringing the Province's forest lands under sustained-yield management. Fourteen new management units, comprising approximately 11,000,000 acres, were placed in operation. These are referred to simply as sustained-yield units. Cutting ledgers have been established to ensure that these areas will not be overcut. No decision will be made as to the final disposition of these lands during this interim period. In some cases there are forest management licence applications covering areas lying within their boundaries, which cannot be processed until forest management licence policy is clarified.

### SUSTAINED-YIELD UNITS

The following management units, lying within the Prince George, Kamloops, and Nelson Forest Districts, were approved during the year. Cutting-control ledgers have been set up.

| Forest District and Name of Sustained-yield Unit | Productive Area (Acres) | Annual Allowable Cut (M C.F.) |
|---|---|---|
| Prince George Forest District— | | |
| 1. Big Valley | 353,179 | 6,000 |
| 2. Bowron | 376,247 | 8,000 |
| 3. Carp Lake | 1,237,385 | 6,100 |
| 4. Longworth | 149,828 | 2,300 |
| 5. Parsnip | 1,034,333 | 3,500 |
| Kamloops Forest District— | | |
| 1. Big Bar | 1,488,311 | 12,000 |
| 2. Botanie Creek | 462,852 | 4,600 |
| 3. Lac la Hache | 1,413,238 | 12,000 |
| 4. Nicola Lake | 323,963 | 3,900 |
| 5. Stum Lake | 994,430 | 3,000 |
| 6. Taseko River | 2,006,885 | 4,200 |
| 7. Yalakom | 425,515 | 3,000 |
| Nelson Forest District— | | |
| 1. Creston | 568,018 | 6,000 |
| 2. Windermere | 503,073 | 4,500 |
| Totals | 11,337,257 | 79,100 |

The regulation of cut on these areas became a matter of urgency due to the excessive increase of logging and sawmilling activity in some sections of the Province, notably in

the Cariboo region of the Kamloops Forest District. Without some control the forest resource would have been seriously depleted, with the resultant damaging effect to the economy of a number of thriving communities.

Smaller in size, but also important to our forest economy, are the tree-farms and farm wood-lots. Four tree-farms were certified in 1956, bringing the total to nineteen, with a combined forest area of 461,000 acres. All tree-farms certified to date lie within the Vancouver Forest District.

Eight farm wood-lot licences were awarded during the year. There are now thirty-seven such licences in operation. Activity in this field is expected to increase in the Vancouver Island and Lower Mainland areas as a result of the increasing demand for pulpwood supplies.

# PUBLIC RELATIONS AND EDUCATION

As funds available for the Division's work remained, for all practical purposes, unchanged from the previous year, no new project of importance was undertaken. There were, however, expansions in certain phases of the work where additional expenditures could be kept at a minimum.

Senior officers of the Division made a concerted effort to spend more time in the districts than in recent years. It continues to be evident that the Division's work is seriously curtailed by the lack of public relations staff in the various districts. With public contact with the Service becoming more and more frequent and complex, the increasing public relations load on already fully occupied district personnel is now a serious problem and one that should be faced in the near future.

The lack of funds for a forestry and forest-protection campaign in the form of press advertising continued to militate against the effectiveness of the Service's public education campaign.

## PHOTOGRAPHY AND MOTION PICTURES

This Section's activities and production volume were, in general, well above the previous year, particularly in the matter of 16-mm. film production. Over 11,000 feet of motion-picture film was obtained during the summer months, with the main production being concentrated in the Prince Rupert and Prince George Districts, where footage was taken of forest-survey crews, forest-engineering projects, and stand-treatment techniques. Simultaneously, footage was obtained in the southern districts on park developments, youth-crew operations, and forest-protection work. By the end of the year, a 1,000-foot training film entitled " Forest Inventory " had been completed, produced primarily for the use of the Surveys and Inventory Division.

In the still-photography field, a total of 8,479 photographic prints were made; 160 rolls and 123 pieces of cut film were developed; 55 copy negatives were made; 310 negatives were taken by the Section's staff; and 996 new negatives were added to the files. Various other photographic jobs of a specialized nature were carried out.

### Film Library

The public continued to utilize the facilities of the film library, which showed its highest audience total since 1952 and an increase of 30,738 persons over 1955. The 1956 total was 218,275 persons, which includes the attendances at schools serviced by the two Division lecturers. It does not, however, include circulation on prints of five Forest Service productions lodged with British Columbia House in London, England. The library started the year with seventy-one subjects; three were withdrawn during the year and ten new subjects added, making a total of seventy-eight subjects available at the year's end. All subjects were in circulation during the year. (*See* Table 65 of Appendix.) Twelve films were previewed during the year with a view to purchase for inclusion in the library. Seven of these were productions of the United States Department of Agriculture, one of the National Film Board, and four were productions of commercial concerns.

## PUBLICATIONS AND PRINTING

The Annual Report of the Service for 1955 was edited, synopsized, printing supervised, and distributed. The production of the 1957 annual Forest Service calendar entailed a run of 26,790 copies, the largest volume on record for this item. A fourth booklet, " The Principal Commercial Trees of British Columbia," was added to the popular Illustrated Forest Activities series and two of the previous issues of the series were reprinted during the year.

A new development in publications saw the production of two school-scribbler designs during the year (10,000 copies of each were printed) featuring coloured covers—one of forest protection and the other of forest management—with a descriptive story printed inside. These were designed to be distributed direct to local schools by the Ranger staff.

Publication service to other divisions included the editing, supervision of printing, and distribution of one technical bulletin, two research notes, three protection bulletins, two special Parks and Recreation Division pamphlets, one radio-telephone operators' manual, and "Forestry in B.C.," the submission of this Service to the Seventh British Commonwealth Forestry Conference to be held in Australia and New Zealand in 1957. In addition, eight publications were reprinted with or without revision, and 120,000 blotters (10,000 each of twelve different designs) for school distribution were reprinted, along with display posters and protection decal transfers.

## RADIO AND TELEVISION

All commercial radio stations throughout the Province were again utilized for informing the public on forestry matters. This consisted of thirty-two flash and sixteen spot announcements over an eight-week period. The experiment tried last year for the first time, when local citizens were used to record these flashes in the Kamloops and Nelson Districts, was expanded to take in all districts. Indications again are that the introduction of local voices adds considerably to the impact of the messages.

Various television outlets throughout Canada showed interest in using our film productions for transmission. Both British Columbia's television stations—namely, CBUT, Vancouver, and CHEK-TV, Victoria—ran Forest Service films during the year.

All radio stations continued to show a high interest in forestry matters and contributed a generous amount of free time to this end. Television was also most co-operative, and as this medium expands additional public service ventures may be expected.

## COMMERCIAL THEATRES

A revised edition of the 35-mm. forest-protection trailer used in 1955 was circulated through both the Odeon and Paramount theatre chains in the Province. The trailer was shown for one week in each of seventy-five theatres during July and August to a total estimated audience of 800,000.

## PRESS LIAISON

In addition to the usual volume of press releases and special articles prepared for the daily and weekly press and trade journals, two visits by members of the press to Forest Service operations in the Prince George District were carried out with satisfactory results. A Division officer accompanied the press representatives, and it is felt that this pattern should be followed and the number of such trips increased in the future.

## ROADWAY AND ROADSIDE SIGNS

The placement and repainting of the "Keep B.C. Green—Use Your Ashtray" signs on the paved main highways of the Province was continued. Through the Southern Mainland and on Vancouver Island, 144 signs at locations previously established were repainted by the special crew and 31 signs were laid during the summer at new sites, to bring the total number throughout the Province to 175. The cost per sign amounted to $34.33.

The Scotchlite "Prevent Forest Fires" sign continued to be in popular demand from the districts. During the spring of the year twenty-five of these units were supplied to the field. One standard Ranger station sign was supplied to the Smithers Station, which

brings the total Ranger units with these distinctive markers to sixty-seven. Numerous requests for the smaller directional Scotchlite signs were filled during the year.

Plans and specifications were completed for a new series of district boundary signs and fire-hazard rating signs, but production had to be postponed due to a shortage of funds and an overload of work at the Forest Service Marine Station.

## EXHIBITS

The permanent Service exhibit in the British Columbia Building, Pacific National Exhibition, Vancouver, featured a model camp-site unit in addition to the model protection lookout featured last year. A special pamphlet, "Let's Go Camping," was distributed along with other Service literature. The exhibit was staffed by Division personnel each day during the two weeks of the exhibition.

Some financial assistance was given to district displays throughout the Province. It is felt more should be done to support these efforts on the Ranger level as the local effect can be most beneficial.

## LIBRARY

Progress was made this year in setting up district libraries. During the summer the librarian visited the Prince Rupert District office, where excellent facilities were provided to house the publications on hand. About 300 items were catalogued and shelved, a card index provided, and a clerk trained to take care of the library routine. In October a visit was made to the Nelson District office. Again, ample room was made available for the shelving of library material. Through the co-operation of the Nelson District Forester and the Forester in Charge of the Research Division, the part-time services of the District Research Officer have been made available for the supervision of the library which is set up in his own office. District office clerks handle the necessary typing and filing. This arrangement appears to be a good basis for efficient management of the library. Additional text-books, magazines, and Experiment Station publications have been ordered. Nelson District thus becomes independent of the Victoria library resources, except for specialized requests and occasional supervision from the Victoria librarian.

A start was made on classifying the numerous publications held in the Working Plans Division, including a separate collection maintained in the Farm Wood-lots Section. This work was suspended until the Division obtains sufficient room to shelve all its publications together.

In spite of the gradual decentralization of library service, borrowings continued at a high level in the Victoria library. At the present time 275 monthly accession lists are distributed throughout the Province. There has been a significant increase in the use of these lists by Ranger staff. A clerk in the continuing casual category was added to the library staff early in the year, and the staff of three have been fully occupied, absence of the librarian on field-trips necessitating some redistribution of the work load.

A complete overhaul of the main catalogue was begun toward the end of the year, and several months' work remains to be done on this project. In order to improve foreign-language representation in library stocks, exchange of publications has been requested with German forestry institutions, and subscriptions obtained for two German periodicals. The Russian forestry delegation which visited British Columbia during the year was also approached on the subject of publication exchanges, and the suggestion was favourably received. The librarian complied with a request from the librarian of the Alice Holt Research Station in England to provide information on early forestry books. It was found that the Forest Service is the owner or custodian of seven such volumes, the first published in 1636, the last in 1836.

## CO-OPERATION

The Division continued its lecture programme throughout the public schools of the Province with the co-operation of the Department of Education and the Canadian Forestry Association. The two lecturers from the Division gave 468 programmes, in 271 schools, to a total school audience of pupils and teachers of 73,693, an increase of 17,000 over the previous year. The lecturers also put on ten non-school showings to an additional audience of 1,662 persons.

The demand for literature from schools both in British Columbia and elsewhere throughout the world reached a new high during the year. In many cases our stocks of publications proved inadequate. Also, in order to meet the demand, suitable publications from outside sources were often included in the material distributed from the Division.

Senior members of the Division delivered addresses to a wide variety of audiences interested in forestry and participated in panel discussions on the subject. An apparent increase in interest in forestry as a career resulted in much greater demand for speakers on that subject at the vocational guidance conferences staged by the high schools.

# FOREST MANAGEMENT

## GENERAL

The total estimated value of all products for the year amounted to $628,586,963. This represents a decrease of only $3,112,599 under that of 1955, which was the record year. The value of lumber was less, due to unit values being lower by approximately $2 per M f.b.m. than the previous year. On the other hand, increases were shown in pulp and paper, plywood, and poles and piling production. Noteworthy is the drop in lumber being used for the manufacture of boxes due to paper cartons replacing the wooden boxes. The industry on the whole had a good year, but during the latter part, what with credit restrictions, higher freight rates, and dwindling markets, there were definite signs of more difficult times ahead.

Water-borne shipments for 1956 were 989,664 M f.b.m. This was a loss of 423,396 M f.b.m., a continuation of the trend which started in 1955, and was the greatest single decrease in any one year. The greatest loss was in the United Kingdom and Continental market, which dropped from 611,451 M f.b.m. in 1955 to 320,293 M f.b.m. in 1956.

The total log exports amounted to 47,010,513 board-feet, which was well below the ten-year average of 113,922,513 board-feet. Of the total, 41,595,347 board-feet came from old Crown grants carrying export privileges, leaving 5,414,879 board-feet from other areas exported under permit. The value of minor products marketed outside the Province amounted to $8,501,409.

The total cut for the Province amounted to 1,068,733,441 cubic feet. This is an increase of 34,753,708 cubic feet over the previous year and is the highest cut recorded to date in any one year. For the second year in a row all forest districts except Vancouver participated in the increased cut. The latter district suffered a loss of 15,526,356 cubic feet. Regionally, the total cut for the Province is broken down in Table 6B, and it will be noted that the cut for the Interior of the Province is steadily increasing and now stands at 38 per cent of the total.

On the basis of forest tenures, 792,049,715 cubic feet or 74 per cent originated from Crown lands, and of this total 519,769,436 cubic feet or 66 per cent originated from timber sales, as compared with 73 per cent and 62 per cent during 1955. Old Crown grants accounted for 169,526,965 cubic feet.

Of the 1,068,733,441 cubic feet, Douglas fir maintained its leading position with 413,313,593 cubic feet or 39 per cent of the total. Other important species in order of output were 213,655,797 cubic feet or 20 per cent hemlock, 152,169,071 cubic feet or 14 per cent spruce, 145,738,047 cubic feet or 14 per cent cedar, as compared with 20, 13, and 15 per cent respectively during 1955. Noteworthy is the fact that spruce is now ahead of cedar, due to the increased cut of this species in the Prince George Forest District.

Timber sales to the number of 3,089 were cruised, covering an area of 1,095,150 acres and an approximate volume of 1,273,970,000 cubic feet. This represents a decrease of 265 in number but an increase of 17,165 acres and 142,449,000 cubic feet in volume. Next to 1952 this was the highest volume cruised in one year.

The actual volume and value of timber sold for cutting under timber-sale contract soared to an unprecedented level in 1956. The number of timber sales awarded was 2,859, and the total volume included in these sales was 800,000,000 cubic feet, an increase of 5 per cent over the 1955 record, and approximately four times the volume sold in 1949. The total stumpage value of this timber was $56,000,000 or just about ten times the 1949 value of sales. These figures do not include the value of timber cut from twenty-three existing forest management licences.

At the end of the year there were 8,738 timber sales in existence, as compared with 8,371 at the end of 1955. The total area held under timber sale is 3,218,820 acres, and money held as guarantee deposits amounted to $14,008,994.30.

## MARKET PRICES AND STUMPAGE TRENDS

### Lumber Prices

Lumber-price figures are voluntarily supplied to the Forest Service by lumber-shippers in the Interior of the Province. From these figures the Forest Service compiles the average net prices received for dressed lumber f.o.b. railway car. For this purpose the Interior is divided into six zones, for which separate prices are compiled. The resultant averages over three-month periods are used in calculating the stumpage value of standing timber being sold and in adjusting stumpage rates on a large number of timber-sale contracts under a sliding-scale stumpage formula.

These lumber-price records indicate that the high demand experienced in the latter part of 1955 continued through the first half of 1956 and, as a result, average prices received for spruce and Douglas fir lumber rose to the highest point since the brief high-demand period in the spring of 1951. However, in the middle of the summer, demand for lumber products declined as a result of a curtailment of housing construction in the United States and Eastern Canada. The situation was aggravated by new railway regulations in the United States requiring specified routing of transit shipments, which temporarily resulted in some sales of carloads in transit at distress prices. This marked the beginning of a decline in prices.

By fall Douglas fir prices had dropped about $10 per thousand board-feet below their summer peak, but optimism concerning the 1957 business outlook temporarily stabilized prices at that level, which was about $5 below that of the previous fall. Spruce prices followed a similar pattern, though the price changes were considerably smaller.

### Log Prices

Log prices remained at a high level on the Lower Coast throughout 1956. Log inventories were generally slightly below normal, and this resulted in a firm demand, with prices increasing gradually during the first part of the year. But in the later months there was a small drop in prices, reflecting the reduction in lumber prices in the United States as well as the effect of the international situation on lumber purchases by the United Kingdom.

### Stumpage Prices

Before timber is advertised for sale, the stumpage value is appraised by the Forest Service. This appraised price constitutes a fair value for the timber at the time, and the timber is offered for sale at this price. But, in order to ensure that everyone has an equal opportunity to purchase the timber, it is disposed of to the highest bidder by public competition. The form of competition may be either sealed bids or public auction. In 1956, 75 per cent of the timber sold under timber sales was disposed of at the appraised prices.

The two factors which have the greatest influence on the appraisal of the value of the timber are the anticipated costs of extraction and the value of the products. The sale value of the products must cover all extraction and processing costs, including stumpage, and a reasonable profit. Therefore, it follows that, after provision has been made for anticipated costs and a reasonable profit, the remaining portion of the sale value is the indicated or appraised stumpage value. For this purpose, the stumpage value of each particular tract of timber being sold is appraised on its individual merits.

With this system of appraisal a small change in the selling price of the product has a substantial effect on the stumpage value; stumpage prices follow the trends in log and

lumber realization prices. Appraised stumpage prices, therefore, rose considerably in the early part of 1956, following the upsurge in log and lumber prices, but at the close of the year had begun to decline. Due to the time required to collect and compile the three-month average lumber-price data and the statutory requirements in terms of advertising timber for sale, fluctuations in appraised stumpage prices tend to lag behind market conditions by three or four months.

Over the years it has been observed that there is a definite annual cycle or seasonal fluctuation in lumber prices which is distinct from changes in market conditions from time to time. During the past year a method has been determined to correct the average prices so that the effect of this seasonal fluctuation will be eliminated. Prior to the introduction of these corrections, appraised stumpage prices tended to vary at different times of the year even though actual market prices over a full twelve-month period remain constant.

Average of stumpage prices bid for all species on timber sales in the Province during 1956 was $6.87 per hundred cubic feet, in comparison with $5.07 for 1955. The weighted average for the Coast was $7.50 and for the Interior $6.51. Further details of average stumpage prices bid and paid are given in Tables 21 and 22 of this Report.

### Time Studies

In order to make equitable appraisals of the stumpage value of various tracts of timber, with due regard for the relative costs and difficulties likely to be encountered in logging, it is necessary for the appraisers to have information concerning the effect various factors may have on operating costs. To gain information on the many varied phases of logging, a party of three men has been engaged in the Northern Interior to carry out production time studies. Studies of felling and skidding were carried out at eleven operations in 1955 and at seven operations in 1956.

## ADMINISTRATION OF MANAGED UNITS

The twenty-three forest management licences awarded to date were operating under regulation, with 109 cutting permits being issued, and this resulted in a cut of about 104,000,000 cubic feet.

No new public working circles were established. However, in order to limit the alienation by timber sales in certain areas to the annual yield, it was necessary to bring in temporary control measures. Fourteen areas in the Interior were set up as sustained-yield units, and an annual allowable cut was approved for each. During 1956 the annual allowable cut was fully committed in 75 per cent of the established publicly managed units. The cut from timber sales within the approved public working circles and sustained-yield units amounted to about 188,455,411 cubic feet in 1956.

## SILVICULTURE VOTE

The programme implemented during 1956 through moneys from the Silviculture Vote included stand treatment, silvicultural studies, planning in working circles, slash-disposal projects, road location in working circles, and co-operative studies with the Forest Pathology Unit, Science Service, Canada Department of Agriculture. The following is a summary of work accomplished in the four Interior forest districts—Prince Rupert, Prince George, Kamloops, and Nelson.

The main effort during the year has been centred on stand treatment. In the four districts a total of 363 sales were treated, involving 78,500 acres. Considerable improvement has been effected in the actual techniques of individual tree selection as a result of a systematized training programme. There has also been a considerable improvement in the various types of equipment used by the stand-treatment crews, which has, in turn, been

reflected by an improvement in work performance. Particularly noteworthy in this regard are the new four-man crew-trailers.

All of the Interior districts continued to make progress in the field of planning in public working circles, and crews were actively engaged in timber-sale layout work.

Slash-disposal by silviculture crews was confined to the Kamloops Forest District, where some 528 acres were treated, in addition to 30 miles of old road either repaired or rebuilt.

As in the past, a free exchange of information concerning insect outbreaks was carried on between the Forest Service and the Forest Zoology Unit, Science Service, Canada Department of Agriculture.

# GRAZING DIVISION

## INTRODUCTION

The range-livestock industry of this Province has experienced periods of both prosperity and adversity during the nearly 100 years of its existence. The forces of nature itself have both smiled and frowned upon the efforts of the rancher. Markets have waxed and waned, first with the flow and ebb of such local activities as the gold-rush and railway construction, and, later, as transportation facilities developed, according to more general economic conditions. In view of the wave of prosperity now being enjoyed, it is ironical that the industry is experiencing one of its most difficult times as a result of drastically reduced returns to the stockman, combined with spiralling costs.

However, in prosperity or adversity, and in spite of many technological developments, the foundation of the industry is still the range, as it was in the beginning. Skilful management of this resource, to secure maximum forage production, is vital to the industry at all times.

Administration of the Crown range, over 80 per cent of which is forested, has been the responsibility of the Forest Service for the past thirty-eight years. The performance of the wide variety of activities necessary to discharge this duty in 1956 are outlined herein.

## ADMINISTRATION

Range-administration duties continued to increase during 1956. The demand for range forage was higher than at any time in history. Not only were more permits issued, but each application required more careful consideration as the ranges became stocked to capacity. Correlation of the increased grazing use with other forest-land uses, which also increased, became more difficult.

In the Peace River area, live-stock numbers have increased to the point where regulation and control of the Crown range is now necessary. Preliminary steps were taken toward commencing the administration of the " Grazing Act " and regulations on selected ranges in this area. Also, increased attention was given to ranges in the vicinity of Quesnel.

Efforts were continued during the year to reduce further the conflict between logging and grazing on forest ranges. Considerable progress was made, and it now appears that these two forest-land uses are fairly well co-ordinated. Clauses are inserted in timber-sale contracts which are designed to protect grazing interests and range improvements and, in addition, a much higher degree of understanding and co-operation is developing between the logger and the rancher.

To cope with the increased administrative load, an additional agrologist was added to the Grazing Division staff and a general reallocation of duties was made. District office procedures and forms were also revised in an effort to keep up with the work. However, there is still a great need for more range supervision at the local level. The multitude of duties the Ranger is called upon to perform make it impossible for him to give adequate attention to range matters.

### Grazing and Hay Permits

Annual grazing permits are issued to resident stock-owners whose ranch properties are dependent on use of the Crown range. In 1956, 1,776 permits were issued, an increase over the 1955 total, and a new high. The number of stock climbed over 1955's all-time high, a total of 127,182 cattle, 3,667 horses, and 22,310 sheep and goats being grazed on Crown ranges under permit. As nearly all of the open grassland ranges are, and have been, stocked to capacity in the past, this increase represents greater use of the timbered range land. For the second year, sheep numbers were down slightly.

The tabulation on page 149 shows a breakdown of the above figures by forest districts, and a comparison with those for the past ten years.

A total of 204 hay-cutting permits were issued, authorizing the cutting of 2,324 tons of meadow-hay and 38 tons of rushes. This was an increase in tonnage cut over 1955, and was due to a favorable haying season. However, the tendency is now for the rancher to develop tame-hay lands rather than to depend upon intermittent use of such unreliable sources of winter feed as wild-hay meadows.

### Grazing and Hay-cutting Fees

Grazing fees are on a sliding scale, related to live-stock prices. Rates in 1956 were down approximately 8 per cent from those of 1955, and reflect the lower prices received by producers in that year. The fees per head per month for 1956 were 12 cents for cattle, 2¾ cents for sheep, and 15 cents for horses. Hay-cutting fees, which are not on a sliding scale, remained at $1 per ton for wild hay, and 70 cents per ton for rushes cut for mulching.

Total billings for grazing and hay-cutting fees remained approximately the same as in 1955, in spite of lower rates. This was due to the greater number of stock under permit. Grazing-fee collections were excellent, particularly in view of the poor economic situation in the industry. Recourse to Court action to collect fees was necessary in only a few cases. At the end of the year, outstanding grazing fees were lower than at the end of 1955.

A summary of fees billed and collected for the past ten years may be found on page 149 of this Report.

### Live-stock Counts

During the year, live-stock counts were carried out in several areas to ensure that stock turned on the range did not exceed permitted numbers. This is time-consuming work but is necessary as a check, particularly where permit numbers are restricted owing to crowded range conditions.

### Trespass

In general, excellent co-operation is received from permittees in complying with grazing-permit conditions and grazing regulations. However, violations do occur and, in fairness to the majority and to protect the Crown range, such violations must be corrected.

A number of trespass cases occurred during the year. For the most part, these were corrected promptly when brought to the attention of the owners of the stock concerned. However, it was necessary to lay two charges under the trespass regulations. One of these was successfully prosecuted, and the second is still pending at the end of the year. In two other cases it was necessary to seize stock grazing in trespass under the provisions of section 17 of the "Grazing Act." This is the first time that it has been necessary to use this legislation.

## RANGE MANAGEMENT

Careful management is necessary to secure maximum sustained forage returns from the range without jeopardy to other land uses. To this end, management plans are worked out for each range unit in co-operation with the range-users, and the necessary conditions to implement these plans are incorporated in grazing permits. Management plans are amended from time to time, according to the requirements of the range.

## Range Surveys

An accurate inventory is a prerequisite of good range management. To determine the extent and quality of the Crown range, primary grazing surveys are carried out each year. In 1956 the following areas were surveyed:—

| | Acres |
|---|---|
| Big Lake Stock Range | 233,000 |
| Jamieson Creek Stock Range (part) | 78,720 |
| Okanagan Falls Stock Range (part) | 135,000 |
| Tranquille Stock Range (part) | 182,400 |
| Upper Kootenay Stock Range (part) | 33,641 |
| Windermere Stock Range (completion) | 120,000 |
| Total | 782,761 |

This brings the total area covered by range surveys, from 1945 to 1956, inclusive, to 7,673,171 acres.

The 1956 programme required 227 man-days of field work, and approximately twice this amount of time will be necessary to work up the maps and develop suitable management programmes for each of the ranges covered. In addition to the above surveys, a number of extensive reconnaissances were also carried out, particularly in the Prince George District. Also, a considerable number of range inspections were made to determine the effectiveness of existing range-management plans.

## Range-readiness Studies

Premature grazing is one of the most damaging factors to the range. It is, therefore, essential to determine as accurately as possible when ranges are properly ready for grazing use. Studies to this end were continued during 1956 on a number of permanent plots. As information becomes available, any adjustments necessary in approved turnout dates can be made.

## Range Improvements

Practically all Crown ranges require improvements of one form or another before they may be properly managed. Necessary improvements are paid for from the Range Improvement Fund, set up under the provisions of section 14 of the "Grazing Act." During 1956, $35,000.97 was spent from the Fund on range-improvement work, as follows:—

| | |
|---|---|
| Three stock-bridges | $548.33 |
| Eleven cattle-guards | 3,756.33 |
| Nineteen drift-fences | 3,772.11 |
| Two experimental plots | 170.15 |
| One hazard-removal | 200.00 |
| One holding-ground | 152.88 |
| One meadow improvement | 75.00 |
| Four mudhole-fences | 814.41 |
| Thirty-eight range-seedings | 3,434.57 |
| Twenty-four stock-trails | 6,245.48 |
| Seven water developments | 688.00 |
| One weed-control | 85.00 |
| Wild-horse disposal | 2,382.41 |
| Machinery and equipment (purchase) | 146.19 |
| Maintenance and operation of equipment | 993.06 |
| Materials purchased but not assigned to projects | 63.01 |
| Supervision, surveys and technical studies | 11,484.04 |

In addition to the above projects, authority was extended to stockmen to construct, at their own expense, the following improvements: Two breeding-pastures, three corrals, seven drift-fences, one grazing-enclosure, two horse-pastures, one stock-trail, and one water development.

In accordance with usual practice, most of the projects listed were constructed under contract by live-stock associations or individual ranchers. In some cases, full costs were charged to the Range Improvement Fund, while in others, costs were shared by the benefiting stockmen. Some work was also done by stand-by fire-suppression crews during non-hazardous periods, at no cost to the Range Improvement Fund.

As has been the case in the last several years, considerably more work was planned for 1956 than could be completed. This was due largely to the difficulty experienced by stockmen in obtaining labour.

Increased range-seeding was a major feature of the 1956 range-improvement programme, practically twice as much seeding being done as in 1955. Most of the seeding done was on logged-over or otherwise disturbed forest land. Excellent results have been obtained from this type of seeding, and forage values have been materially increased on a number of ranges. The above-noted cost covers the purchase price of seed only. All of the labour necessary to apply the seed was supplied by co-operating stockmen and Grazing Division personnel. Preliminary surveys and site selection, supervision, and necessary continuing studies were carried out by Grazing personnel, with costs being included under the general heading for this item.

The weed-control project, noted above, is a continuation of the goatweed (*Hypericum perforatum*) control project reported on in previous years, along with a minor amount of work on Dalmatian toadflax and leafy spurge. Chemical control work on goatweed was limited to the use of 2,4-D on infestations considered particularly dangerous as a source of further infection. Biological control studies on goatweed were continued by the Forest Zoology Unit, Science Service, Canada Department of Agriculture, with the Forest Service co-operating. Although the *Chrysolina* spp. beetles being used in this study continue to show some increase in numbers, they are still not proving a successful control agent in this Province. Several new beetle releases were made with beetles collected from earlier plantings.

During the winter of 1955–56 all of the Kamloops and Nelson Grazing Districts were closed to horses. Wild, useless, and unwanted horses remaining on the Crown range during the closed periods were disposed of by rounding up and shipment for slaughter wherever possible. Shooting was confined to those situations where round-up and shipment was not practical. A total of seventy-seven horse-disposal licences were issued. Horses cleared for shipment numbered 283, and 163 were shot on the range. A bounty, or subsidy, of $5 on mares and geldings and $7.50 on stallions is offered on horses shot or rounded up and shipped for slaughter. The cost of this work, noted earlier in this Report, includes only the bounties and subsidies claimed, the cost of supervising the programme being included under the general heading for this item.

## Plant Collections

Additional specimens were added to the plant collections in the Kamloops and Nelson offices during the year. These collections are a valuable aid in plant indentification. A guide-book to the important range plants found in the Kamloops and Nelson Districts, which has been in use for some time, was revised.

## Range Research

All basic range research in this Province is carried out by the Canada Range Experiment Station at Kamloops. Considerable assistance was obtained from this station during the year in dealing with various range-management problems. During the year the station

commenced carrying-capacity studies on certain range types, which will, in time, yield extremely valuable information applicable to the Crown range.

## CO-OPERATION

There are now forty-nine local range-livestock associations approved under the " Grazing Act " and regulations. Preliminary steps have been taken toward the approval of three additional groups, two of which are in the Peace River area, and only minor details remain to be concluded at the year's end. The two parent organizations, the British Columbia Beef Cattle Growers' Association and the British Columbia Sheep Breeders' Association, and the several intermediate organizations remained active. Close contact was maintained with all of these associations, and the spirit of co-operation displayed during the year was helpful in dealing with a wide variety of local and industry-wide problems. Of a total of 136 association meetings reported, 118 were attended by Forest Officers.

Close contact was maintained with various other agencies, amongst which were the Range Experiment Station at Kamloops in connection with numerous technical problems, the Game Commission regarding game-livestock relationships on the range, and the Live Stock Branch of the Department of Agriculture in connection with live-stock management and disease problems. Indian Superintendents were helpful in dealing with the problem of regulating Crown-range use by Indians.

Grazing personnel assisted in organizing and participated in the annual meeting of the Pacific Northwest Section of the American Society of Range Management held at Penticton in November. This international meeting was well attended by range technicians and ranchers from both sides of the border.

## GENERAL CONDITIONS

As a result of severe weather conditions during the previous winter and a continuing decline in cattle prices, 1956 was a difficult year for the range-livestock producer.

As indicated in our Report for 1955, the winter of 1955–56 commenced unusually early and with extreme severity early in November. Winter feeding was required almost immediately. Spring break-up did not occur until the usual time in 1956, thus resulting in an extremely long feeding period. Hay was in short supply and, in spite of a considerable amount of supplementary feeding, stock were in generally poor condition at time of turnout. Further, the sudden and early onset of severe weather conditions killed or weakened many of the native forage plants, a very unusual situation. Many exposed spring ranges did not yield their normal harvest of forage on this account. As a result of the shortage of hay, there was a strong demand that stock be turned out before the ranges were properly ready for use.

In general, spring ranges were ready for use at the normal time. Unusually warm and dry weather during April and May resulted in early and rapid growth on early ranges, but the yield was somewhat reduced due to a lack of moisture. Forested ranges were not adversely affected by the early drought conditions, and wet weather during June resulted in a lush growth of forage on the summer ranges. Dry conditions during the latter part of the summer did not adversely affect forest-range production.

Although severe winter weather also caused considerable damage to cultivated hay lands, hay yields were generally fair. Dry summer weather resulted in excellent haying conditions, and the crop was generally of high quality.

Weather conditions during the fall of 1956 were favourable, with only the more northerly areas experiencing appreciable quantities of snow before December. Fall grazing conditions were, therefore, good and winter feeding commenced at about the normal time.

Stock, which came out of the previous winter in poor condition, in many cases took until mid-July to regain condition. However, the excellent forage conditions prevailing on summer ranges resulted in stock coming off the range in fair condition.

Grasshoppers were not a problem on the range in 1956. Such outbreaks as did occur were controlled by the use of insecticides by the grasshopper-control zones.

Farm and ranch labour was extremely difficult to acquire. This resulted from the competition of expanding industrialization in the Interior. Ranchers met the problem by increasing mechanization wherever possible. However, many ranches cannot be properly maintained under the present difficult conditions, and the rancher is not able to give sufficient attention to range and live-stock management. The problem is further intensified by the fact that declining cattle prices and rising costs are forcing many small operators to seek supplementary employment in order to make a living. The labour input into ranch and range management is further reduced thereby.

As a result of difficult economic conditions in the industry, many small ranches are being amalgamated to form larger units. A few small marginal ranches have been abandoned.

### Markets and Prices

Cattle shipments were extremely heavy in 1956, being up approximately 26 per cent over the previous two years. Cattle prices showed a further decline and are now considerably less than half of what they were in 1951. The heavy cattle shipments were due partly to the necessity of reducing inventories, which had been increasing during the last two years and, in many cases, owing to the necessity of meeting outstanding obligations.

The British Columbia market continued to show a preference for grain-finished beef. Owing to limited grain production in British Columbia, it is difficult for local ranchers to compete with beef produced on the Prairies, where a grain surplus exists.

Lamb prices declined only slightly in 1956, and sheep and lamb shipments were a little higher than in the previous year. Wool prices advanced to a small extent.

### Live-stock Losses

Losses of stock on the range appeared to be about normal during the year, although bears were particularly troublesome. Many reports of killings and damage by bears were received. Theft of stock on the range continued to be a problem, but appears to be kept within reasonable bounds through the vigilance of the ranchers and the police.

### Diseases of Live Stock

There were no serious new outbreaks of disease necessitating extensive adjustments in range allocation or management plans. However, it was necessary to continue to make provision for a few herds to be grazed under quarantine conditions.

# ENGINEERING SERVICES

## ENGINEERING SECTION

Engineering works were carried out on the Crown lands throughout all forest districts, primarily within public working circles. These included 92 miles of route reconnaissance, 62 miles of road location, 30 miles of new road construction, and general maintenance work on roads previously constructed under the forest-development roads programme. The following table shows the work accomplished to date under this programme:—

*Forest-development Road Programme in Public Working Circles, 1950–56*

| Provincial Forest or Public Working Circle | Forest District | Class of Road | Reconnaissance | Location Survey | Constructed |
|---|---|---|---|---|---|
| | | | Miles | Miles | Miles |
| Salmon Arm | Kamloops | 5 | 23 | 21.2 | 10.1 |
| Niskonlith | Kamloops | 3 | 17 | 12.1 | 12.1 |
| | | 4 | 10 | 8.9 | ..... |
| | | 5 | 4 | 3.9 | ..... |
| Naver | Fort George | 2 | 29 | 29.0 | 24.0 |
| | | 3 | 8 | 7.5 | 9.5 |
| | | 4 | 15 | 14.9 | ..... |
| Morice | Prince Rupert | 2 | 26 | 26.0 | 26.0 |
| | | 3 | 16 | 16.0 | ..... |
| | | 5 | 5 | 3.9 | ..... |
| | | 6 | 8 | 5.0 | ..... |
| Babine | Prince Rupert | 3 | 12 | ..... | ..... |
| Willow | Fort George | 2 | 29 | 22.8 | 12.8 |
| | | 3 | 22 | 18.9 | ..... |
| | | 4 | 15 | 6.4 | ..... |
| | | 5 | 5 | ..... | ..... |
| Upper Kootenay | Nelson | 3 | 14 | 14.0 | 11.0 |
| | | 4 | 21 | 7.0 | ..... |
| | | 5 | 20 | 16.0 | ..... |
| Purdon | Fort George | 4 | 25 | ..... | ..... |
| Cottonwood | Fort George | 3 | 20 | 10.4 | 4.0 |
| Barkley Sound | Vancouver | 5 | 7 | ..... | ..... |
| Chilliwack | Vancouver | 3 | 25 | 18.0 | ..... |
| | | 5 | 20 | ..... | ..... |
| North Thompson | Kamloops | 4 | 13 | ..... | ..... |
| | | 5 | 10 | ..... | ..... |
| Similkameen | Kamloops | 5 | 20 | 8.1 | ..... |
| Totals | | | 439 | 270.0 | 109.5 |

### ROAD RECONNAISSANCE

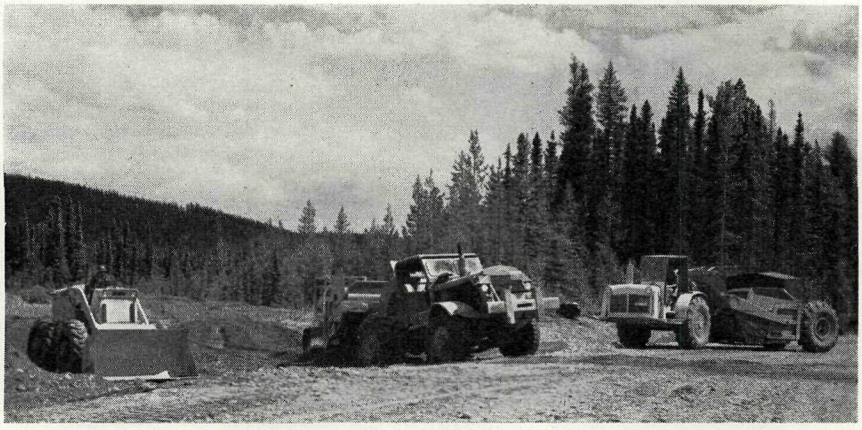
Feasible routes for access roads into eight stands of timber having a volume of 180,000,000 cubic feet and covering an area 167,000 acres in extent were established as the result of field examination. In the Vancouver Forest District, reconnaissance was completed on roads required adjacent to Clowham Lake and through the Soo River valley. Five surveys were completed in the Nelson District, namely, Quartz Creek, Line Creek, Monument Creek, Goat River, and Stirling Creek. A road was reconnoitred in the Kwoiek Creek valley of the Kamloops District.

### ROAD LOCATION

During the year, roads were located and designed for the following public working circles and sustained-yield units:—

(1) Willow River—13.6 miles of main and secondary roads. The main road system, which will service approximately 150,000 acres, has now been located for 43 miles.

(2) Cottonwood—10.4 miles of the Swift River Forest Development Road. This is a start on the 50 miles required.
(3) Chilliwack—20 miles of high-standard road designed for recreational and logging traffic was located along the Chilliwack River.
(4) Morice—8.7 miles of secondary road.
(5) Similkameen—8 miles of the Lawless Creek Road.
(6) Adams Lake—2 miles of the Finn Creek Forest Development Road.



Heavy machinery employed in construction of Stone Creek forest-development road.

## Road Construction and Maintenance

Operating conditions were generally favourable throughout the summer months, and the following projects progressed very satisfactorily:—

1. *Morice Public Working Circle.*—The Service's own forces constructed the Morice Forest Development Road from Mile 17 to Mile 26. This work involved clearing 120 acres of right-of-way, excavating approximately 200,000 cubic yards of common material, excavating 2,200 cubic yards of solid rock, placing 50,000 tons of surfacing, and installing 1,900 lineal feet of wood-stave culvert.

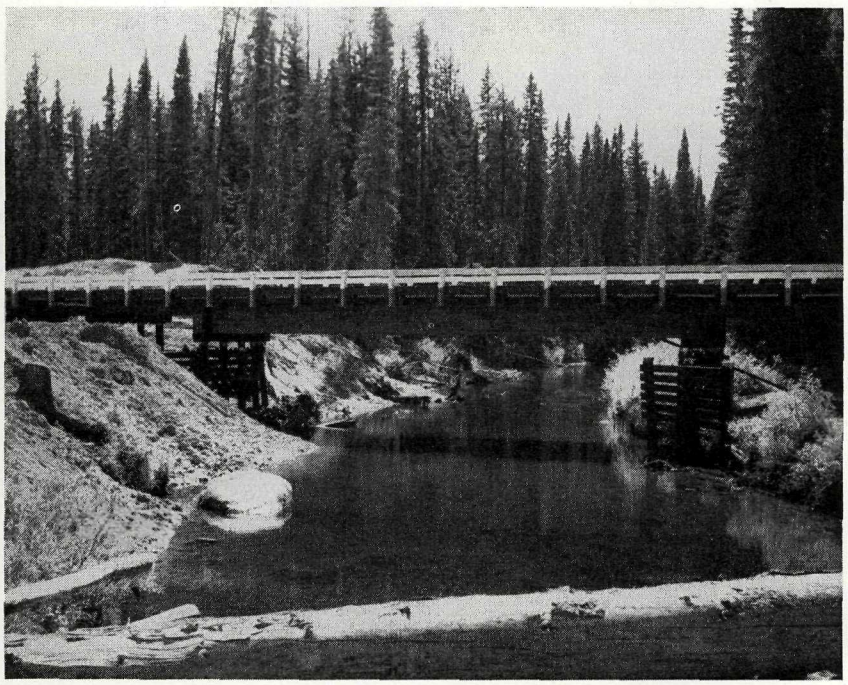
2. *Willow River Public Working Circle.*—(*a*) The Service's own forces completed the 12.8 miles of high-speed road to the Willow River. This construction involved excavating 120,000 cubic yards of common material, excavating 1,000 cubic yards of solid rock, placing 45,000 tons of surfacing material, and installing 1,100 lineal feet of culvert pipe.

(*b*) Forest Development Road Contract No. 4 was let for construction of 10.3 miles of main road southerly along the west bank of the Willow River. The contractor has cleared 60 acres and partially cleared the remainder of the right-of-way. Limited grading between Mile 12.8 and Mile 15.5 required the excavation of 9,000 cubic yards of common material and 1,300 cubic yards of solid rock.

3. *Cottonwood Public Working Circle.*—Operations began in July with the award of a number of hand-clearing contracts. By the end of the year, clearing had been completed on 64 acres from Mile 0 to Mile 6. Grading equipment of the Service's own forces was moved on to this project in September, and grade construction proceeded from Mile 0 to Mile 4. Grading required excavating 97,000 cubic yards of common material, placing 6,000 tons of gravel, and installing 800 lineal feet of culvert pipe.

4. *Naver Public Working Circle.*—(*a*) Road construction by the contractor continued from Mile 12.2 to Mile 20. During the year, right-of-way clearing and 5 miles of

Logging and road construction on Willow River forest-development road.



Bridge over the Naver River on a forest-development road.

subgrade were completed. This work involved clearing 43 acres, excavating 140,000 cubic yards of common material, removing 1,000 cubic yards of solid rock, placing 47,000 tons of gravel, and installing 1,200 lineal feet of culvert pipe.

(*b*) A bridge over Naver Creek was constructed under contract. The contract for this single-lane creosoted-wood bridge, with an over-all length of 128 feet, was awarded in 1955, but construction was delayed by weather conditions until June, 1956. Construction was completed in August, and the bridge was used by heavy equipment during the latter part of the season.

5. *Niskonlith Public Working Circle.*—A contract was awarded in August for an extension of 7.1 miles to the McGillivray Lake Forest Development Road. Clearing operations were started and 22 acres were cleared between Mile 12 and Mile 16.

6. *Salmon Arm Public Working Circle.*—A contract for extending the Fly Hills Forest Development Road from Mile 10.1 to Mile 13.7 was awarded in August. The 1956 operations were confined to clearing and grubbing. At the end of the year, 12 acres of clearing and 6 acres of grubbing had been completed on the first 1½ miles of the contract.

7. *The Upper Kootenay Public Working Circle.*—A contract for the construction of 20.5 miles of the White River Forest Development Road was awarded in June. Clearing and grubbing progressed from Mile 0 to the vicinity of Mile 11. Clearing was completed on 115 acres, 100,000 cubic yards of common material was excavated, 20,000 cubic yards of solid rock was removed, 10,000 tons of gravel was placed on the road, and 2,000 lineal feet of concrete culvert was installed.

8. *Road Maintenance.* — Maintenance work included snow-ploughing, clearing frozen culverts, cleaning ditches, and improving drainage. This latter function is particularly important as drainage patterns are often changed by logging subsequent to road construction. Repairs to road surfaces and routine grading continued. Maintenance required 50,000 tons of road material and 300 lineal feet of culvert pipe.

## General Engineering

Advice and consultation were provided for the various divisions of the Forest Service, particularly those concerned with timber sales, projects, structures, water systems, boats, and small roads. Plans and specifications were prepared for two permanent bridges in the Willow River and Cottonwood Public Working Circles. Design work continued for bridges in the Morice, Chilliwack, and Willow River Public Working Circles. Soil testing and identification continued throughout the Province. A field laboratory was maintained at Prince George to assist Forest Service construction crews in that area. Draughting services were continued as an aid to road location and construction. Various plans for roads, small structures, and bridges were distributed.

## MECHANICAL SECTION

*Forest Service Mechanical Equipment*

| Type | Total Units, Jan. 1, 1956 | Removed from Service | New Purchases | Total Units, Dec. 31, 1956 |
|---|---|---|---|---|
| Sedans, coaches, and coupes | 111 | 23 | 10 | 98 |
| Suburbans, station wagons, and sedan deliveries | 60 | 10 | 20 | 70 |
| Small-type passenger-vehicles | 30 | 7 | 3 | 26 |
| Panel deliveries | 31 | 11 | 6 | 26 |
| Four-wheel-drive passenger types | 25 | 7 | 18 | 36 |
| Four-wheel-drive ¾-ton pick-ups, etc. | 141 | 28 | 80 | 193 |
| Power-wagons | 20 | ----- | 2 | 22 |
| ½-ton pick-ups | 211 | 14 | 10 | 207 |
| ¾-ton and 1-ton pick-ups | 67 | 27 | 18 | 58 |
| 14,000–22,000 G.V.W. trucks, 2- and 3-ton | 55 | 18 | 11 | 48 |
| 25,000–40,000 G.V.W. trucks (H.D.) | 15 | ----- | 7 | 22 |
| Fire-fighting tank-trucks | 5 | ----- | 6 | 11 |
| Snow-plough (Sicard)—rotary blower | 1 | ----- | ----- | 1 |
| Tractors | 43 | 1 | 5 | 47 |
| Graders | 18 | 2 | 3 | 19 |
| Scrapers—self-propelled | 4 | ----- | 1 | 5 |
| Power-shovels | 2 | ----- | 2 | 4 |
| Loaders—self-propelled | ----- | ----- | 1 | 1 |
| Outboard motors | 307 | 19 | 32 | 320 |
| Fire-pumps | 606 | 46 | 29 | 589 |
| Chain-saws | 341 | 20 | 39 | 360 |
| Lighting plants | 62 | 1 | 22 | 83 |
| High-pressure fire-fighting units | 33 | ----- | 31 | 64 |
| Snow-sedan—propeller-driven | 1 | ----- | ----- | 1 |
| Speeders—railway | 20 | 5 | 1 | 16 |
| Trailers—low-bed | 8 | ----- | ----- | 8 |
| Trailers—dwelling, bunk-house, etc. | 85 | ----- | 18 | 103 |
| Trailers—miscellaneous | 79 | ----- | 25 | 104 |
| Air-compressors | 8 | ----- | 2 | 10 |
| Gas-powered rock drills | 5 | ----- | ----- | 5 |
| Muskeg-tractors (personnel carriers) | 1 | ----- | 1 | 2 |
| Yarders | 1 | ----- | ----- | 1 |
| Crushing plants | 1 | ----- | ----- | 1 |
| Mechanical wheelbarrows | 20 | ----- | ----- | 20 |
| Welders | 6 | ----- | 7 | 13 |
| Cement-mixers | 5 | ----- | 1 | 6 |
| Augers—power, planting | ----- | ----- | 3 | 3 |

### Equipment Selection

The total number of transport units has increased from 772 in 1955 to 818 in 1956 and, in addition, there are now some 145 private vehicles operating on mileage allowance in general service, plus 119 cars used by official scalers on mileage. Although the total number of units increases year by year, the number of strictly passenger-type vehicles shows a decrease as more sedan deliveries, panel deliveries, station wagons, and other combination passenger- and load-carrying types are put into service. The most marked increase is to be noted in the number of four-wheel-drive ¾- or 1-ton pick-ups which are gradually displacing the conventional ½-ton light deliveries as general-purpose Ranger and Assistant Ranger vehicles. Lighting plants or electric generating sets continue to increase in number despite the fact that power is reaching more and more Ranger stations. Additional Ranger and Assistant Ranger stations, plus the advent of small generators for trailers and for the operation of power-tools, account for a large percentage of the increase.

The Parks and Recreation Division opened up two park-access road projects which required a good deal of additional heavy equipment. A 1-yard power-shovel, four tractors (two of 66 horse-power and two of 125 horse-power), a 7–9-yard pull scraper, and a 100-horse-power grader were purchased. Equipment for two separate repair-shops had to be obtained, with an 8-kilowatt electric generator for each location. Heavy- and medium-weight trucks, air-compressors, and other road-building equipment were added. Engineering Services Division added a ¾-yard diesel power-shovel, a 2½-yard loader, and a 7-yard powered scraper to its heavy-duty equipment.

Muskeg-tractor with additional side-boards used by road-location party.

Outboard-motor horse-power ratings continued to increase, and whereas 22 horse-power was the highest rating used for many years, the present equivalent is now 30 horse-power. There is more and more demand for larger-size outboards in order to take advantage of the additional speed they offer, but considerable concern is felt inasmuch as there now appears a definite tendency to overpower, with a consequent increase in the danger from striking a hidden object or overturning. The choice of the correct motor for any particular hull is becoming increasingly controversial. Some tests were carried out at the Forest Service Marine Station this year to demonstrate the wisdom of using a 15-horsepower motor rather than a 30-horsepower under certain conditions, and it is felt that the 15-horsepower motor is large enough for all but exceptional cases.

Purchase of fire-pumps remains stabilized around two Canadian-made pumps of approximately 80 gallons per minute free flow or 300 pounds per square inch maximum pressure, and one light-weight pump of 10 gallons per minute capacity with a capability of 300 pounds per square inch maximum.

The muskeg-tractor purchased in 1955 and used during 1956 has proved successful in muskeg, swamp, and mud. The success of its performance in snow is still somewhat questionable, depending entirely upon the state of the snow—a factor that can vary considerably. Purchase of another one or two such units is contemplated for the northern districts. The best type of machine for travel on snow is still subject to much discussion. Several varieties are available, but it is doubtful if any one type will ever be effective over all types of terrain and under all snow conditions.

An interesting product now on the market is the so-called no-spin differential. While this is not a new idea, it does appear to be receiving renewed attention. One or two such units have been put into operation in the hope that they will bridge the gap between the on-highway and off-highway type of operation without going to the expense of four-wheel drive. The greatest danger for mechanical failure would appear to come from expecting the unit to emulate four-wheel drive.

## General Supervision

The primary function of the Mechanical Section is to keep the many types of equipment used by Forest Service personnel in operation by preventive maintenance. There

are two phases to this work. Firstly, regular periodic inspection of all units to uncover dangerous conditions resulting from worn parts, and, secondly, analysis of the condition, type of use, and previous history of each unit to decide the replacement point. The second phase of the work is probably of greater importance. It involves the examination of operators for the purpose of determining their capabilities, and general instructional work. In this regard a two-week course in the operation and maintenance of mechanical equipment has been a part of the curriculum of the Ranger School since the School was organized. Instructors are obtained from the staff of the Mechanical Section.

In addition to the Ranger School mechanical course, the Section organized a series of two-day schools covering the operation and maintenance of four-wheel-drive vehicles, particularly for the benefit of survey personnel. This course included such items as the techniques of winching out of mud-holes and up extremely steep slopes. A total of fifty-six persons received this training, and results have been so favourable that a significant increase in the number attending the second series of courses in 1957 is expected.

## STRUCTURAL DESIGN AND BUILDING CONSTRUCTION

This was the first in a number of years that tenders were turned down on a number of building projects due to prices that were considered too high. This condition can be attributed to a number of reasons. The primary one is the fact that the contractors are very busy in the various cities and towns throughout the Province. In all cases except one where tenders were not accepted, only a single bid was received. The above condition pertains notwithstanding the fact that the residential field, both speculative and owner-built, has been restricted due to lack of mortgage money in the last four months of 1956. The other contributory factor is a perennial one, resulting from the remote location of many Ranger stations. Despite remoteness, it has been possible in the past to attract at least three bidders and, as a result, obtain a good cross-section of prices, with the lowest within the estimate.

In an effort to arrive at a satisfactory solution to the problem of high building costs, simplification of design and details has received considerable attention. For instance, the suitability of pole frame construction for some types of buildings is being investigated, and the design of a four-car garage in this form will be completed shortly. Also, the use of steel buildings for warehouses, etc., has been considered, but found to be more expensive than their wooden counterparts, at least in the vicinity of Vancouver. However, there is a possibility that they may be justifiable for use in remoter locations.

The use of portable buildings was further developed, with three types now in production—caboose, bunk-house, and office. A further development in this line is the proposed portable Assistant Ranger residence, which, it is felt, would prove more economical and flexible than either permanent houses or trailers. The accommodation is similar to that found in a 32-foot trailer, and they are acclimatized for both temperature extremes.

The year saw completion of the design and the letting of contracts for a seed-extraction plant for the Reforestation Division at Duncan. When the buildings and equipment are completed, facilities will be available to handle the receipt of green cones, the complete processing of them, and the storage of the extracted seed under refrigeration until required for planting.

The ever-present problem of housing Forest Service workers for short or medium terms has, for the last five years, been met by the use of house-trailers, and this trend continues to expand into more and more of the Service's activities. During 1956, trailers were supplied through this Division for the following purposes: Park-improvement crews, protection road-maintenance crews, tree-marking crews, forest-development road-building crews, and for temporary accommodation at Ranger stations pending the provision of permanent buildings. In at least one of the above applications it has been demonstrated

that this type of accommodation has resulted in a reduction of personnel turnover from 40 per cent down to 2 per cent per annum, and it is significant that this trend is being followed extensively by other Provincial and Federal departments as well as by contractors, to whom specimen plans have been supplied when requested.

The details of the buildings programme are as follows:—

FOREST SERVICE BUILDING PROGRAMME

| Location | Project | Construction Agency | Stage of Construction |
|---|---|---|---|
| Alert Bay | Float renewal | Contract | Work proceeding. |
| Cranbrook | Residence | Contract | Completed. |
| Cranbrook | Vehicle-storage compound | Forest Service | Completed. |
| Duncan | Seed-extraction plant | Forest Service | Work proceeding. |
| Duncan | Seed-extraction plant, electrical | Contract | Work proceeding. |
| Elko | Assistant Ranger residence | Contract | Work proceeding. |
| Fort Fraser | Warehouse | Contract | Work proceeding. |
| Fort St. James | Four-car garage | | Tenders too high. |
| Fort St. James | Wharf replacement | | Plans in preparation. |
| Golden | Ranger residence | Contract | Completed. |
| Green Timbers Ranger School | Addition | | Plans in preparation. |
| Kettle Valley | Assistant Ranger residence | Contract | Completed. |
| Lund | Ranger residence | Contract | Work proceeding. |
| Mesachie Lake | Bunk-house | Forest Service | Plans in preparation. |
| Mesachie Lake | Office | Forest Service | Work proceeding. |
| Nelson | Air-conditioning | Contract | Completed. |
| Nelson | Heating addition | Contract | Completed. |
| 100 Mile House | Assistant Ranger residence | Contract | Work proceeding. |
| 100 Mile House | Double office | Contract | Work proceeding. |
| 100 Mile House | Ranger residence | Contract | Work proceeding. |
| Pemberton | Garage | | Tenders too high. |
| Quesnel | Office addition and warehouse | | Tenders too high. |
| Summit Lake | Four-car garage | | Tenders too high. |
| Telkwa | Office and garage | Contract | Work proceeding. |
| Telkwa | Ranger residence | Contract | Work proceeding. |
| Thurston Bay | Float renewal | Contract | Work proceeding. |
| Thurston Bay | Ranger residence | Contract | Work proceeding. |
| Valemount | Assistant Ranger residence | Forest Service | Work proceeding. |
| Vancouver | Vehicle-shed | | Tenders called. |
| Vancouver | Warehouse | Contract | Completed. |
| Williams Lake | Site purchase | | Under negotiation. |

*Land Acquisitions and Reserves*

| | Completed | Pending |
|---|---|---|
| Purchases, private land for administrative sites | 11 | 13 |
| Reserves, Crown land for administrative sites | 37 | 31 |
| Purchases, private land for rights-of-way | 8 | 14 |
| Reserves, Crown land for rights-of-way | 30 | 17 |
| Totals | 86 | 75 |

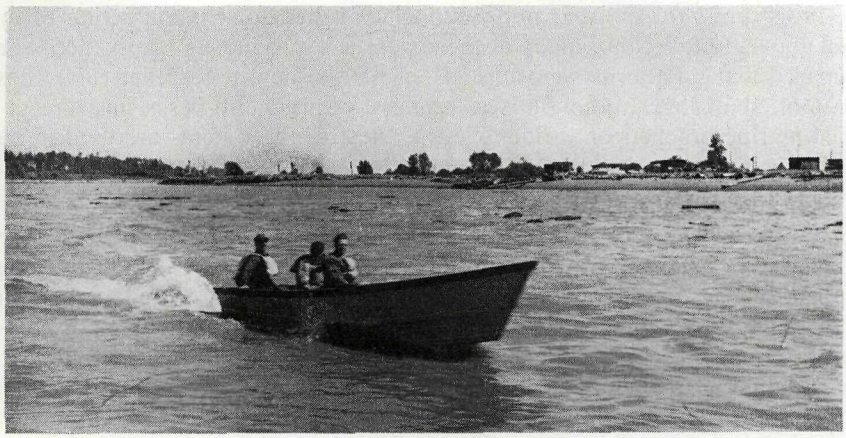
Sites were acquired for new administrative quarters at Blueberry, Little Prairie, Tofino, Keremeos, Noralee, Sixty Mile, Sucker Creek, Telkwa, and Sayward. Land was also acquired for extension to the Duncan and East Kootenay forest nurseries.

As other departments and private companies are acquiring sites on mountain-tops for V.H.F. radio-telephone and radio-microwave units throughout the Province, it has become necessary to reserve mountain-top areas for the Forest Service so that visibility from the many established fire-lookouts is not impaired. It is also necessary to make sure that our essential radio network is not obstructed.

## FOREST SERVICE MARINE STATION

### Marine Work

With the launching of the " Pacific Yew " and the purchase of the " Forest Cruiser " (ex " Marine Explorer "), the coastal fleet now totals forty-three vessels. A second 34-foot Assistant Ranger launch, similar in design to the " Pacific Yew " but engined with a single diesel rather than twins, is nearing completion. Comparison of the performance of the two craft should provide some interesting and useful information. A 40-foot Ranger launch of new design is also being constructed and will be ready for launching in 1957.



A new type of river or lake boat, 22 feet long, built by Forest Service Marine Station.

The marine ways were occupied forty-two times and thirty-eight complete overhauls, together with twenty-eight minor repairs, to launches were carried out. In addition, some fifty small craft used by the Surveys and Inventory Division were reconditioned in varying degree. Between repair jobs the staff found time to construct six 22-foot river-boats, four 18-foot outboard cruisers, five dinghies, and various minor items such as draughting-table stands.

Considerable concern has been felt for the safety of personnel using small craft in Forest Service work. Sometimes persons doing field work have not had a great deal of experience; hence it is important to provide as many safety features as possible. With this in view, compartments filled with a light plastic material called " styrofoam " are now installed for emergency flotation in all open boats and small cruisers. This material has a buoyancy of 48 pounds per cubic foot and never becomes water-logged, nor does it deteriorate with age. Another safety feature during the year was the installation of metal " safety first " tags on all open boats and outboard runabouts. The tags show the maximum capacity in persons or pounds and maximum horse-power outboard motor allowable, plus instructions that all personnel when using the craft must wear life-jackets at all times.

### Prefabrication

The woodworking shop operated at capacity, producing a variety of products needed by the Service for administrative and fire-protection purposes. Four Assistant Ranger residences for isolated locations were prefabricated and shipped to various parts of the Province. Nine 30-foot portable buildings for bunk-houses and field offices were constructed and supplied to the Engineering Section for use on road projects. Twelve sets of furniture for lookouts and sixty-seven pieces of office furniture for Ranger stations

were assembled. Other miscellaneous items included 125 special boxes and crates for pumps, outboards, epidiascopes, etc., ten fire-finder stands, and eighty-two pump-carriers.

### Machine-shop

Due to a relatively severe fire season, repair jobs on fire-pumps were up 18 per cent from the previous year. Altogether 412 pumps, outboard motors, chain-saws, and lighting plants were overhauled. In addition, over 100 units were tested prior to shipment to the field. Other work accomplished included the manufacture of 263 pieces of equipment such as fire-finders, hose ring-expander tools, high-pressure relief-valves, foot-valves, and suction-hose fittings. One hundred and seventy-six hardware fittings for lookout buildings were machined, as well as many similar items.

The programme for the year not only included the actual manufacture of the items mentioned above, but, because many of them were new products, patterns necessarily had to be prepared first. Patterns were turned out for the new hose relief-valve, hose ring-expander tool, shaft-logs, stuffing-boxes, rudders, struts, lamp-bases, instrument-panels, and special marine brackets of various kinds. Most of these items are used in new boat construction.

### General Plant Maintenance

General maintenance of the plant is a perennial item of expense in both labour and money. Instead of painting buildings in 1956, asbestos shingles were applied, using casual labour supervised by station personnel. It is hoped in this way to reduce painting costs henceforth. Other maintenance included repairs to marine ways, dredging of boat-basins, dredging of drainage-ditches, and installation of two new station signs.

The addition of a new 50- by 60-foot warehouse building during the year made a significant improvement in the facilities for storing materials prior to manufacture and finished products awaiting shipment. The shell of the building was erected by contract, but the footings and subsequently the concrete floor were installed under the supervision of the regular staff.

## RADIO SECTION

Radio communication during 1956 continued the trend toward modernization with very high frequency, frequency modulation equipment, and although the number of new installations was small, the year was marked by intensive V.H.F. propogation surveys in four forest districts, aimed at obtaining information for accelerated change-over in the near future.

On July 1st, 1956, the Department of Transport issued a group of standard specifications which will in future be mandatory for the manufacture of certain classes of radio transmitters. From the date of issue of each specification, users of such equipment will be refused licence unless the sets purchased meet the standards of the specification concerned. To date ten specifications have been issued, and three of these affect Forest Service facilities, as follows:—

*Specification No. 103.*—Enforces registration of all types not covered by numbered specification.

*Specification No. 110.*—Affects all marine radio in compulsory-fitted vessels.

*Specification No. 112.*—Affects all marine radio in voluntarily fitted vessels.

Of the above, No. 103 has no immediate bearing on our system, except that licences will be refused for any type not registered. Specification No. 112 has been announced but not actually issued; therefore, in purchasing new marine radio equipment at this time, it is essential to buy Specification No. 110 approved sets, the latter being sufficiently rigid to cover No. 112 when that specification comes into force.

Where ships are already fitted with radio equipment, a five-year period of grace is allowed for replacement. Action to be taken during this period is described in a later paragraph.

New transmitting sets of all types (A.M. and F.M.) totalled ninety-five for the year, while twenty-four obsolete sets were written off. Based on 880 units at the end of 1955, the net total at December 31st, 1956, is 951.

Victoria radio headquarters.

*New Radio Units 1956*

| | |
|---|---|
| Portable—Model B | 50 |
| Mobile—MBL 25 | 20 |
| Marine— | |
| MRT 25 (25-watt) | 1 |
| MRT 400 (40-watt) approved Specification No. 110 | 2 |
| Fixed-station sets— | |
| LRT 100 (100-watt) | 4 |
| LRT 25 (25-watt) | 1 |
| Portable V.H.F., F.M.—two (transistor) | 2 |
| Fixed-station V.H.F., F.M.— | |
| 140 BR (60-watt) | 10 |
| RI43G (25-watt) | 3 |
| Mobile—CT43G | 2 |
| Total new sets, 1956 | 95 |
| Written off | 24 |
| Net increase during year | 71 |
| Total transmitting units, all types | 951 |

Not included are 172 Type LWP fire portables.

The Vancouver District is the most affected by impending Specification No. 112. While no immediate change is necessary to existing ship installations, two sets purchased during the summer were of the new approved type, and arrangements have already been made to write off and replace a percentage of our marine transmitters each year for the next five years.

The long-expected withdrawal of 3430 kilocycles from our assigned channels took place during the spring, and the change-over was implemented without undue loss of time on the air. The new frequency, while subject to interference from United States stations, has proved usable, though coverage north of Seymour Narrows was reduced during the summer. To offset this, a new 200-watt transmitter was installed at the Vancouver headquarters station in November and over-all transmission was considerably improved.

In the V.H.F. field, a transmitter-house was built by Radio Section personnel under the existing cupola at Elk Falls Lookout. In this was installed the third Vancouver Island F.M. repeater, linking Campbell River and district with the Vancouver F.M. network. In addition, F.M. was supplied to Ganges, Mount Bruce Lookout, the Ranger launch at Ganges, and, at a later date, to Port Moody. A propagation survey was made from Squamish to Lund with generally promising results, but no equipment is at present available for these sites.

The Prince George District, in the course of an early, severe fire season, suffered almost total loss of communication during the hottest weather of the summer. Strong sun-spot activity and the unfortunate position of the district frequency sandwiched between that of Prince Rupert on one side and the Forest Survey and Engineering Division on the other combined to make radio communication completely unreliable. This condition, to some extent, corrected itself later, but the experience was sufficient to show that the medium frequency of 3382.5 kilocycles in this locality has ceased to be useful to us except during winter months. Two radio propagation-survey crews investigated V.H.F. possibilities for that part of the district south of Fort St. James, and Pilot Mountain was found to supply the necessary repeating for a considerable portion of the Prince George Forest District. No time was available to investigate each lookout individually, but it is expected that 90 per cent of these will be suitable for F.M. Equipment is at present being assembled at Victoria which is expected to replace a large proportion of the medium-frequency units now in use before the middle of next summer.

The Nelson District, due to the physical obstacles opposing V.H.F. transmission, has not been investigated by a survey crew to date. A visual check was made to determine repeater-sites from which radio survey crews could operate next year. Moyie, Thompson, and Red Mountain proved to be the most promising sites. In the medium-frequency field, sun-spot activity played havoc with communication during the late afternoon throughout most of the summer, as it did in all districts, and conversion to V.H.F., where possible, is long overdue in this region.

Since no V.H.F. is in use or contemplated for Prince Rupert in the immediate future due to the complete absence of suitable power-equipped repeaters, no network changes took place other than the addition of portable and mobile units. Cross-talk from the adjacent Prince George channel, which has always been severe, should be alleviated next year as a result of the projected change to F.M. at Prince George.

The V.H.F. system at Kamloops, established the previous year, functioned satisfactorily until summer temperatures reached 90 degrees and over. In this temperature range, signal refraction occurred between Silver Star repeater and Dufferin Hill, causing a complete loss of signal for periods of one to three hours in the afternoon. The Kamloops radio staff made an emergency change of location at Silver Star repeater to a point 2 miles away from and 200 feet lower than the original site, the entire change being completed in one day. Results from this location proved permanent, and the F.M. system functioned without incident for the balance of the summer. It has not yet proved possible to find a repeater-site which will cover both the Okanagan Valley and the Cari-

boo between Cache Creek and 100 Mile. Lolo and Greenstone Mountains were investigated during the summer with inconclusive results, but the advent of a good road on Greenstone Mountain and power on Timothy Mountain near 100 Mile promise an expanded F.M. system in the near future. The problem of all-year-round operation of Silver Star repeater is still unsolved. Failure of the parties interested to agree on the question of power leaves the Forest Service with a gasoline-driven generator and with the necessity for closing down during the winter months.

Victoria activities included a two-party radio propagation survey in the Interior during the summer and a further survey on the Coast during the late autumn. In addition to maintenance of the Vancouver Island and Lower Mainland F.M. system and the installation of new stations, laboratory work was, as usual, considerably in excess of the time available. Projects completed included the modification and construction of transmitting equipment, the design of improved remote receivers, and the assembly of factory stock into complete V.H.F., F.M. units. It was found possible to effect a considerable saving by buying chassis stock from the factory and assembling, wiring, and installing these in standard cabinets, thus eliminating a great deal of expensive factory labour.

The radio-channel situation has resolved itself, and following the loss of 3430 kilocycles no further changes are expected. At the same time it is obvious that all our medium-frequency channels have had their day, and that our increasing programme of conversion to V.H.F. is in line with the trend of communication the world over.

# FOREST PROTECTION

## WEATHER

After three successive seasons with below average fire danger, conditions during 1956 were moderately severe in the Nelson, Kamloops, and Vancouver Forest Districts. The two northern forest districts, Prince George and Prince Rupert, experienced high hazard, particularly during the early part of the season.

Near normal temperatures and above normal sunshine in April with below normal precipitation combined to give an early fire season in spite of heavy winter snowfalls.

Above normal temperatures and sunshine in May and continuing rainfall deficiencies gave serious build-up conditions throughout the Province and intensified the usual spring hazard in the two northern districts. By the middle of the month, relative humidities below 10 per cent and stick moistures below 3 per cent resulted in extreme conditions in the Prince George Forest District. These conditions were alleviated early in June, with general rainfall persisting throughout the month. Sunshine and temperatures were below normal for this month throughout the Province, and rainfall was well above normal, except in the south-eastern corner of the Province.

Warmer and drier conditions returned early in July and continued into mid-September. However, several brief rainy periods spaced throughout August prevented any serious build-up. A brief period of intense drying in the second week of September was ended when fall rains set in about the middle of the month.

Frequency of lightning-storms appeared to be close to normal, but because of accompanying rainfall or reduced intensity of storms, there were few serious outbreaks.

## FIRES

### Occurrence and Causes

The number of fires was the highest ever recorded. The occurrence by months deviated somewhat from normal. The percentage of fires occurring in May was over twice the ten-year average. The percentage of fires in July, March, and April was about normal and the percentage in the other months was lower.

| Forest District | Fire Occurrence during Ten-year Period 1947–56 | Percentage of All B.C. |
|---|---|---|
| Vancouver | 5,020 | 32.26 |
| Prince Rupert | 756 | 4.86 |
| Prince George | 1,615 | 10.38 |
| Kamloops | 4,791 | 30.78 |
| Nelson | 3,380 | 21.72 |
| Totals | 15,562 | 100.00 |

The principal cause of fires was railways operating, which accounted for 39 per cent, followed by lightning with 18 per cent. The actual number of fires from various causes except railways operating followed the normal ten-year pattern. In the case of railways operating, the large increase in the number of fires was due largely to more efficient reporting. (*See* Tables 53 and 54 in the Appendix.)

### Cost of Fire-fighting

In 1956, fire-fighting costs amounted to $469,116, or $155,058 more than the ten-year average. For further tables of costs, *see* Tables 43, 59, and 61 of the Appendix.

The heaviest costs of suppression were again attributable to fires caused by lightning, being 34 per cent of the total, although that cause only represented 18 per cent of the total number of fires.

### Damage

The total area burned was estimated to be 469,648 acres (*see* Table 58). This is 1¾ times the average annual acreage burned in the last ten years. Of the 413,825 acres burned in the Prince George Forest District, 323,164 acres were non-commercial cover, grazing or pasture land, or non-productive sites. Fires in the Peace River area of the Prince George Forest District accounted for 364,342 acres. The total damage to forest-cover was approximately 2½ times the ten-year average. The largest fire, which was 150,000 acres, was in the Peace River Land District.

## FIRE-CONTROL PLANNING AND RESEARCH

### Fire Atlas and Statistics Ledgers

The work of plotting the current year's fires on the Provincial fire atlas is continuing. The forest district offices are being supplied with fire statistics and fire-classification data for district reference purposes.

### Visibility Mapping and Lookout Photography

The field staff for this work was increased to two two-man crews. Seven lookouts were photographed—four in the Prince Rupert Forest District, one in the Nelson Forest District, and two in the Kamloops Forest District. Sixty-six potential lookout points were visibility mapped—ten in the Vancouver Forest District, twenty-five in the Prince George Forest District, and thirty-one in the Kamloops Forest District. Of the points examined, fifteen will be recommended as primary points—two in the Vancouver Forest District, five in the Prince George Forest District, and eight in the Kamloops Forest District.

### Protection Planning in Public Working Circles

Preliminary field work was carried out in three public working circles this year—one each in the Prince Rupert, Kamloops, and Nelson Forest Districts. Work in the Willow Working Circle in the Prince George Forest District was deferred, pending final location of the proposed highway through the area. Reports are currently being compiled on the three first-mentioned working circles.

The fire-protection access-road programme was continued this year, extending last year's construction through the southern boundary of the Spallumcheen Working Circle on to Moore Lookout in the Kettle Working Circle. Two connections with existing access roads were made. Approximately 20 miles of new road was constructed, and approximately 13 miles of 1955 construction improved.

### Miscellaneous (Air-photo Mosaics)

Coverage has been extended to the eastern part of the Kamloops Forest District and part of the Nelson Forest District, with twenty-one mosaics completed this year, making a total of 128 mosaics available for use in the Vancouver, Kamloops, and Nelson Forest Districts.

All mosaics have been photographed, and the negatives filed in the Protection office. Prints may be obtained through the Air Photo Library, Department of Lands and Forests, if desired by the general public.

## FIRE-WEATHER RECORDS AND INVESTIGATIONS

The Model 8 burning-index meter developed at Missoula, Montana, was used exclusively in the Nelson Forest District this season and appears to be usable in that district without modification.

The fire-weather reporting network is being slowly expanded throughout the Province, particularly in areas where there has previously been little or no coverage.

The build-up index, using the moisture content of 3-inch logs, was tested in the Vancouver Forest District and shows considerable promise as a basis for operational planning. Limited field tests in connection with this study were again carried out in the vicinity of Langford.

Preliminary plans have been drawn up to have two research teams of the Canada Forestry Branch conduct fire-weather studies in British Columbia next season with a view to modifying their Fire Danger Tables for possible use in this Province.

During 1956, 591 sets of fuel-moisture indicator sticks were distributed. Of these, 391 went to industrial operators, an increase of seventy-five sets over 1955.

## FIRE-SUPPRESSION CREWS

Sixteen suppression crews, averaging ten men each, were again employed during the summer for approximately 100 days. They attended 181 fires, of which 91 per cent were held to a size of 5 acres or less. When not fighting fire or on fire stand-by, the crews worked on improvements and training.

*Analysis of Suppression-crew Fire-fighting Activities*

| 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) | 115 | 106 | 7 | 1 | 1 | ---- |
| Over ¼ acre and up to 1 acre | 20 | ---- | 19 | 1 | ---- | ---- |
| Over 1 acre and up to 5 acres | 34 | 1 | ---- | 30 | 2 | 1 |
| Over 5 acres and up to 50 acres | 7 | ---- | ---- | ---- | 5 | 2 |
| Over 50 acres | 5 | ---- | ---- | ---- | ---- | 5 |
| Totals | 181 | 107 | 26 | 32 | 8 | 8 |

## AIRCRAFT

Protection flying was continued under contract with Pacific Western Airlines Limited, who supplied six float-planes. A total of 2,478 flying-hours were logged throughout the Province during the period April 15th to November 15th, as follows:—

| Forest District | Base | Type of Aeroplane | Hours Flown |
|---|---|---|---|
| Vancouver | Vancouver | Beaver | 287 |
| Prince Rupert | Lakelse Lake | Beaver | 548 |
| Prince George | Prince George | Beaver | 431 |
| Kamloops | Kamloops | Beaver and Junkers | 665 |
| Nelson | Nelson | Beaver and Junkers | 547 |
| Total | | | 2,478 |

## ROADS AND TRAILS

The Service continued to add to the network of roads and trails throughout the Province as shown in the table below.

*Construction of Protection Roads and Trails*

| | Light | Medium | Heavy | Total |
|---|---|---|---|---|
| | Miles | Miles | Miles | Miles |
| New road construction | 11.50 | 44.75 | 38.50 | 94.75 |
| Road maintenance | 546.25 | 186.00 | 135.75 | 868.00 |
| Total road construction and maintenance | 557.75 | 230.75 | 174.25 | 962.75 |
| New trail construction | 5.00 | 51.50 | 17.50 | 74.00 |
| Trail maintenance | 465.00 | 304.50 | 74.00 | 843.50 |
| Total trail construction and maintenance | 470.00 | 356.00 | 91.50 | 917.50 |

## SLASH-DISPOSAL AND SNAG-FALLING

During 1956 the acreage logged in the Vancouver Forest District was the largest on record. Spring burning was done on a somewhat larger scale due to favourable weather and actually had to be stopped because of the early spring hazard. No damage to forest-cover occurred either as a result of spring or fall burning of logging slash.

The weather at fall burning time was very spotty. The hazard resulted in a closure from September 7th to September 10th, and following this there was not any specific period during which burning conditions were ideal over the whole district at one time, although good weather breaks occurred as late as the end of November.

Three snag-falling contracts were awarded by the Protection Division during the year, comprising a total area of 5,706 acres. The contracts totalled $57,900.25. These contracts were let in the Campbell River, Pender Harbour, and Chilliwack areas. In addition, the Reforestation Division crews felled snags on 3,660 acres on the Coast and 1,071 acres in the Interior preparatory to planting.

For a further analysis of slash and snags, *see* Tables 45 to 52, inclusive, in the Appendix.

## FIRE-LAW ENFORCEMENT

The 105 prosecutions were over double the ten-year average. The largest number of prosecutions were instigated because of contraventions of forest closures in the Vancouver Forest District. The prosecutions are further analysed in Table 62 of the Appendix.

## FOREST CLOSURES

Twelve regional closures were imposed during the fire season. The summary of closures is shown in the following table.

*Forest Closures, 1956*

| Area | Forest District | Type of Closure | Effective Date | Termination Date |
|---|---|---|---|---|
| Entire Vancouver District | Vancouver | Restricted industrial | May 24 | June 4 |
| Entire Vancouver District | Vancouver | Travel | May 31 | June 4 |
| Bella Coola | Price Rupert | Restricted industrial | May 31 | June 4 |
| Entire Vancouver District | Vancouver | Restricted industrial and travel | July 23 | Aug. 2 |
| Wilson Creek | Nelson | Recreational | July 26 | Aug. 27 |
| Koch Creek | Nelson | Recreational | July 27 | Aug. 27 |
| St. Mary River | Nelson | Recreational | July 30 | Aug. 28 |
| Lamb Creek | Nelson | Recreational | July 30 | Aug. 28 |
| Arrow Park Creek | Nelson | Recreational | July 31 | Sept. 5 |
| Tiger Creek | Nelson | Recreational | Aug. 14 | Aug. 30 |
| Blueberry Creek | Nelson | Recreational | Aug. 14 | Aug. 30 |
| Southern part of Vancouver District | Vancouver | Restricted industrial and travel | Sept. 7 | Sept. 10 |

## CO-OPERATION—OTHER AGENCIES

During the 1956 fire season, 919 Honourary Fire Wardens accepted appointment. These public-spirited citizens take voluntary action on fires which occur in their vicinity, and their invaluable aid in reporting and fighting fires is acknowledged with appreciation.

In addition, there were 1,313 Forest Fire Prevention Officers appointed under section 123 of the " Forest Act." These men, appointed at the request of their employers, have the same authority as a Forest Officer on the particular operation with which they are concerned.

# FOREST-INSECT INVESTIGATIONS*

## FOREST-INSECT SURVEY

An important development during 1956 was the formation of an informal committee composed of representatives from the British Columbia Forest Service, several logging companies (Alaska Pine and Cellulose Limited, Canadian Forest Products Limited, Powell River Company Limited, MacMillan & Bloedel Limited, and Crown Zellerbach Canada Limited), and the Forest Biology Division to deal with the black-headed budworm outbreak on the northern half of Vancouver Island. The original objectives of the committee were to co-ordinate activities between the various agencies concerned with the problem and to serve as a planning organization for any action considered necessary to cope with the situation. Toward the end of the year the industrial members of the group were considering the establishment of a permanent committee and broadening its scope to cover all forest-insect problems. The committee has functioned effectively and has several major accomplishments to its credit.

During 1956 the black-headed budworm on the northern part of Vancouver Island covered a gross land area of about 3,000 square miles. In 990 square miles of this area, hemlock was severely defoliated. It was anticipated that some control action might have to be considered for 1957 if the outbreak showed signs of continuing, and because no previous spraying has been done against this insect, an aerial spraying experiment was carried out in 1956. The objectives were to determine if the standard formulations and dosages of DDT, used against other forest defoliators, would be effective, and to demonstrate which larval instars were most susceptible to the spray. The experiment was supported financially and with man-power by the member organizations of the committee and was organized and directed by officers of the Forest Biology Division. The tests showed that all larval stages from the second to the fifth (last) instar, inclusive, were susceptible to the spray, which provides a time interval of from four to five weeks for control operations, and that the application of 1 imperial gallon of fuel-oil containing 1 pound of DDT per acre killed almost 100 per cent of the larvæ.

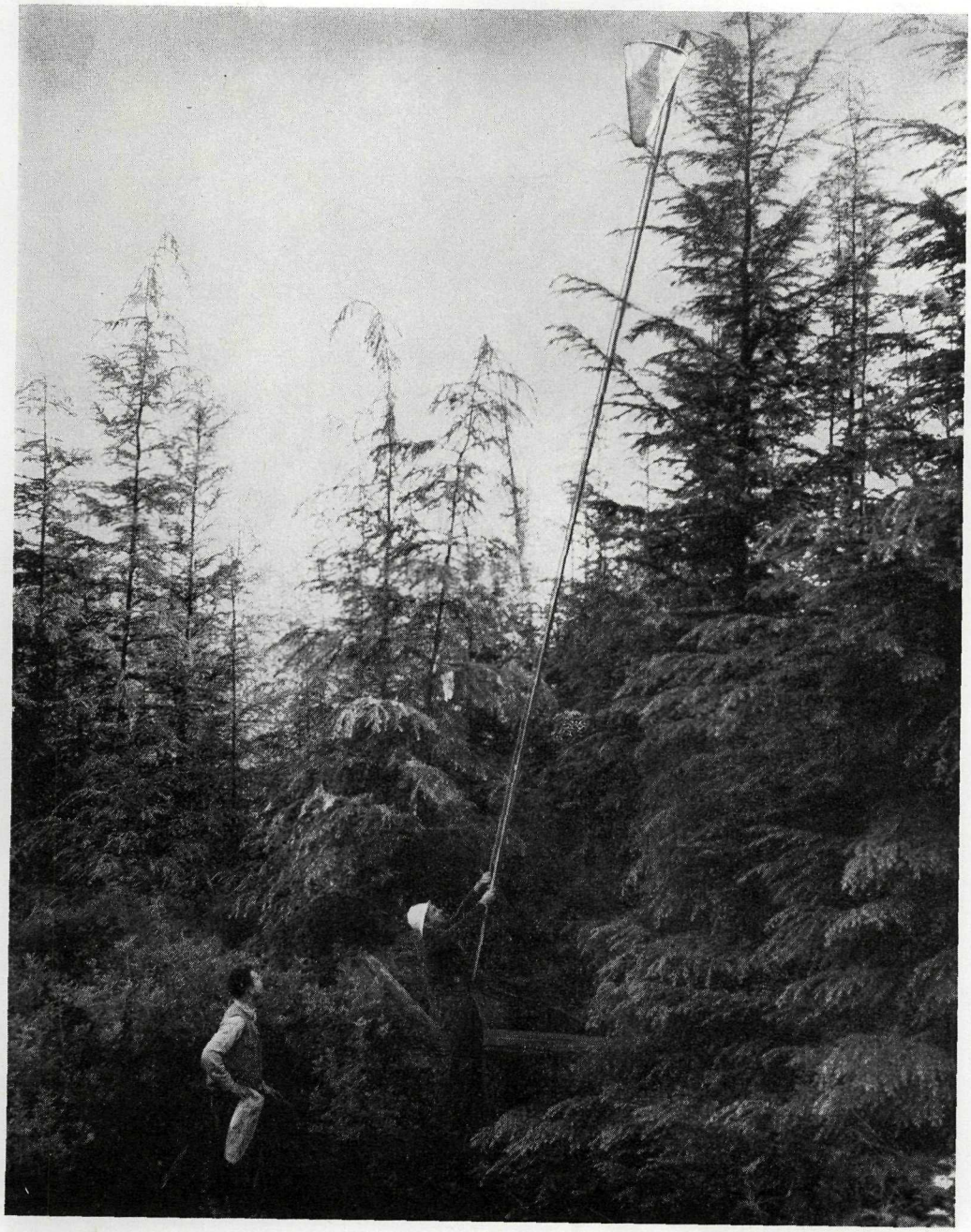
In the fall of 1956, again with the support of the committee, a comprehensive egg survey was made of the infested areas to predict the trend of the outbreak for 1957. The survey indicated that about 150,000 acres of hemlock in the Englewood-Port Hardy-Neroutsos Inlet triangle, which has been heavily defoliated for the last two years, can expect moderate to severe defoliation in 1957, if natural control factors fail to reduce the population substantially. This would expose the stands to the danger of tree mortality and extensive top-killing. As the agencies concerned with the management of these forests consider that this risk cannot be taken, plans are being made to spray these high-hazard stands in 1957.

The one-year-cycle spruce budworm outbreak in the Lillooet River and Lake area spread southward, eastward, and northward. The area infested increased to 450 square miles, but the intensity of defoliation decreased, and there was an over-all reduction in the egg population, thus indicating a continuation of the downward trend evident in 1956. The two-year-cycle spruce budworm in the Babine Lake area of Prince Rupert Forest District heavily defoliated spruce-balsam stands over about 1,000 square miles.

Douglas fir beetle populations declined on the Coast and in the Interior. This reduction is attributed in part to the high mortality of over-wintering stages during the severe winter of 1955–56. Around Lac la Hache the number of beetles was reduced to about one-third of the 1955 population, and the number of trees attacked was correspondingly lower. In the Nimpkish and Lillooet River valleys, new 1956 attacks were also much lighter than in 1955.

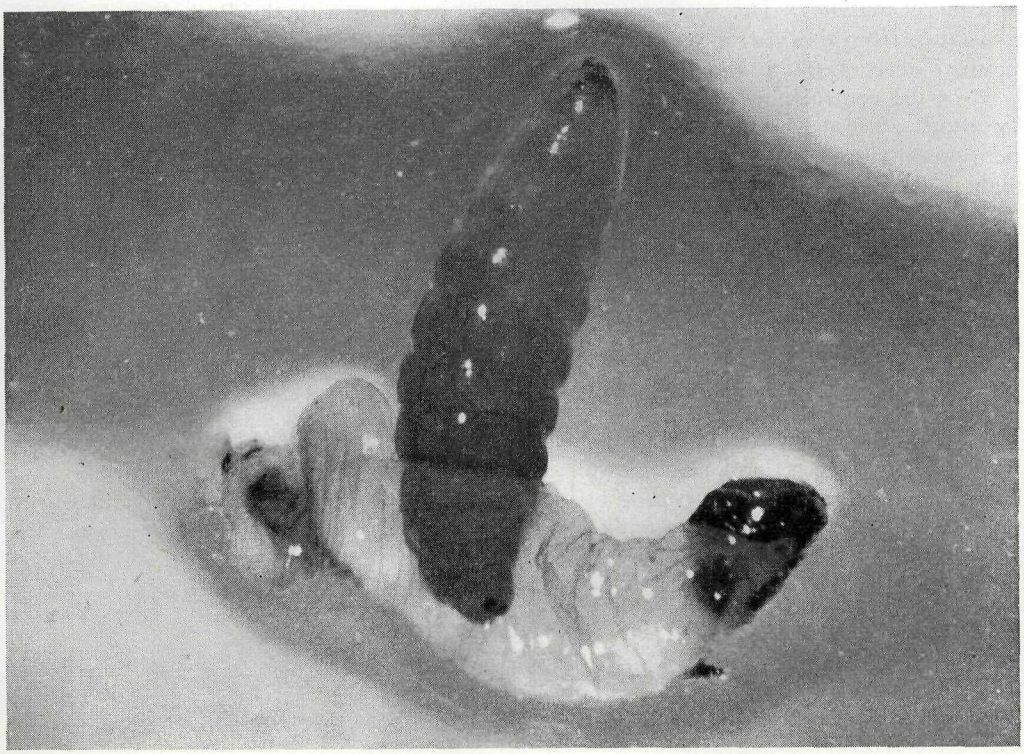
* Prepared by R. R. Lejeune, Forest Zoology Unit (Victoria, B.C.), Forest Biology Division, Science Service, Canada Department of Agriculture.

Full-grown larva of the black-headed budworm feeding in a new shoot of western hemlock.



Removing foliage samples from trees to determine percentage of budworms killed by spray treatment.

The effect of DDT spray for preventing defoliation of western hemlock by black-headed budworm. Branch at left was not sprayed while branch at right was sprayed about mid-June.



Larva of parasite emerging from its dead black-headed budworm host.

Small but severe infestations of the phantom hemlock looper developed in Central Park, Burnaby, and Queen's Park, New Westminster. The Central Park infestation was sprayed with DDT in early August, with good results.

Other important pests causing damage in localized areas were the mountain-pine beetle in the Morrison-Babine Lake area; spruce bark-beetles in the Nun, Monk, and Summit Creek valleys of the Nelson Forest District; and the pine-needle scale on ponderosa pines bordering fruit-orchards in the Okanagan Valley.

As part of a nation-wide programme by the Forest Biology Division, an effort is being made to obtain more realistic estimates of losses caused by insects and diseases. Estimating losses caused by bark-beetles presents difficult problems in developing suitable techniques and in adequately covering the areas involved. A solution to these problems is being sought by intensive studies and observation, particularly in the Interior.

## RESEARCH PROJECTS

Research was continued on several phases of the ambrosia-beetle problem. Particular attention was given to determining the effect of time of felling and removal of logs from the woods on intensity of attack and on distribution of over-wintering beetles in duff, in several areas. Further work was done on the symbiotic relationship between fungi and beetles, and in studying changes of internal organs in beetles as related to their behaviour. Progress was made in the separation and identification of volatile substances removed from the sapwood of logs attractive and not attractive to ambrosia-beetles. This project is being carried out at the University of British Columbia in co-operation with the Forest Biology Division.

A thorough study was made of insects attacking western white pine in the Southern Interior to see if there was any evidence of association between pole-blight disorder

and insect activity. The work was done in co-operation with the Pathology Unit with assistance from the Forest Service. No evidence was obtained to indicate a connection between insects and pole-blight.

In the central part of the Province, efforts were made to obtain more information on attack patterns, brood development, and the effect of parasites, predators, and competition on survival of the Douglas fir beetle. Studies were begun on flight capacity and flight behaviour of this species.

The Christmas tree industry in Eastern British Columbia has been disturbed by the heavy defoliation during the past three years caused by infestations of the Douglas fir needle-miner. Natural control factors and the biology of this insect are being studied.

Investigations were continued of the hemlock looper, insect diseases, and of the biology and taxonomy of several forest insects.

## PERSONNEL AND FACILITIES

Through the co-operation of the Department of Lands and Forests, a reserve was placed on a tract of land near Cowichan Lake for ambrosia-beetle research.

Two research officer positions were transferred from Vernon to Victoria during the year.

## FOREST-DISEASE INVESTIGATIONS*

Although major interest was expressed in problems of decay and deterioration in mature forests, requests received from the Forest Service and industry during the year demonstrated an awareness of pathological problems affecting second-growth forests. In recognition of this trend, steps were taken to strengthen forest-disease survey activities in plantations and young forests generally.

Disease-survey activities were augmented by the submission of specimens and reports of new and unusual occurrences of disease by Forest Service and industrial collaborators. The Forest Service assisted further by assigning personnel to various co-operative activities.

A second trailer, equipped to provide field-office and laboratory facilities, was purchased during the year and assigned to the Interior region.

Publications pertaining to forest-disease conditions in British Columbia distributed during 1956 included the following:—

Buckland, D. C., and Wallis, G. W.: The control of yellow laminated root-rot of Douglas fir. For. Chron. 32:14–16. 1956.

McMinn, R. G.: Studies on the root ecology of healthy and pole-blight affected white pine. *In* Can. Dept. Agr. For. Biol. Div., Bi-monthly Prog. Rept., 12 (6):3. 1956.

Wallis, G. W., and Buckland, D. C.: The effect of trenching on the spread of yellow laminated root-rot of Douglas fir. For. Chron. 31:356–359. 1955.

Three reports were prepared for regional distribution and technical reference during 1956.

### FOREST-DISEASE SURVEY

During the year, 5,074 collections of diseased material were submitted to the laboratory for examination. Approximately 90 per cent of these required cultural isolation and study to verify identification. Although many of the submissions duplicated collections received in previous years, additional information was gained on the occurrence, distribution, and extent of damage associated with important forest diseases. New records provided important information in regard to the occurrence of native forest diseases recorded for the first time in British Columbia.

Forest-disease conditions featured a marked reduction in the incidence of infection by foliage diseases. This trend was particularly well demonstrated by the status of needle rusts, which were little in evidence in 1956 despite a very high level of infection during the summer of 1955.

The unusually severe winter of 1955–56 resulted in heavy winter damage in several regions. Early frost damage to western yellow pine was particularly noteworthy. This species sustained severe foliage mortality over an extensive area. The severity of attack, however, varied considerably both in regard to trees and stands. Thus it was not uncommon to find individual trees and groups of trees which showed no evidence of damage, while adjacent trees and stands were severely attacked. Fifteen sample plots, containing approximately 500 trees, were established in the Merritt-Princeton area to follow the progress of affected trees and to determine the extent of subsequent mortality or damage.

Further steps were taken in regard to the registration of plantations of exotic tree species. Thirty-three European and other non-indigenous tree species occurring in twenty plantations on Vancouver Island and the Mainland Coast have been recorded in laboratory files to date. Included in this number are species native to British Columbia but planted beyond their normal geographical distribution. Preliminary surveys to

* Prepared by R. E. Foster, Forest Pathology Unit (Victoria, B.C.), Forest Biology Division, Science Service, Canada Department of Agriculture.

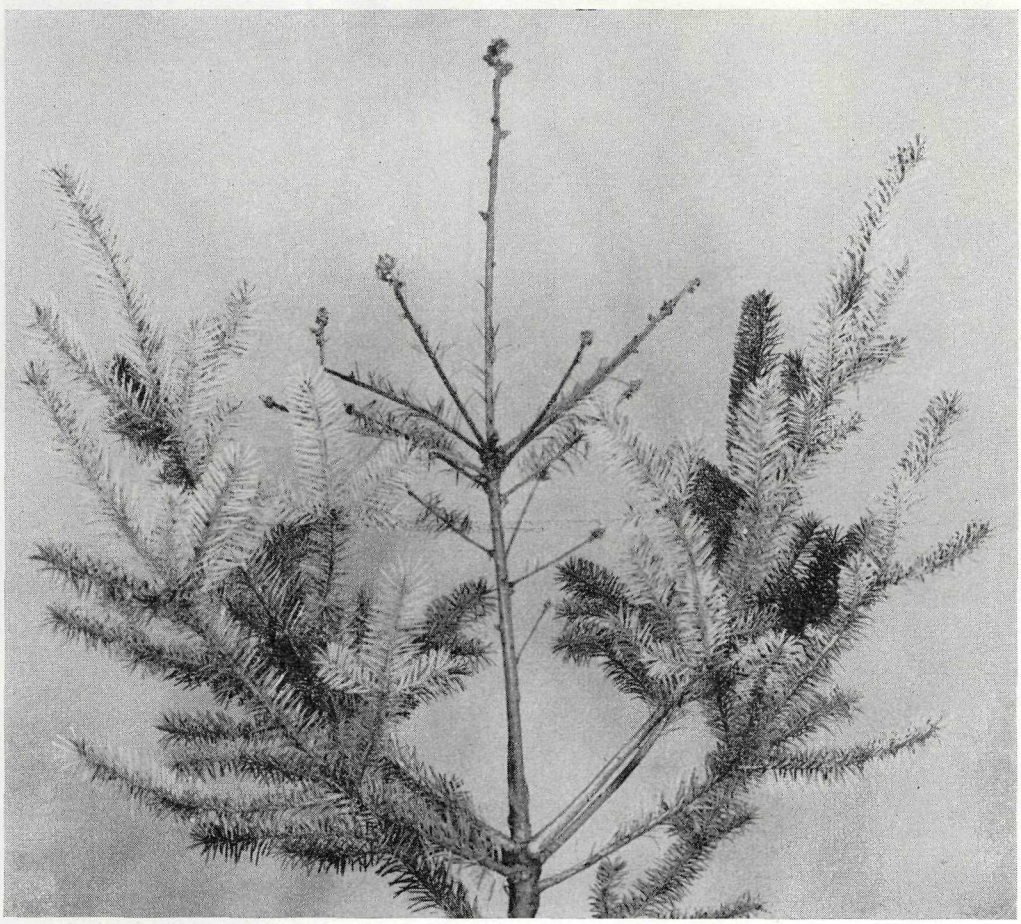
Winter-damaged and healthy western yellow pine in the vicinity of Princeton.

determine the occurrence of disease were initiated in several plantations. Findings to date have included the presence of a blister-rust disease on Scots pine on the Mainland Coast. This disease is believed to be new to British Columbia. Examination of a 26-year-old lodgepole pine plantation uncovered severe damage by a number of diseases, including blister-rust, stem-canker, and root-rot.

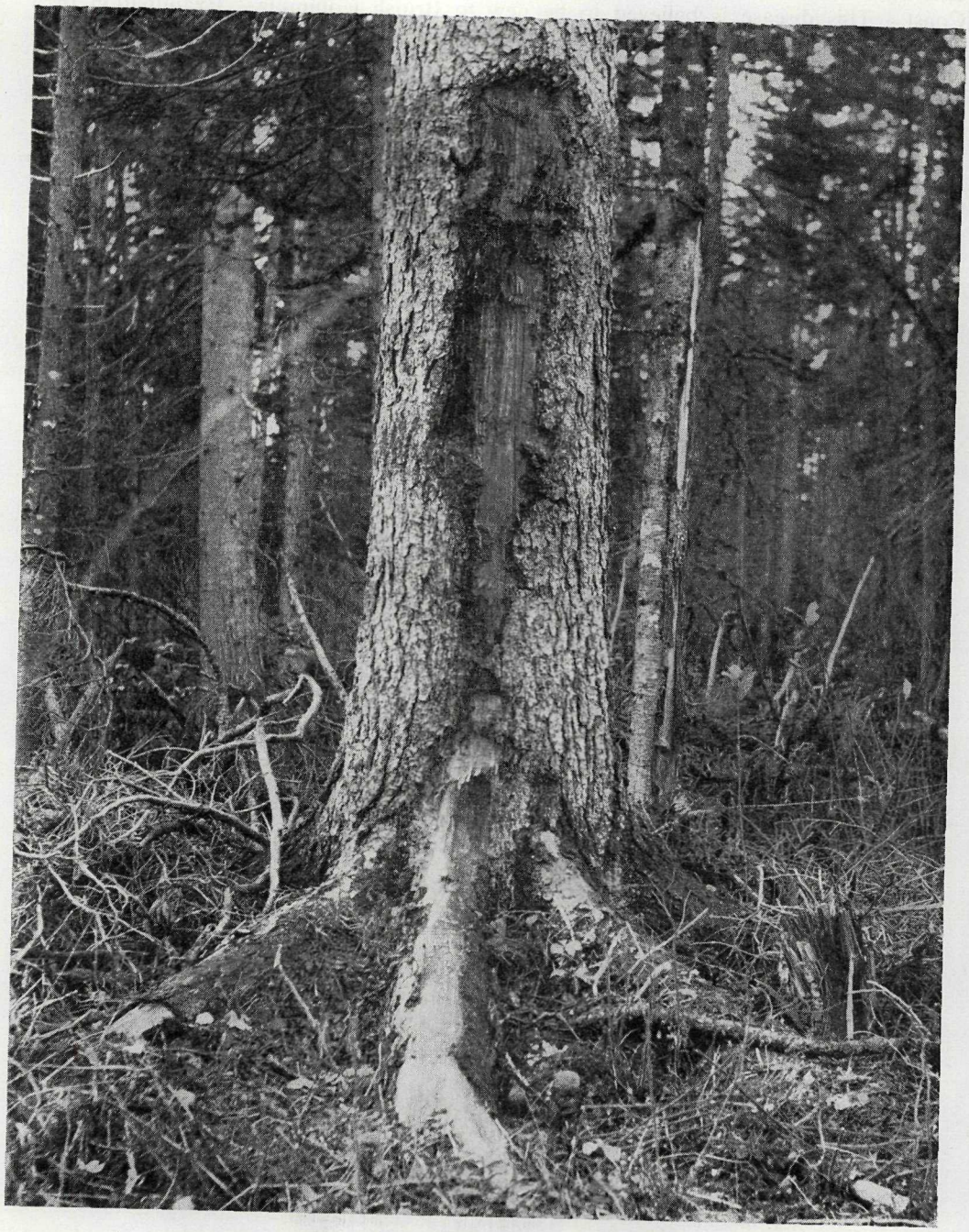
## NURSERY, SEED, AND ORNAMENTAL-TREE DISEASES

Post-emergence damping-off was very light at the Campbell River and Green Timbers nurseries and moderate at the Duncan and Cranbrook nurseries. At Cranbrook, some of the yellow pine seed used was several years old and required a heavy rate of sowing. Evidence was gained that such seed was more susceptible to pre-emergence damping-off, probably because of its slower emergence. Some fungicides increased emergence by 75 and 200 per cent as compared to controls.

Continuing investigations were undertaken on root-rot of ornamental cypress. Examinations of native species established adjacent to infected nurseries failed to reveal any evidence of spread of the disease to natural stands.



Die-back of Douglas fir showing dead leaders and development of the laterals.



Logging-damaged northern white spruce in the Prince George Forest District.

## DISEASES OF IMMATURE FORESTS

Investigations of yellow laminated root-rot of Douglas fir demonstrated the presence of this disease on roots as small as 0.04 inch in diameter and at soil depths of 3 feet. Active mycelium was encountered on the roots of apparently healthy trees, and it was evident that root deterioration may proceed to an advanced stage before crown symptoms become evident. No significant differences were apparent in the development of *Poria weirii* in sample plots established in thinned and unthinned stands in 1952.

Excavations of western white pine designed to appraise the condition of roots in healthy and pole-blight-affected trees were concluded during the year. Twenty-two additional trees were excavated, bringing the total sample to twenty trees with healthy crowns and seventeen in varying stages of decline. Analyses completed to date have shown that trees exhibiting pole-blight symptoms in their crowns had suffered severe reduction of the absorptive root system and considerable mortality in structural elements. This deterioration was most severe in trees in a late stage of pole-blight.

Further examinations were made of permanent sample plots established in the Arrow Lakes region in 1950 and 1951 to study the progress of pole-blight and the effect of sanitation thinning.

Studies were initiated on a condition of die-back in young Douglas fir reported on Vancouver Island and the adjacent Lower Mainland. Severe damage was reported in local areas in the vicinity of Sooke and near Salmon River in the Sayward Forest. Studies are in progress to determine the causal agent and the conditions which have contributed to the present outbreak.

Examinations were made of blister-rust disease garden and outplanting areas, but no further selecting or grafting was undertaken. Five hundred seedlings were imported from Montana for use in future grafting programmes.

## DISEASES OF MATURE FORESTS

A total sample of 399 spruce and 380 balsam was obtained in the Prince George Forest District to determine sampling criteria in regard to the incidence and importance of decay in logging-scars following partial cutting. Samples obtained in the vicinity of Summit Lake, Willow River, Giscome, Upper Fraser, and Stone Creek demonstrated important differences between tree species.

An examination was made of winter-damaged and bark-beetle-attacked Douglas fir in the Lac la Hache area. Forty trees were analysed in 4-, 8-, and 16-foot lengths and in three diameter classes to determine the intensity of sampling required in future studies of rate of pathological deterioration. Applicability of a tree-ring dating technique was also tested.

A further examination was made of plots established in wind-thrown spruce and balsam in the Prince George Forest District. Differences in the rate and nature of deterioration in these species were apparent.

A total of 1,531 samples were drawn from eighty-four forest-inventory plots established and felled by the Surveys Division in 1953–54. Major emphasis was placed on the Douglas fir-yellow pine type in the Interior region. Nineteen areas were examined in the Kamloops and two in the Nelson Forest Districts. These studies were designed in part to determine the nature of decay associated with Interior fir and yellow pine and in part to examine the deterioration that had developed subsequent to felling.

A reanalysis of data pertaining to decay in the Kitimat region was initiated. In this study statistical treatment was afforded 424 balsam and 496 hemlock previously sampled in four areas within the Kitsumgallum and Lakelse watersheds.

Field work was terminated on a study of hemlock forests on the west coast of Vancouver Island. Analysis of data obtained demonstrated that sampling methods employed were inadequate and that reliable information to assist in the orderly removal of mature forests requires a broader approach than that initially developed.

Winter-damaged and bark-beetle-attacked Douglas fir in the Lac la Hache area.

## FOREST RANGER SCHOOL

The Forest Service Ranger School was established on January 7th, 1946, for the purpose of training field personnel in Departmental work and responsibilities as well as more intensive education in forestry generally.

Since the School was established, eight classes of approximately twenty students each have graduated. The first three classes, comprised mostly of permanent Rangers, were given six-month courses consisting of three-month spring and fall terms, thus permitting the students to return to their respective districts for the hazardous summer months. Commencing with the class which started in January, 1949, the training period was extended to three three-month periods; that is, January to early April, October through December, and January to early in April of the succeeding calendar year. The added term was introduced when experience showed up a need for even better grounding in basic procedures to compensate for the lack of field experience apparent in the Assistant Rangers, from which future Ranger replacements and staff additions would be drawn, and because of the increased complexity of the field work resulting from more intensive forest management.

The men selected to attend the Ranger School are chosen after a rigid screening process, consisting of oral and written examination and a review of their previous records and aptitudes. New men are not eligible to undertake the examinations for attendance until they have served at least the equivalent of two seasons with the Forest Service and their services have been found to be satisfactory. Only the most promising men are selected from the total number eligible. In spite of limited dormitory space, the class commencing in September, 1956, was increased to thirty.

A programme of permanent building construction was undertaken in 1948, and the first unit, consisting of an up-to-date combined classroom, workshop, and administration building, completed. Work also was started on a dormitory to provide living accommodation for twenty-one students, visiting instructors, and kitchen staff. This building was ready for occupancy in 1949. Provision has been made for increasing the accommodation this year as a result of the increased enrolment. Since 1949, various improvements have been made, principally in connection with grounds and driveways. This programme has been a continuing one, with a number of small contract jobs and some work done by small hired crews each year.

The eighth class, consisting of twenty-one men, graduated in April. The ninth class of thirty men was enrolled in September and is due to graduate in December, 1957.

The increase in enrolment has made necessary adjustments to the time allotted to some courses and has required extra instructional assistance, particularly in courses involving practical skills.

Starting with the ninth class, a course in typewriting was introduced on a trial basis. The work of revision of several of the courses was continued to bring them up to date with recent developments in the administrative and technical fields.

Subjects given during the year were as follows:—

*Final Term, Eighth Class, Spring, 1956*

| Subject | Days Allotted |
|---|---|
| Management Policy and Procedure | 17 |
| Construction Technique | 9 |
| Stumpage Appraisal | 6 |
| Mechanical—Theory and Field | 12 |
| Silviculture | 7 |
| Ranger District Organization | 8 |
| Examinations, visitors, and field-trips | 12 |
| Total days | 71 |

*First Term, Ninth Class, Fall, 1956*

| Subject | Days Allotted |
|---|---|
| Fire Law and Operation Procedure | 16 |
| Public Speaking | 5 |
| Botany and Dendrology | 9 |
| Pathology | 3 |
| Entomology | 3 |
| Construction—Roads, Trails, and Telephones | 4 |
| Forest Inventory—Mapping | 3 |
| Mathematics Review | 6 |
| Surveying | 12 |
| Examinations, visitors, and field-trips | 6 |
| Total days | 67 |

## EXTRA COURSES

A five-day course for lookoutmen followed the spring term. Twenty men completed the course and later were appointed to stations in the Vancouver Forest District.

## ACKNOWLEDGMENTS

Thanks are due to lecturers and speakers provided by the following agencies: Forest Pathology and Forest Entomology Sections, Science Service, Canada Department of Agriculture; the Canadian Forestry Association; Faculty of Forestry, University of British Columbia; the Provincial Fire Marshal's Office; the Royal Canadian Mounted Police (Cloverdale Detachment), and lecturers supplied by other divisions of the Forest Service.

## FOREST ACCOUNTS

New peaks again were established by both the volume and value of business handled by this Division during 1956, details of which can be found in the various financial and other tables included elsewhere in this Report.

The total revenue collected climbed to an unprecedented $30,088,096. This exceeds the total for 1955, the previous high, by 30.1 per cent and is over 100 per cent greater than the ten-year average of $14,689,821, which is striking evidence of the growth taking place in the last few years. As might be expected, the largest increase was in the principal source of revenue, timber-sale stumpage, and resulted from higher average stumpage prices received, coupled with a continued increase in volume of timber cut. Most other categories of revenue also increased, but it is interesting to note that timber royalty declined to $2,069,424, the lowest total since 1945. This may be due to various factors, such as the volume cut from areas involved, types of material being harvested, and the species and grades available.

The rate of collection continued at a high level up to the year's end, but the outlook for the future was uncertain. The lumber market in the United Kingdom reportedly softened during the year, and there were indications that credit restrictions in both the United States and Canada were beginning to have a detrimental effect on those markets. Lower stumpage prices were being received on new sales of Crown timber, and fluctuations in selling prices required more frequent adjustments of sliding-scale stumpage rates, resulting in increased activity in the timber-sale records section.

Centralization of expenditure accounting was completed by April 1st, and the volume of this phase of the work was considerably increased as a result of expanded programmes undertaken by Parks and Recreation and Engineering Services Divisions. Payrolls for up to 1,800 employees monthly were being originated during the summer months in this Section, and the extension of unemployment insurance coverage to new categories added materially to the volume of record-keeping.

The Expenditure section of the Accounting Manual was completed and issued to all districts and divisions. Preparation of the various other sections is proceeding.

Continued interest was shown in log salvage permits, and by the end of the year a total of 477 had been issued.

# PERSONNEL

## ORGANIZATION

Two new Ranger districts were established during the year — one at 100 Mile House in the Kamloops Forest District and one at Quesnel in the Prince George Forest District. The new districts were created by splitting former overloaded districts. In the Nelson Forest District a member of the research staff was established with permanent headquarters, rather than on seasonal transfer as formerly. In the three Victoria headquarters divisions of Research, Public Relations, and Surveys and Inventory, all permanent-staff salaries were transferred from the Salary Vote to the respective divisional votes in the same manner as had previously been done for the Engineering Services, Reforestation, and Parks and Recreation Divisions. At the same time certain accounting functions, principally to do with the processing of all vouchers and payrolls, were transferred from some of these divisions and centralized under the Victoria Accounts Division.

Numerous changes in office accommodation and location took place in order to better accommodate the various sections and branches of the Service. Of these, the most notable took place at Prince Rupert, where the new Forest Service Building was occupied.

## SERVICES

The functions of personnel administration carried out by the Division remained substantially the same as in the previous year, namely: Employment office for staff recruitment, selection, placement, and handling of inquiries, correspondence, and documents regarding employment; information bureau for inquiries regarding location or service of present and former employees; personnel records office; administrative office dealing with leave, retirement, efficiency ratings, establishment control, work-organization advice, salary and classification administration; liaison office for resolving Forest Service personnel matters with the Civil Service Commission and British Columbia Government Employees' Association; communication centre for instruction, training, and promulgating of personnel policies and information; employee-counselling service and personnel-research centre. As a result of increasing activities and services, it was found necessary early in the year to reorganize the duties of the Personnel Office staff and to add a position of clerk-stenographer to the permanent establishment, bringing the total to five. A much higher proportion of the Personnel Officer's time during the year was spent in negotiations for salary increases and reclassifications.

During the year, discussions and negotiations were carried on with the Government Employees' Association in seven matters of grievance, of which six were satisfactorily settled and one remained unsettled at the end of the year.

## COMMUNICATIONS AND TRAINING

At the beginning of the year there was a considerable backlog of work due to the time-consuming staff survey of the previous year. This backlog, together with the excessive amount of time required during the year in negotiating for more equitable salaries and classifications, reduced to 6 per cent the time spent by the Personnel Officer in visits throughout the forest districts. This was less than one-third of the time spent during each of the previous three years. Only four districts and the Ranger School were visited, with an average of a week and a half in each district. Ranger meetings were attended at Kamloops and Nelson, and talks were given in two sessions at the Ranger School. The Personnel Officer also attended the meeting of Forest Management Officers held in the spring at Green Timbers and gave a talk and led discussion on safety at the Forest Protection Officers' meeting in Victoria in the fall. A District Foresters' meeting was not held, but instead the District Forester and his assistant were called from each district for individual consultations with Victoria divisions.

In further efforts to maintain and develop improved communication and understanding within the Forest Service, the Public Relations and Education Division obtained approval to publish a special Christmas edition of the " Forest Service Newsletter," a former monthly publication. One issue of " Personnel Notes " was prepared, and subscriptions were continued to the publications " Daily Memos for Supervisors," distributed to all Ranger and Scaling Supervisors, and " Just between Office Girls," circulated amongst the various divisional and district office staffs.

In the field of training, three senior members of the Forest Service professional and clerical staff were selected for the first class of the newly established Executive Development Training Plan, sponsored by the Government through the University of British Columbia. Arrangements were also made for thirty-two senior executive and supervisory personnel to attend a one-day course in Human Relations, Man Management, and Supervision, presented through the British Columbia Safety Council and the University Extension Department. Seven members of the Vancouver area staff directly connected with production and training took part in a one-day workshop on " How to Get Results through People " sponsored by the American Institute of Training Directors. The Personnel Officer attended the eighteenth conference of the Pacific Northwest Personnel Management Association as the Victoria Chapter president and received instruction in the Incident Method of supervisory training and in conducting Brain-storming Sessions for obtaining ideas that work in problem solution.

## ESTABLISHMENT, RECRUITMENT, AND STAFF TURNOVER

The permanent Civil Service establishment approved for the Forest Service by the Legislative Assembly for the fiscal year commencing April 1st, 1956, was 866, with eleven additional positions provided under the Salary Contingencies Vote, an increase of fifty-six positions over the previous year. Six of the additional positions, plus two others not anticipated, were approved by Order in Council and filled during the year. During 1956, 204 persons received Civil Service appointments and 125 left the permanent service. One twenty-five-year service badge was earned. There were six retirements during the year. Eighty-three transfers of permanent staff took place, almost double the previous year. Permanent staff turnover for the year averaged 14.3 per cent, with heaviest losses in the Prince George and Vancouver areas, followed by Kamloops and Prince Rupert. There was a 7.3-per-cent turnover in permanent technical staff, a 5.5-per-cent turnover in professional staff, and a 25.9-per-cent turnover of clerical and draughting staff. Turnover of the latter group in the Prince George area reached 48.1 per cent by the year's end. The loss of fifteen graduate foresters with an aggregate of over 114 years' experience with the Forest Service was seriously aggravated by extreme difficulty in recruiting, due primarily to non-competitive salaries offered. Only three members of the 1956 forestry class from the University of British Columbia were recruited.

Despite a stepped-up safety consciousness, two fatal accidents occurred during the year when a seasonal fieldman was drowned on Vancouver Island and a company fire-fighter on Forest Service payroll was drowned in the Prince George District.

Some 325 applications for employment were handled by correspondence in the Personnel Office alone, apart from Youth Training Camp applications and many others handled through divisional and district offices. Written examinations were held for three promotional positions, and oral examinations at panel interviews were employed in filling fourteen positions. The Personnel Office also participated in making selections for 112 other Civil Service positions.

At the annual spring examination for Assistant Rangers, 187 candidates sat, of whom forty-three passed and thirty-eight accepted employment. As there were sixty-one vacancies for Assistant Rangers, the remaining positions were filled on an acting basis by candidates not fully qualified.

## CLASSIFICATIONS, SALARIES, AND WORKING CONDITIONS

It was found necessary to establish eight new position classifications. These were Assistant Superintendent of Construction and a combined grade of Captain and Engineer—Launch in the technical group. In the professional group a fourth grade of Forester and third grade of Assistant Engineer were created, as well as four grades of Engineering Assistant. These latter positions were necessitated by the extreme shortage of professional engineers and make possible the promotion of experienced but subprofessional men to the equivalent of Project Engineer and Area Supervisor status. Changes were also made in the position specifications and classification status of the professional groups of Agrologists, Engineers, and Foresters and in the technical groups of photographic positions, Radio Operators, and Building Construction Section.

Numerous individual position classification reviews were carried out. Of the 156 which were submitted to the Civil Service Commission for approval of reclassification—over double the previous year—138 were approved and eighteen were rejected. During the year one merit increase was withheld. One dismissal by Order in Council was required and there were two demotions.

At the commencement of the fiscal year in April, the Government announced that certain funds had been set aside for fairly general salary increases throughout the Civil Service. Some 75 per cent of the 133 permanent classifications in the Forest Service benefited by this increase, as allocated by the Civil Service Commission, in amounts ranging from 3.8 to 14.5 per cent. Prior to April, approval was obtained for a substantial increase in Assistant Ranger salaries and in rates for University Student Assistants, seasonal Forest Survey Assistants, and seasonal Engineering Aides in an effort to improve recruitment in these categories. Subsequent to the Civil Service revisions, general revisions were approved affecting the wages of all casual " outside " staffs. Resulting from the Commission's allocation of increases throughout the Civil Service staff, some anomalies soon became apparent. This unhappy situation was aggravated by the continuing substantial wage increases occurring in outside business and industry.

Adjustments were soon made in the classifications of Forest Assistant—Grades 2 and 3, Drivers, Assistant Rangers, Camp Cooks, and Foremen. Later, through the combined efforts of the Official Scalers' Association, industry, and Forest Service senior officers, fairly substantial increases were obtained for the scaling field staff, Rangers, Ranger Supervisors, and Forest Assistants—Grades 4 and 5. Subsequently some adjustments were obtained in the radio classifications, Superintendent and Assistant Superintendent of Construction, Langford Workshop Foreman, Nursery Superintendents, Assistant Forest Agrologist—Grade 3, and in the specifications and salaries pertaining to stand-treatment and cruising crews. Numerous other representations were made, with particular reference to the professional staff, mechanical supervisory staff, Marine Station employees, and other groups. These representations were continuing at the year's end but were largely rejected or postponed by the Civil Service Commission on the grounds of insufficient funds.

Effective January 1st, 1956, the Federal Government granted our request for the extension of unemployment insurance coverage to forestry workers, and agreement was reached on the details of this extension to all Forest Service non-Civil Service employees, except casual fire-fighters. During the year the Superannuation Commission advised that Part I of the " Superannuation Act " would apply in future to any full-time monthly salaried employee not holding a Civil Service appointment, and contributions of all such Forest Service employees, including Assistant Rangers and other field staff, were transferred from the Retirement Fund to the Superannuation Fund, with future contributions being based on the Superannuation Fund scale. Instructions were received prohibiting the employment of persons with direct relatives in the government service, but these instructions were later modified for practical purposes to permit such employment in

situations where no conflict of interests could arise. It was noted in the Forest Service that there are many instances in which outstanding service has been rendered by members of the same family devoted to the service of the public in forest administration and other spheres. Negotiations and discussions were carried on between departments and the Civil Service Commission with regard to board and lodging regulations. Letters of instruction to Protection field staff were revised prior to the field season. Revisions in the conditions of appointment and salary administration applying to men graduating from the Forest Ranger School were made, and a form of contract was drawn up intended to eliminate misunderstanding regarding the responsibilities of the Forest Service and the student on graduation from the Ranger School.

## YOUTH TRAINING PROGRAMME

The efforts of the past several years in operating the Youth Training Programme have proven to be worth while. The popularity of the training scheme is evidenced by the fact that applications were received from 649 boys for enrolment in the programme, forty-three of them from boys under the age requirements. Funds permitted the employment of 239 youths, who were placed in twenty-two crews, of ten to twelve boys each, distributed throughout the Province. Parks and Recreation Division had twelve crews; Research Division, two crews; and each of the forest districts, with the exception of Vancouver, had two crews each. The crews, for the most part, lived in tents with lumber floors and side-walls, in which small heaters were placed to provide warmth and some degree of comfort during inclement weather. Each crew was under the immediate supervision and direction of a foreman, employed specifically for the purpose, who was responsible to the forester in charge of the district or division concerned. Food was prepared by a competent cook and was varied and nutritious. Each camp was equipped with light-delivery trucks of the ½-ton pick-up model for transportating supplies, both food and materials, and these were available in cases of emergency. Each crew was equipped with tools suitable for woods work and rough carpentry work. Also first-aid equipment and, where necessary, life-preservers were provided. Each camp was equipped with transmitting-type radios, which permitted constant contact with the district or division office.

The site for the camp was located at the project to be undertaken. Here the youths were given instruction on how to use the various tools necessary for woods work—axe, mattock, saw, shovel, and tools for rough carpentry work. After the instruction period was completed, the boys were put to work developing camp-sites, picnic-sites, and park areas. In some cases, trail and light road maintenance and construction were carried out, but no work beyond the physical capabilities of the youths was attempted.

Educational features were conducted as part of the programme. These included talks on forest protection, management, and entomology, in addition to lectures by various senior officers on subjects such as a career in the Forest Service at both professional and practical levels. In some camps, instruction was given in first aid, weather instruments, and lumber-grading. When possible, organized trips were arranged to industrial operations—logging, milling operations, and underground mines.

For recreation the crews were provided with some light sport equipment, and competitive games arranged with local teams. Recreational periods made it possible for the youths to go boating, swimming, and fishing. Reading material and moving pictures were also provided.

# PERSONNEL DIRECTORY, 1957

## VICTORIA OFFICE

| | |
|---|---|
| Dr. C. D. Orchard | Deputy Minister and Chief Forester. |
| Hicks, W. V. | Départmental Comptroller. |
| MacLeod, D. | Assistant to Comptroller. |
| Rhodes, A. E. | Chief Accountant. |
| Robertson, D. | Assistant Accountant. |
| Cooper, C. | Forest Counsel. |
| Williams, W. J. | Personnel Officer. |
| McKeever, A. E. | Assistant Personnel Officer. |

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| | |
|---|---|
| F. S. McKinnon | Assistant Chief Forester i/c Technical Planning Branch. |
| Pogue, H. M. | Forester i/c Surveys and Inventory Division. |
| Cliff, H. N. | Forester. |
| Highsted, C. J. | Assistant Forester (Field Co-ordination). |
| Malcolm, R. M. | Assistant Forester (Technical Liaison). |
| Vaughan, E. G. | Assistant Forester (Office Co-ordination). |
| Calder, C. J. | Assistant Forester (Mapping Co-ordination). |
| Jones, R. C. | Assistant Forester (Operations Co-ordination). |
| Allison, G. W. | Assistant Forester (Photogrammetry). |
| Breadon, R. E. | Assistant Forester (Gross Volumes, Growth). |
| Browne, J. E. | Assistant Forester (Net Volumes, Depletion). |
| Lyons, E. H. | Assistant Forester (Revision Co-ordination). |
| Bradshaw, M. W. | Assistant Forester (Coast Region). |
| Fligg, D. M. | Assistant Forester (West Interior Region). |
| Horth, A. | Assistant Forester (Operating and Special Cruises). |
| McLaren, J. G. | Assistant Forester (East Interior Region). |
| Small, P. | Assistant Forester (South Interior Region). |
| Wright, N. R. | Assistant Forester (North Interior Region). |
| Abernethy, G. M. | Assistant Forester. |
| Dixon-Nuttall, M. F. | Assistant Forester. |
| Finding, S. L. | Assistant Forester. |
| Jelinek, J. J. | Assistant Forester. |
| Leahy, P. M. | Assistant Forester. |
| Macdougall, D. | Assistant Forester. |
| McMinn, A. R. | Assistant Forester. |
| Robinson, A. B. | Assistant Forester. |
| Brahniuk, F. | Forester-in-training. |
| Fajrajsl, M. | Forester-in-training. |
| Foulger, A. | Forester-in-training. |
| Goddard, W. D. | Forester-in-training. |
| Kruse, J. | Forester-in-training. |
| Raig, H. | Forester-in-training. |
| Spriggs, W. M. | Forester-in-training. |
| Vyhnanek, J. | Forester-in-training. |
| Wood, I. | Forester-in-training. |
| Rhodes, C. J. T. | Chief Draughtsman. |
| Smith, S. | Chief Clerk (General Office). |
| Bailey, W. M. | Principal Clerk (Automation Planning). |
| McKibben, A. M. | Mechanical Supervisor. |
| Sigler, D. | Radio Technician. |
| Powell, O. J. | *Supervisor of Stores and Housing.* |

| | |
|---|---|
| Spilsbury, R. H. | Forester i/c Research Division. |
| Fraser, A. R. | Assistant Forester (Technical Adviser). |
| Warrack, G. C. | Assistant Forester (i/c Cowichan Lake Experiment Station). |
| Decie, T. P. | Forester-in-Training (i/c Aleza Lake Experiment Station). |

VICTORIA OFFICE—*Continued*

| | |
|---|---|
| Garman, E. H. | Assistant Forester (Silviculture). |
| Orr-Ewing, A. L. | Assistant Forester (Genetics). |
| Schmidt, R. L. | Assistant Forester (Ecology). |
| Finnis, J. M. | Assistant Forester (Silviculture). |
| Stettler, R. | Assistant Forester (Silviculture). |
| Illingworth, K. | Assistant Forester (Silviculture). |
| Arlidge, J. W. C. | Forester-in-training (Ecology). |
| Knight, H. A. W. | Forest Agrologist (Soils). |
| Prochnau, A. | Forest Agrologist (Silvics). |
| Clark, M. B. | Regional Research Officer (Kamloops). |
| Stewart, M. | Regional Research Officer (Nelson). |
| Roberts, E. A. | Forest Assistant (Cowichan Lake Experiment Station). |
| Hellenius, R. A. | Forest Assistant (Aleza Lake Experiment Station). |
| Prideaux, D. | Forest Assistant (Duncan). |
| Goward, Miss R. | Clerk. |
| SILBURN, G. | FORESTER I/C REFORESTATION DIVISION. |
| Bamford, A. H. | Assistant Forester. |
| Whiting, E. G. | Assistant Forester. |
| Wallinger, D. P. | Assistant Forester (Cranbrook). |
| Devitt, W. J. B. | Forester-in-training (Victoria). |
| Berg, W. E. | Nursery Superintendent (Cranbrook). |
| Long, J. R. | Nursery Superintendent (Duncan). |
| Wells, T. | Nursery Superintendent (Green Timbers). |
| Campbell, W. H. | Technical Forest Assistant. |
| Mackenzie, C. G. | Technical Forest Assistant. |
| Madsen, E. N. | Technical Forest Assistant. |
| Platt, L. V. | Technical Forest Assistant. |
| HUGHES, W. G. | FORESTER I/C WORKING PLANS DIVISION. |
| Mason, N. V. | Forester. |
| Carey, D. M. | Assistant Forester (Working Plans Analysis). |
| Burrows, I. R. | Assistant Forester (Public Working Circles). |
| Tannhauser, J. R. | Assistant Forester (Tree-farms). |
| Judd, P. H. | Assistant Forester (Farm Wood-lots). |
| Elliott, R. J. | Assistant Forester (General). |
| Jansen, W. G. | Clerk. |
| Owen, J. E. | Technical Forest Assistant (Farm Wood-lots). |
| DRUCE, E. | FORESTER I/C PUBLIC RELATIONS AND EDUCATION DIVISION. |
| Monk, D. R. | Public Relations Officer. |
| Golding, R. C. T. | Photographer. |
| Jones, T. C. | Technical Forest Assistant (Lecturer). |
| Hall, R. F. | Technical Forest Assistant (Lecturer). |
| Guthrie, Mrs. I. V. | Forest Service Library. |
| Moutray, L. E. | Clerk (Motion-picture Library). |

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| | |
|---|---|
| R. G. MCKEE | ASSISTANT CHIEF FORESTER I/C OPERATIONS BRANCH. |
| STOKES, J. S. | FORESTER I/C MANAGEMENT DIVISION. |
| Marling, S. E. | Forester. |
| Reid, J. A. K. | Forester (Appraisals). |
| Corregan, R. W. | Assistant Forester. |
| Borzuchowski, R. | Assistant Forester. |
| Bancroft, H. C. | Assistant Forester. |
| Payne, J. C. | Assistant Forester. |
| Collins, A. E. | Assistant Forester (Cover Maps). |
| Glew, D. R. | Assistant Forester (Silviculture). |
| Axhorn, C. P. | Chief Clerk (General). |
| Chisholm, A. | Chief Clerk (Timber Sale Administration). |

## VICTORIA OFFICE—*Continued*

| | |
|---|---|
| Pendray, W. C. | Agrologist i/c Grazing Division. |
| Murray, W. K. | Assistant Agrologist. |
| Greggor, R. D. | Forester i/c Engineering Services Division. |
| Crowe, A. B. | Mechanical Superintendent. |
| Gilbert, H. F. | Assistant Mechanical Superintendent. |
| Playfair, G. A. | Radio Superintendent |
| Chorlton, D. J. | Assistant Radio Superintendent. |
| Taylor, J. H. | Superintendent of Construction. |
| Paynter, J. W. | Assistant Superintendent of Construction. |
| Slaney, F. S. | Chief Engineer. |
| Hemphill, P. J. J. | Construction Engineer. |
| White, R. G. | Assistant Construction Engineer. |
| Doyle, P. | Contracts Engineer. |
| Williams, C. P. | Project Engineer (White Swan Lake). |
| Ehrenholz, E. | Project Engineer (Willow River). |
| MacDonald, R. L. | Project Engineer (Lawless Creek). |
| Miles-Pickup, H. | Project Engineer (Chilliwack). |
| Laitinen, S. M. | Project Superintendent (Swift River). |
| Adams, D. J. | Project Superintendent (Salmon Arm-Chase). |
| Turner, H. L. | Project Superintendent (Morice River). |
| Rieche, K. W. | Engineering Assistant (Right-of-way Clearing). |
| Thomas, R. D. | Surveys Engineer. |
| Bryant, R. F. | Survey Supervisor (Northern Area). |
| Waelti, H. | Survey Supervisor (Southern Area). |
| Jacobsen, J. M. | Reconnaissance Engineer. |
| Forsberg, R. H. | Reconnaissance Engineer. |
| Kelly, R. L. | Engineering Assistant. |
| Johnson, E. M. | Engineering Assistant. |
| Johnston, C. C. | Engineering Assistant. |
| Scarisbrick, R. G. | Design Engineer. |
| Nordlund, K. N. | Assistant Engineer. |
| Dery, E. I. | Assistant Engineer. |
| Robinson, E. L. | Soils Technician. |
| Greenwood, A. L. F. | Office Assistant. |
| Johnson, F. E. | Land Titles Officer. |
| Foxgord, J. E. | Senior Clerk. |
| Hill, H. H. | Superintendent, Forest Service Marine Station. |
| Shaw, W. H. | Clerk, Forest Service Marine Station. |
| Cameron, I. T. | Forester i/c Protection Division. |
| Nelson, F. H. | Forest Protection Officer. |
| Henning, W. G. | Assistant Forester. |
| Moyes, E. A. | Assistant Forester (Research). |
| Turner, J. A. | Meteorologist. |
| Stringer, A. | Chief Clerk. |
| Dixon, A. H. | Forester i/c Ranger School (New Westminster). |
| Kirk, A. J. | Assistant to the Forester in Charge. |
| Finlayson, D. A. | Clerk. |

## VANCOUVER DISTRICT

| | |
|---|---|
| D. B. Taylor | District Forester. |
| Boulton, L. B. B. | Assistant District Forester. |
| McRae, N.A. | Forester (Management). |
| Tuttle, W. F. (Management); Kennon, G.; Gill, R. G. (Public Working Circles); Williams, F. S. (Forest Management Licences); Johnston, G. R. (Silviculture) | Assistant Foresters. |
| Holmberg, J. H. (Operations); Owen, D. H.; Morrison, R. H. (Slash-disposal); Haddon, C. D. S. (Slash-disposal) | Forest Protection Officers. |
| Hlady, E.; Scholefield, A.; Rogers, G. A.; MacLaurin, D.; Rickson, D. | Foresters-in-training. |

VANCOUVER DISTRICT—*Continued*

| | |
|---|---|
| Brewis, D. (Public Working Circles) | Technical Forest Assistant. |
| Tannock, F.; Robinson, J. H.; Wagner, C. J. | Supervisors. |
| Evans, C. | Mechanical Supervisor. |
| Armstrong, C. L. (Superintendent); Coles, H. L. (Assistant Superintendent); Agnew, J. P. (Records and Compiling); Dunn, H. J. (Tabulating Supervisor) | Scalers. |
| Marriott, G. L.; McNary, E. C.; Clutterbuck, F. | Inspectors of Licensed Scalers and Export. |
| Benwell, S. A. | Administrative Assistant. |
| McNeil, A. G.; Gillies, D. (Management) | Principal Clerks. |
| Barrett, R. J. (Chilliwack); Ginnever, A. F. W. (Hope); Wilson, R. (Harrison Lake); Rockwell, I. (Mission); Aylett, R. W. (Port Moody); Henderson, J. E. (Squamish); Chamberlin, L. C. (Sechelt); Carr, W. S. (Madeira Park); Jones, R. W. (Powell River); Winslow, J. R. (Lund); McKinnon, C. G. (Thurston Bay E.); Webster, J. B. (Thurston Bay W.); Greenhouse, J. P. (Chatham Channel); Bell, P. A. (Echo Bay); Antonelli, M. W. (Alert Bay); Lorrentsen, L. H. (Port Hardy); Hollinshead, S. (Campbell River); Silke, S. (Courtenay); Glassford, R. J. (Parksville); Haley, K. (Nanaimo); Rawlins, W. P. (Duncan); Frost, S. C. (Ganges); Mudge, M. H. (Langford); Morley, K. A. (Lake Cowichan); Brooks, F. T. (Alberni); Ormond, L. D. D. (Tofino); Carradice, J. H. (Campbell River) | Rangers. |

PRINCE RUPERT DISTRICT

| | |
|---|---|
| P. Young | District Forester. |
| Bennett, C. E. | Assistant District Forester. |
| Selkirk, D. R. (Management); Morton, W. D. (Management Cruising); Schutz, A. C. (Public Working Circles); Gilmour, J. R. (Silviculture); Munro, J. F. (Management Licences); Grant, D. T. (Management Administration); McDonald, J. A. D. (Operations) | Assistant Foresters. |
| Strimbold, S. T. | Forest Protection Officer. |
| Richards, D. P. (Management Administration) | Forester-in-training. |
| Campbell, W. H. (Management-Appraisals); Dahlie, C. (Project Supervisor) | Technical Forest Assistants. |
| Whitehouse, W. D. (Coast); Smith, D. R. (Interior) | Inspectors of Licensed Scalers. |
| Court, T. (Ocean Falls); Pavlikis, N. A. (Prince Rupert) | Scalers. |
| MacPherson, A. C. (Coast); Antilla, W. A. (Interior) | Ranger Supervisors. |
| Thompson, H. W. | Mechanical Supervisor. |
| Smith, C. V. | Chief Clerk. |
| Mackie, B. A. (Ocean Falls); Pement, A. R. (Queen Charlotte City); Brooks, R. L. (Prince Rupert); Taft, L. G. (Terrace); Hamblin, R. A. (Kitwanga); Petty, A. P. (Hazelton); Mould, J. (Smithers); Clay, W. D. (Telkwa); Keefe, J. J. (Houston); Kullander, M. O. (Pendleton Bay); Hesketh, F. G. (Burns Lake (N.)); Gibson, C. L. (Burns Lake (S.)); Lindstrom, W. C. (Southbank) | Rangers. |

## PRINCE GEORGE DISTRICT

| | |
|---|---|
| W. C. PHILLIPS | DISTRICT FORESTER. |
| Young, W. E. L. | Assistant District Forester. |
| Knight, E. (Management); Young, W. (District Silviculturist); Talbot, G. P. (Assistant District Silviculturist); Bodman, P. (Management Licences); Isenor, M. G. (Protection); Sutton, R. C. (Management); Robbins, R. (Public Working Circles) | Assistant Foresters. |
| Clouston, R. (Management); Armit, D. (Management) | Foresters-in-training. |
| Willington, L. A. (Protection); Cowell, W. C. (Stand Treatment); Hellenius, R. A. (Research, Aleza Lake); Flynn, D. M. (Cruising) | Forest Assistants. |
| McKenzie, R. A.; Smith, W. W. | Supervisors. |
| Layton, H. R.; Threatful, N.; Rogacz, J. | Inspectors of Scalers. |
| Galinis, J. | Radio Technician. |
| Watts, M. C. | Mechanical Supervisor. |
| Carter, R. B. | Chief Clerk. |
| French, C. L. (McBride); Baker, F. M. (Penny); Kerr, R. D. (Prince George); Bailey, J. (Prince George); Northrup, K. A. (Fort St. James); Kuly, A. (Quesnel); Barbour, H. T. (Pouce Coupe); Angly, R. (Aleza Lake); Graham, G. W. (Vanderhoof); Cosens, A. S. (Fort St. John); McQueen, A. L. (Fort Fraser); Irwin, K. (Summit Lake); Meents, G. E. (Quesnel); Clifford, R. L. (Prince George); Anderson, O. J. (Hixon); Mitchell, B. A. (Quesnel); Thornton, S. H. (Quesnel); Mastin, T. (Atlin); Macalister, J. S. (Quesnel) | Rangers. |

## KAMLOOPS DISTRICT

| | |
|---|---|
| L. F. SWANNELL | DISTRICT FORESTER. |
| Johnston, J. R. | Assistant District Forester. |
| Bruce, J. B. | Forester (Management). |
| Kerr, M. L. (Management Timber Sales); Parlow, A. L. (Silviculture); Neighbor, B. E. (Management Licences and Farm Wood-lots); Groner, A. (Working Plans); Clark, M. B. (Regional Research Officer); Robinson, J. L. (Management); Robson, P. E. (Management Timber Sales); Boulton, G. B. (Cruising, Management Timber Sales); Paterson, D. N. (Management Timber Sales) | Assistant Foresters. |
| Johnson, I. B.; Noakes, H. S. | Forest Protection Officers. |
| Radford, B.; Pringle, R.; Smith, E. R.; Wallace, M. T. (Grazing) | Assistant Forest Agrologists. |
| Mayson, H. G. (Operations); Gibbs, T. L. (Operations, Projects); Huffman, C. H. (Stand Treatment); Leduc, M. B. (Christmas Trees) | Technical Forest Assistants. |
| Charlesworth, E. A.; Hewlett, R. C.; Robinson, G. T. | Inspectors of Licensed Scalers. |
| Fraser, D. P.; Specht, A. F.; McGuire, C. J. | Supervisors. |
| Stewart, W. J. | Mechanical Supervisor. |
| Cowan, W. P. | Chief Clerk. |
| Specht, G. H. (Lumby); McKenna, L. J. (Birch Island); Noble, J. O. (Barriere); Petersen, K. N. (Kamloops (N.)); Paquette, O. (Chase); Boydell, J., and Bodman, G. (Salmon Arm); Jones, G. G. (Sicamous); Cameron, A. G. (Lillooet); Johnson, M. A. (Vernon); Scott, E. L. (Penticton); Dearing, J. H. (Princeton); Robertson, C. E. (Clinton); Cawston, J. B. (Williams Lake); Hamilton, T. J. (Alexis Creek); Hewlett, H. C. (Kelowna); Williams, R. V. (Merritt); Hill, A. F. (Blue River); Collins, G. B. (Enderby); DeWitt, D. O. (100 Mile (N.)); Weinard, J. P. (Kamloops (S.)); Tourond, A. L. (Horsefly); Hammer, H. B. (100 Mile (S.)); Wittner, D. J. | Rangers. |

## NELSON DISTRICT

| | |
|---|---|
| H. B. Forse | District Forester. |
| Robinson, Eric W. | Assistant District Forester. |
| Lehrle, L. W. W. (Management); Waldie, R. A. (Silviculture); Hubbard, T. R. (Working Circles); Bishop, W. G. (Management Licences); Hough, W. S. (Management); Joyce, F. (Christmas Trees, Wood-lots); Stewart, M. (Regional Research Officer) | Assistant Foresters. |
| Couling, H. L. | Forest Protection Officer. |
| Gavin, H. (Management, Cruising); Grainger, W. D. (Silviculture); Bruels, W. (Management) | Foresters-in-training. |
| Milroy, J. E. | Assistant Forest Agrologist. |
| Bawtree, A. H. | Agrologist-in-training. |
| Palethorpe, G. A. (Operations); Barnes, J. N. (Operations, Projects); Fisher, S. F. (Cruising); Hansen, S. H. (Cruising); Chase, L. A. (Protection); Sandberg, H. G. (Management, Christmas Trees); Burbidge, M. (Stand Treatment) | Forest Assistants. |
| Killough, J. F.; Hill, F. R. | Inspectors of Licensed Scalers. |
| Christie, R. O.; MacDonald, J. P.; Kettleson, O. J. | Supervisors of Rangers. |
| Lees, J. | Mechanical Superintendent. |
| Koski, V. I. | Chief Clerk. |
| Hopkins, H. V. (Invermere); Humphrey, J. L. (Fernie); Connolly, J. E. (Golden); Gierl, J. B. (Cranbrook (E.)); Ross, A. I. (Creston); Stilwell, L. E. (Kaslo); Benwell, W. G. (Lardeau); Larsen, A. J. (Nelson); Robinson, R. E. (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); Old, F. G. (Arrowhead); Haggart, W. D. (Edgewood); Jupp, C. C. (Elko); Reaney, R. J. (Spillimacheen); Bailey, J. F. (Cranbrook (W.)); Ivens, J. H. (Beaverdell); Webster, G. R. (Slocan City); Jackson, R. C. (Revelstoke); Pearce, F. (Kettle Valley) | Rangers. |

Note.—Parks and Recreation Division staff, formerly members of the British Columbia Forest Service, are now members of the Parks Branch, Department of Conservation and Recreation, and are, therefore, no longer shown in this directory.

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(1)

## DISTRIBUTION OF PERSONNEL, 1956

| | Vancouver | Prince Rupert | Prince George | Kamloops | Nelson | Victoria | Total |
|---|---|---|---|---|---|---|---|
| *Continuously Employed* | | | | | | | |
| Chief Forester, Assistant Chief Foresters, and Division Foresters | ..... | ..... | ..... | ..... | ..... | 14 | 14 |
| Forest Counsel and Personnel Officer | ..... | ..... | ..... | ..... | ..... | 2 | 2 |
| District Foresters and Assistant District Foresters | 2 | 2 | 2 | 2 | 2 | ..... | 10 |
| Foresters and Assistant Foresters | 11 | 8 | 9 | 11 | 10 | 76 | 125 |
| Agrologists and Assistants | ..... | ..... | ..... | 5 | 2 | 3 | 10 |
| Engineers and Assistants | ..... | ..... | ..... | ..... | ..... | 23 | 23 |
| Forest Protection Officers | 4 | 1 | ..... | 2 | 1 | 2 | 10 |
| Supervisors of Rangers | 3 | 2 | 3 | 3 | 3 | ..... | 14 |
| Rangers | 27 | 14 | 19 | 24 | 24 | 2 | 110 |
| Supervisor of Scalers and Assistants | 11 | 2 | 3 | 3 | 2 | ..... | 21 |
| Scalers, Official | 74 | 1 | ..... | ..... | ..... | ..... | 75 |
| Scalers, Official, temporary | 49 | 1 | ..... | 1 | ..... | ..... | 51 |
| Comptroller and Audit Assistants | ..... | ..... | ..... | ..... | ..... | 7 | 7 |
| Engineering, Mechanical and Radio | 4 | 3 | 3 | 3 | 3 | 66 | 82 |
| Technical Forest and Public Relations Assistants | 4 | 4 | 31 | 34 | 9 | 13 | 95 |
| Reforestation, Parks, Research, and Survey Assistants | ..... | ..... | 2 | ..... | ..... | 87 | 89 |
| Nursery Superintendents | ..... | ..... | ..... | ..... | ..... | 4 | 4 |
| Draughtsmen | 5 | 3 | 4 | 4 | 3 | 33 | 52 |
| Clerks, Stenographers, and Messengers | 99 | 30 | 28 | 31 | 27 | 135 | 350 |
| Superintendent and Foremen, Forest Service Marine Station | ..... | ..... | ..... | ..... | ..... | 5 | 5 |
| Mechanics, Carpenters, and Technicians | ..... | ..... | 1 | ..... | ..... | 40 | 41 |
| Launch Crewmen | 15 | 5 | ..... | ..... | ..... | 2 | 22 |
| Assistant and Acting Rangers | 37 | 24 | 33 | 48 | 36 | ..... | 178 |
| Dispatchers | 20 | 5 | 7 | 11 | 8 | 1 | 52 |
| Cruisers, Compassmen, and Marking Crewmen | 17 | 24 | 12 | 15 | 12 | ..... | 80 |
| Truck and Tractor Operators | ..... | 1 | 3 | ..... | 3 | 29 | 36 |
| Foremen | ..... | ..... | 1 | ..... | ..... | 13 | 14 |
| Miscellaneous | 3 | 1 | 5 | 1 | 3 | 35 | 48 |
| Totals, continuous personnel | 385 | 131 | 166 | 198 | 148 | 592 | 1,620 |
| *Seasonally Employed* | | | | | | | |
| Assistant and Acting Rangers | 18 | 5 | 4 | 1 | 10 | 3 | 41 |
| Patrolmen | 4 | 5 | 5 | 4 | 14 | 7 | 39 |
| Lookoutmen | 34 | 16 | 19 | 29 | 39 | 3 | 140 |
| Dispatchers and Radio Operators | 5 | 1 | 4 | 10 | 12 | 3 | 35 |
| Fire-suppression Crewmen | 50 | ..... | ..... | 48 | 32 | ..... | 130 |
| Reforestation—Snag-fallers, planters, etc. | ..... | ..... | ..... | ..... | ..... | 161 | 161 |
| Cruisers and Compassmen | ..... | ..... | ..... | 8 | ..... | ..... | 8 |
| Truck and Tractor Operators | 4 | 4 | 3 | 6 | 5 | 33 | 55 |
| Student and Survey Assistants | ..... | ..... | ..... | 1 | ..... | 311 | 312 |
| Silvicultural Crewmen | ..... | ..... | ..... | 5 | ..... | ..... | 5 |
| Foremen | 5 | 1 | ..... | 10 | 6 | 3 | 25 |
| Youth Training Programme | ..... | 24 | 23 | 20 | 20 | 176 | 263 |
| Miscellaneous | 13 | 20 | 25 | 19 | 12 | 214 | 303 |
| Totals, seasonal personnel | 133 | 76 | 83 | 161 | 150 | 914 | 1,517 |
| Totals, all personnel | 518 | 207 | 249 | 359 | 298 | 1,506 | 3,137 |

(2)

## SUMMARY OF PLANTING DURING THE YEARS 1947 TO 1956

| Year | Experimental | | Forest Service on Crown Land | | Private Companies | | Community Forests | | Private Planting and Farm Wood-lots | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Trees in Thousands | Acres | Trees in Thousands | Acres | Trees in Thousands | Acres | Trees in Thousands | Acres | Trees in Thousands | Acres | Trees in Thousands | Acres |
| *Coast* | | | | | | | | | | | | |
| 1956 | 30.6 | 29.0 | 954.3 | 1,682.0 | 1,389.9 | 3,536.0 | 1.2 | 2.0 | 58.7 | 90.0 | 2,434.7 | 5,339.0 |
| 1955 | 10.0 | 15.0 | 2,174.6 | 3,410.0 | 4,623.4 | 7,076.0 | 40.0 | 15.0 | 62.2 | 80.0 | 6,910.2 | 10,596.0 |
| 1954 | 27.5 | 30.0 | 5,679.0 | 7,135.0 | 3,302.0 | 5,024.0 | 59.5 | 36.0 | 73.7 | 72.0 | 9,141.7 | 12,297.0 |
| 1953 | 28.5 | 33.0 | 2,377.0 | 2,860.0 | 2,740.1 | 3,808.0 | 25.0 | 31.0 | 21.0 | 6.0 | 5,191.6 | 6,738.0 |
| 1952 | 8.1 | 5.0 | 4,228.4 | 4,865.0 | 1,664.2 | 2,065.0 | 137.4 | 210.0 | 40.9 | 15.0 | 6,079.0 | 7,160.0 |
| 1951 | 12.0 | 20.0 | 5,733.9 | 6,070.0 | 1,808.0 | 2,235.0 | 110.0 | 130.0 | 31.2 | 25.0 | 7,695.1 | 8,480.0 |
| 1950 | ..... | ..... | 6,261.6 | 6,670.0 | 553.1 | 680.0 | 52.0 | 50.0 | 20.9 | ..... | 6,887.6 | 7,400.0 |
| 1949 | 15.3 | 15.0 | 7,418.5 | 8,125.0 | 855.5 | 1,010.0 | 5.0 | ..... | 23.2 | 15.0 | 8,317.5 | 9,165.0 |
| 1948 | 3.4 | 4.0 | 9,123.3 | 10,560.0 | 1,402.0 | 2,140.0 | 5.0 | 5.0 | 18.4 | 20.0 | 10,552.1 | 12,729.0 |
| 1947 | ..... | ..... | 3,466.5 | 4,380.0 | 473.5 | 490.0 | ..... | ..... | 34.0 | 20.0 | 3,974.0 | 4,890.0 |
| Previously planted | 710.0 | 617.7 | 36,755.2 | 47,205.0 | 6,832.3 | 8,276.3 | 299.0 | 317.0 | 82.5 | 82.0 | 44,679.0 | 56,498.0 |
| Totals to date | 845.4 | 768.7 | 84,172.3 | 102,962.0 | 25,644.0 | 36,340.3 | 734.1 | 796.0 | 466.7 | 425.0 | 111,862.5 | 141,292.0 |
| *Interior* | | | | | | | | | | | | |
| 1956 | 34.7 | 46.0 | 192.1 | 259.0 | 121.4 | 192.0 | ..... | ..... | 16.3 | 10.0 | 364.5 | 507.0 |
| 1955 | 1.5 | 2,0 | 215.8 | 288.0 | 81.0 | 105.0 | ..... | ..... | 12.2 | 10.0 | 310.5 | 405.0 |
| 1954 | 5.6 | 8.0 | 590.9 | 1,007.0 | 94.0 | 109.0 | ..... | ..... | 7.2 | 9.0 | 697.7 | 1,133.0 |
| 1953 | 2.0 | 2.0 | 282.3 | 284.0 | 35.0 | 47.0 | ..... | ..... | 10.4 | 17.0 | 329.7 | 350.0 |
| 1952 | 27.0 | 38.0 | 167.2 | 292.0 | 2.0 | ..... | ..... | ..... | 3.1 | 4.0 | 199.3 | 334.0 |
| 1951 | 56.5 | 78.0 | 0.2 | ..... | ..... | ..... | 0.5 | ..... | 1.2 | 1.0 | 58.4 | 79.0 |
| 1950 | 27.2 | 30.0 | ..... | ..... | ..... | ..... | ..... | ..... | 0.1 | ..... | 27.3 | 30.0 |
| Totals to date | 154.5 | 204.0 | 1,448.5 | 2,130.0 | 333.4 | 453.0 | 0.5 | ..... | 50.5 | 51.0 | 1,987.4 | 2,838.0 |
| All planted to date | 999.9 | 972.7 | 85,620.8 | 105,092.0 | 25,977.4 | 36,793.3 | 734.6 | 796.0 | 517.2 | 476.0 | 113,849.9 | 144,130.0 |

(3) ESTIMATED VALUE OF PRODUCTION, INCLUDING LOADING AND FREIGHT WITHIN THE PROVINCE, 1947–56

| Product | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | Ten-year Average, 1947–56 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lumber | $155,761,222 | $219,289,000 | $206,228,610 | $303,384,304 | $278,904,266 | $280,006,490 | $279,979,507 | $270,109,948 | $348,264,190 | $328,262,772 | $267,019,031 |
| Pulp and paper | 57,145,678 | 73,989,000 | 68,482,241 | 78,739,573 | 135,167,761 | 129,238,520 | 135,871,797 | 156,178,180 | 166,902,992 | 176,295,267 | 117,801,101 |
| Shingles | 23,625,946 | 25,094,000 | 16,881,240 | 37,502,958 | 32,537,442 | 23,878,880 | 26,700,153 | 28,077,416 | 29,488,730 | 24,407,817 | 26,819,458 |
| Boxes | 10,430,608 | 6,129,000 | 3,424,268 | 3,837,067 | 4,062,133 | 2,367,450 | 1,810,376 | 1,481,051 | 1,374,984 | 647,112 | 3,556,405 |
| Plywood | 20,830,000 | 22,430,000 | 21,500,000 | 26,250,000 | 34,500,000 | 36,572,000 | 45,240,000 | 53,000,000 | 68,000,000 | 80,000,000 | 40,832,200 |
| Piles, poles, and mine-timber | 5,225,000 | 4,158,000 | 4,470,379 | 5,127,681 | 5,805,745 | 9,540,340 | 8,646,611 | 5,087,052 | 6,283,909 | 9,301,902 | 6,364,662 |
| Cordwood, fence-posts, and lagging | 2,200,000 | 1,671,000 | 2,058,200 | 2,189,249 | 2,349,720 | 2,675,870 | 2,581,806 | 2,282,996 | 1,447,950 | 1,391,960 | 2,084,875 |
| Ties, railway | 580,000 | 671,000 | 467,127 | 281,308 | 633,089 | 963,200 | 669,007 | 445,777 | 306,625 | 615,491 | 563,262 |
| Additional value contributed by the wood-using industry | 1,600,000 | 1,800,000 | 2,000,000 | 2,250,000 | 2,812,500 | 2,530,000 | 2,530,000 | 2,530,000 | 2,530,000 | 2,750,000 | 2,333,250 |
| Laths and other miscellaneous products | 1,200,000 | 1,598,000 | 1,454,000 | 1,723,616 | 1,994,340 | 2,164,660 | 2,688,007 | 1,845,901 | 1,595,900 | 1,306,988 | 1,757,141 |
| Logs exported | 3,313,672 | 6,435,000 | 4,029,069 | 5,741,784 | 4,981,597 | 5,401,410 | 4,514,777 | 5,918,306 | 4,413,508 | 2,342,700 | 4,709,182 |
| Pulp-wood exported | 32,610 | 29,000 | 139,200 | 741,128 | 99,375 | 236,900 | 37,296 | 85,716 | 480 | ..... | 140,171 |
| Christmas trees | 293,652 | 470,000 | 445,965 | 583,549 | 939,390 | 912,700 | 999,159 | 968,047 | 1,085,045 | 1,258,443 | 795,595 |
| Cascara bark | 50,000 | 23,000 | 9,250 | 18,925 | 20,572 | 18,130 | 20,160 | 12,393 | 5,249 | 6,511 | 18,419 |
| Totals | $282,288,388 | $363,786,000 | $331,589,549 | $468,371,142 | $504,807,930 | $496,506,550 | $512,288,656 | $528,022,783 | $631,699,562 | $628,586,963 | $474,794,752 |

(4) PAPER PRODUCTION (IN TONS), 1947–56

| Product | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | Ten-year Average, 1947–56 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Newsprint | 338,239 | 327,764 | 378,355 | 388,191 | 385,172 | 428,832 | 501,083 | 536,656 | 560,993 | 595,717 | 444,100 |
| Other papers | 72,755 | 79,446 | 83,927 | 89,437 | 99,409 | 92,777 | 96,853 | 110,461 | 127,880 | 112,299 | 96,524 |

In addition to 683,055 tons of pulp manufactured into paper in the Province, 707,815 tons were shipped out of the Province during the year.

(5)

## WATER-BORNE LUMBER TRADE (IN M B.M.), 1947–56

| Destination | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | Ten-year Average, 1947–56 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastern Canada | ..... | ..... | ..... | ..... | ..... | ..... | 6,708 | 5,670 | 3,037 | 4,917 | 2,033 |
| Australia | 71,313 | 54,376 | 83,523 | 90,936 | 93,566 | 36,060 | 89,658 | 115,464 | 137,308 | 99,829 | 87,203 |
| New Zealand | 15,362 | 6,768 | 10,702 | 8,823 | 13,311 | 7,839 | 6,036 | 13,465 | 12,588 | 14,097 | 10,899 |
| South America | 5,519 | 5,486 | 7,234 | 2,227 | 2,067 | 2,164 | 3,924 | 648 | 5,756 | 16,541 | 5,157 |
| China, Hong Kong, and Formosa | 48,426 | 34,390 | 4,318 | 7,087 | 21,382 | 7,915 | 9,206 | 3,599 | 1,909 | 1,275 | 13,951 |
| Japan and Korea | ..... | ..... | ..... | 86 | 101 | 82 | 23,742 | 8,216 | 10,725 | 5,852 | 4,880 |
| United Kingdom and Continent | 744,804 | 470,445 | 345,812 | 243,632 | 763,267 | 772,527 | 502,814 | 697,298 | 611,451 | 320,293 | 547,234 |
| Africa | 69,136 | 108,384 | 101,957 | 89,152 | 94,412 | 52,344 | 123,064 | 145,308 | 188,567 | 145,132 | 111,746 |
| India | 8,783 | 2,497 | 12,261 | 2,621 | 7,396 | 1,029 | 16,695 | 4,397 | 1,745 | 416 | 5,784 |
| United States | 205 | 104,636 | 310,411 | 736,831 | 71,316 | 229,809 | 542,472 | 509,661 | 345,694 | 283,834 | 313,487 |
| Philippine and Hawaiian Islands | 73 | 13,901 | 11,086 | 13,112 | 11,353 | 9,558 | 7,577 | 4,998 | 12,715 | 13,183 | 9,756 |
| West Indies | 18,934 | 4,328 | 9,754 | 8,654 | 9,669 | 3,404 | 12,235 | 12,062 | 10,516 | 11,599 | 10,116 |
| South Sea Islands | 6,388 | 5,930 | 7,668 | 7,751 | 9,917 | 8,538 | 8,563 | 8,402 | 16,140 | 15,339 | 9,464 |
| Mexico and Central America | 7 | 435 | 4,619 | 89 | 762 | 463 | 269 | 29,192 | 33,788 | 41,937 | 11,156 |
| Egypt, Arabia, and Israel | 28,451 | 10,291 | 11,744 | 7,634 | 22,426 | 498 | 2,191 | 2,368 | 1,320 | 1,394 | 8,832 |
| Belgium | 180 | 1,203 | 3,202 | 8,958 | (1) | 2,390 | 8,951 | 4,977 | 3,121 | 2,628 | 3,561 |
| France | 26,107 | 30 | 1,841 | ..... | 1,672 | 1,172 | 1,382 | 2,950 | 2,845 | 3,191 | 4,119 |
| Germany | ..... | ..... | 51 | ..... | 291 | 73 | 105 | 15 | 732 | 177 | 144 |
| Holland | 52,813 | 7,883 | 1,945 | 1,917 | (1) | 1,217 | 4,524 | 4,123 | 4,042 | 3,802 | 8,227 |
| Italy | 80 | 47 | 294 | 549 | 1,221 | 637 | 1,084 | 2,284 | 4,349 | 3,007 | 1,355 |
| Foreign, unclassified | 12,597 | 10,568 | 6,939 | 20,423 | 13,335 | 10,107 | 20,217 | 4,674 | 3,603 | 1,221 | 10,368 |
| Belgium and Holland | ..... | ..... | ..... | ..... | 7,720 | ..... | ..... | ..... | ..... | ..... | ..... |
| Denmark, Norway, and Sweden | ..... | ..... | 309 | 714 | 1,107 | 227 | 247 | 175 | 109 | ..... | 289 |
| Totals | 1,109,178 | 841,598 | 935,670 | 1,251,196 | 1,146,291 | 1,148,053 | 1,391,664 | 1,579,946 | 1,413,060 | 989,664 | ..... |

[1] Belgium and Holland combined in 1951.

## TOTAL AMOUNT OF TIMBER SCALED IN BRITISH COLUMBIA DURING YEARS 1955 AND 1956 IN F.B.M.

*(6A)* *(All products converted to f.b.m.)*

| Forest District | 1955 | 1956 | Gain | Loss | Net Gain |
|---|---|---|---|---|---|
| Vancouver | 3,595,748,638 | 3,502,590,505 | | 93,158,133 | |
| Prince Rupert (C.) | 335,893,492 | 387,841,647 | 51,948,155 | | |
| Totals, Coast | 3,931,642,130 | 3,890,432,152 | | 41,209,978 | |
| Prince Rupert (I.) | 216,145,984 | 235,923,363 | 19,777,379 | | |
| Prince George | 609,359,407 | 675,328,926 | 65,969,519 | | |
| Kamloops | 893,391,529 | 1,004,549,740 | 111,158,211 | | |
| Nelson | 458,662,838 | 501,084,443 | 42,421,605 | | |
| Totals, Interior | 2,177,559,758 | 2,416,886,472 | 239,326,714 | | |
| Grand totals | 6,109,201,888 | 6,307,318,624 | 198,116,736 | | 198,116,736 |

## TOTAL AMOUNT OF TIMBER SCALED IN BRITISH COLUMBIA DURING YEARS 1955 AND 1956 IN CUBIC FEET

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

*(6B)* *(All products converted to cubic measure.)*

| Forest District | 1955 | 1956 | Gain | Loss | Net Gain |
|---|---|---|---|---|---|
| Vancouver | 599,291,440 | 583,765,084 | | 15,526,356 | |
| Prince Rupert (C.) | 55,982,248 | 64,640,275 | 8,658,027 | | |
| Totals, Coast | 655,273,688 | 648,405,359 | | 6,868,329 | |
| Prince Rupert (I.) | 37,590,606 | 41,030,150 | 3,439,544 | | |
| Prince George | 105,975,549 | 117,448,509 | 11,472,960 | | |
| Kamloops | 155,372,440 | 174,704,303 | 19,331,863 | | |
| Nelson | 79,767,450 | 87,145,120 | 7,377,670 | | |
| Totals, Interior | 378,706,045 | 420,328,082 | 41,622,037 | | |
| Grand totals | 1,033,979,733 | 1,068,733,441 | 34,753,708 | | 34,753,708 |

(7A)

## Species Cut, All Products, 1956, in F.B.M.

| Forest District | Fir | Cedar | Spruce | Lodge-pole Pine | Hemlock | Balsam | White Pine | Yellow Pine | Cypress | Larch | Hard-woods | Cotton-wood | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vancouver | 1,370,489,620 | 739,623,270 | 48,587,670 | | 1,006,735,328 | 287,770,010 | 23,244,377 | 350,585 | 19,511,397 | | 4,964,192 | 1,314,056 | 3,502,590,505 |
| Prince Rupert (C.) | 28,621,543 | 52,178,393 | 101,432,828 | 74,236 | 174,229,270 | 20,233,166 | 800 | | 892,081 | | 42,725 | 10,136,605 | 387,841,647 |
| Totals, Coast | 1,399,111,163 | 791,801,663 | 150,020,498 | 74,236 | 1,180,964,598 | 308,003,176 | 23,245,177 | 350,585 | 20,403,478 | | 5,006,917 | 11,450,661 | 3,890,432,152 |
| Prince Rupert (I.) | 74,833 | 14,116,799 | 93,470,969 | 40,285,038 | 52,142,105 | 33,821,613 | | | | | 163,200 | 1,848,806 | 235,923,363 |
| Prince George | 142,536,724 | 1,734,327 | 403,383,828 | 115,163,194 | 143,632 | 8,878,681 | | | | | 377,383 | 3,111,157 | 675,328,926 |
| Kamloops | 754,615,920 | 22,574,310 | 115,298,023 | 15,652,012 | 8,878,623 | 7,101,878 | 16,049,916 | 37,505,763 | | 25,712,910 | 573,157 | 587,228 | 1,004,549,740 |
| Nelson | 138,510,820 | 40,758,407 | 119,049,699 | 19,276,555 | 35,598,729 | 7,673,787 | 21,745,976 | 10,052,670 | | 107,413,253 | 9,413 | 995,134 | 501,084,443 |
| Totals, Interior | 1,035,738,297 | 79,183,843 | 731,202,519 | 190,376,799 | 96,763,089 | 57,475,959 | 37,795,892 | 47,558,433 | | 133,126,163 | 1,123,153 | 6,542,325 | 2,416,886,472 |
| Grand totals | 2,434,849,460 | 870,985,506 | 881,223,017 | 190,451,035 | 1,277,727,687 | 365,479,135 | 61,041,069 | 47,909,018 | 20,403,478 | 133,126,163 | 6,130,070 | 17,992,986 | 6,307,318,624 |

(7B)

## Species Cut, All Products, 1956, in Cubic Feet

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

| Forest District | Fir | Cedar | Spruce | Lodge-pole Pine | Hemlock | Balsam | White Pine | Yellow Pine | Cypress | Larch | Hard-woods | Cotton-wood | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vancouver | 228,414,937 | 123,270,545 | 8,097,945 | | 167,789,221 | 47,961,668 | 3,874,063 | 58,431 | 3,251,900 | | 827,365 | 219,009 | 583,765,084 |
| Prince Rupert (C.) | 4,770,257 | 8,696,399 | 16,905,471 | 12,373 | 29,038,212 | 3,372,195 | 133 | | 148,680 | | 7,121 | 1,689,434 | 64,640,275 |
| Totals, Coast | 233,185,194 | 131,966,944 | 25,003,416 | 12,373 | 196,827,433 | 51,333,863 | 3,874,196 | 58,431 | 3,400,580 | | 834,486 | 1,908,443 | 648,405,359 |
| Prince Rupert (I.) | 13,014 | 2,455,095 | 16,255,821 | 7,006,094 | 9,068,192 | 5,882,020 | | | | | 28,383 | 321,531 | 41,030,150 |
| Prince George | 24,788,996 | 301,622 | 70,153,709 | 20,028,381 | 24,980 | 1,544,118 | | | | | 65,632 | 541,071 | 117,448,509 |
| Kamloops | 131,237,551 | 3,925,967 | 20,051,830 | 2,722,089 | 1,544,109 | 1,235,109 | 2,791,290 | 6,522,742 | | 4,471,810 | 99,679 | 102,127 | 174,704,303 |
| Nelson | 24,088,838 | 7,088,419 | 20,704,295 | 3,352,444 | 6,191,083 | 1,334,572 | 3,781,909 | 1,748,290 | | 18,680,566 | 1,637 | 173,067 | 87,145,120 |
| Totals, Interior | 180,128,399 | 13,771,103 | 127,165,655 | 33,109,008 | 16,828,364 | 9,995,819 | 6,573,199 | 8,271,032 | | 23,152,376 | 195,331 | 1,137,796 | 420,328,082 |
| Grand totals | 413,313,593 | 145,738,047 | 152,169,071 | 33,121,381 | 213,655,797 | 61,329,682 | 10,447,395 | 8,329,463 | 3,400,580 | 23,152,376 | 1,029,817 | 3,046,239 | 1,068,733,441 |

## TOTAL SCALE OF ALL PRODUCTS, 1956, IN F.B.M. (SEGREGATED BY LAND STATUS AND FOREST DISTRICTS)

(8A)

| Land Status | Vancouver | Prince Rupert (Coast) | Prince Rupert (Interior) | Prince George | Kamloops | Nelson | Total |
|---|---|---|---|---|---|---|---|
| Timber licences | 645,771,101 | 4,003,305 | 250,339 | 7,349,768 | 5,209,278 | 35,857,945 | 698,441,736 |
| Timber berths | 61,485,291 | ..... | ..... | ..... | 15,647,776 | 5,590,982 | 82,724,049 |
| Timber leases | 142,099,403 | ..... | ..... | ..... | ..... | 148,582 | 142,247,985 |
| Pulp leases | 20,471,346 | 26,108,291 | ..... | ..... | ..... | ..... | 46,579,637 |
| Pulp licences | 8,740,280 | 45,703,818 | ..... | ..... | ..... | ..... | 54,444,098 |
| Hand-loggers' licences | 48,976 | 104,198 | ..... | ..... | ..... | ..... | 153,174 |
| Farm wood-lots | 355,232 | ..... | ..... | ..... | 42,529 | 113,539 | 511,300 |
| Timber sales | 1,102,357,920 | 125,714,228 | 143,820,774 | 594,379,966 | 759,513,863 | 314,057,172 | 3,039,843,923 |
| Pulp-timber sales | ..... | 85,305,251 | ..... | ..... | ..... | ..... | 85,305,251 |
| No mark visible | 125,460,791 | ..... | ..... | ..... | ..... | ..... | 125,460,791 |
| Management licences | 113,203,692 | 39,353,682 | 69,621,174 | 14,055,697 | 23,916,101 | 53,963,494 | 314,113,840 |
| Miscellaneous | 11,897,000 | 27,309,586 | 3,566,020 | 11,055,683 | 14,733,617 | 3,627,061 | 72,188,967 |
| Sub-totals, Crown lands | 2,231,891,032 | 353,602,359 | 217,258,307 | 626,841,114 | 819,063,164 | 413,358,775 | 4,662,014,751 |
| Federal lands | 39,677,539 | 4,960,160 | 5,772,946 | ..... | 23,357,564 | 1,387,425 | 75,155,634 |
| Crown grants— | | | | | | | |
| To 1887 | 966,816,498 | 95,683 | ..... | 1,578,371 | 44,459,678 | 2,117,830 | 1,015,068,060 |
| 1887–1906 | 101,220,117 | 3,222,071 | 201,678 | 122,939 | 14,499,345 | 48,726,837 | 167,992,987 |
| 1906–1914 | 40,271,384 | 13,107,195 | 7,350,765 | 7,009,416 | 27,648,065 | 12,238,907 | 107,625,732 |
| 1914 to date | 122,713,935 | 12,854,179 | 5,339,667 | 39,777,086 | 75,521,924 | 23,254,669 | 279,461,460 |
| Totals | 3,502,590,505 | 387,841,647 | 235,923,363 | 675,328,926 | 1,004,549,740 | 501,084,443 | 6,307,318,624 |

Timber from lands in the former Dominion Government Railway Belt which has passed over to the jurisdiction of this Province is included under the various land-status headings shown above.

Only timber from Indian reserves and other lands still under the jurisdiction of the Canadian Government is shown under the heading "Federal Lands."

N.B.—For details of material actually scaled in cubic feet and units of measurement other than f.b.m., *see* Table 9.

## TOTAL SCALE OF ALL PRODUCTS, 1956, IN CUBIC FEET (SEGREGATED BY LAND STATUS AND FOREST DISTRICTS)

(8B) (Conversion factor: Coast—6 f.b.m.=1 cu. ft.; Interior—5.75 f.b.m.=1 cu. ft.)

| Land Status | Vancouver | Prince Rupert (Coast) | Prince Rupert (Interior) | Prince George | Kamloops | Nelson | Total |
|---|---|---|---|---|---|---|---|
| Timber licences | 107,628,517 | 667,218 | 43,537 | 1,278,221 | 905,962 | 6,236,164 | 116,759,619 |
| Timber berths | 10,247,549 | ..... | ..... | ..... | 2,721,352 | 972,345 | 13,941,246 |
| Timber leases | 23,683,234 | ..... | ..... | ..... | ..... | 25,840 | 23,709,074 |
| Pulp leases | 3,411,891 | 4,351,381 | ..... | ..... | ..... | ..... | 7,763,272 |
| Pulp licences | 1,456,713 | 7,617,303 | ..... | ..... | ..... | ..... | 9,074,016 |
| Hand-loggers' licences | 8,163 | 17,367 | ..... | ..... | ..... | ..... | 25,530 |
| Farm wood-lots | 59,205 | ..... | ..... | ..... | 7,396 | 19,746 | 86,347 |
| Timber sales | 183,726,320 | 20,952,371 | 25,012,309 | 103,370,429 | 132,089,368 | 54,618,639 | 519,769,436 |
| No mark visible | 20,910,132 | ..... | ..... | ..... | ..... | ..... | 20,910,132 |
| Pulp-timber sales | ..... | 14,217,542 | ..... | ..... | ..... | ..... | 14,217,542 |
| Management licences (Crown lands only) | 18,867,282 | 6,558,947 | 12,108,030 | 2,444,469 | 4,159,322 | 9,384,955 | 53,523,005 |
| Miscellaneous | 1,982,833 | 4,551,598 | 620,177 | 1,922,727 | 2,562,368 | 630,793 | 12,270,496 |
| Sub-totals, Crown lands | 371,981,839 | 58,933,727 | 37,784,053 | 109,015,846 | 142,445,768 | 71,888,482 | 792,049,715 |
| Federal lands | 6,612,923 | 826,693 | 1,003,991 | ..... | 4,062,185 | 241,291 | 12,747,083 |
| Crown grants— | | | | | | | |
| To 1887 | 161,136,083 | 15,947 | ..... | 274,499 | 7,732,118 | 368,318 | 169,526,965 |
| 1887–1906 | 16,870,019 | 537,012 | 35,074 | 21,381 | 2,521,625 | 8,474,233 | 28,459,344 |
| 1906–1914 | 6,711,897 | 2,184,533 | 1,278,394 | 1,219,029 | 4,808,359 | 2,128,506 | 18,330,718 |
| 1914 to date | 20,452,323 | 2,142,363 | 928,638 | 6,917,754 | 13,134,248 | 4,044,290 | 47,619,616 |
| Totals | 583,765,084 | 64,640,275 | 41,030,150 | 117,448,509 | 174,704,303 | 87,145,120 | 1,068,733,441 |

Timber from lands in the former Dominion Government Railway Belt which has passed over to the jurisdiction of this Province is included under the various land-status headings shown above.

Only timber from Indian reserves and other lands still under the jurisdiction of the Canadian Government is shown under the heading "Federal Lands."

N.B.—For details of material actually scaled in units of measurement other than cubic feet, *see* Table 9.

(9) TIMBER SCALED IN BRITISH COLUMBIA IN 1956 (BY MONTHS AND FOREST DISTRICTS)

| | January | February | March | April | May | June | July | August | September | October | November | December | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vancouver— | | | | | | | | | | | | | |
| F.b.m. | 95,600,290 | 99,977,391 | 142,997,755 | 174,372,120 | 232,780,488 | 263,702,116 | 256,847,946 | 221,885,743 | 197,842,054 | 230,914,058 | 195,598,195 | 169,445,425 | 2,281,963,581 |
| Cubic feet | 6,137,931 | 4,865,809 | 7,367,453 | 10,584,082 | 19,488,527 | 20,879,881 | 23,233,413 | 22,951,448 | 22,011,739 | 22,743,796 | 19,424,915 | 12,756,732 | 192,435,726 |
| Lineal feet | 712,036 | 188,679 | 395,022 | 479,483 | 428,648 | 1,313,560 | 1,091,799 | 1,022,855 | 899,699 | 1,490,497 | 1,345,372 | 641,055 | 10,008,705 |
| Cords | 5,879 | 5,645 | 4,725 | 6,757 | 6,938 | 8,705 | 5,284 | 5,647 | 6,971 | 3,407 | 8,075 | 5,483 | 73,516 |
| Hewn ties | | 1,004 | 1,939 | | | 2,020 | | | | | | 524 | 5,487 |
| Prince Rupert (C.)— | | | | | | | | | | | | | |
| F.b.m. | 5,603,786 | 3,411,628 | 4,878,918 | 11,905,203 | 20,305,378 | 17,739,503 | 29,121,173 | 31,327,100 | 24,651,523 | 30,359,185 | 24,749,409 | 15,071,555 | 219,134,361 |
| Cubic feet | 921,752 | 849,876 | 959,851 | 1,612,574 | 1,942,027 | 2,910,133 | 3,301,699 | 3,071,313 | 3,250,573 | 3,464,625 | 3,518,371 | 2,274,667 | 28,077,461 |
| Lineal feet | | 1,325 | 5,485 | | 1,406 | 7,084 | 11,145 | 1,010 | 335 | 1,325 | | 27,725 | 56,840 |
| Cords | | | | | | 18 | | | | | | | 18 |
| Hewn ties | | | | | | | | | | | | | |
| Prince Rupert (I.)— | | | | | | | | | | | | | |
| F.b.m. | 3,136,815 | 3,735,377 | 4,331,969 | 5,307,769 | 3,220,145 | 1,695,026 | 3,360,987 | 3,281,865 | 3,540,899 | 2,308,765 | 1,941,216 | 2,193,189 | 38,054,022 |
| Cubic feet | 1,901,953 | 2,196,734 | 2,701,522 | 3,303,789 | 7,175,092 | 1,350,708 | 2,739,454 | 1,815,158 | 2,570,124 | 2,741,520 | 1,659,599 | 1,784,357 | 31,940,010 |
| Lineal feet | 299,970 | 148,600 | 272,864 | 184,600 | 183,710 | 104,625 | 329,305 | 336,820 | 261,245 | 459,585 | 324,650 | | 2,986,974 |
| Cords | 35 | 110 | 106 | 48 | 112 | 207 | 81 | 206 | 148 | 81 | 416 | | 1,550 |
| Hewn ties | 2,867 | 9,448 | 3,427 | 691 | 14,326 | 991 | 16,225 | 11,346 | 5,557 | 32,709 | 9,228 | | 106,815 |
| Prince George— | | | | | | | | | | | | | |
| F.b.m. | 11,617,392 | 18,300,178 | 15,086,478 | 14,044,750 | 4,737,770 | 5,505,750 | 7,760,703 | 10,865,148 | 9,193,089 | 6,740,814 | 9,847,490 | 5,473,525 | 119,173,087 |
| Cubic feet | 8,819,298 | 13,035,631 | 12,101,363 | 15,970,674 | 5,225,001 | 2,201,813 | 4,916,991 | 8,247,210 | 7,802,298 | 6,122,915 | 5,671,105 | 4,453,408 | 94,567,707 |
| Lineal feet | 2,774 | 37,541 | 20,176 | 87,523 | 18,330 | 121,705 | 214,320 | 39,915 | 268,301 | 129,501 | 411,501 | 176,147 | 1,527,734 |
| Cords | 296 | 306 | 1,328 | 312 | 221 | 158 | 94 | 412 | 197 | 10 | 1,048 | 94 | 4,466 |
| Hewn ties | 8,511 | 2,791 | 5,024 | 7,492 | 16,252 | 19,629 | 7,749 | 14,040 | 3,111 | 16,144 | 94,108 | 18,352 | 213,203 |
| Kamloops— | | | | | | | | | | | | | |
| F.b.m. | 21,831,209 | 22,541,276 | 25,794,269 | 22,364,961 | 13,672,979 | 25,418,448 | 25,560,082 | 34,230,145 | 32,135,481 | 32,843,855 | 24,188,472 | 26,015,734 | 306,596,911 |
| Cubic feet | 7,877,555 | 9,857,559 | 10,684,657 | 9,731,091 | 5,099,410 | 7,569,183 | 9,966,093 | 10,238,124 | 14,500,464 | 11,369,349 | 9,192,112 | 10,620,020 | 116,705,617 |
| Lineal feet | 195,975 | 788,253 | 292,284 | 166,832 | 199,844 | 187,506 | 210,045 | 354,395 | 1,133,908 | 1,260,927 | 1,339,717 | 860,402 | 6,990,088 |
| Cords | 458 | 1,073 | 639 | 1,855 | 563 | 708 | 787 | 1,049 | 1,119 | 592 | 1,259 | 931 | 11,033 |
| Hewn ties | | 1,022 | 1,580 | 802 | | 3,004 | | | 2,022 | 144 | | 734 | 9,308 |
| Nelson— | | | | | | | | | | | | | |
| F.b.m. | 19,429,099 | 10,854,237 | 8,129,567 | 11,364,131 | 6,769,253 | 9,301,763 | 11,572,402 | 13,002,174 | 21,291,313 | 21,579,277 | 18,779,205 | 18,089,191 | 170,161,612 |
| Cubic feet | 5,027,469 | 4,459,515 | 3,407,924 | 3,508,261 | 1,321,441 | 2,679,185 | 3,765,988 | 5,434,249 | 6,362,693 | 6,586,417 | 3,544,956 | 7,260,913 | 53,359,011 |
| Lineal feet | 435,631 | 249,201 | 123,678 | 102,487 | 74,282 | 296,272 | 203,270 | 452,040 | 900,595 | 639,970 | 1,025,205 | 503,632 | 4,976,263 |
| Cords | 2,151 | 1,738 | 1,278 | 808 | 805 | 725 | 1,703 | 764 | 2,830 | 1,515 | 1,293 | 1,128 | 16,738 |
| Hewn ties | 712 | | | | | | 175 | | 1,101 | 4,025 | 428 | | 6,441 |
| Totals— | | | | | | | | | | | | | |
| F.b.m. | 157,218,591 | 158,820,087 | 201,218,956 | 239,358,934 | 281,486,013 | 323,362,606 | 334,233,293 | 314,592,175 | 288,654,359 | 324,745,954 | 275,103,987 | 236,288,619 | 3,135,083,574 |
| Cubic feet | 30,685,958 | 35,265,124 | 37,222,770 | 44,710,471 | 40,251,498 | 37,590,903 | 47,913,638 | 51,757,502 | 56,497,891 | 53,028,622 | 43,011,058 | 39,150,097 | 517,085,532 |
| Lineal feet | 1,646,386 | 1,413,599 | 1,109,509 | 1,020,925 | 906,220 | 2,000,752 | 2,122,884 | 2,207,035 | 3,464,083 | 3,981,805 | 4,464,445 | 2,208,961 | 26,546,604 |
| Cords | 8,819 | 8,872 | 8,076 | 9,780 | 8,629 | 10,521 | 7,949 | 8,078 | 11,265 | 5,605 | 12,091 | 7,636 | 107,321 |
| Hewn ties | 12,090 | 14,265 | 11,970 | 8,985 | 30,578 | 25,644 | 24,149 | 25,386 | 11,791 | 53,022 | 103,764 | 19,610 | 341,254 |

## (10) Volume of Wood Removed under Relogging at Reduced Royalty and Stumpage, 1948–56, in M Cubic Feet

| Year | Salvage Wood (M Cu. Ft.) | Year | Salvage Wood (M Cu. Ft.) |
|---|---|---|---|
| 1948 | 727 | 1953 | 1,053 |
| 1949 | 549 | 1954 | 1,888 |
| 1950 | 324 | 1955 | 1,209 |
| 1951 | 420 | 1956 | 1,795 |
| 1952 | 732 | | |
| | | Total | 8,697 |

## (11) Number of Acres Managed and Operated under Approved Working Plans, 1947–56

| Year | Forest Management Licences | | Christmas-tree Permits | | Farm Wood-lots | | Public Working Circles and Sustained-yield Units[1] | | Total Acres |
|---|---|---|---|---|---|---|---|---|---|
| | Number | Productive Acres | Number | Productive Acres | Number | Productive Acres | Number | Productive Acres | |
| 1947 | ---- | ---------- | 82 | 32,139 | ----- | ---------- | ----- | ---------- | 32,139 |
| 1948 | 1 | 795,208 | 107 | 40,767 | ----- | ---------- | ----- | ---------- | 835,975 |
| 1949 | 2 | 1,081,711 | 118 | 43,778 | ----- | ---------- | ----- | ---------- | 1,125,489 |
| 1950 | 7 | 1,668,663 | 129 | 45,360 | ----- | ---------- | ----- | ---------- | 1,714,023 |
| 1951 | 10 | 1,953,754 | 135 | 47,250 | 3 | 452 | ----- | ---------- | 2,001,456 |
| 1952 | 13 | 2,071,918 | 145 | 49,986 | 5 | 727 | ----- | ---------- | 2,122,631 |
| 1953 | 14 | 2,158,898 | 163 | 64,835 | 20 | 4,571 | 24 | 5,649,162 | 7,877,466 |
| 1954 | 19 | 2,788,313 | 174 | 68,689 | 25 | 5,549 | 28 | 7,019,759 | 9,882,310 |
| 1955 | 23 | 4,685,492 | 209 | 72,603 | 29 | 6,455 | 33 | 9,328,447 | 14,092,997 |
| 1956 | 23 | 4,680,846 | 221 | 76,457 | 37 | 8,320 | 47 | 21,667,410 | 26,433,033 |

[1] Approved public working circles and sustained-yield units.

(12)

## Total Scale of All Products from Managed Lands, 1947–56

(In Table 8B, "management licences" includes only the cut from Crown lands within forest management licences. The cut from "other tenures" is shown under appropriate headings. In this table, all the cut from managed lands under regulation is combined.)

| Year | Forest Management Licences | | Christmas-tree Permits | | Farm Wood-lots | | Public Working Circles and Sustained-yield Units | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Cubic Feet | Number | Number of Trees | Number | Cubic Feet | Number | Cubic Feet | Number of Christmas Trees | Cubic Feet |
| 1947 | ---- | ---------- | 82 | 163,648 | ---- | ---------- | ---- | ---------- | 163,648 | ---------- |
| 1948 | 1 | ---------- | 107 | 157,944 | ---- | ---------- | ---- | ---------- | 157,944 | ---------- |
| 1949 | 2 | ---------- | 118 | 165,035 | ---- | ---------- | ---- | ---------- | 165,035 | ---------- |
| 1950 | 7 | ---------- | 129 | 174,609 | ---- | ---------- | ---- | ---------- | 174,609 | ---------- |
| 1951 | 10 | 27,440,866 | 135 | 175,755 | 3 | ---------- | ---- | ---------- | 175,755 | 27,440,866 |
| 1952 | 13 | 33,532,810 | 145 | 195,803 | 5 | 232 | ---- | ---------- | 195,803 | 33,533,042 |
| 1953 | 14 | 40,442,745 | 163 | 267,182 | 20 | 17,497 | 24 | 89,731,000 | 267,182 | 130,191,242 |
| 1954 | 19 | 47,631,411 | 174 | 326,106 | 25 | 26,939 | 28 | 100,166,664 | 326,106 | 147,825,014 |
| 1955 | 23 | 69,715,422 | 209 | 301,319 | 29 | 64,482 | 33 | 115,091,229 | 301,319 | 184,871,133 |
| 1956 | 23 | 121,869,721 | 221 | 430,447 | 37 | 92,124 | 47 | 188,455,411 | 433,850[1] | 310,425,826[2] |
| Totals | ---- | 340,632,975 | ---- | 2,357,848 | ---- | 201,274 | ---- | 493,444,304 | 2,361,251[1] | 838,871,587[2] |

[1] Includes 3,403 Christmas trees cut on forest management licences and farm wood-lots.
[2] Includes 8,570 cubic-feet cut from Christmas-tree permits.

(13)

## Logging Inspections, 1956

| Forest District | Type of Tenure Operated | | | | Number of Inspections |
|---|---|---|---|---|---|
| | Timber Sales | Hand-loggers' Licences | Leases, Licences, Crown Grants, and Pre-emptions | Totals | |
| Vancouver | 1,540 | 1 | 2,227 | 3,768 | 9,569 |
| Prince Rupert | 1,203 | 2 | 439 | 1,644 | 1,662 |
| Prince George | 1,581 | ----- | 735 | 2,316 | 3,474 |
| Kamloops | 2,455 | ----- | 1,664 | 4,119 | 2,173 |
| Nelson | 713 | ----- | 773 | 1,486 | 5,160 |
| Totals, 1956 | 7,492 | 3 | 5,838 | 13,333 | 22,038 |
| Totals, 1955 | 6,818 | 3 | 4,673 | 11,494 | 22,355 |
| Totals, 1954 | 5,855 | 3 | 4,874 | 10,732 | 21,011 |
| Totals, 1953 | 5,851 | 3 | 4,859 | 10,713 | 20,656 |
| Totals, 1952 | 5,822 | 6 | 5,710 | 11,538 | 20,264 |
| Totals, 1951 | 5,448 | 6 | 4,766 | 10,220 | 17,754 |
| Totals, 1950 | 5,189 | 6 | 3,812 | 9,007 | 16,221 |
| Totals, 1949 | 6,405 | 7 | 4,440 | 10,852 | 15,483 |
| Totals, 1948 | 4,847 | 5 | 3,982 | 8,834 | 15,432 |
| Totals, 1947 | 4,428 | 5 | 3,190 | 7,623 | 13,876 |
| Ten-year average, 1947–56 | 5,815 | 5 | 4,614 | 10,434 | 18,509 |

(14)

## Trespasses, 1956

| Forest District | Number of Cases | Areas Cut Over (Acres) | Quantity Cut | | | | | | | | Number of Resulting Seizures | Amount Charged |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cubic Feet | Feet B.M. | Lineal Feet | Cords | Ties | Christmas Trees | Cedar Shakes, Car-stakes | Posts | | |
| Vancouver | 189 | 1,105 | 2,661,500 | ..... | 40,210 | 50 | ..... | 4,570 | 176,999 | 14,781 | 3 | $244,909.00 |
| Prince Rupert | 93 | 1,126 | 903,883 | ..... | 41,720 | 9 | 970 | ..... | 500 | ..... | ..... | $62,432.37 |
| Prince George | 136 | 2,189 | 1,016,433 | ..... | 5,780 | 1,250 | 397 | ..... | ..... | ..... | ..... | $84,462.61 |
| Kamloops | 137 | 2,300 | 858,782 | ..... | 271,111 | 5 | ..... | 3,398 | ..... | ..... | ..... | $83,266.90 |
| Nelson | 75 | 1,024 | 252,264 | ..... | 25,410 | 7 | ..... | 6,826 | 60 | 13,792 | 2 | $13,995.02 |
| 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 |
| Totals, 1953 | 446 | 10,188 | 4,072,874 | 466,401 | 230,636 | 2,917 | 6,335 | 16,314 | 116,368 | 30,663 | 4 | $221,000.12 |
| Totals, 1952 | 419 | 5,768 | 372,788 | 24,247,327 | 272,770 | 1,147 | 5,237 | 10,921 | 227,267 | 3,991 | 13 | $312,774.33 |
| Totals, 1951 | 454 | 5,999 | ..... | 24,545,775 | 159,064 | 1,779 | 20,976 | 28,121 | ..... | 13,325 | 41 | $237,588.00 |
| Totals, 1950 | 276 | 3,072 | ..... | 12,753,405 | 360,190 | 1,475 | 1,806 | 6,312 | 75,309 | 7,550 | 16 | $87,589.23 |
| Totals, 1949 | 418 | 4,132 | ..... | 20,419,563 | 244,655 | 1,298 | 3,514 | 9,022 | 34,070 | 8,785 | 28 | $81,923.27 |
| Totals, 1948 | 312 | 3,062 | ..... | 11,738,855 | 470,674 | 3,569 | 18,211 | 3,711 | 11,135 | 4,100 | 8 | $59,654.37 |
| Totals, 1947 | 316 | 5,132 | ..... | 17,234,601 | 659,621 | 5,599 | 5,235 | 15,416 | 439,554 | 17,506 | 15 | $74,761.43 |
| Ten-year average, 1947–56 | 423 | 5,711 | 3,746,119[1] | 15,915,132[1] | 350,712 | 2,098 | 6,873 | 13,363 | 126,760 | 12,985 | 14 | $197,476.03 |

[1] Cubic feet—five-year average; feet b.m.—seven-year average.

(15)

## Pre-emption Inspections, 1956

| | |
|---|---|
| Vancouver | 3 |
| Prince Rupert | ---- |
| Total | 3 |

## (16) Areas Examined by the Forest Service for Miscellaneous Purposes of the "Land Act," 1956

| Forest District | Applications for Hay and Grazing Leases | | Applications for Pre-emption Records | | Applications to Purchase | | Miscellaneous | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Acres | Number | Acres | Number | Acres | Number | Acres | Number | Acres |
| Vancouver | ----- | ------- | ----- | ------- | 15 | 646 | 38 | 919 | 53 | 1,565 |
| Prince Rupert | ----- | ------- | ----- | ------- | 13 | 1,282 | 15 | 377 | 28 | 1,659 |
| Totals | ----- | ------- | ----- | ------- | 28 | 1,928 | 53 | 1,296 | 81 | 3,224 |

## (17) Classification of Areas Examined by the Forest Service, 1956

| Forest District | Total Area | Agricultural Land | Non-agricultural Land | Merchantable Timber Land | Estimated Timber on Merchantable Timber Land |
|---|---|---|---|---|---|
| | Acres | Acres | Acres | Acres | M F.B.M. |
| Vancouver | 1,565 | 66 | 1,499 | 151 | 2,578 |
| Prince Rupert | 1,659 | 110 | 1,549 | 37 | 1,064 |
| Totals | 3,224 | 176 | 3,048 | 188 | 3,642 |

## (18) Areas Cruised for Timber Sales, 1956

| Forest District | Number Cruised | Acreage | Sawtimber (M B.M.) | Pit-props, Poles, and Piles (Lin. Ft.) | Shingle-bolts and Cordwood (Cords) | Railway-ties (No.) | Car-stakes, Posts, Shakes, etc. (No.) | Sawtimber (M Cu. Ft.) |
|---|---|---|---|---|---|---|---|---|
| Vancouver | 923 | 148,466 | ---------- | 66,400 | 2,017 | ---------- | 203,000 | 402,562 |
| Prince Rupert | 452 | 93,651 | ---------- | 3,133,568 | 37,625 | 4,675 | 6,200 | 144,711 |
| Prince George | 759 | 295,399 | ---------- | 453,683 | 760 | 116,107 | 224,400 | 386,741 |
| Kamloops | 705 | 431,252 | ---------- | 4,233,971 | 1,600 | ---------- | 266,449 | 259,031 |
| Nelson | 250 | 126,382 | ---------- | 6,094,234 | 2,285 | 7,650 | 1,216,461 | 80,925 |
| Totals, 1956 | 3,089 | 1,095,150 | ---------- | 13,981,856 | 44,287 | 128,432 | 1,916,510 | 1,273,970 |
| Totals, 1955 | 3,354 | 1,077,986 | ---------- | 9,885,451 | 16,819 | 145,525 | 501,820 | 1,131,521 |
| Totals, 1954 | 3,085 | 781,665 | ---------- | 10,532,164 | 76,859 | 76,310 | 1,127,346 | 697,421 |
| Totals, 1953 | 2,579 | 719,234 | ---------- | 12,887,882 | 12,328 | 141,313 | 694,182 | 561,601 |
| Totals, 1952 | 2,340 | 1,029,199 | 2,543,890 | 40,005,329 | 13,405 | 989,144 | 518,652 | 1,188,361 |
| Totals, 1951 | 2,704 | 934,475 | 6,577,298 | 20,674,280 | 25,630 | 316,954 | 432,000 | ---------- |
| Totals, 1950 | 2,196 | 333,435 | 1,777,025 | 7,388,875 | 24,522 | 123,091 | 352,440 | ---------- |
| Totals, 1949 | 1,638 | 269,576 | 1,355,342 | 9,599,176 | 57,002 | 170,475 | 738,510 | ---------- |
| Totals, 1948 | 1,851 | 346,648 | 1,817,737 | 7,603,641 | 44,726 | 180,602 | 1,947,010 | ---------- |
| Totals, 1947 | 1,960 | 361,834 | 1,481,715 | 23,015,436 | 50,346 | 299,501 | 1,064,125 | ---------- |
| Ten-year average, 1947–56 | 2,480 | 694,920 | 2,592,168[1] | 15,557,409 | 36,592 | 257,135 | 929,260 | 970,575[1] |

[1] M B.M.—six-year average; M cu. ft.—five-year average.

## (19) Timber-sale Record, 1956

| Forest District | Sales Made | Sales Closed | Total Sales Existing | Total Area (Acres) | Area Paying Forest Protection Tax (Acres) | Total 10-per-cent Deposits |
|---|---|---|---|---|---|---|
| Vancouver | 727 | 616 | 2,068 | 494,259 | 437,166 | $5,253,453.16 |
| Prince Rupert | 451 | 427 | 1,540 | 368,688 | 349,080 | 1,178,403.01 |
| Prince George | 623 | 469 | 1,730 | 556,892 | 505,579 | 2,044,740.14 |
| Kamloops | 590 | 482 | 2,376 | 1,211,805 | 1,202,092 | 3,766,718.25 |
| Nelson | 229 | 259 | 1,024 | 587,176 | 576,269 | 1,765,679.74 |
| Totals | 2,620 | 2,253 | 8,738 | 3,218,820 | 3,070,186 | $14,008,994.30 |
| Cash sales | 239 | ------- | ------- | ---------- | ---------- | ---------- |
| Total sales | 2,859 | ------- | ------- | ---------- | ---------- | ---------- |

## TIMBER SALES AWARDED BY FOREST DISTRICTS, 1956

| Forest District | No. of Sales | Acreage | Cubic Feet | 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 Hop-poles | No. of Car-stakes | No. of Blasting-sticks | No. of Bean-poles | No. of Cedar Shakes | No. of Fence-rails | Estimated Revenue |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vancouver | 728 | 131,184 | 249,676,200 | ..... | 239,080 | 2,000 | 4,548 | 620 | ..... | ..... | ..... | ..... | ..... | 71,360 | ..... | $19,871,394.50 |
| Prince Rupert | 467 | 86,259 | 85,315,020 | ..... | 3,123,025 | ..... | 3,657 | 32,625 | ..... | ..... | 2,600 | ..... | ..... | ..... | ..... | 4,087,992.93 |
| Prince George | 729 | 193,000 | 204,446,800 | ..... | 297,355 | 168,125 | 2,335 | 107,686 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10,325,063.77 |
| Kamloops | 661 | 315,134 | 183,029,500 | ..... | 7,264,630 | 214,732 | 825 | 2,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 14,958,690.09 |
| Nelson | 274 | 144,592 | 79,957,910 | ..... | 2,676,510 | 414,570 | 849 | 7,650 | ..... | ..... | 600 | ..... | ..... | ..... | ..... | 6,700,616.37 |
| 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 |
| Totals, 1953 | 2,881 | 605,450 | 461,100,000 | 446,200 | 22,090,812 | 795,235 | 22,580 | 196,144 | ..... | ..... | 6,810 | 12,000 | 500 | 9,100 | ..... | $17,322,931.29 |
| Totals, 1952 | 2,594 | 534,409 | 57,729,795 | 2,221,589,000 | 14,148,539 | 1,005,485 | 20,546 | 218,433 | 300 | ..... | 700 | ..... | ..... | 174,700 | ..... | $23,584,741.49 |
| Totals, 1951 | 2,962 | 605,511 | 5,000 | 2,806,195,000 | 12,812,383 | 615,153 | 25,783 | 296,932 | ..... | ..... | 2,150 | ..... | ..... | 313,250 | ..... | $24,621,254.79 |
| Totals, 1950 | 2,591 | 372,237 | ..... | 1,628,166,500 | 12,451,507 | 793,976 | 31,785 | 144,592 | 300 | ..... | 1,700 | ..... | ..... | 113,720 | ..... | $9,152,791.81 |
| Totals, 1949 | 2,525 | 375,717 | ..... | 1,238,155,000 | 10,298,466 | 1,601,707 | 57,557 | 200,300 | ..... | ..... | 2,650 | ..... | ..... | 542,000 | ..... | $5,669,035.70 |
| Totals, 1948 | 2,611 | 440,198 | ..... | 1,824,615,000 | 12,052,076 | 966,267 | 65,599 | 235,583 | ..... | ..... | ..... | 117,000 | ..... | 1,247,800 | ..... | $8,544,121.84 |
| Totals, 1947 | 2,469 | 375,781 | ..... | 1,469,890,000 | 27,185,542 | 1,291,482 | 64,576 | 236,851 | ..... | 3,000 | 1,800 | ..... | ..... | 636,385 | ..... | $7,097,435.12 |
| Ten-year average, 1947–56 | 2,788 | 579,586 | ..... | ..... | 14,561,637 | 964,372 | 97,890 | 190,277 | ..... | ..... | ..... | ..... | ..... | 331,412 | ..... | $21,138,154.16 |

## AVERAGE STUMPAGE PRICES AS BID, BY SPECIES AND FOREST DISTRICTS, ON SAW-TIMBER CRUISED ON TIMBER SALES IN 1956, PER C C.F. LOG-SCALE

*(21)*

| 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 | 53,863 | $12.56 | $2.80–32.00 | 59,742 | $8.33 | $2.40–24.00 | 3,753 | $4.86 | $2.60– 8.40 | 85,069 | $6.10 | $0.90–30.00 | 42,011 | $5.61 | $2.60–48.00 |
| Prince Rupert (C.) | 2,964 | 10.05 | 3.50–12.90 | 7,836 | 4.22 | 2.30– 7.40 | 11,857 | 4.15 | 2.30– 8.90 | 17,345 | 5.12 | 2.30– 9.50 | 2,048 | 3.86 | 2.40– 6.20 |
| Prince Rupert (I.) | 3 | 6.50 | 6.50– 6.50 | 785 | 4.02 | 1.50– 7.20 | 22,024 | 4.85 | 2.10– 9.10 | 2,592 | 3.64 | 2.20– 6.60 | 8,034 | 3.28 | 1.40– 5.90 |
| Prince George | 29,410 | 5.89 | 1.80–20.00 | ..... | ..... | ..... | 122,275 | 5.54 | 2.30–12.40 | ..... | ..... | ..... | 13,127 | 2.92 | 1.50–14.00 |
| Kamloops | 108,614 | 7.64 | 1.40–18.00 | 4,567 | 7.25 | 0.25–13.50 | 35,238 | 9.86 | 2.50–22.00 | 5,898 | 6.28 | 0.25–12.50 | 7,962 | 6.74 | 0.25–13.50 |
| Nelson | 11,692 | 7.80 | 1.55–17.00 | 4,396 | 5.10 | 1.55–17.00 | 31,479 | 8.50 | 1.85–18.20 | 4,938 | 5.10 | 2.00–17.00 | 8,193 | 8.00 | 2.00–14.10 |
| Totals for Province | 206,546 | $8.72 | $1.40–32.00 | 77,326 | $7.63 | $0.25–24.00 | 226,626 | $6.48 | $1.85–18.20 | 115,842 | $5.87 | $0.25–30.00 | 81,375 | $5.26 | $0.25–48.00 |

| Forest District | White Pine | | | Western Yellow Pine | | | Larch (Tamarack) | | | 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 | 446 | $11.26 | $5.10–22.10 | 249 | $11.34 | $10.60–12.20 | ..... | ..... | ..... | 4,508 | $6.11 | $2.00– 9.00 | 249,641 | $7.94 | $0.90–48.00 |
| Prince Rupert (C.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 762 | 3.51 | 2.10– 8.90 | 42,812 | 4.94 | 2.10–12.90 |
| Prince Rupert (I.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 9,858 | 4.25 | 1.40– 8.20 | 43,296 | 4.33 | 1.40– 9.10 |
| Prince George | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 54,448 | 4.37 | 1.40–13.00 | 219,260 | 5.14 | 1.40–20.00 |
| Kamloops | 3,014 | 17.16 | 6.60–29.00 | 3,511 | 12.17 | 3.80–22.60 | 3,191 | $5.59 | $2.60–15.80 | 8,604 | 3.19 | 1.40–16.30 | 180,599 | 7.98 | 0.25–29.00 |
| Nelson | 3,120 | 20.10 | 10.00–36.00 | 234 | 10.00 | 5.90–14.50 | 9,277 | 7.70 | 3.10–20.80 | 4,671 | 6.22 | 1.40–12.20 | 78,000 | 8.20 | 1.40–36.00 |
| Totals for Province | 6,580 | $18.15 | $5.10–36.00 | 3,994 | $11.99 | $3.80–22.60 | 12,468 | $7.09 | $2.60–20.80 | 82,851 | $4.43 | $1.40–16.30 | 813,608 | $6.87 | $0.25–48.00 |

## Average Stumpage Price Received, by Species and Forest Districts, on Saw-timber Scaled on Forest Management Licences[1] in 1956, per C C.F. Log-scale

| Forest District | Douglas Fir | | | Cedar | | | Spruce | | | Hemlock | | | Balsam | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M C.F. | Price per C C.F. | Price Range per C C.F. | M C.F. | Price per C C.F. | Price Range per C C.F. | M C.F. | Price per C C.F. | Price Range per C C.F. | M C.F. | Price per C C.F. | Price Range per C C.F. | M C.F. | Price per C C.F. | Price Range per C C.F. |
| Vancouver | 3,113 | $10.53 | $7.20–11.70 | 3,168 | $5.90 | $2.70– 9.20 | 728 | $4.65 | $2.70– 7.80 | 7,848 | $4.95 | $2.60– 8.40 | 3,105 | $3.25 | $2.60– 6.80 |
| Prince Rupert (C.) | ..... | ..... | ..... | 9 | 2.16 | 2.30– 2.40 | 693 | 2.99 | 2.30– 6.10 | 1,622 | 2.22 | 2.20– 7.00 | 810 | 2.18 | 2.00– 5.70 |
| Prince Rupert (I.) | ..... | ..... | ..... | 493 | 2.64 | 2.70– 2.80 | 1,062 | 2.97 | 2.60– 3.20 | 6,637 | 2.80 | 2.60– 3.20 | 3,547 | 2.97 | 2.60– 3.20 |
| Prince George | 1,659 | 3.38 | 2.30– 5.00 | ..... | ..... | ..... | 567 | 2.20 | 2.10– 2.20 | ..... | ..... | ..... | 128 | 1.92 | 1.30– 2.20 |
| Kamloops | 1,006 | 4.74 | 1.80– 7.90 | ..... | ..... | ..... | 2,630 | 4.98 | 2.10– 7.90 | ..... | ..... | ..... | 270 | 3.76 | 1.20– 4.70 |
| Nelson | 2,180 | 4.77 | 1.40– 7.70 | 767 | 3.48 | 1.40– 8.10 | 1,917 | 5.91 | 1.80– 9.50 | 962 | 2.74 | 1.40– 4.20 | 106 | 3.48 | 2.00– 5.70 |
| Totals | 7,958 | $6.73 | $1.40–11.70 | 4,437 | $5.11 | $1.40– 9.20 | 7,597 | $4.51 | $1.80– 9.50 | 17,069 | $3.73 | $1.40– 8.40 | 7,966 | $3.02 | $1.20– 6.80 |

| Forest District | White Pine | | | Western Yellow Pine | | | Larch | | | Other Species | | | All Species | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M C.F. | Price per C C.F. | Price Range per C C.F. | M C.F. | Price per C C.F. | Price Range per C C.F. | M C.F. | Price per C C.F. | Price Range per C C.F. | M C.F. | Price per C C.F. | Price Range per C C.F. | M C.F. | Price per C C.F. | Price Range per C C.F. |
| Vancouver | 52 | $6.98 | $6.20–11.30 | ..... | ..... | ..... | ..... | ..... | ..... | 65 | $4.31 | $3.00– 5.00 | 18,079 | $5.78 | $2.60–11.70 |
| Prince Rupert (C.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 124 | 2.26 | 2.00– 3.50 | 3,258 | 2.37 | 2.00– 7.00 |
| Prince Rupert (I.) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 102 | 2.47 | 2.20– 3.50 | 11,841 | 2.85 | 2.20– 3.50 |
| Prince George | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 91 | 2.18 | 1.90– 5.00 | 2,445 | 2.38 | 1.30– 5.00 |
| Kamloops | ..... | ..... | ..... | 112 | $8.60 | $1.90– 9.90 | 105 | $4.65 | $2.60– 5.30 | 166 | 1.89 | 1.50– 6.30 | 4,289 | 3.40 | 1.20– 9.90 |
| Nelson | 562 | 18.25 | 10.00–23.60 | 62 | 6.54 | 5.00– 9.50 | 1,918 | 4.81 | 1.40– 7.70 | 69 | 4.09 | 1.40– 6.20 | 8,543 | 5.57 | 1.40–23.60 |
| Totals | 614 | $17.30 | $6.20–23.60 | 174 | $7.87 | $1.90– 9.90 | 2,023 | 4.80 | $1.40– 7.70 | 617 | $2.60 | $1.40– 6.30 | 48,455 | $4.42 | $1.20–23.60 |

[1] Those cutting permits on board feet converted to cubic feet using conversion factor of 6.

(23)

## Timber Cut from Timber Sales during 1956

| Forest District | Board-feet | Lineal Feet | Cords | Ties | Posts | Christmas Trees | Hop-poles | Stakes and Sticks | Car-stakes | Blasting-sticks | Anchor-blocks | Shingle-shakes | Shake Blanks | Cubic Feet |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vancouver | 232,687,876 | 451,184 | 2,546 | 2,038 | 3,677 | ..... | ..... | ..... | ..... | ..... | ..... | 5,876,794 | 1,040,496 | 143,189,690 |
| Prince Rupert | 24,441,656 | 2,661,435 | 1,602 | 105,273 | ..... | ..... | ..... | ..... | 1,204 | ..... | ..... | ..... | ..... | 39,655,860 |
| Prince George | 62,635,678 | 759,945 | 3,584 | 192,731 | 75,872 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 90,642,803 |
| Kamloops | 119,900,141 | 4,740,677 | 4,434 | 6,313 | 189,916 | ..... | ..... | ..... | ..... | ..... | ..... | 66,330 | ..... | 108,123,632 |
| Nelson | 62,285,225 | 2,813,268 | 1,363 | 1,721 | 338,063 | 268,945 | ..... | ..... | 750 | ..... | ..... | ..... | ..... | 41,847,510 |
| Totals, 1956 | 501,950,576 | 11,426,509 | 13,529 | 308,076 | 607,528 | 268,945 | ..... | ..... | 1,954 | ..... | ..... | 5,943,124 | 1,040,496 | 423,459,495 |
| Totals, 1955 | 707,975,332 | 10,646,201 | 19,839 | 158,748 | 712,813 | 313,820 | ..... | ..... | 3,971 | 45,000 | 610 | 5,966,313 | 1,196,178 | 360,046,248 |
| Totals, 1954 | 1,072,985,534 | 9,249,681 | 15,214 | 241,579 | 773,939 | 234,277 | 42,632 | 1,225,534 | 1,204 | 15,000 | 107 | 4,030,698 | 1,262,058 | 208,475,224 |
| Totals, 1953 | 1,593,812,300 | 14,671,961 | 14,961 | 345,513 | 1,209,211 | 208,070 | 254,330 | 908,250 | 3,266 | 12,500 | 340 | 4,753,434 | 783,450 | 74,251,388 |
| Totals, 1952 | 1,853,359,728 | 15,463,269 | 14,861 | 390,598 | 1,168,309 | 177,329 | 42,834 | 1,223,775 | 1,190 | 12,000 | 925 | 3,505,899 | 729,817 | 828,089 |
| Totals, 1951 | 1,761,852,867 | 8,794,979 | 15,682 | 276,688 | 1,018,336 | 1,025 | ..... | 690,200 | 2,550 | ..... | ..... | 3,008,663 | 1,092,737 | 2,440 |
| Totals, 1950 | 1,522,542,421 | 11,393,092 | 24,260 | 175,905 | 1,101,724 | 174,048 | 3,940 | 631,900 | 2,350 | 12,000 | ..... | 4,480,878 | 956,777 | 173,729 |
| Totals, 1949 | 1,310,203,222 | 13,412,816 | 33,148 | 327,215 | 1,357,854 | 197,699 | 8,126 | 756,725 | 8,650 | 77,000 | ..... | 2,061,390 | 470,162 | 17,121 |
| Totals, 1948 | 1,355,986,827 | 13,329,783 | 42,102 | 357,618 | 1,403,700 | 157,944 | 4,072 | 1,031,925 | 2,975 | ..... | ..... | 4,585,000 | 286,750 | ..... |
| Totals, 1947 | 1,263,834,114 | 24,205,192 | 42,463 | 391,343 | 2,140,769 | 408,239 | 21,336 | ..... | 3,252 | 75 | ..... | ..... | ..... | ..... |
| Ten-year average, 1947–56 | 1,294,450,292 | 13,259,348 | 23,606 | 297,328 | 1,149,418 | 214,140 | 37,727 | 646,831 | 3,136 | 17,357 | 198 | 3,833,540 | 781,843 | 106,725,373 |

## (24) Saw and Shingle Mills of the Province, 1956

| 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 | 295 | 10,098 | 62 | 1,334 | 87 | 266 | 3 | 11 |
| Prince Rupert | 327 | 2,049 | ..... | ..... | 47 | 270 | ..... | ..... |
| Prince George | 687 | 6,107 | ..... | ..... | 114 | 698 | ..... | ..... |
| Kamloops | 788 | 7,025 | 1 | 5 | 41 | 194 | ..... | ..... |
| Nelson | 338 | 3,801 | 3 | 42 | 101 | 585 | 5 | 4 |
| 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 |
| Totals, 1953 | 2,413 | 23,300 | 59 | 1,121 | 286 | 2,186 | 12 | 47 |
| Totals, 1952 | 2,223 | 23,433 | 59 | 1,173 | 332 | 2,092 | 24 | 117 |
| Totals, 1951 | 2,100 | 21,748 | 60 | 1,169 | 294 | 1,474 | 16 | 78 |
| Totals, 1950 | 1,826 | 19,143 | 65 | 1,234 | 234 | 1,462 | 11 | 25 |
| Totals, 1949 | 1,671 | 19,082 | 61 | 1,101 | 314 | 2,373 | 17 | 73 |
| Totals, 1948 | 1,671 | 18,570 | 68 | 1,209 | 179 | 840 | 11 | 51 |
| Totals, 1947 | 1,634 | 17,546 | 73 | 1,230 | 143 | 754 | 6 | 14 |
| Ten-year average, 1947–56 | 2,081 | 22,552 | 64 | 1,253 | 294 | 1,776 | 12 | 46 |

## (25) Export of Logs (in F.B.M.), 1956

| Species | Grade No. 1 | Grade No. 2 | Grade No. 3 | Ungraded | Fuel-logs | Total |
|---|---|---|---|---|---|---|
| Fir | ..... | 849,175 | 1,564,151 | ..... | 2,969,744 | 5,383,070 |
| Cedar | 24,529 | 271,107 | 1,533,515 | 271,720 | 312 | 2,101,183 |
| Spruce | 1,920 | 22,045 | 115,576 | 128,653 | 192 | 268,386 |
| Hemlock | 156,073 | 1,757,451 | 24,143,163 | ..... | 347,722 | 26,404,409 |
| Balsam | ..... | ..... | ..... | 12,524,557 | 211,960 | 12,736,517 |
| White pine | 1,337 | 30,564 | 6,763 | ..... | 249 | 38,913 |
| Cypress | ..... | ..... | 10,748 | ..... | ..... | 10,748 |
| Hardwoods | ..... | ..... | ..... | 4,792 | 300 | 5,092 |
| Cottonwood | ..... | 2,787 | 59,121 | ..... | ..... | 61,908 |
| Totals, 1956 | 183,859 | 2,933,129 | 27,433,037 | 12,929,722 | 3,530,479 | 47,010,226[1] |
| 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 |
| Totals, 1953 | 5,341,576 | 15,853,076 | 74,187,464 | 18,974,550 | 5,788,905 | 120,145,571 |
| Totals, 1952 | 4,732,890 | 15,944,292 | 84,757,110 | 18,400,266 | 1,161,660 | 124,996,218 |
| Totals, 1951 | 5,901,140 | 12,229,159 | 51,669,605 | 10,202,844 | 2,224,693 | 82,257,441 |
| Totals, 1950 | 8,659,552 | 21,625,295 | 88,031,088 | 19,210,615 | ..... | 137,526,550 |
| Totals, 1949 | 6,392,228 | 21,382,979 | 103,550,707 | 14,228,041 | ..... | 145,553,955 |
| Totals, 1948 | 9,380,092 | 31,127,805 | 106,739,296 | 16,367,096 | ..... | 163,614,289 |
| Totals, 1947 | 7,156,095 | 21,100,803 | 52,368,152 | 7,552,386 | ..... | 88,177,436 |
| Ten-year average, 1947–56 | 5,260,192 | 16,926,103 | 73,829,171 | 15,230,495 | 4,455,921[2] | 113,922,513 |

[1] Of this total, 41,595,347 f.b.m. were exported from Crown-granted lands carrying the export privilege; 5,414,879 f.b.m. were exported under permit from other areas.

[2] Six-year average.

## (26) SHIPMENTS OF POLES, PILING, MINE-PROPS, FENCE-POSTS, RAILWAY-TIES, ETC., 1956

| Forest District and Product | Quantity Exported | Approximate Value, F.O.B. | Where Marketed | | |
|---|---|---|---|---|---|
| | | | United States | Canada | Other Countries |
| Vancouver— | | | | | |
| Poles ..... lin. ft. | 4,202,257 | $1,689,157.17 | 3,234,775 | 931,832 | 35,650 |
| Piling ..... ,, | 552,900 | 224,306.11 | 86,853 | 374,474 | 91,573 |
| Fence-posts ..... pieces | 28,935 | 8,089.80 | 1,200 | 27,735 | ..... |
| Shakes ..... ,, | 20,570,453 | 1,687,376.75 | 19,947,068 | ..... | 623,385 |
| Shake-blanks ..... ,, | 4,686 | 281.16 | 4,686 | ..... | ..... |
| Christmas trees ..... ,, | 78,131 | 78,131.00 | 78,131 | ..... | ..... |
| Prince Rupert— | | | | | |
| Poles ..... lin. ft. | 3,256,710 | 1,498,086.60 | 2,367,166 | 889,544 | ..... |
| Hewn ties ..... pieces | 117,550 | 176,325.00 | ..... | 117,550 | ..... |
| Prince George— | | | | | |
| Poles ..... lin. ft. | 324,276 | 91,380.55 | 88,250 | 236,026 | ..... |
| Hewn ties ..... pieces | 103,796 | 166,133.65 | ..... | 103,796 | ..... |
| Fence-posts ..... ,, | 43,612 | 6,541.80 | ..... | 43,612 | ..... |
| Kamloops— | | | | | |
| Poles ..... lin. ft. | 4,089,050 | 754,413.90 | 2,347,240 | 1,741,810 | ..... |
| Poles and piling ..... ,, | 1,810,515 | 213,870.00 | 708,995 | 1,101,520 | ..... |
| Fence-posts ..... cords | 2,916 | 80,910.00 | ..... | 2,916 | ..... |
| Christmas trees ..... pieces | 708,950 | 196,588.40 | 672,942 | 36,008 | ..... |
| Nelson— | | | | | |
| Poles and piling ..... lin. ft. | 2,933,905 | 725,040.00 | 1,861,245 | 1,072,660 | ..... |
| Corral-rails ..... ,, | 23,921 | 288.00 | ..... | 23,921 | ..... |
| Mine-timbers ..... ,, | 360,391 | 19,101.00 | ..... | 360,391 | ..... |
| Mine-props ..... cords | 1,397 | 16,274.00 | ..... | 1,397 | ..... |
| Cedar shakes ..... ,, | 17 | 1,632.00 | 17 | ..... | ..... |
| Cordwood ..... ,, | 6 | 84.00 | 6 | ..... | ..... |
| Fence-posts ..... ,, | 4,471 | 143,072.00 | 1,173 | 3,298 | ..... |
| Hewn ties ..... pieces | 5,326 | 9,799.00 | ..... | 5,326 | ..... |
| Christmas trees ..... ,, | 1,553,320 | 714,527.20 | 1,294,433 | 258,887 | ..... |
| Total value, 1956 ..... | ..... | $8,501,409.09 | ..... | ..... | ..... |
| Total value, 1955 ..... | ..... | $8,778,455.03 | ..... | ..... | ..... |

## (27) SUMMARY FOR PROVINCE, 1956

| Product | Volume | Value | Per Cent of Total Value |
|---|---|---|---|
| Poles ..... lin. ft. | 11,872,293 | $4,033,038.22 | 47.4396 |
| Piling ..... ,, | 552,900 | 224,306.11 | 2.6384 |
| Poles and piling ..... ,, | 4,744,420 | 938,910.00 | 11.0442 |
| Corral-rails ..... ,, | 23,921 | 288.00 | 0.0034 |
| Mine-timbers ..... ,, | 360,391 | 19,101.00 | 0.2247 |
| Fence-posts ..... cords | 7,387 | 223,982.00 | 2.6347 |
| Mine-props ..... ,, | 1,397 | 16,274.00 | 0.1914 |
| Cedar shakes ..... ,, | 17 | 1,632.00 | 0.0192 |
| Cordwood ..... ,, | 6 | 84.00 | 0.0010 |
| Shakes ..... pieces | 20,570,453 | 1,687,376.75 | 19.8482 |
| Shake-blanks ..... ,, | 4,686 | 281.16 | 0.0033 |
| Christmas trees ..... ,, | 2,340,401 | 989,246.60 | 11.6363 |
| Hewn ties ..... ,, | 226,672 | 352,257.65 | 4.1435 |
| Fence-posts ..... ,, | 72,547 | 14,631.60 | 0.1721 |
| Total value ..... | ..... | $8,501,409.09 | 100.0000 |

(28) TIMBER MARKS ISSUED

| | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | Ten-year Average, 1947–56 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Old Crown grants | 738 | 791 | 548 | 549 | 1,062 | 696 | 381 | 528 | 609 | 480 | 638 |
| Crown grants, 1887–1906 | 191 | 156 | 128 | 169 | 269 | 201 | 134 | 175 | 218 | 207 | 185 |
| Crown grants, 1906–1914 | 176 | 150 | 97 | 165 | 218 | 204 | 136 | 160 | 171 | 172 | 165 |
| Section 55, "Forest Act" | 489 | 439 | 352 | 505 | 714 | 538 | 409 | 485 | 653 | 655 | 524 |
| Stumpage reservations | 75 | 82 | 60 | 69 | 108 | 62 | 95 | 69 | 95 | 82 | 80 |
| Pre-emptions under sections 28 and 29, "Land Act" | 8 | 5 | ..... | 5 | 3 | 8 | 10 | 1 | 2 | 6 | 5 |
| Timber berths | 9 | 4 | 7 | 8 | 6 | 7 | 3 | 1 | 10 | 10 | 6 |
| Indian reserves | 18 | 20 | 18 | 32 | 41 | 13 | 24 | 30 | 31 | 46 | 27 |
| Timber sales | 2,469 | 2,612 | 2,525 | 2,591 | 2,962 | 2,594 | 2,881 | 2,786 | 3,130 | 2,859 | 2,741 |
| Hand-loggers | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Special marks and rights-of-way | 32 | 40 | 26 | 33 | 73 | 98 | 63 | 44 | 43 | 71 | 52 |
| Pulp leases | ..... | ..... | 1 | 4 | ..... | 6 | 3 | 1 | 6 | 1 | 2 |
| Pulp licences | 1 | 2 | 1 | 4 | 2 | 1 | ..... | ..... | ..... | ..... | ..... |
| Totals | 4,206 | 4,301 | 3,763 | 4,134 | 5,458 | 4,428 | 4,139 | 4,280 | 4,968 | 4,589 | 4,427 |
| Transfers and changes of marks | 655 | 745 | 550 | 752 | 1,086 | 983 | 744 | 780 | 867 | 873 | 804 |

(29) FOREST SERVICE DRAUGHTING OFFICE, 1956

| Month | Number of Drawings Prepared or Tracings Made | | | | | Number of Blue-prints or Ditto-prints Made from Draughting Office Drawings | | |
|---|---|---|---|---|---|---|---|---|
| | Timber Sales | Timber Marks | Examination Sketches | Miscellaneous Matters | Total | Blue-prints | Ditto-prints | Total |
| January | 40 | 113 | ..... | 81 | 234 | 850 | 2,000 | 2,850 |
| February | 40 | 233 | ..... | 64 | 337 | 843 | 1,880 | 2,723 |
| March | 46 | 147 | ..... | 104 | 291 | 971 | 1,915 | 2,886 |
| April | 32 | 185 | ..... | 74 | 291 | 897 | 1,378 | 2,275 |
| May | 32 | 171 | ..... | 75 | 278 | 926 | 1,300 | 2,226 |
| June | 16 | 262 | ..... | 69 | 347 | 948 | 670 | 1,618 |
| July | 48 | 149 | ..... | 63 | 260 | 540 | 2,330 | 2,870 |
| August | 40 | 101 | ..... | 76 | 217 | 550 | 2,000 | 2,550 |
| September | 37 | 169 | ..... | 53 | 259 | 634 | 1,850 | 2,484 |
| October | 41 | 189 | ..... | 64 | 294 | 841 | 2,020 | 2,861 |
| November | 42 | 114 | ..... | 62 | 218 | 574 | 2,100 | 2,674 |
| December | 30 | 130 | ..... | 34 | 194 | 467 | 1,450 | 1,917 |
| Totals, 1956 | 444 | 1,963 | ..... | 819 | 3,226 | 9,041 | 20,893 | 29,934 |
| Totals, 1955 | 381 | 2,309 | ..... | 1,244 | 3,934 | 8,694 | 15,538 | 24,232 |
| Totals, 1954 | 274 | 1,983 | ..... | 574 | 2,831 | 6,275 | 9,920 | 16,195 |
| Totals, 1953 | 270 | 1,823 | 382 | 350 | 2,825 | 6,976 | 6,989 | 13,965 |
| Totals, 1952 | 491 | 2,827 | 1,387 | 1,068 | 5,773 | 18,924 | 10,320 | 29,244 |
| Totals, 1951 | 1,008 | 3,196 | 1,336 | 1,891 | 7,431 | 17,540 | 19,360 | 36,900 |
| Totals, 1950 | 828 | 2,050 | 1,108 | 805 | 4,791 | 13,759 | 16,599 | 30,358 |
| Totals, 1949 | 514 | 1,547 | 988 | 353 | 3,402 | 10,184 | 10,344 | 20,528 |
| Totals, 1948 | 681 | 2,300 | 1,247 | 241 | 4,469 | 13,625 | 12,959 | 26,584 |
| Totals, 1947 | 500 | 2,223 | 1,238 | 290 | 4,251 | 12,026 | 9,844 | 21,870 |
| Ten-year average, 1947–56 | 539 | 2,222 | ..... | 763 | 4,293 | 11,704 | 13,276 | 24,981 |

## (30) Crown-granted Timber Lands Paying Forest Protection Tax as Compiled from Taxation Records

| Year | Acreage Assessed as Timber Land | Coast | | Interior | |
|---|---|---|---|---|---|
| | | Logged | Timber | Logged | Timber |
| | | Acres | Acres | Acres | Acres |
| 1956 | 723,103 | 205,503 | 389,396 | 64,606 | 63,598 |
| 1955 | 783,517 | 221,934 | 429,350 | 69,822 | 62,411 |
| 1954 | 801,983 | 236,350 | 429,037 | 69,416 | 67,180 |
| 1953 | 757,516 | 201,264 | 444,014 | 27,692 | 84,546 |
| 1952 | 718,284 | 203,249 | 433,496 | 29,418 | 52,121 |
| 1951 | 682,746 | 191,435 | 410,037 | 31,333 | 49,941 |
| 1950 | 631,967 | 207,308 | 378,985 | 8,635 | 37,039 |
| 1949 | 597,790 | 172,024 | 340,200 | 30,625 | 54,941 |
| 1948 | 571,439 | 158,120 | 326,738 | 25,485 | 61,096 |
| 1947 | 596,900 | 153,072 | 354,207 | 26,591 | 63,030 |
| 1946 | 601,148 | 146,331 | 364,556 | 23,125 | 67,136 |
| 1945 | 591,082 | 142,504 | 357,037 | 21,536 | 70,005 |
| 1944 | 571,308 | 134,194 | 345,378 | 20,816 | 70,920 |
| 1943 | 543,044 | 125,313 | 325,996 | 20,205 | 71,529 |
| 1942 | 527,995 | 112,834 | 322,306 | 20,072 | 72,781 |
| 1941 | 543,633 | 105,541 | 335,468 | 26,016 | 76,608 |
| 1940 | 549,250 | 103,486 | 338,419 | 24,852 | 82,493 |
| 1939 | 719,111 | 89,209 | 338,794 | 153,032 | 138,075 |
| 1938 | 756,328 | 106,833 | 344,858 | 157,508 | 147,129 |
| 1937 | 766,413 | 96,598 | 363,693 | 153,566 | 152,556 |

## (31) Acreage of Timber Land by Assessment Districts

| District | Acres | District | Acres |
|---|---|---|---|
| Alberni | 18,850 | Omineca | 160 |
| Comox | 158,885 | Prince George | 800 |
| Cowichan | 165,158 | Prince Rupert | 30,962 |
| Gulf Islands | 1,204 | Princeton | 555 |
| Kamloops | 444 | Quesnel Forks | 40 |
| Kettle River | 445 | Revelstoke | 33,190 |
| Lillooet | 3,728 | Vancouver | 1,725 |
| Nanaimo | 162,562 | Vernon | 639 |
| Nelson-Slocan | 88,203 | Victoria | 55,553 |

## ACREAGE OF CROWN-GRANTED TIMBER LANDS PAYING FOREST PROTECTION TAX AS COMPILED FROM TAXATION RECORDS

(32)

| Year | Area (Acres) | Year | Area (Acres) |
|---|---|---|---|
| 1956 | 723,103 | 1938 | 754,348 |
| 1955 | 783,517 | 1937 | 743,109 |
| 1954 | 801,983 | 1936 | 515,924 |
| 1953 | 757,516 | 1935 | 535,918 |
| 1952 | 718,284 | 1934 | 557,481 |
| 1951 | 682,746 | 1933 | 567,731 |
| 1950 | 631,967 | 1932 | 552,007 |
| 1949 | 597,790 | 1931 | 602,086 |
| 1948 | 571,439 | 1930 | 629,156 |
| 1947 | 596,900 | 1929 | 644,011 |
| 1946 | 601,148 | 1928 | 671,131 |
| 1945 | 591,082 | 1927 | 690,438 |
| 1944 | 571,308 | 1926 | 688,372 |
| 1943 | 543,044 | 1925 | 654,016 |
| 1942 | 527,995 | 1924 | 654,668 |
| 1941 | 543,632 | 1923 | 883,344 |
| 1940 | 549,250 | 1922 | 887,980 |
| 1939 | 719,112 | 1921 | 845,111 |

(33)

## FOREST REVENUE

| | Twelve Months to Dec. 31, 1952 | Twelve Months to Dec. 31, 1953 | Twelve Months to Dec. 31, 1954 | Twelve Months to Dec. 31, 1955 | Twelve Months to Dec. 31, 1956 | Ten-year Average, 1947–56 |
|---|---|---|---|---|---|---|
| Timber-licence rentals | $366,163.74 | $364,497.01 | $372,401.39 | $361,975.14 | $365,257.80 | $375,029.30 |
| Timber-licence transfer fees | 2,520.00 | 4,670.00 | 1,970.00 | 2,120.16 | 3,121.00 | 2,810.62 |
| Timber-licence penalty fees | 1,723.07 | 1,646.74 | 4,112.38 | 1,204.89 | 1,442.27 | 2,963.56 |
| Hand-loggers' licence fees | 100.00 | 50.00 | ---------- | ---------- | ---------- | ---------- |
| Timber-lease rentals | 49,584.88 | 48,974.49 | 72,117.02 | 72,165.65 | 72,021.27 | 56,970.12 |
| Timber-lease penalty fees | 129.09 | 5.96 | 48.56 | 73.18 | 15.48 | 51.54 |
| Timber-sale rentals | 171,823.98 | 187,991.05 | 235,597.98 | 313,865.18 | 379,821.98 | 174,026.40 |
| Timber-sale stumpage | 14,240,255.46 | 15,405,085.68 | 14,702,704.22 | 19,538,202.71 | 26,335,715.53 | 11,404,046.92 |
| Timber-sale cruising | 83,404.65 | 108,881.28 | 151,679.94 | 221,334.48 | 213,058.29 | 99,511.27 |
| Timber-sale advertising | 24,739.87 | 26,080.28 | 28,224.58 | 39,249.17 | 42,858.60 | 20,897.11 |
| Timber royalty and tax | 2,190,410.88 | 2,338,624.30 | 2,260,406.43 | 2,368,344.78 | 2,069,424.19 | 2,398,092.88 |
| Scaling expenses (not Scaling Fund) | 9,415.03 | 9,046.93 | 9,190.37 | 10,532.29 | 10,381.64 | 6,733.26 |
| Exchange | 118.49 | 68.74 | 51.77 | 51.99 | 34.68 | 76.94 |
| Seizure expenses | 1,921.88 | 1,249.14 | 1,501.64 | 740.22 | 768.72 | 1,011.05 |
| General miscellaneous | 55,541.01 | 64,024.29 | 79,248.71 | 102,231.43 | 130,293.84 | 55,536.07 |
| Timber-berth rentals and bonus | 20,166.61 | 20,297.86 | 19,851.56 | 19,592.47 | 20,139.94 | 20,170.75 |
| Interest on timber-berth rentals and bonus | ---------- | 33.19 | 10.92 | 13.05 | 20.19 | 15.58 |
| Transfer fees on timber berths | 189.76 | 27.33 | 102.74 | 89.99 | 85.00 | 104.02 |
| Grazing fees and interest | 110,731.32 | 102,983.97 | 81,589.75 | 75,250.32 | 79,247.61 | 71,774.29 |
| Forest protection tax | ---------- | ---------- | ---------- | ---------- | 364,388.20 | ---------- |
| Totals | $17,328,939.72 | $18,684,238.24 | $18,020,809.96 | $23,127,037.10 | $30,088,096.23 | $14,689,821.68 |

## AMOUNTS CHARGED AGAINST LOGGING OPERATIONS, 1956

| District | Royalty | Tax | Trespass Stumpage | Seizure Expenses | Government Scaling Expenses | Scaling Fund | | Stumpage | Rentals, Cruising, Advertising, Transfer Fees | Forest Reserve Account Timber | Silviculture Fund | Forest Development Fund | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaling Expenses | Scaling Fees | | | | | | |
| Vancouver | $1,528,025.17 | $997.75 | | $594.20 | $2,620.54 | $205,773.34 | $714,530.28 | $12,601,066.66 | $252,266.41 | | | | $15,305,874.35 |
| Prince Rupert | 296,553.35 | 1,586.75 | | | 920.69 | 10,277.02 | 64,573.87 | 2,331,788.59 | 93,502.28 | | $28,405.00 | | 2,827,607.55 |
| Prince George | 72,200.32 | | | 97.02 | 3,118.50 | | | 4,207,953.06 | 158,229.69 | | 123,991.00 | $149,093.65 | 4,714,763.24 |
| Kamloops | 139,321.04 | | | 46.00 | 2,578.75 | | | 6,722,948.16 | 274,258.13 | | 117,447.43 | 33,458.92 | 7,290,058.43 |
| Nelson | 115,099.27 | | | 73.00 | 1,958.50 | | | 2,965,113.79 | 137,020.95 | | 46,953.00 | | 3,266,218.51 |
| Totals, 1956 | $2,151,279.15 | $2,584.50 | | $810.22 | $11,196,98 | $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 | $2,340,176.87 | $12,457.59 | | $765.88 | $10,258.85 | $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 | $2,207,163.57 | $27,145.42 | | $1,393.07 | $9,291.03 | $144.589.21 | $556,779.39 | $14,596,633.95 | $586,983.41 | | $1,163,596.44 | $32,785.07 | $19,326,360.56 |
| Totals, 1953 | $2,230,773.33 | $30,410.06 | | $1,134.99 | $8,578.30 | $126,613.32 | $552,705.46 | $14,961,152.26 | $453,745.79 | | $1,066,676.88 | $22,501.38 | $19,454,291.77 |
| Totals, 1952 | $2,059,831.35 | $37,180.07 | | $2,075.40 | $10,043.93 | $119,689.20 | $555,735.85 | $14,950,895.47 | $421,924.48 | $12,008.53 | $153,752,26 | $8,871.32 | $18,332,007.86 |
| Totals, 1951 | $2,255,986.89 | $13,361.79 | | $720.21 | $4,889.37 | $103,302.87 | $444,068.21 | $10,151,067.98 | $358,394.68 | $33,986.75 | $93,127.15 | | $13,458,905.90 |
| Totals, 1950 | $2,442,763.64 | $23,764.59 | | $733.18 | $4,871.58 | $100,555.30 | $376,945.27 | $6,261,542.18 | $253,486.04 | | $694,948.82 | | $10,163,125.26 |
| Totals, 1949 | $2,577,770.96 | $47,469.51 | | $1,128.73 | $4,943.46 | $94,588.60 | $295,075.36 | $4,946,698.82 | $210,112.24 | | $478,602.29 | | $8,655,568.74 |
| Totals, 1948 | $3,137,060.09 | $36,807.32 | | $611.36 | $3,437.13 | $78,846.92 | $305,961.62 | $4,476,410.64 | $246,342.89 | | $314,660.90 | | $8,602,220,83 |
| Totals, 1947 | $2,984,978.60 | $20,944.06 | $123,345.94 | $1,227.84 | $2,717.46 | $63,361.93 | $308,652.88 | $3,331,244.16 | $163,659.81 | | | | $7,000,132.68 |
| Ten-year-average, 1947–56 | $2,438,778.45 | $25,212.99 | | $1,080.08 | $7,022.79 | $122,373.94 | $462,719.96 | $12,245,492.64 | $442,760.46 | | | | $16,312,015.40 |

(35)

## Amounts Charged against Logging Operations, Fiscal Year 1955–56

| District | Royalty | Tax | Trespass Stumpage | Seizure Expenses | Government Scale Expenses | Scaling Fund | | Stumpage | Rentals, Cruising, Advertising, Transfer Fees | Silviculture Fund | Forest Reserve Account | Forest Development Fund | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Expenses | Fees | | | | | | |
| Vancouver | $1,622,313.04 | $4,442.22 | | $489.00 | $2,577.07 | $171,305.54 | $430,733.64 | $8,932,771.32 | $244,057.42 | | | | $11,408,689.25 |
| Prince Rupert | 331,521.38 | 884.71 | | 10.00 | 1,466.33 | 5,126.98 | 30,732.90 | 1,638,605.75 | 96,542.07 | $90,885.00 | | | 2,195,775.12 |
| Prince George | 69,394.38 | | | 42.32 | 1,867.00 | | | 3,670,660.46 | 132,490.91 | 357,344.15 | | $92,347.21 | 4,324,146.43 |
| Kamloops | 129,220.83 | 32.08 | | 214.88 | 2,485.25 | | | 4,881,966.11 | 271,008.13 | 462,209.95 | | 23,093.87 | 5,770,231.10 |
| Nelson | 124,982.90 | 530.18 | | 25.00 | 1,401.51 | | | 2,161,019.12 | 159,203.41 | 203,692.52 | | | 2,650,854.64 |
| Totals, 1955–56 | $2,277,432.53 | $5,889.19 | | $781.20 | $9,797,16 | $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 | $2,287,175.16 | $29,560.95 | | $740.25 | $10,465.61 | $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 | $2,129,798.35 | $22,187.23 | | $1,620.06 | $7,862.82 | $123,420.80 | $523,584.39 | $13,672,473.41 | $408,143.52 | $1,077,446.47 | | | $17,966,537.05 |
| Totals, 1952–53 | $2,051,347.46 | $43,148.91 | | $2,042.15 | $10,734.56 | $118,794.61 | $525,391.14 | $15,175,379.22 | $289,757.89 | $381,467.62 | $8,991.41 | | $18,607,054.97 |
| Totals, 1951–52 | $2,299,053.99 | $17,168.38 | | $856.75 | $5,179.84 | $110,524.80 | $527,790.82 | $11,596,883.33 | $261,783.40 | $6,025.17 | [1]$37,003.87 | | $14,850,220.01 |
| Totals, 1950–51 | $2,548.879.89 | $20,313.87 | | $756.14 | $4,872.85 | $108,594.65 | $399,834.04 | $7,021,098.74 | $265,649.10 | $663,475.85 | | | $11,033,475.13 |
| Totals, 1949–50 | $2,495,843.74 | $47,791.08 | | $932.34 | $5,351.54 | $92,195.04 | $288,118.35 | $4,950,699.50 | $209,680.23 | $482,808.18 | | | $8,571,244.98 |
| Totals, 1948–49 | $3,031,177.07 | $37,722.35 | | $724.75 | $3,485.69 | $76,559.44 | $286,340.73 | $4,564,284.78 | $262,403.83 | $381,505.04 | | | $8,642,471.12 |
| Totals, 1947–48 | $2,932,284.42 | $22,450.07 | $92,695.98 | $1,260.50 | $2,695.01 | $70,073.76 | $320,438.04 | $3,123,738.93 | $196,341.75 | $53,260.31 | | | $6,819,025.78 |
| Totals, 1946–47 | $2,509,322.95 | $18,176.08 | $85,269.80 | $1,425.15 | $2,265.58 | $44,310.81 | $190,607.89 | $1,999,259.67 | $142,390.02 | | | | $4,993,027.95 |
| Ten-year average, 1946–47 to 1955–56 | $2,456,231.55 | $26,440.81 | | $1,113.92 | $6,271.06 | $107,212.03 | $407,445.03 | $9,916,315.77 | $354,844.60 | | | | $13,826,600.89 |

[1] Credit.

(36A)

## FOREST REVENUE, FISCAL YEAR 1955–56

| | | Ten-year Average |
|---|---|---|
| Timber-licence renewal fees | $356,194.64 | $380,734.89 |
| Timber-licence transfer fees | 4,161.16 | 3,074.97 |
| Timber-licence penalty fees | 1,304.50 | 3,907.21 |
| Hand-logging licence fees | ---------- | 139.05 |
| Timber-lease rentals | 71,631.14 | 54,050.64 |
| Timber-lease penalty fees and interest | 54.80 | 59.76 |
| Timber-sale rentals | 345,495.48 | 141,558.89 |
| Timber-sale stumpage | 20,320,948.58 | 8,347,918.24 |
| Timber-sale cruising | 234,602.97 | 78,600.45 |
| Timber-sale advertising | 43,281.16 | 16,469.07 |
| Timber royalty | 2,270,624.41 | 2,437,111.24 |
| Timber tax | 9,054.26 | 23,834.17 |
| Scaling expenses (not Scaling Fund) | 10,024.30 | 3,717.42 |
| Exchange | 51.66 | 80.46 |
| Seizure expenses | 760.81 | 935.51 |
| General miscellaneous | 102,187.67 | 42,303.54 |
| Timber-berth rentals, bonus, and fees | 19,946.47 | 18,491.04 |
| Interest on timber-berth rentals | 13.05 | 27.83 |
| Transfer fees on timber berths | 145.99 | 66.89 |
| Grazing fees and interest | 77,222.45 | 58,464.91 |
| | $23,867,705.50 | $11,611,546.18 |
| Taxation from Crown-granted timber lands | 681,503.26 | 461,937.30 |
| Taxation collected under authority of "Esquimalt and Nanaimo Railway Belt Land Tax Act" | 940,632.27[1] | ---------- |
| Taxation collected on forest land (section 32A, "Taxation Act") | 524,172.01[2] | ---------- |
| Taxation collected on tree-farm land (section 33A, "Taxation Act") | 7,837.99[3] | ---------- |
| | $26,021,851.03 | ---------- |

[1] Collection of this tax has only been authorized during the last six fiscal years.
[2] Collection of this tax has only been authorized during the last two fiscal years.
[3] Collection of this tax has only been authorized during the last three fiscal years.

(36B) FOREST REVENUE BY FISCAL YEARS

| Fiscal Year | Direct Forest Revenue | Taxation from Crown-granted Lands | Taxation Collected under Secs. 32A and 33A of "Taxation Act" | Taxation Collected under Authority of "E. & N. Railway Belt Land Tax Act" | Total |
|---|---|---|---|---|---|
| 1955–56 | $23,867,705.50 | $681,503.26 | $532,010.00 | $940,632.27 | $26,021,851.03 |
| 1954–55 | 19,130,835.31 | 621,527.16 | 518,648.74 | 879,822.00 | 21,150,833.21 |
| 1953–54 | 17,578,625.58 | 612,865.29 | ..... | 863,116.21 | 19,054,607.08 |
| 1952–53 | 18,016,025.17 | 588,821.78 | ..... | 418,395.59 | 19,023,242.54 |
| 1951–52 | 13,703,715.41 | 484,475.51 | ..... | 972,156.13 | 15,160,347.05 |
| 1950–51 | 10,089,884.69 | 440,213.07 | ..... | 345,220.16 | 10,875,317.92 |
| 1949–50 | 8,331,497.19 | 445,632.68 | ..... | ..... | 8,777,129,87 |
| 1948–49 | 7,977,676.22 | 453,980.08 | ..... | ..... | 8,431,656.30 |
| 1947–48 | 7,010,038.77 | 253,345.02 | ..... | ..... | 7,263,383.79 |
| 1946–47 | 4,880,232.89 | 237,506.83 | ..... | ..... | 5,117,739.72 |
| 1945–46 | 4,352,179.14 | 244,980.89 | ..... | ..... | 4,597,160.03 |
| 1944–45 | 4,017,653.53 | 213,912.46 | ..... | ..... | 4,231,565.99 |
| 1943–44 | 3,703,703.13 | 203,457.36 | ..... | ..... | 3,907,160.49 |
| 1942–43 | 3,519,892.44 | 206,146.21 | ..... | ..... | 3,726,038.65 |
| 1941–42 | 4,057,437.86 | 211,410.13 | ..... | ..... | 4,268,847.99 |
| 1940–41 | 3,549,931.53 | 224,652.87 | ..... | ..... | 3,774,584.40 |
| 1939–40 | 3,236,731.36 | 267,290.48 | ..... | ..... | 3,504,021.84 |
| 1938–39 | 2,982,702.42 | 241,109.96 | ..... | ..... | 3,223,812.38 |
| 1937–38 | 3,257,525.05 | 269,285.54 | ..... | ..... | 3,526,810.59 |
| 1936–37 | 3,001,054.84 | 299,992.41 | ..... | ..... | 3,301,047.25 |

(37) FOREST EXPENDITURE, FISCAL YEAR 1955–56

| Forest District | Salaries | Expenses | Total |
|---|---|---|---|
| Vancouver | $393,399.05 | $143,838.46 | $537,237.51 |
| Prince Rupert | 240,165.90 | 92,912.35 | 333,078.25 |
| Prince George | 263,959.96 | 84,548.71 | 348,508.67 |
| Kamloops | 353,087.88 | 95,190.02 | 448,277.90 |
| Nelson | 307,081.42 | 79,024.40 | 386,105.82 |
| Victoria | 470,892.91 | 402,081.75 | 872,974.66 |
| Totals | $2,028,587.12 | $897,595.69 | $2,926,182.81 |
| Reforestation and forest nursery | | | 338,774.92 |
| Provincial parks | | | 705,389.93 |
| Forest management | | | 173,188.78 |
| Forest research | | | 55,976.54 |
| Public relations | | | 50,440.23 |
| Ranger School | | | 68,607.41 |
| Canadian Forestry Association | | | 6,000.00 |
| Office furniture and equipment | | | 42,548.38 |
| Rentals | | | 46,064.94 |
| Youth training programme | | | 121,904.19 |
| Engineering services | | | 709,108.21 |
| Forest protection | | | 2,272,297.04 |
| Forest surveys | | | 968,889.69 |
| Grazing Range Improvement Fund[1] | | | 32,807.32 |
| Forest Development Fund[1] | | | 439,211.51 |
| Special Warrant No. 13 | | | 52,000.00 |
| Fire suppression | | | 75,944.45 |
| *Grand total* | | | $9,085,336.35 |

[1] With the exception of these items, all figures are net expenditures. Items marked are actual gross expenditures and statements of these funds will be found in this Report.

(38) SCALING FUND

| | | |
|---|---|---|
| Balance for April 1st, 1955 (credit) | | $124,222.24 |
| Collections, fiscal year 1955–56 | | 622,935.28 |
| | | $747,157.52 |
| Expenditures, fiscal year 1955–56 | $885,179.45 | |
| *Less* refunds | 211.28 | |
| | | 884,968.17 |
| Deficit, March 31st, 1956 (debit) | | $137,810.65 |
| Collections, nine months, April to December, 1956 | | 765,104.84 |
| | | $627,294.19 |
| Expenditures, nine months, April to December, 1956 | | 819,327.86 |
| Balance, December 31st, 1956 (debit) | | $192,033.67 |

(39) SILVICULTURE FUND

| | | |
|---|---|---|
| Balance forward April 1st, 1955 (credit) | | $609,700.63 |
| Collections, fiscal year 1955–56 | | 1,169,204.77 |
| | | $1,778,905.40 |
| Expenditures, fiscal year 1955–56 | $1,252,567.65 | |
| *Less* refunds | 10,827.80 | |
| | | 1,241,739.85 |
| Balance, March 31st, 1956 (credit) | | $537,165.55 |
| *Less* amount applied to Vote 264, fiscal-year estimates, 1956–57 (estimated) | | 300,000.00 |
| Estimated balance, March 31st, 1957 (credit) | | $237,165.55 |

(40) GRAZING RANGE IMPROVEMENT FUND

| | | |
|---|---|---|
| Balance, April 1st, 1955 (credit) | | $30,205.66 |
| Government contribution (section 14, "Grazing Act") | | 40,144.90 |
| | | $70,350.56 |
| Expenditures, fiscal year 1955–56 | $32,807.32 | |
| *Less* refunds | 74.00 | |
| | | 32,733.32 |
| Balance, March 31st, 1956 (credit) | | $37,617.24 |
| Government contribution (section 14, "Grazing Act") | | 38,611.23 |
| | | $76,228.47 |
| Expenditures, April 1st, 1956, to December 31st, 1956 | | 29,049.74 |
| Balance, December 31st, 1956 (credit) | | $47,178.73 |

(41) FOREST DEVELOPMENT FUND

| | | | |
|---|---|---|---|
| Amounts borrowed under authority of "Forest Development Fund Loan Act, 1948"— | | | |
| Fiscal year 1950–51 | | | $35,000.00 |
| Fiscal year 1951–52 | | | 45,000.00 |
| Fiscal year 1952–53 | | | 185,000.00 |
| Amounts advanced under authority of the Legislature— | | | |
| Fiscal year 1953–54 | | | 345,104.72 |
| Fiscal year 1954–55 | | | 312,207.48 |
| Fiscal year 1955–56 | | | 304,162.33 |
| Nine months to December 31st, 1956 | | | 825,161.34 |
| | | | $2,051,635.87 |
| Total gross expenditures— | | | |
| Fiscal year 1950–51 | $7,958.84 | | |
| Fiscal year 1951–52 | 71,986.26 | | |
| Fiscal year 1952–53 | 161,378.25 | | |
| Fiscal year 1953–54 | 365,883.00 | | |
| Fiscal year 1954–55 | 364,910.47 | | |
| Fiscal year 1955–56 | 439,131.51 | | |
| Nine months to December 31st, 1956 | 958,886.70 | | |
| | | $2,370,135.03 | |
| *Less* collections (under authority of section 164 (4), "Forest Act") and loan repayments— | | | |
| Fiscal year 1952–53 | $10,582.22 | | |
| Fiscal year 1953–54 | 20,778.28 | | |
| Fiscal year 1954–55 | 52,702.99 | | |
| Fiscal year 1955–56 | 134,969.18 | | |
| Nine months to December 31st, 1956 | 133,725.36 | | |
| | | 352,758.03 | |
| | | | 2,017,377.00 |
| Balance, December 31st, 1956 (credit) | | | $34,258.87 |

(42) FOREST PROTECTION FUND

| | |
|---|---|
| Balance, April 1st, 1955 (credit) | $800,291.69 |
| *Less* applied against expenditures, Vote 244, during 1955–56 | 800,291.69 |
| Balance, March 31st, 1956 | *Nil* |

(43) FOREST PROTECTION EXPENDITURE FOR TWELVE MONTHS ENDED MARCH 31ST, 1956, BY THE FOREST SERVICE

| District | Salaries and Expenses | | Tools and Equipment | | Fires | Improvements | Aircraft | Planning and Research | Hazard Reduction | Uniforms | Miscellaneous | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Permanent | Temporary | New | Maintenance and Operation | | | | | | | | |
| Vancouver | $2,484.30 | $221,839.02 | $384.59 | $31,348.45 | $12,982.36 | $35,038.31 | $36,923.75 | ..... | ..... | ..... | $4,262.86 | $345,263.64 |
| Prince Rupert | 1,469.32 | 107,162.25 | 1,974.00 | 29,268.45 | 1,631.88 | 42,167.56 | 35,896.67 | ..... | ..... | ..... | 2,974.00 | 222,544.13 |
| Prince George | 2,172.34 | 115,704.37 | 1,371.35 | 35,677.26 | 17,988.19 | 64,165.25 | 24,301.14 | ..... | ..... | ..... | 3,450.15 | 264,830.05 |
| Kamloops | 3,290.76 | 200,023.13 | 2,539.66 | 47,119.44 | 18,818.38 | 137,980.54 | 45,532.60 | ..... | ..... | ..... | 2,629.46 | 457,933.97 |
| Nelson | 3,955.15 | 221,980.00 | 1,732.28 | 56,287.56 | 21,457.07 | 81,541.57 | 37,284.43 | ..... | ..... | ..... | 3,422.34 | 427,660.40 |
| Victoria | 1,812.10 | 3,176.37 | 342,947.83 | 26,401.39 | 3,066.57 | 150,242.81 | 4,087.24 | $20,186.59 | $49,480.00 | $22,544.81 | 6,063.59 | 630,009.30 |
| Totals | $15,183.97 | $869,885.14 | $350,949.71 | $226,102.55 | $75,944.45 | $511,136.04 | $184,025.83 | $20,186.59 | $49,480.00 | $22,544.81 | $22,802.40 | $2,348,241.49 |

(44) REPORTED APPROXIMATE EXPENDITURE IN FOREST PROTECTION BY OTHER AGENCIES, 1956

| Forest District | Expenditures | | | | |
|---|---|---|---|---|---|
| | Patrols and Fire Prevention | Tools and Equipment | Fires | Improvements | Total |
| Vancouver | $222,070.00 | $273,925.00 | $374,148.00 | $48,900.00 | $919,043.00 |
| Prince Rupert | 40,797.00 | 42,160.00 | 20,628.00 | 14,808.00 | 118,393.00 |
| Prince George | 97,000.00 | 9,000.00 | 56,387.00 | 7,000.00 | 169,387.00 |
| Kamloops | 2,000.00 | 49,927.00 | 12,301.00 | 92,100.00 | 156,328.00 |
| Nelson | 4,660.00 | 71,971.00 | 40,000.00 | 119,873.00 | 236,504.00 |
| Totals | $366,527.00 | $446,983.00 | $503,464.00 | $282,681.00 | $1,599,655.00 |
| Ten-year average, 1947–56 | $242,712.00 | $318,314.00 | $255,974.00 | $82,222.00 | $899,222.00 |

(45) SUMMARY OF SNAG-FALLING, 1956, VANCOUVER FOREST DISTRICT

| | | Acres |
|---|---|---|
| Total area logged, 1956[1] | | 90,661 |
| Logged in snag-exempted zone[2] | 1,891 | |
| Logged in small exempted operations[2] | 3,087 | |
| | 4,978 | |
| Assessed for non-compliance, *less* 903 acres subsequently felled | 2,995 | |
| | | 7,973 |
| Balance logged acres snagged, 1956 | | 82,688 |

[1] Approximate figure only, compiled prior to end of calendar year.
[2] Exemption granted under subsection (3), section 113, "Forest Act."

(46) SUMMARY OF LOGGING SLASH CREATED, 1956, VANCOUVER FOREST DISTRICT

| | | Acres |
|---|---|---|
| Total area logged, 1956 | | 90,661 |
| Area covered by full hazard reports | 75,568 | |
| Covered by snag reports but exempted from slash-disposal[1] | 1,891 | |
| Covered by acreage reports only (exempted from slash and snag disposal) | 3,087 | |
| | | 80,546 |
| Slash created too late to be dealt with in 1956 | | 10,115 |

[1] Exemption granted under subsection (3), section 113, "Forest Act."

(47) ACREAGE ANALYSIS OF SLASH-DISPOSAL REQUIRED, 1956, VANCOUVER FOREST DISTRICT

| | Acres of Slash | | |
|---|---|---|---|
| | Prior to 1956 | 1956[1] | Total Acres |
| Broadcast burning | 2,946 | 6,384 | 9,330 |
| Spot burning | 9,018 | 17,941 | 26,959 |
| Totals | 11,964 | 24,325 | 36,289 |
| 1956 reports not recommending slash-disposal | | | 39,279 |
| 1956 slash examined for snags but exempt from slash-disposal | | | 1,905 |
| 1956 slash in zone completely exempted | | | 1,891 |
| 1956 slash on very small operations exempted without special examination | | | 1,182 |
| Total area of slash dealt with, 1956 | | | 44,257 |
| Grand total | | | 80,546 |

[1] Above table does not include the estimated 10,115 acres (*see* Table 46) created too late to be dealt with in 1956.

(48) ANALYSIS OF PROGRESS IN SLASH-DISPOSAL, 1956, VANCOUVER FOREST DISTRICT

| | | | Acres |
|---|---|---|---|
| Total disposal required (*see* Table 47) | | | 36,289 |
| | Acres of Slash | | |
| Type of Disposal | Prior to 1956 | 1956 | Total Acres |
| Spring broadcast burning | 523 | | 523 |
| Spring spot burning[1] | 894 | | 894 |
| Fall broadcast burning | 1,078 | 919 | 1,997 |
| Fall spot burning[2] | 8,307 | 7,830 | 16,137 |
| Total burning completed | 10,802 | 8,749 | 19,551 |
| Burned by accidental fires | | | 2,872 |
| Lopping, scattering, land-clearing, etc. | | | *Nil* |
| Total | | | 22,423 |
| Balance reported slash not yet abated | | | 13,866 |
| Slash created, 1956—acres assessed | | | *Nil* |
| *Plus* slash created too late to be dealt with, 1956 | | | 10,115 |
| Total area of slash carried over to 1957 for disposition | | | 23,981 |

[1] Actual area burned in spring spot burning, 127 acres.
[2] Actual area burned in fall spot burning, 1,311 acres.
The above figures do not include 1955 slash-burn reports received too late for inclusion in 1955 Annual Report, 2,426 acres.

(49) SUMMARY OF OPERATIONS, 1956, VANCOUVER FOREST DISTRICT

| | | |
|---|---|---|
| Total operations, Vancouver Forest District | | 1,427 |
| Intentional slash-burns | 178 | |
| Operations on which slash was disposed of by lopping, scattering, land-clearing, etc. | *Nil* | |
| Operations on which slash was accidentally burned | 43 | |
| Operations not required to burn | 820 | |
| Operations granted total exemption under subsection (3), section 113, "Forest Act" | 350 | |
| Operations where compensation assessed or security deposit posted | 71 | |
| Operations in snag-falling only area | 27 | |
| Operations pending decision *re* assessment or further time for disposal | 95 | |
| | | 1,584[1] |

[1] Difference noted above is accounted for by slash on some operations being disposed of by both accidental and intentional means and some operators conducting both spring and fall burns.

(50) SUMMARY OF SLASH-BURN DAMAGE AND COSTS, 1956, VANCOUVER FOREST DISTRICT

| | |
|---|---|
| Total acres of forest-cover burned in slash fires, 1956 | *Nil* |
| Net damage to forest-cover | *Nil* |
| Net damage to cut products | *Nil* |
| Net damage to equipment and property | *Nil* |
| Total damage | *Nil* |

*Cost of Slash-burning as Reported by Operators*

| | Total Cost | Acres | Cost per M B.F. | Cost per Acre |
|---|---|---|---|---|
| (*a*) Spring broadcast burning | $3,651.70 | 523 | $0.17 | $6.98 |
| (*b*) Spring spot burning | 4,255.48 | 894 | 0.16 | 4.77 |
| (*c*) Fall broadcast burning | 9,636.42 | 1,997 | 0.13 | 4.82 |
| (*d*) Fall spot burning | 31,099.65 | 16,137 | 0.06 | 1.92 |

(*a*) and (*c*) based on volume of 40 M b.f. per acre.
(*b*) and (*d*) based on volume of 30 M b.f. per acre.

(51) RECAPITULATION OF SLASH-DISPOSAL, 1934–56

| | Acres of Slash Burned | |
|---|---|---|
| | Accidentally | Intentionally |
| 1956 | 2,872 | 19,551 |
| 1955 | 199 | 34,486 |
| 1954 | 225 | 41,596 |
| 1953 | 17 | 22,220 |
| 1952 | 3,856 | 39,064 |
| 1951 | 11,614 | 10,436 |
| 1950 | 1,700 | 25,389 |
| 1949 | 1,468 | 53,543 |
| 1948 | 2,215 | 30,652 |
| 1947 | 2,663 | 34,414 |
| 1946 | 2,174 | 25,498 |
| 1945 | 3,897 | 46,467 |
| 1944 | 5,121 | 27,278 |
| 1943 | 2,046 | 40,013 |
| 1942 | 4,504 | 80,226 |
| 1941 | 3,385 | 5,524 |
| 1940 | 2,265 | 33,034 |
| 1939 | 1,930 | 51,603 |
| 1938 | 35,071 | 50,033 |
| 1937 | 3,015 | 27,516 |
| 1936 | 1,340 | 7,691 |
| 1935 | 11,783 | 13,239 |
| 1934 | 4,927 | 15,935 |

(52) RECAPITULATION OF SNAG-FALLING, 1940–56, BY LOGGING OPERATIONS AND FOREST SERVICE

(Acres totally logged.)

| Year | Logging Operations, Vancouver District (Sec. 113) | Forest Service by Protection Division | Forest Service by Reforestation Division[1] | Total |
|---|---|---|---|---|
| 1956 | 82,688 | 4,069 | 4,731 | 91,488 |
| 1955 | 78,450 | 3,717 | 7,711 | 89,878 |
| 1954 | 74,332 | 1,947 | 10,387 | 86,666 |
| 1953 | 73,556 | 884 | 7,820 | 82,260 |
| 1952 | 67,214 | 541 | 9,517 | 77,272 |
| 1951 | 66,120 | 980 | 6,583 | 73,683 |
| 1950 | 72,205 | 1,500 | 11,440 | 85,145 |
| 1949 | 47,770 | ..... | 12,500 | 60,270 |
| 1948 | 56,778 | 120 | 16,843 | 73,741 |
| 1947 | 74,567 | 1,500 | 13,000 | 89,067 |
| 1946 | 57,424 | ..... | 16,775 | 74,199 |
| 1945 | 55,508 | ..... | 4,181 | 59,689 |
| 1944 | 51,440 | ..... | 2,620 | 54,060 |
| 1943 | 49,130 | ..... | 21,409 | 70,539 |
| 1942 | 58,097 | 5,896 | 20,960 | 84,953 |
| 1941 | 58,247 | 341 | 15,000 | 73,588 |
| 1940 | 40,000 | ..... | 5,500 | 45,500 |

[1] Includes all areas snagged for planting (Coast and Interior), areas snagged in parks, and A.S.W. work during war years.

## (53) FIRE OCCURRENCES BY MONTHS, 1956

| Forest District | March | April | May | June | July | August | September | October | Total | Per Cent |
|---|---|---|---|---|---|---|---|---|---|---|
| Vancouver | ..... | 24 | 712 | 12 | 372 | 236 | 68 | ..... | 1,424 | 50.68 |
| Prince Rupert | ..... | 14 | 62 | 5 | 49 | 24 | 15 | ..... | 169 | 6.02 |
| Prince George | 17 | 11 | 121 | 10 | 49 | 29 | 15 | 1 | 253 | 9.00 |
| Kamloops | 7 | 31 | 160 | 19 | 155 | 115 | 82 | 6 | 575 | 20.46 |
| Nelson | ..... | 12 | 25 | 33 | 107 | 125 | 78 | 9 | 389 | 13.84 |
| Totals | 24 | 92 | 1,080 | 79 | 732 | 529 | 258 | 16 | 2,810 | 100.00 |
| Per cent | 0.86 | 3.27 | 38.43 | 2.81 | 26.05 | 18.83 | 9.18 | 0.57 | 100.00 | ..... |
| Ten-year average, 1947–56 | 12 | 53 | 274 | 190 | 424 | 391 | 187 | 25 | 1,556 | ..... |
| Per cent | 0.77 | 3.40 | 17.61 | 12.21 | 27.25 | 25.13 | 12.02 | 1.61 | 100.00 | ..... |

## (54) NUMBER AND CAUSES OF FOREST FIRES, 1956

| Forest District | Lightning | Campers | Railways Operating | Smokers | Brush-burning (Not Railway-clearing) | Road and Power- and Telephone-line Construction | Industrial Operation | Incendiarism | Miscellaneous (Known Causes) | Unknown Causes | Total | Per Cent of Total Fires in Province |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vancouver | 20 | 39 | 1,005 | 122 | 52 | 46 | 52 | 1 | 61 | 26 | 1,424 | 50.68 |
| Prince Rupert | 30 | 25 | 22 | 29 | 21 | 1 | 14 | 1 | 12 | 14 | 169 | 6.02 |
| Prince George | 39 | 56 | 14 | 12 | 16 | 21 | 43 | ..... | 49 | 3 | 253 | 9.00 |
| Kamloops | 168 | 66 | 33 | 74 | 15 | 1 | 64 | 24 | 103 | 27 | 575 | 20.46 |
| Nelson | 240 | 28 | 16 | 44 | 8 | 4 | 10 | 1 | 35 | 3 | 389 | 13.84 |
| Totals | 497 | 214 | 1,090 | 281 | 112 | 73 | 183 | 27 | 260 | 73 | 2,810 | 100.00 |
| Per cent | 17.69 | 7.61 | 38.79 | 10.00 | 3.99 | 2.60 | 6.51 | 0.96 | 9.25 | 2.60 | 100.00 | ..... |
| Ten-year average, 1947–56 | 405 | 203 | 297 | 244 | 76 | 21 | 95 | 17 | 160 | 38 | 1,556 | ..... |
| Per cent | 26.03 | 13.05 | 19.09 | 15.68 | 4.88 | 1.35 | 6.11 | 1.09 | 10.28 | 2.44 | 100.00 | ..... |

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

| Causes | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lightning | 326 | 266 | 487 | 342 | 574 | 431 | 597 | 116 | 418 | 497 | 4,054 |
| Campers | 193 | 105 | 215 | 251 | 228 | 298 | 174 | 157 | 195 | 214 | 2,030 |
| Railways operating | 270 | 113 | 325 | 197 | 211 | 255 | 184 | 118 | 206 | 1,090 | 2,969 |
| Smokers | 245 | 140 | 281 | 291 | 354 | 349 | 171 | 120 | 206 | 281 | 2,438 |
| Brush-burning (not railway-clearing) | 51 | 39 | 60 | 77 | 128 | 140 | 47 | 63 | 47 | 112 | 764 |
| Road and power- and telephone-line construction | 8 | 5 | 20 | 25 | 20 | 17 | 10 | 11 | 24 | 73 | 213 |
| Industrial operations | 53 | 45 | 87 | 94 | 133 | 114 | 83 | 64 | 89 | 183 | 945 |
| Incendiarism | 13 | 5 | 13 | 7 | 28 | 37 | 10 | 12 | 15 | 27 | 167 |
| Miscellaneous (known causes) | 144 | 58 | 169 | 196 | 205 | 237 | 116 | 82 | 134 | 260 | 1,601 |
| Unknown causes | 29 | 23 | 44 | 35 | 42 | 36 | 28 | 21 | 50 | 73 | 381 |
| Totals | 1,332 | 799 | 1,701 | 1,515 | 1,923 | 1,914 | 1,420 | 764 | 1,384 | 2,810 | 15,562 |

## (56) FIRES CLASSIFIED BY SIZE AND DAMAGE, 1956

| 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 | 50.68 | 1,212 | 85.11 | 59.79 | 160 | 11.24 | 31.31 | 47 | 3.30 | 22.93 | 5 | 0.35 | 7.46 | 1,382 | 18 | 24 |
| Prince Rupert | 169 | 6.02 | 73 | 43.19 | 3.60 | 63 | 37.28 | 12.33 | 29 | 17.16 | 14.15 | 4 | 2.37 | 5.97 | 143 | 16 | 10 |
| Prince George | 253 | 9.00 | 90 | 35.57 | 4.44 | 78 | 30.83 | 15.26 | 43 | 17.00 | 20.97 | 42 | 16.60 | 62.69 | 184 | 24 | 45 |
| Kamloops | 575 | 20.46 | 362 | 62.96 | 17.86 | 129 | 22.43 | 25.25 | 72 | 12.52 | 35.12 | 12 | 2.09 | 17.91 | 497 | 42 | 36 |
| Nelson | 389 | 13.84 | 290 | 74.55 | 14.31 | 81 | 20.82 | 15.85 | 14 | 3.60 | 6.83 | 4 | 1.03 | 5.97 | 373 | 8 | 8 |
| Totals | 2,810 | 100.00 | 2,027 | ..... | 100.00 | 511 | ..... | 100.00 | 205 | ..... | 100.00 | 67 | ..... | 100.00 | 2,579 | 108 | 123 |
| Per cent | 100.00 | ..... | 72.13 | ..... | ..... | 18.19 | ..... | ..... | 7.30 | ..... | ..... | 2.38 | ..... | ..... | 91.78 | 3.84 | 4.38 |
| Ten-year average, 1947–56 | 1,556 | ..... | 960 | ..... | ..... | 418 | ..... | ..... | 144 | ..... | ..... | 34 | ..... | ..... | 1,440 | 68 | 48 |
| Per cent | 100.00 | ..... | 61.70 | ..... | ..... | 26.86 | ..... | ..... | 9.25 | ..... | ..... | 2.19 | ..... | ..... | 92.54 | 4.37 | 3.09 |

## (57) DAMAGE TO PROPERTY OTHER THAN FORESTS, 1956[1]

| Forest District | Forest Products in Process of Manufacture | Buildings | Railway and Logging Equipment | Miscellaneous | Total | Per Cent of Total |
|---|---|---|---|---|---|---|
| Vancouver | $141,784.00 | $1,500.00 | $75,951.00 | $4,765.00 | $224,000.00 | 60.08 |
| Prince Rupert | 29,904.00 | 6,450.00 | 23,450.00 | 1,000.00 | 60,804.00 | 16.31 |
| Prince George | 6,993.00 | 17,250.00 | 14,800.00 | 28,603.00 | 67,646.00 | 18.14 |
| Kamloops | 28.00 | 4,500.00 | 15,000.00 | 325.00 | 19,853.00 | 5.33 |
| Nelson | ..... | 500.00 | ..... | ..... | 500.00 | 0.14 |
| Totals | $178,709.00 | $30,200.00 | $129,201.00 | $34,693.00 | $372,803.00 | 100.00 |
| Per cent | 47.94 | 8.10 | 34.65 | 9.31 | 100.00 | ..... |
| Ten-year average, 1947–56 | $169,377.81 | $22,855.80 | $183,060.23 | $22,878.50 | $398,172.34 | ..... |
| Per cent | 42.53 | 5.75 | 45.97 | 5.75 | 100.00 | ..... |

[1] Does not include intentional slash-burns. (For this item *see* page 140.)

## (58) DAMAGE TO FOREST-COVER CAUSED BY FOREST FIRES, 1956—PART I[1]

| Forest District | Accessible Merchantable Timber | | | | Inaccessible Merchantable Timber | | | Immature Timber | |
|---|---|---|---|---|---|---|---|---|---|
| | Net Area Killed | Total Volume Killed | Salvable Volume of Timber Killed | Net Stumpage Loss | Net Area Killed | Total Volume Killed | Damage | Net Area Killed | Present Value |
| | Acres | M B.F. | M B.F. | $ | Acres | M B.F. | $ | Acres | $ |
| Vancouver | 1,150 | 10,431 | 7,888 | 29,975 | 544 | 1,420 | 3 | 1,455 | 49,827 |
| Prince Rupert | 3,014 | 8,620 | 2,045 | 24,953 | ..... | ..... | ..... | 4,518 | 60,420 |
| Prince George | 5,864 | 15,507 | 6,181 | 92,388 | 24,755 | 420 | 6,288 | 23,323 | 311,214 |
| Kamloops | 1,938 | 13,902 | 8,476 | 36,222 | 356 | 470 | 11,736 | 12,617 | 177,486 |
| Nelson | 1,552 | 10,374 | 2,796 | 23,818 | 2 | 6 | 194 | 3,112 | 57,254 |
| Totals | 13,518 | 58,834 | 27,386 | 207,356 | 25,657 | 2,316 | 18,221 | 45,025 | 656,201 |
| Per cent | 2.88 | 96.21 | 46.55 | 19.59 | 5.46 | 3.79 | 1.72 | 9.59 | 61.99 |
| Ten-year average, 1947–56 | 7,112 | 69,196 | 37,809 | 131,220 | 3,472 | 2,800 | 9,586 | 31,646 | 185,422 |
| Per cent | 2.67 | 96.11 | 54.64 | 32.83 | 1.31 | 3.89 | 2.40 | 11.90 | 46.39 |

[1] Does not include intentional slash-burns. (For this item *see* page 140.)

## (58) DAMAGE TO FOREST-COVER CAUSED BY FOREST FIRES, 1956—PART II[1]

| Forest District | Not Satisfactorily Restocked | | | | Non-commercial Cover | | Grazing or Pasture Land | | Non-productive Sites | | Grand totals | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Logged Unburned | Logged and Burned | Burned, Not Logged | Damage | Area Burned | Damage | Area Burned | Damage | Area Burned | Damage | Area | Quantity | Damage |
| | Acres | Acres | Acres | $ | Acres | $ | Acres | $ | Acres | $ | Acres | M B.F. | $ |
| Vancouver | 2,872 | 512 | 122 | 6,471 | 2,043 | 306 | 162 | 16 | 2,311 | 363 | 11,171 | 11,851 | 86,961 |
| Prince Rupert | 241 | 2 | 41 | 1,341 | 4,373 | 1,090 | 1,243 | 67 | 628 | 149 | 14,060 | 8,620 | 88,020 |
| Prince George | 5,520 | 47 | 31,152 | 84,620 | 83,294 | 20,559 | 18,688 | 953 | 221,182 | 35,255 | 413,825 | 15,927 | 551,277 |
| Kamloops | 476 | 10 | 2,951 | 18,498 | 2,829 | 4,879 | 1,554 | 191 | 48 | 114 | 22,779 | 14,372 | 249,126 |
| Nelson | 3 | 72 | 4 | 1,378 | 565 | 135 | 37 | 4 | 2,466 | 302 | 7,813 | 10,380 | 83,085 |
| Totals | 9,112 | 643 | 34,270 | 112,308 | 93,104 | 26,969 | 21,684 | 1,231 | 226,635 | 36,183 | 469,648 | 61,150 | 1,058,469 |
| Per cent | 1.94 | 0.14 | 7.30 | 10.61 | 19.82 | 2.55 | 4.62 | 0.12 | 48.25 | 3.42 | 100.00 | 100.00 | 100.00 |
| Ten-year average, 1947–56 | 5,791 | 2,527 | 20,859 | 35,011 | 92,596 | 24,195 | 47,274 | 2,642 | 54,680 | 11,627 | 265,957 | 71,996 | 399,703 |
| Per cent | 2.18 | 0.95 | 7.84 | 8.76 | 34.82 | 6.05 | 17.77 | 0.66 | 20.56 | 2.91 | 100.00 | 100.00 | 100.00 |

[1] Does not include intentional slash-burns. (For this item *see* page 140.)

## (59) FIRE CAUSES, AREA BURNED, FOREST SERVICE COST, AND TOTAL DAMAGE, 1956

| Causes | Fire Causes | | Area Burned | | Forest Service Cost | | Total Damage | |
|---|---|---|---|---|---|---|---|---|
| | Number | Per Cent | Acres | Per Cent | Amount | Per Cent | Amount | Per Cent |
| Lightning | 497 | 17.69 | 19,086 | 4.06 | $158,294.00 | 33.75 | $139,220.00 | 9.73 |
| Campers | 214 | 7.61 | 344,343 | 73.34 | 51,764.00 | 11.03 | 200,607.00 | 14.02 |
| Railways operating | 1,090 | 38.79 | 653 | 0.13 | 5,202.00 | 1.11 | 3,408.00 | 0.24 |
| Smokers | 281 | 10.00 | 2,537 | 0.54 | 20,411.00 | 4.35 | 93,974.00 | 6.56 |
| Brush-burning (not railway-clearing) | 112 | 3.99 | 4,368 | 0.93 | 8,406.00 | 1.79 | 16,625.00 | 1.16 |
| Road and power- and telephone-line construction | 73 | 2.60 | 6,889 | 1.46 | 4,346.00 | 0.93 | 31,016.00 | 2.17 |
| Industrial operations | 183 | 6.51 | 3,668 | 0.78 | 40,227.00 | 8.57 | 272,403.00 | 19.03 |
| Incendiarism | 27 | 0.96 | 1,794 | 0.38 | 9,435.00 | 2.01 | 19,519.00 | 1.36 |
| Miscellaneous (known causes) | 260 | 9.25 | 80,468 | 17.14 | 98,130.00 | 20.92 | 555,642.00 | 38.82 |
| Unknown causes | 73 | 2.60 | 5,842 | 1.24 | 72,901.00 | 15.54 | 98,858.00 | 6.91 |
| Totals | 2,810 | 100.00 | 469,648 | 100.00 | $469,116.00 | 100.00 | $1,431,272.00 | 100.00 |

(60) COMPARISON OF DAMAGE CAUSED BY FOREST FIRES IN LAST TEN YEARS

| | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | Total, Ten Years |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total number of fires | 1,332 | 799 | 1,701 | 1,515 | 1,923 | 1,914 | 1,420 | 764 | 1,384 | 2,810 | 15,562 |
| Area burned (acres) | 142,765 | 384,356 | 145,549 | 848,246 | 420,954 | 152,406 | 38,645 | 10,309 | 46,694 | 469,648 | 2,659,572 |
| Standing timber destroyed or damaged (M f.b.m.) | 11,017 | 31,265 | 7,617 | 17,882 | 295,462 | 278,759 | 8,308 | 3,186 | 5,316 | 61,150 | 719,962 |
| Amount salvable (M f.b.m.) | 3,846 | 13,678 | 1,518 | 7,805 | 187,235 | 129,146 | 4,680 | 1,177 | 1,615 | 27,386 | 378,086 |
| Damage to forests | $62,497 | $287,192 | $32,449 | $359,417 | $1,417,975 | $498,775 | $145,957 | $43,329 | $90,971 | $1,058,469 | $3,997,031 |
| Damage to other forms of property | 246,737 | 284,271 | 326,848 | 413,194 | 1,535,125 | 492,344 | 114,693 | 131,554 | 64,153 | 372,803 | 3,981,722 |
| Total damage | $309,234 | $571,463 | $359,297 | $772,611 | $2,953,100 | $991,119 | $260,650 | $174,883 | $155,124 | $1,431,272 | $7,978,753 |

(61) FIRES CLASSIFIED BY FOREST DISTRICT, PLACE OF ORIGIN, AND COST PER FIRE OF FIRE-FIGHTING, 1956

| Forest District | Total Fires | Originated on Vacant Crown Lands and Lands Contributing to Forest Protection Fund | Originated on Lands Not Contributing to Forest Protection Fund | 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 | 105 | 1,319 | 83,276.00 | 17.75 | 329.15 | 1,171 | 82.23 | 41.67 | 253 | 17.77 | 9.00 | 124 | 82 | 27 | 9 | 11 |
| Prince Rupert | 169 | 91 | 78 | 46,009.00 | 9.81 | 418.26 | 59 | 34.91 | 2.10 | 110 | 65.09 | 3.91 | 73 | 26 | 7 | 3 | 1 |
| Prince George | 253 | 176 | 77 | 151,080.00 | 32.21 | 932.59 | 91 | 35.96 | 3.24 | 162 | 64.04 | 5.77 | 69 | 60 | 22 | 6 | 5 |
| Kamloops | 575 | 512 | 63 | 97,927.00 | 20.87 | 329.72 | 278 | 48.35 | 9.90 | 297 | 51.65 | 10.57 | 167 | 109 | 17 | 2 | 2 |
| Nelson | 389 | 372 | 17 | 90,824.00 | 19.36 | 375.30 | 147 | 37.79 | 5.23 | 242 | 62.21 | 8.61 | 155 | 76 | 5 | 3 | 3 |
| Totals | 2,810 | 1,256 | 1,554 | 469,116.00[1] | 100.00 | 440.90 | 1,746 | ---- ---- | 62.14 | 1,064 | ---- ---- | 37.86 | 588 | 353 | 78 | 23 | 22 |
| Per cent | 100.00 | 44.70 | 55.30 | ---- ---- | ---- | ---- | 62.14 | ---- ---- | ---- ---- | 37.86 | ---- ---- | ---- ---- | 20.92 | 12.56 | 2.78 | 0.82 | 0.78 |
| Ten-year average, 1947–56 | 1,556 | 992 | 564 | 314,058.35 | ---- ---- | ---- ---- | 793 | ---- ---- | ---- ---- | 763 | ---- ---- | ---- ---- | 520 | 188 | 37 | 8 | 10 |
| Per cent | 100.00 | 63.75 | 36.25 | ---- ---- | ---- | ---- | 50.96 | ---- ---- | ---- ---- | 49.04 | ---- ---- | ---- ---- | 33.42 | 12.08 | 2.38 | 0.52 | 0.64 |

[1] Cost correct to date. Subject to later revision.
Cost to other parties (493 cost-fires), $503,464. Cost to Forest Service (1,064 cost-fires), $469,116.
Detailed final costs are published one year in arrears in the table "Forest Protection Expenditure for Twelve Months Ended March 31st (by Districts)" in each Annual Report.

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## PROSECUTIONS, 1956

| Forest District | Information Laid | Burning without Permit | Refusing to Render Assistance in Fire-fighting | Contravening a Forest Closure | Failure to Maintain Proper Fire-protection Equipment | Failing to Control and Extinguish Fire | Failing to Fall Snags and Remove Debris in Accordance with Regulations | Fines | | Served Sentence in Gaol | Suspended Sentence | Cases Dismissed | Cases Withdrawn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Number | Amount | | | | |
| Vancouver | 68 | 12 | 6 | 40 | 8 | ---- | 2 | 64 | $1,725.00 | ---- | ---- | 2 | 2 |
| Prince Rupert | 5 | 2 | 3 | ---- | ---- | ---- | ---- | 5 | 150.00 | ---- | ---- | ---- | ---- |
| Prince George | 14 | 4 | 9 | ---- | ---- | 1 | ---- | 14 | 450.00 | ---- | ---- | ---- | ---- |
| Kamloops | 16 | 9 | 6 | ---- | 1 | ---- | ---- | 14 | 400.00 | ---- | ---- | 1 | 1 |
| Nelson | 2 | 2 | ---- | ---- | ---- | ---- | ---- | 2 | 55.00 | ---- | ---- | ---- | ---- |
| Totals | 105 | 29 | 24 | 40 | 9 | 1 | 2 | 99 | $2,780.00 | ---- | ---- | 3 | 3 |
| Ten-year average, 1947–56 | 47 | 16 | 11 | 10 | 7 | 2 | 1 | 40 | $1,180.42 | 1 | 3 | 2 | 1 |

(63)

## BURNING PERMITS, 1956

| Forest District | Clearing Agricultural Land | | | | Clearing Logging-slash | | | | Clearing Railway Right-of-way | | | | Clearing Public Roads | | | | Grand Totals | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Permits Issued | Area Burned Over | Fires Escaped Control | Fires Set without Permit | Permits Issued | Area Burned Over | Fires Escaped Control | Fires Set without Permit | Permits Issued | Area Burned Over | Fires Escaped Control | Fires Set without Permit | Permits Issued | Area Burned Over | Fires Escaped Control | Fires Set without Permit | Permits Issued | Area Burned Over | Fires Escaped Control | Fires Set without Permit |
| | No. | Acres | No. | No. | No. | Acres | No. | No. | No. | Acres | No. | No. | No. | Acres | No. | No. | No. | Acres | No. | No. |
| Vancouver | 3,305 | 10,061 | 2 | 12 | 277 | 22,908 | ..... | ..... | 7 | ..... | ..... | ..... | 190 | 30 | 7 | ..... | 3,779 | 32,999 | 9 | 12 |
| Prince Rupert | 726 | 2,174 | 3 | 3 | 121 | 81 | ..... | ..... | 12 | 63 | 2 | ..... | 24 | 213 | 3 | ..... | 883 | 2,531 | 8 | 3 |
| Prince George | 1,839 | 12,575 | 12 | 4 | 555 | 4,973 | 3 | ..... | 188 | 6,475 | 11 | ..... | 57 | 2,268 | 2 | ..... | 2,639 | 26,291 | 28 | 4 |
| Kamloops | 1,677 | 6,955 | ..... | 4 | 990 | 640 | ..... | 4 | 49 | 895 | 1 | ..... | 82 | 442 | ..... | 1 | 2,798 | 8,932 | 1 | 9 |
| Nelson | 1,362 | 493 | ..... | 2 | 220 | 121 | ..... | ..... | 70 | 4 | ..... | ..... | 117 | 699 | 1 | ..... | 1,769 | 1,317 | 1 | 2 |
| Totals | 8,909 | 32,258 | 17 | 25 | 2,163 | 28,723 | 3 | 4 | 326 | 7,437 | 14 | ..... | 470 | 3,652 | 13 | 1 | 11,868 | 72,070 | 47 | 30 |
| Per cent | 75.07 | 44.76 | 36.17 | 83.33 | 18.22 | 39.85 | 6.38 | 13.33 | 2.75 | 10.32 | 29.79 | ..... | 3.96 | 5.07 | 27.66 | 3.34 | 100.00 | 100.00 | 100.00 | 100.00 |
| Ten-year average, 1947–56 | 8,943 | 18,356 | 18 | 10 | 1,069 | 24,797 | 12 | 1 | 164 | 1,409 | 6 | ..... | 183 | 2,992 | 6 | ..... | 10,359 | 47,554 | 42 | 11 |
| Per cent | 86.33 | 38.60 | 42.85 | 90.91 | 10.32 | 52.15 | 28.57 | 9.09 | 1.58 | 2.96 | 14.29 | ..... | 1.77 | 6.29 | 14.29 | ..... | 100.00 | 100.00 | 100.00 | 100.00 |

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## ENROLMENT AT RANGER SCHOOL, 1956

| Forest District | Forest Assistants | Rangers | Acting Rangers | Assistant Rangers | Clerks | Total | Graduations |
|---|---|---|---|---|---|---|---|
| Vancouver | ---- | ---- | ---- | 6 | ---- | 6 | ---- |
| Prince Rupert | ---- | ---- | ---- | 5 | ---- | 5 | ---- |
| Prince George | 3 | ---- | ---- | 2 | ---- | 5 | ---- |
| Kamloops | ---- | ---- | ---- | 8 | ---- | 8 | ---- |
| Nelson | ---- | ---- | ---- | 5 | ---- | 5 | ---- |
| Research Division | 1 | ---- | ---- | ---- | ---- | 1 | ---- |
| Attendance, 1956[1] | 4 | ---- | ---- | 26 | ---- | 30 | ---- |
| Attendance, 1956[2] | 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 |
| Previous attendance | ---- | 2 | 9 | 9 | ---- | 20 | 20 |

[1] Class 1956–57 due to graduate December, 1957.
[2] Class 1955–56 graduated April, 1956.
NOTE.—Commencing with the class of 1949–50, each class takes one and one-half years to complete the course.

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## MOTION-PICTURE LIBRARY

### *Stock Records*

| | Year | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 |
| Films in library at January 1st | 75 | 74 | 77 | 75 | 75 | 74 | 77 | 80 | 64 | 71 |
| Films withdrawn during year | 8 | 2 | 3 | 9 | 8 | 3 | ..... | 24 | 2 | 3 |
| New films added during year | 7 | 5 | 1 | 9 | 7 | 6 | 3 | 8 | 9 | 10 |
| Films in library at December 31st | 74 | 77 | 75 | 75 | 74 | 77 | 80 | 64 | 71 | 78 |
| Films used during year | 77 | 77 | 74 | 76 | 71 | 72 | 79 | 64 | 70 | 80 |

### *Circulation Records*

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of loans made during year | 235 | 436 | 397 | 416 | 461 | 492 | 490 | 422 | 429 | 413 |
| Number of film loans during year (one film loaned one time) | 632 | 1,122 | 1,075 | 1,046 | 1,057 | 1,218 | 1,158 | 1,474 | 1,280 | 1,743 |
| Number of showings during year | 812 | 1,293 | 1,505 | 1,880 | 2,943 | 2,764 | 2,288 | 2,664 | 1,998 | 1,909 |
| Number of audiences— | | | | | | | | | | |
| Adults | 8,009 | 21,633 | 14,568 | 26,988 | 13,542 | 13,655 | 12,640 | 12,333 | 14,353 | 14,537 |
| Children | 25,362 | 20,455 | 24,031 | 95,102[1] | 264,245[1] | 157,085[2] | 118,622[2] | 102,013[1] | 131,844[1] | 157,086[1] |
| Mixed | 24,351 | 42,930 | 87,506 | 43,282 | 26,706 | 59,182 | 43,099 | 54,069 | 41,340 | 42,587 |
| Totals | 57,722 | 85,018 | 126,105 | 165,372[1] | 304,493[1] | 234,396[2] | 174,367[2] | 168,415[1] | 187,537[1] | 218,275[1] |

[1] Including attendances of lecture tour of two school lecturers.
[2] Including attendances of lecture tour of three school lecturers.

### *Loaned and Leased Films, 1956*

| Title | Number of Showings | Number in Audience | | | |
|---|---|---|---|---|---|
| | | Adult | Children | Mixed | Total |
| " Beaver Valley " | 302 | 1,025 | 49,976 | 41 | 51,042 |
| " Olympic Elk " | 120 | 85 | 18,776 | 606 | 19,467 |

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## SUMMARY OF PROGRAMMES BY SCHOOL LECTURERS, 1956

| Forest District | Lecturer | Period | Schools | | | Non-school | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Number of Schools | Number of Programs | Total Attendance | Number | Attendance | Number of Programmes | Total Attendance |
| Vancouver | Hall, R. F. | January to June | 84 | 141 | 22,612 | 2 | 489 | 143 | 23,101 |
| Vancouver | Jones, T. C. | January to June | 104 | 201 | 35,015 | 3 | 608 | 204 | 35,623 |
| Kamloops | Hall, R. F. | October to December | 39 | 49 | 5,731 | 3 | 230 | 52 | 5,961 |
| Vancouver | Jones, T. C. | October to December | 44 | 77 | 10,335 | 2 | 335 | 79 | 10,670 |
| Totals | | | 271 | 468 | 73,693 | 10 | 1,662 | 478 | 75,355 |

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## FOREST SERVICE LIBRARY

| Classification | Items Catalogued and Indexed | | | | | | | | | | Ten-year Average, 1947–56 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | |
| Bound volumes | 14 | 39 | 36 | 27 | 23 | 9 | 41 | 62 | 55 | 37 | 34 |
| Government reports and bulletins | 231 | 123 | 100 | 62 | 109 | 122 | 484 | 246 | 190 | 179 | 185 |
| Other bulletins and reports | 90 | 140 | 153 | 140 | 152 | 337 | 90 | 92 | 94 | 170 | 146 |
| Periodicals | 72 | 72 | 80 | 102 | 110 | 115 | 111 | 124 | 136 | 151 | 107 |
| Serials[1] | ..... | ..... | ..... | ..... | ..... | ..... | 66 | 127 | 141 | 177 | ..... |
| References indexed | 1,798 | 3,543 | 2,074 | 1,960 | 2,650 | 2,203 | 1,800 | 932 | 1,090 | 1,321 | 1,937 |

[1] Previous to 1953 included with periodicals, bulletins, and reports.

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## GRAZING PERMITS ISSUED

| Forest District | Number of Permits Issued | Number of Stock under Permit | | |
|---|---|---|---|---|
| | | Cattle | Horses | Sheep |
| Kamloops | 1,254 | 109,750 | 2,598 | 20,343 |
| Nelson | 466 | 14,780 | 893 | 1,938 |
| Prince George | 56 | 2,652 | 176 | 29 |
| 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 |
| Totals, 1953 | 1,730 | 108,894 | 4,133 | 23,172 |
| Totals, 1952 | 1,621 | 104,610 | 4,040 | 23,565 |
| Totals, 1951 | 1,561 | 100,082 | 4,350 | 22,282 |
| Totals, 1950 | 1,562 | 98,484 | 4,650 | 23,100 |
| Totals, 1949 | 1,496 | 101,349 | 5,029 | 25,842 |
| Totals, 1948 | 1,444 | 110,333 | 6,644 | 29,444 |
| Totals, 1947 | 1,322 | 105,723 | 5,513 | 25,289 |

N.B.—Some of the figures in this table for the years 1947 to 1951, inclusive, have been revised and differ from those shown in previous Reports. Past tables have shown net figures for some years and gross figures for others. This table shows the total number of permits issued and the net number of live stock covered for each of the years listed.

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## GRAZING FEES BILLED AND COLLECTED

| Year | Fees Billed | Fees Collected[1] | Outstanding |
|---|---|---|---|
| 1956 | $76,155.51 | $79,247.61 | $13,655.07 |
| 1955 | 76,061.32 | 75,250.32 | 16,577.24 |
| 1954 | 80,191.97 | 85,043.96 | 15,766.24 |
| 1953 | 95,088.64 | 102,460.00 | 20,618.23 |
| 1952 | 125,495.09 | 110,731.32 | 27,989.59 |
| 1951 | 108,400.14 | 106,161.36 | 13,225.82 |
| 1950 | 80,178.43 | 74,305.08 | 10,986.74 |
| 1949 | 27,819.65 | 28,299.94 | 5,113.39 |
| 1948 | 28,960.42 | 27,089.74 | 5,597.18 |
| 1947 | 28,584.74 | 29,203.74 | 3,726.50 |

[1] "Fees Collected" column includes statutory penalties.

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