Forestry Annual Report 1981-82

Queensland Department of Forestry

7 September 1982

The Honourable W.H. Glasson,
M.L.A.
Minister for Lands and Forestry
BRISBANE Q 4000

Dear Mr Glasson

I am pleased to present to you the 1981-82 Annual Report of the Department of Foresty.

Your faithfully

J.A.J. Smart

Conservator of Forests

Contents

Cover: *The bark of Grey Gum* (Eucalyptus propinqua) *soon after old bark has been shed.*

The Year in Brief

HARVESTING AND MARKETING

- Sawlog prices were increased by an average of 22 per cent on 1st July, 1981. Pulpwood prices were increased 35 per cent.
- The total volume of timber harvested (including native and plantation forests) from Crown lands decreased by 6.8 per cent during the year.
- Generally unfavourable trading conditions prevailed over most of the year. Major factors were the general building industry downturn, compounded by increased competition from discounted imported timber from overseas and interstate.
- The proposition accepted last year for harvesting 80 000 cubic metres per annum of mature plantation pine from the Beerburrum area was unable to proceed. The resource was re-offered and fresh proposals are now receiving consideration.
- A sale was made of an annual volume of 13 000 cubic metres of mature age hoop pine and younger thinnings from both younger hoop pine and Caribbean pine plantations on the Atherton Tableland.
- Propositions were invited for the establishment of a pulp and paper mill to utilize pulpwood from plantations in the Gympie-Maryborough area. One proposal was received and is being evaluated.

PLANTATION PROGRAMME

- A total of 6 311 hectares of new plantations were established, comprising 5 635 hectares of exotic pines and 676 hectares of native hoop pine. The aim of establishing at least 200 000 hectares of softwood plantation by the turn of the century is now two-thirds achieved.

PLANNING

- Modified logging guidelines were introduced for the rainforests of north Queensland in further recognition of the high environmental status of these forests.
- Development of improved hardwood logging guidelines for south-east Queensland is progressing.

RESEARCH

- Extensive research programmes continued throughout the year. Areas of major interest include: the pine breeding programme; pre-commercial thinning studies; plantation hydrology and timber utilization.

EXTENSION SERVICES

- Forestry, together with the Department of Education and the Queensland timber industry, has initiated a comprehensive forest education project. A secondary school teacher has been appointed to the project for two years to design and develop the content.
- The West Indian drywood termite eradication programme is continuing with promising results. To date over 4 500 enquiries have been serviced.

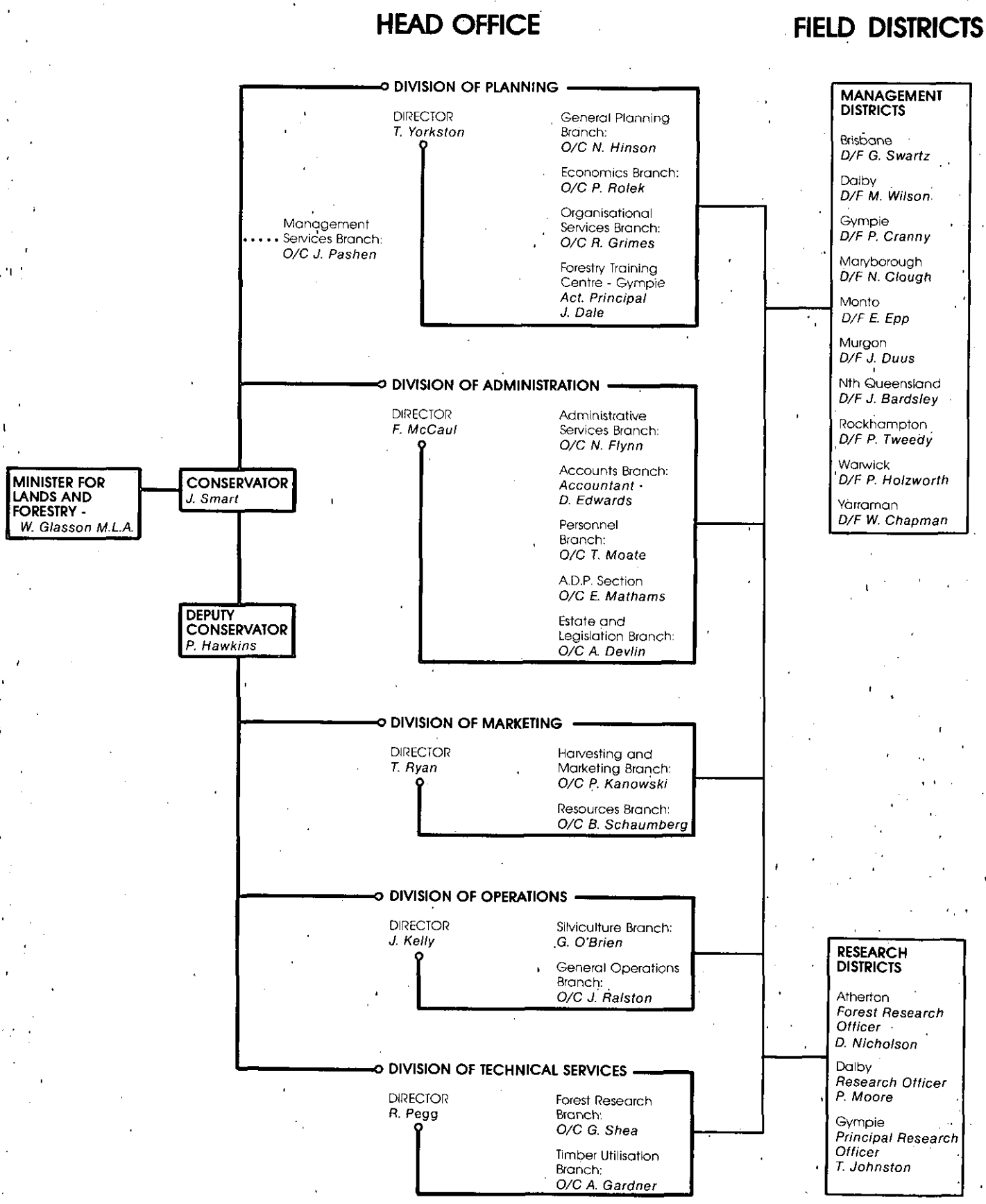
RECREATION

- The popularity of forest recreation continued to flourish. It is estimated that 700 000 people visited State Forest Parks — this is a 40 per cent increase in use over the 1980–81 levels.

PERSONNEL

- Salaried staff establishment levels remained at 645 in keeping with the Government's policy of zero growth. The actual number of salaried staff as at the end of the financial year was 642. Wages staff as at 30th June, 1982, totalled 1 087, compared with 1 211 employees at 30th June, 1981.

Departmental Structure



Objectives

The Department's objectives are to:

- Develop and manage the State-owned forests in the best long-term interest of the general community.
- Manage these forests, including production forests, so that they best fulfil their multiple use role, including recreation and protection of the environment.
- Manage production forests to maintain, as far as practicable, adequate supplies of timber and other forest products to meet the community needs in perpetuity.
- Contribute to the development of effective general land use policies and practices in the State.
- Promote sound development and stability in the wood-using industry.
- Undertake research relevant to the needs of forestry and the wood-using industry.
- Undertake training in forestry and encourage the development of safe working practices in the forest.
- Encourage sound timber utilization practice in the community.
- Provide extension advice to the public and the timber industry in the fields of forestry and timber utilization.

Bark of a scribbly gum (Eucalyptus signata) *showing characteristic markings of scribbly gum moth larvae.*

Five Year Summary

	1981-82	1980-81	1979-80	1978-79	1977-78
Crown Forest Estate —					
State Forest — 000's hectares	**3 829**	3 713	3 716	3 610	3 444
Timber Reserve — 000's hectares	**572**	584	595	589	616
Plantation Management —					
Total area — 000's hectares	**139**	133	127	119	113
Native Forest Management —					
Area Treated — hectares	**8 947**	7 839	9 430	13 433	18 971
Nursery Stock Produced —					
For Departmental Use — 000's	**7 235**	8 000	11 308	8 802	8 080
For Amenity and Forest Plots Sales — 000's	**1 059**	523	400	418	421
Prescribed Burning —					
Native Forests — 000's hectares	**106**	159	107	58	151
Plantation — 000's hectares	**12**	12	8	6	10
Wildfires —					
Number of fires	**64**	157	206	37	261
Area burnt — 000's hectares	**35**	67	63	3	112
Roads Constructed —					
Kilometres	**266**	324	298	280	310
Timber Cut on Crown Lands —					
Native Forest — 000's cubic metres	**575**	593	637	567	572
Plantations — 000's cubic metres	**303**	350	285	229	261
Forestry Development Fund Expenditure —					
$000's	**20,480**	22,687	19,265	16,411	15,891
Staff —					
Wages	**1 087**	1 211	1 192	1 213	1 249
Salaried	**642**	631	632	633	624

Timber Marketing

THE FOREST ESTATE

The total area of land set apart as State Forest and Timber Reserve was increased by some 104 306 hectares during the year. Parliament sanctioned the excision of 183 hectares from existing State Forest. The largest single area excised was from the Jimna State Forest to enable its controlled development as a township.

FOREST RESOURCES

Native forest inventory: About 3.3 per cent of the State is publicly owned forest, available for commercial wood production.

This forested land falls within four regions:

Region	*Timber Resource*
south-east Queensland	hardwoods and scrubwoods
western Queensland	hardwoods and cypress pine
central Queensland	hardwoods, scrubwoods and cypress pine
north Queensland	scrubwoods

For the purpose of log supply to mills, the area of forest under Forestry control is divided into 36 sawmill allocation areas.

In 1976 the Government determined that periodic auction sales of Crown timber be replaced by non-competitive sales with the level of log allocations to individual mills related to available supplies.

It was not possible to introduce allocations simultaneously throughout the State as the available forest resource base had to be reviewed so that the determined allowable cuts reflected the resource in each allocation area. The Department embarked on the necessary inventory surveys on a priority basis commencing with south-east Queensland and progressively covering other regions throughout the State.

With the finalization of data for central Queensland during the year, Crown log allocations have now been introduced throughout Queensland.

Plantation forest inventory: The establishment of fast-growing conifer plantations to supplement the native forest resource commenced in Queensland 50 years ago and to date 137 110 hectares have been planted with native or exotic conifers in this ongoing programme.

The plantation inventory system provides information and projections on a short- and long-term basis of expected timber yields from plantations.

Short-term information aids the preparation of detailed harvesting schedules and future projections are used in planning future industry development.

In a major organizational change during the year, District staff assumed responsibility for plantation inventory and permanent plot establishment and remeasurement. This work was previously performed by permanent crews operating on a regional basis and controlled from head office.

A proposal for the establishment of a major pulp/paper mill in south-east Queensland was based on a comprehensive analysis of the plantation resource and possible management strategies on a long-term regional basis using computer simulation systems.

This analysis verified sufficient pulpwood availability for the new industry whilst still ensuring the continuing supply of sawlog to existing and future industry.

Valuation of timber for conversion of tenure: In line with the Government's policy of allowing conversion of certain leasehold land to freehold tenure, the majority of applications now being received in the Department for timber valuation are in the Rockhampton and north Queensland Forestry Districts.

Increasing demand for Crown timber and a change in utilization standards is now necessitating timber valuations in areas of relatively low timber productivity, especially in the expanding mining areas of central Queensland.

The position, at 30th June, 1982, of timber valuations for conversion of tenure are shown in the table below:

Applications	Number	Area(ha)
Withdrawn	213	853 309
Being processed	123	440 540
Awaiting field assessment	88	283 621
Completed	3 773	11 988 039
	4 197	13 565 509

Below left: *Forest Ranger Glen Mills, Dalby District, recording the dimensions of a crown log.*

Below middle: *A forwarder loading exotic pine logs, Kenilworth Sub-District.*

Below right: *A load of exotic pine thinnings leaving the plantation.*

HARVESTING AND MARKETING

Pricing: Forestry's policy is to maintain the real value of timber revenue by periodically varying Crown log prices in accordance with the movement in the Consumer Price Index.

In the past years some increases were deferred because of adverse trading conditions in the wood-using industry, but in recent times it has been possible to progressively reduce this accumulated backlog. To this end sawlog prices were increased by an average of 22 per cent at 1st July, 1981.

Prices applying to sales of pulpwood were increased during the year by approximately 35 per cent.

The Department and Industry recognize the need to review current pricing systems for all species groups in order to simplify procedures and restore price relativities which had become distorted through the application of flat percentage increases and other factors. During the year, therefore, reviews of the prices of cypress pine (*Callitris columellaris* syn. *glauca*), native hoop pine (*Araucaria cunninghamii*) and bunya pine (*Araucaria bidwillii*) were completed and similar action is now in hand for plantation softwoods.

Log measurement: Following trials, the sale of cypress pine logs by measurement of weight rather than volume now represents 20 per cent of the cypress pine volume cut. The mass of the logs is converted to volume using average conversion factors which are determined and regularly checked from load samples. Both the Department and Industry gain from weight measurement through reduced measuring costs.

Below left: *Loads of rainforest timbers being hauled down from Mt. Windsor Tableland.*

Below middle: *A timber cutter preparing a spotted gum log for removal.*

Below right: *A cable hauler removing hoop pine thinnings from a plantation.*

FOREST PRODUCE AND FOREST INDUSTRIES

Timber harvesting: The volume of timber harvested from Crown and private lands during 1981–82 is provided in the Appendices. The milling timber cut from native forests on Crown lands decreased by 14 779 cubic metres. The total cut, including pulpwood, was 878 433 cubic metres and this represents a decrease of 6.8 per cent over the previous record year.

Plantation sawlog sales decreased by 6.7 per cent and pulpwood sales decreased by 30 per cent due mainly to adverse trading conditions in industry.

As a result of the previously reported increase in sawlog prices this decrease in volume cut did not result in decreased timber revenue, which rose by 13 per cent over the previous year to $11,226,184.

Timber industry: Generally unfavourable trading conditions occurred over most of the year. Major influencing factors were the general building industry downturn compounded by competition from imported timber.

The proposition accepted last year for the harvesting of 80 000 cubic metres per annum of plantation pine from the Beerburrum area was not able to proceed and the resource was re-advertised. Several new propositions were received and were still receiving consideration at the close of the financial year.

Propositions were called for the purchase and processing in Queensland of mature age hoop pine plantation resources in the Brisbane and Mary Valleys, but due to the downturn in the economy the prices offered were not considered satisfactory and were not accepted. This timber will be re-offered for sale at a later time.

A sale was made of an annual volume of 13 000 cubic metres of mature age hoop pine from plantations and thinnings from younger hoop pine and Caribbean pine plantations on the Atherton Tableland — removal of this timber has commenced.

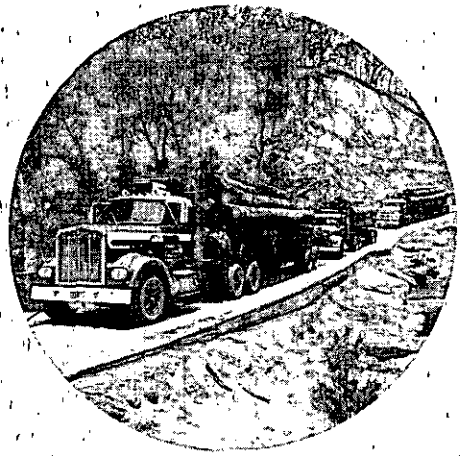
Pulpwood sales: Propositions were invited for the establishment of a pulp and paper mill to utilize pulpwood from plantations in the Gympie-Maryborough area. Only one proposal was received and negotiations were continuing with the interested firm.

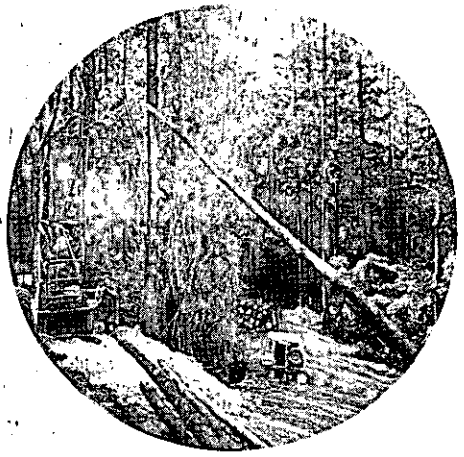
Sawmill licensing: The Department exercises some control over the processing of log timber through the Sawmills Licensing Act which has been in operation since 1936. Licenses are issued for the operation of Crown and/or private timber when it is accepted that there is sufficient resource to justify the establishment of a sawmill. The declining resource of privately owned native forests has led to an excess in licensed sawmill capacity in most areas.

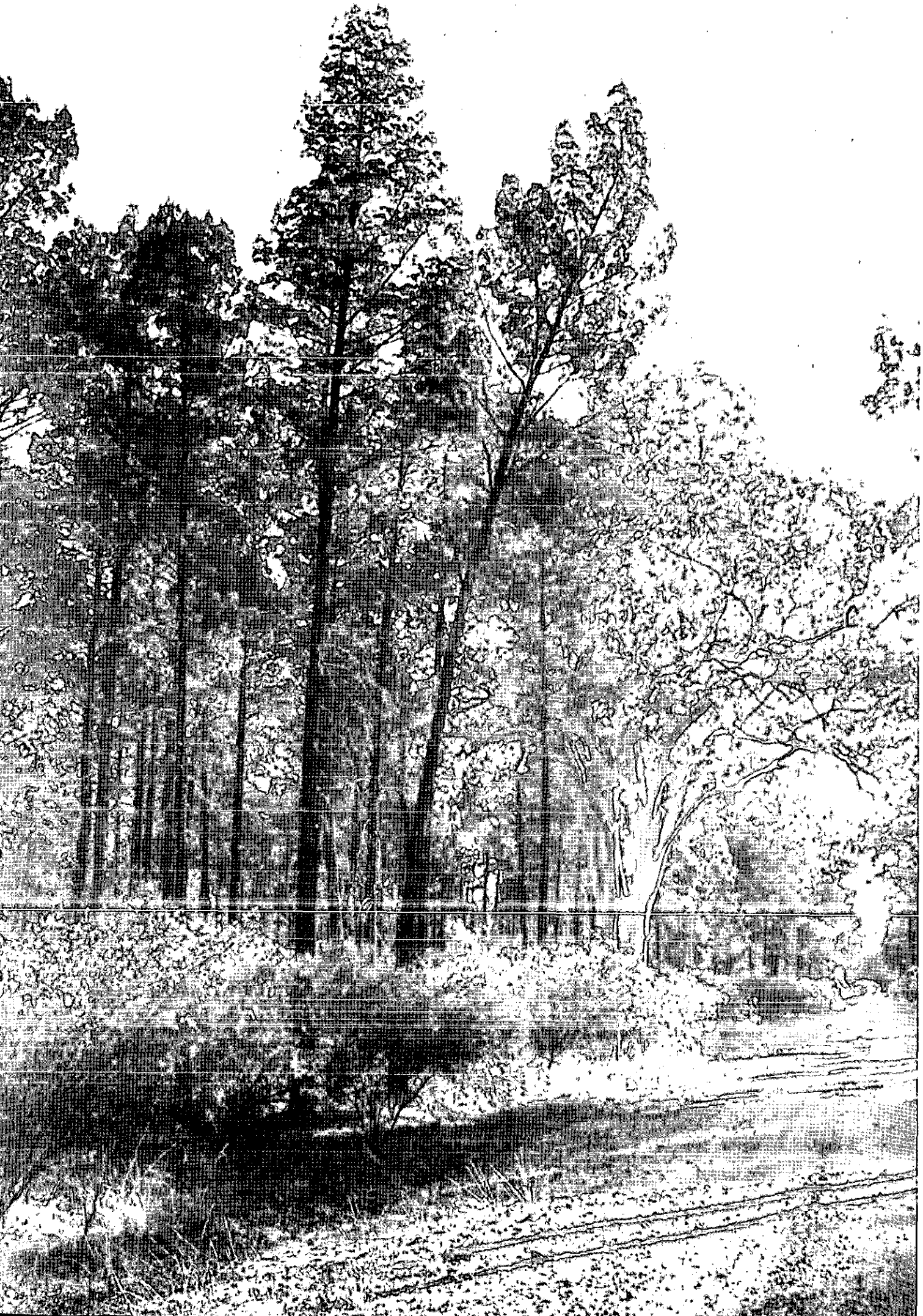
In 1969, the Department introduced a policy which permitted the amalgamation of licensed sawmills so that mills with insufficient supplies could amalgamate with other sawmills within defined zones. This policy aims at permitting sawmills to maintain the size of their operations at an economic level.

At the time of the introduction of this policy, there were 517 licensed sawmills, of which 472 were general purpose mills, and 45 were restricted use mills.

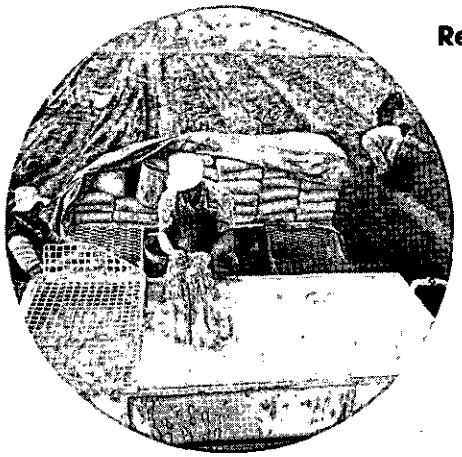
At the end of 1981–82, the number of mills had declined to 360, of which 280 were general purpose mills, 54 were restricted license mills and 26 were portable mills.







Forest Management



Reforestation expenditure 1981/82 under the Department's Works Programme.

Item	Expenditure	% of Total
Plantations	6,662,955	38.0
Natural Regeneration	649,759	3.7
Protection	695,019	4.0
Nursery Expenses	630,484	3.6
New Construction	397,864	2.3
Seed Collection* [a]	70,594	0.4
Surveys	104,764	0.6
Research	701,882	4.0
Total Direct Expenditure	9,913,321	56.6
Overheads	7,613,248	43.4
Total Reforestation Works Expenditure	17,526,569	100.0

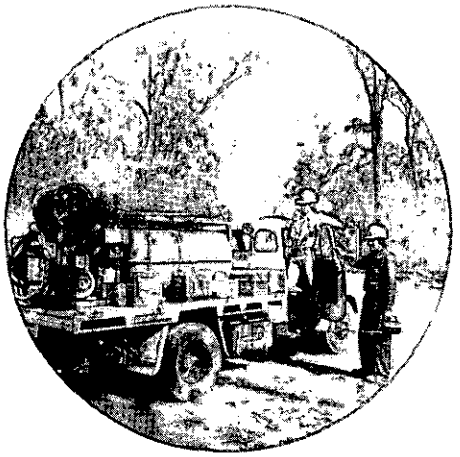
*This refers only to seed collection expenditure incurred under the Works Programme. A further amount of $299 951 was expended on seed collection under the Department's Forestry and Lumbering Trust Fund.

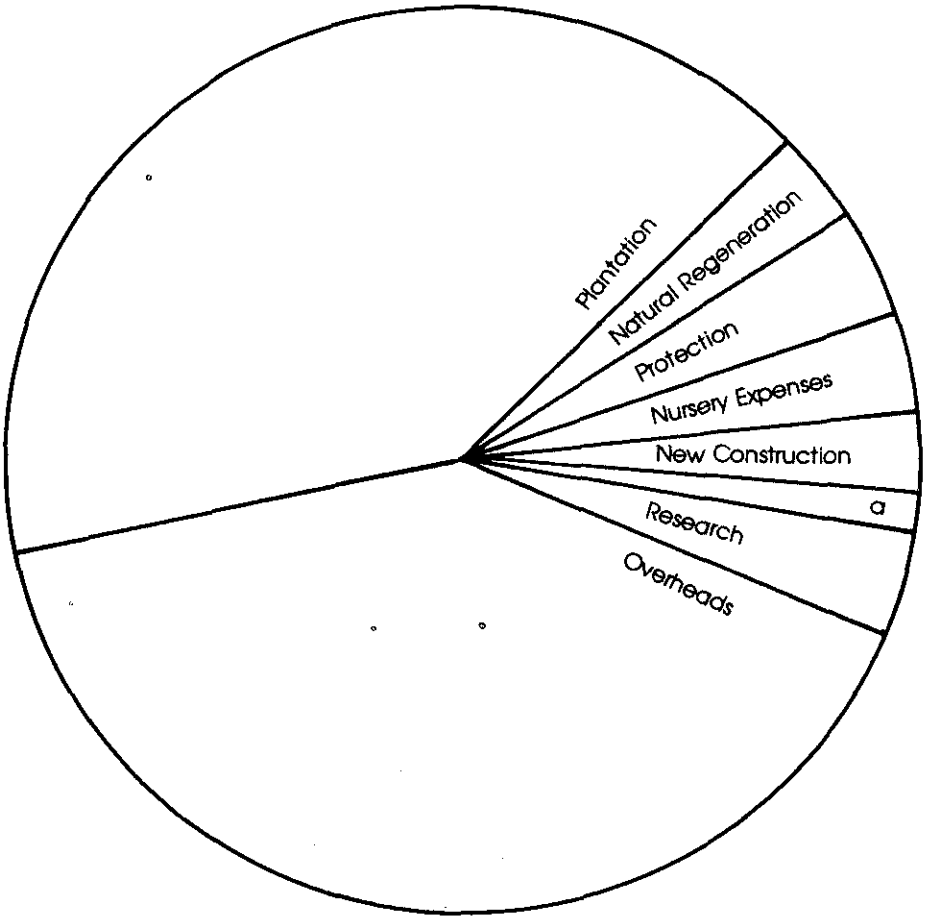
Opposite page: *Native cypress pine forests, Barakula.*

Top: *Preparation of open-root stock for planting.*

Middle: *Planting machine in operation.*

Below: *Fire tender and crew at prescribed burning operations.*





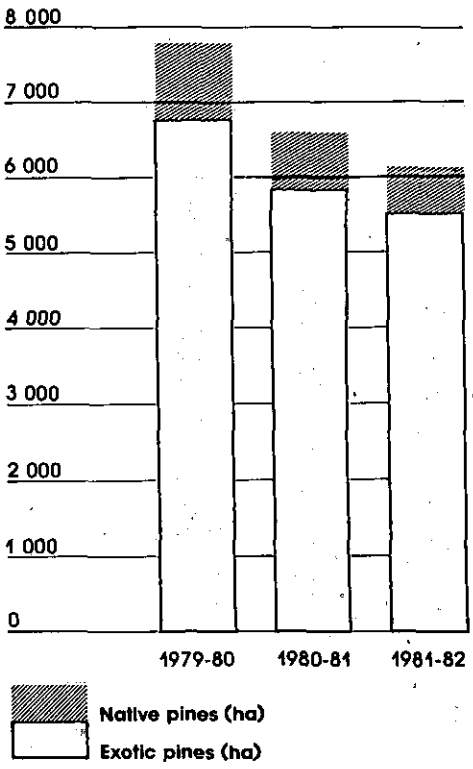
PLANTATIONS

Plantation programme: During the year 6 311 hectares of plantations were established, comprising 5 635 hectares of exotic pines and 676 hectares of native hoop pine. This is slightly lower than the area established last year. The aim of establishing at least 200 000 hectares of softwood plantation by the turn of the century is now two-thirds achieved. For the Department to meet the target and offset the decline in the supply of timber from native forest resources, it will be necessary to maintain planting programmes at a high level.

With a projected real decrease in funding for 1982–83, it is likely that plantings will again be lower than 1981–82. Smaller annual plantings will reduce the future availability of softwood.

The following graph indicates the position:

Planting Established



Caribbean pine (*Pinus caribaea*) now accounts for over 60 per cent of all new softwood plantings. Slash pine (*Pinus elliottii*) continued to decline in importance (23%), while hoop pine maintained its relative position (10%). It is expected that new plantings of slash and hoop pine will continue to decline in future years as the availability of suitable planting land decreases.

Nurseries: Ingham nursery was opened during the year, increasing the total number of production nurseries to 11. In addition there are two amenity nurseries in Brisbane and one in Dalby. Extensions to Beerburrum nursery were completed increasing its capacity by 50 per cent. Forestry nurseries now have the capacity to meet the anticipated future Departmental planting programmes and also to provide seedlings for forest plot and major private reforestation projects.

Water supplies were improved at two nurseries during the year. At Toolara, a bore will supplement the existing creek supply, while at Bunyaville, an earth dam was constructed to permit installation of an automatic watering system.

Seed collection and sales: Hoop pine seed orchards yielded over 12 tonnes of seed this year — it is the first major collection of this species from the orchards.

Improved plantation stands were used exclusively for this year's Caribbean pine seed collection. Of a total of 841 kilograms of seed collected, 182 kilograms were of orchard grade. With the improved orchard production there are expected to be sufficient supplies of orchard grade seed to supply all future Departmental plantings of this species.

During the year the Department made substantial seed sales of *Acacia mangium* (brown salwood), and important provenances of *Eucalyptus camaldulensis* (river red gum) and *Eucalyptus grandis* (rose gum).

Receipts from seed sales totalled $62,630, of which $24,870 was from overseas sales.

Recent purchases of a seed dewinger, cleaner and gravity separator will permit further upgrading of seed quality with consequent improvement in nursery efficiency.

Nutrition: New plantings of exotic pines were fertilized with 60 kilograms of phosphorus per hectare as superphosphate in accordance with routine practice. In addition, certain element deficient sites received an initial application of nitrogen, copper and zinc.

After foliar sampling, selected plantings of exotic pines were treated with a supplementary dressing of 40 kilograms per hectare of phosphorus as superphosphate at about age 10 years.

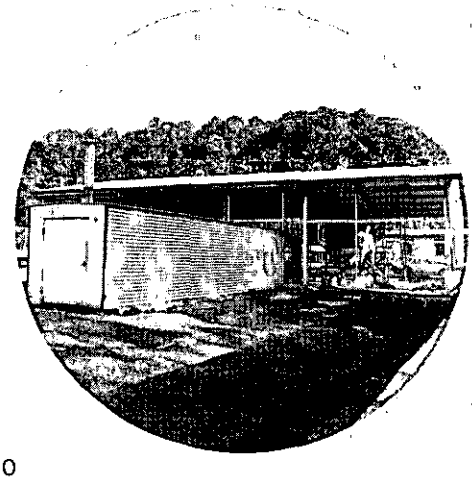
Weed control: Control of weeds in plantations is always a major and necessary operation, but this year weed growth was greater than normal as a result of above average rainfall.

Prescriptions for weed control were reviewed during the year in the light of results of research and operational trials. The appointment of an additional technical officer to the Weed Control Section should enable further improvement in the effectiveness of field practices.

Below left: *A new seed extraction facility, with kiln.*

Below middle: *Nursery Overseer Yvette Sullivan (right) assisting visitors at the Salisbury amenity nursery.*

Below right: *Senior Overseer John Murphy (Yarraman District) instructs field staff in the operation of a power mister — used in weed control.*



Exotic pine: In young exotic pine plantations, weed control is effected by thorough ploughing before planting, supplemented with the use of herbicides where necessary. On erosion-sensitive sites the risk of soil loss is minimized by strip ploughing and use of filter strips in lieu of over-all ploughing.

Introduced pasture grasses, with their great capacity for regeneration, are proving to be significant inhibitors to satisfactory growth in young plantations of exotic pines on recently purchased grazing land in the Tuan-Toolara area. Trials using a range of herbicides have been established to investigate means of controlling this problem.

Hoop pine: In young hoop pine plantations, trials with the use of sown ground-cover crops and residual weedicide have continued. Work has been directed to solving operational problems and improving cost effectiveness of this alternative specific regime. Additionally, recently developed techniques of ring-weeding by controlled application of herbicide and the use of splatter guns are receiving increased attention. A satisfactory technique using chemical injection has been developed for pre-commercial thinning of hoop pine.

Pre-commercial thinning: During the year a decision was taken to introduce additional pre-commercial thinning in certain areas to provide larger sized thinnings and final crop saw logs. In coastal exotic pine areas south of Bundaberg, it was decided to initiate pre-commercial thinning of Caribbean pine by thinning to 750 stems per hectare. In exotic pine plantations elsewhere, except for the Mary Valley, future thinning will be to 600 stems per hectare in lieu of 750 stems per hectare as previously undertaken. Plantations in Mary Valley and in coastal areas south of Bundaberg have been excluded from this heavier thinning. They are either already committed to the supply of pulpwood or are regarded as the potential source of supply for a projected large pulp/paper industry.

Pruning: Exotic pines are selectively pruned to 300 stems per hectare with restrictions on a site index basis depending on the management regime applying. In the pulp and mill log integrated zone, pruning is restricted to the better sites only, whereas in areas being managed for sawlog production the restrictions are less demanding.

Hoop pine is pruned to 400 stems per hectare on areas above a minimum age/height development. In practice over 90 per cent of the area planted with this species is pruned because of its high value.

NATIVE FORESTS

Treatment: Restrictions on funding continue to seriously limit treatment of native forests. Silvicultural work was limited to selection of trees for logging and some follow-up stand improvement. A total of 7 943 hectares of cypress pine and 1 004 hectares of hardwood forest were treated during the year.

PROTECTION

Prescribed burning: ***Plantations:*** Broad area burning of young exotic pine plantations was implemented for the first time this year. It replaced the method of utilizing restricted buffer strips. A total of 11 543 hectares of plantations were treated with low intensity fires. Helicopter lighting was again used extensively in young plantation areas, with good results. A total of 1 826 hectares were lit in this manner.

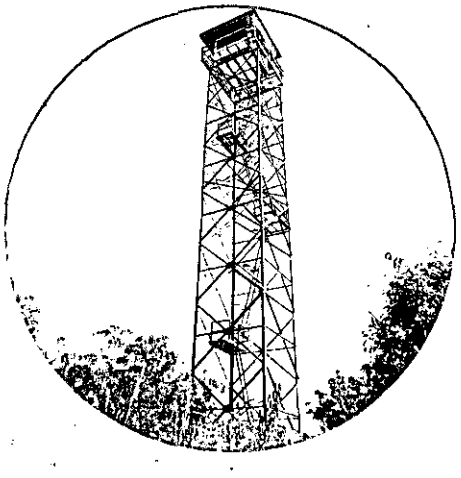
Native forests: A total of 105 684 hectares of native forests were aerially ignited during the 1981 winter season.

Fire damage: The 1981–82 fire season was quite mild, with good spring rains and above average wet season falls in the south of the State. North Queensland was unusually dry until April when flood rains were recorded.

A total of 64 fires were reported covering some 35 154 hectares. Thirteen fires occurred in pine plantations, covering 251 hectares. The most serious plantation fire occurred in young slash pine at Kelly Range on Toolara State Forest. This fire was started by lightning, and burnt fiercely during a period of very high fire danger. Most of the 223 hectares of plantation burnt will not recover.

Left: *Senior Overseer Barry Frohloff (Dalby District) using a drip torch to start a prescribe burn.*

Below: *A new fire tower at Mt Kandanga.*



and damage is estimated at $102,000. A review was made of the effectiveness of fire control measures and equipment performance under the extreme conditions as applied with that fire. As a result of this review, changes in equipment and organization are being made.

The value of prescribed burning was clearly demonstrated in the Kelly Range fire — adjacent areas that had been prescribed burnt sustained much less damage, were easier to control during the wildfire, and helped to contain its spread.

Training and conferences: Lessons learnt during the Kelly Range plantation fire were passed on to officers from other centres during a field day held at the site of the fire.

Two field officers attended a course on large fire administration conducted by the Victorian Forest Commission. There has been a continuing programme of fire training for field staff.

Communications: New, very high frequency (V.H.F.) radios were installed throughout Rockhampton District, as part of the continuing conversion to the newly allocated frequencies.

Base consoles were replaced with new units at several centres.

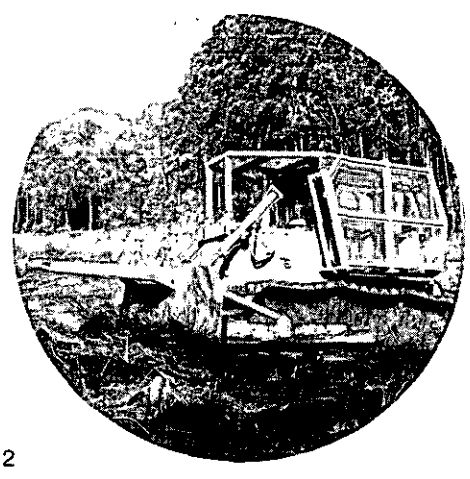
Vehicles operating with single side band (S.S.B.) radios in remote areas now have the additional security of an emergency signalling device onto the Royal Flying Doctor frequency which is monitored 24 hours per day.

Successful tests were undertaken with repeater bases and Brisbane District will shortly receive the first installation for operational trial.

The severe storm season of 1981 caused considerable structural damage to radio installations.

Right: *Engineering Draftsman Richard Lunn (left) and Fire Protection Officer Tom Just prepare an incendiary dispensing machine for detailed drawing.*

Below: *A low ground pressure crawler dozer clearing land in a low lying area.*



CAPITAL WORKS AND EQUIPMENT

Mechanical plant: Refer to Appendix 6 for details of the Department's operative plant.

Expenditure on the purchase of plant was $1,149,898 and items purchased included 83 light motor vehicle replacements, two loader-backhoes and one small agricultural tractor.

Workshop facilities were improved at several centres to upgrade service and repair capability. Construction was completed of major extensions to the Department's workshop at Maryborough. New equipment including 60-tonne hydraulic presses, water blast cleaners and motor vehicle hoists went into service in a number of workshops.

A further 150 kilowatt class low ground pressure crawler dozer went into service during the year and provided additional capacity to clear swampy sites for planting exotic pines.

Apprentices were engaged at Atherton and Rockhampton workshops under the Commonwealth Training for Aboriginals Programme.

Roads: The Department has constructed and maintains about 18 000 kilometres of roads for the management and protection of plantations and native forests.

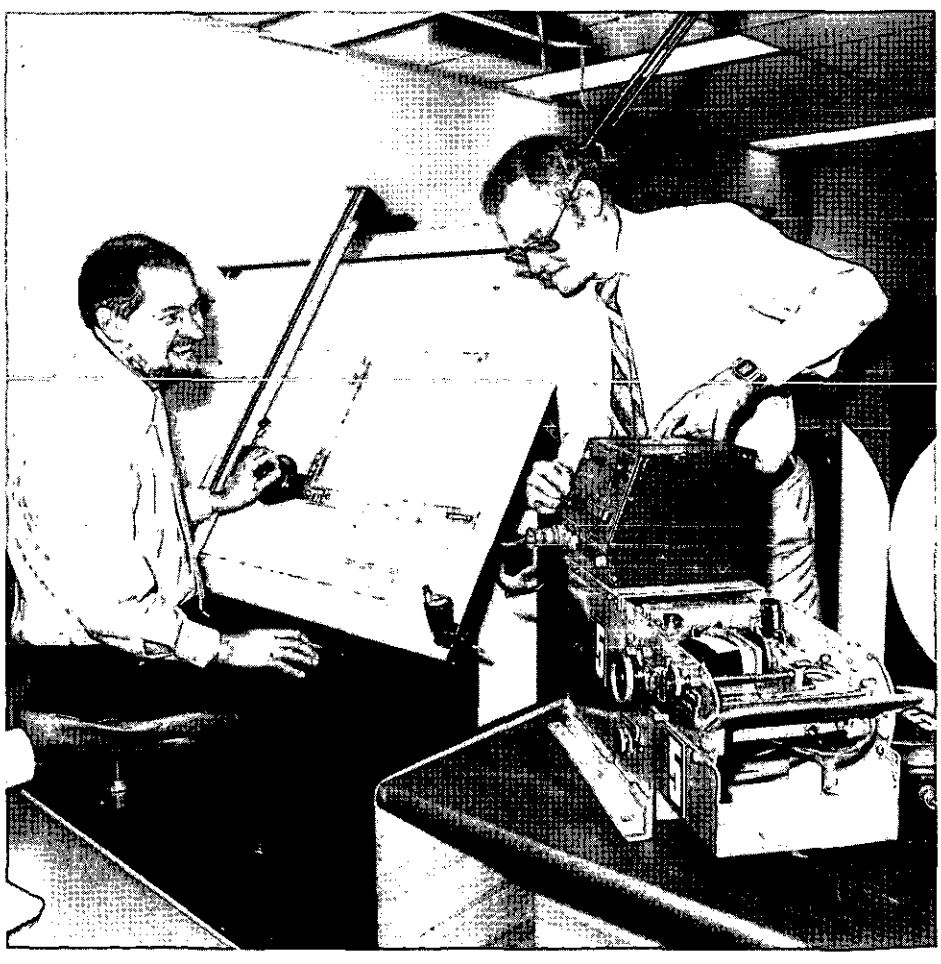
Preparations for the construction of a major new bridge over the Barron River in north Queensland began this year.

As part of its continuing appraisal of costs and environmental aspects, the Department introduced changes to road standards and construction techniques in tropical areas such as Mount Windsor Tableland near Mareeba. The changes in road geometry and pavement design have effectively reduced environmental impact and lowered maintenance costs.

Many Departmental bridges in north Queensland have now reached an age where they require significant maintenance or reconstruction. This year major maintenance was carried out on bridges in the Koombooloomba and Kuranda areas.

Fire towers: Two prefabricated steel-web fire towers were erected during the year at Mount Kandanga near Imbil, and Big Angle near Tuan. Tower sections were assembled on the ground and then hoisted into position. This innovative method was developed and undertaken by the Department's tower carpenter.

Work has commenced on a 36-metre wooden tower at Wongi State Forest near Maryborough. Poles to be used for the construction of the tower were obtained from Jimna State Forest.



Buildings: Construction of the new Ingham seedling nursery was completed and was officially opened by the Minister for Lands and Forestry in August, 1981. The nursery produced its first crop of seedlings early in 1982.

New stores and workshop buildings were completed at Imbil and Tuan Forest Stations to replace outmoded facilities.

New installations completed at Beerwah Forest Station will allow major improvements in seed drying, extraction and cleaning.

FOREST RECREATION

An estimated 700 000 people visited State Forest Parks and Forest Drives during the year, a 40 per cent increase in use over the 1980–81 levels. This number does not include the many people who, under permit, used undeveloped areas of State Forests for a wide range of informal recreational activities.

Highlights of the recreation uses in State Forests this year were the 125 000 visitors to Central Station Information Centre and State Forest Park on Fraser Island, and over 120 000 visitors who enjoyed a day in Daisy Hill State Forest Park, south of Brisbane.

Costs of servicing and maintaining recreation facilities are directly related to visitation levels. Additional maintenance funds were made available this year in response to the continuing increase in visitation. High standards of maintenance are essential for the protection of park areas from heavy use, and to maintain enjoyable recreational opportunities.

The limited funds available for capital works on recreation this year were channelled toward improving existing facilities in State Forest Parks so as to minimize damage associated with increased usage.

Balloting for camp sites during Easter was extended to four State Forest Parks to avoid overcrowding and overloading facilities. Similar restrictions may have to be imposed at other times and in more parks if the gap between demand and availability of recreation opportunities continues to widen. This is regrettable as forest recreation is often the primary contact beteen the public and the Department.

OTHER FOREST USES

Apiculture: With the continuing deforestation of private land, honey producers are becoming increasingly dependent on State Forests as a source of honey producing flora. The Department recognizes the importance of honey production from State Forests and provides for the conservation of honey flora as far as is possible.

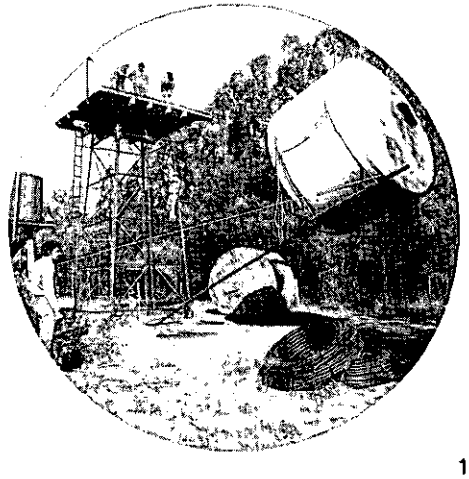
Leasing: Most State Forest areas suitable for grazing are held within some form of permit or lease under either the Forestry Act or Land Act.

The establishment of hoop pine plantations and silvicultural treatment of native forest further enhances grazing values on these areas and this is reflected in the demand and leasing fees offered. As part of the concept of multiple use of State Forests, the needs of the grazing industry receive full consideration in the adoption of forest management practices.

Left: *Picnickers at Numinbah State Forest Park.*

Below: *Joggers in Daisy Hill State Forest Park.*

Below: *Forest Ranger Brian Wilson (Barakula) supervises the replacement of a storage water tank.*



Planning

LONG RANGE DEVELOPMENT PLANNING

General: Forests serve a wide variety of uses including wood production, catchment protection, recreation, forage, and wildlife protection.

The sensible integrated use of all State Forest resources on a sustainable basis is a prime management aim of the Department.

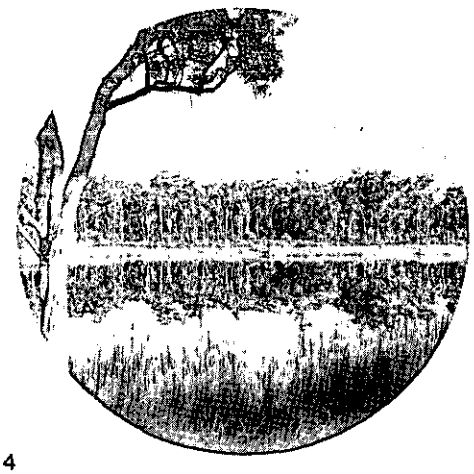
During the year, the Commonwealth Government initiated the development of a National Conservation Strategy in line with the World Conservation Strategy launched in March, 1980. The National Conservation Strategy outlines several objectives under the heading of living resource conservation. These are:

Maintain ecological processes and life support systems, e.g. soils, water.

Preserve genetic diversity.

Ensure sustainable use of species and ecosystems.

Forestry management has recognized and endeavoured to carry out these important conservation measures for many years, while still meeting community needs for forest products and maintaining forest values. For it to continue to do so it is essential that land use policies fully recognize the vital community role of working forests. This is particularly so where high quality native forest land is involved. With the long term nature of forestry, security of tenure of the forest resource and stability of management aims are vital if sustainable use of the forest resource is to be most effectively put into practice.



Land use: The Department has been active on inter-departmental committees examining problems of land use in areas of forestry interest. In most cases these problems arise as a result of conflicting needs for arable land, and this has led to pressure to release areas of State Forest, particularly for sugar cane farming. In some cases this involves land which has been set aside to meet the future needs of a still developing plantation programme, but unfortunately these long term requirements of forest management are not always fully appreciated.

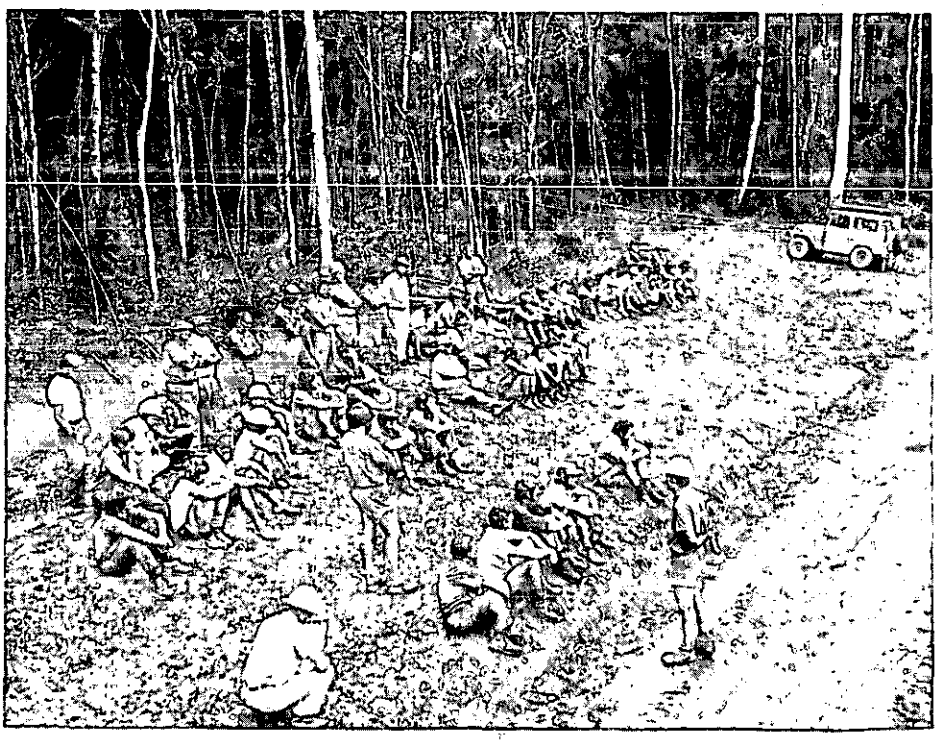
Forest environment: One of the major responsibilities recognized by the Department is to protect both native and plantation forest environments. Management guidelines designed to assist technical staff to minimize the environmental disturbance implicit in most forest operations are under constant review.

Modified logging guidelines were introduced for the rainforests of north Queensland in recognition of the high environmental status of these forests. With the support and co-operation offered by the timber industry, they will effectively control the level of logging disturbance within acceptable limits. Major progress has also been made in south-east Queensland where formulation of improved hardwood logging guidelines is approaching completion. There is an awareness and acceptance in the timber industry that environmentally responsible procedures are required in forest operations. These procedures need to be developed and implemented in a realistic way, bearing in mind the additional costs involved which must ultimately be passed on to the community.

The Department has a good record of preserving the forest environment on areas under its control and will continue to carry out its responsibility in this area. The policy towards preservation of viable samples of major natural communities on State Forests has been stated in guidelines adopted for the selection and management of Scientific Areas within State Forests.

In response to a vigorous campaign to terminate the controlled harvest of rainforest timbers on State Forests, the Department published a position paper entitled "Timber Production from North Queensland Rainforests". This paper was prepared to provide a balanced perspective of the impact and importance of rainforest logging. It discusses such aspects as rainforest occurrence, ownership, resource and yield calculations, and sets out the future management strategy proposed for north Queensland rainforests under Departmental control.

During the year there was some opposition to the Department's management of State Forests in the Conondale Range area in the south of



the State. Moves were made to have the Government revoke from these State Forests a large area of high quality commercial forest and gazette it as National Park. This area is vital to the long-term supply of logs to the timber industry in south-east Queensland and its loss would have serious repercussions. However, there is no reason why multiple use management, integrating sustained hardwood timber production, forest recreation, water catchment protection, and preservation of plants and animals, should not continue to provide optimal community benefits from the area.

The Department has acted as an advisory body in relation to a number of development proposals in the State involving forested areas.

Wildlife management: A fauna study has been planned for the Conondale Range area primarily to examine the impact of logging on the native fauna of the area. The Conondales are regarded as a key area for both nature conservation and timber production. The Department's zoologists and Queensland Museum staff will conduct the study.

The Department co-operated with the Stock Routes and Rural Lands Protection Board in their dingo baiting programme where it involved State Forests and Timber Reserves in south-western Queensland.

There has been heightened gold fossicking activity in some State Forest areas over the past few years. There was a need to exercise greater control over this activity in order to minimize environmental damage, particularly along streams. The Department has moved, in collaboration with the Mines Department, to control this activity by amending both the Mines Act and the Forestry Act to provide for fossicking on certain State Forests, under a Miners Right, subject to conditions laid down by the Conservator of Forests.

Opposite page, far left: *A Scientific Area near Gympie.*

CAPITAL REQUIREMENTS AND FUNDING

Amounts provided from all sources for Loan Fund and Forestry Development Fund Expenditure for 1981–82 totalled approximately $20.6 m.

The composition of these funds was as follows:

Source	Amount ($)
Loan Fund	15,550,000
Special Project Funds	4,000,000
Commonwealth Funds (various)	1,013,757
	20,563,757

This total compares with 1980–81 funds of $20,671,309.

The financing of the forestry works programme is a matter of major concern to the Department. By its long-term nature the works programme requires to be carefully planned on a continuing basis, avoiding excessive fluctuations which must ultimately be reflected in the annual yield of timber becoming available to industry from the forests.

The Commonwealth Softwood Forestry Agreements Act terminated on 30th June, 1982, and Commonwealth funds will therefore no longer be available from this source to supplement State allocations. Since programmes have already been substantially trimmed even at existing levels of funding, further reductions are inevitable unless this shortfall can be replaced from other sources.

Economic conditions: Following relatively buoyant conditions in 1980–81, the past year has been characterized by trading difficulties for the forest products industries.

The timber processing industries were challenged in their traditional local markets by significant increases in the volume of imported softwood products. This came at a time when the Queensland housing industry experienced a rapid slowdown in activity, as illustrated by the decline in demand for new dwellings throughout the year.

However the effect of this decline on local industry, though serious, was magnified by the increase in discounted overseas imports which came predominantly from North America and New Zealand, together with surplus timber from other Australian States.

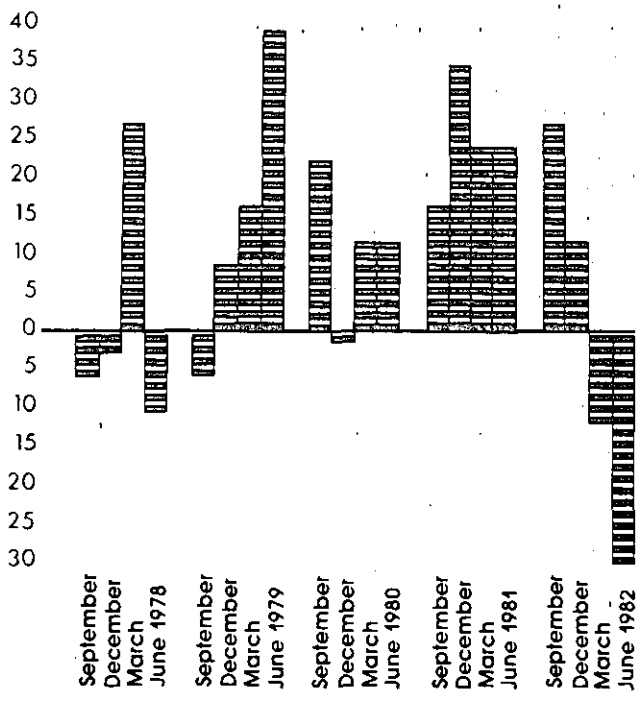
For the Department, the year also proved to be a difficult one. The Forestry works programme had to be reduced as a result of overall budgetary restrictions. Substantial cost increases during the year had to be absorbed by the Department, particularly in the area of wages.

The difficult conditions for the conversion industries also affected the Department adversely, particularly in the marketing area, where difficulties were experienced in sales of final crop plantation timbers.

Opposite page, right: *Jim Bardsley, District Forester, North Queensland, addresses sawmillers and contractors on new rainforest logging guidelines.*

Below: *House construction using Queensland produced softwood.*

Quarterly Approvals - New Dwelling Units - Queensland - Seasonally Adjusted (percentage change over a year earlier)



Research

FOREST RESEARCH

Research report: Recent research activities and findings are published in full in the Division of Technical Services Research Report 1981.

Pine breeding programme: Tree-breeding programmes involving Honduras Caribbean pine, slash pine, various hybrids and hoop pine are currently in progress. These programmes aim to improve productivity from plantations. Honduras Caribbean pine, the most important species, is receiving priority with the development of a second seed orchard complex to provide genetically improved seed by the 1990s.

In co-operation with A.P.M. Forests Pty. Ltd. intensive work to develop populations of the hybrid of slash and Caribbean pines was undertaken. Two seed orchards were established in 1981–82 to provide hybrid-derived seed for plantation establishment. Work on interbreeding genetically superior hoop pine trees is also continuing.

A considerable amount of collaborative tree-breeding research and development is currently in progress with industry, universities, government forest authorities in other states, and overseas institutions.

Honduras Caribbean pine – pre-commercial thinning research: Studies testing pre-commercial thinnings as opposed to repeated commercial thinnings in Honduras Caribbean pine suggest that pre-commercial thinning provides the maximum financial return from these species.

Based on the experimental evidence, pre-commercial thinning to 600 stems per ha at three to four years of age has been implemented in all exotic pine plantations managed primarily for sawlog production.

Plantation hydrology research: During the past twelve months, monitoring of soil erosion in the Cardwell plantation complex has continued. Two small undisturbed native forest catchments and five small catchments covered by plantations established between 1969 and 1981 have been studied.

Forestry's research into the hydrology of streams near or in plantation areas has shown the effectiveness of the retained buffer strips in minimizing the impact of clearing and cultivation operations on the stream environment. With 25 to 30 years between field cultivations, plantation forestry causes considerably less erosion than competing land uses which involve intensive cultivation and annual cropping.

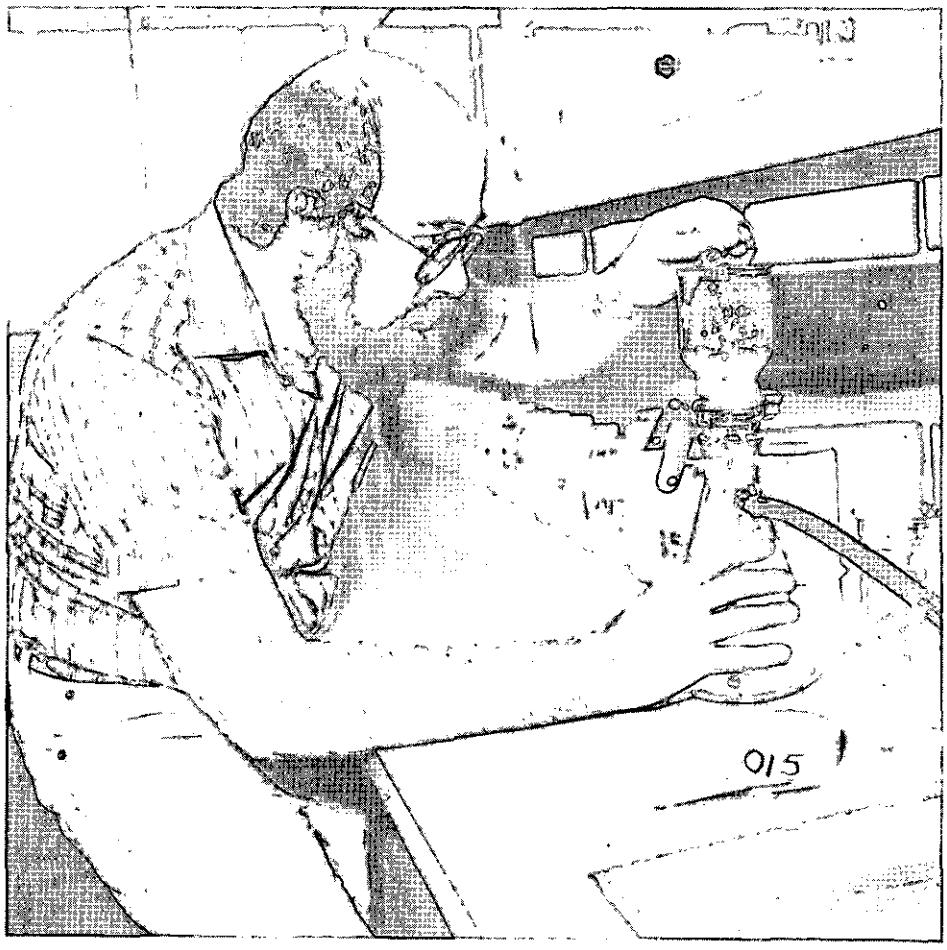
Hoop pine stock research: High nursery costs associated with this species have led the Department to seek a means of raising hoop pine planting stock in 12 months instead of the current 25- to 27-months. The feasibility of this proposition has been demonstrated on a research scale.

Field results indicate that the one year stock, though substantially smaller than routine stock, experienced no survival problems and gave much greater height increments in the field. It is expected that the one year stock will catch up with the routine stock during the second growing season in the field.

Opposite page: *A stand of mature exotic pines near Beerwah.*

Below: *Controlled watering in a hoop pine seedling trial.*

Right: *Forest hydrologist, Dave Cassells, testing stream water samples.*



Ironbark seed collections: A joint ironbark seed collection programme was undertaken by the Division of Forest Research, CSIRO, and the Department.

Small research quantities of seed were collected from 19 locations. Between five to ten trees were sampled at each site using a .308 calibre rifle to sever limbs from standing trees. Seven named ironbarks and three unnamed taxa were collected. A total of 7.3 kg of seed was collected and this should be enough seed to raise at least one million plants. Seed from ironbarks together with a range of other eucalypt species will be used in the Department's eucalypt trials in China.

TIMBER UTILIZATION RESEARCH

There has been a marked shift in the last ten years toward the use of local or imported softwoods at the expense of native hardwood and rainforest timbers. The use of reconstituted wood products such as particle board and plywood is also increasing.

The following trials were established to compare the performance of the more recently available products with established systems.

Below: *Panel made from veneer of unpruned slash pine plantation timber being admired by (from left) Conservator of Forests Mr Jim Smart, Minister for Lands and Forestry Mr W. Glasson and a Timber Industry representative, Mr Brian Morley.*

Cladding trial: In this experiment the behaviour of six species commonly used in south-east Queensland as unpainted, 'natural look' timber cladding, is being observed in 62 exposure panels set up near the Bunyaville nursery. Unpainted hoop and exotic pine with various preservative treatments, sarking and exposure direction, form the bulk of the trial. The trial duration is indefinite but initial findings will be published by early 1984 and will form the basis of recommendations to the public and industry.

Flooring trials: Most species, provided they meet strength requirements and are of the correct moisture content, are suitable for flooring. However, when a house is being built, the floor is usually laid as a platform before the roof is put on. Certain species react badly to exposure to sun and rain during this period of exposure.

Trials are continuing which have the object of identifying problem species or sizes and to allow sound recommendations on protective treatments to be made.

Below, top right: *Forester Chris Bragg (left) and Timber Technician Graham Hughes record data for the cladding trial.*

Below, bottom right: *Timber Research Officer Stan Panow (left) and Overseer Dave Bauer testing the new experimental kiln.*

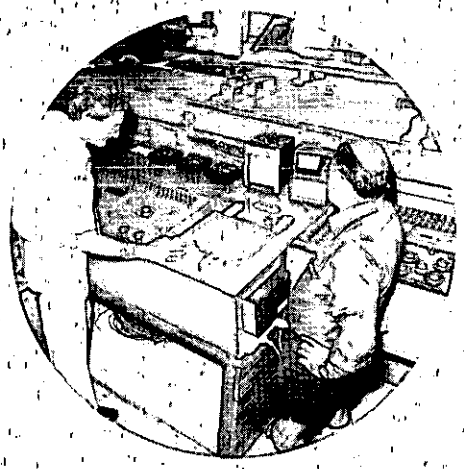
Opposite page: *A high powered rifle being used to sever limbs in the ironbark seed collection project.*

Experimental kiln: The experimental seasoning kiln mentioned in the 1980–81 report has now been constructed and trials will begin shortly. The kiln will be used to test high and low temperature drying schedules for many species. In addition, it will be used to develop high temperature, high humidity schedules for species which tend to distort or form surface defects when conventional schedules are used.

Cypress pine sawing research: Studies have been carried out at Injune and Chinchilla to determine the graded sawn recovery for cypress pine under a range of conditions. The studies examined material from virgin and recut stands in both areas and simulated the sawing patterns used under current market conditions.

In general, results obtained in these studies compare very well with data obtained from industry sources reported in the "Cypress Pine Survey of Queensland", prepared by the Department of Primary Industry, Canberra, 1981.

Slicing trials: Recent slicing trials, carried out on clearfelled slash and loblolly pine (*Pinus taeda*) logs from Beerburrum showed that both species have excellent prospects for use as face veneers in plywood. These results are in accord with large scale peeling trials carried out by the Department in 1978 which showed that both slash and loblolly pine could be used as structural and face veneers.



Support Services

Management services: Management Services provides assistance to the Conservator and other levels of Departmental management in order to contribute to efficient and effective organization.

The Branch provides the Conservator with:

- A consulting service to address existing administrative/managerial problems.
- A review service which is designed to enhance efficiency and effectiveness by recommending and facilitating change within the organization.
- Staff development training programmes.

Work commenced on a project to assist senior staff review the functioning and management of the Department.

During the year, staff and management systems were developed in the Department's Survey and Mapping Section. On-going training programmes, such as management supervision and written communication courses, were conducted in order to further staff development and effectiveness in day-to-day operations.

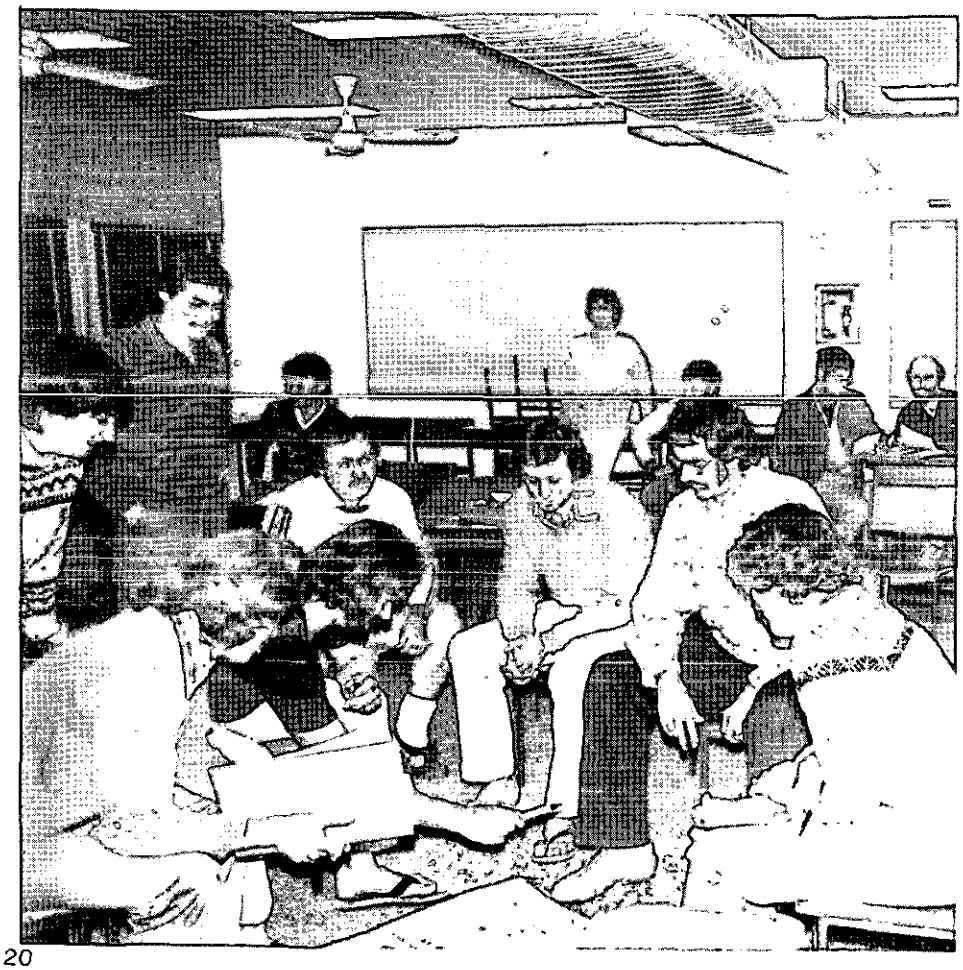
Survey and mapping: Surveying methods are being progressively updated and another electronic distance measuring (EDM) unit was purchased during the year.

Training of selected staff in 70 millimetre aerial surveys has been completed in all major Districts. Centres for aerial surveys have now been established in Brisbane, Kingaroy, Maryborough, Ingham and Mareeba. Investigation into the establishment of centres in Rockhampton and Mackay is continuing.

Mapping of the forest estate at scales 1:25 000 and 1:50 000, and the plantation estate at scale 1:10 000, progressed. Details of maps published by the Department appear in the "Pictorial Index of Survey and Mapping Activities" prepared and published by the Department of Mapping and Surveying. Investigation into the use of computer graphics in plantation management commenced. A request was made for funds to conduct a feasibility study into the use of computer graphics in the Department.

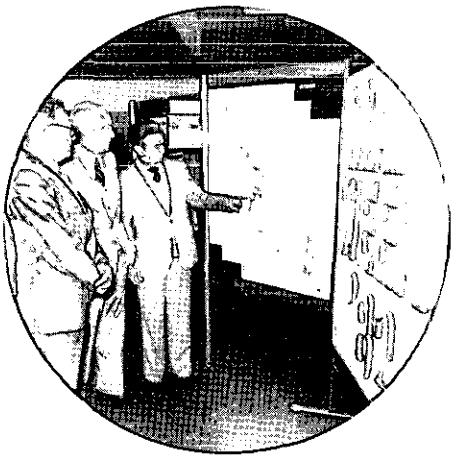
During the year agreement was reached with the Department of Mapping and Surveying to market Forestry maps through "SUNMAP" centres. During the period 1981–82 Forestry maps valued at $17,809 were sold to the public or to government authorities.

The Department also participated in "Map Week '82", winning the open section of the Queensland Cartographic Competition with its recent publication, Fraser Island.



Left: *A staff development course at Gympie Training Centre.*

Below, from left: *Director of Planning Tim Yorkston, retired cartographer Jack Craig and Officer in Charge, Survey and Mapping Trevor Bannon examine the award winning Fraser Island map.*



Library: Forestry staff continued to make good use of the library this year, borrowing 6 708 items, of which 619 were inter-library loans.

Library staff recorded an increase in the number of enquiries on various aspects of forestry from the general public and a greater use of the library by tertiary students.

Gympie library has developed considerably during the year, processing 650 internal loans and, since November, 1981, 107 inter-library loans.

Legislative and legal: Legislation administered by the Department was reviewed during the year. "*The Sandalwood Act of* 1934", whose main purpose was the preservation of sandalwood and the control by license of the getting or interference with this wood on both Crown and freehold lands, was found to be obsolete due to changed circumstances and was repealed in February, 1982.

Review of the Timber Users' Protection Act is now well advanced and it is expected that amending legislation will be presented to Parliament during the coming year.

A total of 115 cases involving reported breaches of the Acts administered by the Department were investigated during the year. Of these, 51 were for alleged breaches of the Timber Users' Protection Act, 63 cases were alleged breaches of the Forestry Act, and one an alleged breach of the Sawmills Licensing Act.

Of the 63 breaches of the Forestry Act investigated, prosecution action was instituted in three cases; these involved unauthorized interference with forest products. A further three breaches have been referred to the Crown Solicitor for possible prosecution action.

Electronic data processing:

Many manual tasks have been taken over by electronic data processing (E.D.P.), resulting in improved efficiency and time saving.

The plant accounting system was further developed to provide plant managers with reports in relation to costs, earnings and performance of the Department's fleet of vehicles and heavy equipment.

Computerization of the log timber accounts ledger system is advancing following investigations.

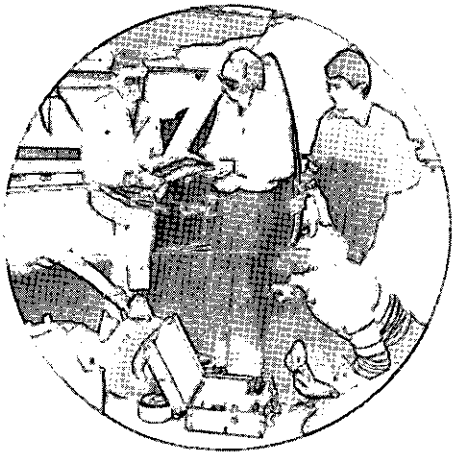
Other developments in Forestry E.D.P. systems included—

- Logging Area and map names system
- Plantation area register
- Optimization techniques for scheduling of final crop harvesting operations
- Rainforest inventory system
- Plantation inventory system

Top left: *Pre-flight planning for aerial photographic crew.*

Bottom left: *Head Office library staff assisting with enquiry.*

Below: *Computer programmer Chris Cornish, operating a remote terminal.*



Extension Services

Public relations: Communication with the public, interest groups and other organizations is an important role for the Department.

The public is keen to learn more about the environment, and forestry in particular — and this interest is fostered. A balanced and progressive approach to public relations is considered of paramount importance. The Department has established a sound basic programme of information on forest management and recreation, and can now undertake a wider range of projects.

Education: *Forestry, together with the* Department of Education and the Queensland Timber Industry, has initiated a comprehensive education project. A secondary school teacher has been appointed on secondment from the Department of Education for two years to design and develop the programme which will provide resource material to primary and secondary schools. This ensures that the material produced will be well balanced, of value to the education system, and compatible with school curricula. A Forestry Education Committee (FORED) has been formed in Queensland to oversee the project. Similar committees have been established in most other States.

Open days and displays: The Department contributed to the Forest Industries Fair again this year with pre-opening promotions and a large display featuring the theme "Living and Working with Wood". Once again the live demonstrations of broad axe and adze work by a Forestry staff member proved to be extremely popular.

A total of eight Forestry Districts participated in country shows this year. They were: Bundaberg, Dalby, Gympie, Maryborough, North Queensland, Rockhampton, Warwick and Yarraman Districts. Monto District held an Open Day to celebrate World Forestry Day.

Silvicultural services: The Department provides incentives for private reforestation through its Forest Plot and Windbreak Planting Schemes. Under these schemes, silvicultural advice is given free of charge and plants are supplied at a concessional rate. Advice is also given on methods of control for insect attack and fungal problems.

Amenity nurseries: Trees and shrubs suitable for planting in urban and rural areas can be purchased by the public from Forestry nurseries at Salisbury and Bunyaville, in Brisbane, and at Dalby, on the Darling Downs. Both the Brisbane amenity nurseries are being upgraded to improve their output and service to the public.

Timber users' protection: Complaints investigated under the Timber Users' Protection Act (T.U.P.A.) revealed that, as in previous years, most of the timber causing complaints originated outside the State. Routine inspections have been made at building sites, timber yards, sawmills and wood working factories by officers stationed at Atherton, Rockhampton and Brisbane. These officers have also lectured at functions and seminars advising both the building industry and the general public of the provisions of the Act. As it is impossible to advise on T.U.P.A. without reference to preservation, seasoning, utilization and entomology, a close liaison has been kept with these sections of the Department.

The Timber Users' Protection Act, gazetted in 1949, is in need of major revision to cater for advances in building practices and technology. A new Act has been discussed with representatives of the timber industry and is now in the process of being formally drafted.

Right: *Forester Geoff Johnson and clerk Donna Lavis assisting teachers and students at the RNA show display.*

Below left: *The Forestry education committee (FORED).*

Below middle: *Head Office staff testing the prototype Forester game.*

Below right: *The Commonwealth Games message baton, designed by Mr Gerald Hancock (left), being admired by Conservator of Forests Mr Jim Smart and Mrs Simone Hancock.*

Wood structure laboratory: The wood structure laboratory provides extension services to other government departments and to the public.

Extension services form a minor proportion of the laboratory's work, generally taking the form of specific technical advice on the anatomy or identification of wood, wood products and tree root specimens.

Advice is provided to industry on the quality and scope of wood being produced. This data has proved valuable in consideration of the proposal to establish a pulp mill in south-east Queensland.

During the year Departmental staff were instructed on the role of wood technology in forestry.

Biological services: Biological extension aims to educate government, industry and consumers in the most efficient and economic ways of protecting and utilizing timber resources. It embraces all the facets of forestry operations as well as problems associated with ornamental trees and shrubs. Although the prime role of this extension is education, a supervisory role may sometimes be involved (for example, the Biology Section assists in the implementation of the Timber Users Protection Act and the Diseases in Timber Act).

Most enquiries relate to insect and fungal disorders occurring in trees or forest products. However, the Section is also involved in areas such as timber and plant quarantine and decline of native trees on rural lands. The expansion in the demand for information can be gauged from the figures below:

Year	Enquiries Received
1978–79	628
1979–80	1 634
1980–81	2 097
1981–82	2 560

About three-quarters of these enquiries concerned problems with insects.

In recent years, publicity campaigns on the West Indian drywood termite eradication project have added to the extension work load. During the period November, 1979, to April, 1982, 4 697 enquiries related specifically to this project.

Timber preservation laboratory: Technical advice and assistance is provided to the community and industry on a range of subjects related to timber preservation.

As more timber preservatives enter the market, the need for accurate analytical testing of their effectiveness becomes more urgent. As a step in this direction Forestry has purchased a gas chromatograph and high performance liquid chromatograph.

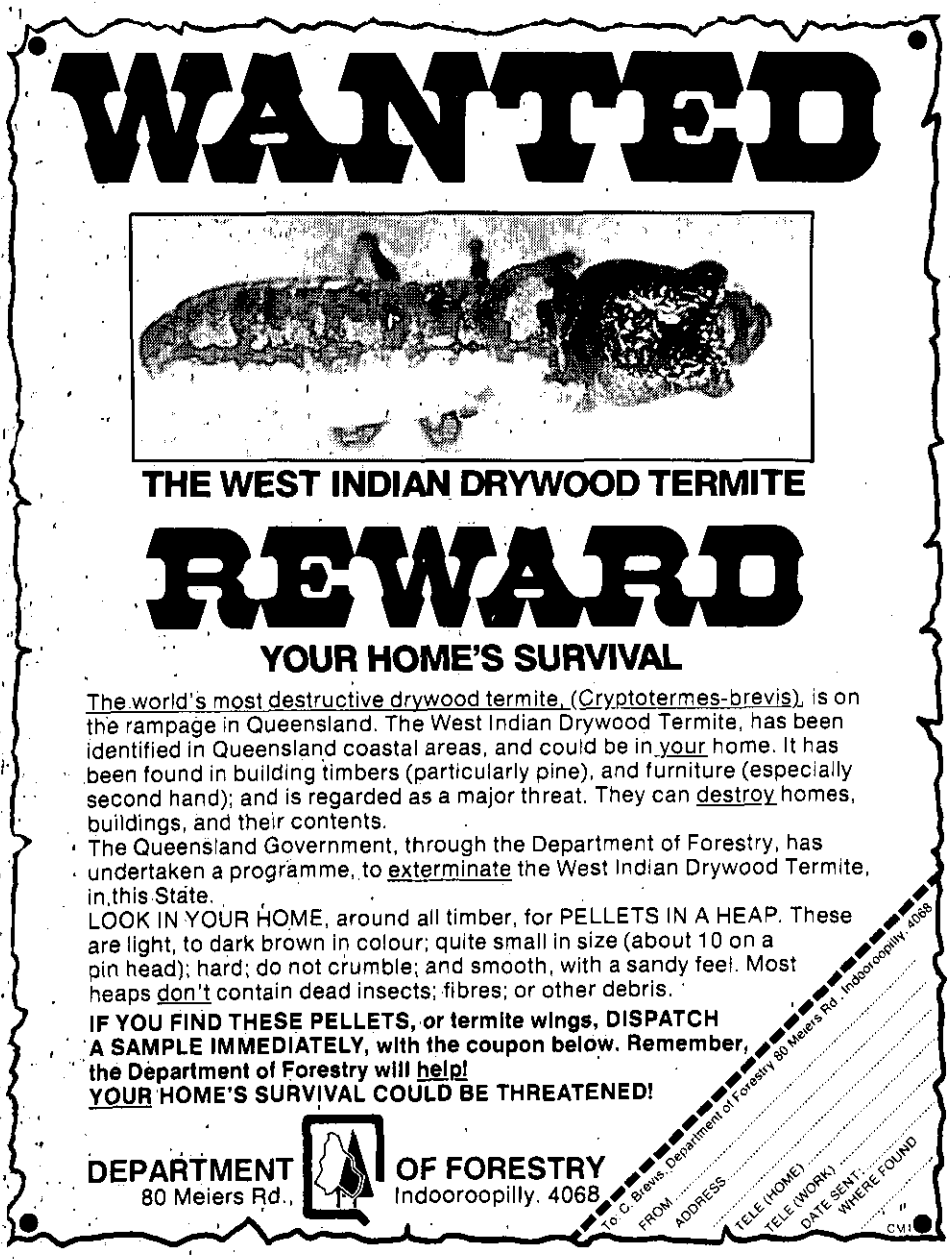
Test procedures for various chemicals are being investigated using material exposed in field tests and laboratory samples.

A survey of corrosion within Copper Chrome Arsenic (C.C.A.) treatment plants has been completed. A review of findings is being prepared, together with recommendations for avoiding corrosion.

Timber utilization: Timber Utilization Branch provides technical advice to the public, industry, semi-government and government organizations. The level of demand for some services has increased, particularly consultancy work in areas such as graded quality of sawn timber.

The Branch has initiated a publication programme to provide information sheets on a wide range of timber utilization topics. A major development has been the completion of a draft publication to supersede the Department's Pamphlet No. 5, specifying use conditions for timbers in Queensland buildings. This document is expected to have a significant impact on promoting better timber utilization throughout the State.

The Branch has assisted with production of a timber baton to deliver the Queen's message to Brisbane for the XII Commonwealth Games in September, 1982. Assistance was provided with collection of wattle timbers from all States, and with drying and gluing of the components prior to turning the finished baton.



Left: A recent press advertisement released by Forestry as part of its West Indian Termite eradication programme.

Personnel

Personnel services: Continuing progress was achieved during the year on the development of the Personnel Branch. Although the appointment of staff to the Branch occurred only towards the end of the year, much development work has commenced. It is expected that some important personnel initiatives will commence during the next year.

Ongoing review of current personnel policies and practices will continue with a view to integrating these with future developments.

The Director of Administration, the Personnel Manager and an officer from the Department of the Public Service Board visited the Victorian Public Service Board in November, 1981. The purpose of the visit was to discuss public sector personnel policies and practices in that State, particularly in relation to the Victorian Forests Commission, and to assess their relevance to the Queensland situation. Much valuable information was obtained both for use in Forestry and the Queensland Public Service Board.

Staff establishment: The Department's establishment of salaried staff remained at 645 during the year, in keeping with the Government's policy of zero growth. Wages staff at 30th June, 1982, totalled 1 087, compared with 1 211 employees at 30th June, 1981.

Fifty-one salaried officers left the Department during the year, including seven officers who transferred to other Government Departments and five officers who retired after long and meritorious careers.

The 1981–82 year saw the appointment of the Department's first female Forester.

Appendix 15 provides details of staff distribution at 30th June, 1982.

Overseas travel: During the year a number of officers visited overseas countries as part of the Public Service Overseas Travel Programme or to provide expert assistance to developing forestry programmes in other countries.

A major highlight of the year has been Forestry's involvement as managing agent for the Australian Development Assistance Bureau's China-Australia Forestry Project at the Dongmen State Forest Farm in China. The Department has provided three resident advisors to the project (Messrs E. Mannion, R. Stevens and I. Drew) for an initial engagement of two years. In addition, a number of other officers have made short visits to the project to assist with preliminary work.

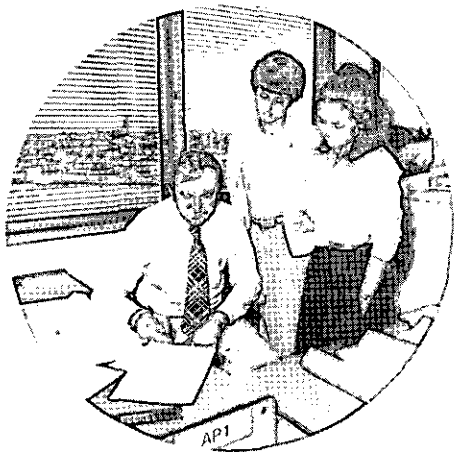
Opposite page: *The Department's chain saw instructor Pat Cannon, captivated audiences in Brisbane's King George Square with his demonstration of cross-cut sawing and broad axe work.* (Photo courtesy of The Courier-Mail.)

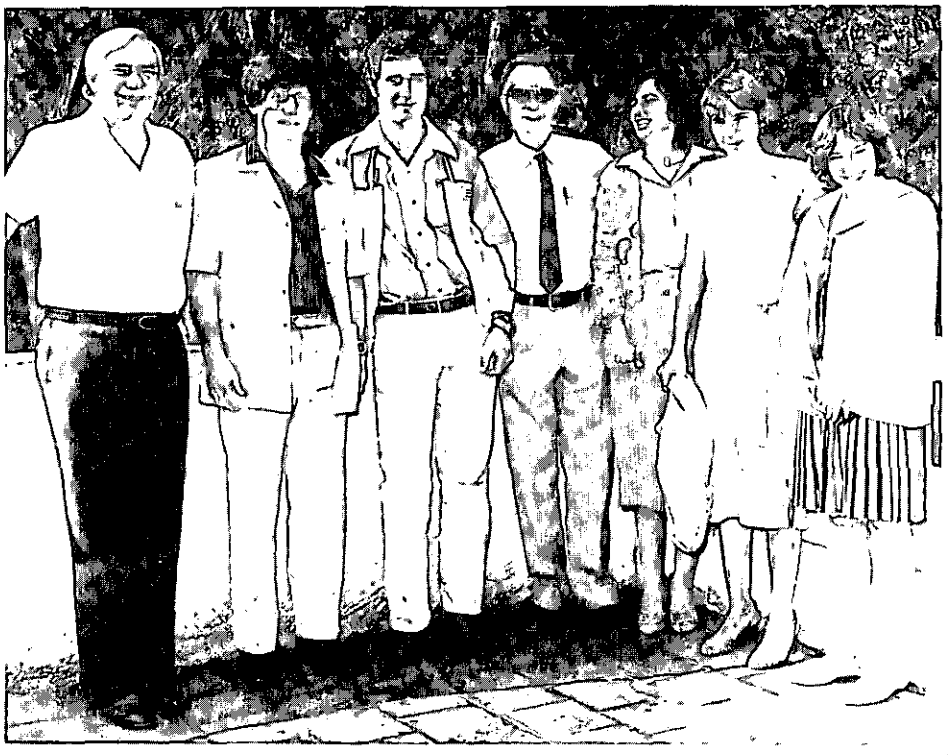
Left: *Personnel officer Ken Moore assisting clerks Terri Forrest and Donnal Lavis*

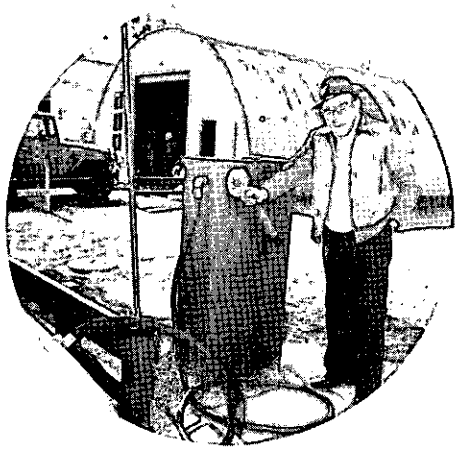
Bottom: *Overseer Jack McAlister retires after lengthy service at Barakula office.*

Right: *Pam Chappelle operating telex terminal.*

Below: *Australian–Peoples Republic of China Forestry Project team with some family members at the completion of language course.*







Other aid programme visits initiated during the year were made by Dr D. Gilmour and Mr P. Gordon, who were seconded to the Nepal-Australia Forestry Project in Nepal for a period of two years from November, 1981.

Visits under the Overseas Travel Programme were made by the following officers:

- Dr D. Bevege — September, 1981 — to attend XVII World Congress of International Union of Forest Research Organizations in Japan and to be presented with the I.U.F.R.O. Scientific Achievement Award.
- Dr L. Leightley — May, 1982 — to attend a meeting of the International Research Group on Wood Preservation, in Turkey, and to visit the Imperial College and the Portsmouth Polytechnic in the United Kingdom.

During the year the Conservator of Forests accompanied the Minister on a visit to New Zealand to inspect forestry and forest industry in that country.

In addition, Mr T. Johnson, Principal Research Officer, Gympie, visited New Zealand in September, 1981, under the Australia-New Zealand Forestry Officers Exchange Programme.

Study and research assistance scheme: At 30th June, 1982, there were 50 officers of the Department undertaking educational courses under the scheme.

It is encouraging to note that many officers continue to seek further development through the undertaking of part-time studies.

It is also pleasing that assistance under the scheme was provided to Mr R. Grimes, Officer-in-Charge, Organizational Services Branch, to enable him to take up a Gottstein Fellowship in the United States and Canada during May and June, 1982.

Officer interchange programme: The following interchanges were undertaken during the year:

- Mr L. Perkins — to C.S.I.R.O., Canberra, during February–March, 1982, to obtain experience and skills in regard to new techniques and equipment in seed testing.
- Mr J. Ward — to Forest Research Institute and a private organization in New Zealand during May–June, 1982, to discuss and study new techniques and modern equipment associated with cable logging in steep country.

Industrial: The Industrial Officer visited most Districts during the year in order to gain a greater appreciation of the working conditions and problems of the workforce.

Significant improvements were made during the year in regard to the remuneration and conditions of employees generally. The major changes involved were:

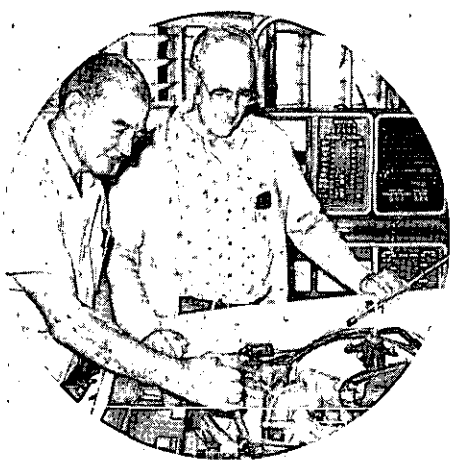
- New arrangements in regard to compensation to officers and employees engaged in fire detention and fire overtime duty.
- Increase in sick leave from eight days to ten days per annum for certain employees.
- Extension of the Flexible Working Hours Scheme to various officers not previously participating in the scheme.

Action is pending in relation to increased sick leave provisions for employees under the Forestry Employees' Award — State Government.

Left: *Chemist Michael Kennedy using liquid chromatograph analysing equipment.*

Below: *Foreman and mechanic checking the servicing of Departmental vehicle.*

Bottom: *Safety Officer Barry Patterson demonstrating the correct use of a fire extinguisher.*



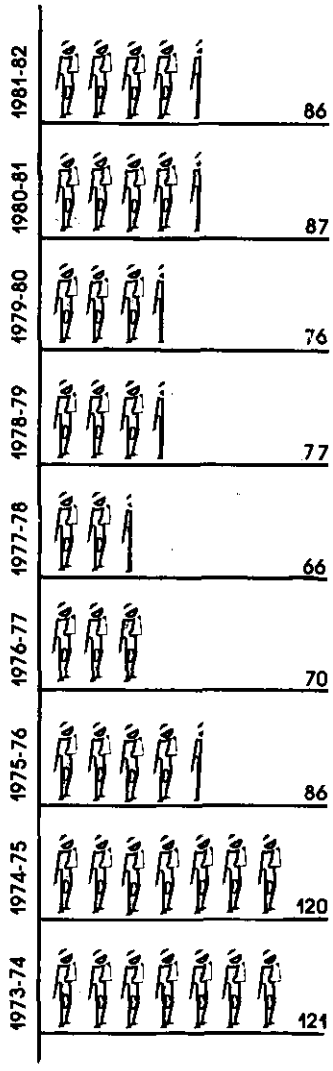
Safety: The Safety Officer visited all Districts during the year for familiarization, attendance at safety meetings and conducting safety training.

Some 241 employees received safety training during the year.

It is encouraging to see that safety committees are again active in all Districts and, in some areas, intra-District safety competitions have been initiated at the local level.

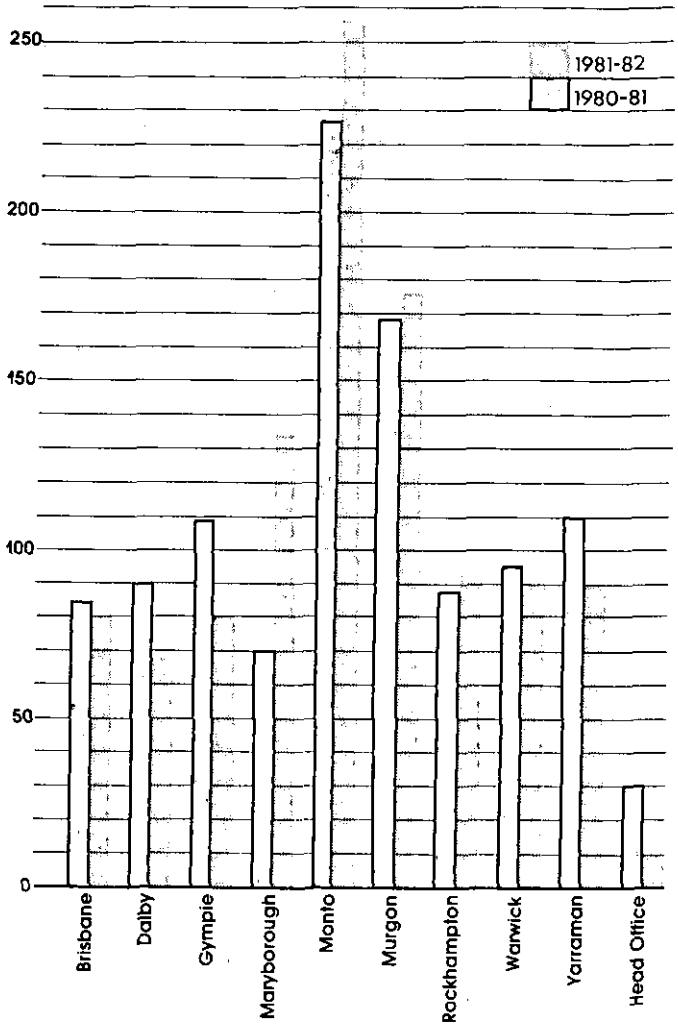
During the year, eight employees gained membership of the Tortoise Club and four employees gained in excess of 30 years service without a lost time injury.

Employment of disabled persons: During the year a public service programme to facilitate the placement of disabled persons was introduced. The objectives of the programme are to provide employment opportunities for disabled persons, provide a monitoring of the guidance service so that such persons can achieve integration into the workplace, and to assist officers throughout Departments to understand the work capabilities of the disabled.



Lost time injury frequency rate since 1973-74 (base 40)

Lost Time Injury Frequency Rate by Districts



To date the Department has placed one person under this programme, and no doubt Forestry can continue to contribute to this important scheme.

Forestry Training Centre: Forestry's technical training programme is proceeding smoothly with the second intake of trainees. The original syllabus has been revised and improved and comprehensive course notes in botany and genetics have also been produced.

Courses on the Department's activities and forest management were organized by the Department of Forestry for Agricultural Project Club teachers and teacher trainees.

The Training Centre has also played a valuable role as a conference centre for other government departments and non-government organizations. Examples of these include the management improvement programme run by the Public Service Board and the Department of Primary Industries course in dairy technology and computing.

An encouraging sign has been the number of enquiries by overseas countries about the possibility of sending their employees to the Centre for forestry training. Planning is under way to develop a course for senior forest managers from south-east Asia and Pacific countries as part of the Australian aid programme to this area.

Work has commenced on a new seminar and conference room and a 20-bed accommodation block. Both projects are expected to be completed by January, 1983. The addition of the new buildings will allow more flexibility in the running of the Centre and greatly increase the facilities that can be offered.

Below: *Forestry trainees receiving instruction on chainsaw maintenance.*

Appendices

APPENDIX 1

STATE FORESTS AND TIMBER RESERVES LISTED BY DISTRICTS AND SUB-DISTRICTS AT 30th JUNE, 1982

District	Sub-District	No. of Reservations	State Forest Areas (hectares)	No. of Reservations	Timber Reserve Areas (hectares)
Brisbane	Beerburrum	24	59 078 6760	2	256 5180
	Brisbane	25	48 387 2930	5	4 567 5211
	Total	**49**	**107 465 9690**	**7**	**4 824 0391**
Dalby	Chinchilla	—	—	—	—
	Barakula	18	450 861 1920	1	5 768 0000
	Dalby	12	224 782 3250	2	150 2033
	Roma	40	338 913 1430	1	19 652 9600
	Total	**70**	**1 014 556 6600**	**4**	**25 571 1633**
Gympie	Gympie	25	33 902 3680	—	—
	Imbil	8	51 098 0000	1	0 2094
	Toolara	6	70 039 2110	—	—
	Total	**39**	**155 039 5790**	**1**	**0 2094**
Maryborough	Bundaberg	17	116 121 7970	12	18 242 7860
	Maryborough	24	230 493 2990	7	9 427 6000
	Tuan	6	61 735 3000	2	24 9099
	Total	**47**	**408 350 3960**	**21**	**27 695 2959**
Monto	Kalpowar	9	28 800 453	10	18 609 7609
	Monto	39	303 837 659	7	7 466 8520
	Total	**48**	**332 638 112**	**17**	**26 076 6129**
Murgon	Jimna	4	46 076 0000	1	1 860 0000
	Murgon	21	93 984 9110	6	3 981 4983
	Total	**25**	**140 060 9110**	**7**	**5 841 4983**
North Queensland	Atherton	29	363 618 2270	26	303 002 6807
	Ingham	18	279 629 4230	2	798 4000
	Total	**47**	**643 247 6500**	**28**	**303 801 0807**
Rockhampton	Emerald	15	125 518 9800	8	117 817 1000
	Mackay	22	113 628 1330	1	28 082 2200
	Rockhampton	37	465 898 5320	7	29 417 8990
	Total	**74**	**705 045 6450**	**26**	**175 317 2190**
Warwick	Inglewood	30	204 379 6470	—	—
	Warwick	18	37 933 2400	1	129 0000
	Total	**48**	**242 312 8870**	**1**	**129 0000**
Yarraman	Benarkin	14	48 369 8520	4	2 756 8240
	Yarraman	11	31 979 6220	2	7 4130
	Total	**25**	**80 349 4740**	**6**	**2 764 2370**
State Total		**472**	**3 829 067 283**	**118**	**572 020 3556**

APPENDIX 2

RESERVATION FIGURES FOR THE YEAR ENDING 30th JUNE, 1982

		No. of Reservations	Area (hectares)
STATE FORESTS			
Figures as at 1st July, 1981		467	3 713 202 8507
Declared	+	8	+ 50 482 8510
Declared and added to existing State Forests	+	4	+ 65 028 265
Timber Reserves declared State Forest	+	1	+ 1 882 585
Timber Reserves declared State Forest and Amalgamated with existing State Forests	+		+ 133 4
Reservations Revoked	−		− 183 6730
Reservations partially Revoked	−		− 404 7122
Areas Released	−		− 495 8945
Recomputation of Boundaries			
Amalgamation of existing State Forests	−	4	
Parts of State Forest taken for Amalgamation with existing State Forest	−		− 4 630 677
Parts of State Forest Amalgamated with existing State Forest	+		+ 4 052 2880
Total as at 30th June, 1982		**472**	**3 829 067 283**
TIMBER RESERVES			
Figures as at 1st July, 1981		120	583 578 1925
Timber Reserves declared	+	1	+ 411 386
Timber Reserves declared State Forest	−	1	− 1 882 585
Timber Reserves declared and added to existing Timber Reserves	+		+ 3 15
Amalgamation of existing Timber Reserves	−	1	
Timber Reserves delcared State Forest and Amalgamated with existing State Forest	−		− 133 4
Timber Reserves Revoked	−	1	− 97 12
Timber Reserves partially Revoked	−		− 9 736 2399
Recomputation of Boundaries	−		− 99 0219
Areas released	−		− 24 0061
Total as at 30th June, 1982		**118**	**572 020 3556**

APPENDIX 3

NET AREA OF SOFTWOOD PLANTATION ESTABLISHED

1st APRIL 1981 TO 31st MARCH 1982

— hectares —

District	Native Conifers			Exotic Conifers								
	Hoop Pine		Total Native	Slash Pine		Caribbean Pine		Other Exotic Conifers		Total Exotic	Total Conifers	Total Conifers 1980–81
	New Areas	Others		New Areas	Others	New Areas	Others	New Areas	Others			
Brisbane	33	—	33	1	—	348	—	—	—	349	**382**	402
Gympie	101	2	103	458	—	578	—	114	—	1 047	**1 150**	1 260
Maryborough	72	—	72	926	5	2 190	180	—	—	3 301	**3 301**	3 479
Monto	197	—	197	—	—	—	—	72	—	—	**72**	74
Murgon	2	—	2	—	—	546	3	2	—	551	**553**	674
North Qld	—	—	—	—	—	203	—	—	—	203	**203**	212
Rockhampton	—	—	—	—	5	—	—	43	80	128	**128**	—
Warwick	—	—	—	—	9	41	—	—	—	56	**325**	327
Yarraman	181	88	269	6								
Total	**586**	**90**	**676**	**1 391**	**19**	**3 906**	**183**	**56**	**80**	**5 635**	**6 311**	6 642
Total 1980–81	637	96	733	2 617	109	2 996	—	187	—	5 909	6 642	

APPENDIX 4

*NET AREA OF EFFECTIVE SOFTWOOD PLANTATION AS AT 31st MARCH, 1982

— hectares —

District	Native Conifers				Exotic Conifers				Total Conifers	Total 1980–81
	Hoop Pine	Bunya Pine	Other Native Conifers	Total Native	Slash Pine	Caribbean Pine	Other Exotic Conifers	Total Exotic		
Brisbane	1 419	7	5	1 431	13 472	1 496	1 936	16 904	**18 335**	17 980
Gympie	11 973	222	36	12 231	23 744	2 389	590	26 723	**38 954**	37 886
Maryborough	1 481	3	29	1 513	26 648	8 121	146	34 915	**36 428**	33 208
Monto	2 818	1	1	2 820	22	3	13	38	**2 858**	2 788
Murgon	8 205	124	1	8 330	—	—	46	46	**8 376**	8 186
North Qld	1 030	1	106	1 137	4	4 625	206	4 835	**5 972**	5 393
Rockhampton	264	—	1	265	1 015	4 968	58	6 041	**6 306**	6 095
Warwick	13	1	1	15	344	—	2 319	2 663	**2 678**	2 616
Yarraman	14 429	117	4	14 550	519	402	1 732	2 653	**17 203**	17 001
Total	**41 632**	**476**	**184**	**42 292**	**65 768**	**22 004**	**7 046**	**94 818**	**137 110**	131 153
Total 1980–81	41 039	487	184	41 710	64 524	17 883	7 036	89 443	131 153	

*The net effective area as at 31-3-82 consists of the net effective area as at 31-3-81 plus the net area established during 1981–82 less corrections for write-offs, replantings, boundary recomputations and re-checks.

APPENDIX 5

*NET AREA OF EFFECTIVE BROADLEAVED PLANTATION AS AT 31st MARCH, 1982

— hectares —

District	Native Forest Hardwoods					Other Broadleaved Species	Miscellaneous Experimental Species	Total	Total 1980–81
	Rose Gum	Grey Ironbark	Blackbutt	Other Native Forest Hardwoods	Total Native Forest Hardwoods				
Brisbane	130	84	91	42	347	1	24	**372**	374
Gympie	484	156	111	163	914	87	15	**1 016**	1 063
Maryborough	—	—	49	1	50	2	44	**96**	91
Murgon	8	6	3	—	17	9	1	**27**	28
Rockhampton	—	—	—	—	—	1	4	**5**	6
North Qld	1	12	—	13	26	143	14	**183**	187
Warwick	—	—	—	—	—	—	10	**10**	10
Yarraman	45	129	—	4	178	43	35	**256**	253
Total	**668**	**387**	**254**	**223**	**1 532**	**286**	**147**	**1 965**	2 012
***Total 1980–81**	715	387	256	228	1 586	291	135	2012	

*Previous figures have been adjusted for write-offs, replantings, boundary recomputations and re-checks.

APPENDIX 6
OPERATIONAL STATISTICS

1980-81		1981-82
6 642	Softwood Plantation Establishment (hectares)	6 311
	Nursery Stock * Departmental Use —	
	Hoop Pine —	
712 100	Container	692 100
	Caribbean Pine —	
502 000	Container	465 000
3 404 200	Open Root	4 342 800
	Ocote Pine —	
101 400	Container	nil
	Slash pine —	
3 026 200	Open Root	1 526 800
	Radiata Pine —	
15 000	Open Root	120 200
	Loblolly Pine —	
64 700	Open Root	nil
	Container	12 800
	Caribbean/Slash Hybrid —	
100 300	Open Root	4 700
	Eucalypts —	
73 500	Container	70 500
	Nursery Stock Sales —	
318 800	Forest Plots	725 250
204 200	Amenity Stock	334 052
$194 420	Total value of seedlings sold	$286 214
	Seed Sold —	
$51 293	Value	$62 630
	Weed Control —	
13 494	Native Pine Plantation (hectares)	12 909
12 353	Exotic Pine Plantation (hectares)	9 333
	Fertilizing —	
5 604	New Areas Fertilized (hectares)	4 239
155	Old Areas Refertilized (hectares)	680
	Pruning —	
2 920	First (hectares)	3 428
2 039	Final (hectares)	2 208
	Operative Plant as at 30th June —	
460	Motor Vehicles and Trucks	462
20	Graders	20
92	Rubber-tyred Tractors and Loaders	91
43	Crawler Dozers	41

*All Departmental use information refers to the 12-month period 1st April to 31st March.

APPENDIX 7
AREAS OF NATURAL FOREST TREATED 1981-82
—hectares—

District	Eucalyptus Forests	Cypress Pine Forest	Total	Total 1980-81
Brisbane	110	—	110	119
Dalby	—	6 387	6 387	5 096
Gympie	747	—	747	102
Maryborough	25	—	25	255
Monto	67	—	67	167
Murgon	25	—	25	133
Rockhampton	—	—	—	—
Warwick	—	1 556	1 556	1 927
Yarraman	30	—	30	40
Total	1 004	7 943	8 947	7 839
Total 1980-81	816	7 023	7 839	

APPENDIX 8

MILLING TIMBER REMOVALS FROM CROWN LAND

— cubic metres gross measure —

NATIVE FORESTS

District	Forest Hardwoods	Rainforest Structural Timbers	Prime Cabinet Woods	Misc. Cabinet Woods	Hoop, Bunya, Kauri, Pines	Cypress Pine	Other Pines	Total	Total 1980-81
Brisbane	23 533	139	6	340	332	218	—	**24 568**	24 568
Dalby	25 512	—	—	—	—	109 298	—	**134 810**	125 270
Gympie	28 614	327	7	854	1 426	1	—	**31 229**	34 517
Maryborough	47 695	32	19	355	14 298	8	—	**62 107**	74 186
Monto	40 273	77	2	438	7 326	—	—	**48 116**	44 480
Murgon	26 130	108	—	66	2 687	—	—	**28 991**	33 665
North Qld	14 324	57 062	29 306	48 603	5 978	—	300	**155 573**	162 309
Rockhampton	40 208	6 800	176	1 857	766	2 334	11	**52 152**	53 827
Warwick	4 170	3 070	—	—	338	22 826	—	**30 404**	32 463
Yarraman	3 782	254	—	78	3 196	—	—	**7 310**	6 909
Total	**254 241**	**67 869**	**29 516**	**52 291**	**36 347**	**134 685**	**311**	**575 260**	590 039
Total 1980-81	245 582	72 221	32 063	54 723	52 449	132 230	771	590 039	

PLANTATIONS

District	Native Conifers	Exotic Conifers	Non-Conifers	Total	Total 1980-81
Brisbane	—	57 420	—	**57 420**	44 499
Gympie	32 556	10 657	1 213	**44 426**	42 068
Maryborough	1 296	15 648	—	**16 944**	41 658
Monto	8 252	208	—	**8 460**	6 061
Murgon	10 165	—	—	**10 165**	15 019
North Qld	5 726	102	—	**5 828**	782
Rockhampton	—	10 024	—	**10 024**	8 177
Warwick	—	12 847	—	**12 847**	15 273
Yarraman	37 932	19 129	172	**57 233**	65 845
Total	**95 927**	**126 035**	**1 385**	**223 347**	239 382
Total 1980-81	90 510	147 722	1 150	239 382	

APPENDIX 9

PULPWOOD REMOVALS FROM CROWN LAND

— cubic metre gross measure —

Forest	Species	District					Total	Total 1980-81
		Brisbane	Gympie	Maryborough	Murgon	Yarraman		
Plantation	Native Conifers	8 618	—	—	2 920	—	**11 538**	8 376
Plantation	Exotic Conifers	23 605	21 810	16 174	—	6 699	**68 288**	102 488
Native Forest	Non Conifers	—	—	—	—	—	—	2 714
Total		**32 223**	**21 810**	**16 174**	**2 920**	**6 699**	**79 826**	113 578
Total 1980-81		26 938	33 428	42 110	2 263	8 839	113 578	

APPENDIX 10

MISCELLANEOUS REMOVALS FROM CROWN LANDS

1980–81	Product	1981–82	Unit
	Miscellaneous Timber Products		
	Sleepers —		
847	1·2 metres	1 801	pieces
129 397	1·5 metres	111 075	pieces
—	1·8 metres	—	pieces
8 643	2·0 metres	6 052	pieces
428	2·1 metres	3 361	pieces
192 636	2·15 metres	213 472	pieces
12 838	2·45 metres	19 817	pieces
	Transoms, Headstocks,		
386	Crossings, etc	7 440	cubic metres
74	Turnout Timbers	508	cubic metres
145	Bridge Timbers	464	cubic metres
18 292	Girders, Corbels, Piles and Sills	20 459	metres
113 862	Poles	192 511	metres
144 561	Fencing Material — Round	124 031	metres
259 917	Fencing Material — Split	258 489	pieces
57 740	Mining Timber — Round	84 713	metres
4 788	Mining Timber — Sawn	438	cubic metres
4 368	Mining Timber — Others	1 408	pieces
113 116	Round Timber	113 647	metres
32	Head and Limb Logs	94	cubic metres
25	House Blocks	1	metres
439	Offcuts	535	cubic metres
3 629	Offcuts	1 122	pieces
5 860	Stakes	7 323	pieces
66	Boat knees	15	pieces
6	Black Wattle	—	pieces
155	Chopping Blocks	182	metres
4 706	Fuelwood	4 141	tonnes
118	Landscape Timber	82 502	pieces
5	Leaf Mould	—	bags
15	Charcoal	11	tonnes
11	Mulga Wood	—	tonnes
2	Pine Cones	5	cubic metres
7	Pine Needles	—	cubic metres
1	Pine Tops	—	tonne
63	Ironbark Bark	8	bags
48	Tea Tree Bark	8	cubic metres
—	Other Bark	18	tonnes
	Non-timber Products		
5	Beehives	4	number
6 776	Flora	8 493	pieces
—	Crows Nest	—	tonnes
21	Lawyer Cane	28	tonnes
13	Peat	44	tonnes
1 228 989	Quarry Material	1 475 420	cubic metres
32	Slate	3	cubic metres

APPENDIX 11

MILLING TIMBER REMOVALS UNDER HAULAGE CONTRACT

The table shows the quantities hauled and payments made for the haulage of milling timber by contractors to the Department.

—cubic metres gross measure—

	South Queensland							North Queensland		Total	
	Hoop Pine	Forest Hardwoods	Rainforest Structural Timbers	Prime Cabinet-woods	Misc. Cabinet-woods	Total Volume	Payments Made ($)	Prime Cabinet-Woods	Payments Made ($)	Volume	Payments Made
1981-82	13 775	17	66	21	41	13 920	361 962	175	4 619	14 095	366 581
1980-81	22 404	13	688	64	590	23 759	565 314	423	11 875	24 182	577 189

APPENDIX 12

MILLING TIMBER REMOVALS FROM PRIVATE LANDS 1981-82

—cubic metres gross measure—

Species	North Qld	Brisbane	Dalby	Gympie	Mary-borough	Monto	Murgon	Rock-hampton	Warwick	Yarraman	Total 1981-82	Total 1980-81*
Hoop, Bunya & Kauri Pines	106	352	7	644	1 568	174	1 340	790	303	1 314	**6 598**	5 897
Cypress Pine		80	40 873		4			748	19 389	162	**61 256**	64 673
Other Pines	163	679		60					48		**950**	1 022
Forest Hardwoods	8 011	142 602	6 847	14 957	54 734	21 612	11 008	36 181	8 680	17 790	**322 422**	265 061
Rainforest Structural Timbers	7 821	1 229		2	2			1 403	47		**10 504**	10 163
Prime Cabinetwoods	2 273	84		45				24			**2 426**	1 712
Miscellaneous Cabinetwoods	4 381	3			14			684		5	**5 087**	6 021
Plantations — Native Conifers	41							107	66		**214**	98
Plantations — Exotic Conifers	3	29 837			9				221		**30 070**	6 399
Imported	157	889						618			**1 664**	
Total	**22 956**	**175 755**	**47 727**	**15 708**	**56 331**	**21 786**	**12 348**	**40 555**	**28 754**	**19 271**	**441 191**	361 046

N.B. Volumes shown in the above table have been estimated due to incomplete statistics being available at time of compilation.

*Corrected Figures.

APPENDIX 13

COMPARATIVE STATEMENT OF RECEIPTS FOR THE YEARS 1980-81 AND 1981-82

1980-81		1981-82
$		$
	Consolidated Revenue Fund — (1)	
4,832	Miscellaneous	80,819
	LOAN FUND — (2)	
586,258	Sale of Motor Vehicles and Plant	326,704
161,243	Excess Plant Hire	5,474
	Other	244,768
747,501		576,946
	Forestry and Lumbering Fund —	
126,889	Opening Balance	158,603
9,921,320	Log timber Receipts	11,226,184
729,022	Forestry and Lumbering	1,207,581
4,057,142	Plant Hire (3)	4,605,018
616,830	Other Receipts	786,018
351,061	T.R.A.D.A.C.	365,673
	Grants —	
146,600	Flood Relief	69,127
6,742	Aboriginal Advancement	5,750
	Dongmen Project	1,227,200
15,955,606		19,651,154
158,603	*Less* Balance Carried Forward	152,553
15,797,003		19,498,601
	Forestry Development Fund —	
2,176,704	Opening Balance	37,471
221,990	Commonwealth Grant for Aboriginal Advancement	224,060
841,309	Commonwealth Forestry Softwood Agreement	783,757
14,880,000	Loan Fund Contribution	15,430,000
2,000,000	Special Projects Fund	4,000,000
74,506	Flood Relief	—
2,500,000	Land Acquisition Grant	—
29,240	Other Receipts	5,150
22,723,749		20,480,438
37,471	*Less* Balance Carried Forward	35
22,686,278		20,480,403
39,235,614		40,636,769

$		$
	The above receipts were disposed of as follows: —	
	To Consolidated Revenue Fund as repayment	
4,832	of Expenditure	80,819
	To Loan Fund —	
586,258	Repayment of Previous Expenditure	571,472
161,243	Excess Plant Hire	5,474
747,501		576,946
	To Forestry and Lumbering Fund —	
	Expenditure of Marketing, maintenance	
	of Roads, Capital Improvements and Plant	
9,539,844	T.R.A.D.A.C. Dongmen Project	12,179,334
6,257,159	Interest and Redemption on Loans	7,319,267
15,797,003		19,498,601
	To Forestry Development Fund —	
	Expenditure of Reforestation, Land Acquisition,	
22,686,278	Plant Purchase, Road construction	20,480,403
39,235,614		40,636,769

Notes to Appendix 13

(1) Consolidated Revenue Fund expenditure not shown as receipts in this Appendix.

(2) State Loan Fund expenditure on recreation facilities not shown as receipts in this Appendix.

(3) Plant hire and the associated expenditure item 'Maintenance of Plant' should not be taken as receipts and expenditure in themselves. Other expenditure votes have already financed Maintenance of Plant through plant hire charges on them.

APPENDIX 14

COMPARATIVE STATEMENT OF EXPENDITURE BY FUNDS FOR YEARS 1980–81 AND 1981–82

1980–81		1981–82
$		$
	Consolidated Revenue Fund —	
9,988,091	Salaries	11,366,780
143,000	Termite Eradication	63,809
81,296	Fares, Printing and Stores	88,093
1,164,030	*Travelling Expenses and Incidentals*	1,430,629
228,977	Recreation Facilities — Maintenance	355,669
204,605	Cash Equivalent of Long Service Leave	146,173
11,809,999		13,451,153
41,720	*Less* Expenditure credited for Grant from Brisbane Forest Park Trust	57,573
11,768,279		13,393,580
	Loan Fund —	
338,567	Recreation Facilities — Construction	182,900
14,880,000	Amount to be credited to Forestry Development Fund	15,430,000
15,218,567		15,612,900
118,574	*Less* Expenditure credited for Grant from Brisbane Forest Park Trust	67,469
15,099,993		15,545,431
	Trust and Special Funds —	
	Forestry and Lumbering Fund —	
6,257,159	Interest and Redemption on Loans	7,319,267
667,275	Contract Timber Supplies	1,499,847
3,819,218	Marketing	3,734,506
846,130	Roads — Maintenance and Subsidies	915,472
3,660,142	Maintenance of Plant	4,171,249
375,701	Maintenance of Capital Improvements	435,859
	Dongmen Project	1,227,066
	Expenses — Timber Research and Development Advisory Councils	371,669
19,945,270		19,674,935
148,267	*Less* Expenditure credited for Apprentice Training and Miscellaneous	176,334
15,797,003		19,498,601
	Forestry Development Fund —	
16,805,094	Reforestation	17,526,569
3,146,433	*Land Acquisition*	770,418
1,610,015	Purchase of Plant	1,150,079
1,172,539	Roads — Construction	1,095,356
22,734,081		20,542,422
47,803	*Less* Expenditure credited for Miscellaneous	62,019
22,686,278		20,480,403

APPENDIX 15

STAFF DISTRIBUTION — 30th JUNE, 1982

	Head Office	District	Total	Total 1980-81
Salary —				
Graduate	63	77	**140**	136
Technical	80	31	**111**	110
Field Supervisory	4	107	**111**	107
Administrative/Clerical	133	132	**265**	265
Miscellaneous	14	1	**15**	13
Sub-total	294	348	**642**	631
Wages —				
Reforestation	15	761	**776**	857
Marketing and Resources	13	117	**130**	159
Road Construction and Maintenance	—	51	**51**	50
Maintenance of Plant and Capital Improvements	9	104	**113**	103
Recreation Facilities — Construction and Maintenance	—	11	**11**	40
Miscellaneous	—	6	**6**	2
Sub-total	37	1 050	**1 087**	1 211
Total	**331**	**1 398**	**1 729**	1 842
Total 1980-81	335	1 507	1 842	

APPENDIX 16

DEPARTMENTAL PUBLICATIONS 1981–82

RESEARCH NOTES

33 Epp, E. A. and Anderson, T. M. (1982) — The effects of directional thinning in slash pine plantations. 8 pp.

34 Vanclay, J. K. and Anderson, T. M. (1982) — Initial spacing effects on thinned stem volumes of slash pine in south east Queensland. 9 pp.

RESEARCH PAPERS

11 Male, P. S. (1981) — Site index studies of established exotic species for the Granite Belt region. 36 pp.

TECHNICAL PAPERS

25 Anderson, T. M., Bacon, G. J. and Shea, G. M. (1981) — Thinning strategies for Honduras Caribbean pine in plantations: an analysis of pre-commercial and commercial thinnings. 17 pp.

26 Nester, M. R. (1981) — Assessment and measurement errors in slash pine research plots. 10 pp.

27 Siemon, G. R. (1981) — Effect of C.C.A. preservative treatment on bending strength of small clear specimens of high temperature dried and air dried Caribbean pine. 4 pp.

28 Byrne, P. J. and Just, T. E. (1982) — Exotic pine plantation prescribed burning using a helicopter. 13 pp.

29 Ashcroft, B. C. (1982) — Public attitudes to the exotic pine reforestation programme in south east Queensland. 42 pp.

TECHNICAL NOTES

5 Nicholson, D. I. (1981) — The natural occurrence and conservation status of *Acacia mangium* Willd. in Australia. 7 pp.

6 Simpson, J. A. (1981) — Compatibility of inorganic ferilizer mixes. 4 pp.

7 Siemon, G. R. (1981) — Strength testing of Caribbean pine. 3 pp.

8 Perkins, L. R. (1981) — Screening of nine fungicides for Honduras Caribbean pine seed testing. 3 pp.

9 Norton, J. (1981) — Comparison of preservative retentions as determined by two different methods. 6 pp.

ADVISORY LEAFLETS

14 Grimmett, J. L. (1981) — Stabilizing wooden articles. 2 pp.

16 Drew, I. K. (1982) — Borers, termites and the householder in Queensland. 6 pp.

17 Norton, J. (1982) — Timber preservation — copper and zinc naphthenates. 2 pp.

UNPUBLISHED REPORTS

1 Epp, E. A. (1981) — Chemical weed control in exotic pine plantations in southern coastal Queensland. 40 pp.

2 Vanclay, J. K. (1982) — Report on a joint project with the Western Australian Forests Department under the Officer Interchange Program of the Queensland Public Service. 2nd February to 15th May 1981. 46 pp.

3 Garthe, R. J. (1982) — Eucalypt plantation trials on the north coast. 8 pp.

4 Master, R. W. C. (1982) — Hoop Pine Container Project — Submission 1: Where to with hoop pine planting stock production? Submission 2: Selecting containers for raising hoop pine stock. 39 pp.

5 Weatherhead, T. F. (1982) — Solar kiln drying trial — rose mahogany (*Dysoxylum fraseranum*). 5 pp.

6 Perkins, L. R. (1982) — Report of two month interchange with C.S.I.R.O. Division of Forest Research, Seed Section, Canberra, under the Queensland Public Service Officer Interchange Program — 2nd February to 26th March 1982. 11 pp.

INFORMATION SHEETS

16 Managing Exotic Pine Plantations

EDUCATION PROGRAM

Your Forests (Second edition) 56 pp.
Forester Simulation Game
Plantation Management audio visual
Trees and People booklet
Queensland Forests — A General Survey booklet

POSTERS

Forest Type Series No. 1 Wet Sclerophyll Forest

BROCHURES

Regional Recreation Brochures:
South-east Queensland (revised)
Camping in State Forest Parks

State Forest Parks:
Amamoor State Forest Park
Benarkin State Forest Park
Booloumba Creek State Forest Park
Camp Mountain State Forest Park
Cedar Grove State Forest Park
Charlie Moreland State Forest Park
Emu Creek State Forest Park
Jaxut State Forest Park
Lake Euramoo State Forest Park (revised)
Murray Falls State Forest Park (revised)
Peach Tree State Forest Park
Red Rock State Forest Park
Yarraman State Forest Park

Forest Drives:
Beerburrum Forest Drive (revised)
Danbulla Forest Drive
Imbil Forest Drive (revised)

Other:
Forestry Training Centre — Gympie

PERIODICALS

"Between the Leaves" (Departmental newsletter)

50483 — By Authority: S. R. HAMPSON, Govt. Printer, Qld.

Design, editing and photography by Organisational Services Branch, Division of Planning, Dept. of Forestry

Cover on 217 gsm Warren's Lustro Dull Saxony Finish
Inside text and appendices on 117 gsm Warrens's Lustro Dull Saxony Finish
Text set Avante Garde Book 9/10.14 ems ragged right. Sub-headings 14 pt. Demi bold