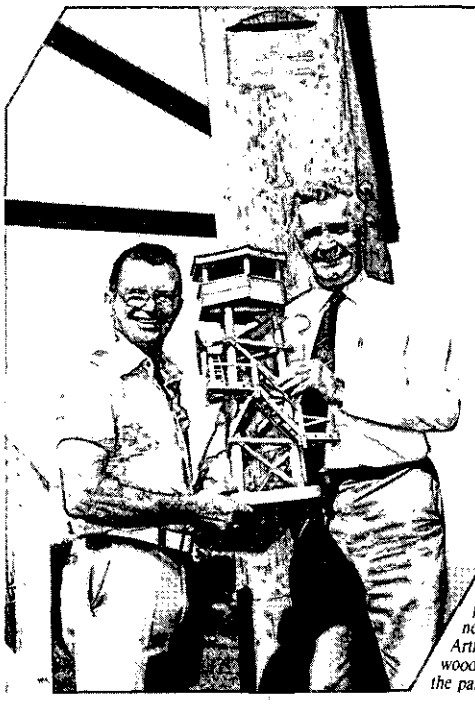

Forestry Minister Bill Glasson (right) presents a model of the Department's new Mt Wolvi fire tower to its builder, Arthur Leis, in commemoration of the many wooden fire towers he has constructed over the past 30 years.

Department of Forestry, Queensland

Annual Report 1986-87

The Annual Report & Financial statements of the Queensland Department of Forestry for the financial year ending 30 June 1987.

Presented to Parliament by command.

Front Cover Photo

Department of Forestry overseer at Mt Mee, Tony Greer, uses the Crown hammer on a harvested Sydney blue gum (Eucalyptus saligna) log to produce an imprint of a crown—signifying the timber's release from the Crown to the sawmiller.

The use of the Crown hammer on harvested logs in State Forests is an old forestry practice. Experienced measurers are issued with a Crown hammer with its own individual identifying number.

The Crown hammer consists of a crown stencil on one end and a broad arrow on the other. The broad arrow, when stencilled on a log, means the log is to remain the possession of the Crown.

At one time in State Forests every harvested log and its stump were crowned by forestry staff. However, this practice is under review. In some cases, hardwood logs are now being crowned in sawmill yards. This cuts out the time that a measurer need spend in a logged area locating, then crowning, harvested logs and stumps. Crowning is no longer carried out in plantations and some cypress pine areas.

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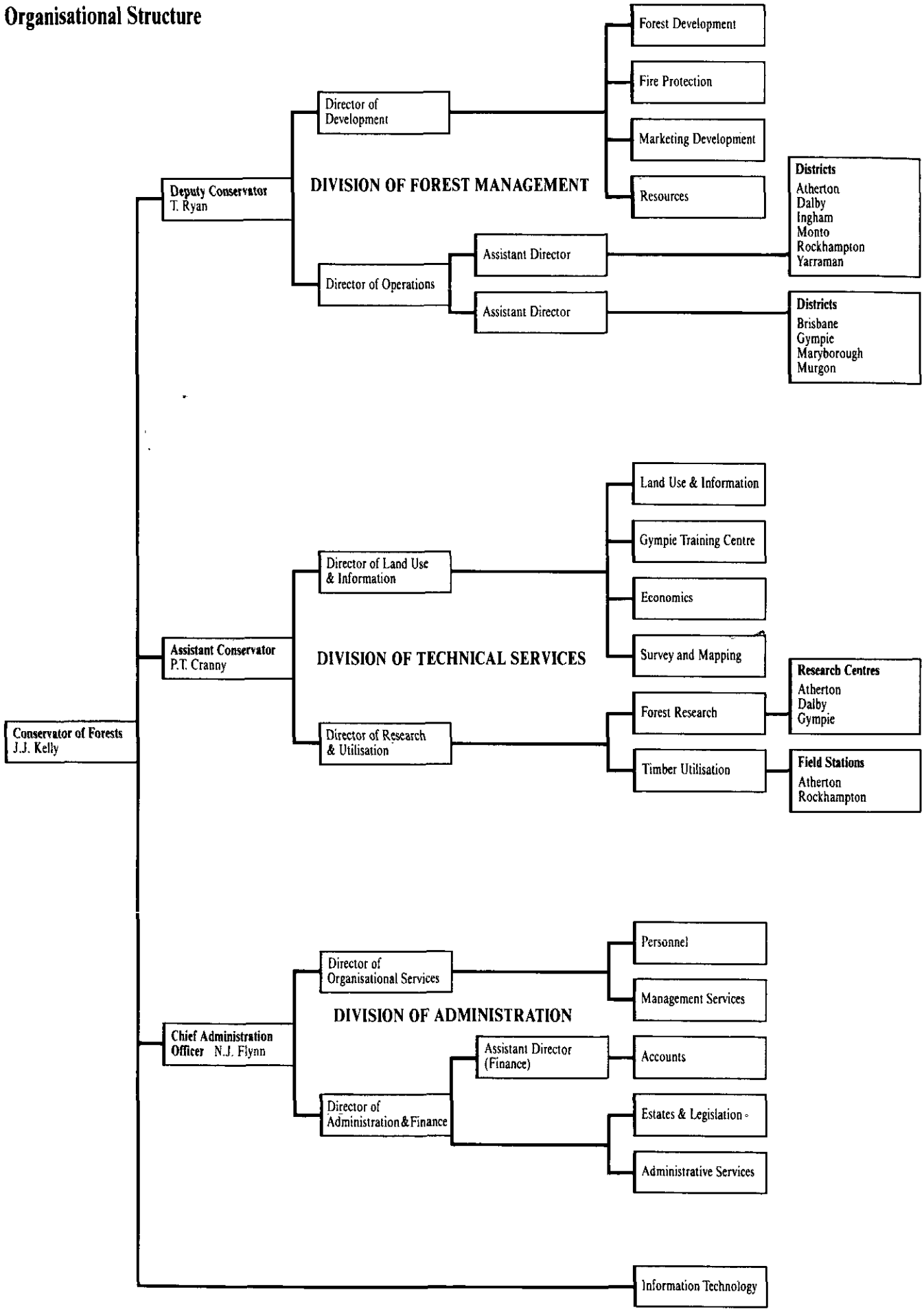
Organisational Structure



Contents

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

Dear Mr Glasson

I am pleased to report that during the 1986-87 financial year further significant progress was made towards achieving the State's long term development goals for the forestry and forest based industries.

A further 5274 hectares of coniferous plantations were established on State Forests, and another 533 hectares were replanted following final crop logging. The net total area of State coniferous plantations exceeded 158 000 hectares at the end of the year.

Receipts from the sale of forest products increased by a further 15% during the year, bringing them to a level 40% above that of two years ago, largely as a result of the recent initiation of large scale sales of final crop log timber from the plantation estate. Utilisation of this material will increase dramatically in the future. At the present time only the relatively small scale plantings of 30-50 years ago are becoming available for final harvest, while 65% of the planted area is 15 years of age or less, and has yet to produce any revenue.

At Gympie in south-east Queensland ACI Australia Ltd have commenced construction of a $73 million medium density fibreboard plant, which will utilise up to 300 000 cubic metres of thinnings per annum from the Tuan/Toolara plantations. The plant, which will be entirely dependent on the Crown plantation resource, and is expected to be in production by the end of 1988, will provide significant employment and flow on benefits to the Gympie/Maryborough region, and represents a major diversification within the Queensland Timber Industry.

Progress towards Departmental development goals is underpinned by vigorous programs of research and development, support and corporate services.

Due to the prodigious efforts of responsible staff, the Department has met on time all its obligations to date under the Regulatory Reform Act, a new Information Technology Branch is established and functioning, modern technology and management systems are being introduced or developed in all fields of activity, and a strategic planning process for the Department has been initiated. It is intended that this process will be completed and implementation commenced during 1987-88.

Towards the end of the year a major threat arose to the Department's well established and environmentally sound management of the north Queensland rainforests, and to the continuation of the industry which currently utilises logs from these forests on a sustainable basis.

I refer of course to the Prime Minister's announcement on 5 June 1987 that the Commonwealth would unilaterally proceed to nominate the wet tropics of north-east Queensland for World Heritage listing for the express purpose of preventing further logging within this area.

At the close of the year this matter was generating considerable controversy between those supporting the nomination and the northern timber industry, its employees and other groups whose interests might be prejudiced by the proposed listing.

This precipitate and unwarranted action by the Commonwealth may eventually have repercussive effects well beyond the north Queensland forests and the northern timber industry.

In presenting this report on the current Forestry situation in Queensland, I take the opportunity to sincerely thank all the staff of the Department for their continued loyalty and commendable industry throughout the year. I also extend to you as Minister my personal thanks and the appreciation of my staff for your very generous and consistent support in the many challenges we face at the present time.

Yours faithfully

(J.J. KELLY)

Introduction by the Conservator of Forests

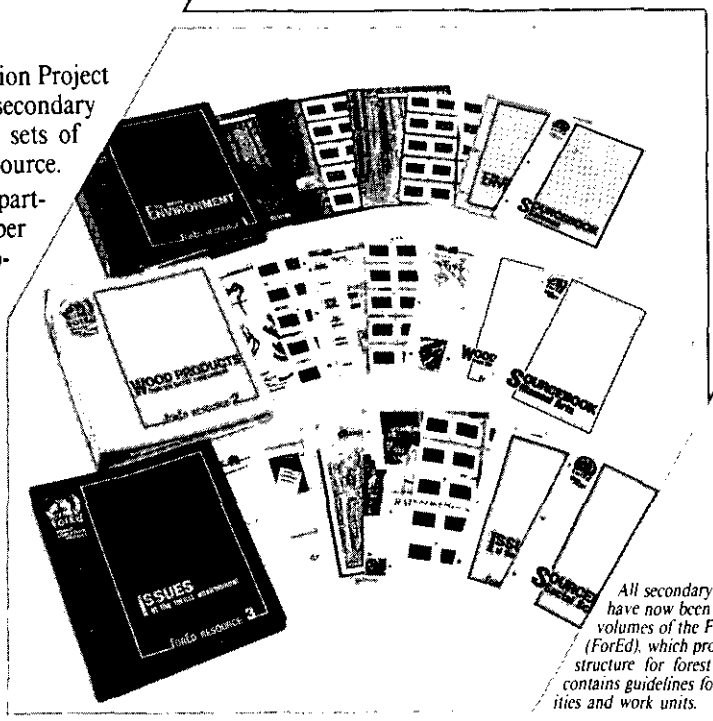
Conservator of Forests, Mr J. J. Kelly

ForEd Distribution

The third and final volume of the Forest Education Project (ForEd) was completed during the year, and all secondary schools in Queensland should now hold complete sets of what has been hailed as a landmark educational resource.

The $1 million project, jointly funded by the Departments of Forestry and Education and the Timber Research and Development Advisory Council, provides a comprehensive rationale for the inclusion of forest studies in school programs. The importance of the forest ecosystem is outlined, and a perspective on competing forest uses is given.

The ForEd framework provides an organisational structure for the content of forest studies curricula, and contains guidelines for the structure of activities and work units. The three resource folders contain sourcebooks for science, social science and manual arts teachers, and include numerous transparencies, slide sets and information sheets for students and teachers.



All secondary schools in Queensland have now been provided with all three volumes of the Forest Education Project (ForEd), which provides an organisational structure for forest studies curricula and contains guidelines for the structure of activities and work units.

All materials were developed by teachers in conjunction with Department of Education specialists, and all materials are designed to fit school curriculum and educational requirements. The Department of Forestry had a major role in producing ForEd materials and co-ordinating the project.

Rainforest Harvest Quota Revised

The basis for the harvesting of Queensland's northern rainforests following World War II was established when the J.D. McLean Timber Inquiry of 1949 determined that the removal of overmature trees within areas available for logging would continue, in the certain knowledge that this cut would ultimately reduce to the forests' sustainable yield capacity.

By 1978 it became appropriate to phase the harvest down to a sustainable yield level, and progressive reductions in cut have been achieved since.

As of 1 October 1986, north Queensland rainforest harvest quotas were reduced from 130 000 cubic metres a year to 60 000 cubic metres over the following five-year period. This yield is being obtained from 160 000 ha of rainforest zoned for selective harvesting (about 19% of north Queensland rainforest).

As progressive reductions in quotas have been imposed since 1978, the timber industry in north Queensland has undertaken responsible rationalisation through the amalgamation of sawmills, and upgrading processing methods and product value—all aimed at adaptation to a self-regenerating, sustained yield harvesting cycle.

Emphasis on Information Technology

During the year a comprehensive review of the computing function within the Department was completed. An information technology plan has been developed to ensure that future developments in the computing area are consistent with long term Departmental objectives, responsive to user requirements, and of a high technical standard. Central to this plan is the establishment of a new integrated management and organisational structure to formulate and execute information technology policy.

The management structure comprises an Information Technology Policy Committee to determine policy and priorities, Project Management Committees covering each major area of application, and multidisciplinary Project Teams with heavy user involvement.

The Information Technology Branch, with the Manager reporting directly to the Conservator, has been set up to advise the Information Technology Policy Committee on policy matters, to co-ordinate the use of computing resources in line with established priorities, to manage the acquisition, installation and use of computer hardware and software on a Departmental basis, and to provide a consultancy service to Departmental information technology users.

Major Hardwood Research Contract

In December 1986, the Department entered into a contract agreement to carry out research work on behalf of the Shell Company of Australia. Known as the Shell Hardwood Plantation Research and Development Project, this $1.65 million research endeavour establishes important co-operative links with both Shell and the Commonwealth Scientific and Industrial Research Organisation.

The project's aims are to determine the potential growth rate of selected native hardwood species when grown in plantations at or near sea level along the east coast of Australia. In Queensland, a total of 50 hectares will be established over a three-year period on selected sites on State Forests near Gympie and Ingham. In the 30 ha planted so far, the trees have received fertiliser treatments and are growing vigorously. A practical result of the project could be the development of hardwood plantations on a commercial basis.

Important Developments

Improved Nursery Techniques

This year saw the completion of a major research project aimed at improving the cost-effectiveness of hoop pine nursery techniques.

Current methods, although producing robust seedlings with high field survivals, have changed little since the 1920s. A two-year production cycle and a high labour input were seen as areas where more efficient operation could be achieved. The techniques identified during the research project and now being operationally developed, include the use of controlled-environment greenhouses, artificial potting media, soluble fertilisers and plastic containers. The principal benefits are reduced labour requirements and a one-year production cycle, with resultant cost savings. These results have application to the operational production not only of hoop pine seedlings, but also of exotic pines and hardwoods.

Five Year Summary

	1986-87	1985-86	1984-85	1983-84	1982-83
Crown Forest Estate					
State Forest—000s ha	3 969	3 930	3 918	3 903	3 869
Timber Reserve—000s ha	544	553	558	559	571
Plantation Forest Management					
Total area—000s ha	160	155	151	147	143
New area established ha	5 310	4 935	4 042	3 879	4 414
Replanted area—ha	533	876	385	169	416
Native Forest Management					
Area treated—ha	6 722	5 751	7 128	7 595	8 605
Nursery Stock Produced					
For Departmental use—000s	5 778	5 915	4 107	4 400	6 048
For Amenity and Forest Plot sales—000s	588	449	553	601	1 129
Hazard Reduction (Prescribed) Burning					
Native Forests—000s ha	158	128	154	76	100
Plantation—000s ha	7	13	10	20	14
Wildfires					
Number of fires	126	78	81	10	270
Area burnt—000s ha	44	15	19	—	197
Roads Constructed					
kilometres	276	292	365	253	282
Timber Cut on Crown Lands					
Native Forests—000s cubic metres	438	471	467	456	406
Plantation— 000s cubic metres	435	399	324	283	210
Expenditure					
Forestry Development Fund $000s	31 320	28 863	26 136	25 601	24 835
Consolidated Revenue Fund $000s	21 999	20 907	19 183	16 171	14 914
Loan Fund Recreation Facilities—Construction $000s	806	694	496	213	123
Forestry and Lumber Fund $000s*	18 230	16 907	15 335	13 989	12 567
Staff					
Wages	1 120	1 143	1 238	1 112	1 215
Salaries	653	646	645	645	645

* Excludes interest and redemption on loans and transfers to other Funds.

Minister for Lands, Forestry, Mapping and Surveying, Mr W. H. Glasson, M.L.A.

The Queensland Department of Forestry

Minister for Lands, Forestry, Mapping and Surveying

The Honourable W.H. Glasson, M.L.A.

Departmental Permanent Head and Accountable Officer Subject to the Minister

Mr J.J. Kelly

Acts Administered by the Department

Forestry Act 1959-1984

The Forestry Regulations of 1960

Sawmills Licensing Act 1936-1979

The Sawmills Licensing Regulations of 1965

Timber Users' Protection Act 1949-1972

The Timber Users' Protection Regulations of 1949

Diseases in Timber Act 1975

The Diseases in Timber Regulations of 1979

(The following are jointly administered with Queensland National Parks and Wildlife Service).

Fraser Island Public Access Act Regulations 1985

Fraser Island Recreation Area By-laws

Other Significant Responsibilities

Management of the Dongmen Forest Farm Project in the Peoples' Republic of China for the Australian Development Assistance Bureau

Statutory Bodies Constituted under the Forestry Act and Subject to the Minister

Timber Research and Development Advisory Council of South and Central Queensland

Timber Research and Development Advisory Council of North Queensland

Purpose Statement

To contribute to the long term economic and social needs of Queensland by

- managing State Forest lands for the sustainable production of forest based goods and services, marketing of forest products from Crown lands, and provision of extension services
- fostering wood based industries.

Goal Statement

Forest Management

(a) To maximise reserved Crown forest lands and manage these lands to meet to the extent possible on a sustainable basis community requirements for those goods, services and values provided by the forests.

(b) To encourage development and sound management of private forest resources.

Marketing

To provide supplies of forest products to industry at the highest sustainable level overall, while fostering development at appropriate regional centres of economic processing units capable of conversion of products to highest value end use.

Economic/Financial

(a) To sell forest products at price levels which give due regard to end product values and costs of production.

(b) To provide a reasonable return on public funds invested in plantation forestry and secure appropriate funding for the management of native forests in the long term.

Staffing/Human Resources

To develop a working environment which encourages initiative and innovation and which fosters personal and organizational development.

Research

To undertake cost effective forest and forest products oriented research necessary to provide effective and efficient forest management and to foster appropriate use of forest products.

Extension Services

To provide competent advice to the public and the timber industry on tree culture forest management, seasoning, preservation and utilization of wood and wood products.

Corporate Image

To project a corporate image that the Department is committed to providing Queensland with an efficient, competent, responsible, friendly and professional forest service, receptive to public needs, and operating to its charter in the long term public interest.

Division of Forest Management

The Division of Forest Management is directly responsible for the development and implementation of policies related to the growth and sale of forest products, the multiple use management of the forest estate, and the protection of the forest environment.

Staff within the Division are involved in the entire range of management and development activities, encompassing native forest treatment, plantation establishment and management, timber marketing, sawmills licensing, seed collection and sales, nursery operation, fire protection, construction works, forest estate inventory and the provision of recreational facilities.

Working within the guidelines contained in the two-part document "Forest Management in Queensland", published in 1984, the Division ensures that the Queensland timber industry has access to thinnings and final crop plantation material and selectively harvested native species—with a resulting increase in the domestic production of timber products.

PLANTATION ESTABLISHMENT

The first plantations established in Queensland were experimental plantings of hoop and bunya pines on Fraser Island in 1911 and at Brooloo in 1913, with these experiments being duplicated in the Mary Valley and the Atherton Tableland. By the 1920s, the growth of hoop pine was so successful that a major plantation program was begun. To date as seen in Appendix 7, 43 619 ha of hoop pine and 485 ha of bunya pine have been planted.

It was decided in the 1930s that a major product from these plantations should be valuable veneer logs. To ensure this aim, pruning of selected stems to produce quality knot free timber was begun in 1935 and continues to date.

The early plantations of native conifers are now old enough for final crop harvesting. During the year 221.2 ha of final crop hoop pine were harvested while 182 ha were replanted.

Exotic conifers are species introduced from another country. Initial introductions in the early 1900s were not very encouraging, but their successful establishment was necessary to supply Queensland with sufficient timber. Slash pine, loblolly pine, long leaf pine and radiata pine from the U.S.A. were further trialled in the 1920s in south-east Queensland. Slash pine proved very successful on the wallum land around Beerwah and radiata pine on the cooler, drier Granite Belt. Successful plantings of slash pine continued in the south-east of the State with major plantings in the Gympie-Maryborough area. As exotic pine planting expanded north it was found that Caribbean pine from Central America was more suitable than slash pine. Caribbean pine is now used in all plantings north of Maryborough.

The rate of planting increased during the late 1960s with the introduction of specialised machinery: ploughs for draining the swamps and machines for planting, and improved nursery and silvicultural techniques. The greatest rate of planting was reached in the 1960s and 1970s. Appendices six and seven show the area planted 1986-87 and the area to date.

Like hoop pine, exotic pines are ground pruned to 2.4 m and the selected 300 stems per ha are high-pruned two years later. During 1986-87 2676 ha were ground pruned and 2115 ha high pruned to 5.4 metres.

Great improvements have been made in the form and quality of exotic pines since their early introduction. Careful selection of quality trees and controlled pollination has resulted in improved seed. A hybrid between slash pine and Caribbean pine has been developed and exhibits the better qualities of both species. Plants of this superior hybrid produced by controlled pollination will be used next year in the routine plantation establishment program, especially on the wetter sites.

Both exotic and native conifer plantations are regularly thinned to produce millable timber, while final crop harvesting on both types of plantations has been underway for some years. This year, 666.5 ha of exotic conifer final crop were cut, and 351 ha were replanted. Combined final crop revenue from exotic and native conifer plantations totalled $8 464 622 for 1986-87.

SEED COLLECTION AND SALES

The year's Caribbean pine seed collection was successful, with 36.1 t of cone collected yielding 821 kg of seed. In addition 5.25 t of second generation slash pine x Honduras Caribbean pine hybrid cones were collected yielding 70 kg of seed. This year also saw the first collection of seed from a major first generation hybrid controlled pollination program. Nursery stock produced from this hybrid seed will be used to establish plantations with enhanced windfirmness on poorly drained sites.

In spite of severe damage from cyclone Winifred to Acacia mangium stands at Mission Beach and Tully, 156 kg of seed were collected. This collection was the largest to date. Collections were also made individually from 26 selected trees for sale to Brazil.

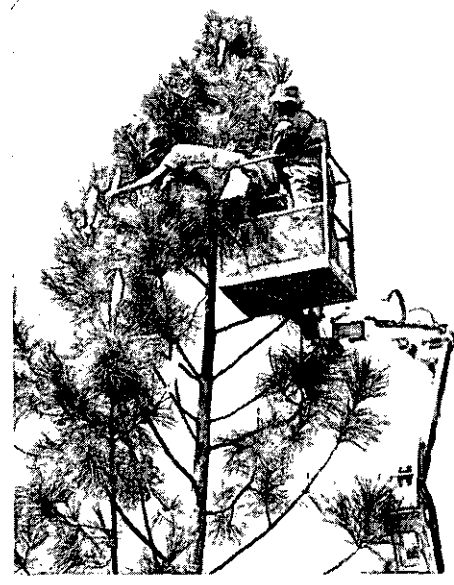
Deputy Conservator of Forests, Mr T. Ryan

Other major activities in the Department's seed collection program included:

- the collection of seed from southern silky oak throughout its natural range in Queensland; and
- the collection of seed from 100 rose gum select trees on the Windsor Tableland in north Queensland.

The rose gum seed was collected primarily for seed stand establishment at the Dongmen Project in the People's Republic of China.

Seed sales, locally and overseas have remained steady. Major overseas sales were made to Brazil, China, Hong Kong, Indonesia, Holland, Sweden, New Caledonia, Tahiti, Thailand, U.S.A., Uruguay, Vanuatu, and Venezeula. The predominance of tropical countries highlights the importance of Queensland's genetic resources to tropical forestry development. Total receipts for (domestic and international) seed sales amounted to $176 700.



Overseer Peter Hall and ganger John Pegg control pollinate a Caribbean pine on Byfield State Forest. Control pollination is undertaken to produce superior seed by applying specific pollens to developing conelets on selected trees.

An elevating platform for tree seed collection was also purchased and put into service during the year.

NURSERIES AND PLANT SALES

Departmental nurseries raised sufficient stock for the exotic and hoop pine planting programs. The development of this year's planting stock at Beerburrum and Toolara nurseries was very even due to the use of 'best clone' orchard seed. Larger sowings at Ingham and Beerburrum nurseries significantly reduced nursery costs per 1000 plants. Major developments included:

- The adoption of a bulk handling system for open root Caribbean pine at Toolara nursery, a system which incorporates mechanized lifting and cold storage of plants prior to despatch. Its introduction followed major trials and the construction of a cold room at the Toolara nursery.
- The use of pallets and containers has also allowed an increase in the numbers of plants that can be carried on a truck, with a consequent reduction in plant transport costs.
- The adoption of cold storage to transport open root Caribbean pine from Ingham nursery to Kuranda.
- Trials have been carried out in the production of container grown Caribbean pine stock as an alternative to open root stock for second rotation sites. Survival of container grown stock is less dependent on seasonal conditions, soil moisture and compaction than is open root stock. Work done to date has given promising results and the costs per established plant in second rotation, using container grown stock, are comparable with those for open root stock. Further trial work is proceeding on this topic.
- Hoop pine planting stock has been produced traditionally as a two-year crop in Departmental nurseries. Experimental work completed previously has shown that satisfactory stock can be container grown under favourable growing conditions in twelve months. Trials to produce 30 000 plants for outplanting at 12 months are current both in a Departmental shadehouse at Toolara and in a nursery owned by Queensland Agricultural College. It is likely from results to date that a significant reduction in costs of planting stock may be achieved.

The Department's amenity nurseries at Bunya, Salisbury and Dalby continue to cater for an increasing demand from the public and rural landholders. A significant part of this demand has resulted from landholders wishing to address problems of increasing soil salinity and land degradation.

SITE PREPARATION

Because the establishment and early growth of Caribbean pine is sensitive to waterlogging of the root zone, it is essential on many sites to provide a mound in order to get good survival and fast early growth of this species. This species is particularly sensitive to waterlogging immediately after outplanting.

On first rotation sites, mounds have been constructed by two passes of a Shearer plough. However, in site preparation before second rotation establishment, the presence of stumps and logging debris from first rotation trees makes the use of a Shearer plough impractical.

A Rome plough, imported from the U.S.A., has proved reasonably successful in establishing mounds in both first and second rotation areas. Only one pass of the plough is required to produce the mounds, consequently reducing preparation costs. However this plough has difficulty in handling the stumps remaining from the first rotation, and a locally designed and built plough is showing great promise. This plough features an individual stump jump action on each disc, and is able to negotiate the stumps. Both the new plough and the Rome ploughs are hauled by large four-wheel-drive tractors of 225 kW capacity rather than by the crawler tractors commonly used in this type of work.

After intensive testing, an Australian designed and built rake was purchased for raking the debris resulting from clear-felling operations. Modifications since made to the rake have improved its operation and reliability. In this instance the Department was able to assist the Queensland manufacturer in developing a machine for which export orders have now been obtained.

For areas which do not require mounding a blade plough has been designed and constructed. This plough incorporates a number of innovative features including a swivelling blade action for by-passing stumps and a coulter wheel for cutting debris.

In the preparation of sites for the second rotation of hoop pine, work has been directed towards the preparation of planting lanes through the debris where terrain is suitable. On the steeper areas where machines cannot be worked, it appears that logging debris will have to be burnt before replanting. Studies are underway to determine the relative merits of retaining the litter or burning, including the effect on site preparation and plant costs, weed control and the nutrient status of the site.

Determination of site preparation techniques for particular soil types and terrain have been enhanced by the purchase of tractor mounted soil testing equipment. This equipment will also be used in conjunction with hydrological investigations and to monitor soil compaction due to logging activities.

A two-part manual covering all known aspects of exotic pine site preparation was issued during the year. Current investigations are attempting to relate soil factors and site preparation methods with the taxa of planting stock for optimal performance.

NUTRITION

A deficiency of phosphorus is the major factor limiting the growth of exotic pines on coastal lowland soils. To correct this deficiency it is routine practice to apply 60 kg per ha phosphorus at or near planting. Lesser deficiencies of nitrogen have also been recognized. Where dense regrowth of heath species is anticipated, nitrogen is applied on an individual tree basis to nourish pine plants so that they can outgrow the competing heath. Poorly drained sandy soils with an accumulation of organic matter on the surface and at depth (podzols) contain little available copper. This can be manifest in the pines as severely malformed branches and stems. This problem is largely overcome by the addition of 5 kg per ha copper. Deficiencies of potassium on these sites are currently being documented and wider use of potassic fertilizer is foreshadowed.

During the year 1986-87 a total of 4029 ha of new plantation was fertilized with 60 kg per ha phosphorus and 513 ha received nitrogen and/or copper. Most of the phosphorus is applied broadcast from either fixed wing aircraft or helicopter. Where elements apart from phosphorus are used the fertilizer is generally applied by hand to individual trees to improve efficiency and minimize effect on weed growth. The application of fertilizer in bands along the planting line, using tractor mounted equipment developed for the sugar cane industry, was trialled extensively this year and has shown promise in reducing costs.

The program of refertilizing established exotic pine stands 10 years or more in age continued this year with 10 308 ha being aerially fertilized with 40 kg per ha phosphorus. Refertilizing activities have been confined to slash pine stands where a volume increment of 20% has been demonstrated. High analysis phosphorus fertilizer, triple superphosphate (19.4% P) has been used as the source of phosphorus but because of cost advantage a higher analysis mixed fertilizer, mono ammonium phosphate (13% N, 22% P) was used for the first time this year. In the mixed fertilizer 24 kg per ha nitrogen is supplied for very little additional cost.

WEED CONTROL

The declaration of the Rural Lands Protection Act on 1 July 1986 required a complete revision of the Department's control of declared noxious plants. New equipment was developed by fitting low volume sprinkler sprayers to off-road motorcycles. These, together with the roadside sprinkler sprayer units developed last year, have proved to be effective tools for the control of declared weeds.

Weed control is an integral part of the total site preparation process in exotic pine areas. This can be achieved in part by ploughing operations, and in part by the application of herbicides; but the timing of each operation is often critical, as one affects the other. Weed control prescriptions have been designed to take account of this interaction, while improved herbicide application was effected by the introduction of four additional tractor-mounted multi-boom units.

In hoop pine areas, objectives of both site protection and weed control are being achieved by a revised prescription involving the integrated use of cereal cover crops, kikuyu grass sowing and herbicide application with forest guns and sprinkler sprayers. The grass and cereal crops provide an effective ground cover for the inter-row space, and weed free growing space of one metre radius around each tree is maintained by chemical means.

A wide range of slashers has also been tested in both hoop and exotic pine areas. As a result of these tests, a forest mower has been purchased and a special heavy duty slasher was designed and constructed.

To ensure that the use of herbicides is safe and responsible, the Department has had for some years a Code of Practice covering their application. This code was revised during the year in light of recent developments in the herbicide field. As a further safety measure, a new and spill free herbicide tank module was developed for the cartage of mixtures to the field.

The safe disposal of used chemical containers has been a continuing problem for the Department. This has prompted the design and construction of a drum crusher which flattens containers of up to 200 litres capacity.

A ploughing profile resulting from a single pass of a new plough developed by a Rockhampton company. The ploughing was done over the tops of stumps left over from final crop harvesting. Caribbean pine seedlings will be planted along the top of the mound.

During the year under review, the Department's Weed Control Manual was also updated in line with new developments, and special training courses relating to the Manual's prescriptions were run for senior ranger staff from exotic pine areas—and for forest trainees. The usual field training program was also maintained.

NATIVE FORESTS

After commercial logging, cypress pine and hardwood forests may be silviculturally treated to improve growth rate and quality. Treatment is the removal of useless stems of commercial species as well as stems of non-commercial species competing with desirable species. It also involves the thinning of potentially merchantable stems to a given spacing. Where there is a shortage of regeneration in wet sclerophyll forest, the forest is often enriched by planting suitable species of young hardwood trees. The area of native forest treated is shown in Appendix 8.

Three new fire tankers—based on Mercedes Benz chassis—were designed and constructed by the Department during the year. They are stationed in the Gympie and Maryborough Districts.

Stems unsuitable for saw logs can be put to other uses. Particularly in the south-east part of the State, these stems are marketed and converted into such products as sleepers, landscape timber, sawn and split posts, rails and slabs and also into chips to produced hardboard. The economics depend on the volume of suitable raw material available per hectare, and on extraction and haulage costs. Many State Forests are too remote or rugged to make such an enterprise feasible. Each year 8000 to 9000 t (7000 m^3) are cut in the Yarraman district for conversion to hardboard. This volume however, is cut both from areas previously logged for mill logs, and from areas cleared for plantation establishment. In the Gympie area about 1900 m^3 are cut each year and sawn into fencing and landscape materials.

Native forests which are not treated silviculturally after logging nor cut over for hardboard raw material and other forest products, nevertheless benefit from logging. State Forests are treemarked for logging and this in itself is a treatment because it improves the quality and growth rate of the forest by removal of moribund and low quality stems and thinning of the better stems.

CONSTRUCTION WORKS

In conjunction with Hyne and Son Pty Ltd, who are constructing a major sawmill at Tuan, improvement to the road connecting the Tuan Forest Station and the Maryborough-Boonaroo Road has continued. A second section has been completed bringing the total length of sealed road to 7.25 km.

A bridge near Cardwell was repaired using thickened plywood for decking planks. This is a new technique now available to the Department, and it should be of particular benefit where it is necessary to minimise delays to logging and management traffic during repair works.

Buildings with a total floor area of 1100 m^2 were designed and constructed during the year. These include herbicide and fuel storage facilities which are progressively being updated.

Development, maintenance and management of recreation areas on Fraser Island have been enhanced by the establishment of a new Forest Station at Eurong. A residence, barracks, workshop, temporary office and associated services have been completed.

FIRE OCCURRENCE

The fire season was generally mild, except for a dry and windy September. A total of 126 fires costing $113 915 to suppress and covering 44 000 ha were recorded for the year, with 59 of these occurring in September.

The most expensive fires occurred in the Mt Nebo region west of Brisbane. Relights from previous hazard reduction burning created problems around the township of Mt Nebo and the fires were difficult to suppress because of the steep terrain and the general lack of protective measures around some of the houses. The local Bush Fire Brigades provided reliable and valued assistance to the Departmental officers in the suppression of the fires.

Seventeen fires occurred in plantations with a total of 63.9 ha being burnt. None of these were serious and damage was minimal.

HAZARD REDUCTION BURNING

The relatively short winter burning season resulted in a significant reduction in aerial ignition operations and 39 957 ha of native forests were burnt. A further 118 426 ha were burnt by ground crews.

In exotic pine plantation areas aerial ignition was used on 3041 ha, and 4049 ha were ignited by ground crews.

EQUIPMENT

The fabrication of three fire tankers was completed at the Departmental workshop in Gympie, and the tankers were commissioned in December by the Honourable W.H. Glasson, Minister for Lands, Forestry, Mapping and Surveying. The tankers are of the Department's own design—based on a Mercedes Benz chassis—and are stationed in the Gympie and Maryborough Districts.

Following the introduction of the three new fire tankers, refurbished fire tankers were assigned to Ingham District and Bundaberg Sub District.

Seven modular 1000 litre polythene slip-on units were supplied to the districts and have proved versatile and simple to use. Approximately 20 other tanks and 50 replacement pumps were also supplied to upgrade existing firefighting units.
A three legged wooden fire tower was constructed at Mt Wolvi to strengthen the protection system of the Toolara Sub District. The tower was officially opened by the Minister, and is the last wooden tower to be built by Mr Arthur Leis.

COMMUNICATIONS

Radio repeaters were installed at Passchendaele, Warwick and Mt Tamborine as part of the Brisbane District repeater system. A repeater was also installed at Byfield to upgrade radio facilities in Rockhampton District, and 117 new mobile sets were purchased for use in the areas covered by these repeaters.

VHF simplex base facilities were installed at Cooloola and Eurong to provide increased mobile coverage on Fraser Island. A UHF base was also provided at Eurong to enable contact with the Air Sea Rescue Organisation at Inskip and Double Island Point.

RECREATION

The publication of the booklet "Recreation in Forests" highlighted the Department's initiative to encourage people to explore State Forests as a recreational pursuit.

The popular camping areas throughout the state continue to attract a large number of visitors, but State Forests were also used for other recreational activities such as canoeing, white water rafting, abseiling, horse riding, driving and hiking during the past year. Approximately 1 200 000 visitors accessed State Forests for recreation in 1986-87.

To cater for this increased public use of State Forests, existing recreation facilities have been upgraded at Tully, Atherton, Benarkin and Kenilworth State Forests.

The design and construction of composting toilet systems at Goomburra, Beerburrum, Fraser Island, Jimna and Kenilworth were completed during the year. The composting system eliminates potential pollution problems from overloaded septic systems during peak holiday periods.

New picnic facilities were built, and the upgrading and construction of walking tracks, hiking trails and swimming areas was continued.

The increasing use of State Forest Parks has caused damage to some areas. A camping permit system is being designed to regulate usage and protect parks from over use.

A recreation workshop held in September provided field staff with information on recreation planning, design and park management.

WOODWORKS, THE FORESTRY AND TIMBER MUSEUM

The location of this museum on the Bruce Highway outside Gympie is ideal for attracting visitors. This financial year WoodWorks attracted 12 905 visitors including school and other organised groups, with an increasing number of visitors from overseas.

WoodWorks has become well established as a tourist, education and information centre and now provides a range of interests including a video theatre showing forestry past and present. A keen interest is shown in the demonstrations given in the blacksmith shop and a shop selling books and souvenirs does a steady trade, especially in locally made woodturned articles. A dramatic increase in visitations is expected when a steam driven sawmill begins operating later in 1987.

PLANTATION RESOURCES

Updated field inventory data were utilised to provide revised information on thinnings log availability from softwood plantations in the Elliott River, Murgon, Jimna, Yarraman and Benarkin areas. Calculations aimed at determining the volumes of final crop material available over the next 10-15 years were completed for the Atherton, Kuranda, Murgon and Jimna areas.

The data for the Yarraman, Murgon, Monto and Imbil hoop pine plantations were reviewed using sophisticated modelling systems in order to forecast the long term implications of present forest management systems.

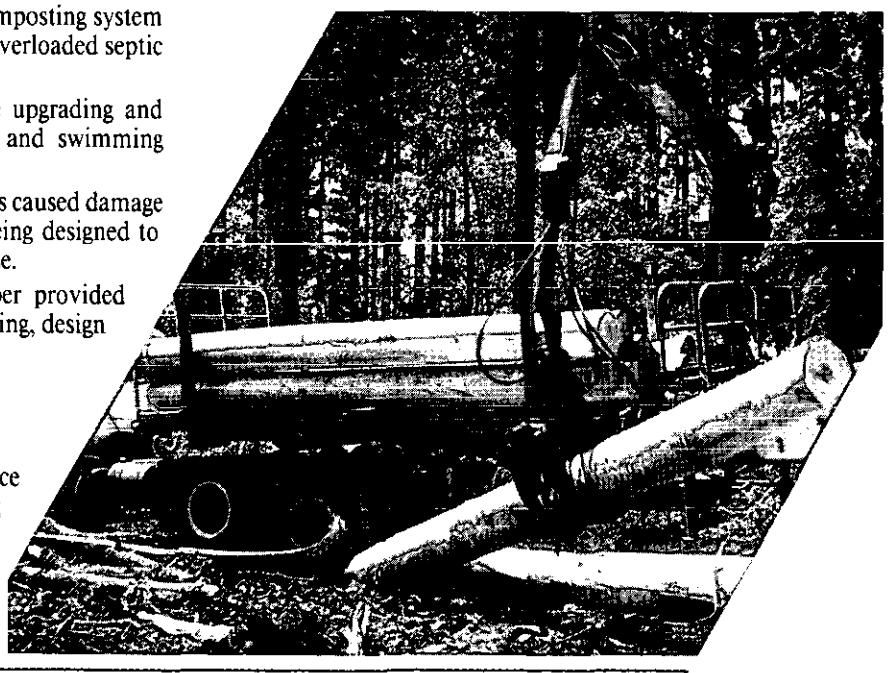
The effects of cyclone Winifred on plantations in north Queensland were examined in order to supply information on likely salvage, thinning and clearfall volumes available for the establishment of a softwood-using industry in the region.

Revised growth plot management procedures have been introduced and data access has been simplified, leading to improved growth model development and monitoring of plantation growth.

NATIVE FOREST RESOURCES

Review of the allowable cut for rainforests between Cardwell and Babinda was carried out following damage caused by tropical cyclone Winifred, which crossed the coast near Innisfail in February 1986.

Exhaustive computer analysis of data collected from the Landsat earth resources satellite has been carried out in conjunction with the Department of Mapping and Surveying to produce maps showing the location and extent of damage.



Plantation-grown hoop pine logs being loaded in Yarraman District. These logs exhibit the desirable qualities of uniform size and straightness associated with plantation-grown trees, and their unblemished appearance indicates the benefits of high-pruning to produce clear wood.

Information from these maps was used in conjunction with field inventory data as input to the rainforest growth and yield model to assess the impact on future timber yields. Revised saw log allocations have now been advised to the two mills affected.

Studies are planned to take into account new data on the recovery of stems damaged by the cyclone, and the operational and silvicultural restrictions in cyclone damaged forest. Further review of the allowable cut will be conducted in 1991 following these studies.

A review of Crown saw log allocations in the central Queensland region was also carried out during the year. It was determined that the established allowable cuts should continue.

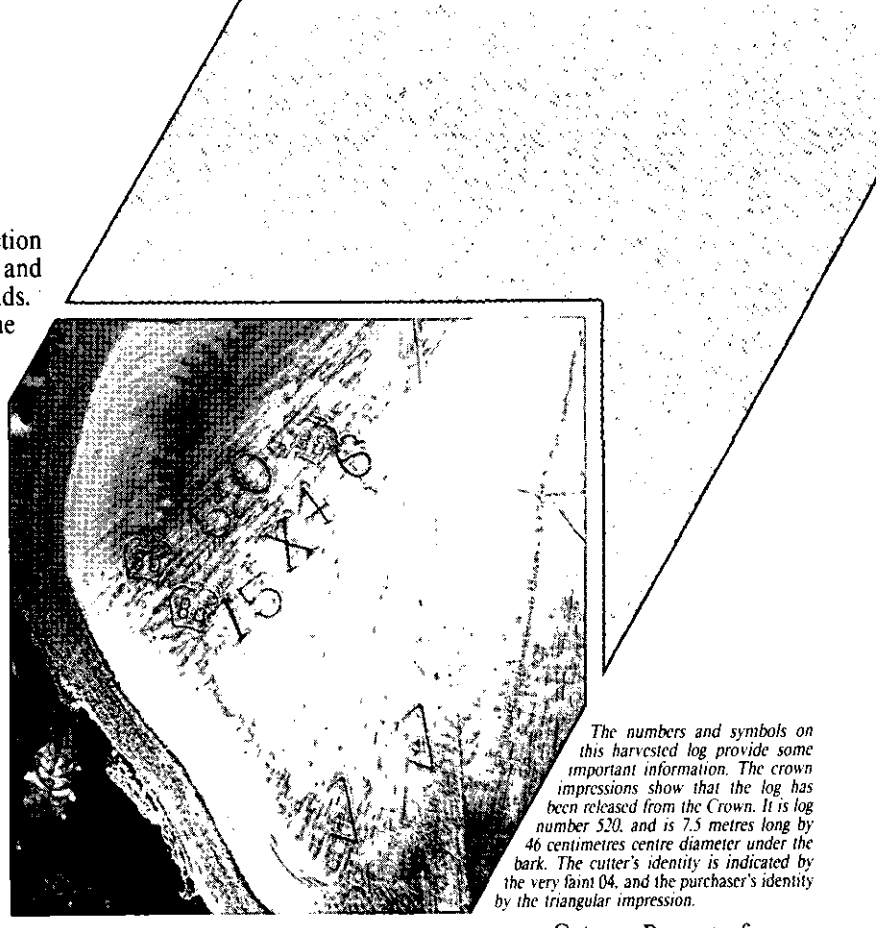
Native Forest Valuation—Tenure Conversion

The program of timber valuation on Crown leasehold lands under application for conversion of tenure to freehold continued.

New applications for the year numbered 83.

The overall position at 30 June 1987 was:

Applications	Number	Area (hectares)
Awaiting field assessment	46	348 020
Being processed	33	160 799
Withdrawn by applicants	463	1 489 741
Completed	4 159	13 867 991
Total since inception up to 30.6.87	4 701	15 866 551
Totals at 30.6.86	4 618	15 322 758



The numbers and symbols on this harvested log provide some important information. The crown impressions show that the log has been released from the Crown. It is log number 520, and is 7.5 metres long by 46 centimetres centre diameter under the bark. The cutter's identity is indicated by the very faint 04, and the purchaser's identity by the triangular impression.

SYSTEMS DEVELOPMENT

A major review of the forest inventory and yield prediction methodology used for native forest resources work was carried out by a Departmental task force. New procedures recommended by the task force are expected to result in greater efficiency in the collection of resource information on the native forest estate, and to provide better information on growth and yields as the basis for managing these forests.

Detailed design has commenced on a computer system which will simulate the growth of trees under diverse conditions, and simulate the harvesting and processing of these trees into products such as veneer, sawn timber, round timber and pulpwood. The system, to be known as PLATIPUS (for Plantation Timber Production and Utilisation System), will not only predict the volume of product produced, but will also predict the quality, and thus allow realistic valuation of the final product. As PLATIPUS is an integrated system, it will allow the intrinsic value of any tree to be computed, and will facilitate the financial evaluation of all forest management practices. PLATIPUS will be linked to the plantation inventory data base, and will thus allow the consequences of management decisions to be assessed for the entire forest estate.

TIMBER MARKETING

Timber is sold in six major categories. The table below describes the categories and shows the volume of timber in cubic metres allocated to timber mills for a twelve month period, the volume of timber cut in 1986-87, and the percentage increase or decrease compared with the volume of timber cut in 1985-86.

Category	Allocation m^3	Cut 1986-87 m^3	Percent of change over 1985-86
Forest hardwoods	210 830	217 285	−9
Cypress pine	155 645	102 520	−12
Thinnings from native and exotic pine plantations	228 499	112 348	−64
Final crop timber	265 030	226 999	+30
Rainforest hardwoods for structural and cabinet-wood purposes	65 008	89 455	−6
Native pines, including hoop, bunya and kauri	N/A	21 972	−8

Note: the north Queensland rainforest hardwoods allocation was reduced from 130 000 m^3 to 60 000 m^3 on 1 October 1986.

The total Crown cut of milling timber and pulpwood was 872 185 m^3 compared to 870 301 m^3 in 1985/86. The 226 999 m^3 of final crop logging of plantations was composed of 142 334 m^3 of exotic pine and 84 665 m^3 of hoop pine. This is comparable with 52 304 m^3 of hoop pine and 107 623 m^3 of exotic pine in 1985/86.

Total receipts from sales of forest products amounted to $21 967 800 compared to $19 135 493 last year.

NEW SALES

A milestone in the history of plantation management in Queensland has been reached with recent sales of locally-grown softwoods which raised the total commitment of plantation timbers from State Forests above the one million cubic metres per year mark for the first time. Additional parcels of plantation timbers will continue to be offered for sale as the plantation estate expands and matures.

Some of the more significant activities during the year included:

- A long standing goal of forest management in the Gympie/Maryborough region has been achieved with the sale of 300 000 m^3 per year of plantation pulpwood thinnings from Tuan and Toolara State Forests. To utilise this resource, ACI Australia Ltd plans to build a $73 million medium density fibreboard (MDF) plant near Gympie, providing a major new decentralised industry for the Gympie-Wide Bay region.

- Offers of sales of 130 000 m^3 per year of final crop hoop pine plantation timber in the Murgon and Mary Valley areas have been forwarded to successful applicants following an invitation for propositions last year.
- Following the lapse of a previous proposition call for 56 000 m^3 of cyclone salvage at Cardwell, interest is being sought in a new sale offer of final crop and thinnings material from Atherton and Cardwell. The timber parcel includes 10 000 m^3 per year of final crop and 6 000 m^3 per year of thinnings over 20 years from the Atherton Tableland and 5 000 m^3 per year of exotic pine plantation thinnings over 10 years from Cardwell.
- 176 000 m^3 of plantation pine, unsuitable for use by the Queensland timber industry, have provided the basis for the State's first softwood log export industry. The surplus exotic pine logs from Byfield State Forest are being shipped through Port Alma near Rockhampton by Wood Marketing Ltd.
- Sandalwood, a prized species on Chinese and south-east Asian markets, occurs in commercial quantities over substantial areas of northern and western Queensland. Rising overseas prices have caused an upsurge in demand for Australian sandalwood and the following initiatives have been formulated in response to the increasing interest in the Queensland resource of this species:
  - — collection of data on the occurrence and silvicultural status of sandalwood in Queensland;
  - — formulation of a sales policy to enable stabilisation of the industry and to ensure sound, sustainable management; and
  - — a call for propositions for the purchase and harvesting of 1000 t of sandalwood per year for 20 years, to be harvested from approved Crown lands in Queensland.
- Numerous trees species of inland Queensland have proved unsuitable for normal sawmilling purposes and significant volumes are being destroyed in agricultural land clearing operations. Export markets are being developed for some of these species as specialist furniture timbers. To assist the development of these markets, a sale has been negotiated for 15 000 t per year of selected, non-endangered species from inland Queensland over a period of five years.

MARKETING DEVELOPMENT PROJECTS

- An alternative to the usual practice on forest hardwood sales of measuring and crowning "at stump" was introduced in late 1986 following two years of trials by the Queensland Hardwood Harvesting Research Committee. The new system of "in yard" measuring will provide greater flexibility for purchasers in wood procurement operations, with particular advantages for wet weather scheduling and operating isolated sales. Departmental approval and a cutter accreditation scheme are integral to the implementation of this system.
- In response to the report of the Committee of Review of Business Regulations and the Regulatory Reform Act of 1986, regulations under the Forestry Act 1959-1984 have been reviewed in conjunction with the policies and procedures presently adopted for the sale and disposal of forest products and quarry materials. From 1 July 1987 current sales permit documents prescribed in the regulations will be deleted and replaced by simplified procedures and forms. In addition, the regulations will be replaced by a single document entitled "Terms and Conditions relating to the Getting of Forest Products and Quarry Materials".
- Following the acceptance of an Information Technology Plan Report prepared by computer consultants for the Department, branch staff are managing the development of two major computer systems considered to have sound economic justification. A Forestry Marketing Information System (FORMIS) will replace the ageing Timber Sales System which is no longer adequate for the Department's needs. The Pricing Update and Review System (PURS) will replace current manual systems for updating forest products prices and will be integrated with FORMIS.
- Review of marketing policies and procedures continued with the revision of hardwood treemarking guidelines, south Queensland hardwood and scrubwood measuring rules and rainforest treemarking guidelines.

PRICING

The Department endeavours to maintain the real value of revenue from forest products in accordance with movements in the Consumer Price Index. However, in recognition of difficult trading conditions within the timber industry, resulting largely from a downturn in home building, Crown saw log royalty and stumpage price increases of 8.1% due on 1 July 1986 were delayed until 1 January 1987. Prices for other miscellaneous forest products rose 8.1% from 1 July 1986.

SAWMILLS LICENSING

Whilst rationalisation and amalgamation within the timber industry is an ongoing process which has resulted in a general stabilisation in the number of processing plants, this past year has seen a slight increase in the number of processing plants.

During the year, five new licences were issued for the operation of Crown timber. Of these licences, one was issued for the processing of cyclone damaged plantation timber whilst three were issued for timber obtained under sale and Forest Service Orders for the production of sleepers. One was issued for the production of furniture and other speciality timber uses such as billiard cues and golf club heads, utilising inland species of Queensland timber mainly of *Acacia* species.

Nine sawmill licences were issued for the utilisation of private timber being salvaged from land clearing operations.

Eight sawmill licences were cancelled at the request of the licencees because they no longer intended operating their sawmills.

Currently there are 254 general purpose, 68 restricted licence, two sleeper residue and 30 portable mills licensed.

Review of the Sawmills Licensing legislation administered by the Department is proceeding. In discussions with organisations representative of the timber industry, general agreement has been reached that the existing legislation is not effective in achieving its stated purpose. Industry has accepted in principle that the existing Act should be repealed and replaced by less restrictive legislation. In order to reduce any significant adverse impact, industry sought a transitional period to prepare for these changed circumstances. Accordingly, an exemption to 30 September 1989 from the provisions of the Regulatory Reform Act in respect of this legislation was sought and was subsequently granted by Executive Council on 12 March 1987.

Assistant Conservator of Forests, Mr P. T. Cranny

Division of Technical Services

The Division of Technical Services provides a sound technical basis for forest management, so that the Department and the forest industry as a whole can better serve the State and its people.

Land use planning forms the basis for the current and ongoing management of the forest estate. Planning includes provision for the multiple use of State Forest areas for timber production, recreation, mining, quarrying and scientific research activities all within stringent environmental guidelines.

The Division's research activities provide the basis for optimising the productive management of the forest estate through biological and silvicultural experimentation, while research directed towards the utilization and preservation of timber assists the timber industry and timber using public. Research findings are broadly disseminated within the Department, to external organisations and to the public.

High quality survey and mapping capabilities are integral to the land use planning function, although they also play a wider role in the day-to-day management of the forest estate.

Because the Department has a responsibility to keep the public informed of its objectives and achievements, considerable effort is directed towards both broad-based and detailed information activities.

Economic data and forecasts prepared by the Division are vital to effective forward planning, as the early identification of trends in timber consumption can be related to the expected productivity of the forest estate.

The Division also operates the Department's Gympie Training Centre. Graduates of the Centre's two-year course are awarded the Associate Diploma of Applied Science (Forestry).

LAND USE

The investigation of the forestry potential of land and the provision of a forestry viewpoint and input into land use planning are major strategies in the implementation of the Department's goal statement for forest management, as set out earlier in this Report.

In conjunction with other State Government Departments, vacant Crown lands north of Maryborough were investigated for their suitability for forestry, sugar cane and conservation. The Department is interested in reserving suitable sections of these areas to expand the softwood plantations at nearby Wongi. However, there are salinity problems in these areas which may severely limit their potential for softwood production.

In order to facilitate the accuracy of forest management information contained in town plans and regional plans, the Department has contacted all 87 shires and city councils with State Forests and Timber Reserves within their boundaries. Local authorities have been offered up-to-date data on forestry areas, as well as general forestry management information.

After a very favourable response from local authorities, the Department is continuing negotiations with the Department of Local Government in order to develop consistent zoning procedures for State Forests and Timber Reserves. Eventually, consideration will be given to modifying Management Priority Area Zoning on State Forests and Timber Reserves so that is is compatible with local authorities' zoning.

Continuing high gold prices have led to a marked increase in the number of mining lease applications and authorities to prospect on State Forests and Timber Reserves.

The Department's management objectives are aimed at ensuring that mining activities will have minimal disruptive effects on other forest users and will have minimal long-term effects on the forest environment. The objectives also require that mining activities observe environmental safeguards, and that disturbed areas are effectively rehabilitated. The co-operation extended by the Department of Mines in meeting these objectives is gratefully acknowledged.

In connection with a proposal to export hardwood wood chips from State Forest areas in central Queensland through the Port of Gladstone, the Department undertook the role of responsible authority in terms of the "State Development and Public Works Organisation Act 1971-1981". Terms of reference and guidelines for an impact assessment study were prepared and issued after consultation with other advisory bodies and interested organisations and groups.

In conjunction with the Queensland National Parks and Wildlife Service, a considerable amount of work was undertaken in preparing a Queensland Government submission to the Commonwealth Government in connection with the National Rainforest Conservation Program. Prior to the Prime Minister's announcement of 5 June of a proposal to nominate rainforest areas of north-east Queensland for World Heritage listing, the Commonwealth suspended negotiations relative to this Queensland Government submission. At the time this Report was prepared, no agreement on this matter had been reached with the Commonwealth Government. The continuance of rainforest harvesting under the strict environmental and logging guidelines in force is a firm Queensland Government policy, as is opposition to World Heritage listing for any further areas of the State.

An area of concern is the misuse of the National Estate Register to attempt to block forest operations. Nominations of forest areas for listing on the Register in many cases stretch to the limits the concept of heritage. It is difficult to see how the Australian Heritage Commission can make any full assessment of the merits or otherwise of a nomination in the time between nomination and acceptance for listing on the Register. It is worth noting that no State Government objection to the listing of a forest area on the Register has been successful.

Management Plans

The Department's first two State Forest Group Management Plans, for the Kroombit Tops and Pomona Groups, received favourable comment from interested groups following periods of public review prior to release. Public comment was an important consideration in formulating the final plans.

A total of 52 Management Plans is envisaged for the series, which will provide a comprehensive framework for land use planning of forestry lands.

Draft management plans covering Beerburrum, Tully and Dan Dan Forest Groups are now ready for public comment. The Tuan, Taroom, Granite Creek and Monto plans are in the process of being edited.

ECONOMICS

Economics branch activity in 1986/87 was taken up largely with various microeconomic analyses and reports on Departmental operations. Typical activities were:

- the development of a cost/benefit study of a computer mapping facility;
- the design and implementation of a program management system for the Gympie Training Centre, and
- the computerisation of Crown timber statistics.

The branch conducted two surveys of economic conditions and activities of relevance to forestry and the forest products industries during the year. A statistical summary was prepared and this was circulated to industry personnel.

Dwelling approval numbers in 1986/87 were the lowest recorded for several years. This was despite the fact that the level of finance made available for owner occupation—particularly from savings bank sources—increased during the year. It appears that an increased percentage of the funds made available for housing was directed to the purchase of existing dwellings.

A brief analysis was made of the link between the consumption of sawn timber and the demand for housing. The results of this analysis broadly supported recent Indicative Planning Council forecasts suggesting a medium to long term slowdown in the rate of new dwelling commencements in Queensland.

On a brighter note the continuing low Australian dollar permitted the local industry to compete more effectively against imports to capture a greater share of the domestic timber market.

SURVEY AND MAPPING

Surveys

Surveys are conducted in connection with land acquisition, boundary disputes, for mapping, and area calculation purposes.

During the year, six property boundary surveys were completed, four by private survey consultants. Three Forest Entitlement Area surveys were also completed.

Several major items of surveying equipment were purchased, including a combination theodolite and electronic distance measuring unit for Yarraman District and an electronic survey data recorder. The data recorder will be used to investigate methods of transmitting survey data from field locations to the Department's head office via telephone line.

Mapping

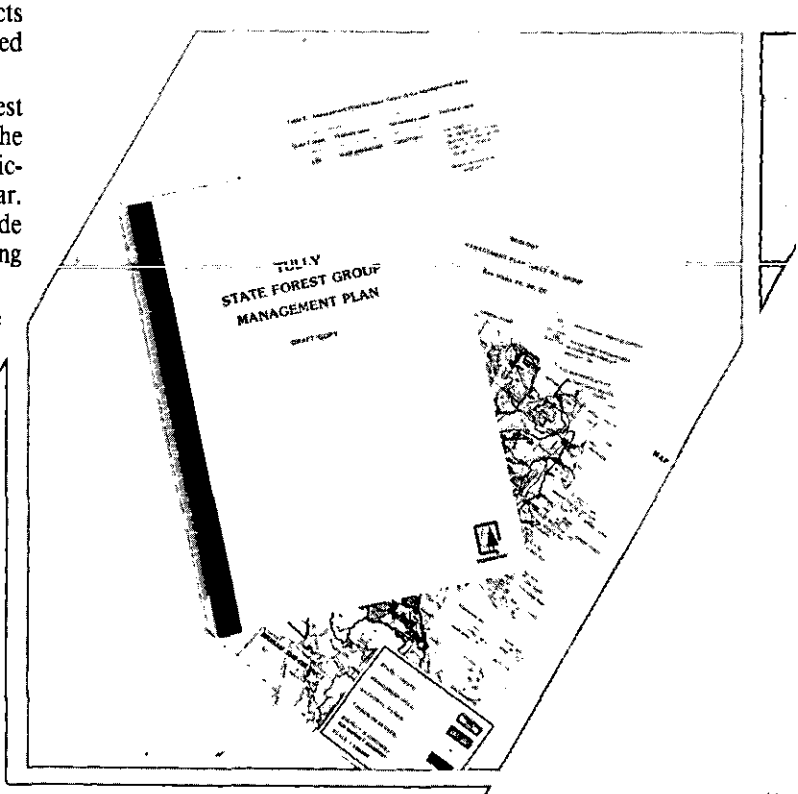
The main function of the Branch is the preparation of maps for forest management, with 24 new editions of maps published.

Maps are also sold to the public, mainly for recreation purposes, through SUNMAP centres and agencies and the Department's offices. A total of 4952 maps to a value of $20 343 were sold during the year.

The Branch produced several maps by computer. Computer methods indicate a time saving of some 40% compared with manual methods of compilation.

In liaison with the State Government Computer Centre and several other Government Departments, evaluations were conducted on a number of software packages which may be suitable for a computer mapping and geographic information management system. Purchase of a software package is scheduled for late 1987. A computer mapping system can be maintained more economically than the existing manual system. To achieve this system however, the investment of considerable funds in additional hardware is required.

A program to train cartographers in computer mapping methods is continuing.



A series of Management Plans will provide a comprehensive framework for land use planning on over 50 State Forest groups throughout Queensland.

Seventy-millimetre aerial photography continues to provide extensive mapping information, particularly in plantation areas. Approximately 3000 frames were printed during the year.

Research into analytical stereo plotters to obtain horizontal and vertical data from seventy millimetre aerial photography was undertaken jointly with the Surveying Department of the Queensland Institute of Technology. Results to date are promising, particularly with the trend towards computer mapping.

Cartographic Services

Generally, each State Forest and Timber Reserve declared under the Forestry Act has a plan delineating its boundary prepared by the Department of Mapping and Surveying. Thirty-three new or amended plans were gazetted during the year. Cartographic Services also prepares diagrams for Specialized Management Areas, leasing, permits, land dealings etc. and supplies the Department's district officers with maps for their day to day operations.

The Department purchased a XEROX 2080 plan printer which was previously leased. The plan printer facilitates the supply of maps, plans and large documents to staff and is also used by numerous other State Government Departments. Revenue from printing of plans for Government Departments totalled $97 564.

Selected Departmental publications, manuals and research materials are also prepared by Cartographic Services.

The first two of a series of six recreational booklets, designed to facilitate the rapidly growing public use of State Forest Parks and other recreation areas managed by the Department.

INFORMATION SERVICES

Community Extension

The Forest Education Project (ForEd) has now been distributed to all seconday schools throughout Queensland. More than 120 direct sales of ForEd have been made, including several to interstate and overseas purchasers.

At Hawaii in October 1986, the Pacific Circle Consortium (an education program of the Organisation for Economic Co-operation and Development) adopted the ForEd framework as the basis for developing forestry materials from nine participating states and countries including Alaska, Oregon, Fiji, British Columbia, Japan, New Zealand, Tasmania, Queensland and Hawaii. This event will allow the further easy assimilation of outside materials into the Queensland curriculum at low cost.

"The Growing Force—Managing Queensland's Forests", a 23-minute video documentary, was released to all Queensland television stations. Two Departmental officers briefed coastal television and radio stations on "The Growing Force" and other aspects of forestry operations. The video has been shown in whole or part on some regional television stations.

The Department launched a low-key print advertising campaign in metropolitan and major provincial daily papers to promote wider use and appreciation of State Forests. An address on tree dieback was also presented to the Queensland Rural Press Club.

"Recreation in Queensland Forests" a full colour booklet was produced as the Department's "flagship" of recreation brochures. It introduces the public to the myriad and free recreation possibilities inherent in forests.

In response to an increased public demand for information on forest based recreation, the Department also initiated a revision and expansion of its range of free pamphlets providing details of specific recreation areas.

Feedback by way of a professionally conducted survey in January 1987 shows that information activities are on the right track, but there is room for significant expansion—particularly in broadcast television.

Library

The library service continued to be in high demand this year with an 80% increase in usage of computer facilities for literature searches.

Staffing responsibility for the library was transferred from the State Library of Queensland to the Department during the year. This has resulted in some staff changes.

The Indooroopilly Branch Library has now established a viable reference collection supplying 55% of loan requests from this collection. The next stage of development will be the organisation of the reprint collection for computerisation. Staffing of this library is currently on a part-time basis with additional support from Central Library.

Research officers and Training Centre personnel made good use of the Gympie Branch Library resources throughout the year. Over 650 reference enquiries were answered by library staff at Gympie throughout the year.

Displays

The Department is now involved in over thirty displays, open days and public events each year.

On 30 August 1986 the Conservator jointly opened the now-famous Amamoor Music Muster. A crowd of over 30 000 people was recorded at this two-day event which represents a new horizon in the recreational use of State Forest Parks.

For the first time, a large co-opertive display on the theme "Farming now for the Future" was mounted by the Departments of Primary Industries, and Forestry and the National Parks and Wildlife Service at FarmFest in Toowoomba. It represented a concerted effort to alert farmers to the growing menace of land degradation.

Agroforestry is by far the most popular forestry theme with landholders in south-east and central Queensland. A highly successful Forestry advisory booth at Barcaldine's Westech Expo in September 1986 led to an invitation to Longreach's Garden Expo in April 1987. Plant sales in excess of $1000 over two days indicated the determination of the landholders in this region to utilise trees for shade and shelter.

The Department's 1986 RNA display proved one of the most attractive at the Brisbane Show with its restful rainforest setting.

For the first time, the Department introduced its amenity planting and afforestation schemes at the timber industry's "Living and Working with Wood" exhibition held in May 1987 at the new RNA pavilion.

One of the Department's most succesful open days was held at Ingham. The crowd of over 2000 people included visitors from Bowen and Cairns, as well as a cross section of interstate and overseas tourists.

Overseas Visitors

Eighty overseas visitors were welcomed and shown Departmental methods, practices, and research techniques during the year. Enormous interest in nursery practices, tree breeding and seed provenances is being displayed, by Japan and China in particular.

Japan currently has a dearth of information on third-world and semi-arid agroforestry and is intensively examining Queensland practices with a view to setting up consultancies in Africa and elsewhere. Much of the Chinese interest has been stimulated by the Department's highly successful project team who are conducting eucalyptus plantation trials at Dongmen in south-east China.

As well as Japan and China, other countries sponsoring visitors were Brunei, Fiji, Malaysia, Netherlands, Sri Lanka, Tonga, Vietnam, U.S.A., Burma and Zambia.

GYMPIE TRAINING CENTRE

Sixteen students graduated from the Training Centre with Associate Diplomas of Applied Science (Forestry) in June. These graduates are now working as Overseers in a wide range of locations throughout the State. The award for successful completion of the course has been recently upgraded to Associate Diploma status, from the previous Fellowship Certificate. No major changes were required in the course structure.

A new group of 20 students started the Forestry training course in March. These students are a much older group (average age of 23½ years compared to 19 years in the previous group) and come to the course with a wide range of experience, mostly in outdoor pursuits. The popularity of the course continues, with 550 applicants for the 1987 intake—even though the applications were invited much later than usual. Two students from the Fiji Pine Commission have also joined the group.

A more individual approach to teaching, based on the principles of adult learning, is being developed for the Associate Diploma course. This approach should also be very useful for inservice training courses.

The reputation of the Training Centre in the Pacific and South East Asian regions continues to grow. There are regular requests for short courses in specific subject areas. Most of these are met by giving on-the-job training in the Gympie area using the expertise of staff in the Research Centre and the District.

FOREST RESEARCH

Fast-Growing Australian Hardwoods

Shell Australia, the Queensland Department of Forestry and the Commonwealth Scientific and Industrial Research Organisation (C.S.I.R.O.) have joined forces in a research and development project funded by Shell to find a method of growing commercially viable plantations of Australian hardwoods in the sub-tropics.

The aims of this project are:

- to find species capable of fast growth;
- to find out what soils and climates favour fast growth; and
- to ensure that the full growth potential of each planting is realised.

In 1986, Forestry researchers surveyed in detail the soils of some possible project sites near Gympie and Ingham. Areas were chosen with contrasting soil types, and in early 1987 these were planted as a series of trials covering 30 ha. More trees will be planted over the next three years, and the project will eventually have up to 100 species and varieties of Australian trees under evaluation.

The five main areas of study will determine:

- how fast the trees under trial can be grown under selected conditions;
- what yields some selected species can produce;
- the effects of soil type on those species' nutritional needs;
- what cultivation, weed control and other treatments the trees need; and
- how eucalypts use water and nutrients to achieve fast growth.

These trials will also provide other benefits. One is to provide data for a computer model on the effects of climate on tree growth. The other hoped-for benefit is in the field of genetics. When superior trees are found in the trials, they can be cloned. Alternatively, they can be used for breeding better stock.

Departmental entomologist, Ross Wylie (right), pathologist John Tierney (centre) and a member of the Chinese Study Mission on Forestry Natural Enemies search for predators and parasites of the exotic bark beetle Ips grandicollis at Beerburrum. This insect is potentially a serious pest of exotic conifers in Queensland, and a number of its natural enemies imported from the United States have been released here as part of a biological control program.

Mass Vegetative Propagation

The potential benefit of mass vegetative propagation is the capture of a high proportion of the genetic gains made through breeding. The program has two components: Propagation by cuttings, and by tissue culture.

The Department has conducted research in this area since 1985. The aim is to develop propagation techniques for hoop pine, Honduras Caribbean pine and the hybrids of Honduras Caribbean pine with slash pine and Tecun Uman pine (*Pinus tecunumannii*). Only genetically superior trees are used.

Work on cuttings is aimed at definition of the techniques and conditions which lead to the best root initiation, and the determination of the multiplication rates attainable. The shoots used for this work are obtained from hoop pine by pinning the growing stems horizontally. With Honduras Caribbean pine the shoots come from plants which are cut back to produce a hedge about fifty centimetres high. Each shoot produced can itself be grown into a hedge, to provide more cuttings. The techniques used to produce hedges can also be varied.

Exotic pine shoots developing on a host (a hedge plant). The shoots will become cuttings for use in plant propagation. Selected cuttings are placed in containers to develop roots, prior to outplanting.

The results of this work so far have been encouraging. Under good conditions, up to 90% strike can be achieved with hybrid slash x Honduras Caribbean pine. A slightly lower level is possible with hoop pine.

Work on tissue culture is funded under a contract with Shell Australia. The contract was current through June 1987, and is scheduled for review. Research is aimed at obtaining the best multiplication rates in test tissue. The variables under test include the type of starting plant material, the culture media, the incubation conditions and the dissection procedures.Another important facet of the research program is the 'hardening off' phase required to produce acceptable planting stock from shoots in culture tubes.

Plants produced both from cuttings and from tissue culture will be tested in the field over a long period. So far, cuttings of Honduras Caribbean pine and its hybrids have been planted at a range of locations.These are showing excellent survival and early growth.

A Container Nursery for Hoop Pine

Hoop pine trees have been raised for many years from seed grown in the open in nursery beds. During the 1970s, research began into ways to improve the cost effectiveness of this approach. The 'containerised nursery' is a new system that emerged from this work. It appears to have good potential for future use not only for hoop pine, but also for exotic pines and hardwoods.

Under the new system, the germinated seeds are placed in containers of artificial potting mix. These are set up in a greenhouse, where air temperture and humidity are kept high. The containers are made of moulded polystyrene or polyethylene, and stand above ground in raised racks. Soluble fertilisers are added to the potting mix, and the seedlings grow rapidly in this environment.

Under the existing system the seedlings are sown in a prepared nursery bed in the spring. In the winter two years later, they are lifted from the bed and the spindly and poorly developed ones are discarded. The remaining seedlings are then placed in a rolled galvanised iron tube containing about 350 cc of soil. This process is called 'tubing'. The tubed seedlings must then be 'hardened off' for about 10 weeks, to make them ready for planting. The end product ideally, comprises robust plants about 30 cm high and 6 mm in diameter. This method has been in use since the 1920s and has given excellent field survivals.

The aims of development work on the new system are to grow equally robust plants in less time, with less manpower and at lower cost. The researchers have looked into seven main areas:

- assisting the seeds to sprout;
- transferring germinated seedlings to containers;
- finding the best type of container;
- controlling temperature and humidity;
- using a variety of potting mixes;
- keeping the seedlings well-nourished; and
- hardening them off for planting.

Under the new system, hoop pine plants can be grown to 15 cm high and 3.5 mm diameter in one year. After two years in the field, these plants have grown as tall and sturdy as those raised in two years in an open nursery bed. Wages costs are less using the containerised system, and the total cost saving may be 35% or more. Research and development work is ongoing.

Establishing Exotic Pines on Pasture Sites

In recent years east of Gympie, the Department has been establishing exotic pine plantations on two types of land: cleared native forests of low productivity and repurchased pasture country.

On the native forest sites, the degree of soil cultivation needed for successful establishment is well-known as it has been determined from long experience. On the pasture sites, there is a vigorous growth of pasture grasses and legumes. They have great capacity to regenerate, and compete intensely with young exotic pines for moisture and nutrients.

The pasture sites are also different in other ways. Because of previous grazing history, the soil is often compacted. The soils are also usually well-drained, compared to the swampy country on many native forest sites remaining available for planting.

Because of these differences, some early attempts to establish plantations on pasture sites were not completely successful. There was a need to define the optimum level of cultivation, and this prompted the setting up of two experiments on pasture sites. In both of these, the cultivation implement used was the winged ripper-plough. When mounted on a crawler tractor, this implement penetrates and shatters the soil, but does not turn it over. The resulting cultivated area is 2.4 metres wide. The plough itself consists of a steel blade with wings, set between two ripper tynes.

Each of the two experiments was planted with Honduras Caribbean pine, and included two soil types—a hard-setting red clay and a deep sandy soil.

In the first experiment, planted in 1984, there were six treatments. One involved the use of herbicide only. Two treatments combined winged ripping with disc harrowing, and the remaining three combined winged ripping with formation of mounds.

After two years, the results showed that

- no advantage to tree growth resulted from formation of mounds;
- winged ripping of the whole area gave no better result than winged ripping along the planting strip.

The aims of the second experiment, a year later, were therefore to more precisely define the level of cultivation and tillage needed. The treatments were:

1. no site preparation, except for spraying a 'knock-down' weed killer along the planting line, before the trees were planted;
2. winged ripping along the planting line to 25 cm depth;
3. as for 2, with a single pass by a disc harrow as well, along the planting line only;
4. as for 3, with a single pass by a rotary hoe as well, along the planting line only;
5. as for 3, but winged ripping to 50 cm depth instead of 25 cm; and
6. as for 3, but both the winged ripping and disc harrowing were applied over the whole area.

Treatment 3 corresponds to current operational practice. The conclusions drawn after one year were:

- no treatment gave better results than the current operational practice;
- the best level of tillage may be less than that currently used; and
- a greater tillage or depth of cultivation than that currently used does not significantly improve performance.

Phytophthora in Rainforest

Phytophthora cinnamomi is a fungal organism widely associated with the decline and death of forest trees. For a number of years the Department has been studying the distribution of this fungus in tropical rainforest soils and its effect on the health of trees in areas of known infestation.

Over 3000 soil samples have been taken at 1817 sites, with *P. cinnamomi* being detected in 33% of samples and at 35% of sites. Other species have also been detected, most commonly *P. heveae*.

P. cinnamomi detections were highest in patches of dead trees but the fungus was also found in soils supporting apparently healthy rainforest. Detections were generally higher in virgin rainforest away from roads than in virgin forest near roads, or in logged rainforest. Feral pig activity also seems to be associated with higher detections.

Total tree mortality in the study plots at the latest assessment was 12.4%, with appreciably heavier mortality in two laurels, camphorwood and cinnamon laurel.

Australian Trees for Fuelwood and Agroforestry

Australia's unique flora includes many species of trees and shrubs that grow well in soils of low fertility. These species are of potential benefit to tropical countries, especially those where tree growth is seriously depleted. The Australian Centre for International Agriculture Research (ACIAR) is funding a special study in this area. Its aims are to test the suitability of a range of Australian tree and shrub species for fuelwood, agroforestry and other uses.The Department has had a major role in this study since 1984.

The work began in 1983, when ACIAR assembled in Canberra a number of experienced foresters and botanists to prepare a list of 'best bet' candidates for the trials. The list was purposely drawn from lesser known Australian species, which may have potential for the work proposed. Collection of seed was then arranged by CSIRO's Division of Forest Research.

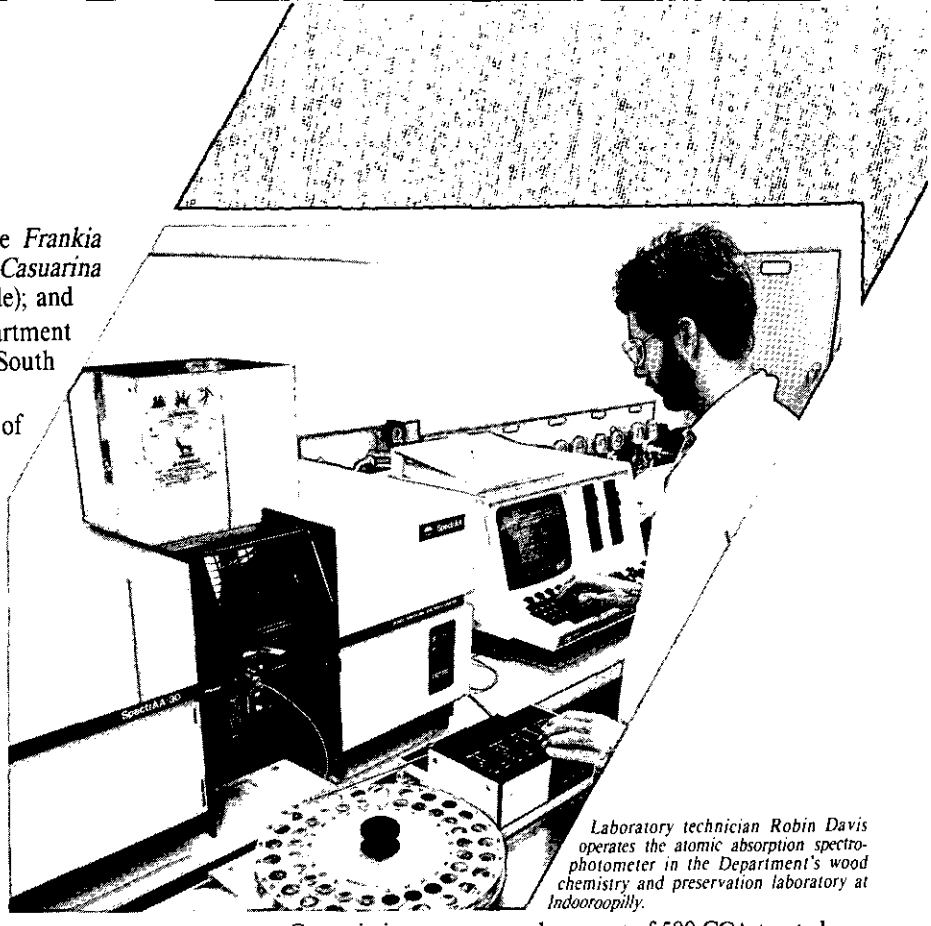
Departmental staff sowed the seed provided by CSIRO, and planted out the young trees and shrubs over three years—1984, 1985 and 1986. There are now two main sites, both on State Forests in south Queensland. These cover 35 hectares and include over 200 species. Small areas have also been planted at Dalby and Cardwell, and on the Atherton Tableland. During the study, Gympie research staff will gather data on the life-cycles and growth habits of these species. The research will include two studies made in collaboration with other organisations, covering:

Forester Robyn Bell examines the foliage of a river she-oak that is growing in the ACIAR trial at Tuan. The trees were planted in 1984.

- the effectiveness of various strains of the *Frankia* micro-organism for nitrogen fixation in *Casuarina* species (CSIRO Division of Soils, Adelaide); and
- oil production in *Melaleuca* species (Department of Organic Chemistry, University of New South Wales).

Data will also be collected on some other areas of special interest:

- how much heat the different woods produce when burnt;
- what value the leaves have for stock fodder;
- whether flowers of some of the *Acacia* could be used to make perfume; and
- what chemcials can be made from *Acacia* gum.



Laboratory technician Robin Davis operates the atomic absorption spectrophotometer in the Department's wood chemistry and preservation laboratory at Indooroopilly.

TIMBER UTILISATION

Wood Chemistry and Preservation

Staff have completed their move into the laboratories in the Division of Technical Services' new building. The facilities and equipment are first class, offering an excellent environment for research work.

The field testing and evaluation of chemical and finishing systems for protection of timber against decay, insect attack and weathering has continued. Previous experience with this work has allowed the development of small scale test and evaluation techniques which provide reliable information for practical application in industry.

For example, a large number of chemicals with potential for the commercial control of fungal staining in freshly sawn timber and stored logs was evaluated in a recent trial. Several formulations demonstrated equal efficacy to the currently used sodium pentachlorophenate, which is relatively toxic and requires careful handling to minimise occupational health risks.

As the use of the organochlorine insecticides for timber preservation may be prohibited in Australia in the near future, the Department has commenced field evaluations of numerous environmentally preferable insecticides for the protection of timber against termites. This is part of an international testing program involving seven countries and co-ordinated by the Wood Research Institute in Kyoto, Japan.

Two important projects on preservative treated transmission poles continued during the year.

- In collaboration with the University of Queensland, a survey into the service performance of CCA-treated hardwood transmission poles has been completed for the Queensland Electricity Commission. Analysis of data on preservative loadings and incidence and severity of groundline soft rot in the Statewide sample of over 1000 poles indicates that a satisfactory service life can be expected from poles which have been CCA-treated to existng specifications. The overwhelming majority of poles are in this category, with the presence of severe soft rot being associated with inadequately treated poles.
- Departmental trials have shown that 25 year old CCA-treated plantation pine poles in rural telephone lines in Queensland are in excellent condition. These results have encouraged the Queensland Electricity Commission to arrange placement of 500 CCA-treated plantation pine poles in transmission line service. Monitoring and evaluation will be carried out by both the Department and the Commission with particular reference to handling and engineering acceptability.

An economical, simple and reliable system of preservative analysis for 'in-house' quality control by timber treatment plants has been a long standing need. The alternative method, preservative analysis by standard laboratory techniques, is a specialised and costly procedure. The department's evaluation of two commercially available low cost x-ray fluorescence analysers against standard laboratory analytical techniques has indicated that the low cost analysers are accurate and easily operated. They are well suited for use by the timber treatment industry to obtain analytical results rapidly and at low cost.

The Department is also collaborating with four other organisations to investigate the refinement and evaluation of analytical techniques that are fundamental to effective research in wood chemistry and preservation. Investigation of sophisticated techniques for analysis by gas chromatograph and mass spectrograph of the products of low temperature wood combustion has already been undertaken. This was found to be an extremely useful research tool for characterisation of the complex organic compounds in wood. It also appears to have potential use for species identification where closely related timbers cannot be separated on anatomical features.

Collaborators in this work are the Queensland Institute of Technology, Australian National University, the University of Wisconsin (USA) and Division of Scientific and Industrial Research in New Zealand.

Timber Utilisation

A timber decking trial is being conducted, in conjunction with the Timber Research and Development Advisory Council, to determine:

- the relative serviceability of cypress pine, brush box and CCA-treated slash and hoop pines, when used as exposed decking;
- the performance of two recommended finish systems compared with untreated controls;

- the performance of cypress pine decking under two combinations of the exposure hazard and maintenance schedule; and
- the performance of timber decking laid over joists and protected with a variety of treatments.

This trial will run initially for 10 years, following which, the situation will be reviewed to decide the extent and frequency of future monitoring.

A large-scale above-ground durability trial was started in 1985-86, using simulated joinery items. This trial is now in place, with over 6000 L-joint test pieces. There are eight sites throughout Queensland, and others in Sydney, Canberra and Melbourne. The main site near Brisbane includes test pieces of over 40 Australian and imported timber species. At other sites, sets of nine reference species are under trial.

Timber usage surveys are continuing. These provide an important basis for estimating both future demand for timber and future programs of plantation establishment. Reports have been prepared on these topics:

- timber use in multi-unit dwelling and non-residential building;
- building material use in housing;
- timber use by a range of industries in central and north Queensland;
- timber use by the furniture industry in south-east Queensland.

All of these reports have now been published. They are available to the timber industry as pamphlets in the 'Timber Trends' series.

Wood Quality Assessment

Staff of the Wood Structure Laboratory took part in a major study on abnormal resin streaking and heart shakes in Honduras Caribbean pine. Increment core samples were used to categorise the trees and provide a balanced study group for sawn conversion studies. Factors affecting the age-related occurrence and development of these defects are being examined, and the recovery of graded sawn boards is also being studied. Results will show whether increment borers are a useful tool for non-destructive sampling. If so, they can be used to establish the distribution, incidence and severity of these defects in plantation stands well in advance of harvesting. Indications to date are that resin problems with Caribbean pine will be fewer than with slash pine.

Timber Conversion of Seasoning

A local wood processing firm requested information on the likely recovery of sawn timber from 15-year old slash pine. To meet this request, a report was prepared on recovery percentages. The figures came from a sawmill study, organised on a fee-for-service basis. For this work, Departmental staff used a range of sawing patterns of special interest to the firm.

Utilisation staff have used the Department's experimental kiln at Salisbury on a number of timber seasoning projects. One of these was the development of a kiln control system. This system was recently adopted on a commercial scale by a local softwood producer. Another project aims at the development of a commercially practical and reliable system for determining when charges of timber have reached the required final moisture content during high temperature kiln drying. The Australian Timber Research Institute has granted $5 000 towards this work.

The Fiji Pine Commission provided the impetus for another project at Salisbury. This involved drying Fijian-grown Caribbean pine at high temperatures on a fee-for-service basis. The aim of this was to study seasoning distortion and machine stress grading results and gain information that can be of vital importance for efficiently managing commercial seasoning operations.

TIMBER UTILISATION EXTENSION

Many homeowners in south-east Queensland are carrying out house repair or renovation work.As a result, extension enquiries continued at a high level. Similarly, demand from all over Queensland for timber samples was heavy and many people placed orders with the Department.

'Timber Notes' are a popular series of pamphlets and are produced by Utilisation staff. New titles published during the year covered insect attack on timber in use, timber preservation and stabilising wooden articles.

The Department now has two permanent displays at building advisory centres in Strathpine and Underwood, near Brisbane. These are aimed at helping homeowners find the right people for advice on correct timber use. The displays are also of assistance to timber users generally.

The timber industry staged a major exhibition during the year. Its theme was 'Living and Working with Wood'. The Department's contribution was a manned display on 'Educating the Timber User'.

A test site at Beerburrum where almost 2000 painted and unpainted L-joints are set out on exposure racks as part of the Department's above-ground timber durability trial.

Timber Users' Protection Act

During the year, the Department's inspectors acted on eighteen complaints made under this Act. The complaints have been grouped as follows:

	1986/87
Seasoning complaints	Nil
Lyctus in timber produced in Queensland	1
Lyctus in timber imported from overseas	4
Lyctus in timber produced in other Australian states	8
Borers, other than Lyctus	3
Preservation complaints	2
	18

An important conclusion drawn from this break-up is that the year's Lyctus problems related almost entirely to timber brought into Queensland from interstate or overseas. This reflects a very satisfactory level of compliance by Queensland producers.

Yasmin McErlain, operations assistant with the Timber Utilisation Branch, prepares for the fumigation of a Maryborough house as part of the Department's West Indian drywood termite eradication program. (Photo courtesy of the Maryborough Chronicle).

West Indian Drywood Termite Eradication Project

Work on this project continued, with 556 new samples arriving for processing. Since November 1979, project officers have received 7557 samples from members of the public. This year they found signs of West Indian drywood termites in 36 samples. Eleven of these samples were from furniture and 25 were from building materials. Of the 25, 21 came from the Brisbane metropolitan area. All but five of these were taken from buildings with a history of infestation or in known infested areas. Of the eleven furniture samples, six were from Government buildings. All of these were known as sites of previous infestations.

Project staff also discovered infestations at several locations in the Brisbane area. Commercial fumigators treated 23 houses in Brisbane and three in Maryborough this year, as well as Brisbane's historic Queen Alexandra Home, two Government Printery buildings and the Bundaberg Post Office. Project staff have not found large groups of infested houses at previously unknown sites. Rather, these results have heightened efforts aimed at 'mopping-up' around known sites. Some infested Government buildings also became available for treatment for the first time this year.

Division of Administration

The Division of Administration provides a range of administrative and financial services to the Department, so that its objectives can be met as efficiently as possible.

The division is responsible for monitoring the Department's expenditures, recording its revenues, and providing a full range of personnel and administrative services. These tasks are essential elements in Departmental responsibility for prudent management of State forests for timber production, and the multiple use management of forests.

With the finalisation of the installation of micro computers into Sub Districts, the Department has provided the technology for regional centres to progress into the next decade with up to date equipment and systems.

Following the passage of the Regulatory Reform Act deadlines had to be met for review, amendment and replacement of legislation administered by the Department. This has been achieved with a concentrated effort by officers of the division in conjunction with staff of the other divisions. The review of legislation has required the full time participation of key staff and has involved detailed discussions with Departmental officers and industry.

A review of safety within the Department resulted in a new policy statement being issued and a committee was set up to monitor progress in this field. This emphasises the Department's commitment to safe working conditions for its employees who carry out their duties, in some cases, in very hazardous circumstances.

ACCOUNTS

The Branch has maintained a commitment towards the enhancement of the Department's accounting functions.

Notable achievements are as follows:

- Implementation of a new wages payroll system for all regional centres was completed. This has resulted in computerised payroll processing for the Department's 1100 wages employees. The resultant savings and efficiencies have been significant and have afforded Sub District personnel greater opportunity to devote more time to other important administrative functions. Work has also commenced on the testing and implementation of a new release of system software designed to enhance processing and reporting capabilities. It is envisaged that this software will be installed in all Sub Districts by the end of the next financial year.
- Development has continued on the Department's computerised expenditure accounting system, particularly in the area of management and budgetary reporting.
- This development has allowed Accounts Branch personnel to provide financial reports for the specific needs of managers, and has provided them with the means to exercise greater control over Departmental expenditure.
- Computerisation of the Department's receipting system was completed during the year. This has facilitated improved classification of moneys received and provides for ease of management and external reporting.
- Investigation is currently being undertaken on the use of a microcomputer and proprietary software to produce financial forecasts required by Treasury. These are currently produced manually and consume considerable time and effort. The computerised production of these statements will not only afford considerable saving, but will enable the reports to be produced in a more timely and efficient manner. It is also envisaged that the use of proprietary software will enable the Department to avail itself of forecasting and trend analysis techniques.

Through the development and implementation of the computerised systems and techniques outlined, the Department is committed to the upgrading and enhancement of its accounting functions to provide managers with effective, accurate and timely budgetary reports while at the same time fulfilling external obligations.

Chief Administration Officer, Mr N. J. Flynn

ADMINISTRATIVE SERVICES

Accommodation

On 9 July 1986 the Honourable Sir Joh Bjelke-Petersen, K.C.M.G., M.L.A., Premier and Treasurer of Queensland officially opened the new Technical Services Building at Indooroopilly. By providing accommodation for all staff of the Division of Technical Services (Research and Utilization) in one building, this complex will ensure the continuing efficient operation of the Division.

An extension to the Beerburrum Office was completed in January 1987. Provision of the extra floor space has overcome severe congestion in some of the work areas.

Planning for Head Office and Brisbane District staff to move to a new building in Mary Street is well advanced. At the present rate of construction it is anticipated that the new building will be ready for occupation in early 1988.

Doug Johnson, manager, administrative services branch, and Doug Corley, officer in charge, general administration, discuss details of floor plans regarding the anticipated early 1988 move of Head Office and Brisbane District Office to new premises on Mary Street.

Construction of a new office, workshop and storage complex for the Benarkin Sub District has commenced. The construction of this complex in Blackbutt will improve the overall efficiency of the Sub District.

Plans have been approved to provide alternative accommodation for Monto staff by relocation and renovation of the Court House. Renovation will include air conditioning and carpeting, and will provide additional floor space.

Telephones

The program of upgrading telephone facilities in regional centres continued with new systems being installed at Beerburrum, Imbil, Kalpowar, Roma and Yuleba.

Stores Section

During the year Stores Section processed the following documents for supply of goods and services:

- 6700 requisitions placed for orders to be issued (7300 requisitions in 1985/86)
- 8000 orders issued on firms for supply (8600 orders in 1985/86)
- 309 stock issue notes processed for the supply of items held in stock at Salisbury bulk store. (500 stock issue notes in 1985/86).

The decrease in the number of orders issued reflects the final transfer of responsibility for ordering replacement mechanical parts from a centralised system to each workshop in the country centres. A policy to reduce stock held at Salisbury depot in Brisbane is highlighted by the smaller number of stock issue notes processed.

Sixty contract actions were referred to State Stores Board for call of quotations or tenders for specific items used by the Department. The Department was represented on three committees at State Stores Board to evaluate the suitability of office equipment for use by all departments.

FOREST ESTATE

The area of land set apart as State Forest and Timber Reserve was increased during the year by 30 000 ha and now totals 4 513 000 ha.

Investigations

During the year, officers reported 56 breaches of the Forestry Act and two breaches of the Sawmills Licensing Act.

Investigation and processing of these reports together with others received earlier, resulted in 11 convictions and fines of $3100.

In addition, an amount of $21 246 was received by the Department as a result of demands issued for recovery of the value of forest products and investigation costs.

Legislation

During the year a major effort of officers of the Estates and Legislation Branch was directed towards meeting the deadlines imposed by the Regulatory Reform Act.

All subordinate legislation administered by the Department has been reviewed in terms of the philosophy promulgated by the Committee of Review of Business Regulations and accepted by Government.

As a result, major amendments to the Forestry Regulations effective from 1 July 1987 have been finalised. These amendments are aimed at replacing, where possible, mandatory controls imposed by regulation upon purchasers of Crown forest products with a more flexible system of administrative control through specific sale documents.

Implementation of this changed approach has also necessitated a total review of the Department's administrative sale procedures. This review was undertaken in conjunction with officers of the Division of Forest Management, and has resulted in greatly simplified and more effective marketing procedures.

While the new regulations will have considerably less impact on the regulation of business, they will significantly strengthen the Department's capability to manage the recreational use of State Forests by the public and in particular State Forest Parks and other Specialised Management Areas.

Two pieces of legislation were introduced into Parliament during the Autumn session:

- The Timber Utilisation and Marketing Bill; and
- The Forestry Act Amendment Bill.

The Timber Utilisation and Marketing Bill was designed to set standards with which certain timbers and timber articles must comply when sold or used in Queensland as preservative treated or seasoned timber, and to effectively remove from the marketplace timber which is susceptible to attack by lyctid borers. The Bill also provides for the repeal of the Timber Users' Protection Act, the provisions of which it replaces and enhances.

This Bill passed through all Parliamentary stages and will be brought into force as the Timber Utilisation and Marketing Act 1987 as from 1 July 1987 by proclamation.

Regulations required for the implementation of the provisions of this Act were finalised and will be implemented from 1 July 1987.

The Forestry Act Amendment Bill, which provides for the consolidation into one body of the Timber Research and Development Advisory Councils of South and Central Queensland and of North Queensland, passed through its first and second reading stages after being introduced into Parliament. It will await further consideration in the next session of Parliament.

All matters required by the Regulatory Reform Act to be dealt with by the Department by 30 June 1987 were finalised by the due date.

MANAGEMENT SERVICES

Management Services Branch provides a consultancy service to assist in enhancing the efficiency and effectiveness of the Department and its staff. The branch assists them to continually improve the services they provide.

Throughout the year, the branch carried out a wide range of staff development activities in all divisions and districts.

In addition, the branch assisted in projects to review and improve the performance of various functions carried out by Departmental staff. These included the establishment of the new Information Technology Branch and assisting in co-ordinating the development of a Departmental Strategic Plan.

The ongoing personnel development program conducted by branch staff has included the following training courses:

- New Age Thinking
- Effective Written Communication
- Time Management
- Dealing with the Public
- Introductory and Advanced Supervisor Courses
- On-the-Job Training
- Supervisor Skills for Gangers
- Public Relations

PERSONNEL

Achievements during the year included:

- issue of a Departmental occupational health and safety policy statement, and the formation of a Safety Co-ordination Committee
- introduction of a micro computer based leave management system for salaried staff
- commencement of an exit interview system
- revision of induction procedures.

The Manager continued to represent the Department on the Permanent Inter-Departmental Standing Committee on Occupational Safety.

Further installations of the computerised wages staff personnel information system were effected in Sub Districts.

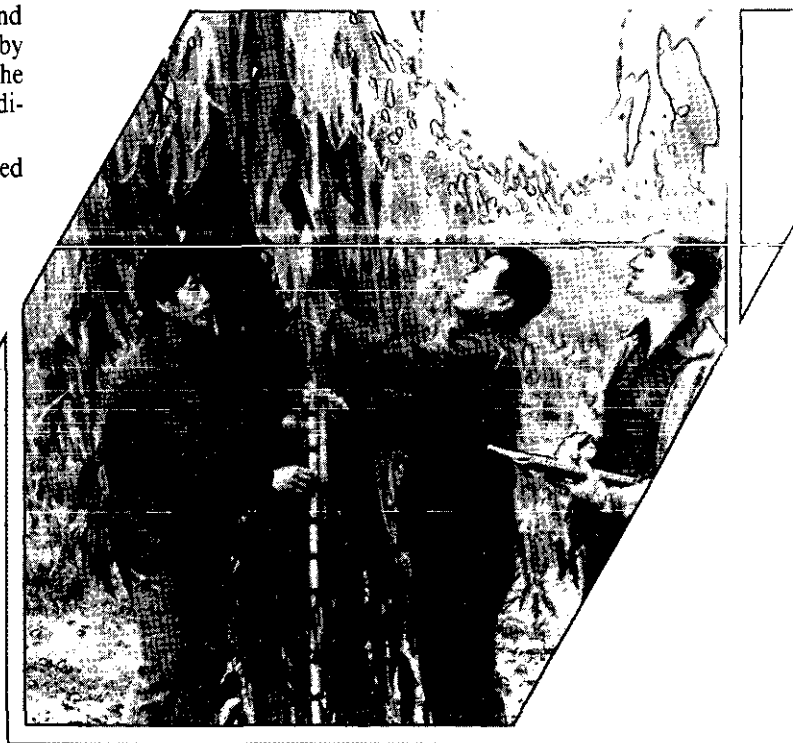
Establishment

Salaried staff establishment increased by seven positions, to 653 at the end of the year. At 30 June 1987, 1120 wages staff were employed compared with 1143 at the end of the previous year.

Forty-nine salaried officers left the Department during the year including 13 officers who transferred to other Departments and seven officers who retired after long and meritorious service.

Overseas Visits

Dr D.G. Nikles—Officer-in-Charge Tree Breeding, Forest Research Branch visited Thailand from 29 September to 4 October 1986 to assist in the initiation of the implementation phase of the ASEAN—Australian Forest Tree Improvement Program. From 11 to 23 October 1986 Dr Nikles visited the United States of America to attend the International Union of Forest Research Organisations Conference. In order to keep personnel and tree breeders in particular thoroughly informed, he also visited Brazil from 24 October to 29 November 1986 to broaden the genetic base of material available in Queensland for use in tree breeding programs.



Keith Gould (right), a Departmental senior adviser at the Dongmen Forest Farm Project in the People's Republic of China, records the growth of a eucalypt hybrid under trial.

Dr L.E. Leightley—Officer-in-Charge Wood Chemistry and Preservation Section, Timber Utilisation Branch visited Canada and the United States of America from 9 to 31 May 1987 to attend meetings of the International Research Group on Wood Preservation, International Union of Forest Research Organisations (Wood Protection) and American Wood Preservers Association, and to discuss future timber preservatives, preservation techniques and in-service performance in sub-tropical/tropical environments. From 1 March 1987 to 7 March 1987 Dr Leightley visited New Zealand to attend a Wood Preservation committee meeting at the Forest Research Institute in Rotorua.

Mr J.K. Vanclay, Resources Development Officer, Resources Branch and Mr C.T. Bragg, Senior Forester, Timber Utilisation Branch visited the Forest Research Institute in New Zealand from 26 April 1987 to 4 May 1987 to look at softwood conversion modelling.

The Department continued to act as managing agent for an Australian Overseas Aid Forestry project at Dongmen in the People's Republic of China. The following overseas visits were undertaken in connection with this project:

- Mr P.G. Foster, Senior Forester, Gympie visited China from 11 August 1986 to 3 September 1986 to complete a site preparation report.
- Mr M.J. McQualter, Workshop Foreman Grade III, Atherton visited China from 6 October 1986 to 25 November 1986 for follow up assessment of performance of plant.
- Mr E.G. Mannion, District Forester, Atherton visited China from 19 November 1986 to 12 January 1987 in regard to the management of the project.
- Mr R.E. Pegg, Director, Division of Forest Management visited China from 21 November 1986 to 22 December 1986 and from 12 June 1987 to 6 July 1987 in regard to management of the project.
- Dr L. Bolland, Officer in Charge (Biology), Forest Research Branch and Dr F.R. Wylie, Senior Entomologist, Forest Research Branch visited China from 1 June 1987 to 29 June 1987 to assess the pathological and entomological problems being experienced on the project and to advise on practical control measures.
- Mr K.J. Harding, Timber Technologist, Timber Utilisation Branch visited China from 1 June 1987 to 13 July 1987 to provide expertise in the sampling and assessment of trees for a tree breeding program.
- Dr D.G. Nikles, Officer in Charge (Tree Breeding), Forest Research Branch visited China from 12 June 1987 to 29 June 1987 for investigations aimed at developing a tree breeding strategy for the second phase of the project.

Staff Development

An increased awareness of the need for improved professional and personnel skills was reflected in the increased number of staff members who availed themselves of the support provided by the Study and Research Assistance Scheme. The 18% increase brings the number of staff members studying to 64, which represents almost 10% of salaried staff. This includes 22 staff members who undertook post graduate studies. In addition seven wages employees were undertaking part-time studies during the year.

District	LTIFR	
	1986/87	1985/86
Atherton	67.10	136.53
Brisbane	68.16	75.40
Dalby	109.62	75.86
Gympie	73.76	91.16
Ingham	81.85	131.90
Maryborough	119.68	113.58
Monto	179.35	59.91
Murgon	169.86	138.31
Rockhampton	30.94	44.83
Yarraman	77.86	84.35
Head Office	7.26	3.18
Departmental	72.95	79.09

Lost-time injury frequency rates (LTIFR), in man-hours, and by districts for 1986/87.

Following an intensive implementation program the Staff Development and Review Scheme has now been introduced to most areas of the Department. This scheme is becoming a valuable part of the management process and will assist in providing more effective training and development to staff.

Industrial and Safety

The Senior Personnel Officer—Industrial, and the Safety Officer continued their program of visiting Districts and Sub Districts for inspections and discussions with staff. These visits continue to assist in identifying and resolving potential work problems as well as maintaining amicable working relationships with field staff.

To supplement these visitations, industrial relations training courses are held at the various District centres. During the year such courses were held at Beerburrum and Gympie. The principal objectives of these courses are:

- to provide a basic understanding of industrial relations in terms of operations, procedures and processes; and
- to acquire the necessary skills to resolve industrial problems at the workplace.

These courses were conducted in conjunction with officers from the Industrial Division of the Department of the Public Service Board.

Word processor facilities have been used to store the provisions of the Forestry Employee's Award—State Government. This enables all users to be provided with a consolidated and up to date award.

The Safety Officer visited all Districts throughout the year, mainly for discussions in relation to the preparation and operation of annual Sub District safety plans. Some safety training was also undertaken. The Safety Officer represented the Department at several meetings of two sub-committees established by the Standards Association of Australia dealing with safe working in the forest and leg protection for chainsaw operators.

Information and Technology Branch

This year saw the absorption of Computer Services Branch into Information Technology Branch. Six additional positions have been created, and action is currently underway to recruit appropriately qualified staff.

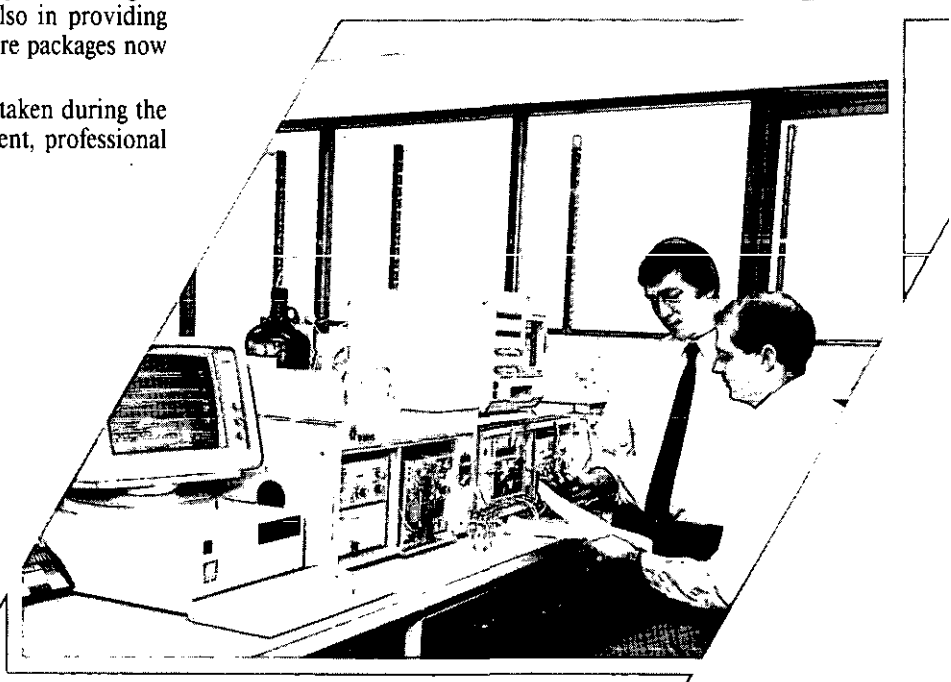
Software systems currently being developed and enhanced will constitute the mainstay of the Department's marketing, management and other systems for at least a decade. The revised management and organisational structure for information technology will ensure the effective co-ordination of computing activities within the Department.

Major highlights of the year's operations have included:

- Completion of the program to provide microcomputer facilities in all Sub District offices.
- Commencement of the redevelopment of the Department's timber sales computer system. Operation and maintenance of the existing system, first introduced in 1973, has ceased to be economic. The new system will be developed using the most modern computing techniques.
- Commencement of the redevelopment of the fleet management system. This system will allow more effective management and financial control of the Department's extensive fleet of light and heavy vehicles and equipment.
- Installation of microcomputer based laboratory control system. This is believed to be the first such installation of its type in Queensland, and has attracted considerable attention from industry and tertiary educational institutions.
- Completion of training needs analysis for users of computer information systems, capacity planning review, and a security and risk analysis for the Department.

The services of the Branch's information centre, particularly the help desk, have been used extensively during the year, not only for assisting Sub District staff with aspects relating to the operation of their microcomputers, but also in providing training in the use of the wide range of software packages now available within the Department.

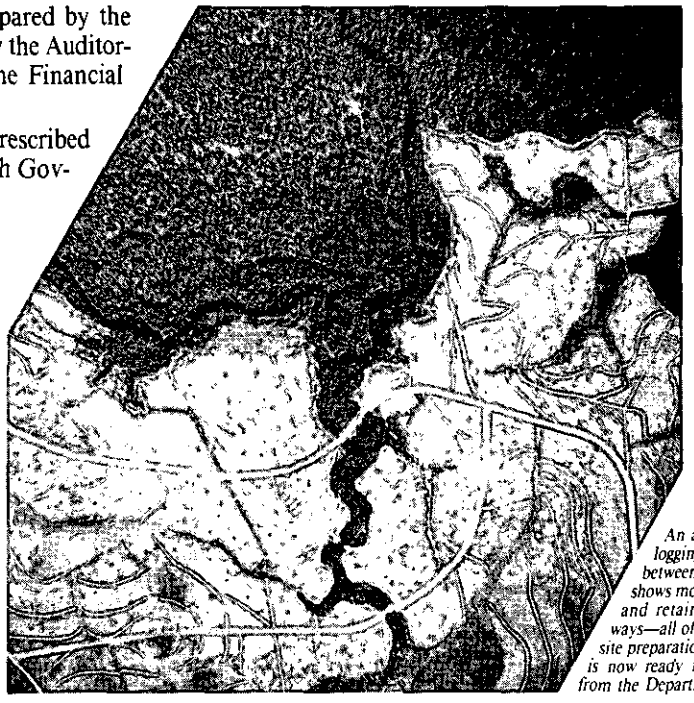
A review of computer training was undertaken during the year, and a program of courses for management, professional and clerical staff has been developed.



Senior chemist Mike Kennedy and computer systems officer Marek Gawdzik (standing) discuss operational aspects of the Department's new computer-based chromotography data acquisition system.

The Department's financial statements are prepared by the Conservator of Forests and their certification by the Auditor-General is in accordance with section 37(3) of the Financial Administration and Audit Act 1977-1985.

These statements are prepared in terms of prescribed legislative requirements and are in accordance with Government accounting principles and practices.



An aerial photograph of Missings logging area on Tuan State Forest between Maryborough and Gympie, shows mounding patterns, drainage lines and retained vegetation along waterways—all of which are provided for in the site preparation planning process. This area is now ready for the planting of seedlings from the Department's nurseries.

Financial Reporting and Appendices

BASIS OF ACCOUNTING

Gross Cash Basis

Receipts and expenditure are recorded on a cash basis, that is receipts and expenditure are shown on the basis of cash received and payments made in the financial year. Cash accounting is on a gross basis, that is receipts and expenditure are not offset.

Materiality

Explanatory notes are given on matters which, in the judgement of the Conservator of Forests, are of significance in the context of accountability, adequate disclosure and meaningful reporting.

Under the cash basis of financial reporting, capital expenditure is treated as a charge in the year of payment.

Legislation provides for the establishment and maintenance of Departmental asset registers and requires material losses and deficiencies to be disclosed.

FUNDS

In accordance with the requirements of the Constitution Act of 1867 and Financial Administration and Audit Act 1977-1985, financial transactions are recorded in three categories of funds, the Consolidated Revenue Fund, the Loan Fund and the Trust and Special Funds. The purposes for which these funds are used are explained hereunder.

Consolidated Revenue Fund

This fund is used for the purpose of recording transactions in connection with the payment of salaries and related costs, administrative expenditure and the maintenance of recreation facilities established by the Department.

Loan Fund

This fund is used for the purpose of recording transactions in connection with the construction of recreation facilities and for recording State loan borrowings used to finance the Department's Capital Works Program as recorded in the Forestry Development Fund.

Forestry and Lumbering Fund

This fund is established for the purpose of recording revenue from the sale of forest products and expenditure in connection with the harvesting and sale of such products and the maintenance of Departmental assets. In addition, transactions relating to interest and redemption on loan borrowings, maintenance of plant, the Timber Research and Development Advisory Council and other Departmental Special Projects are recorded in this Fund.

Forestry Development Fund

This fund is established for the purpose of recording transactions in connection with the Department's Capital Works Program, which provides for the management and development of State Forests and includes expenditure on the purchase and construction of assets and plant.

APPENDIX 1

Comparative Statement of Receipts for the Years 1985-86 and 1986-87

Receipts Previous Year	Note Ref. No.	Particulars of Receipts	Estimate	Receipts	Receipts compared with Estimate	
					Greater	Less
$			$	$	$	$
		CONSOLIDATED REVENUE FUND—				
		Receipts for Goods/Services—				
58 167		Plan Printing Service	60 000	71 476	11 476	—
		Miscellaneous and Recoveries—				
136 273		Expenditure Recovered	145 200	134 496	—	10 704
24 350		Sales of Government Property	33 500	33 090	—	410
660		Other	2 000	5 019	3 019	—
219 450		**Total—Consolidated Revenue Fund**	240 700	244 081	14 495	11 114
		LOAN FUND				
		COMMONWEALTH PAYMENTS—				
—		National Estate Programme	—	20 000	20 000	—
245 105	1	Community Employment Programme	74 000	67 801	—	6 199
245 105		**Total—Loan Fund**	74 000	87 801	20 000	6 199
		FORESTRY AND LUMBERING FUND				
		Territorial—				
15 948 129		Forest Products Receipts	19 264 000	18 403 054	—	860 946
576 399		Freeholding of Grazing Selections	550 000	400 611	—	149 389
2 016 352		Contract Timber Supplies	2 183 000	2 615 134	432 134	—
145 742		Land Rentals	140 000	133 977	—	6 023
		Receipts for Goods/Services—				
594 613		Plants and Seeds	560 000	549 001	—	10 999
		Miscellaneous and Recoveries—				
7 319 169		Plant Hire Receipts	8 362 000	8 416 785	54 785	—
335 261		T.R.A.D.A.C.	380 000	340 008	—	39 992
40 650		Vegetative Propagation Project	25 000	11 650	—	13 350
—	2	Hardwood Plantation Project	—	430 693	430 693	—
406 525		Other	351 000	377 734	26 734	—
—		Commonwealth Payments—				
560 800	3	Dongmen Project, Peoples Republic of China	317 000	793 800	476 800	—
89 050		Gympie Fuelwood Project	109 000	69 000	—	40 000
133 657		Natural Disaster Relief	152 680	163 156	10 476	—
28 430		Community Employment Program	40 449	35 550	—	4 899
28 194 777		**Total—Forestry and Lumbering Fund**	32 434 129	32 740 153	1 431 622	1 125 598
		FORESTRY DEVELOPMENT FUND				
		Miscellaneous and Recoveries—				
1 090 621	4	Sale of Vehicles and Plant	1 510 000	1 280 274	—	229 726
246 900		Other	400 000	302 631	—	97 369
		Financing Receipts—				
		Repayable Advances—				
5 400 000		Special Projects Fund	—	—	—	—
		Repayable Advances—				
21 077 000		Loan Fund	27 725 000	27 581 700	—	143 300
1 967 000	5	Plant Account	2 853 739	3 300 000	446 261	—
		Commonwealth Payments—				
31 997		Diesel Fuel Rebate	32 000	39 826	7 826	—
30 406	6	Natural Disaster Relief	332 942	324 732	—	8 210
120 862	1	Community Employment Programme	99 200	88 656	—	10 544
29 964 786		**Total—Forestry Development Fund**	32 952 881	32 917 819	454 087	489 149

1. Receipts are lower than those of the previous year due to the Commonwealth Government not funding any new Community Employment Projects.
2. The Hardwood Plantation Project commenced during the 1986/87 financial year and estimates of funding to be provided by the sponsoring organization were not available when the estimates were framed.
3. Receipts have exceeded estimate due to the extension of the Dongmen Project beyond the expiry date of the initial agreement. Such additional funding was not provided for in the budget at the time the estimates were framed.
4. Receipts are lower than estimated due to delays experienced in the sale of vehicles and plant due for replacement.
5. Receipts have exceeded estimate due to a larger plant operating surplus being available through:—
   (a) an increase in plant hire receipts in the Forestry and Lumbering Fund.
   (b) savings achieved in the Maintenance of Plant Vote in the Forestry and Lumbering Fund.
6. Receipts have exceeded those of the previous year due to additional funding being provided for restoration of Departmental assets damaged by Cyclone "Winifred".

APPENDIX 2

Departmental Appropriation Account for 1986-87

1985/86 Expenditure	Note Ref. No.	Headings of Expenditure	Appropriations	Transfers	Appropriations as adjusted by Transfers	Total Expenditure	Unforseen Expenditure-Amount to be Appropriated	Lapsed Appropriations
$			$	$	$	$	$	$
		CONSOLIDATED REVENUE FUND						
		Supply Services and Unforeseen Expenditure—						
		Department of Forestry—						
15 262 220		Salaries	15 779 000	—	15 779 000	15 812 741	33 742	—
71 608		Termite Eradication	97 000	—	97 000	96 909	—	91
222 475		Printing and Stores	261 000	—	261 000	260 997	—	3
4 511 215	1	Allowances and incidentals	5 081 700	+12 000	5 093 700	5 134 595	40 896	—
		Recreation Facilities—						
543 693		Maintenance	538 900	—	538 900	563 554	24 654	—
		Cash Equivalent of Long Service						
296 227	2	Leave	222 000	—	222 000	130 499	—	91 501
20 907 438		**Total—Consolidated Revenue Fund**	**21 979 600**	**+12 000**	**21 991 600**	**21 999 295**	**99 292**	**91 595**
		LOAN FUND						
		Forestry—						
		Recreation Facilities—						
693 626	3	Construction	649 000	+143 300	792 300	806 038	13 739	—
		Amount to be credited to Forestry						
21 077 000		Development Fund	27 725 000	−143 300	27 581 700	27 581 700	—	—
21 770 626		**Total—Loan Fund**	**28 374 000**	—	**28 374 000**	**28 387 738**	**13 739**	—
		FORESTRY AND LUMBERING FUND						
9 203 020		*Interest and Redemption on Loans*	*11 510 457*	—	*11 510 457*	*11 083 507*	—	*426 950*
1 796 891		Contract Timber Supplies	1 985 000	—	1 985 000	2 090 709	105 709	—
4 833 818		Marketing	5 631 000	−110 000	5 521 000	5 302 300	—	218 700
5 312 430		Maintenance Plant	5 548 000	—	5 548 000	5 156 370	—	391 630
3 522 037		Maintenance of Capital Improvements	3 845 000	+110 000	3 955 000	3 960 572	5 573	—
258 276		Timber Utilisation	258 000	—	258 000	241 248	—	16 752
560 461	4	Dongmen Project	317 744	—	317 744	722 387	404 644	—
477 857		Amounts transferred to TRADAC	380 000	—	380 000	340 008	—	39 992
—	5	Hardwood Plantation Project	—	—	—	318 049	318 049	—
94 711		Gympie Fuelwood Project	116 706	—	116 706	76 195	—	40 511
		Transfer to Plant Account—						
1 967 000	6	Forestry Development Fund	2 853 739	—	2 853 739	3 300 000	446 261	—
50 246		Vegetative Propagation Project	38 882	—	38 882	22 244	—	16 638
28 076 747		**Total—Forestry and Lumbering Fund**	**32 484 528**	—	**32 484 528**	**32 613 589**	**1 280 236**	**1 151 173**
		FORESTRY DEVELOPMENT FUND						
21 885 880		*Reforestation*	*23 337 982*	*−20 000*	*23 317 982*	*23 043 889*	—	*274 093*
431 595		Land Acquisition	500 000	—	500 000	437 165	—	62 835
3 299 999		Purchase of Plant	4 057 000	+190 000	4 247 000	4 117 130	—	129 870
2 474 353		Construction of Capital Improvements	3 000 000	−190 000	2 810 000	2 801 789	—	8 211
770 999		Forest Research	900 000	+20 000	920 000	919 681	—	319
28 862 826		***Total—Forestry Development Fund***	**31 794 982**	—	**31 794 982**	**31 319 654**	—	**475 328**
56 939 573		**Total—Trust and Special Funds**	**64 279 510**	—	**64 279 510**	**63 933 243**	**1 280 236**	**1 626 501**
99 617 637		**Total—All Funds**	**114 633 110**	**+12 000**	**114 645 110**	**114 320 276**	**1 393 267**	**1 718 096**

NOTES BY ACCOUNTABLE OFFICER

Section 24A Transfers—

1 A transfer was approved from the following Treasury Appropriation under the Consolidated Revenue Fund pursuant to Section 24A of the Financial Administration and Audit Act 1977-85—

Treasury Department—Special Allocations—Treasurer's Advance Account $12 000

Material Variation from Appropriation—

2 The initial appropriation was based on knowledge of anticipated resignations. However some officers who signified an intention to retire during the year have now deferred such action.

3 Additional expenditure was incurred due to work being undertaken to complete road access for visitors to a recreation facility constructed under a Community Employment Program Project and for additional upgrading of recreation facilities on State Forests.

4 Additional expenditure was incurred as a result of an extension of this project and additional funding being provided by the Australian Development Assistance Bureau.

5 Expenditure was incurred on a Hardwood Plantation Project which commenced during 1986-87, funding for which was not provided at the time the estimates were framed.

6 Additional expenditure was incurred in the Transfer to Plant Account as a result of increased plant hire receipts as well as reduced expenditure for Maintenance of Plant.

APPENDIX 2—continued

Statement of other financial Information 1986-87

LOSSES OR DEFICIENCIES—	Cases	Losses $	Recoveries $
Public moneys or other moneys due to—			
Stealing or other offence	2	13	—
Debts written off	15	986	—
Salary overpayments	1	—	3 278
TOTAL—		**999**	**3 278**
Public property or other property due to—			
Stealing or other offence	22	7 526	94
Destruction or damage	2	1 345	—
Stores—no evidence of theft or fraud	5	1 338	—
		10 209	94
Total—		**11 208**	**3 372**

UNEXPENDED ADVANCES TO AGENCY DEPARTMENTS—
Moneys held unexpended in the Department of Lands—Collection Suspense Account as at 30 June, 1987 for purchase of land amounted to $190 000.

LOAN INDEBTEDNESS **$356 745 744**

Certificates in relation to statement contained in Appendix 2

CERTIFICATE OF THE DEPARTMENT OF FORESTRY

The foregoing statements of the accounts subsidiary to the public accounts have been prepared pursuant to section 37 of the Financial Administration and Audit Act 1977-1985 and other prescribed requirements and we certify that—

(a) the foregoing financial statements with other information and notes to and forming part thereof are in the form required by the prescribed requirements and are in agreement with the accounts and records of the department;

(b) in our opinion—

(i) the prescribed requirements in respect of the establishment and keeping of accounts have been complied with in all material respects;

(ii) expenditure has been correctly charged in accordance with the Financial Administration and Audit Act 1977-85 and the statements fairly show the disposal of moneys issued out of the public accounts by the Treasurer for the use of the department; and

(iii) the foregoing statements have been drawn up so as to present a true and fair view, on a basis consistent with that applied in the financial year last preceding, of the transactions of the department for the period 1 July 1986 to 30 June 1987, and of the financial position as at the close of that year.

Dated this thirty-first day of July 1987.

N. J. FLYNN
Chief Administration Officer

J. J. KELLY
Conservator of Forests

CERTIFICATE OF THE AUDITOR-GENERAL

I have examined the accounts of the Department of Forestry as required by the Financial Administration and Audit Act 1977-1985 and certify as follows—

(a) I have received all the information and explanations which I have required;

(b) the foregoing departmental statements of the accounts subsidiary to the public accounts are in the form required by the prescribed requirements and are in agreement with those accounts; and

(c) in my opinion—

(i) the prescribed requirements in respect of the establishment and keeping of accounts have been complied with in all material respects;

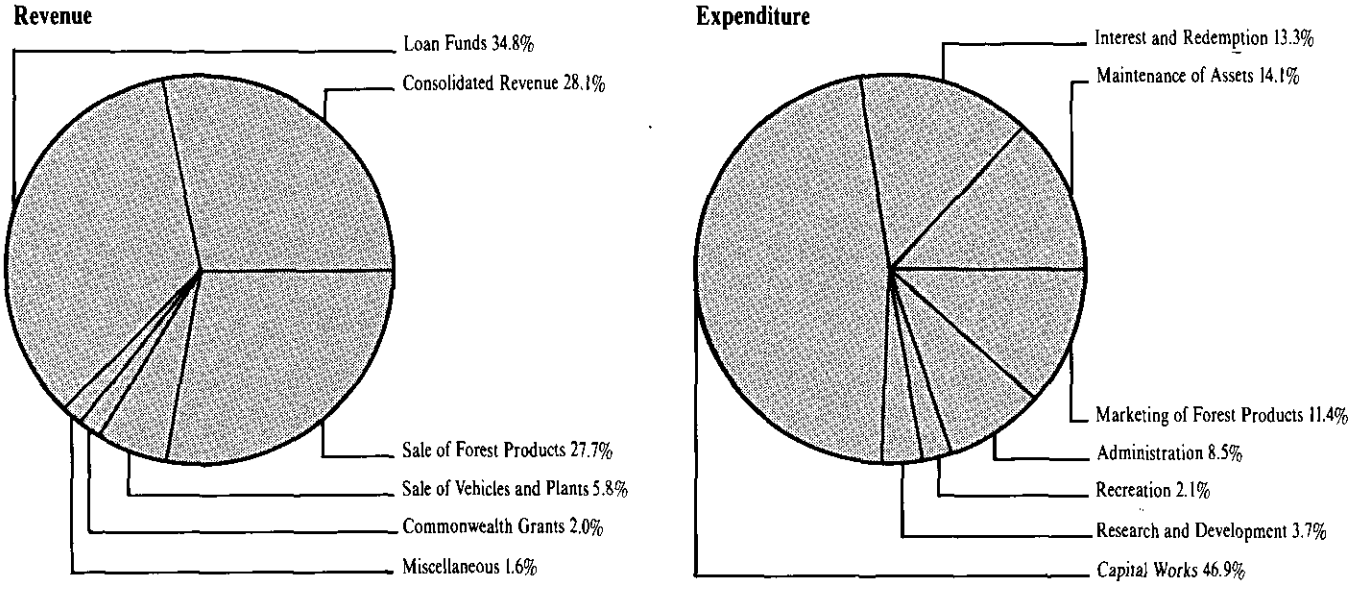
(ii) moneys issued out of the public accounts by the Treasurer pursuant to the aforementioned Act for the use of the Department have been properly accounted for; and

(iii) the foregoing statements have been drawn up so as to present a true and fair view, on a basis consistent with that applied in the financial year last preceding, of the transactions of the Department for the period 1 July 1986 to 30 June 1987, and the financial position as at 30 June 1987.

V. C. DOYLE
Auditor-General

APPENDIX 3

Sources of Revenue and Areas of Expenditure, by Percentage, 1986-87



APPENDIX 4

State Forests and Timber Reserves listed by Districts and Sub-Districts as at June 30, 1987

Forestry District	Sub District	No. of State Forests	State Forest Areas (hectares)
Atherton	Atherton	31	381 518
	Total	**31**	**381 518**
Brisbane	*Beerburrum*	23	58 140
	Brisbane	24	49 561
	Warwick	18	38 075
	Total	**65**	**145 776**
Dalby	Chinchilla	19	456 990
	Dalby	12	227 606
	Inglewood	30	211 950
	Roma	40	352 543
	Total	**101**	**1 249 089**
Gympie	Gympie	20	82 956
	Imbil	15	63 770
	Total	**35**	**146 726**
Ingham	Ingham	17	281 596
	Total	**17**	**281 596**
Maryborough	Bundaberg	14	88 477
	Maryborough	24	227 604
	Tuan	6	64 271
	Total	**44**	**380 352**
Monto	Monto	56	376 924
	Total	**56**	**376 924**
Murgon	Jimna	4	46 071
	Murgon	19	93 118
	Total	**23**	**139 189**
Rockhampton	Mackay	28	122 988
	Rockhampton	53	664 300
	Total	**81**	**787 288**
Yarraman	Benarkin	15	48 452
	Yarraman	12	323 453
	Total	**27**	**80 905**
State Total		**480**	**3 969 363**

APPENDIX 4—continued

Forestry District	Sub District	No. of Timber Reserves	Timber Reserve Areas (hectares)
Atherton	Atherton	22	306 986
	Total	**22**	**306 986**
Brisbane	Beerburrum	2	257
	Brisbane	4	4 118
	Warwick	—	—
	Total	**6**	**4 375**
Dalby	Chinchilla	1	5 768
	Dalby	2	150
	Inglewood	—	—
	Roma	1	19 653
	Total	**4**	**25 571**
Gympie	Gympie	—	—
	Imbil	1	—
	Total	**1**	—
Ingham	Ingham	2	798
	Total	**2**	**798**
Maryborough	Bundaberg	5	4 978
	Maryborough	7	9 428
	Tuan	1	—
	Total	**13**	**14 406**
Monto	Monto	20	30 158
	Total	**20**	**30 158**
Murgon	Jinna	1	1 860
	Murgon	6	3 307
	Total	**7**	**5 167**
Rockhampton	Mackay	11	27 655
	Rockhampton	14	126 077
	Total	**25**	**153 732**
Yarraman	Benarkin	4	2 812
	Yarraman	2	7
	Total	**6**	**2 819**
State Total		**106**	**544 012**

APPENDIX 5

Reservation figures for the year ending June 30, 1987

State Forests	No. of Reservations	Area (hectares)
Total as at July 1, 1986	473	3 929 511
Crown Land declared State Forest	+ 8	+ 30 601
Crown Land declared State Forest and added to existing State Forests	—	+ 10 795
Areas excluded for road and railway purposes	—	− 91
Recomputation of boundaries	—	− 1 453
Amalgamation of existing State Forests	− 1	—
Total as at June 30, 1987	**480**	**3 969 363**

Timber Reserves	No. of Reservations	Area (hectares)
Total as at July 1, 1986	111	553 278
Crown Land declared Timber Reserve	+ 1	+ 7 840
Timber Reserve declared State Forest	− 4	− 9 728
Timber Reserve revoked	− 2	− 1 376
Timber Reserve partially revoked	—	− 5 920
Areas excluded for road and railway purposes	—	− 38
Recomputation of boundaries	—	− 44
Total as at June 30, 1987	**106**	**544 012**

APPENDIX 6

Net area of Softwood Plantation established April 1, 1986 to March 31, 1987 (hectares)

District	Native Conifers		
	Hoop Pine		Total Native Conifers
	New Areas	Other Areas	
Atherton	—	—	—
Brisbane	—	—	—
Gympie	23	—	**23**
Ingham	—	—	—
Maryborough	—	—	—
Monto	54	—	**54**
Murgon	129	—	**129**
Rockhampton	—	—	—
Yarraman	96	182	**278**
Total 1986-87	**302**	**182**	**484**
Total 1985-86	278	181	459

District	Exotic Conifers						
	Slash Pine		Caribbean Pine		Other Exotic Conifers		Total Exotic Conifers
	New Areas	Other Areas	New Areas	Other Areas	New Areas	Other Areas	
Atherton	—	—	139	—	—	—	**139**
Brisbane	—	—	179	30	62	105	**376**
Gympie	68	—	1 126	40	207	69	**1 510**
Ingham	—	—	809	73	—	—	**882**
Maryborough	—	—	1 885	22	354	12	**2 273**
Monto	—	—	—	—	—	—	—
Murgon	—	—	—	—	—	—	—
Rockhampton	—	—	143	—	—	—	**143**
Yarraman	—	—	—	—	—	—	—
Total 1986-87	**68**	**—**	**4 281**	**165**	**623**	**186**	**5 323**
Total 1985-86	222	3	4 350	626	59	63	5 323

District	All Conifers	
	Total 1986-87	Total 1985-86
Atherton	**139**	119
Brisbane	**376**	295
Gympie	**1 533**	1 936
Ingham	**882**	850
Maryborough	**2 273**	2 047
Monto	**54**	56
Murgon	**129**	116
Rockhampton	**143**	139
Yarraman	**278**	224
Total	**5 807**	5 782

APPENDIX 7

*Net area of Effective Softwood Plantation as at March 31, 1987 (hectares)

District	Native Conifers			
	Hoop Pine	Bunya Pine	Other Native Conifers	Total Native Conifers
Atherton	1 018	2	106	**1 126**
Brisbane	1 520	8	4	**1 532**
Gympie	12 230	225	36	**12 491**
Ingham	4	—	1	**5**
Maryborough	1 465	3	29	**1 497**
Monto	3 136	1	1	**3 138**
Murgon	8 825	131	1	**8 957**
Rockhampton	261	—	1	**262**
Yarraman	15 160	115	4	**15 279**
Total 1986-87	**43 619**	**485**	**183**	**44 287**
Total 1985-86	43 366	480	183	44 029

District	Exotic Conifers			
	Slash Pine	Caribbean Pine	Other Exotic Conifers	Total Exotic Conifers
Atherton	3	1 593	101	**1 697**
Brisbane	13 276	2 502	4 101	**19 879**
Gympie	24 927	6 694	960	**32 581**
Ingham	2	6 852	107	**6 961**
Maryborough	26 921	16 187	542	**43 650**
Monto	14	2	10	**26**
Murgon	1	—	46	**47**
Rockhampton	1 007	5 636	80	**6 723**
Yarraman	509	400	1 526	**2 435**
Total 1986-87	**66 660**	**39 866**	**7 473**	**113 999**
Total 1985-86	67 279	35 508	6 817	109 604

District	All Conifers	
	Total 1986-87	Total 1985-86
Atherton	**2 823**	2 685
Brisbane	**21 411**	21 361
Gympie	**45 072**	43 759
Ingham	**6 966**	6 126
Maryborough	**45 147**	43 183
Monto	**3 164**	3 110
Murgon	**9 004**	8 875
Rockhampton	**6 985**	6 843
Yarraman	**17 714**	17 691
Total	**158 286**	153 633

*The net effective area as at March 31, 1987 equals the net effective area as at March 31, 1986 plus the net area established during 1986-87 less corrections for write-offs, replantings, boundary recomputations and re-checks.

APPENDIX 8

* Net area of Effective Broadleaf Plantation as at March 31, 1987 (hectares)

District	*Native* Forest Hardwoods	*Other* Broadleaf Species	Miscellaneous Species	Total 1986-87	Total 1985-86
Atherton	28	151	8	**187**	187
Brisbane	347	3	41	**391**	391
Gympie	761	89	15	**865**	865
Ingham	1	1	39	**41**	6
Maryborough	49	—	38	**87**	85
Murgon	17	9	1	**27**	27
Rockhampton	1	1	4	**6**	6
Yarraman	124	27	31	**182**	190
Total 1986-87	**1 328**	**281**	**177**	**1 786**	
Total 1985-86	1 328	289	140		1 757

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

APPENDIX 9

Areas of Native Forest Treated 1986-87 (hectares)

District	Eucalypt Forest	Cypress Pine Forest	Total 1986-87	Total 1985-86
Brisbane	110	—	**110**	203
Dalby	—	5 026	**5 026**	4 090
Gympie	425	—	**425**	136
Maryborough	—	—	—	185
Monto	398	—	**398**	37
Murgon	758	—	**758**	975
Yarraman	5	—	**5**	125
Total 1986-87	**1 696**	**5 026**	**6 722**	
Total 1985-86	1 661	4 090		5 751

APPENDIX 10

Operational Statistics 1986-87

Operation	Total 1986-87	Total 1985-86
Softwood Plantation Established (hectares)	**5 807**	5 782
Nursery Stock*, Departmental Use—		
Hoop Pine—		
Container	**369 714**	496 309
Caribbean Pine—		
Container	**162 151**	250 142
Open Root	**3 863 804**	4 453 705
Slash Pine—		
Container	**47 945**	—
Open Root	**105 725**	291 231
Caribbean/Slash Pine Hybrid—		
Container	**89 013**	6 000
Open Root	**767 865**	119 597
Radiata Pine—		
Open Root	**66 120**	20 350
Loblolly Pine—		
Container	**20 000**	6 400
Open Root	**12 920**	6 918
Eucalypts—		
Container	**217 432**	223 788
Hardwood Trials	**55 000**	40 700
Nursery Stock, Sales—		
Forest Plots, Windbreaks, Rehabilitation, etc.	**138 201**	186 575
Amenity Stock	**231 538**	211 445
Leucaena	**218 280**	51 250
Total value of seedlings sold	**$314 146**	$323 091
Seed Sales—		
Value	**$176 700**	$223 044
Weed Control—		
Native Pine Plantation (hectares)	**7 400**	6 291
Exotic Pine Plantation (hectares)	**13 704**	12 888
Fertilizing—		
Establishment (hectares)	**4 029**	4 678
Maintenance (hectares)	**10 308**	3 080
Pruning—		
First (hectares)	**3 144**	2 952
Final (hectares)	**3 242**	5 243
Operative Plant as at June 30—		
Motor Vehicles and Trucks	**480**	478
Graders	**17**	18
Rubber-tyred Tractors and Loaders	**80**	80
Crawler Dozers	**25**	26

*All Departmental use information refers to the 12 months period April 1 to March 31.

APPENDIX 11

Milling Timber Removals from Crown Lands 1986-87 (cubic metres gross measure)

	Native Forest Hardwoods and Scrubwoods			
District	Forest Hardwoods	Rainforest Structural Timber	Rainforest Cabinet Woods	Total Hardwoods and Scrubwoods
Atherton	5 047	29 409	41 485	**75 941**
Brisbane	19 929	9	76	**20 014**
Dalby	22 746	—	—	**22 746**
Gympie	34 809	31	561	**35 401**
Ingham	602	4 615	8 650	**13 867**
Maryborough	42 561	168	12	**42 741**
Monto	36 240	48	2	**36 290**
Murgon	17 129	29	11	**17 169**
Rockhampton	34 167	2 825	940	**37 932**
Yarraman	4 055	166	418	**4 639**
Total 1986-87	**217 285**	**37 300**	**52 155**	**306 740**
Total 1985-86	226 058	41 802	52 686	320 546

	Native Forest Conifers		
District	Cypress Pine	Other Conifers	Total Conifers
Atherton	—	3 029	**3 029**
Brisbane	158	381	**539**
Dalby	100 732	—	**100 732**
Gympie	—	1 017	**1 017**
Ingham	—	500	**500**
Maryborough	9	12 068	**12 077**
Monto	16	2 282	**2 298**
Murgon	—	2 136	**2 136**
Rockhampton	1 605	65	**1 670**
Yarraman	—	494	**494**
Total 1986-87	**102 520**	**21 972**	**124 492**
Total 1985-86	116 310	24 900	141 210

	Plantation			
District	Native Conifers	Exotic Conifers	Non-Conifers	Total Plantation
Atherton	1 692	1 528	—	**3 220**
Brisbane	682	94 375	—	**95 057**
Gympie	22 571	37 868	734	**61 173**
Ingham	—	2 202	—	**2 202**
Maryborough	2 091	39 306	72	**41 469**
Monto	8 777	—	—	**8 777**
Murgon	5 947	—	—	**5 947**
Rockhampton	417	12 599	—	**13 016**
Yarraman	103 927	5 365	1 321	**110 613**
Total 1986-87	**146 104**	**193 243**	**2 127**	**341 474**
Total 1985-86	134 135	182 984	114	317 233

	All Milling Timber	
District	**Total 1986-87**	Total 1985-86
Atherton	**82 190**	87 802
Brisbane	**115 610**	93 559
Dalby	**123 478**	135 954
Gympie	**97 591**	102 713
Ingham	**16 569**	15 954
Maryborough	**96 287**	110 067
Monto	**47 365**	43 609
Murgon	**25 252**	34 900
Rockhampton	**52 618**	58 956
Yarraman	**115 746**	95 475
Total	**772 706**	778 989

APPENDIX 12

Pulpwood Removals from Crown Lands 1986-87 (cubic metres gross measure)

District	Plantation		Native Forest	Total 1986-87	Total 1985-86
	Native Conifers	Exotic Conifers	Non-Conifers		
Atherton	—	367	—	**367**	—
Brisbane	72	27 579	—	**27 651**	21 990
Gympie	—	17 811	661	**18 472**	32 707
Ingham	86	145	—	**231**	63
Maryborough	145	17 148	—	**17 293**	24 156
Murgon	251	—	—	**251**	743
Rockhampton	—	26 808	—	**26 808**	—
Yarraman	1 450	1 296	5 660	**8 406**	11 653
Total 1986-87	**2 004**	**91 154**	**6 321**	**99 479**	
Total 1985-86	**949**	**81 002**	**9 361**		91 312

APPENDIX 13

Miscellaneous Removals from Crown Lands 1986-87

Product Group	Volume cubic metres	Value $
Railway Sleepers and Other Railway Timbers/Non-Railway Sleepers and Like Timbers	38 209	594 839
Round Timbers	26 245	791 324
Mining Timbers	2 583	7 218
Landscaping & Fencing Timbers	11 443	171 707
Quarry Materials	1 181 285	706 828
Minor Forest Products	—	125 987

APPENDIX 14

Milling Timber Processed from Private Lands 1986-87 (cubic metres gross measure)

District	Native Forests Hardwoods and Scrubwoods			
	Forest Hardwoods	Rainforest Structural Timber	Rainforest Cabinet Woods	Total Hardwoods and Scrubwoods
Atherton	5 243	3 153	6 991	**15 387**
Brisbane	113 778	1 198	60	**115 036**
Dalby	9 479	—	—	**9 479**
Gympie	14 966	112	—	**15 078**
Ingham	6 378	1 074	3 168	**10 620**
Maryborough	52 849	39	—	**52 888**
Monto	22 259	—	—	**22 259**
Murgon	9 958	—	—	**9 958**
Rockhampton	30 257	1 003	904	**32 164**
Yarraman	14 371	—	—	**14 371**
Total 1986-87	**279 538**	**6 579**	**11 123**	**297 240**
Total 1985-86*	280 332	9 528	11 250	301 161

District	Native Forests Conifers		
	Cypress Pine	Other Conifers	Total Conifers
Atherton	94	62	**156**
Brisbane	—	1 941	**1 941**
Dalby	42 610	—	**42 610**
Gympie	—	1 064	**1 064**
Ingham	—	12	**12**
Maryborough	—	143	**143**
Rockhampton	272	36	**308**
Yarraman	71	730	**801**
Total 1986-87	**43 047**	**3 988**	**47 035**
Total 1985-86*	48 065	8 889	56 954

District	Plantation		Imported	Total Plantation and Imported
	Native Conifers	Exotic Conifers		
Atherton	11	5	—	**16**
Brisbane	3 662	30 290	—	**33 952**
Gympie	1 815	—	—	**1 815**
Ingham	—	12	75	**87**
Rockhampton	—	58	—	**58**
Total 1986-87	**5 488**	**30 365**	**75**	**35 928**
Total 1985-86*	3 637	19 544	—	23 181

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

District	All Milling Timber	
	Total 1986-87	Total 1985-86*
Atherton	**15 559**	16 182
Brisbane	**150 929**	145 200
Dalby	**52 089**	51 362
Gympie	**17 957**	15 509
Ingham	**10 719**	9 973
Maryborough	**53 031**	55 084
Monto	**22 259**	21 672
Murgon	**9 958**	10 754
Rockhampton	**32 530**	36 326
Yarraman	**15,172**	19 183
Total	**380 203**	381 245

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

APPENDIX 15

Pulpwood Processed from Private Lands 1986-87 (cubic metres gross measure)

District	Forest Hardwoods	Plantation—Exotic Confiers	Total 1986-87	Total 1985-86*
Brisbane	44 001	22 195	66 196	64 522
Total 1986-87	**44 001**	**22 195**	**66 196**	
Total 1985-86*	42 052	23 370		64 522

* Corrected figures

APPENDIX 16

Staff Distribution—June 30, 1987

	Head Office	District	Total 30-6-87	Total 30-6-86
***Salaried Officers—**				
Graduate	107	62	**169**	163
Technical	87	36	**123**	123
Field Supervisory	1	103	**104**	105
Administrative/Clerical	142	115	**257**	255
Miscellaneous	—	—	—	—
Sub-Total	**337**	**316**	**653**	646
Wages Employees—				
Reforestation and Research	3	714	**717**	730
Marketing	12	181	**193**	166
Construction of Capital Improvements	—	27	**27**	18
Maintenance of Plant and Capital Improvements	9	103	**112**	153
Recreation Facilities—	—	22	**22**	44
Construction & Maintenance				
Miscellaneous	18	31	**49**	32
Sub-Total	**42**	**1 078**	**1 120**	1 143
Total 30-6-87	**379**	**1 394**	**1 773**	
Total 30-6-86	368	1 421		1 789

*** Figures in this category are based on Public Service Board Establishment.**

APPENDIX 17
Publications

Publications—General

Booklets
"Recreation in Queensland Forests"
"Recreation in State Forests: Jimna-Conondale-Mary Valley Region"
"Recreation in State Forests: Brisbane-Sunshine Coast Region"

Periodicals
"Between the Leaves" (Departmental Newsletter)

Publications—Research

Research Reports
No. 5 Report of Research Activities for 1984, 1985. 100pp.

Technical Papers
No. 40 Bragg, C. (1986). An equilibrium moisture content survey of timber in Queensland. 26pp.
No. 41. Leightley, L. E. (1986). The use of CCA-treated slash pine as a pole species. 8pp.
No. 42. Davis, R. I. (1986). Corrosion in timber preservation treatment plants.
No. 43. Holzworth, P. V. (1987). A field guide to the eucalyptus of the Main Range.
No. 44. Holzworth, P. V. (1987). A field guide to the eucalypts of the Granite Belt.
No. 45. Holzworth, P. V. (1987). A field guide to the eucalypts of the southern Downs—far west.
No. 46. Holzworth, P. V. (1987). A field guide to the eucalypts of the north-eastern Queensland.

Timber Notes
No. 23. Bragg, C. T. (1986). Equilibrium moisture content of timber. 2pp.
No. 24. Peters, B. C. (1986). Drywood termites in Queensland. 3pp.
No. 25. Greve, D. M. (1986). Timber in platform constructions floors. 3pp.
No. 26. Hockey, M. J. (1986). Anobiid beetles in timber and buildings in Queensland. 4pp.
No. 28. Norton, J. (1986). Timber preservation—copper and zinc naphthenates.
No. 30. Grimmett, J. L. (1986). Stabilising wooden articles.

Timber Trends
No. 5. Diehm, W. I. (1986). Timber in multi-unit and non-residential building in Queensland. 5pp.
No. 6. Greve, D. M. (1986). Building materials used in house construction in Queensland—1985/86. 15pp.
No. 7. Greve, D. M. (1986). Timber usage in central and north Queensland. 3pp.
No. 8. Greve, D. M. (1986). Timber and wood product use in furniture in south-east Queensland. 6pp.
No. 9. Greve, D. M. (1986). CCA-treated pine production in Queensland—revised projections. 4pp.

Timber Species (new series)
Species described—

Black bean	Queensland walnut
Blackbutt	Radiata pine
Blush alder	Red cedar
Bollywood	Rose mahogany
Brown pine	Scentless rosewood
Brush box	Silver quandong
Crow's ash	Slash pine
Douglas fir	Spotted gum
Grey ironbark	Tallowwood
Hoop pine	Tasmanian oak
Meranti	Tulip plum
Northern silky oak	Western red cedar
Queensland maple	White beech
Queensland silver ash	White cypress pine

APPENDIX 17—*continued*

Publications—Maps

Reference	Map Name	Edition	District
Scale 1:15000:			
	Murray Upper	1	Ingham
	Wongi Sheet 4	1	Maryborough
Scale 1:25000:			
	Womalah	1	Gympie
7964-11	Craiglie	1	Atherton
7964-13	Mt. Molloy	1	Atherton
7964-14	Rumula	1	Atherton
7964-41	Mt. Carbine	1	Atherton
7965-31	Smith Creek	1	Atherton
7965-32	Mt. Surgeon	1	Atherton
7965-33	Spencer Creek	1	Atherton
7965-34	Mt. Armit	1	Atherton
7966-23	Ayten	1	Atherton
7966-32	Mt. Boolbun	1	Atherton
Scale 1:50000:			
	Fraser Island (North Sheet)	2	Maryborough
	Fraser Island (Central Sheet)	2	Maryborough
	Fraser Island (South Sheet)	2	Maryborough
7964-1	Rumula	1	Atherton
9346-2	Miva	2	Maryborough/Murgon
9443-3	Lowood	3	Brisbane/Yarraman
9443-1	Caboolture	4	Brisbane
9444-2	Woodford	1	Brisbane
9445-2	Cooroy	4	Gympie
9544-3	Caloundra	1	Brisbane
Scale 1:500000			
	Central Queensland	2	Ingham/Rockhampton

APPENDIX 18
Botanical Names

NATIVE CONIFERS

Bunya Pine	*Araucaria bidwillii*
Cypress Pine	*Callitris columellaris.* Syn. *Callitris glauca*
Hoop Pine	*Araucaria cunninghamii*
Kauri Pine	*Agathis robusta* Syn. *Agathis palmerstonii*

EXOTIC CONIFERS

Caribbean Pine	*Pinus caribaea*
Honduras Caribbean Pine	*Pinus caribaea* var. *hondurensis*
Lobolly Pine	*Pinus taeda*
Long Leaf Pine	*Pinus palustris*
Patula Pine	*Pinus patula*
Radiata Pine	*Pinus radiata*
Slash Pine	*Pinus elliottii* var. *elliottii*

EUCALYPTUS

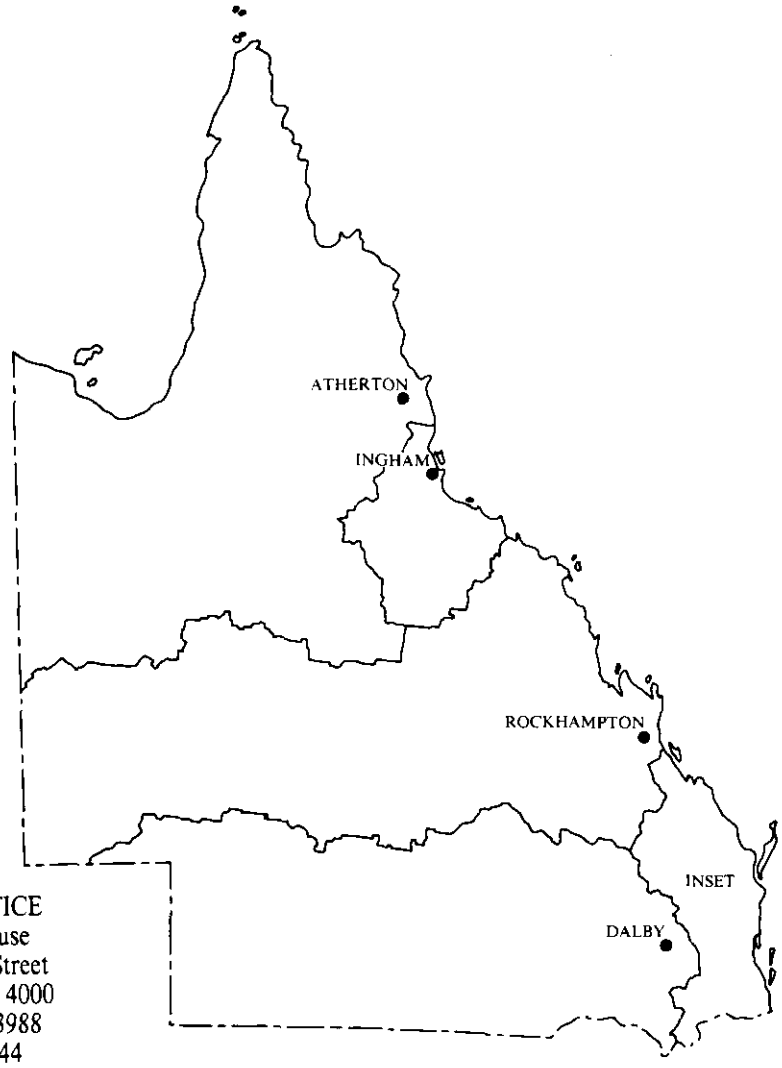
Blackbutt	*Eucalyptus pilularis*
Grey Ironbark	*Eucalyptus drepanophylla*
Gympie Messmate	*Eucalyptus cloeziana*
Rose Gum	*Eucalyptus grandis*
Spotted Gum	*Eucalyptus maculata*
Swamp Mahogany	*Eucalyptus robusta*
White Mahogany	*Eucalyptus acmenioides*

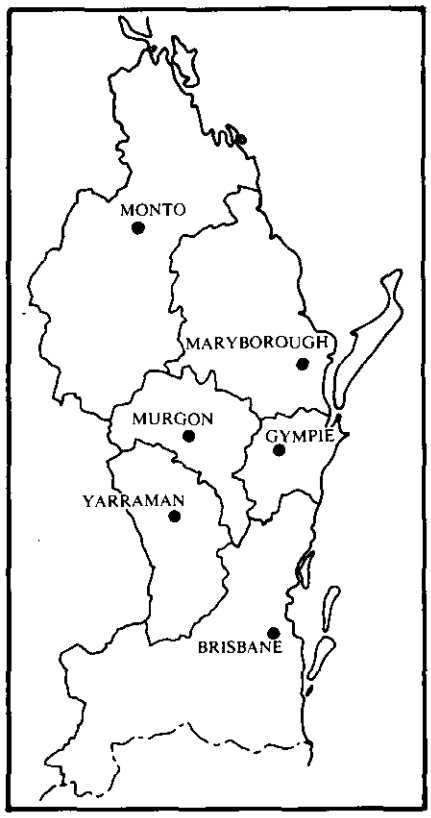
OTHER BROADLEAF SPECIES

Brown Salwood	*Acacia mangium*
Brush Box	*Tristania conferta*
Camphorwood	*Cinnamomum oliveri*
Cinnamon laurel	*Cryptocarya cinnamomifolia*
Hickory Ash	*Flindersia ifflaiana*
Satinay	*Syncarpia hillii*
Sandalwood	*Santalum lancealatum*
Southern Silky Oak	*Grevillea robusta*

APPENDIX 19

Forest Districts





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Dalby:	D.M. WILSON	Telex: AA48712	PO Box 590	(074) 62 2022
Gympie:	G.J. SWARTZ	Telex: AA42259	M/S 483	(071) 82 2244
Ingham:	L.S. HAWKES	Telex: AA47691	PO Box 1322	(077) 76 2354
Maryborough:	P.V. HOLZWORTH	Telex: AA49639	PO Box 219	(071) 22 1111
Monto:	K.L. WAUGH	Telex: AA49615	PO Box 219	(071) 66 1433
Murgon:	P.S. MALE	Telex: AA49712	PO Box 42	(071) 68 1422
Rockhampton:	P.J. TWEEDY	Telex: AA49138	PO Box 344	(079) 27 6877
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