

1953
WESTERN AUSTRALIA

REPORT

ON THE OPERATIONS OF

THE FORESTS DEPARTMENT

FOR THE

YEAR ENDED 30th JUNE, 1953

BY

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PERTH:
By Authority: WILLIAM H. WYATT, Government Printer.

1953

Annual Report on the Operations of the Forests Department for the Year ended 30th June, 1953

INTRODUCTION AND SUMMARY.

Sawn timber production for the year under review 1952-53 at 16,975,093 cubic feet exceeded that of any previous year. Of this total 13 million cubic feet were held in the State, 3 million were exported interstate, and nearly 1 million was exported overseas. The total exports represented 23·4 per cent.

The total value of sawn timber this year was estimated at over £8,000,000, and the gross revenue reached a peak of £678,150. Forest products other than sawn timber were estimated at a value of over £2,000,000.

The following table illustrates the recent trends in production and consumption :—

Year.	Total Sawn Production.	Total Export.	Local Consumption.	No. of Sawmills.	Men Employed.
	cub. ft.	cub. ft.	cub. ft.		
1937-38	11,720,652	7,545,744	6,700,000	134	3,105
1945-46	8,700,000	3,300,000	5,200,000	128	2,870
1950-51	12,571,000	2,343,000	10,200,000	256	4,047
1951-52	14,717,000	2,368,000	12,350,000	278	4,700
1952-53	16,975,093	3,965,188	13,009,905	306	5,671

This year's production represents a far greater output than the forests of the State can maintain, and moreover, the rate of cut is still increasing. Nearly 30 per cent. of the sawn timber was derived from Private Property, a source which will disappear over the years ; for there is no private forestry in Western Australia. Another 20 per cent. was obtained from low quality forest on Crown Lands not permanently dedicated to forestry much of which may be alienated in the future, so that this source of timber will also disappear.

The remainder of the cut was taken from the main timber belt, and it is highly desirable that the distribution of this cut should be improved by replacing to the greatest extent possible the log supply from the heavily cut-over forests by cutting in the virgin forests of the far South.

In the meantime, contrary to general practice, in order to keep in operation City Mills and those around some country towns, logs are being sold by the Department from its own direct conversion operations, and a system of sale of small permits has been arranged.

It can be clearly seen that the outlook for timber for the increased population predicted for this State, even if it is only double the present population, is a far from pleasing one. Admittedly 23·4 per cent. of the timber was exported, but with an increased population this will be absorbed locally. Account has not been taken of the needs of the State for cellulose products, paper and the host of articles made today from wood, and the additional demands on our forests made for mining timber, piles and poles, bridge and fencing timbers, and other items which are not sawn.

There is a prescription to remedy the position, and that is increased forestry development and the dedication of further areas of State Forest. Funds are required for three major steps :—

- (1) A larger pine planting programme.
- (2) Quicker extension of Fire Control measures to protect native forests where timber is being destroyed by fire.
- (3) Housing for forest workers.

It is unfortunate for the future, in a State so deficient in forest, that although funds could be found over the post-war years for agricultural development on a large scale, relatively little finance is available for the growth and care of forests. This is an equally important form of settlement of our country, and one capable of providing the necessities of life, shelter, clothing and even food. Forestry is a rural industry, and apart from the large sawmilling towns of the Timber Trade, has developed, and is capable of further developing, small permanent townships in the forests.

There has been a tardiness in the past in this State to increase the area of dedicated State Forest to protect our natural forest resources from the inroads of the many demands for forest lands for other purposes. The dedication of State Forest may be regarded as having two main purposes in timber production ; firstly, the protection of forests needed in the close future to support for as long as possible the existing Timber Industry, and secondly, the protection of forests needed for the growth of timber in perpetuity. The dedication of forest is not irrevocable and small sections of State Forest are revoked every year with the approval of Parliament.

Fire is the chief enemy of the forests, and it is pleasing to record that last summer was comparatively mild. Although there were more " Dangerous " days than usual, there were no extended spells of hot weather which in some years have been as long as six weeks of " High " summer. The weather this summer did rise sharply to Dangerous Hazard, but then fell again steeply ; and in that respect was abnormal. A very successful season is to be recorded, no serious fire losses having occurred. The extension of Fire Control and Forest Management into the forests of the far South has continued slowly. Three new fire lookout stations, Mt. Burnside, Beard and Boorara, were manned during the season making a total of 34 lookouts now in use. A new station at George Tower was constructed.

Although the pine afforestation programme was curtailed during the year through a shortage of Loan Funds, a record area of 2,543 acres was planted in the winter of 1952 during the early portion of the financial year. Some 5,000 acres remain part-cleared for future planting. The total area of plantations is now 17,690 acres, exclusive of the 1953 planting season.

In Forest Research further attention has been given to the soils and litter of the Jarrah forest ; to pine nutrition as a continuing study of the growth of pine in the poor soils available for planting ; to some aspects of the use of selective weedicides in nursery operations, and the use of toxic chemicals and hormone-like synthetics in the eradication of coppice growth on firebreaks. Problems involved in the germination of seed and initial steps in tree-breeding are being studied.

The outbreak of bark beetle (*Ips grandicollis*) attack, first reported from a Perth plantation (Collier) in August, 1952, has now become apparent at all Metropolitan plantations of *Pinus pinaster*. Possible measures of silvicultural control and the use of chemical sprayings on infested slash and logs are being studied.

The shortage of Senior professional foresters which began during World War II. has not been overcome although additional graduates have joined the Department as Juniors in recent years. The low salary classification of Senior professional foresters represents a risk of further loss to the State.

Increased attention has been given to the trial of trees for inland areas where a number of new arbereta have been established. Studies are being made of trees suitable for the Kimberley areas. The State Nursery at Hamel which produces trees for distribution to farmers and rural areas, disposed of over 40,000 trees to local authorities and private persons. The Kalgoorlie Nursery which raises trees for use in the low rainfall inland areas distributed nearly 10,000 plants.

With the planting in the lower South-West of many Northern hemisphere species noted for their Autumn tints the tourist attractions of some of the towns in the forest country should ultimately be considerably enhanced.

A Eucalyptus Study Tour of Australia, financed partly from the funds of Food and Agriculture Organisation of the United Nations, and partly by member nations, included in its itinerary one week in the forests of Western Australia. Twenty-six delegates from eighteen (18) nations together with F.A.O. officials visited this State and examined Jarrah, Karri, Wandoo and Tuart forests in the South-West, and Mallet in the Narrogin district. The inland forests of Eucalyptus around Norseman and Kalgoorlie were also visited and were of special interest to those engaged in growing timber in arid regions of the world. The interest displayed by delegates and discussions with them emphasised the high value attached to the Australian Eucalypts by other nations throughout the world.

REVENUE.

The gross revenue of the Department for the year ended 30th June, 1953, amounted to a record figure of £678,150. The previous highest revenue received in any one year was in 1951-1952 when it amounted to £481,497.

The following tabulation shows a comparison of the two years :—

	Year ended 30th June, 1952.	Year ended 30th June, 1953.
	£	£
Royalties and Rents	292,767	399,011
Sandalwood	54,195	54,276
Departmental	134,535	224,863
	<u>£481,497</u>	<u>£678,150</u>

Goldfields revenue decreased to £9,079 as compared with £9,535 for the previous year.

The major items collected under the heading of "Departmental" were :—

	£
Sale of Pine Logs	32,665
Sale of Milled Timber	56,256
Sale of Firewood	108,996

THE FOREST AREA.

State Forest (Forests Act, 1918).

The area of State Forest as at 30th June, 1953, was 3,460,092 acres, an increase of 18,141 acres as compared with the acreage for the previous year. During the year additions totalling 18,260 acres were made to State Forest. This was mainly due to the inclusion in State Forest 16 of an area for pine planting. One hundred and nineteen acres comprising five small areas were excised during the year and reverted to the Lands Department for alienation.

In the timber forests proper of the South-West, 3,460,092 acres have been dedicated as State Forest, and 87,000 acres have been declared Timber Reserve under the Forests Act, and 201,000 acres as Timber Reserve under the Land Act.

The Forests Department has recommended the dedication of an additional 336,000 acres in the extreme South-West below Nannup to Walpole. This recommendation was supported by the findings of the recent Royal Commission.

The machinery to review any dedicated State Forest has operated continuously since the passing of the Forests Act in 1918, and some pieces of State Forest found unsuitable for forest purposes or required to meet special circumstances are revoked each year following the consent of Parliament.

It is strange that forest carrying valuable timber cannot be freely dedicated in a great State so deficient in forests.

Timber Reserves (Forests Act, 1918).

The total area of timber reserves under the Forests Act as at 30th June, 1953, was 1,796,920 acres, a decrease of 2,738 acres as compared with the acreage for the previous year. This was the result of Reserve No. 118/25 (Mining timber and firewood, etc.) being cancelled and re-gazetted as a National Park. Of this total only about 60,000 acres are in the South-West and capable of producing timber. The balance is chiefly firewood forest of the inland areas.

APPLICATIONS FOR LAND.

During the period 1st July, 1952, to 30th June, 1953, the Department received either through the Lands Department or direct, 217 applications covering a total area of 144,258 acres.

Of these applications 136, covering a total area of 93,880 acres, were referred to the Forest Officer in charge of the District concerned for either a detailed inspection or for additional information, before making a recommendation. Of this area applied for the Forests Department agreed to the release of 136 blocks totalling approximately 61,000 acres.

SAWMILLING AND HEWING.

While the sawn timber production reached a record, the milling capacity of the State is at a still higher level. There has been a great increase in the number of mills on Private Property, and because of the present demand for timber, mills, which normally would have closed down, have been continued in operation. Though this capacity has not been fully used it now totals about 1,500,000 loads in the round, or nearly 75 million cubic feet made up of 1,200,000 on Crown timber and 300,000 on Private Property. This is almost double the output the forest of the State could support on a permanent basis.

Actually in the year under review the total cut was nearly 1,000,000 loads, or 50 million cubic feet, of logs, 685,000 loads from Crown Lands and 260,000 loads from Private Property, but the rate of cut is still steadily increasing. It is always difficult to resist the demands of sawmills for logs to replace those obtained from permits now cut out or from Private Property now exhausted, but the State must face the position.

Assuming that the forest desired for agriculture is all cut out in 20 years and the Private Property similarly, the State will be forced thus to rely upon the timber from the permanent forests, and this will not provide more than 700,000 loads of logs per annum, probably less. The amount of timber used within the State this year was of the order of 723,000 loads of logs, or more than 50 cubic feet of logs per head of the population, exclusive of pulp and paper products for which nearly 10 cubic feet would be required.

The position for the future with a greatly increased population is therefore a serious one. The people of the State will not have enough hardwoods for their own needs. Again, the State possesses in its Jarrah and Karri forests, timber of high intrinsic value and trees of big sizes capable of cutting hardwood timbers of large dimensions are keenly sought after by world users. These timbers provide a high quality, high value export commodity, and it would be wise to conserve for an export trade in the future instead of diverting it all to the many common uses for which inferior timbers are suitable.

The need then for a greatly increased pine planting programme is evident. Seven-eighths of the timber used in the world is softwood, and Western Australia can overcome its prejudice against the use of softwood for many common purposes. It will be forced to do so eventually.

Details of the production of mill logs and sawn timber are given in the accompanying tables.

Thirty-nine new mills were registered during the year bringing the total to 306 as at December, 1952, of which 159 were on Crown Land and 147 on Private Property. The number of mills in itself is not a measure of timber being cut, as it is the large mills with capacity intakes of more than 1 million cubic feet per annum each and up to double that capacity which cut the bulk of the timber.

Departmental plantations yielded nearly 14,000 loads of pine thinnings, of which 245 loads were used for plywood manufacture. Other species, chiefly Jarrah and Karri, provided 109,713 cubic feet (2,194 loads) for plywood, practically all of which was from State Forest with the exception of a small quota, 2,616 cubic feet, of Blackbutt from Private Property.

TIMBER PRODUCTION.

Production of Timber for Year ended 30th June, 1953 (exclusive of Mining Timber, Firewood, Piles and Poles and Logs used for Tannin).

	Mill Logs.					Hewn Timber.		Grand Totals.	
	Jarrah.	Karri.	Other.	Total.		Jarrah in log.	Jarrah in square.	In log.	In square.
				in Log.	Recovery of sawn Timber.				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Crown Lands	23,719,054	8,189,687	2,307,488	34,216,229	12,291,853	7,150	1,430	34,223,379	12,293,283
Private Property	10,921,770	800,355	1,297,624	13,019,749	4,681,479	1,655	331	13,021,404	4,681,810
Gand Totals	34,640,824	8,990,042	*3,605,112	47,235,978	16,973,332	8,805	1,761	47,244,783	16,975,093

Figures in columns (1), (2), (3), (4), (6) and (8) are in the round based on full volume measure.

Figures in columns (5), (7) and (9) are the volumes of sawn or hewn timber in the square.

* Comprises :—

1,811,467 cub. ft. Wandoo.	704,759 cub. ft. Pine.	614,199 cub. ft. Blackbutt.	197,623 cub. ft. Sheoak.
180,160 cub. ft. Marri.	64,119 cub. ft. Tuart.	25,109 cub. ft. Red Tingle	2,591 cub. ft. Yellow Tingle
2,642 cub. ft. Bullich.	1,749 cub. ft. Morrell.	555 cub. ft. Cadjuput.	139 cub. ft. Banksia.

In addition to the above total, 68,635 tons of Wandoo logs were used for Tannin extract.

THE QUANTITY OF SAWN AND HEWN TIMBER PRODUCED FROM CROWN LANDS AND PRIVATE PROPERTY FOR THE PAST TWO YEARS IS SET OUT IN THE FOLLOWING TABLE.

Year.	From Crown Lands.			From Private Property.			Total Quantity.	Estimated Value of Timber Obtained.
	Sawn Timber other than Sleepers.	Sawn Sleepers.	Hewn Sleepers.	Sawn Timber other than Sleepers.	Sawn Sleepers.	Hewn Sleepers.		
1951-52	9,363,216	1,056,110	.....	3,859,271	438,515	.....	14,717,112	£ 6,105,922
1952-53	10,540,913	1,750,940	1,430	3,977,327	704,152	331	16,975,093	8,162,586

Log Production from the Forests of Western Australia.

From the foundation of the Colony of Western Australia in the year 1829 to 1873, the population rose from 1,003 to 25,761, and the estimated timber production gradually increased from a mere 602 loads to 16,820 loads per annum. It has now been estimated that during this period the total log production was approximately 315,000 loads.

Between 1874 and 1893 population rose steadily to 65,037, and in this period production is estimated to have increased to approximately 50,000 loads per annum. It is thus estimated that 773,000 loads were produced during these two decades.

The era of 1894 to 1915 saw a marked increase in population to 316,663 with a corresponding large increase in timber production, estimated to have reached to 452,700 loads per annum of log production. It is estimated, therefore, that these two decades produced 7,058,000 loads of timber.

Since 1915 log production figures have been given annually.

As an interesting estimate, therefore, it may be said that the total log production for Western Australia from the foundation of the Colony to June of 1953, amounted to over 36 million loads—as shown in Appendix 2E.

Timber Inspection.

The service of Timber Inspection provided for buyers by the Department has increased considerably during recent years.

Sawn sleepers inspected during the year under review amounted to 2,199,092 cubic feet, of which 634,372 cubic feet were from Private Property. Hewn sleepers inspected totalled 1,761 cubic feet only, of which 331 cubic feet were from Private Property.

Other sawn timber inspected totalled 189,287 cubic feet of which 6,486 cubic feet were from Private Property. The number of piles and poles inspected totalled 503 amounting to 14,522 lineal feet.

Sawn Timber Consumption and Distribution.

Of the total of 339,502 loads produced during the year 260,180 loads or 76·6 per cent. were held in Western Australia, 79,323 loads or 23·4 per cent. were sold outside the State, and of these exports 60,086 loads or 17·7 per cent. of the total cut were sent to the Eastern States and 19,237 loads or 5·7 per cent. were shipped overseas.

The production of Karri was 64,728 loads or 19·1 per cent. of the total. Of this, 34,000 loads approximately were consumed in Western Australia and 31,000 loads exported outside the State.

Sleepers sawn during the year totalled 49,102 loads and 30,239 loads of these were used in Western Australia.

The quantity of timber used in the construction of nearly 8,000 new houses was estimated on a basis of 10 loads per house at 80,000 loads. Although flooring and joinery in these houses used an estimated 24,000 loads of seasoned timber, there is a demand for this product for other purposes including repairs, and it is estimated that the present annual production of seasoned timber is about 40,000 loads.

Firewood Production and Consumption.

Firewood production for the State exceeded one million tons, over half of which was used for industrial and mining fuel. The Forests Department continued to supply wood directly to No. 1 and No. 2 G.W.S. Pumping Stations, together with emergency supplies to No. 3 Station.

The proposed electrification of the Mundaring Weir Pumping Stations in the near future may entail the loss of employment for some 70 to 80 men and a consequent loss of a fire fighting force unless a new market is found for firewood from this centre.

Firewood.	Crown Land Tons.	Private Property Tons.	Total Tons.
1. Production for the State—			
(a) Domestic Firewood :			
Firewood Permits (South-West)	49,571	1,217	50,788
Mill Waste sold as Firewood (estimated 50 per cent. of total)	36,887	20,818	57,705
Domestic use on Goldfields	16,597	.....	16,597
Total Domestic Wood as shown by returns received	103,055	22,035	125,090
(b) Industrial Firewood :			
Direct supply by Forests Department Nos. 1 and 2 pumps	22,100	.....	22,100
Nos. 3 and 4 pumps	3,323	.....	3,323
Supplied by Petty contractors Nos. 1 and 2 pumps	4,354	.....	4,354
Supplied under License Nos. 3 to 8 pumps	35,219	.....	35,219
Other Pumps	1,185	.....	1,185
Factories, etc.	49,571	.....	49,571
Mill Waste sold as Firewood (estimated 50 per cent. of total)	36,887	20,819	57,706
Mill Waste used as Firewood	121,031	12,876	133,907
Total, Industrial Firewood as shown by returns received	273,670	33,695	307,365
(c) Mining Firewood			
Total, Firewood produced as shown by returns received	544,877	55,730	600,607

It will be noted that this total does not equal the estimated consumption due to many returns not being received for Private Property.

2. Consumption—

Estimated Domestic	314,260 (at 2 tons per dwelling.)
Industrial	473,810 (ex Government Statistician.)
Pumping Stations	66,187 (as per F.D. Returns.)
Mining	168,152 (as per F.D. Returns.)

1,022,409 tons.

Approximately 53 per cent. of the firewood consumed was supplied from Crown Land.

A good reserve of firewood has been maintained at Nos. 1 and 2 Pumping Stations during the year.

Sandalwood.

Indications last year that more men were taking an interest in the Sandalwood industry were realised, and as a result no difficulty was experienced in obtaining sufficient Sandalwood to meet all export orders and build up a reserve stock at Fremantle.

The quantity of Sandalwood delivered during the year (including deliveries from orders placed during the previous year), was :—

<i>Crown Lands—</i>	Oil	Export.
	Distillation. Tons.	Tons.
Logwood ....	....	581
Roots and Butts	*157	....
Pieces ....	....	3
		(logwood)
<i>Private Property—</i>		
Nil		
	157	584

* Severed from logs delivered for export.

The quantity of Sandalwood exported during the year was 400 tons as compared with 373½ tons for the previous year.

Nine thousand three hundred and thirty-seven pounds of Sandalwood oil were produced by local distillers during the year, and 4,405 lb. were exported out of the State.

FOREST PRODUCE.

Piles and poles totalling 197,565 lineal feet were obtained from Crown Lands, of which 33,377 lineal feet were supplied by departmental cutting. Records available show that nearly 400,000 lineal feet were obtained from Private Property, but in addition to this an unknown quantity from Private Property goes into local use, for which the Department has no records.

Over a quarter of a million fence posts and rails were recorded, but this record must fall far short of the actual consumption, as returns are not received from private owners.

Tanning materials form one of the most important items of forest produce apart from sawn timber. From Crown Lands 200 tons of Mallet bark were sold, of which 49 tons came from Plantation thinnings. One thousand and thirty-two tons came from Private Property. Wandoo logs used for the preparation of tannin extract totalled 68,635 tons, all from Private Property.

Mining timber, apart from that supplied by sawmills, reached approximately 31,000 tons, nearly all from Crown Lands, and about half of which came from the inland forest areas.

Although very little charcoal was produced for general consumption, the Wundowie Charcoal Iron Industry produced over 9,000 tons for use in the process of steel production.

Numerous other items of interest produced from forest areas are shown in the following table.

It has been estimated that this forest produce has a total value of over £2,000,000.

FOREST PRODUCE NOT ELSEWHERE INCLUDED IN PRODUCTION TABLES.
OBTAINED DURING YEAR ENDED 30th JUNE, 1953.

Description of Forest Produce.	South-West Division and Agricultural Areas.			Northam Central and Eastern Goldfields.	Total.
	Supplied by Department.	Other Crown Lands.	Private Property.*	Crown Lands.	
Mining Timber Tons	300	12,864	528	17,006	30,698 tons.
Sleepers for Goldfields Wood Line Cu. ft.	....	....	....	19,036	19,036 cu. ft.
Charcoal (Includes 9,129 tons ex Wundowie) Tons	....	117	9,129	16	9,262 tons.
Piles and Poles Lin. ft.	33,377	164,188	395,498	....	593,063 lin. ft.
Fencing Posts and Rails No.	11,437	165,067	15,214	73,850	265,568 No.
Mallet Bark (Includes 49 tons thinnings) tons	49	151	1,032	....	1,232 tons.
Wattle Bark tons	4	....	....	....	4 tons.
Blackboy tons	....	56	....	....	56 tons.
Wandoo Timber for Tannin Extract.... tons	....	....	68,635	....	68,635 tons.
Boronia megastigma for distillation purposes lb.	....	3,223	303	....	3,526 lb.
Bean, etc., Sticks No.	....	5,500	....	3,375	8,875 No.
Stone Cub. yds.	....	846	....	....	846 cub. yds.
Sand Cub. yds.	....	261	....	....	261 cub. yds.

* Complete figures for Private Property are not available. Only information furnished to the Department has been included.

FOREST OFFENCES.

Eighty-two offences were reported to Head Office during the year. In six cases proceedings were taken against offenders. Fines totalling £40 and costs of £13 2s. were inflicted.

Nineteen warnings were issued, and the remainder were dealt with by charging royalty, cancellation of Licenses, forfeiture of deposits, collection of damages, or the confiscation and sale of timber illegally cut.

The amount received by the Department in this way totalled £802 16s. 6d.

EXPENDITURE.

The total expenditure charged against Consolidated Revenue Fund amounted to £273,820. Compared with the previous year this amount was expended, as follows:—

	Year ended 30th June, 1952.	Year ended 30th June, 1953.
	£	£
General Administration of the Forests Act and Regulations	69,068	79,921
Administration of the Timber Industry Regulations Act	3,201	3,003
Pine Conservation	29,431	45,445
Firewood and other Direct Conversion Projects	93,179	145,451
	<u>£194,879</u>	<u>£273,820</u>

The total expenditure of the Department charged against all Funds was as follows:—

	£
Consolidated Revenue Fund	273,820
Reforestation Fund, including Federal Aid Road Grant	388,570
General Loan Fund	104,386
	<u>£766,776</u>

FORESTS IMPROVEMENT AND REFORESTATION FUND.

	£	s.	d.
Balance—1st July, 1952	1,883	2	7
Three-fifths Net Revenue	250,165	6	9
Treasury Grant	83,247	14	0
Federal Aid Road Grant	46,504	8	10
Direct Credits	6,985	9	11
	<u>388,786</u>	<u>2</u>	<u>1</u>
<i>Less Expenditure—</i>			
	£	s.	d.
General Account	342,065	2	11
Federal Aid Road Grant	46,504	8	10
	<u>388,569</u>	<u>11</u>	<u>9</u>
<i>Balance as at 30th June, 1953</i>	<u>£216</u>	<u>10</u>	<u>4</u>

APPORTIONMENT OF NET REVENUE OF DEPARTMENT.

	£	s.	d.
Gross Revenue for year 1952–1953	678,150	9	4
<i>Less Revenue from Firewood, etc.</i>	134,199	2	6
	<u>543,951</u>	<u>6</u>	<u>10</u>
	£	s.	d.
Consolidated Revenue Fund Expenditure	273,819	11	1
<i>Less Expenditure on Firewood</i>	145,450	11	6
	<u>128,368</u>	<u>19</u>	<u>7</u>
<i>Less Timber Industry Regulations, Salaries and Incidentals</i>	3,193	17	2
	<u>125,175</u>	<u>2</u>	<u>5</u>
Salary of Conservator	1,834	0	0
	<u>127,009</u>	<u>2</u>	<u>5</u>
<i>Net Revenue</i>	<u>£416,942</u>	<u>4</u>	<u>5</u>
Three-fifths of net revenue credited to Reforestation Fund during the year 1952–1953	<u>£250,165</u>	<u>6</u>	<u>9</u>

REFORESTATION.

The total area of Jarrah, Karri and Wandoo on Crown Land and State Forest cut over during the amounted to approximately 106,000 acres. About half of this area was treemarked in accordance with our silvicultural practice and working plan control to ensure regeneration and perpetual yield. The balance being mostly outside State Forest was cut under other forms of control. Cutting on State Forest was followed by top disposal work for the protection of the immature growing stock remaining. A total of approximately 44,000 acres received this treatment. There are now 1,937,000 acres regenerated. In addition approximately 25,000 acres of Private Property on which timber is reserved to the Crown was cut over.

Management and protection is being extended into areas in the far South-West on which new mills are operating.

ROAD CONSTRUCTION AND MAINTENANCE.

The road and track system upon which management and protection to a large extent depends was increased to a total of 13,373 miles by the addition of 282 miles. Maintenance grading covered 3,353 miles.

Main Forest Divisions.

Division.	Construction Miles.	Maintenance Grading Miles.
Mundaring	22	169
Dwellingup	19	532
Collie	20	295
Kirup	32	919
Manjimup	46	388
Gleneagle	3	14
Narrogin	3	112
Harvey	17	565
Pemberton	120	359
	<hr/> 282	<hr/> 3,353

In addition, about 100 miles of grading were carried out within plantations and the Department undertook construction of several roads for the Main Roads Department, for which Federal Aid Road Grant money was made available.

AFFORESTATION.

Pine Plantations.

The total net area of pine plantations is now 17,690 acres. The gross area including internal firebreaks is approximately 32,000 acres.

During the year under review, 2,543 acres (net) were planted, and some 5,000 acres remain part cleared for future planting. This record reflected the accumulation of work over several years while loan money was available, but due to the shortage of loan funds for 1952-53 the future for pine planting is now obscure.

Following the planting season (July and August, 1952), plantations were reduced to a maintenance basis and very little work for future planting has proceeded.

This position is a serious one for the future of Afforestation, as a period of up to four years must elapse between the initiation of clearing a new plantation and the first large scale planting.

Nett areas planted at the various plantations this year were as follows :—

	acres.
Gnangara	1,748
Gleneagle	121
Grimwade	76
Keenan	28
Ludlow	35
McLarty	14
Myalup	107
Mundaring	13
Willcock	367
Somerville	34
Total	<hr/> 2,543

Mallet.

The Mallet plantations now total 18,189 acres. No sowing was done this year.

In the course of thinning, 49 tons of bark were produced, and mining timber was cut for the Murchison Goldfields, totalling 9,015 cubic feet, most of which was lagging poles.

A total of 1,232 tons of bark was produced for the State, most of which came from Private Property.

PRODUCTION OF PINE LOGS.

The total production of pine logs from Departmental Pine Plantations was 13,629 loads which was obtained chiefly from first thinnings over approximately 740 acres.

Of this total, 3,554 loads were milled at Departmental centres and the balance of 10,075 loads sold chiefly to case-making firms. Two hundred and forty-five loads of logs were supplied for peeling for plywood manufacture, and the Department disposed of by sale 220 loads of processed pine mouldings, etc.

HOUSING.

Forest protection and management depends largely on the establishment of resident workers and the development of roads and tracks. During the war years and until 1950, little progress was made. Of recent years, houses have been established as follows :—

1948-49	....	....	....	....	20
1949-50	....	....	....	....	38
1950-51	....	....	....	....	28
1951-52	....	....	....	....	47
1952-53	....	....	....	....	32

The houses completed in the current year were mostly under construction in the year 1951-52, and the loan money available for the current year was insufficient to continue the planned programme.

FOREST PROTECTION AND FIRE CONTROL.

Forest protection normally includes the protection of the forest against many agencies, including fire, insects, fungi, common stealing of timber, and so forth.

During the year under revision the forest has suffered from three unusual attacks :—

- (1) The deliberate destruction on tree after tree of the covering bags used in pollination work in tree-breeding experiments at Kalgoorlie.
- (2) The continued lighting of fires by an incendiarist at Collie.
- (3) The cutting for Christmas Trees of the tops of young pine trees in experimental plots near Dwellingup.

An area of two million acres was afforded either intensive or partial protection.

Satisfactory controlled burns, particularly Autumn burns, were reported from most Divisions, and a total of 1,336 miles of breaks were burned together with 101,000 acres of broadcast burning and 63,000 acres of top disposal and advance burn.

This was somewhat less than last year due to the late rains in September, October and November which curtailed Spring burning to some extent.

Three new lookout trees were brought into operation during the year, two of these, Beard tree and Boorara are in the extreme South and give cover to a considerable area of forest that is being brought under fire control.

The third tree at Greenbushes was manned intermittently to give better co-ordination in the Kirup District, particularly during periods of acute smoke haze.

The first fires of the season were recorded on 6th October simultaneously at Mundaring Weir and Dwellingup while the last fire of the season occurred at Manjimup on 27th May, 1953.

The total number of fires attended by Departmental gangs during the year under review was 289 as compared with 324 for the previous year, and a total of 4,042 acres of the intensively protected forest was burnt over mostly very lightly.

Causes of Fires were as follows :—

W.A.G.R. Locos.	....	....	....	....	9
Bush Locos.	....	....	....	....	37
Escapes from Control Burns	....	....	....	....	32
Bush Workers	....	....	....	....	17
Bush Navvies	....	....	....	....	1
Hunters and Fishers	....	....	....	....	10
Householders	....	....	....	....	6
On and from Private Property	....	....	....	....	61
Firewood Cutters	....	....	....	....	5
Travellers	....	....	....	....	22
Lightning	....	....	....	....	3
Deliberately Lit	....	....	....	....	40
Children	....	....	....	....	6
Mill Surroundings	....	....	....	....	9
Mine Surroundings	....	....	....	....	1
Other Government Employees	....	....	....	....	6
Stockmen	....	....	....	....	4
Tractors	....	....	....	....	5
Unknown	....	....	....	....	15
Total	....	....	....	....	289

The greatest individual cause of fires was escapes from Private Property with 61 or 21 per cent. of the total.

Although this number of fires is still high, all Divisions reported improved co-operation and liaison with Private Property owners, and the fact that the prohibited period for the Southern areas was prolonged to 15th March instead of 1st March probably assisted to a considerable extent.

The most alarming cause was incendiarism which accounted for 40 fires, or nearly 14 per cent. of the total. Of these 40 fires, 31 were lit in the Collie district where they accounted for 50 per cent. of the total fires for the district. In spite of the co-operation of the Police Department, the work of a black tracker and patrols by officers of the Department, no arrest has yet been made.

Sawmillers' locomotives fitted with a new type of spark arrester continued to prove satisfactory, and it is hoped that as more are similarly fitted the number of fires originating from smoke stacks will decrease. Special attention was given to locomotives with defective ash pans.

Continued and increasing co-operation with bush fire brigades and Private Property owners was a feature of the year.

Six fire schools were conducted during the year for Assistant Foresters, Overseers and power pump operators and preliminary training notes have been prepared and distributed to all officers and overseers.

Three tank-carrying Crawler tractors each of different design were given field trials during the season and promise well as future major attack units. The original designs have been further improved, and it is hoped to have six of these units in experimental use next year.

The establishment of static water points throughout the forest is continuing.

The Department continued the practice of burning protective strips round isolated schools, halls, and mill villages.

As in the past, the Department has received the co-operation of the Timber Industry, and this co-operation is greatly appreciated.

COMMUNICATIONS.

One hundred miles of new telephone lines were built chiefly in the Pemberton and Manjimup Divisions, bringing the total length of line to 1,548 miles. Good progress has been made with the re-installation of new telephone switchboards and associated wiring. Thirty switchboards were made up and installed this year. This work is proceeding.

The radio equipment functioned well during the past fire season. Certain minor modifications to the higher powered mobile transmitter increased their reliability. A new fixed station aerial system and equipment layout has been designed, one installation has been completed for testing. Results show improved performance.

WORKING PLANS AND ASSESSMENTS.

Collection and study of data for the revision of the General Working Plan due in 1954 was continued during the year, considerable progress was made in the use of air photos for this work combined with ground assessment lines to assist the interpretation.

No new flying was done for this work during the year with the exception of some experimental flights to obtain large-scale photos taken with a camera equipped with a 25in. length lens, but 515 photos covering nearly 400,000 acres were received from flying done in previous years.

Preliminary type maps were prepared covering approximately 421,500 acres, bringing the total area covered to about two million acres. Of this area four standard 40-chain scale maps were prepared, and also some 600,000 acres were summarised into areas of quality classes for Working Plan data.

Reconnaissance sketch maps were prepared for about 700,000 acres, bringing the total to over one million acres.

In addition, photos were laid down for preliminary work for some 400,000 acres, and some studies made for road location problems. Mosaics for a number of plantations were supplied for use in the field and practically all plantations now hold photo coverage.

The preparation of stereograms continued, a total of 51 now being available for study of forest types.

Apart from the many routine assessments carried out in connection with land alienation and permit problems, 26 miles of new permanent line for growth studies was established, bringing the total to 551 miles, and 12 miles of this total was re-measured. Computations from the field work are up-to-date with the exception of 14 miles.

Pamphlet 6 of the Foresters' Manual was issued incorporating a revision and consolidation of the methods to be used in the work of Permanent Line Assessments.

Working plans for firewood supplies to the Metropolitan Area and for the Mallet areas were prepared but not finalised,

ABORICULTURE.

The demand for trees from local authorities and private buyers again showed an increase.

The State Nursery at Hamel, which produces trees for distribution to farmers and rural areas, disposed, during 1952, of 40,411 trees to local authorities and private persons. The Kalgoorlie Nursery, which raises trees for use in the low rainfall inland areas, distributed 9,623 plants for the calendar year 1952, the plants being disposed of chiefly between May and August. One hundred and twenty-eight different species were available for sale.

Sowings were carried out in experimental nurseries at Dryandra and Gngangara with the object of determining the practicability of raising at these centres native plants, particularly those of the drier areas, for distribution throughout the South-Eastern Wheat Belt. This work was further extended to include the vegetative propagation of a number of our native species.

In addition to these State Nurseries, the Department raises planting stock, for its own plantation use, at a number of other nurseries, and the total number of trees thus raised amounted to nearly three million, most of which were used in the winter planting season of 1952. Some two million plants are in nurseries for 1953 planting.

Sugar Gum again proved the most popular tree distributed from Hamel, being closely followed by *Pinus pinaster* and Brush Box.

Distribution figures from Kalgoorlie show that Coral-Flowered Gum, River Gum, Dundas Blackbutt and Dundas Mahogany were by far the most popular and sales of these four species accounted for over 50% of the total number of trees distributed.

The Hamel and Kalgoorlie Nurseries operate as a service to the public, and trees are sold below cost to encourage planting. A statement of costs and expenditure is given :—

	£	£		£	£
To Sale of Trees (including freight) :			By Hamel Nursery :		
Hamel Nursery	2,081		Wages	2,651	
Kalgoorlie Nursery	771		Incidentals	959	
		2,852			3,610
,, Excess of Expenditure over Revenue	2,058		,, Kalgoorlie Nursery :		
			Wages	1,097	
			Incidentals	203	
				1,300	
		£4,910			£4,910

Arboreta.

During the year, arboreta which operate both as educational centres for the public and as experimental areas for tree growth studies, were established at Newdegate, Lake Camm and Jennacubbine, bringing the total of Wheat Belt arboreta to 12. New centres are being prepared for planting at Narrogin, Three Springs, and the Newdegate Pilot Farm. Extensions were made to existing arboreta and some refilling was carried out.

Seed Distribution.

The Departmental Seed Store carries, apart from seed for use in State Nurseries, small supplies of a large variety of tree seeds.

Supplies of seed are sold to the public and to Eastern States and overseas buyers. In addition, they are supplied on an exchange basis to other forest authorities. Seeds of some 200 species are held, of which about 60 are Australian Eucalypts.

Increasing attention is being paid by countries outside Australia to the possibility of using our varied species from the drier inland areas.

There has been an increase in sales this year to a total value of £552. Parcels of seed covering 145 species were despatched to buyers, of which 55 were sent overseas.

Attention is being given to increasing the number of species held and to obtaining further stocks of the more ornamental native trees and shrubs.

RESEARCH.

Research work during the year gathered some impetus, and the Pine Research Station which is being established at Gngangara is nearing completion.

Ecology and Plant Nutrition.

Under this heading the practice was continued of establishing small plots in Pine and Mallet plantations and in the Jarrah forest to test the effect of recognised fertilisers, trace elements, and synthetic hormones at various stages of growth. A detailed study of a section of the Gngangara Plantation was commenced to correlate site factors with pine quality and disorders.

Experiments in establishment techniques continued, and planting machine efficiency was improved.

This investigation parallels litter, flora and fauna studies, while detailed chemical analysis of the cyclic return of nutrient elements to the soil is also being carried out.

Nursery Studies.

Seed provenance, nutrition, hygiene, parasite and weed control, and the many problems met with in the raising of plants in nurseries were the subject of further studies. Published papers cover certain aspects of this work.

Soil and Litter Studies.

A study of the bacteria population density in our forest soils is being carried out as a first step in the investigation of the character, composition and role of the bacteria in the exotic plantation soils. Counts are made of bacterial colonies developing on nutrient media. Samples from four centres embracing both pine plantations and the jarrah forest have been taken. Graphs showing the population count of bacteria/gram of soil at varying periods of the year have been prepared.

More emphasis has been placed on investigation into the rate of accumulation and disintegration of Jarrah litter. The first results have been published.

More than two tons of litter per acre were found to fall annually under the Jarrah forest as at present constituted in the area under study at Dwellingup. The important constituents included Calcium, 33 lb.; Potassium, 10 lb.; Nitrogen, 18.4 lb.; Magnesium, 11.6 lb.; Phosphorus, 1 lb. The phosphorus is equal to that in about 10 lb. of 22 per cent. superphosphate, the potassium to that in 22 lb. of sulphate of potash, and the nitrogen to that in 86 lb. of sulphate of ammonia per acre per annum, though of course in different forms. The loss through volatilisation in forest fires is under investigation.

Soil surveys were carried out at a number of different centres, including the Mallet areas.

Genetics.

Polyploid plots were set down at Gngangara, and further work is proposed following this stage, to involve softwoods, hardwoods and selected ground flora.

Eucalypt breeding work was increased this year and valuable fundamental data has been accumulated on selfing and hybridisation techniques. Promising indications have been obtained from the first series of crosses.

Entomology.

The outbreak of bark beetle (*Ips grandicollis*) attack first reported from a plantation (Collier) in August, 1952, has now become apparent at all Metropolitan plantations of *Pinus pinaster*.

Preliminary measures of control consisting of spraying infested slash and logs with chemicals are being undertaken. A study of the habits of life history of this beetle and its relationship to the development of Blue Stain fungi is being undertaken.

Co-operation was maintained with the Plant Quarantine Branch of the Commonwealth Health Department in quarantine control against *Sirex* and other possible pests.

Utilisation.

Work has been done on stain prevention on both hard and softwoods and improvements in procedure has been effected.

Considerable statistics have been dealt with for experimental mills, and assistance has been given to other sections of the Department as required. Assistance was given to the State Housing Commission in this field.

Proofing problems have been investigated and identifications made of various insects and fungal rots.

Forest products studies during the year included co-operation with the Division of Forest Products, C.S.I.R.O., on the re-measurement of shrinkage figures of the important commercial timbers of the State. A board shrinkage test is being run in conjunction with this work.

A preliminary trial to study the affect of re-conditioning of Karri has been completed and indicates the desirability of a full scale test.

Fence posts preservation tests using round pine and fire-killed Jarrah sapplings treated for varying periods with creosote and oil solutions have been laid down in two localities. The tests were designed to compare full length treatment to the butt treatment of previous tests.

Sand Dune Fixation.

Apart from the normal annual programme of Sand Dune Fixation on the lower Indian Ocean Coast and the Southern Ocean Coast, work has been commenced on sands immediately South of Geraldton. localised problem has arisen on part of these sands near the mouth of the Greenough River where the high lime content renders them unsuitable for Marram Grass. Experiments with other plants and fertiliser trials are in progress.

Fire Control.

Research work under this heading continued on the practice, equipment and methods necessary in actual fire suppression. Construction and use of converted tractors as power pumpers was carried further. Fundamental studies were commenced on the effects of fire on growth, and the soil and litter chemistry and populations, and on the subject of the economy of firebreak clearing by chemical and hormone applications.

Advice to Public Bodies.

As a basis for future tree planting in the Kimberley region, information is being accumulated about tree species in similar climates of the world. Conditions there are unfavourable for tree growth under rainfall of 25 to 40 in. with a mean daily maximum temperature of over 90°F., and a Relative Humidity of 50-55 per cent.

Apart from items mentioned above, advice has been given on a number of matters, both to other Departments and to the general public. Lectures have been given.

Computations and Statistical Analyses.

Machinists attached to the Research Branch carried out calculations of various types for other Branches of the Department, and also for the Lands Department and Department of Agriculture.

The Department has been severely hampered by the loss of its central laboratory for forest botany, wood technology and extension work, and the lack of satisfactory accommodation for the Head Office Research Branch where the computing and recording service is housed and which assists with the Statistical planning of experiments and carries out the analyses of the results.

EMPLOYMENT IN FORESTRY.

The number of wage earners directly employed in the forest has been estimated at approximately 7,495, made up of :—

Firewood cutters, pole getters, etc., on permits	436
Sandalwood getters	39
Goldfields firewood cutters, contractors and wood-line employees, and carters	548
Direct employees of the Forests Department—	
Head Office	66
Field Staff	102
Wages employees	458
Contractors and employees	100
	726
Sawmill employees including bush workers at 30th June, 1953*	5,671
Apiarists, estimated (101 sites are registered)	75
	7,495

* Includes employees of all registered Sawmills.

STAFF.

I desire to again place on record my appreciation of the co-operation and loyal support of all members of both field and office staffs during the year.

T. N. STOATE,
Conservator of Forests.

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APPENDIX 1A.

CONSOLIDATED REVENUE FUND.

Consolidated Statement of Revenue and Expenditure.

Dr.		Cr.	
	£ s. d.	£ s. d.	
To Log Royalty	327,570 4 3	By Salaries	67,319 18 6
„ Sleeper Royalty	21,742 16 4	„ Incidentals (including Aboriculture)	14,287 18 1
„ Sawn Timber Royalty	2,962 11 10	„ Timber Industry Regulations (Incidentals)	1,315 14 0
„ Miscellaneous Royalties	21,893 15 4	„ Pine Conversion	45,445 9 0
„ Direct Conversion Royalties	13,967 5 6	„ Direction Conversion	145,450 11 6
„ Goldfields Revenue	9,078 19 5		273,819 11 1
„ Rent and Leases	1,795 14 1	„ Excess of Revenue over Expenditure	404,330 18 3
„ Sandalwood	54,276 1 2		
„ Inspection Fees	3,853 5 6		
„ Miscellaneous Sales	14,717 9 6		
„ Sales of Pine Logs	32,665 7 2		
„ Sales of Mill Timber	56,255 13 5		
„ Sales of Firewood	108,995 14 11		
„ Miscellaneous Receipts	8,375 10 11		
	£678,150 9 4		£678,150 9 4

APPENDIX 1B.

Statement of Reforestation Fund Expenditure for the Year ended 30th June, 1953.

Dr.					Cr.
	£	s. d.	£	s. d.	£ s. d.
To Division 1—					By Forest Improvement and Reforestation
Administration	937	16 9			Fund—General Account
Busseton	206	9 2			Commonwealth Aid Roads Grant
			1,144	5 11	342,065 2 11
„ Division 2—					46,504 8 10
Administration	1,096	2 7			
Mundaring	13,726	14 7			
			14,822	17 2	
„ Division 3—					
Administration	6,901	16 3			
Dwellingup	34,950	13 3			
Research Station	2,393	12 1			
Gleneagle	7,925	11 10			
			52,171	13 5	
„ Division 4—					
Administration	3,985	15 0			
Collie	27,285	2 9			
			31,270	17 9	
„ Division 5—					
Administration	3,044	11 8			
Kirup	34,677	16 8			
			37,722	8 4	
„ Division 6—					
Administration	6,722	1 7			
Manjimup	41,674	13 9			
Denmark	340	6 9			
			48,737	2 1	
„ Division 10—					
Administration	2,229	11 11			
Harvey	27,239	2 11			
			29,468	14 10	
„ Division 11—					
Administration	6,162	2 3			
Pemberton	52,955	10 10			
			59,117	13 1	
„ Kalgoorlie			129	2 0	
Total, Divisional Expenditure			£274,584	14 7	
Plantations—					
To Division 1—					
Keenan	3,968	17 2			
Ludlow	6,510	8 11			
Willcock	3,337	11 0			
			13,816	17 1	
„ Division 2—					
Mundaring			712	19 10	
„ Division 3—					
Dwellingup (Gleneagle)			4,875	16 1	
„ Division 5—					
Kirup (Grimwade)			3,917	18 9	
„ Division 9—					
Somerville	2,151	14 0			
Collier	1,084	9 3			
Seaddan	43	11 5			
			3,279	14 8	
„ Division 10—					
Harvey Weir	1,428	5 9			
McLarty	2,582	0 10			
Myalup	6,761	9 3			
			10,771	15 10	
„ Mallet Planting, Division 7—					
Narrogin			7,322	1 3	
Total Plantation Expenditure			44,697	3 6	
„ Training of Staff			506	16 7	
„ Head Office Research			525	16 0	
„ Preparation of Working Plans, etc.			7,087	7 3	
„ Salaries and Allowances—					
Head Office			13,567	0 11	
„ Incidentals			8,544	4 10	
„ Salaries and Allowances—					
Plantations			11,501	7 6	
„ Communications and Electrical Services			5,171	17 2	
„ Equipment not charged to Divisions			11,740	15 5	
„ Purchase of Land			956	2 5	
„ Pay Roll Tax			7,192	8 5	
„ Cash Orders Unallocated			2,493	17 2	
			£388,569	11 9	£388,569 11 9

APPENDIX 2A.

WESTERN AUSTRALIA.

Exports* of Timber, Tanning Substances and Essential Oils during Year ended 30th June, 1953.

Stat. Item No.	Item and Country of Destination.	Quantity.	Value.	Stat. Item No.	Item and Country of Destination.	Quantity.	Value.
			£A.				£A.
6301-6309	<i>Wicker, Bamboo and Cane, and all Manufactures of, N.E.I.:</i> Commonwealth States : £ New South Wales 70 Victoria 60 Northern Territory 11 Total—Wicker, Bamboo and Cane Manufactures 141		141				
	TIMBER.				TIMBER—continued.		
6363	<i>Logs, not Sawed (including merely heven or squared with the axe)—</i> <i>Jarrah :</i> Commonwealth States : New South Wales 8	Cub. ft.	5	6564	<i>Karri :</i> Commonwealth States : Cub. ft. £ Victoria 33,881 15,987 South Australia 310,204 131,828 Northern Territory 1,712 958 United Kingdom Belgium 345,797 148,773 1,471 1,180 2,435 1,830 349,703 151,833		
6402	<i>Railway Sleepers, heven or sawn :</i> Commonwealth States : Cub. ft. £ Victoria 9,816 3,579 South Australia 927,732 396,384 Malaya, Federation of 4,474 2,349 Singapore 1,120 448 937,548 399,963 4,474 2,349 1,120 448 943,142 402,760			6589	<i>Hardwoods (pored woods), N.E.I.:</i> Commonwealth States : Cub. ft. £ New South Wales 63 30 South Australia 4,624 1,961 4,687 1,991		
6404	<i>Palings :</i> Commonwealth States : No. £ Victoria 2,115 106 South Australia 8,519 280 10,625 386	No.	386	6605	<i>Plywood, veneered or otherwise, including Plywood Door Panels :</i> Commonwealth States : Sq. ft. £ Victoria 4,134 730 South Australia 40 2 Northern Territory 213 16 4,387 748	Sq. ft.	748
6409	<i>Sandalwood :</i> (Information not available for publication.)			6616	<i>Mouldings—</i> <i>Architraves, Skirtings, and Room Mouldings,</i> <i>Mouldings, N.E.I.:</i> Commonwealth States : South Australia 651 13	Lin. ft.	13
6463	<i>Undressed Timber, N.E.I.—Beams Baulks, Half Logs and Flitches in sizes 7 inches by 2½ inches (or the equivalent) and over—</i> <i>Jarrah :</i> Commonwealth States : Cub. ft. £ New South Wales 12 8 Victoria 61,395 25,377 South Australia 558,762 234,999 Northern Territory 4,447 2,397 United Kingdom Christmas Island (Indian Ocean) Mauritius and Dependencies New Zealand South Africa, Union of Iraq Netherlands Mozambique 624,616 262,781 155,782 132,731 7,788 3,765 34,112 14,598 35,947 29,161 57,898 36,990 7,736 7,617 822 420 1,320 1,056 926,021 489,119	Cub. ft.	489,119	6627	<i>Staves :</i> Commonwealth States : Cub. ft. £ New South Wales 29,765 37,924 Queensland 561 1,200 South Australia 1,060 1,842 31,386 40,966	Cub. ft.	40,966
6464	<i>Karri :</i> Commonwealth States : Cub. ft. £ Victoria 40,834 18,214 South Australia 281,054 126,327 Northern Territory 17,620 11,014 United Kingdom Christmas Island (Indian Ocean) New Zealand Rhodesia, Southern South Africa, Union of Egypt 339,508 155,555 460,107 374,905 684 454 13,621 8,995 1,383 841 153,820 107,321 288 199 969,411 648,270			6630	<i>Timber—Cut to size for making Boxes (Box and Crate Shooks) :</i> Commonwealth States : Cub. ft. £ New South Wales 2,582 1,680 Northern Territory 1,056 665 3,638 2,345		
6489	<i>Hardwoods (pored woods), N.E.I.:</i> Commonwealth States : Cub. ft. £ New South Wales 21 12 South Australia 3,785 1,504 United Kingdom 3,806 1,516 575 481 4,381 1,997			6641	<i>Timber, Tongued or Grooved or Tongued and Grooved ; Weatherboards :</i> Commonwealth States : Cub. ft. £ Victoria 260 213 South Australia 12,881 11,800 United Kingdom Christmas Island (Indian Ocean) 13,141 12,013 225 91 303 796 13,669 12,810		
6510	<i>Undressed Timber, N.E.I.—In sizes under 7 inches by 2½ inches (or equivalent)—</i> <i>Softwood (non-pored wood) :</i> Commonwealth States : Northern Territory 35 21			6648	<i>Timber, Bent or Cut into Shape, Dressed or Partly Dressed, N.E.I.:</i> Commonwealth States : Cub. ft. £ New South Wales 12,034 10,683 South Australia 250 217 Northern Territory 125 95 12,459 10,995		
6563	<i>Jarrah :</i> Commonwealth States : Cub. ft. £ New South Wales 1,790 1,050 Victoria 97,237 40,655 South Australia 580,568 250,413 Northern Territory 6,002 3,325 United Kingdom Belgium Iraq Netherlands 685,507 295,443 3,257 2,329 4,189 3,421 8,095 5,844 4,434 2,654 705,482 309,691			6649	<i>Timber, Dressed or Moulded, N.E.I.:</i> Commonwealth States : Cub. ft. £ Victoria 2 4 South Australia 1,164 467 1,166 471		
					Total, Timber Exports (excluding Sandalwood) 2,074,421		
					WOOD MANUFACTURES.		
				6655	<i>Casks and Vats—Empty :</i> Commonwealth States : No. £ New South Wales 8,477 100,701 Victoria 466 2,859 Queensland 40 304 South Australia 283 1,346 New Zealand 9,266 105,210 103 982 9,369 106,192	No.	
				6661	<i>Doors of Wood (including Fly Doors), Wholly or Partly made up :</i> Commonwealth States : Northern Territory 6 25		
				6674	<i>Tool Handles—Unattached :</i> Commonwealth States : Victoria £ 216 South Australia 17 Northern Territory 67 300		

APPENDIX 2A—continued.

WESTERN AUSTRALIA.

Exports* of Timber, Tanning Substances and Essential Oils during Year ended 30th June, 1953.

Stat. Item No.	Item and Country of Destination.	Quantity.	Value.	Stat. Item No.	Item and Country of Destination.	Quantity.	Value.
	WOOD MANUFACTURES—continued.		£A.		ESSENTIAL OILS—continued.	lb.	£A.
6679	<i>Articles of Wood (except Furniture), N.E.I. :</i>			8239	<i>Essential Oils—Other, N.E.I. :</i>		
	Commonwealth States : £			(inc.	Commonwealth States : lb. £		
	New South Wales 1,855			8231	New South Wales 12,428 18,619		
	Victoria 488			8232	Victoria 5,123 7,787		
	South Australia 520			and	Queensland 14 36		
	Northern Territory 420			8234)	South Australia 35 55		
	Christmas Island (Indian Ocean) 137		3,283		Tasmania 17 36		
			3,420		United Kingdom 17,617 26,533		
6690	<i>Furniture :</i>				Borneo (British) 50 47		
	Commonwealth States : £				Canada 4,160 2,872		
	New South Wales 2,399				Uganda Protectorate 400 181		
	Victoria 63				Hong Kong 1,436 2,540		
	Queensland 1				India, Republic of 300 160		
	South Australia 119				Singapore 941 2,173		
	Northern Territory 7,051		9,633		South Africa, Union of 4,314 1,874		
	Christmas Island (Indian Ocean) 437		437		United States of America 1,120 3,888		
	Malaya, Federation of 35		35				
	Singapore 53		53		Total, All Essential Oils...	41,428	55,950
			10,158				70,852
	Total, Wood Manufactures		120,095		TANNING SUBSTANCES.		
	Total, Wicker, Timber and Wood Manufactures		2,194,657	1600	<i>Tanning Bark :</i>		
					Commonwealth States : cwt. £		
					New South Wales 991 2,117		
					Victoria 13,994 29,183		
					Queensland 1,532 2,757		
					Ceylon 17 79		
8221	<i>Eucalyptus :</i>	lb.				18,517	34,057
	Commonwealth States : lb. £					17	79
	New South Wales 32,687 2,654					16,584	34,136
	Victoria 17,874 1,850						
		50,561	4,504	1610	<i>Tanning Extracts :</i>		
					(Information not available for publication).		
8227	<i>Citrus Oils :</i>			1620	<i>Other Tanning Substances</i>		
	Commonwealth States : lb. £				Total, Tanning Substances (excluding Tanning Extracts)		34,136
	New South Wales 767 1,288				Total Value of All Exports Shown on This Return		2,299,645
	Victoria 4,702 8,603						
	Queensland 170 272						
	South Australia 112 235						
		5,751	10,398				

Note.—* Exports to Commonwealth States are of Western Australian Origin and Overseas Exports are of Australian Origin.

APPENDIX 2B—continued.

WESTERN AUSTRALIA.

Imports of Timber, Tanning Substances and Essential Oils during Year ended 30th June, 1953.

Stat. Item No.	Item and Country of Origin.†	Quantity.	Value.	Stat. Item No.	Item and Country of Origin.†	Quantity.	Value.
	WOOD MANUFACTURES—continued.		£A.		WOOD MANUFACTURES—continued.		£A.
6661	Doors of Wood, including Fly Doors— Commonwealth States : No. £	Number.			<i>Furniture—continued.</i>		
	New South Wales ... 7 17				United Kingdom		1,618
	Victoria 36 127				Cocos Islands		3
	Queensland 2,238 5,608	2,281	5,752		Hong Kong		148
6663	Incubators, Foster Mothers and Brooders— Commonwealth States :				India, Republic of		19
	New South Wales	81	899		Malaya, Federation of		35
6665	Lasts— Commonwealth States : doz. £	Dozens.			New Guinea		10
	New South Wales ... 13 37				Singapore		653
	Victoria 224 2,470				South Africa, Union of		79
	South Australia ... 48 218	285	2,725		Indonesia, Republic of		146
6666	Match Splints— Commonwealth States : £				Italy		20
	New South Wales 7				Denmark		2
	Victoria 78		85		Finland		2
	Soviet Union		7,596		Germany, Western Zone		20
			7,681		Netherlands		97
6667	Oars and Sculls— Commonwealth States : No. £	Number.			Sweden		40
	New South Wales ... 929 1,584				Switzerland		27
	Queensland 60 89	1,001	1,710		United States of America		27
	South Australia ... 12 37		5				
	United Kingdom	1,001	1,715				
6671- 6674 (inc.)	Tool Handles— Commonwealth States : £			8211- 8239 (inc.)	Essential Oils, Natural, Non-Spirituous— Commonwealth States : lb. £	lb.	
	New South Wales 25,312				New South Wales ... 252,995 48,865		
	Victoria 5,786				Victoria 7,340 4,298		
	Queensland 854				Queensland 41 79		
	South Australia 634		35,103		South Australia ... 17,830 6,852	278,206	60,094
	Tasmania 2,517		2,384		United Kingdom	7	59
	United Kingdom		37,487		Ceylon	1,401	358
6676- 6679 (inc.)	Articles of Wood (except Furniture), N.E.I., whether partly or wholly finished— Commonwealth States : £				Kenya	112	37
	New South Wales 16,620				China	2,059	1,009
	Victoria 31,278				Formosa	400	82
	Queensland 1,631				Indonesia, Republic of	4,737	1,033
	South Australia 9,563				Madagascar	4,321	5,582
	Tasmania 591				Netherlands Antilles	376	94
	United Kingdom		59,683		United States of America	407	1,454
	Hong Kong		3,772		Commonwealth of Australia*	4	2
	India, Republic of		2				
	Pakistan		4				
	Singapore		3				
	Austria		27				
	Belgium		3				
	China		2				
	Czechoslovakia		3				
	Germany, Western Zone		18				
	Italy		222				
	Japan		11				
	Netherlands		4				
	Sweden		120				
	Switzerland		14				
	United States of America		173				
	Commonwealth of Australia*		72				
			64,134				
6691- 6699 (inc.)	Furniture— Commonwealth States : £			1601- 1609 (inc.)	Tanning Substances—NATURAL ORIGIN.		
	New South Wales 14,621				<i>Tanning Bark—</i> Commonwealth States : cwt. £	cwt.	
	Victoria 32,436				New South Wales ... 1 6		
	Queensland 3,408				South Australia ... 51 66		
	South Australia 30,312						
			80,777				
						52	72
				1611- 1619 (inc.)	<i>Tanning Extracts—</i> Commonwealth States : cwt. £		
					New South Wales ... 5 31		
					Victoria 91 377		
					South Africa, Union of	96	408
					Norway	4,038	17,001
					United States of America	442	398
						40	262
						4,616	18,069
				1620	<i>Other Tanning Substances—Natural Origin—</i> Commonwealth States :		
					Victoria	241	541
					India, Republic of	1,408	2,559
					Sweden	200	252
						1,849	3,352
					Total—Tanning Substances		21,493
					Total Value—All Imports shown on this Return		600,964

* Produce of Australia, previously exported, now returned to this State.
 † The tabulation of origin for interstate imports was discontinued on the
 1st July, 1952, and imports from the Commonwealth States now include goods of oversea origin which, in previous years, have been recorded according to
 country of origin.

APPENDIX 2C.

SUMMARY OF EXPORTS OF FOREST PRODUCE SINCE SINCE 1836.

Year.	Timber.		Year.	Timber.		Wood Manu-	Tanning	Essential
	Cub. ft.	Value.		Cub. ft.	Value.	factures.	Bark.	Oils.
		£			£	£	£	£
1836 (a)	10,000	2,500	1891	1,273,950	89,179	....	....	....
1837 ....	....	....	1892	1,082,650	78,419	....	....	....
1838 ....	....	....	1893	512,950	33,888	....	....	....
1839 ....	....	....	1894	1,063,700	74,804	....	....	....
1840 ....	....	....	1895	1,255,250	88,146	....	....	....
1841 ....	....	....	1896	1,545,600	116,420	....	....	....
1842 ....	....	....	1897	2,393,300	192,451	....	....	....
1843 ....	....	....	1898	4,086,150	326,195	....	....	....
1844	(b)	163	1899	6,913,550	553,198	....	....	....
1845 ....	....	....	1900	5,725,400	458,461	....	....	....
1846	2,550	255	1901	7,150,600	572,354	....	....	....
1847	12,200	1,120	1902	6,256,750	500,533	....	....	....
1848	3,350	333	1903	7,748,450	619,705	....	859	....
1849 ....	....	....	1904	8,072,300	654,949	....	32,876	....
1850	10,500	1,048	1905	8,709,500	689,943	....	154,087	....
1851	1,250	268	1906	(c) 8,830,700	708,993	....	140,720	....
1852	7,050	806	1907	(c) 6,409,550	511,923	....	98,773	....
1853	52,200	5,220	1908	(c) 9,869,500	813,591	....	79,934	....
1854	58,500	7,023	1909	(c) 10,830,450	867,419	....	59,633	....
1855	76,900	12,076	1910	(c) 12,074,100	972,698	....	93,733	....
1856	70,500	9,671	1911	(c) 12,449,500	986,341	....	83,470	....
1857	69,200	9,449	1912	(c) 11,297,100	903,396	....	49,094	....
1858	29,250	2,340	1913	(c) 13,619,850	1,089,481	....	47,377	....
1859	67,250	6,051	1914 (d)	(c) 6,279,750	502,153	....	18,197	5
1860	54,800	4,932	1915 (e)	(c) 9,968,500	808,392	....	6,127	381
1861	27,750	2,497	1916 (e)	5,432,100	441,991	....	10,208	1,102
1862	68,800	7,151	1917 (e)	3,890,650	310,893	....	18,959	2,060
1863	32,900	2,963	1918 (e)	3,436,250	274,141	....	16,886	3,995
1864	58,300	5,508	1919 (e)	4,135,750	332,584	11,535	18,875	3,987
1865	183,950	15,693	1920 (e)	5,065,300	465,731	21,935	22,121	3,704
1866	85,650	6,849	1921 (e)	9,816,250	1,137,819	24,916	23,073	10,107
1867	56,750	4,541	1922 (e)	8,309,750	1,041,047	22,248	13,328	6,878
1868	8,000	638	1923 (e)	7,911,310	997,454	12,377	21,161	20,075
1869	179,900	14,273	1924 (e)	11,126,861	1,367,517	11,505	29,606	39,877
1870	157,200	17,551	1925 (e)	11,844,303	1,477,997	13,928	40,136	42,057
1871	218,500	15,304	1926 (e)	12,001,384	1,522,958	10,072	15,056	47,819
1872	37,000	2,590	1927 (e)	12,580,262	1,651,149	8,727	15,818	26,454
1873	68,150	4,771	1928 (e)	10,384,784	1,265,383	7,783	27,662	39,131
1874	345,600	24,192	1929 (e)	7,635,237	960,435	6,603	35,850	63,307
1875	342,350	23,965	1930 (e)	6,579,743	807,425	4,687	40,628	77,510
1876	219,050	23,743	1931 (e)	4,127,856	507,382	26,615	35,333	56,170
1877	336,150	36,979	1932 (e)	3,062,673	361,700	85,488	42,016	59,301
1878	580,900	63,902	1933 (e)	2,235,540	262,617	80,332	33,352	26,331
1879	627,250	69,742	1934 (e)	4,060,830	487,248	76,107	20,904	26,720
1880	662,550	66,252	1935 (e)	5,326,117	636,466	65,494	15,284	35,363
1881	792,750	79,277	1936 (e)	5,598,180	679,522	50,665	12,237	27,526
1882	936,500	93,650	1937 (e)	5,673,903	699,684	52,338	14,491	38,185
1883	997,000	79,760	1938 (e)	7,545,744	932,420	47,934	13,865	35,128
1884	861,700	68,936	1939 (e)	5,704,250	722,310	43,518	17,842	25,550
1885	848,150	67,850	1940 (e)	5,049,585	634,859	62,796	19,485	47,736
1886	626,150	50,092	1941 (e)	6,091,187	790,876	74,935	13,686	59,867
1887	354,800	28,384	1942 (e)	5,224,634	700,474	64,454	6,896	74,904
1888	525,750	42,060	1943 (e)	3,516,566	605,327	32,426	1,598	70,253
1889	788,500	63,080	1944 (e)	3,645,354	613,994	25,324	1,294	72,704
1890	1,172,200	82,052	1945 (e)	2,851,475	570,028	27,307	2,795	103,055
			1946 (e)	3,373,025	722,061	(f) 2,616	4,872	128,050
			1947 (e)	3,458,628	865,255	(f) 13,118	12,056	151,768
			1948 (e)	3,584,405	1,099,073	(f) 6,572	9,556	116,465
			1949 (e)	3,198,212	993,152	(f) 6,639	5,112	75,395
			1950 (e)	2,857,946	974,493	(f) 13,525	8,243	78,550
			1951 (e)	2,342,492	(g) 918,485	(f) 25,101	16,581	125,833
			1952 (e)	2,373,553	(g) 1,032,909	(f) 47,689	19,120	119,109
			1953 (e)	3,965,188	(g) 2,074,421	(f) 120,095	34,136	70,852
			Total	393,162,077	46,279,812	1,207,584	1,575,001	2,013,264

(a) The exports up to the year 1834 consisted only of supplies to shipping, of which no record is kept.

(b) Not available.

(c) Approximate figures only.

(d) Six months ended 30th June.

(e) Year ended 30th June.

(f) Excludes Casks (principally empty returns) previously included in this Item.

(g) Includes Items for which the quantity in cub. ft. is not available.

	£	£	£		£	£	£
1848	464			1930	56,266	1,416	1,105
1849				1901	80,134	1,740	1,546
1850	189			1902	97,810	3,418	1,751
1851	3,216			1903	102,383	3,556	1,348
1852	2,479			1904	157,856	1,322	2,122
1853	790			1905	98,494	582	1,592
1854	831			1906	95,229	1,412	1,915
1855	1,464			1907	122,016	2,767	1,549
1856	1,124			1908	93,205	2,392	4,584
1857	744			1909	90,502	4,129	4,033
1858	1,528			1910	171,280	3,531	3,686
1859	690			1911	152,133	2,912	4,938
1860	2,005			1912	167,244	3,089	4,598
1861	1,459			1913	202,640	2,651	5,392
1862	1,920			1914	78,736	629	2,323
1863	1,568			1914-15	107,763	2,082	4,988
1864	894			1915-16	76,849	3,313	4,788
1865	548			1916-17	75,681	2,848	3,484
1866	1,442			1917-18	58,305	2,020	4,358
1867	1,727			1918-19	62,824	1,181	4,168
1868	1,451			1919-20	100,083	3,748	10,043
1869	1,408			1920-21	171,654	*4,899	6,106
1870	1,518			1921-22	92,448	5,865	6,577
1871	736			1922-23	109,428	6,991	4,033
1872	1,660			1923-24	133,983	2,790	3,301
1873	1,008			1924-25	161,898	2,670	4,429
1874	1,774			1925-26	144,989	5,826	4,449
1875	2,707			1926-27	162,193	8,971	4,254
1876	3,098			1927-28	183,196	9,648	6,955
1877	2,036			1928-29	241,601	6,894	4,413
1878	2,947			1929-30	197,532	10,825	3,980
1879	2,340			1930-31	76,533	4,145	3,160
1880	3,061			1931-32	164,496	4,705	3,505
1881	3,639			1932-33	197,916	4,903	3,421
1882	3,692			1933-34	183,944	4,310	3,888
1883	6,667			1934-35	211,056	4,076	5,040
1884	2,930			1935-36	228,451	5,401	3,921
1885	11,479			1936-37	257,164	5,267	4,810
1886	17,888			1937-38	270,126	4,777	6,560
1887	8,136			1938-39	254,315	3,974	7,014
1888	4,461			1939-40	259,399	6,802	23,027
1889	7,686			1940-41	249,111	3,798	32,399
1890	14,979			1941-42	283,611	15,846	33,828
1891	18,406			1942-43	163,480	6,250	47,718
1892	26,713			1943-44	149,928	7,883	68,871
1893	14,493			1944-45	148,838	9,264	75,449
1894	17,964			1945-46	†219,466	19,573	56,295
1895	47,128			1946-47	386,465	12,395	78,091
1896	5,381			1947-48	345,508	8,019	96,769
1897	164,552			1948-49	570,755	8,662	42,926
1898	55,566			1949-50	521,815	24,923	51,197
1899	45,689			1950-51	640,059	21,147	161,358
				1951-52	1,037,499	18,494	167,697
				1952-53	509,667	21,493	69,804
				Total	11,704,262	342,224	1,170,026

* This and subsequent years include tanning extracts, not previously recorded.

† This and subsequent years include values for furniture, bamboo, cane, etc., not previously included.

APPENDIX 2E.

SUMMARY OF LOG PRODUCTION IN W.A. SINCE 1829.

Year.	Crown Land.	Private Property.	Total.	Year.	Crown Land.	Private Property.	Total.
1829-1915— Estimated	....	....	8,147,037	1935	549,164	229,035	788,199
1916	....	....	365,824	1936	628,012	268,722	896,734
1917	....	....	337,371	1937	634,077	318,044	952,121
1918	....	....	256,600	1938	634,748	318,579	953,327
1919	362,197	5,018	367,215	1939	584,953	221,720	806,673
1920	....	....	534,096	1940	553,202	182,791	735,993
1921	....	....	726,548	1941	561,783	205,780	767,563
1922	....	....	1,035,251	1942	532,733	112,668	645,401
1923	....	....	734,087	1943	472,098	86,458	558,556
1924	....	....	1,026,945	1944	445,050	89,124	534,174
1925	....	....	1,239,502	1945	439,400	86,191	525,591
1926	....	....	1,477,227	1946	422,530	109,647	532,177
1927	....	....	1,564,874	1947	438,971	156,639	595,610
1928	855,625	466,889	1,322,514	1948	445,027	177,438	622,465
1929	645,795	221,978	867,773	1949	405,235	196,286	601,521
1930	....	....	866,155	1950	421,622	198,653	620,275
1931	376,457	242,970	619,427	1951	507,828	214,261	722,089
1932	234,857	82,319	317,176	1952	578,851	238,766	817,617
1933	263,313	49,133	312,446	1953	684,468	260,428	944,896
1934	425,263	126,608	551,871	Total	....	....	36,290,921

APPENDIX 3.

TIMBER INDUSTRY REGULATION ACT, 1926-50.

Annual Report for Year Ended 31st December, 1952.

The number of Mills registered under the provisions of the Act at the close of the year totalled 306 (159 Crown Lands, 147 Private Property).

The average number of persons employed on timber holdings each month throughout the year was 5,395 compared with 4,708 last year.

The District and Workmen's Inspectors made 1,179 inspections of Timber holdings and investigated and reported on 726 notifiable accidents, of which six were fatal.

The number of accidents per 100 persons employed was 13.4 compared with 15.7 for last year.

The total period of incapacity as a result of accidents was 16,930 days, an average of 23.3 days per injured person (compared with 25.6 days last year).

Returns as listed hereunder have been prepared, but are not included in this report.

1. Number of notifiable accidents reported in accordance with Section 14 of the Act, according to months, and indicating the age and nationality of the injured person, the period of incapacity, and the number of cases on which the first aid outfit was used.
2. The number of accidents reported during 1952, and their classification according to location and nature of injury.
3. The number of accidents classified according to cause of accident and location of injury.
4. The number of accidents classified according to cause of accident and nature of injury.
5. The number of accidents classified according to the months and days of the week, on which the accident occurred.
6. The number of hours worked on the day and up to the time of injury by the person injured.
7. A return showing by months the time at which the notifiable accidents occurred.
8. A return showing the personal cause of accidents as determined by the Inspectors.

T. N. STOATE,
Controlling Officer.

APPENDIX 4.

DEPARTMENTAL PUBLICATIONS.

New publications printed during the year were :—

Foresters' Manual Pamphlet 5. "Afforestation with Pines."