

**Bailey, Caris**

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**From:** Strelein, Greg  
**Sent:** Monday, April 24, 2006 10:49 AM  
**To:** Bailey, Caris  
**Subject:** FW: API and RLI

Hi Caris,

Would we include the Jarrah Inventory project here or as a separate poster?

Greg

-----Original Message-----

**From:** Jack Bradshaw [mailto:jbrad@karriweb.com.au]  
**Sent:** Friday, 21 April 2006 3:24  
**To:** Strelein, Greg  
**Subject:** API and RLI

Hi Greg

See attached. Can you please pass on to Caris if you are happy.

Cheers

Jack

## The Development of Resource Inventory for South west forests

The traditional description of resource inventory in a forestry sense is the estimation of forest parameters (e.g. species, volume, size class distribution and so on) generally using large numbers of sample plots covering all or a large part of the forest estate. There are of course many other types of inventory such as vegetation and landscape quality mapping, wildlife census and so on but these rarely involve the same extensive ground sampling that forest inventories have used. The following is a description of the development of large scale timber inventories of the south west forests.

The first attempt at forest inventory was that done by Ednie Brown in 1895. He not only attempted to map the area of forest but also the volume.

*... in the examination of these extensive forests a distance of over 5,000 miles has been covered by rail, buggy, and horseback.*

*... something like 150 camps were formed during the trip, and that over 1,500 individual acres were measured in arriving at an estimate of the quantity of marketable timber in these forests."*

From this he estimated that there was 88M m<sup>3</sup> of marketable timber on the forest.

The next major inventory began in 1916 and was completed five years later. As part of the forest classification, parallel assessment lines 800m apart throughout the forest (300m in karri forest) were established to record the area of cutover forest, the forest type and the volume on sample plots along the assessment line.

*The results obtained will make it possible to recommend what areas should be permanently reserved for forestry purposes. Finally, the detailed information collected will pave the way towards forest working plans, which will both regulate the cutting in the virgin forests yet remaining, and also lay down the procedure and silvicultural operations necessary in order assure the regeneration of the best species on those areas which have been by sawmillers and timber hewers in the past."*  
(Annual report 1916).

The inventory was extensive. Its most valuable contribution was the delineation of the prime forest country and the clear indication that the net forest area was much smaller than the previous estimate based on the external boundaries identified by Ednie Brown. By the standards of today the estimates of standing volume were very low. Assessors based their judgements on the standards of sawmilling of the day, and these were extremely demanding. Areas said to be 'cut out' still contained substantial volumes of timber. While real enough at the time, the resource was significantly underestimated by the standards that prevailed even a few years later. At this time there was an estimated 30M m<sup>3</sup> of timber suitable for sawmilling.

Between 1932 and 1938, one hundred 2 and 4 ha plots were established in 21 centres throughout the jarrah forest. These data provided the basis for describing a wide variety of silvicultural parameters and characteristics of the jarrah forest rather than an estimate of volume. This was the first comprehensive report of the geology, soils, volume and growth habits of the jarrah. This was not a broadscale inventory in the usual sense but it added a great deal to the knowledge of the forest.

Strip line assessments continued to be done through the 1940s and 50s, measuring trees 20m each side of the line, with trees on sections of the lines being tagged for future growth measurements. In 1951 an assessment baseline (May's line) was established running north-south from Gleneagle to the Southern Ocean, with other lines established parallel to it. These lines were assessed for volume by local staff.

*Permanent line assessments, commenced in 1940 and continued until 1953... proved abortive, due again to the difficulty of uniformity by assessors and the misconception as to the staggering cost of such work [\$700,000 in today's values]. Some 661 miles were established, cost rising as high as £40 per mile, but still no real picture of the forest was obtained (Nunn 1959).*

The absence of an effective stratification was a major problem.

The completion of aerial photo interpretation (API) program in 1963 was a huge step forward for forest inventory. For the first time detailed maps of forest type and structure were available and stratification became possible. Trials of various stratification schemes were undertaken but it soon became apparent that the variance in standing volume and the number of structural and site combinations were too large for effective sampling of specific structural types.

In 1963 a complete re-inventory of the forest was initiated. It differed from earlier assessments in that:

- All trees >100 dbh were measured
- A constant standard was aimed at, adjusted later for varying standards of acceptance
- Marketable, unmarketable and dead trees were assessed
- Broad strata within each forest block were based on forest type and quality, cutting and dieback status
- Stratified random sampling with optimum allocation was used for plot selection
- The target sampling error was  $\pm 20\%$  by block and  $\pm 10\%$  by sawmill permit.

The Forest Department's first major computer program was written to process these results and involved the punching and verifying of 10,000 individual punch cards. Summaries of the distribution of stem numbers, basal area and volume by size class were produced for each block, strata and sawmill permit. They were later converted to metric units and provide an invaluable picture of the forest in the 1960s.

10,000 plots (8,000 ha) across the whole of State Forest were assessed under this program by the time it was completed a decade later. The first statistically valid and reliable resource inventory had been completed.

But there were some shortcomings. Assessors attempted to assess to a common standard, with adjustments for current utilisation being made on the basis of 'acceptable loadage plots'. These were plots established before and after cutting to check the accuracy of the assessment or utilisation standard. The results were useful but never entirely reliable. Secondly, only one product was assessed for each tree so that a tree that contained a sawlog would record only that volume. While this was satisfactory when only sawlogs were marketable, it resulted in an underestimate of chipwood volume. This problem was finally rectified in 1977.

With the broad resource estimates completed, the emphasis of inventory shifted to Management Level Inventory. This was based on a more intensive systematic sampling at the coupe level with the primary purpose of providing detailed information for logging plan development. Initially developed for integrated sawlog, chipwood operations it was later extended to all forest areas.

[Greg. Suggest a summary of the new Jarrah Inventory should be added here. Are there examples of broad scale inventory being done in the forest areas for purposes other than timber?]



## Air photo interpretation (API)

A forest type map is fundamental to forest management. However it was one hundred year after the first trees were being cut from the forest before the first detailed forest type map was produced.

Ednie Brown, the first Conservator of Forests produced the first map of forest types, showing the broad external boundaries of the jarrah, karri, tuart, wandoo, York gum, yate, sandalwood and jam forests. During the period 1916-21 the prime jarrah, karri and tuart were more accurately delineated by the forest classification.

But it was not until the 1950s that detailed forest maps were produced. World War II had been the catalyst for major improvements in aerial photography. It had also provided training in air photo interpretation and this experience had a direct influence on Australian forestry – Max Jacobs, Principal of the Australian Forestry School had earned his first Doctorate in aerial photogrammetry, and Les Carron, AFS lecturer in inventory had been the Forestry Corps API specialist in New Guinea.

In 1951 a program to map the entire forest was begun, initially covering the virgin forests of the Donnybrook Sunklands and the Frankland River area, then largely unroaded. Species type, crown cover and height class were identified. In 1959 crown cover of the mature tree component (upper strata) was identified separately and the stand was designated as a mature, pole or sapling stand. By 1965, 1.6 M ha had been interpreted and mapped for species type, density and structure. The black and white photos were taken at 1:15840 (20 chns per inch) and varied in quality from poor to good.<sup>1</sup> The system was unique to WA though the height classes used were those of the FAO standard of the time.

The work was done by some 40 interpreters over 15 years, working mainly from the Working Plans Offices at Manjimup and Harvey. Interpreters generally spent the winters interpreting (one day a week ground truthing) and the summer doing field assessments.

Up until this time all forest topographic maps (Topo sheets) had been prepared from ground surveys, using theodolite surveys for the major framework and chain and compass surveys within that. Much of the theodolite data was from tramway surveys provided by timber industry surveyors while the chain and compass surveys were a significant part of forest officer duties. From now on most of this work was incorporated in the API maps where the data was transferred to maps using huge photogrammetry machines in the Mapping Branch in Perth with tip, tilt and scale controlled with 'slotted template' layouts. The detailed mapping of streams was possible for the first time.

API maps represented a huge leap forward in knowledge of the forest, allowing it to stratified on the basis of species, structure and site quality.

The photos themselves provided an overview of the forest never seen before and extended ones vision beyond the few metres that can be seen from the ground. Stereoscopic aerial photographs also revolutionised road selection and design.

Before the days of cheap colour printing, two sets of maps were hand coloured, one set for Head Office, one set for the Working Plans Office. Each set consisted of two maps, one coloured for species, the other for structure<sup>ii</sup>.

Advances in computer technology allowed relevant summaries of these maps to be presented at small scale in 1997<sup>iii</sup>.

The structure of stands cutover since mapping has of course been changed but they still provide valuable insight. For example the height difference between mature trees and poles was very obvious in the 1960s and the API generally provides more accurate depiction of that than is possible on photos taken today. Although these maps are now more than 40 years old they are still (with opportunistic correction as needed) the primary source of forest type and site quality.

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<sup>i</sup> Examples of good and bad quality interpreted photos could be obtained from Manjimup FMB if required.

<sup>ii</sup> An example of these would be good. I can't find any in Manjimup. Do you know of any elsewhere? The head office set should be somewhere.

<sup>iii</sup> Suggest that a composite of the three Forest Association maps could be produced at 1:500,000 for background display if required.

(4) From data we are steadily collecting, I am hopeful that fire-protected Jarrah forest will easily maintain the .25 inches annual diameter increment you suggest. In all the older age classes the problem today is not thinning but the restoration of the crowns which have been thinned out by frequent burning until most of the older trees today are gaunt frames carrying a few leaves. On measurement plots it is possible to forecast the girth increment with considerable accuracy by examining the crowns.

(5) The problem certainly calls for increased staff on the Working Plan side. The large unemployment relief grants of the past few years must be regarded as a passing phase which has enabled us to greatly increase the growing stock on the best of our cut-over forest. As you will note from last year's Annual Report, our regeneration operations in the Jarrah forest extended over 96,000 acres. This work must slacken off during the next 12 months and, before the end of the current 10-year period of the Plan, I hope we will be in a position to prepare a revision much more informative and accurate than the original attempt. I am not optimistic enough, however, to suggest that we can hope to reduce much below a cut of 450,000 loads per annum in the immediate future, but we can make a start to educate the people of W.A. so that strict regulation of cut is accepted as the most important feature of sound forest management, and gradually work for permanence of industry on each section of the forest.

With kind regards,  
Yours sincerely,

The total volume of our re-created jarrah forests which will be nearer normality would be 5½ million loads in round figures, to this we might tentatively apply V.M.'s formula which on your r of 90 years would give us 1.13 million loads as the cut and on my minimum estimate of r viz. 120 years, 850,000 loads. Compare these figures with your calculated cut and keep in mind the fact that out of the 2.78 million acres only 1.3 are virgin while 0.85 are cut over, 0.3 practically cut out and 0.33 consist of poor quality forest and I think you will agree that a cut of anything round 400,000 loads means heavy overcutting.

The figure of 187,000 loads or at a pinch 225,000 loads could only be used to bring the people of Western Australia round to face the facts and possibly as the position becomes more difficult a government might face the obloquy of reducing the milling to that extent. If that comes before the bulk of the virgin jarrah is cut over it would be a wonderful win.

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CONFIDENTIAL

SLX/MD

9th October, 1976.

Dear Lans-Pools,

I have to thank you for your letter of the 25th ultimo and attached memorandum concerning the General Working Plan for Jarrah Forests. I agree that this is much better treated as a personal exchange of views rather than official correspondence on the subject.

I find myself in general agreement with many of the points made by you and will look forward to discussing the matter at greater length when next we meet. The following are a few of the many comments that one could raise on the involved issues:-

(1) My objection to your past remarks on this issue in its general application to Australian conditions has not been to the challenging of any basis of calculation but to the implication that Western Australia should be lumped in with the other States, where apparently a laissez-faire policy has been adopted towards yield regulation, although lip service may have been paid to the principle of sustained yield.

(2) Although the calculation I have used is in effect von Mantel's formula, I have made no claim to have applied a recognised system such as this, as I agree with you concerning the unreliability of results of such application owing to the abnormal condition of our forests. As an objective for the first ten years of the Plan I have set out to reduce the mill intake in the Jarrah forest from 700,000 loads per annum to 460,000 loads per annum and to distribute the cutting as far as practicable. Present indications are that I have a reasonable chance of success. When we have more data concerning the stocking of our forests, rates of growth, etc. and are able to make sounder calculations of permissible cut, it will be time to consider further objectives. So that your criticism that my yield is to a large extent based on economic considerations is a correct one, but the public and the sawmiller can appreciate the desirability of making existing mature timber serve for 45 years, where they would be simply suddled by references to von Mantel and regard such references as an effort to introduce some high falutin theoretical conception.

(3) With regard to the third paragraph of your letter, I do not want you to think that there is any lack of interest by members of the staff or general enthusiasm for the principles of sustained yield. The trouble was my inability to explain what I hoped to achieve by a Plan drawn up on very broad lines without demonstrating my ideas by doing the job myself. Telfer came in to the extent of making the numerous calculations involved in connection with areas and volumes, working on the assessment plans which were in the office. This routine work did not, of course, need any silvicultural knowledge.

## The Development of Forest Management Plans

Although most of the work of the Forest Management Branch and its predecessors revolves around inventory of one kind or another, inventory is not an end in itself. The principal purpose is to inform the management of the forest, and one formal expression of this is the Management Plan.

A key component of the Forests Act when it was first drafted was the provision for management plans to be prepared periodically. The plans not only set out to provide a clear statement of intent for management but their status as legal documents, once passed by Parliament, was intended to prevent short term political interference in forest management, a major concern at that time. The CALM Act that replaced the Forests Act retains the requirement for management plans. An examination of these plans provides a valuable insight into the changing attitudes and objectives as well as the impact of a changing resource base over the last 80 years.

Charles Lane Poole, the Conservator who drafted the Forests Act, regarded these plans as fundamental and undertook a world wide search for a suitably trained forester to fill the role of Working Plans Officer, a position finally filled by Stephen Kessell in 1920.

The priority at that time was the preparation Working Plans for each "Working Circle", an area of forest to be managed as an entity (about 50,000 ha). For the most part these areas had already been cutover to some extent in the recent past. These plans set out the rate and method of cutting, the silvicultural program for regeneration and thinning, infrastructure needs and fire protection strategies.

**Working Plan no 1**<sup>i</sup> was prepared for the Mundaring Working Circle, an area that had been cutover as early as the 1880s. 5,000 ha of it had also been ringbarked in 1903 in an effort to increase water flow into the Mundaring Weir but had also resulted in increased salinity. The management objectives were:

- To maintain a well regulated supply of pure water in creeks and springs
- To produce the greatest sustained yield that the country can support
- To utilise all areas of soil unsuited to the production of jarrah for the raising of other species, both indigenous and exotic.

In fact, Working Plan no 2 (the Ludlow tuart forest) was the first plan to be completed and approved in 1921.

This was followed shortly after for the Collie Working Circle Plan that had a principal objective of providing mining timber. Clearfelling was adopted as the silvicultural prescription with the object of providing a ready source of pit props, thinning for which continued well into the 1970s.

By 1929 there were 327,000 ha under Working Circle Plans<sup>ii</sup> and some were in the process of being revised. By this time the Timber Concessions were coming to an end and this provided the first opportunity to regulate the level of cutting which was seen as being well above the level that could be sustained. In preparation for this, two overall Working Plans were prepared.

In 1927 **Working plan no 40** was approved and covered the whole karri forest. This was followed in 1929 by **Working Plan no 60** to cover the jarrah forest. In the absence of the complete dedication of State Forest, they were based on the area of prime forest that the

Department expected would be finally reserved. The plan called for a reduction in allowable cut of jarrah from 990,000 m<sup>3</sup> to 650,000 m<sup>3</sup> per annum, with the aim of 'spinning out' the life of the mature resource for 45 years (half the then estimated rotation) by which time the regrowth forest would begin to contribute. The allowable cut of karri was set at 212,000m<sup>3</sup>/ann

Kessell argued his case with the Minister in these terms:

*The future of the rapidly developing primary and secondary industries of the State is intimately bound up in a sufficient and economical timber supply. Authorities who have made a special study of the question predict a world famine in timber within 25 years, and, unless the position is faced today, Western Australia will have slaughtered her forests for the sake of overseas countries, and find later that internal development..... is seriously hampered by the difficulty of being forced to import unsuitable timbers, at a ruinous price, while, at the same time, large sums will be necessary to help restore forest areas which have ceased to support the timber industry. To sum up, it is evident that, unless immediate reduction of output on sound lines is faced, our forests within a very few years will become a burden on the community instead of a valuable asset.*

Kessell agonised over his calculation of allowable cut and in private correspondence with Lane Poole, he (Lane Poole) disagreed with Kessell's calculations:

*Does not the problem call for increased staff on the Working Plans side? No one would be more delighted if, when you have completed the re-enumeration and have a true measure of the useful potential mill logs, you can prove me wrong in my estimate that at 160,000 loads [ 650,000 m<sup>3</sup>] you will still be overcutting to the extent of 150,000 to 200,000 loads [212,000 to 280,000 m<sup>3</sup>]*

It was fortuitous that the Great Depression that followed facilitated the reductions proposed.

In 1945 **Working Plan no 66** was prepared to regulate sleeper mills. These mills were established in response to the huge demand for sleepers in the post war period (4M/ann in Australia). These mills were seen as a significant improvement over the wasteful practice of hewing and were directed into areas already cut by major mills, in poorer quality forest and close to areas being cleared for agriculture. The plan provided for the production of 500,000 sleepers per annum.

**General Working Plan no 67** for jarrah, karri and wandoo was also prepared in 1945. Against a backdrop of huge post war demand for sawn timber, a net shortfall in supply in Australia and limited import opportunities, it set the allowable cut for all species at 850,000 m<sup>3</sup>/ann for 30 years with the expectation of reductions thereafter.

In 1956 (?) 'test' plans were developed for two areas, one in the jarrah and the other in the karri forest (the **Karnet and Dombakup working plans**)<sup>iii</sup> to develop a model for the calculation of sustained yield. The formulae developed were used to calculate the yield for each Working Plan area on a standard 'Form 420'<sup>iv</sup>.

The 1956 **General Working Plan no 79** placed emphasis on maintaining the timber industry and community stability. It used a resource base of 2.4M ha which included forested land that would eventually be alienated. The level of cut was increased to utilise this resource and there was also a deliberate decision to utilise what it saw as a wasting resource, as a consequence of fire damage, in unroaded forest areas. An allowable cut was 'determined' (not 'calculated' as it points out) at 1.27M m<sup>3</sup>. It did not purport to be sustained yield.



This plan was reviewed internally in 1960 (GWP 81) and 1966 (GWP 83) but it was not until 1971 that a revised plan was presented to Parliament for approval.

The 1971 **General Working Plan no 85 for hardwood forest** continued to emphasise the objective of community stability but also the goal of State self sufficiency in timber by 2030 through an increase in pine planting. The plan also acknowledged that new inventories had shown a reduced resource and recognised that the resource from Private Property was coming to an end. The term 'allowable yield' was used and defined as the level of cut necessary to bring the forest to maximum productivity as soon as possible – conceptually a higher figure than any estimate of sustained yield. A reduction in permissible cut to 850,000 m<sup>3</sup> was recommended. In the interests of stability the final figure became 1.06M /ann to be reduced to 640,000 m<sup>3</sup> in 1990 when pine plantations were expected to fill the gap. There was to be an additional 155,000 m<sup>3</sup>/ann from Private Property for 5 years.

All Working Plans to this point had primarily dealt with the regulation of the cut. The 1971 plan was the first one to mention specific objectives for other values such as conservation, water protection and so on.

The 1977 **General Working Plan no 86** was a major departure from previous plans. By this time the concept of 'priority use' had evolved and the State Forest was divided according to its priority use - such as water production, water protection, conservation, recreation etc and objectives and strategies for the management of each had been determined. Timber production was compatible with some uses and not others, with the result that 30% of the timber resource (24% of the area) previously available was now in other land uses.

State self sufficiency in timber remained a goal but to achieve it pine planting would need to increase and the hardwood cut would need to be kept above the long term capacity for some time. A reduction in hardwood sawlog cut to 795,000 m<sup>3</sup> /ann by 1980 was determined with the expectation that it would reduce to 150-200,000 m<sup>3</sup> /ann by 2020 when pine production would exceed 900,000 m<sup>3</sup> ann. Chipwood products, available since 1975, were additional to this figure.

The sawlog cut was now regulated by species, not as one hardwood figure.

The 1982 **General Working Plan no 87** was essentially a confirmation of the previous plan with further fine tuning of the priority use concept and strategies for implementing it. It is interesting that the Conservator expressed his disappointment in the general lack of public response to these forward-looking proposals. The hardwood allowable sawlog cut was reduced to 792,000 m<sup>3</sup> with further reductions of karri sawlog in 1988 with the long term expectation of an allowable cut of 150,000 m<sup>3</sup> by 2020.

In 1987 a **Timber Strategy** was developed. This set out the proposed allowable harvest levels and was the first of the plans prepared under the new Department of Conservation. The management objective was to provide for a timber industry that was sustainable, provided for State net self sufficiency with an export surplus. For the first time it provided a graphical representation of a forecast reduction in hardwood forest yield and an increase in pine yield to compensate for this reduction. Sustained yield was seen as the combined total of hardwoods and pine.

The hardwood yield predictions were highly optimistic in that they incorporated all potential sawlog products (not just first grade sawlogs), a substantial yield of marri sawlogs, and assumed a program of fertilising and thinning. However only some of these predictions were to be realised and without an adequate mechanism to control 'leakage' from one product to another, there was increased potential for overcutting of higher grade sawlogs.

Along with the Timber Strategy, **Regional Management Plans** were prepared for the Northern, Central and Southern Regions that dealt with issues other than timber production and yield.

The **1994 Forest Management Plan** still espoused multiple use forestry and the plan set out the objectives and strategies for each of these uses – but by now the ‘priority use’ concept had given way to formal tenure changes that in some cases had shifted priority use to exclusive use. The proportion of forest unavailable for timber production had increased to 38%.

Timber production was required to be ‘ecologically sustainable’ – the first time that this term was formally used. Achieving this simply through ‘sustained yield’ of timber products was unsatisfactory from many points of view. To overcome this a new approach was developed. This involved the setting of targets for the percentage of the forest that should be represented in each development (or age) class in perpetuity, thereby directly controlling the desired structure of the forest rather than trying to do it through the awkward and indirect mechanism of sustained yield.

This plan defined sustained yield as the being no more than the total growth capacity of the forest i.e. as the gross bole increment. On this basis the level of hardwood cut for first and second grade logs was set at 704,000 m<sup>3</sup>, still well above the estimated longer term yield of 480,000 m<sup>3</sup> indicated in the 1987 strategy. The goal of State self sufficiency was no longer enunciated, though the level of cut that was determined, still reflected concerns for community stability.

The **2004 Forest Management Plan** saw further developments to the process. This plan was the legal confirmation of the result of several major developments that had occurred over the previous 7 years. The first of these was the RFA process that sought to establish a representative reserve system to national standards as well as maintaining relative stability of rural communities. The second was a later change in government policy that resulted in the reservation of all old growth forest and substantial additions of other forest to the reserve system. The result was that there was now 55% of the forest area in reserves, though the proportion in terms of timber resource was much greater since all of the highest volume areas (old growth) were now reserved.

Ecological sustainability remained a goal but with a much greater priority on conservation values. Structural targets were no longer considered relevant since the proportion of old age classes was now represented in reserves to the full extent possible.

Sustained yield was redefined as the ‘non-declining’ yield of sawlogs. The background data and the level of non-declining yield prepared by the Forest Management Branch was reviewed by an external panel who presented several recommendations to government based on different reserve options. This process took into account not only the existing resource base but also changes expected as a result of predicted dieback spread.

The government determined an allowable cut of 185,000 m<sup>3</sup> /ann of first and second grade sawlogs, with the potential for an additional 847,000 m<sup>3</sup> /ann of other bole wood if markets could be established for their use. The long term objective of sustained yield had finally been achieved, but on a much smaller area of State Forest than envisaged by Lane Poole and Kessell.

Despite the shift in the emphasis of forest management from timber production to conservation over the last 80 years, forest management plans are still primarily concerned with the management of those forests where timber production occurred. Specific goals for other forest and wildlife values have yet to be fully developed. At the present time, separate management plans are prepared for each National Park.

J. Bradshaw  
28 April 2006

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<sup>i</sup> Pat Collins has a copy

<sup>ii</sup> There are copies of several of these at FMB Manjimup

<sup>iii</sup> I will need to get these from State Archives to confirm the date

<sup>iv</sup> There are worked examples at FMB Manjimup

**Bailey, Caris**

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**From:** Strelein, Greg  
**Sent:** Monday, May 01, 2006 11:52 AM  
**To:** Bailey, Caris; Rayner, Martin  
**Subject:** FW: Latest installment

Caris, Martin,

This last document may need some checking before finalising. The Admin timeline may also need more work to link the dates to activities in the Management Milestones timeline. Martin, will you have time to check them?

Greg

-----Original Message-----

**From:** Jack Bradshaw [mailto:jbrad@karriweb.com.au]  
**Sent:** Friday, 28 April 2006 3:52  
**To:** Strelein, Greg  
**Subject:** Latest installment

Hi Greg

Latest installment attached. This is rather longer than the others but the information contained should be of value for other purposes.

I think that is about it. Is there anything else to be done at this stage?

Note track changes on Admin timelines

Cheers

Jack

# ADMINISTRATIVE MILESTONES

## **1842 First forest regulations**

## **1870 First timber concessions granted**

## **1874 First concerns expressed that the forest were not inexhaustible**

## **1877 Royal Commission**

A commission was appointed to report on the timber trade and conservation but it never reported

## **1879 Report on the forests of WA by Baron von Mueller**

## **1883 First (honorary) Forest Ranger appointed**

## **1896 Woods and Forests Dept established**

The government decided that the management of forest and control of the timber industry should be managed by a specific department and provided for the formation of Woods and Forests Department, with Ednie-Brown appointed as Conservator of Forests. Rangers stationed at Chidlow's Well, Donnybrook, Coolup, Coolgardie, Northam.

## **1896 Ednie-Brown's Report on the Forests of Western Australia was tabled in parliament.**

Ednie-Brown made his views clear on the subject of land clearing and forestry "*...much of the land on which jarrah grows, is as a rule, of little or no value for agriculture.... To destroy it therefore, for the sake of a few more blades of grass, is suicidal and reprehensible in the extreme.*"

## **1896 Concern over import imbalance and future supplies of native timber**

Department establishes the first plantation on the "Seaside Commonage" approximately 2 miles south of Bunbury.

## **1899-1916 G.G. Richardson Acting Conservator**

## **1903 Royal Commission**

The Commission was appointed to report on issues relating to the rate of cutting, waste, the declaration of permanent forest and other forestry matters. They observed that : "*State acquiescence in the destruction of good timber only because the trade demands it, is a crime against future generations*"

## **1916 C.E. Lane-Poole appointed Conservator of Forests**

Charles Edward Lane-Poole was a graduate of the School of Water and Forests in Nancy, France and had previously been Conservator of Forests in Sierra Leone. He strenuously advocated the virtues of forest management, raised public awareness and embarked on a program of forest classification as a basis for recommending areas of forest that should be permanently reserved as State Forest. "*... instead of the forests being a fleeting source of wealth to be mined by timber companies without let or hindrance, they should be worked on*

*sound silvicultural lines with a view to assuring a continuity of timber supplies for all time...* ”  
He drafted the Forests Act and saw it passed through Parliament.

### **1918 Forest Act passed in Dec 1918, and assented to in Jan 1919**

The passing of the Forests Act and its attendant reservation of State Forest was not achieved easily. The principal antagonists in the early years were land clearers: “*..land should not be devoted to the production of timber when it is capable of producing other items required on the world’s markets... there is no acre of karri forest....that would produce an equal return...as such an area of apple orchard.*” There was also the timber interests: “*Forest policy is in crisis....Swept by the full force of vested timber exploiting interests, and lacking support from the one quarter which could give support, it threatens to become a total wreck.*”

The Forests Act was written with the very clear intent of reducing the influence of short term politics. It was said that “*However much we may allow for justifiable expediency, the [forest] policy cannot safely rest on a shifting opportunism to the neglect of conviction.*”

An essential element of the new Forest Act was that the principal vehicle of control was the management plan, devised by the Conservator, approved by Parliament, and implemented by the Conservator.

### **1919 First State Forest declared at Ludlow**

### **1920 First Working Plans Officer appointed – S.L. Kessell**

### **1920 Paper pulp produced from karri and marri**

The Royal Commission of 1903 had recommended an investigation into the establishment of a pulp mill to use logs that could not be sawn. A pilot plant was established by the Commonwealth Institute of Science and Industry (later the CSIRO Forest Products Division) at Crawley, supported by the local newspapers. Paper was made from both karri and jarrah. In 1922 the work was transferred to Victoria.

### **1922 Royal Commission**

To enquire into the financial provisions of the Forest Act and the administration of the Act. Recommend among other things,

- Allocation of three fifths of revenue to the Forests Dept
- Encourage the establishment of a wood pulp industry
- Gazette areas agreed by Forests and Lands Dept as State Forest
- Reserve all water catchments to be managed by the Forest Department.

### **1922 Kessell appointed Conservator**

Following a bitter dispute between Lane-Poole and the Premier James Mitchell over the extension of timber Concessions and delays in the dedication of State Forests, Lane-Poole resigned and was replaced by the 23 year old Kessell.

### **1923 T.N. Stoate appointed Working Plans Officer**

### **1927 Working plan no 40**

Karri forest

### **1927 First Foresters Manual published**

### **1929 Working Plan no 60**

Jarrah forest



### **1930s Great Depression - major silvicultural work undertaken in the forest**

Between 1922 and 1941, 169,000 ha of silvicultural treatment was carried out, 90% of it during the depression period. Up to 1,500 men were employed in bush camps from Mundaring to Manjimup.

### **1933 Last timber concession expires**

While the timber concessions and leases granted in the 1870s remained their relative advantage over the conditions applying to permit holders under the Forests Act, effectively delayed full implementation of the Act. The decision by the government to grant an extension because of the shutdowns caused during the Great War was the last straw for Lane Poole and was the catalyst for his resignation.

### **1945 Working Plan no 66**

Sleeper mills

### **1945 Working Plan no 67**

Jarrah, karri, wandoo

### **1951 Royal Commission**

Reported on the dedication of SF, the need to improve utilisation, the need for more pine planting, the limitation of cutting to 1.1M m<sup>3</sup>/ann, and the establishment of the Crown Land Tribunal to resolve conflicts over land use (C of F, Surveyor General, Chair of Land Settlement Board, Director of Agriculture)

### **1954 Working Plans Office established at Manjimup**

This was the beginning of the branch as it is today, establishing a specialist staff to undertake the work related to inventory and planning. Manjimup Office was originally responsible for areas south of the Preston River.

### **1955 Working Plans Office established at Dwellingup, later moved to Harvey**

This office was later moved to Bunbury in 1978

### **1956 (?) Karnet and Dombakup working plans**

A 'test' plan was developed for an area in the jarrah and the karri forest to develop a model for the calculation of sustained yield. The formulae developed were used to calculate the yield for each Working Plan area on a standard 'Form 420' <sup>1</sup>

### **1960 General Working Plan for WA**

### **1961 Royal Commission**

Reported on the 1961 bushfires

### **1967 General Working Plan**

**1970s The reservation of State Forests as A class reserves is virtually complete**

### **1971 General Working Plan for hardwood forest**



### **1975 Woodchipping commences**

Recommendations to establish a pulp mill had been made by the Royal Commission in 1903, paper was made from karri and marri at a pilot plant in WA in 1922, the pulp resource at Boranup was investigated in the 1920s, and investigations into establishing a pulp mill at Dombakup had been made by APM in 1951. It was not until 1975 that an export woodchip operation commenced in the southern forest.

### **1977 Change of name to Inventory & Planning Branch**

I&P offices become responsible to the regions for the program but remain responsible to the Como I&P for technical standards and co-ordination

### **1977 Department installs its first mainframe computer**

### **1978 Kelmscott I&P Office established**

### **1977 General Working Plan no 86**

### **1982 General Working Plan no 87**

### **1984 Mainframe computer access extended to the regions**

### **1985 CALM formed by amalgamating the Forests Dept., National Parks Authority and parts of Fisheries and Wildlife**

### **1985 Honorary Royal Commission**

Reported on the operation of CALM

### **1987 Timber Strategy and Regional Management Plans**

A strategy outlining the proposed future allowable harvest levels was prepared. This was the first time that a detailed explanation of the long term yield had been publicly presented.

### **1987 Branch name changed to Inventory Branch in the Forest Resources Division**

### **1992 Resource Assessment Commission**

### **1994 Forest Management Plan**

### **1993 Branch activities part of the Native Forest Management Branch**

### **1994 Branch name changed to Forest Management Division**

### **1999 RFA signed**

### **2000 CALM split**

CALM was split to form the FPC and CALM

### **2001 FMB becomes part of Sustainable Forest Management Branch**

### **2004 Forest Management Plan**

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<sup>i</sup> Completed samples are available at Manjmur FMB for display if required

**Bailey, Caris**

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**From:** Adams, Julie  
**Sent:** Friday, April 21, 2006 11:48 AM  
**To:** Bailey, Caris  
**Subject:** FW: Third batch

-----Original Message-----

**From:** Owens, Shani  
**Sent:** Thursday, 20 April 2006 8:48 AM  
**To:** Adams, Julie  
**Subject:** FW: Third batch

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Shani Owens  
Executive Officer to the  
Director of Nature Conservation  
Department of Conservation and Land Management  
Locked Bag 104  
Bentley Delivery Centre WA 6983  
Ph: (08) 9442 0302  
Fax: (08) 9386 1286  
Email: [shanio@calm.wa.gov.au](mailto:shanio@calm.wa.gov.au)

-----Original Message-----

**From:** Jack Bradshaw [mailto:[jbrad@karriweb.com.au](mailto:jbrad@karriweb.com.au)]  
**Sent:** Wednesday, 19 April 2006 6:04 PM  
**To:** Strelein, Greg; Owens, Shani  
**Subject:** Third batch

**Bailey, Caris**

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**From:** Adams, Julie  
**Sent:** Friday, April 21, 2006 11:48 AM  
**To:** Bailey, Caris  
**Subject:** FW: Second lot

-----Original Message-----

**From:** Owens, Shani  
**Sent:** Thursday, 20 April 2006 8:48 AM  
**To:** Adams, Julie  
**Subject:** FW: Second lot

---

Shani Owens  
Executive Officer to the  
Director of Nature Conservation  
Department of Conservation and Land Management  
Locked Bag 104  
Bentley Delivery Centre WA 6983  
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-----Original Message-----

**From:** Jack Bradshaw [<mailto:jbrad@karriweb.com.au>]  
**Sent:** Wednesday, 19 April 2006 6:03 PM  
**To:** Strelein, Greg; Owens, Shani  
**Subject:** Second lot

I shall be surprised if you can get an average of 0.25" in jarrah and this for a 28" (d.b.h.) tree is 112 years. I think you will find it will average around 0.15" which means a rotation of 190 years. Did you know the rate of growth accurately you would still be confronted with an unsolvable problem when you faced the fixing of the total annual cut of the Jarrah forest. On p. 5 you say "the application of recognised formulae for the calculation of permissible annual cut is impracticable". When you come to attempt the calculation you actually adopt the time honoured Von Mentel formula  $2v/r$ . "Gloriously Simple", I think, Graves called it. For V.M.'s formula to give a cut approximating to the correct the forest must approach normality. Can the forests of Western Australia as a whole or taken in individual natural logging areas be regarded as approaching normality? Von Mentel's formula is therefore a very dangerous one to use.

One can do anything with figures and I don't propose to use arrays of them to demonstrate the danger of using Von Mentel's formula. A walk in the jarrah forest whether it be virgin or cut over or cut out is enough to show that the merchantable mature stand holds 75% of the ground in the first, that in the 2nd the number of trees left behind is wholly inadequate for present milling purposes and in the third there is very little useful middle sized timber and hardly any useful small stuff. Enumeration will tell us how dreadful is the position but the degree is not important. We propose growing forests again to mill log size call it 30" d.b.h. and 40' bole. What would you regard a fair estimate of the average volume per acre (on a 30" tree rotation) when you have regrown your forests? I should be surprised if it exceeds 40 loads and would put it down at 37 loads. Standard crown ratio would make an acre of dominants 30" d.b.h. 40 feet long with an 80% taper (.4 F.P.) carry 51 loads and this would be well above the average. In a normal forest we should expect the total volume to be half this figure times the area i.e.  $16\frac{1}{2} \times 2\frac{1}{2}$  approx. = 50,875,000 loads would be the maximum. Your assessment figures show 22 $\frac{1}{2}$  mill loads or about  $\frac{1}{2}$  the total normal stocking but your volume consists of trees over the 30" limit, it is the existing merchantable volume. It consists of larger trees occupying more space than the mill logs we hope to grow and they are situated in virgin forest and in cut over forest and poor forest in the proportions you set out in your table -

<u>Area.</u>	<u>Volume.</u>
<u>Mill. acs.</u>	<u>Mill. loads.</u>
1.3	15.6
0.85	5.0
0.3	0.8
<u>0.33</u>	<u>1.1</u>
<u>2.78</u>	<u>22.5</u>

Most of it is in the virgin forest and when we take the estimate of 37 loads per acre we see that for a natural forest the volume is very satisfactory,  $1.3 \times 37 = 48.1$  mill, and taking half of this as the normal stocking we have 24.1 so there is a shortage of 8.5 mill. loads. We might call it  $\frac{1}{2}$  stocked.

Even with it fully stocked V.M.'s formula would not apply for we are only dealing with mature timber 30"+. Since we have all this mature timber it means that we have an excess in the 30"+ classes and



there must be a frightful deficiency below 30". That is what a walk through any virgin forest shows one. Small trees are to be found but they are mostly of the useless suppressed deformed type. The time taken for a jarrah tree to reach maturity is so short compared with its whole life that the number of groups of "head free" seedlings saplings poles is small compared with the area occupied by the mature and over mature trees. Had we the virgin forest area only to consider and we applied V.M.'s formula and your  $x = 90$  we should cut the forest out in 45 years and would have to wait 90 years for the new formed groups to mature, existing after 45 years on the very few crown free decent shaped trees that come to maturity between 45 and 90 years. The space occupied by the trees is 75% of the area and here your new groups will start the 25% is all you have for the middle and pole sizes and they are mostly deformed. Taking  $r = 120$  V.M.'s formula would again let you down. You can't abolish an excess of mature timber in 60 years and expect as much again to grow in the period.

As it is impossible to fix a total cut for the whole country and economically and politically impossible to enforce working plans and a maximum cut for unit logging areas it is also impossible to say how much your calculation errs.

As you say Helm's stuff should give an estimate of the smaller trees. If he gets you the number of "crown free" trees i.e. trees you can see the sky all round when you stand under them he will give you a measure of your future mill logs. That will have to be scaled down to allow for smashes by fallers etc.

I am afraid you will be very disappointed. As regards the cut over forest types the position is clearly very much worse. Seventy five per cent of the capital has gone and the interest can't accumulate till you regenerate the forest. The few middle size trees are of the greatest importance they alone will enable you to keep the forests open, but how few there are. I don't know the poor quality jarrah forest of which you have 333,200 acres but it is clear you can't expect to make a silk purse from a sow's ear. Is it mainly potential sleeper forest on the eastern limits of the jarrah forest? How much your estimate of the cut overshoots the mark I can't say but were I facing the problem - if my life depended on fixing a total cut for the jarrah forest as a whole - then I would re-estimate the forests by topographical logging areas and I would calculate the cut for each, and I would add them altogether. I know that economically and politically such Working Plans could not be applied to each logging area, it would result in 50% of the mills closing down, but the total figure might be useful to show the people of Western Australia what is the position.

At a rough guess I would say that :-

Assuming you can get money to carry out intensive silvicultural work (money without interest for it won't pay) and so promote a reasonably fast M.A.I. in d.b.h. ( $0.25''$ ) then I should count the undersized trees in the virgin forest and in the cut over forest as worth 20 years of your rotation. So we have  $120 - 20 = 100$  and  $22.5 \text{ mill.} \div 100 = 225,000$  loads. I would advance this in fear and trembling and would much rather play certain and safe by dividing 22.5 mill. by 120 and making the cut 187,500 loads.

Look at it this way. If we regard 37 loads as the average volume we can expect when we grow the forests again and cut at 30" d.b.h.

**Bailey, Caris**

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**From:** Adams, Julie  
**Sent:** Friday, April 21, 2006 11:48 AM  
**To:** Bailey, Caris  
**Subject:** FW: Lane Poole resignation

-----Original Message-----

**From:** Owens, Shani  
**Sent:** Thursday, 20 April 2006 3:26 PM  
**To:** Adams, Julie  
**Subject:** FW: Lane Poole resignation

Julie/Paul

More from Jack Bradshaw.

---

Shani Owens  
Executive Officer to the  
Director of Nature Conservation  
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-----Original Message-----

**From:** Jack Bradshaw [<mailto:jbrad@karriweb.com.au>]  
**Sent:** Thursday, 20 April 2006 3:07 PM  
**To:** Strelein, Greg; Owens, Shani  
**Subject:** Lane Poole resignation

Hi All,

Attached is a transcript of the correspondence related to Lane Poole's resignation. Also attached is an image of the resignation letter from the file. These were obtained from the FD file 794/20 in the State Archives. If you wanted a copy of the original resignation letter presumably there is one on the Premiers Dept file with his signature.

When you read this you wonder how Kessell was able to salvage anything. Judging by Mitchell's later comment that Kessell "went on about forestry ad nauseum" he must have been just as forceful but clearly more diplomatic.

Cheers

Jack



CONFIDENTIAL

THE HON. THE MINISTER, FOREST,

Extension of Minister's Fisher & Trading Company's  
Concessions in Iceland.

With reference to the above matter, and for four  
interviews, I attach herewith some condensed notes of  
what took place at these interviews. The notes, of  
course, have been compiled solely from memory, and if  
there are any inaccuracies I shall be glad to be corrected.

It would appear to me that it is just as impossible  
for a professional forester to recommend, or suggest, an  
unprofessional method of action as it is for a doctor or  
an engineer to do so. Indeed, forestry being perhaps  
the function of a Government, it is with some difficulty  
for the professional officer appointed to advise the  
Government in matters of forestry to take up a course  
which is contrary to the forest policy that has been  
laid down and accepted.

I am of opinion that Sweden, Austria, and  
the rest have the best forests and woodland or land  
entirely useless for cultivation, while the very best  
possibles in the Commonwealth occur. From a forestry stand-  
point, and that, by proper forestry methods, there can be  
made up on the ruins of the old-wood country, an extent  
which would return to the country double results in time  
and space.

It is for this reason that I have, throughout  
my time I have been here, recommended every measure  
to be taken in the interests of the country's forest lands to  
be decided upon and really carried out forest preservation,  
and that these should be done to and for the benefit of  
the State.

It has been inevitable, in an interview such as I  
have made, that there should be distinct classes of opinion.  
The whole idea of forestry was new to the State, and rather  
interests have a very large area spread through the area of  
country which includes the old timber land. I find  
that the timber land is a smaller area than it should be  
which covers a portion of the State in favour of a forest  
policy, and that, therefore, with the timber forest I  
find that in the matter the Government should have a  
policy which is better.

From what was said at the four interviews that I  
have had with you, and from what I had said to you  
and explained to you, and in consequence have decided upon  
the administration of the Department, as far as the various  
concessions of Minister's interests are concerned, to the  
Minister's interest, it would seem that the Minister's  
policy of forestry was the correct one. I would, there-  
fore, ask you to be good enough to allow me to state these  
concessions of the Minister's interest in the matter.

Yours faithfully,  
[Signature]

Commissioner of Forests



GOVERNMENT OF WESTERN AUSTRALIA

FORESTS DEPARTMENT,  
PERTH WA

7<sup>TH</sup> July, 1921

THE HON. THE MINISTER FOR FORESTS

Extension of Millars' Timber & Trading Company's  
Concessions and Leases.

I am forwarding you herewith a copy of my minute of the 5<sup>th</sup> instant addressed to the Hon. the Premier, in which I ask him to release me from my engagement here.

Attached to that minute are notes of the four interviews that I have had with him regarding the above matter.

I have advised the Public Service Commissioner of the action that I have taken.

C.E. Lane Poole  
CONSERVATOR OF FORESTS

794/20  
1001/21

FROM THE CONSERVATOR OF FORESTS

TO

THE PUBLIC SERVICE COMMISSIONER

I am forwarding you herewith a copy of my minute addressed to the Hon. The Premier, in which I have asked him to release me from my engagement here. Attached to the minute are notes of the interviews I have had with him, which explain the situation.

I need hardly say that I do not in any way wish to embarrass the Government by leaving in a hurry; on the contrary, I wish to help the Government in every way possible, and to that end would wait until a successor is obtained.

7<sup>th</sup> July, 1921

C.E. Lane-Poole  
CONSERVATOR OF FORESTS

(hand written note)

Returned by Public Service Commissioner who is leaving for the Eastern States and did not wish these papers to be in his office under present circumstances.

GH 11.7.21

Yes the PSC rang me up. Please bring up as soon as he returns.

C.E.L.P.

11.7.21

THE HON. THE PREMIER, PERTH

"Extension of Millars' Timber & Trading Company's  
Concessions and Leases"

With reference to the above matter, and our four interviews, I attach herewith some condensed notes of what took place at these interviews. The notes, of course, have been compiled purely from memory, and if there are any inaccuracies I shall be glad of correction.

It would appear to me that it is just as impossible for a professional forester to recommend, or execute, an unprofessional course of action as it is for a doctor or an engineer to do so. Indeed, forestry being purely the function of a Government, it is still more difficult for the professional officer appointed to advise the Government in matters of forestry to take up a course which is subversive of the forestry policy that has been laid down and accepted.

I am of opinion that Western Australia, owing to the fact that its best forests are situated on land entirely useless for cultivation, holds the very best position in the Commonwealth group from a forestry standpoint, and that, by proper forestry methods, there can be built up on the ruins of the cut-over country, an asset which would return to the country untold wealth in time to come. It is for this reason that I have, throughout the time I have been here, concentrated every endeavour to explain what was really meant by forest conservation, and what steps should be taken to set our forest house in order.

It has been inevitable, in an endeavour such as I have made, that there should be distinct clashes of opinion. The whole idea of forestry was new to the State, and vested interests hold a very large sway right through the area of country which includes our best timber land. I feel that today there is a growing sentiment throughout the South Western portion of the State in favour of a forestry policy, and it is, therefore, with the greatest regret I find that in this matter the Government itself does not agree to such a policy.

From what has passed at the four interviews that I have had with you, and from the fact that you appear to have lost confidence in me, and in consequence have handed over the administration of my Department, so far as the serious question of Millars' extensions are concerned, to the Solicitor General, it would seem that my position as Conservator of Forests here has become untenable. I would, therefore, ask you to be good enough to allow me to make such enquiries as are necessary to see if I can find a position elsewhere.

5/7/1921  
Forests

(Sgd.) C.E. Lane-Poole,  
Conservator of

INTERVIEW NO. 1

Friday, 1<sup>st</sup> July, 9.15 am.

You sent for me on Friday morning and expressed your desire that the question of extending Millars' holdings be finalized at once, and wished to know what was the reason for the delay.

I explained that the delay was due to the misleading and insufficient documentary evidence submitted by Millars, regarding the period that operations were suspended on their concessions and leases owing to the war. I could not accept their statement regarding the period that they had been closed during the war. Millars were applying for an extension for Canning Concession, in spite of the fact that for a considerable period during the war they had taken logs from this area and milled them at Jarrahdale. They were applying for an extension for Karridale Concession on the grounds that it was closed during the war, in spite of the fact that the Concession in question had been closed for many years prior to the war, ever since the M.C. Davies Co. ceased operating there.

(I might add here that the plea that the war had prevented the building of the Busselton to Margaret railway, and therefore the reopening of their Concession, is transparently false, the forests of Karridale are served by a good port and a railway).

That the applicants make no mention whatever of a large amount of timber that was removed from both concessions and leases during the war, but which was not milled using either hewn sleepers and beams or round poles and piles. I held allowance should be made for the partial working of the areas, since milling operations are not the sole way the company employs of working its forests.

You stated that, in your opinion, the firm should get all it asked for, certainly both Karridale and Canning Concessions; that I had a considerable period to negotiate with Millars, and that these now were the best terms that could be obtained by the Government.

I said that the negotiations I had carried out were all based on the assumption that the Government had the discretionary power to grant the extensions either under Section 6 (b) (i) or under Section 6 (b) (ii) of the Forests Act 1912, or if advisable in the interests of the State and its forest policy, to refuse extensions altogether .....?I insert the sections in the question here:-

6. The Governor may -

(b) so far as the operations under any existing timber concession or timber lease have been temporarily suspended in consequence of the present state of war -

- (i) extend the term of such concession or lease subject to payment, during the period of such extension, in lieu of the rent thereby received, of a royalty on all timber required at the prescribed rate of royalty under this Act for timber acquired under permits, and to the regulations in force for the time being, subject to the proviso to section forty-three; or
- (ii) within twelve months of the termination of the war, accept a surrender of any concession or lease, and issue, in lieu thereof, a permit under this Act of the same or other land at the prescribed royalty, the rent paid under the surrendered concession or lease during the period of temporary suspension of operations being credited to the permit holder and apportioned over the term of the permit.

That the negotiations I had initiated with your approval with the Board of Directors of Millars' Timber and Trading Co., when I was in London last year, were all based on this assumption, and I had repeatedly informed the Board that, as I would not recommend that action be taken under ss. (b) (i), it was highly improbable that the Government would grant extensions except under ss. (b) (ii).

That negotiations with the firm went along so well that I left London with the impression that, subject to a satisfactory report from the local directors in Perth, the London Board would take action under ss. (b) (ii).

Negotiations were continued in Perth on my return, with Mr. McNeil and Mr. Temperley. The only serious point of dispute was the question of royalty. The London Board regarded a fixed royalty as vital. The Act provided for a prescribed royalty, which would vary from time to time. I advised Mr. McNeil that this could not be altered, and that they would not be charged more royalty than the permit holder, nor would they be charged less.

You said that I was asking the firm to put its hand in a noose and that no sensible firm would keep its money in a country which treated it in such a manner.

I stated that Millars had dictated the forest policy of the State every since the timber companies were amalgamated into the present combine, and that the course the Government apparently



desired to take would mean that the firm would continue to dictate the forest policy until at least 1931.

You asked me to be as little offensive as possible.

I said I was very sorry and that I had no intention of being offensive.

(In explanation here I would like to say that my statement could only be taken as offensive if there were read into it that I imputed dishonesty or corruption when I used the term "dictation". Nothing was further from my mind. What I meant was that a firm like Millars, holding as they do close on these quarters of a million acres of our best and most accessible forest areas, and having in addition control over so many small and large milling companies in the State, that one hesitates to say whether any private sawmiller is free from their tentacles; and holding as they did before the war a very large measure of control over the chartering of timber ships for our export trade, such a powerful firm could make its voice heard in an unmistakable manner in Western Australia, through the various channels, departmental or parliamentary, and also, such a firm, by employing astute persons, could create an atmosphere of self-importance and so lead even the Agent General to think that Millars have some say in the financial world of London, and might use that influence to lower our credit and prestige if they were not treated exceptionally well. This would seem absurd to anyone knowing the City of London, for the effect Doctor White and the somewhat obscure persons associated with him as Directors of Millars' Timber & Trading Co. would have on the London financial whirlpool would be so small as to be entirely negligible).

You stated that Millars had never dictated to you. I replied that they had always dictated to me.

(I may say that Mr. McNeil and his co-directors repeatedly threatened to turn the London debenture holders of Millars' Timber & Trading Co. loose on the Government of Western Australia. He uttered threats of this sort when the Forests Act was a Bill, with such success that amendments were inserted, and they have often been repeated since in connection with the question of extensions).

I said that I felt that there was no reason for taking the matter out of my hands and for negotiations to be started direct between the firm and my Minister and between the firm and you. That I was under the impression that the firm would, if I were supported, take action under ss. (b) (ii), and it was naturally a blow when I learned, after the elections, that they had applied direct to my Minister for extensions under ss. (b) (i). That the



action proposed was so subversive to the forest policy laid down that it made forestry almost impossible until 1931, when there would be no virgin forests left. That I saw no reason for this great haste in granting the extensions. The concessions had not nearly expired and the leases would only begin expiring in 1924. It would be time to think of extending under this sub-section when each concession and each lease was reaching the point of expiration, and in this way there would be some certainty of good behaviour in the meantime.

You said that the Company had a perfect right to obtain extensions at any time; that it had its policy to frame and that it could not frame it if it did not know what was its security of tenure; that the statutory meeting of shareholders in London would take place this month, and that the Directors wished to inform the shareholders of the position.

I stated that Millars were conducting their operations in a wasteful manner and, putting aside the wasteful milling, virgin timber had been hewn into sleepers and undersized, immature timber was being cut on the concessions; that, for every load of milling timber converted by hewers £10 was lost to the state in wages, freights, etc., and of our virgin forests today only 400,000 acres remained.

You stated that I was so unreasonable in all my dealings that you found it very difficult to work with me at all. That, in the matter of land settlement I had, when Sir Henry Lefroy was Minister for Lands, driven settlement to Nornalup; that I had then turned round and refused to recommend that this country be thrown open for this purpose.

I said that the lack of reasonableness was not wholly on one side. I pointed out that the whole of the classification of the Jarrah Belt had been completed some time back (two and a half years) and no State Forests have been proclaimed except a petty area over the coal mining leases. I drew your attention to the alienation to a farmer (after inspection by the Forestry Department and my having opposed such alienation) of an area of pure karri country carrying £2,280 worth of timber.

Some discussion ensued regarding value of timber, and I pointed out that its value was not a royalty value, but the value in wages, freights, taxes, etc. The royalty value of 2s. at present per load has borne no relation whatever to the true value to the country, which lies between £10 and £12 per load.

You pointed out that the farmer could not destroy the timber, that it was reserved for the Crown in his C.P. lease.

I replied that, while this was so on paper, it was impossible for a farmer to farm and yet preserve the timber.

You held the contrary opinion and said that he could do so and many were doing so.

Reverting to Millars, you stated that Mr. McNeil would be prepared to tell me something that would make the question of Forest Regulations over the concessions and leases possible, and you instructed me to ring up Mr. McNeil and arrange an appointment and notify you of the result.

END OF INTERVIEW NO. 1

I had some difficulty in getting Mr. McNeil on the telephone and when I succeeded, and stated what you had said, he told me he had nothing to say. I notified Mr. Shapcott and asked him to tell you that my attempt had not been successful.

I then attempted to obtain the file, in order that I might pursue my investigations into the legal "fact" regarding the question of the period during which operations were temporarily suspended on each concession and each lease. I had some difficulty in finding the file, which had been marked into your office, but finally ran it down in the Crown Law Department, where I found Mr. Sayer dealing with it.

The Crown Solicitor informed me that he had received instructions from you that morning (Friday, 1<sup>st</sup> July) to prepare Executive Council papers for the extension of the concessions and leases, that you had advised him to hold over Karridale Concession and to accept the documents Millars had prepared as evidence of the suspension of operations so far as other concessions and leases were concerned.

In regard to Canning, Mr. Sayer discussed the question of whether or not some give and take might be possible, and that portion to the south of the Concession which is divided from the north by a low range of hillocks and which has been operated on by Jarrahwood [Jarrahdale?] Mill, be separated from the northern half, which is operated on by Barton's Mill, and that extension might be granted in regard to the northern half but not the southern half.

I pointed out to Mr. Sayer that the document Millars had submitted was misleading, if not actually inaccurate, as no mention was made of partial operations carried out by the Company when the war was in progress. I reminded him that the Crown had

prosecuted Millars (we lost the case) for cutting undersized timber on their concessions and that large numbers of sleepers were cut on both concessions and leases.

Mr Sayer stated that he was not recommending or opposing the course that the Government proposed taking, but was carrying out instructions from you to prepare documents for the consideration of the Governor in Council.

I was considerably chagrined that you should have taken the drastic course of removing the administration of the Forests Act so far as this matter is concerned from the Forests Department, when such Act specifically states -

7. (2) The department shall have the exclusive control and management of -

- a) all matters of forest policy;
- e) the enforcement of the conditions of timber concessions, leases, permits, licenses and authorities granted under this Act, or any Act hereby repealed, or otherwise;
- g) the administration of this Act generally.

8. (2) Subject to the provisions of this Act, the Conservator -

- b) shall hold office for a term of seven years, and at the expiration of his term of office shall be eligible for re-appointment.

And handed the administration over to the Solicitor General. I felt that I had lost the confidence that you reposed in me and as a professional forester, my position was rendered untenable.

#### INTERVIEW NO. 2

I again waited on you, on Saturday morning, 2<sup>nd</sup> July, at 10.30 am when I explained that I had come to the conclusion, from what had been said at the first interview, and from your action in taking the administration of my Department out of my hands so far as the concession and lease difficulty was concerned, that my position as Conservator of Forests was untenable, and I asked you to release me from my engagement.

You said that you are unable to understand the attitude that I was taking up and that you had done more than anyone else to support me and the forest policy.

I said that it was not only the question of concessions and leases, but in every other respect, the forest policy had been undermined. No State Forests had been made and the pine planting scheme has had to be abandoned.

You said that the scheme was not workable, that the Treasurer, even I should admit, must control expenditure, and that the spending of £20,000 on a tramline to cut out an acre of forest a year was unthinkable.

I agree as to the question of financial control, but was of opinion that it was a good scheme financially, so much so that a private company was now buying the right-of-way through the private lands which separated West Guildford from the Crown Lands, so that it might tap the area which I desired to plant.

You referred to the failure of the Sawyer's Valley Firewood Co. and the uselessness of expecting a similar venture in worse bush to succeed.

(I may say that, in the scheme I proposed, as the file will show, the area to be cleared annually of firewood will be greater by far than the area that I would plant. I laid down as a minimum that I should plant one square mile a year to supply the future needs of the community of Western Australia. The total consumption of banksias in Perth is annually 35,000 cords, and it takes about 8,000 acres, or 90 square miles, to supply this.

Reverting to Millars' extensions, I stated that it was clear that you no longer reposed confidence in me, seeing that Mr. Sayer was putting the business through, and that I was at a loss to understand why the Executive Council papers were being rushed through in such a hurry.

You stated that I was again imputing dishonest motives, that I had done so yesterday and was doing so again, and that it must cease, that I must know that I was not the only honest man in the country, and that, as I grew older, I would learn that there are others whose actions are based on entirely honest and disinterested motives.

I said that I had no misconception on this point. (I might say here that I regret very much indeed that you should have thought I imputed dishonest motives to you. In my bringing up I have never been taught to consider others dishonest, and certainly in all my dealings with people in this State, particularly those in



authority over me, I have never for one moment thought that any action they took was tainted with dishonest motives).

You continued that I had proved a continual source of opposition and that it was quite impossible for me to expect to get my own way all the time.

I said that I had never had my own way in anything, and that today the feud between the Lands and Forests Departments was more intense than it had ever been; that my opposition must continue to proposals which would operate adversely to the forest policy, and that, as far as I could see it, the fight must go on until all forest land was finally and permanently reserved for growing timber; that the fight to date had been a losing one all along, and that I did not wish to see my youth and my enthusiasm gradually exhausted will I became a civil servant of the time-serving type.

### INTERVIEW NO. 3

I waited on you at 3.30 p.m. on Tuesday, 5<sup>th</sup> instant, when the question of Millars' extensions of concessions and leases was re-discussed.

I, first of all, regretted that I had hurt your feelings in any way and said that I did not wish you to think that I had for a moment thought that there were any dishonest motives asking the extension of these concessions and leases.

We discussed the whole matter very fully, and I pointed out that it was necessary to obtain complete control over these people during the 4 years which is the average term of their concessions and leases, and this could only be done by getting them to surrender their concessions and leases and take up permits. That the Act only places them in a stronger position today than they were in before the passing of the Act. That by custom and practice they had rights which could not be altered by regulation.

You said that if that were the case the Act should be amended.

I said that I had told Millars it was quite impossible for the Government to fix royalties 10 years ahead, and that I was willing to recommend that the surrender of their leases and concessions should be accepted and that the royalty be no greater and no less than that paid by permit holders.

You pointed out that this was giving them nothing at all, while we were getting control, and you were inclined to give them a fixed royalty of just sufficient to cover the repayment of the lease rents. If we could get more from them, so much the better.

You arranged that Mr. McNeil should see you on Wednesday morning, 6<sup>th</sup> instant, at 9.30 a.m., and I understand that the Government was prepared to accept the surrender of the leases and concessions and grant a permit not for 9 years but for 10 years and fix the royalty for 4 years at such a way as could be agreed upon.

### INTERVIEW NO. 4

I waited on you at 9.30 this morning, 6<sup>th</sup> inst. And I found Mr McNeill with you. I handed you a copy of the following statement for use during your interview:

"Millars have an average of 4½ years life. The lease rents that they would pay during this period would amount to about £33,000, unless they adopt the system they practiced prior to the war of surrendering the country as they cut over it, a course which is unlikely owing to the increase in the value of jarrah.

Millars' operations were suspended for an average of 4 years by the war. The rent they paid during that time amounted to about £35,000. It will be seen the two sums are equal.

If Millars' demands are acceded to, and their leases and concessions re-extended, the Department loses all control during the first 4 years, and obtains only a small measure of control during the extension of 4½ years, the control then being only possible by means of a system of royalty charges acting preferentially against wasteful cutting.

If action is taken under sub-clause 2, and Millars surrender their concession and leases at once, and take up permits for 10 years, dating from the 1<sup>st</sup> date of this year, then the Department would have complete control right through, and would have to refund \$35,000 (rents paid during the war).

I have told Millars that the result, if this course is adopted, cannot be fixed for 10 years. If for say it can be fixed for 4 years, then the royalty should be fixed at a figure which will be equal to at least £70,000. Taking the output of the mills, this would work out at about 2/10 per load. We should try for more, but this is the irreducible minimum, if we are to get the same revenue during the first 4½ years. The new prescribed royalty for permit holders situated close to port with accessible bush is 13/4. We might try for 6s. as the fixed royalty for 4 years; Millars will probably offer 2s. and we might then split the difference and make it 30.64 or 4s.??

The whole question of the concessions and leases and their extension was discussed, and you, at the very outset, told Mr MacNeil that he was to get his extensions under the sub-section that he desired. By putting it in this way, of course, you made the negotiations so far as we had arranged the day before impossible. Had you taken up the attitude that the Government would adopt whichever course seemed best to it, then Mr MacNeil might have considered the second course of surrendering his leases and concessions and accepting a fixed royalty for 4½ years. As it was, the negotiations were all carried out on the basis that the Government would extend the concessions under sub-section 1. Mr. MacNeil, knowing this, naturally would not listen to any argument for the other course but plumped straight out for the extension of the concessions.

Mr Sayer in his minute on this subject, which will be found on the file, made it quite clear that the Government has the discretionary power to grant or refute these extensions, and that with this discretionary power if concurrent then either under one sub-section or under the other, or can refuse them under both. Mr

Sayer added that the Government should take action under either of these sub-sections unless there were some good reason to the contrary. I submit that the reasons I have put on paper are good and sufficient so far as sub-section 1 is concerned.

After considerable discussion, Mr McNeil suggested that he would give the Forests Department control of all timber under 72", not only on the Canning and Karridale but also on Jarrahdale, the concession over which he is not applying for any consideration in the way of extension. You were satisfied with this, although I pointed out that the protection of piles and poles is a matter which, though very important, does not cover all the ground. That the mill at Jarrahdale is already cutting all timber down to 72" and has never cut timber below 72", so that really Millars were giving very little away.

In the matter of the poles and piles, if Millars take the course of destroying these ruthlessly, the Act can be amended, in which you agreed.

You instructed me to obtain the Ex. Co. papers and to ask Mr. Sayer to amend them so as to make it quite clear these set forth in the documents granting their concessions and leases.

I rang up Mr. Sayer and explained the position to him and I further saw him in the matter, so that your instructions might be made as clear as possible to him., and that there might be no delay, as you told me you were particularly anxious that the Ex. Co. papers should reach Cabinet by 12 o'clock, and Mr. McNeil had promised to advise his Directors in London by cable today.



COPY

HON. MINISTER FOR FORESTS:

I have received a minute in the following terms from the Conservator of Forests:-

"Extension of Millars' Timber & Trading Company's Concessions and Leases"

With reference to the above matter, and our four interviews, I attach herewith some condensed notes of what took place at these interviews. The notes, of course, have been compiled purely from memory, and if there are any inaccuracies I shall be glad of correction.

It would appear to me that it is just as impossible for a professional forester to recommend, or execute, an unprofessional course of action as it is for a doctor or an engineer to do so. Indeed, forestry being purely the function of a Government, it is still more difficult for the professional officer appointed to advise the Government in matters of forestry to take up a course which is subversive of the forestry policy that has been laid down and accepted.

I am of opinion that Western Australia, owing to the fact that its best forests are situated on land entirely useless for cultivation, holds the very best position in the Commonwealth group from a forestry standpoint, and that, by proper forestry methods, there can be built up on the ruins of the cut-over country, an asset which would return to the country untold wealth in time to come. It is for this reason that I have, throughout the time I have been here, concentrated every endeavour to explain what was really meant by forest conservation, and what steps should be taken to set our forest house in order.

It has been inevitable, in an endeavour such as I have made, that there should be distinct clashes of opinion. The whole idea of forestry was new to the State, and vested interests hold a very large sway right through the area of country which includes our best timber land. I feel that today there is a growing sentiment throughout the South Western portion of the State in favour of a forestry policy, and it is, therefore, with the greatest regret I find that in this matter the Government itself does not agree to such a policy.

From what has passed at the four interviews that I have had with you, and from the fact that you appear to have lost confidence in me, and in consequence have handed over the administration of my Department, so far as the serious question of Millars' extensions

are concerned, to the Solicitor General, it would seem that my position as Conservator of Forests here has become untenable. I would, therefore, ask you to be good enough to allow me to make such enquiries as are necessary to see if I can find a position elsewhere.

5/7/1921

(Sgd.) C.E. Lane-Poole,  
Conservator of Forests

No-one has asked Mr. Lane-Poole "to recommend or execute, an unprofessional course of action".

Parliament has vested certain authority in the Conservator - regulations can be made on his recommendation, and not otherwise; and Parliament has, acting within its undoubted rights, authorized the Government to extend certain timber leases, definite provision being made for this to be done by the Executive Council. These are leases held prior to the war, and the extensions are for such periods as they were not used during the war. Rent must be paid over these periods, and the lessees must pay during the extended term such royalty as the Conservator may impose under his Act - in other words, they must pay what any permit holder pays, if the Conservator so decides.

Mr. Lane-Poole has power to make regulations for the proper conservation of the forest, and apparently always has had the power. He has neglected to exercise the control contemplated by the various Acts - why I do not know. He says the forests have been badly treated - if so, he would seem to be responsible.

In regard to his paragraph 3, we are all just as concerned as Mr. Lane-Poole to preserve the life of our forests, and are anxious to assist him to this end. We do help him, while often disagreeing with his methods.

Mr. Lane-Poole's statement that the Government does not agree to a forest policy is not only an impertinence but it is absolutely untrue.

Please advise him in reply to his final paragraph that the State cannot be made a convenience of in the way he asks. Should he desire to retire from the Service to take another and possibly better paid appointment elsewhere, then he can put up a request to you for Cabinet's consideration.

(Sgd.) J.M. (James Mitchell)

9<sup>th</sup> July, 1921

PREMIER

CONSERVATOR OF FORESTS

For your consideration.

(Sgd.) J.S. (John Scaddan)  
12.7.21

HON. MINISTER FOR FORESTS

Further to my minutes of even date, the "condensed notes" referred to by Mr. Lane Poole do not furnish a record of our interviews. It is an incomplete and inaccurate statement, and merely records in Mr. Lane Poole's way what Mr. Lane Poole wants put on paper.

Many subjects were discussed between us, including the failure to arrange a cheaper firewood supply for Perth, pine planting at Ludlow, Wonnerup mill, Mr. Lane Poole's personal connection with the forest classification, timber regulations.

My remarks in reply to his veiled insinuations are not recorded.

I do not, however, propose to correct this so-called record. I do not know that it has ever been customary to make such a record of a conversation between a Minister and a civil servant. To do so would be wrong and costly, destroying the usefulness of frank discussion. Should a record be necessary, a shorthand writer should be called in. If written approval of any arrangement made is required, the official should ask for it. If he disapproves of the arrangement, he can say so, and set up his reasons. This of course affords him the protection to which he is entitled.

9<sup>th</sup> July, 1921

(Sgd.) J.M. (James Mitchell)  
Premier

Conservator of Forests/

For your information.

(Sgd.) J.S. (John Scaddan)

12.6.21 (sic)



EXTENSION OF MILLARS' CONCESSIONS & LEASES

HON. MINISTER FOR FORESTS

In regard to the last paragraph of the Hon. The Premier's minute hereunder of the 9<sup>th</sup> instant. I regret that he should think that I am trying to make a convenience of the state. All papers were sent to the Public Service Commissioner, but, as he was leaving for the Eastern States, he particularly asked me to take no action until his return, and I am doing what he has asked.

14/7/21

CONSERVATOR OF FORESTS

HON. MINISTER FOR FORESTS:

Mr. Lane Poole told me that he has never been able to enforce the conditions set up by Statute governing the leases and concessions held by Millers. He said that the powers had been waived by custom and practice and that the Forests Act confirmed the waiving, with the result that he could never enforce such regulations as are necessary for the preservation of the forests, i.e. land under timber.

I told him that I did not agree, and after consulting the Solicitor General I find that he can, and always could, set up such regulations as are necessary for the preservation of the forests.

I cannot understand why this duty has been ignored up to now, and I hope you will instruct the Conservator to immediately take such steps as the law permits for the protection of our interests in these leases.

Mr. Lane Poole should say definitely why he has not enforced the law, which he complains is so very necessary, since, in his opinion, the forests are being slaughtered.

6<sup>th</sup> July, 1921

Premier

M.F.

Conservator of Forests

Please look into this matter and report.

I suggest you confer with the Solicitor General regarding your powers not only under the Forests Act but also under the Land Act under which the original concessions and leases were granted.

J.S.  
7.7.21

FROM THE SOLICITOR GENERAL  
To  
CONSERVATOR OF FORESTS

With reference to my minute of 1<sup>st</sup> June last:

1. The Land Act Amendment Act, 1899, (which prescribed the form of Timber Leases enables the Governor, by regulations, to prescribe the size of timber, etc., that may be lawfully cut under such leases and the principal Act of 1898 enables regulations to be made generally for regulating the cutting of timber on Crown lands which includes land under lease or concession. These powers are unrepealed.
2. The concessions granted prior to the Land Act. 1898, are subject (in the exercise of the rights conferred) to such regulations as may be made for the conservation of forests; but there is not the same specific power to prescribe the size of timber that may be lawfully cut, as in the case of leased under the Land Act.
3. At the time of the passing of the Forest Act, 1918, leases and concessions were held, and still continue to be held, subject to such regulations as may be in force for the time being.
4. The Forest Act confers power on the Governor to make regulations under that At on the recommendation of the Conservator. Those regulations apply to existing concessions and leases, subject to the proviso that they shall not be inconsistent with the rights under such concessions and leases.
5. No regulations under the Forest Act, the making of which would be within the power to make regulations referred to in paragraphs 1, 2 and 3 of this minute, would be inconsistent with the rights of holders of concessions or leases and, therefore, it is within the power of the Governor under section 13 of the Land Act Amendment Act, and under section 48 of the Forest Act, 1918, to prescribe the size of timber that may be lawfully cut on leases.
6. As regards the general power under the Land Act to make regulations for regulating the cutting of timber on Crown lands, which includes concessions and leases (apart from the specific power in regard to leases conferred by the Act of 1899 referred to) and as regards the specific powers conferred by section 43 of the Forest Act, these powers can be exercised with due regard to the rights under concessions

and leases granted prior to the Forest Act, 1918, and any regulation not derogatory to such rights can be sustained.

7<sup>th</sup> July, 1921

SOLICITOR GENERAL



FROM THE SOLICITOR GENERAL  
TO  
THE CONSERVATOR OF FORESTS

- A) When a lessee has lawfully cut a tree (e.g. a tree of the prescribed size) he can dispose of it as he pleases, and, therefore, you cannot by regulation prohibit the hewing of the fallen timber.
- B) You cannot by regulation close a portion of a lease and prohibit further cutting thereon. The lessee, during the continuance of his lease, has the right to cut over the whole area, subject to the regulations prescribing the size of the timber and regulating the cutting of timber.
- C) A regulation requiring a concessionaire or leaseholder to cut in rotation, in manner best suited to the silvicultural requirements of the forest, depends on whether it is a reasonable regulation within the undoubted power of the Governor "to regulate the cutting of timber" on concessions and leases. I am not able to judge between the Conservator and the lessee as this depends on expert silvicultural knowledge. It is, however, a matter that can be determined by such regulations in that direction as are deemed to be within the right conferred on the Governor to regulate the cutting of timber, as between the Crown as lessor and the concessionaire or leaseholder.

The power of regulating the cutting is expressly conferred by the original Land Act of 1898, and this should not be deemed a mere dead-letter as regards existing leases and concessions. The matter entirely depend upon whether the regulation is so derogatory to the rights of the lessee as to be unreasonable and ultra vires.

5<sup>th</sup> August, 1921

SOLICITOR GENERAL

**Bailey, Caris**

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**From:** Adams, Julie  
**Sent:** Friday, April 21, 2006 11:47 AM  
**To:** Bailey, Caris  
**Subject:** FW: Lane Poole Kessell correspondence

-----Original Message-----

**From:** Owens, Shani  
**Sent:** Thursday, 20 April 2006 8:48 AM  
**To:** Adams, Julie  
**Subject:** FW: Lane Poole Kessell correspondence

Julie/Paul

I don't think this was meant for me. There are two other emails from Jack which I will forward as well.

---

Shani Owens  
Executive Officer to the  
Director of Nature Conservation  
Department of Conservation and Land Management  
Locked Bag 104  
Bentley Delivery Centre WA 6983  
Ph: (08) 9442 0302  
Fax: (08) 9386 1286  
Email: [shanio@calm.wa.gov.au](mailto:shanio@calm.wa.gov.au)

-----Original Message-----

**From:** Jack Bradshaw [<mailto:jbrad@karriweb.com.au>]  
**Sent:** Wednesday, 19 April 2006 6:01 PM  
**To:** Strelein, Greg; Owens, Shani  
**Subject:** Lane Poole Kessell correspondence

Hi all,

I'm not sure what you can do with this but I find it fascinating the way it deals with the issues of yield for the first time.

The files are large so I will send it in pieces

Cheers

Jack

CONFIDENTIAL.

Jarrah Working Plan. 26/7/1929.

Section 31 of the Act provides for working plans to be drawn up for each State Forest and I fully appreciate the difficulty you encountered with a small staff in carrying out such work. The drawing up of a plan for the whole Jarrah belt has much to recommend it for as you point out it has taught the milling people and public generally what is meant by the term sustained yield. It has shown the miller what life he can expect and so has given confidence to the industry.

When one considers the condition of the Jarrah forest cut over as it has been for 6 to 7 decades the difficulty of drawing up such a general working plan would doubt the most courageous. You are to be congratulated on having attempted it. Such a general plan can however only be an expedient to tide over the immediate difficulty due no doubt to lack of staff and proper working plans for each unit will doubtless take its place in the course of time. It is clearly impossible to fix a cut for the whole Jarrah forest and here your plan must be subject to criticism. I realise better than anyone except yourself how economic and political considerations make the fixing of sustained yield to each unit area impossible. The sum of the fixed cuts on each such areas would of course give you the true total cut for the Jarrah forest. That it is impossible to do it for the unit area makes the fixing of it for the total area equally impossible.

The fixing of the total cut for the whole <sup>COUNTRY</sup> community while there is virgin forest left leads to a trend of thought which ends in adopting migration of industry as the solution of their problem. This is what Victoria has done. She expects when the Alexander forests are cut out to move the industry back to Mt. Cole and then to the Otways.

I don't suggest that your migration of industry will be of such extent as this but there is definite abandonment of mill villages and there will be settling up new ones in the, at present, inaccessible forests which will be opened following "the development of other primary industries in districts further removed from the coast". Migration of industry means the locking up of forests and experience has shown that a young country won't stand it. Victoria is a good case in point. The Otway Forest which it is proposed to return to is now 12,000 acres and no serious forest work has been undertaken in it. Mt. Cole is a joke. The danger of political changes entirely destroying a forest policy of a state is such that no forest area should be locked up. Every effort should be made to keep them worked.

When we leave these somewhat political conceptions and come down to technical difficulties the total yield problem presents insuperable difficulties when you are dealing with a mixed aged natural forest scandalously misused by man consisting of a species the silviculture of which is only beginning to be understood and the rate of growth of which is still to be determined.

Take this last first: All sample plot figures and my observations in East coast forests lead me to regard 0.2" to 0.25" as maximum M.A.I. in d.b.h. we can expect from timbers of the tallow wood, ironbark, spotted gum types under silvicultural treatment. We have got significant response from our heavy thinnings of spotted gum. The dominants have doubled their M.A.I. in d.b.h. from 0.1" to 0.2" ! If we can keep it up we shall reduce the rotation for 30" trees from 300 to 150 years! But it is not possible to carry out the thinning and the revenue is too low to provide funds even were it possible to show that it would pay which it obviously won't. (This is what will happen in all locked up forests in the "hiatus" period)

## Private correspondence between Lane-Poole and Kessell

The following correspondence occurred in 1936 when Kessell was Conservator and Lane-Poole was Principal of the Australian Forestry School. Kessell has apparently sent a copy of the 1929 General Working Plan to Lane-Poole for comment and this correspondence is the response. It is not clear why this occurred seven years after the event.

The first letter from Lane-Poole after he received the Working Plan is not available.

There are some interesting insights here which have parallels today. These include:

- The need to make judgments with imperfect information despite the inevitable criticisms – he would probably be disappointed to know that it never gets better
- The difficulty of calculating yield for a ‘non-normal’ forest and the inadequacy of the von Mantel formula
- The concept of ‘spinning out’ the current harvest cycle for 45 years – not unlike the current concept in FORSHED
- Kessell does not claim to be managing to sustained yield in this plan but implies that SAY is a longer term objective – he uses the term permissible cut. Not unlike what I have termed ‘acceptable’ yield as opposed to ‘non-declining’ yield
- The need to make an allowance for the smashing of growing stock in selection harvesting - an issue that was even more significant than he realised
- The arguments for and against calculating yield for the whole forest or parts of it (an argument continued during the RFA and the Ferguson panel)
- The dangers of ‘locking-up’ the forest while it regenerated – he was proved correct in this as clearfelled karri was alienated behind logging and ultimately caused the shift to karri selective cutting
- The social and economic difficulties of immediate reductions from an historically high level

Jack Bradshaw  
April 19, 2006

Attachments:

JPEG images KLP1 to KLP8



24th August, 1936.

Dear Lane-Pooley,

Among correspondence awaiting attention on my return from Sydney was your letter of July 14th acknowledging the receipt of a copy of the General Working Plan for Jarrah (1929). I should be interested to receive your further comments in due course. I notice you use the term "management proper". I am not sure what this phrase is meant to convey, unless it is the need to conform to some conventional pattern designed to meet conditions probably entirely different. There is nothing technically unsound in considering the two million acres of Jarrah as one forest, and I can see no need for any divergence between the technical angle of approach and the practical solution which has been adopted. Up to 1929 I had difficulty in getting members of the staff to see what I was driving at and, finally, with Telfer's assistance, took the job in hand myself and wrote up the Plan which you now have. My feeling is that it may be sound in theory and practice to work forests which are accessible to existing rail facilities for a period of years and hold in reserve other forest which will become accessible as rail and other transport facilities are extended with the development of other primary industries in districts further removed from the coast, but this is a very different thing from advocating the migration of industry.

You ask whether there is any hope of "stemming the tide in Western Australia". I can only reply that a retaining wall has been built which has withstood the test of eight years and the structure in the main is as sound today as when the work was carried out in 1929. The industry as a whole has accepted the position that it must look for the more remunerative markets for a limited output, and give up ideas of trying to compete with cheaper and poorer quality timbers in the sleeper and other low priced markets. My greatest concern today is whether the original calculations of total volume available are sound, and the rate at which depreciation of virgin forest through uncontrolled burning is eating into our forest capital. The work on which Holms is engaged will give us valuable information on these lines during the next year or two.

With kind regards,

Yours sincerely,

*Handwritten note:* The principal technical members of the plan are of course, at the moment of my preparation, all very young growing stock is the exceedingly rough & ready method of yield calculation, but had I waited for the former the Plan would not have been so much as so valuable as it would have been had it established the conception of sustained yield as a basis for management proper in 1929.

*Handwritten note:* See 7.12.36  
as



COMMONWEALTH OF AUSTRALIA

COMMONWEALTH FORESTRY BUREAU,  
CANBERRA.

25th September, 1936.

CONFIDENTIAL.

S. L. Kessell, Esq.,  
Conservator of Forests,  
PERTH. W.A.

Dear Kessell,

Working Plan for Jarrah Forests.

Your letter of 24th August followed me to camp where I could not answer it. I will attempt to do so now. I am sorry that I was so tactful when in Western Australia for it would have been far better to have thrashed the question of cut out in talks than write about it.

I didn't know that you had applied Von Mentel's formula to the forests and imagined that you had merely fixed a cut which represented as big a reduction as you thought was politically possible to achieve. Goodness knows it is a tremendous thing to attempt to cut down a cut from 700,000 loads to 460,000 loads and when you have achieved this you will have done wonders.

I wish you had taken working plan up with me in 1929 for while your men over there were not prepared to help I certainly would have been delighted to have done so. My interest in the jarrah country is a deep one and I know of no forests I would like to help as much and surely good man though Telfer is he has no silvicultural knowledge.

I can now understand better your objection to my not leaving Western Australia out of my criticism in South Africa which was to the effect that all States were overcutting their forests.

I think it is technically wrong to regard the jarrah forests as approaching normality and that your calculation, therefore, must give you an incorrect estimate of the cut.

I attach notes which please regard as though they were spoken and not as a serious official document to be registered and brought up against me or you in the future.

Does not the problem call for increased staff on the Working Plan side? No one would be more delighted if, when you have completed the re-enumeration and have a true measure of the useful potential mill logs, you can prove me wrong in my estimate that at 460,000 loads you will still be overcutting to the extent of 150,000 to 200,000 loads.

Kind regards,

Yours sincerely,

C. E. Lambert

**Bailey, Caris**

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**From:** Strelein, Greg  
**Sent:** Wednesday, April 19, 2006 11:46 AM  
**To:** Bailey, Caris  
**Subject:** FW: Forest classification

Hi Caris,

Another component of the story from Jack.

Greg

-----Original Message-----

**From:** Jack Bradshaw [mailto:jbrad@karriweb.com.au]  
**Sent:** Tuesday, 18 April 2006 5:13  
**To:** Strelein, Greg  
**Subject:** Forest classification

see attached. Can you please pass on to Caris when you are happy.

Cheers

Jack

## Forest Classification

A pre-requisite for managing the forest was knowing where it was, how much there was and what parts of it should be dedicated for as permanent forest. In the latter part of the 1800s and the early 1900s there was tremendous pressure from agricultural interests to make land available for agriculture and at the same time there was a significant timber industry already established and significant areas had already been cutover.

In 1912 a system of forest classification began. Forest rangers began to accompany the surveyors who were locating land for agriculture pointing out forest land that should be reserved as forest. This led to land being classified ahead of selection and in 1913 some 420,000 ha had been classified.

When Lane-Poole arrived in 1916, a more detailed classification was developed. They mapped vegetation as well as timber volumes based on parallel assessment lines 800m apart across the forest (300m in karri forest).

*“The work is of the nature of a stock-taking of the State’s forest assets, and should yield all the data necessary for:*

- 1) the area of virgin forest still remaining, and*
- 2) the area of forest that has been cutover. The results obtained will make it possible to recommend what areas should be permanently reserved for forest purposes.*

*The results obtained will make it possible to recommend what areas should be permanently reserved for forestry purposes. Finally, the detailed information collected will pave the way towards forest working plans, which will both regulate the cutting in the virgin forests yet remaining, and also lay down the procedure and silvicultural operations necessary in order assure the regeneration of the best species on those areas which have been cut-over by sawmillers and timber hewers in the past.” (Annual report 1916)*

The following is an extract from “Early Chapters from a Forester’s Story” by the Dick Perry.

*“In 1917 ... I was transferred to a forest classification camp in the jarrah forest between Nannup and Busselton. ... I had been issued with a departmental saddle and bridle, a halter, a curry comb and brush and a leather axe cover with straps to attach it to the saddle. ... My instructions were to await the arrival [at Busselton] of Assistant Forester Gordon Parke with my horse, and directions to the camp in the forest.*

*Gordon duly arrived a couple of days later leading my mount, a 17 hand white-faced chestnut gelding hack with whom I was to form a strong bond of respect and affection in the months ahead. We left Busselton the next day with my blankets, personal gear, some rations and a butt of chaff and grain tied to the saddle in front and behind, and a pack on my back. Our destination was sixty miles away. We followed the old Jalbarragup Road to the Blackwood River and then a cattle pad that led to the coast. We camped the first night under a sheoak beside the track with our horses tied up nearby. A chorus of dingoes howled nearby throughout the night. The following afternoon we arrived at the camp near the confluence of Rosa Brook and the Blackwood and a very interesting life in the bush commenced for me.*

*It may not be out of place to describe an assessment camp of those days. The personnel included a licensed surveyor and forester-in-charge, two other Assistant Forester assessors, a survey hand to assist the surveyor, a driver, a cook and 3 compass men - 9 in all. Tents were 10 feet by 12 feet with 3 foot walls and there were usually two men to a tent. Heavy canvas flies for each tent ensured they were waterproof. The cook had a tent to himself and some stores were stowed in it. A big fly to serve as a dining room was pitched in front of the cook’s tent and another smaller fly in front of that for a cook house. The cook’s fire, pots and pans and camp ovens were in front of that again. The driver*



*took a spring cart drawn by two horses into the nearest town or settlement for stores once a week. This trip usually took five days, four days travelling and one day doing the shopping and spelling the horses. The biggest item on his shopping list was of course chaff and oats for the horses. Meat was always a problem in the summertime. We consumed two sheep a week and although these were killed on the driver's day in town, after two days in the sun on top of the load they were often very ripe by the time he got back to camp. The cook would cut the freshest meat off for immediate use and the balance went into the brine barrel. It was tainted when it went in and was worse when it came out. The cook did his best by turning it into cottage pie or rissoles well laced with herbs and sauces to hide the taste, but stinking meat has an odour nothing will blunt. To this day I have trouble facing up to tomato sauce which we poured on liberally in the mistaken idea that it improved things. It taught me a lesson I have never forgotten and this comes to mind whenever I see people fussing and fiddling with their food: if you are really hungry, any food becomes attractive, even rotten meat. Incidentally none of us ever suffered upset stomachs from eating bad meat. Some of the experiences and incidents that occurred while I was engaged on this work may be of interest.*

*The purpose of our work was to survey, classify and measure the forest. There were many such teams of foresters working systematically throughout the southwest in those days. Along the survey lines we made accurate maps of forest type (jarrah, swamp, karri etc.), understory species and timber volumes. Now I think of it, these were probably the first broadscale ecological surveys in Western Australia. We did not record fauna unfortunately, because this was before the main onslaught of the fox, and the bush was full of animals.*

*We worked very long hours in the classification camps because the accepted routine was to do the surveying and assessing by daylight and the plotting in the evening by lamplight."*

By 1918 the Forests Act had been passed and land was recommended to be reserved permanently as State Forest, or as either Forests Act or Land Act timber reserves. There were also several other tenures such as Timber for Settlers requirements.

Most of the jarrah forest on the lateritic uplands was reserved as State Forest while in the karri forest agreement was eventually reached that pure karri would be reserved while marri/karri forest was considered more suitable for agriculture.

By 1920 much of the forest was still remote and large areas were still to be classified as Kessell's letter to the Minister indicates.

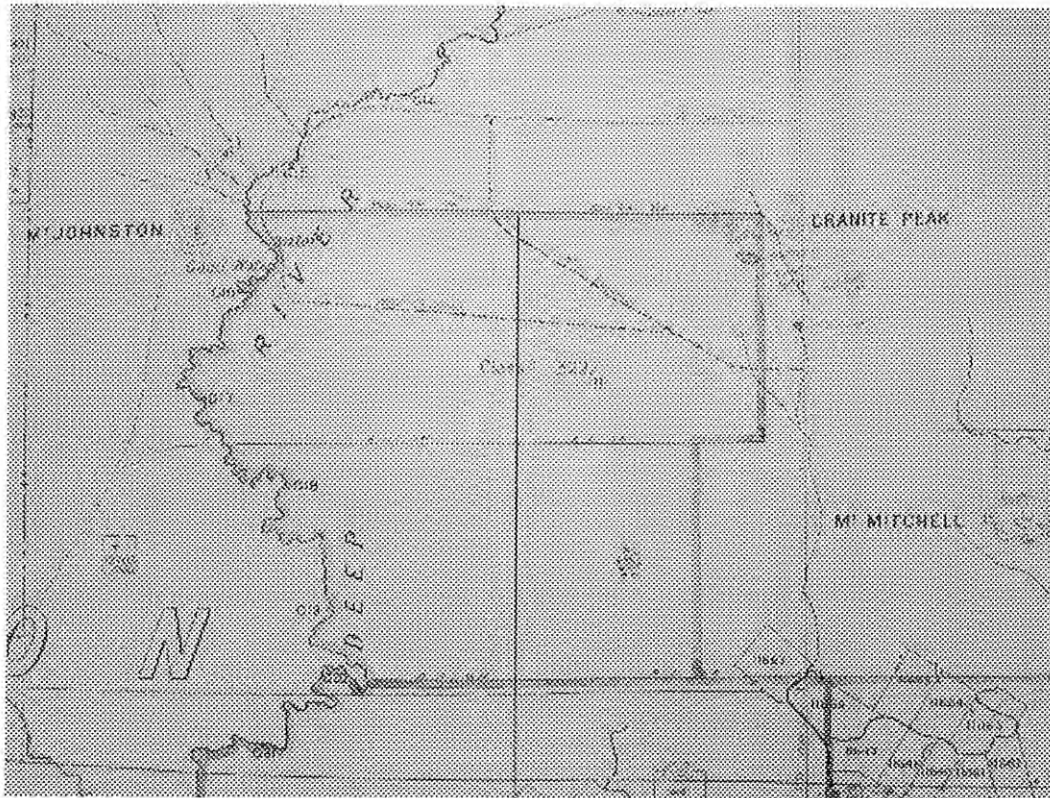
*"The classification work be pushed on between Big Brook, the Gardner, the Shannon Rivers and Nornalup Rd, so that the extensive area of land carrying karri may be surveyed as soon as possible. All the country between Big Brook and Deeside Rd is now done, and the plans are being prepared....Mr Brockman expects to complete the work before the rains drive him back to jarrah country.*

*As soon as the weather permits, say October, the classifiers to be thrown into the country between Big Brook and Manjimup to the east, and Nannup south to the sea on the west. In the meantime the classifiers, as soon as the rain sets in, say May, to go north and tackle all the country lying between Manjimup and Bridgetown on the west, and the edge of the big jarrah on the east."*

The initial classification work was completed by 1923. It provided the first estimates of the net area of the broad forest types and it provides one of the first examples of rational land use planning based on objective information. Timber estimates, based on the standards of the time, proved to be a significant underestimate of the resource.

In 1921 a joint submission by the Surveyor General and the Conservator recommended 800,000 ha of jarrah country be dedicated as State Forest and a further 180,000 ha as timber reserves. For a number of other reasons State Forest dedication was slow and it was not until the 1970s that most of the present reserved forest was dedicated as A class reserve.

## Examples of maps at Manjimup



The known information east of the Deep River prior to classification

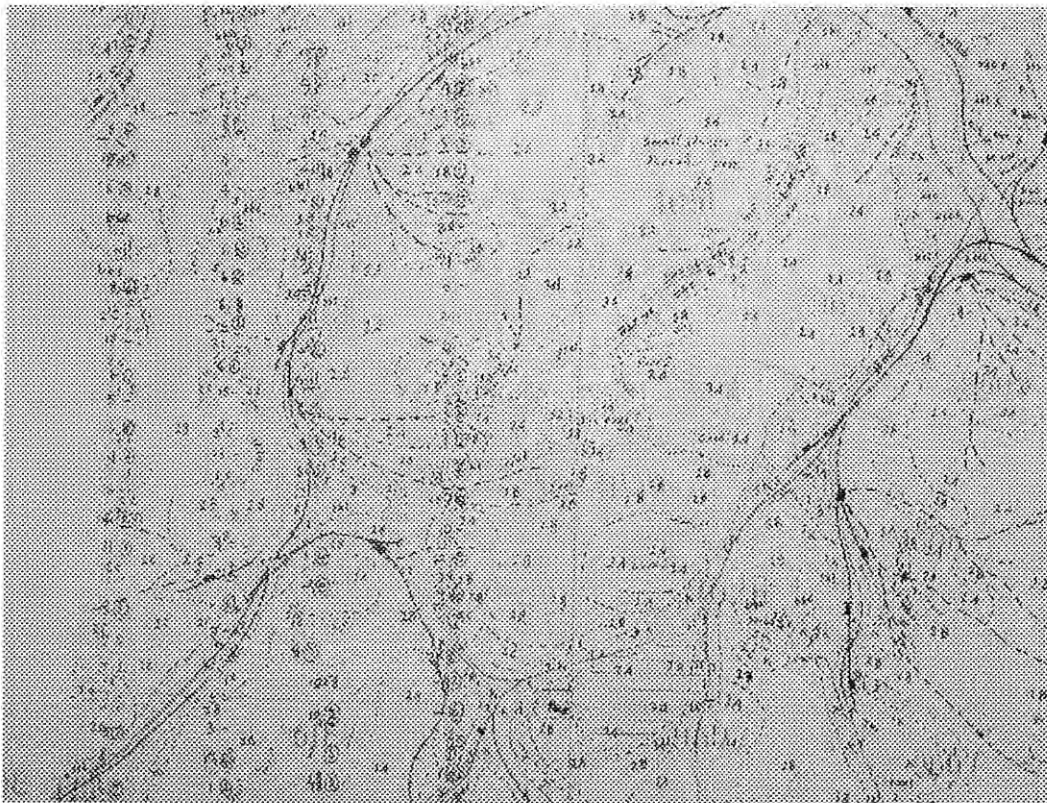


Classification west of the Frankland River

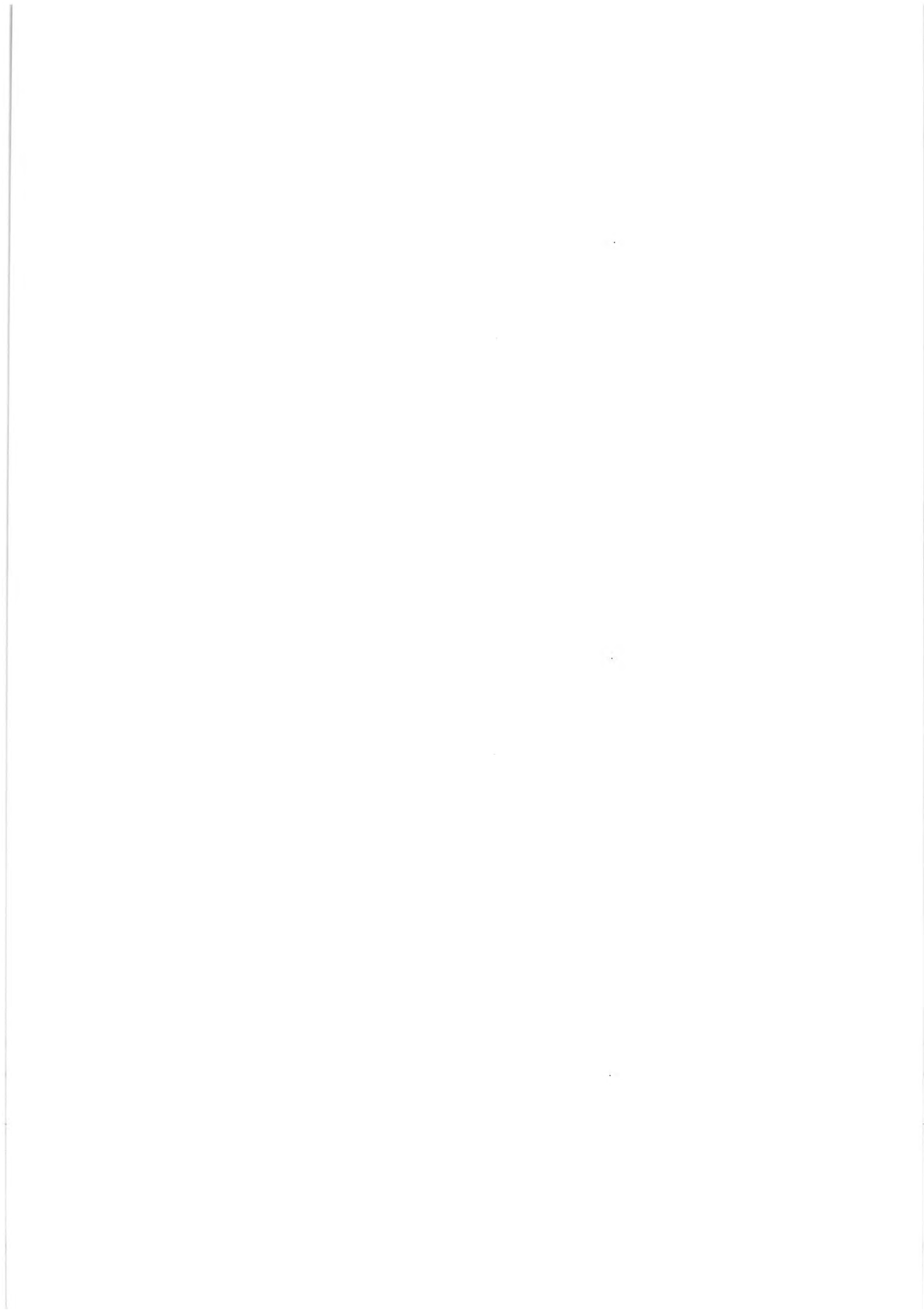




Details of the survey on classification maps



Classification near Yornup showing volumes. By DWR Stewart, later Supt of Management and Conservator of Forests



**Bailey, Caris**

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**From:** Strelein, Greg  
**Sent:** Tuesday, April 18, 2006 1:59 PM  
**To:** Bailey, Caris  
**Subject:** FW: Edited text

Caris,

Here are some edits from Jack of the originals. I am not sure about the major edits to my 'area calculation' draft, particularly the intro, but will leave them in for you to have a look at and make the decisions.

Greg

-----Original Message-----

**From:** Jack Bradshaw [mailto:jbrad@karriweb.com.au]  
**Sent:** Tuesday, 18 April 2006 11:01  
**To:** Strelein, Greg  
**Subject:** Edited text

Hi Greg,  
Attached are the edits requested. Suggested changes are shown in Track changes.  
I will give Caris a call.  
Cheers  
Jack

## AREA CALCULATION

Much of the work of the branch involves the calculation of area. A variety of methods have been used to do that.

Drawing boundaries on a map was relatively simple, but the process to calculate the area within the boundary was tedious. Of course mapped irregular boundaries could be divided into regular shapes such as triangles and the size of each calculated using trigonometry but simpler methods were generally applied based on this concept.

Initially, transparent overlays of square grids (or dot grids) were placed randomly over the map at the appropriate scale. And all the squares (or the dots that represented them) were manually counted with any partial grid squares on the edges summed as proportions of a whole square that lay inside the boundary. When preparing a summary for the whole south-west forests this was a very labourious/laborious process. This method was used routinely up to the 1980's. – Photo of grid in use, sample of grids on display.

Planimeters were often used for single area calculation and when more accuracy was required. Then came planimeters and there was a considerable overlap in these technologies as the planimeter was more expensive and required some technical skill to set up. The planimeter carried out the equivalent geometric calculation by carefully tracing the boundary of an area with the pointer, while the counter wheel summed the area encompassed. This was a much faster process and was similar to the modern process of electronic digitising. It was not long however before the electronic planimeter later replaced the mechanical vernier scale version.

The disadvantage was that every common boundary was traced twice. For complex maps, such as forest type maps, the planimeter was much too slow and the dot grid reigned.

– Photo of manual and electronic planimeters, units on display.

When boundary distances were required or lengths of roads and map distance was measured such like, were required this was again a manual process of measuring with a scale rule or later, using an opisometer. This was or mapping distance wheel which used a small knurled wheel and internal cogs, that was run along the boundary and the distance was scaled off the distance by calculated according to the the number of revolutions made, adjusted appropriately for scale. – Photos of use, instruments on display.

These processes were still very tedious for large jobs and had to be continually redone as a new category was introduced. In the mid-early 1980's the Branch devised a revolutionary concept tool for area calculation. A transparent plastic overlay with gridded holes drilled to take graded lead shot was placed over the map. The lead shot over the area to be measured were sucked up with a small vacuum pump and run into a "trough" graduated in units of area. The technique was fast and double counting was prevented. of a fixed grid over the whole forest estate based on the same concept of the grid square overlays. Management and treatment boundaries needed to be only gridded once and stored in a computer database where the computer could count the number of squares or grid cells inside any boundary or any intersection combination of the boundaries. Photos of coding and coding sheets, file of coding sheets on display.

Then began the era of GIS through the development of FMIS. Still a grid based system. Thus began the era of GIS or in this case the Forest Management Information System – FMIS. Thus also began the process of coding all of the decades of treatment and management data that the Branch had accumulated. Initially this process was carried out manually data was initially input using transparent coding sheets overlain on maps and with each grid cell coded for the appropriate attribute. and then the The sheets were then sent of the data punching

~~service before input to the computer (or actually only the boundary ones were coded and the data punching service filled in between).~~

During the early 1990's the first 'digitising tablets' became available for the electronic encoding of boundaries. The technology was very similar to the old grid squares since the inside of the tablet was a grid of wires that could sense the movement of the electric pointer on the tablet as boundaries were traced and recorded the co-ordinates of the intersecting wires at each position. The tracing process was the same as that used with the planimeters. – Photo pf digitising.

~~Thus electronic boundaries became available and areas were easily calculated as well as distances. However this also made it~~ It was now possible to translate the electronic boundaries into electronic coding sheets and so the tedious manual coding for FMIS was now became automated. The calculation of area has never been easier.

But FMIS was much more. It allowed separate attributes to be measured and overlaid later in any combination required, rather than the overlay process being done before area was measured. It was a revolution in planning flexibility that had been dreamed of all those years earlier, and long before the days of proprietary GIS software, the Branch was able to undertake very complex and sophisticated spatial and mathematical intersection queries that allowed questions to be answered in minutes that would not have been possible before. FMIS still outperforms other GIS in its speed of analysis. – References to articles and projects.



## MEMORABILIA NOTES

### CULTURAL HERITAGE – FMB TIMBER TABLES

The Tables in this office are made from Western Australian native timbers and form part of the Department's Cultural Heritage.

Since the formation of the Department it has been part of the forest management role to map the extent of the major tree species and to assess the timber resources of the various species within the state.

These WA Timber Tables were commissioned to commemorate the many years of work by forest assessors, interpreters and surveyors to quantify the timber resources of the state.

Background photo of forest assessment crew – A4

### CULTURAL HERITAGE - EDNIE-BROWN COMPASS

Western Australia's first Conservator of Forests J. Ednie-Brown, was appointed in 1896 after completing his 'Report on the Forests of Western Australia, Their Description, Utilisation and Proposed Future Management'. Ednie-Brown's expedition was based from Bunbury where the services of local surveyor Newton J. Moore had been appointed to assist.

That report was based on extensive surveys and assessment of the south-west forest areas and Ednie-Brown reported that: "in the examination of these extensive forests a distance of over 5,000 miles has been covered by rail, buggy and horseback" and "that over 1,500 individual acres were measured in arriving at an estimate of the quantity of marketable timber in these forests".

His compass was kindly loaned by Mr A. C. Ednie-Brown.

Background photo of Ednie-Brown on horseback – A5

### CULTURAL HERITAGE – S. L. KESSELL NAME PLATE

This 'name-plate' was from the briefcase of Stephen Lackey Kessell, Conservator of Forests from 1923 to 1945. Kessell was appointed 2<sup>nd</sup> of April 1920 as Working Plans Officer to compile the first working plans following the completion of the forest classification surveys. Kessell oversaw the development of this process of forest management.

Kessell took office as Conservator at the age of twenty four at a time of bitter controversy over forest. By the time of his resignation in 1945 he had seen the dedication of nearly half of the present reserved forest; the implementation of silvicultural treatment of all of the forest harvested to that time; the control of forest industry under the new 'permit system'; the development of a series of Working Plans covering all of the then dedicated forest. He had made the first calculations of sustained yield and developed an effective, decentralised forest administration.

~~Forest Management Branch was renamed from the Inventory and Planning Branch but was previously known for most of its history as the Working Plans Office. The WPO role was to prepare working~~

plans—Section 31 of the Forest Act required the Conservator to produce Working Plans for Individual Working Circles to regulate the timber industry.

Working circles were generally defined by the forest type or the supply areas for certain sawmills and prescribed how the forest was to be managed. Working Plan No 1 concerned the Mundaring Catchment Regeneration Areas (cutover to increase water supply similar to current programs in forest catchments).

Background photo of WP No1 – A5

#### CULTURAL HERITAGE – FORESTS DEPT THEODOLITE

From the earliest years of the Department, staff were employed to assist with the collection of information about the state's resources. Such work required detailed knowledge of the topographic and cadastral detail of the estate being managed. These surveys were assisted with instruments such as this early theodolite. A theodolite was used to take accurate bearings from one position to another.

The need for accurate location data was recognised in the 1918 Forest Act requiring the classification of Forest Lands "to include topographic surveys" and so, 'licensed surveyors and other experienced staff laid down a network of theodolite traverses connected to cadastral surveys as a basis for topographic surveys' (Fifty Years of Forestry).

The 1914 Annual Report of the Woods and Forests Department noted the progress of 'Classification' surveys that 'surveyors accompanied by forest rangers have been engaged in making surveys and estimating the quantity of standing timber in the areas reserved from alienation'.

Background photo of Classification map – A5

#### CULTURAL HERITAGE – FORESTER'S COMPASS

Beyond the requirement for formal surveys, field staff required their own means of determining positions, locating features and conducting surveys. Before the days of GPS technology, staff were issued with a range of compasses and this example is of an early compass issued as FD No 1. The 1925 Annual Report commented on the selection of these compasses "the Verschoyle Transit Prismatic compass, the Military Sighting Vane, and the Forester's Compass were tried in turn, and of these the Forester's compass (by Cooke, Troughton & Sims) has proved the most reliable and satisfactory." This old style compass has been updated over the years with various models but is now replaced by the GPS for many situations.

Background photo of survey plan/Forester's Manual Topo sheet B12 – A5

## CULTURAL HERITAGE – ABNEY LEVEL

This brass Abney Level is an early example of the instruments used by Departmental staff to measure slope or the heights of things such as fire towers but most commonly for measuring tree height. The instrument measures angles of incline or decline and by measuring the distance to the object, the height can be calculated using trigonometry as outlined in the Forester's Manual. These were replaced by more advanced 'inclinometers' such as the Haga meter, Sunto Clinometer, various 'Relascopes' and most recently by laser-laser instruments.

Background photo of Forester's Manual - measurement – A5

## CULTURAL HERITAGE – CONSERVATOR'S DESK

This antique jarrah desk and sheoak chair were used by Charles Edward Lane-Poole, Conservator of Forests, 1916-1921. Lane-Poole drafted the Forests Act and set the foundations for the forest policy and management for decades to follow. Following a bitter dispute with the then Premier James Mitchell over the extension of timber Concessions and delays in the dedicated of State Forests, Lane Poole resigned. From 1926 to 1944 he was the first Principal of the Australian Forestry School in Canberra, the establishment of which he had championed for many years. He was critical of the government's favourable treatment of sectors of the timber industry and when further concessions were extended for timber rights, Lane-Poole resigned in protest and became the first Principal of the Australian School in Canberra.

Background photo of C.E. Lane-Poole

## CULTURAL HERITAGE – REFERENCE TREE

This 'mirror image' of the blaze of a reference tree represents a navigational aid unique to the forest area of WA and which was in day-to-day use until the availability of GPS.

The forest area was divided into one-mile squares with an alpha-numeric identifier. As roads and tramways were surveyed, trees near certain junctions were blazed with the reference number and the consecutive number of the tree in that square.

e.g. HR  
62  
2

Trees established by theodolite were also marked with broad arrow or sometimes an R, the initial of a later surveyor. These are marked on maps with a double circle. Reference trees established by chain and compass survey are shown with a single circle.

Most early plot positions will be 'tied' to reference trees.

Background photo of a field reference tree

CULTURAL HERITAGE –

Background photo of

## Bailey, Caris

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**From:** Strelein, Greg  
**Sent:** Tuesday, April 18, 2006 11:49 AM  
**To:** Bailey, Caris  
**Subject:** RE: Artefacts

Caris,

Jack said you hadn't seen his details yet but I did forward them to you on Thursday. Just in case, here they are again.

Greg

-----Original Message-----

**From:** Bailey, Caris  
**Sent:** Tuesday, 18 April 2006 10:19  
**To:** Strelein, Greg  
**Subject:** RE: Artefacts

Okay - I won't be able to do it this week, but if you like, I can go and have a look next week to see how big it is and then raise it with John.

Caris

-----Original Message-----

**From:** Strelein, Greg  
**Sent:** Tuesday, April 18, 2006 9:56 AM  
**To:** Bailey, Caris  
**Subject:** RE: Artefacts

Caris,

There is a small (slightly larger than a bread box) cupboard behind Peter Fishwick's desk and the bookcase is just inside the door of Peter's room - the old Conservators room at Kensington. Peter is very possessive, and guarded about enquiries, but John Byrne is the custodian so we would need to clear things with John.

Greg

-----Original Message-----

**From:** Bailey, Caris  
**Sent:** Tuesday, 18 April 2006 9:30  
**To:** Strelein, Greg  
**Subject:** RE: Artefacts

Hi Greg

The carved cupboard sounds very interesting - do you think it's still over at Kensington, or do we need to find it first? If we know where it is at Kensington, I'm happy to go and have a look and get some digital pics for you.

The level and tripod also sound like key pieces that should be with FMB.

Regards, Caris

-----Original Message-----

**From:** Strelein, Greg  
**Sent:** Thursday, April 13, 2006 11:17 AM



**To:** Bailey, Caris  
**Subject:** FW: Artefacts

Hi Caris,

I haven't looked at these yet but thought I would send them on for you to ponder over.

Greg

-----Original Message-----

**From:** Jack Bradshaw [mailto:jbrad@karriweb.com.au]

**Sent:** Monday, 3 April 2006 2:39

**To:** Strelein, Greg

**Subject:** Artifacts

I have been speaking to Roger Underwood and he tells me that there used to be an ornately carved cupboard in the Consecrators room that Lane-Poole had made for the Emoire Forestry Conference. That may be a better bet than the book case.

He also has an original FD dumpy level and tripod that he has had for safe keeping. Are you interested?

Cheers

Jack

## Bailey, Caris

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**From:** Strelein, Greg  
**Sent:** Thursday, April 13, 2006 4:53 PM  
**To:** Bailey, Caris  
**Subject:** FW: The FMIS story attached.

Have I sent you this one yet, Jack is still editing this also.

-----Original Message-----

**From:** Green, Mike  
**Sent:** Tuesday, 4 April 2006 2:22  
**To:** Strelein, Greg  
**Subject:** RE: The FMIS story attached.

Greg,

I have found a couple of typos in the original – the attached is a corrected version.

Mike

Michael A Green  
Systems analyst/programmer  
Department of Conservation & Land Management  
20 Dick Perry Avenue  
Kensington  
Western Australia 6151

-----Original Message-----

**From:** Strelein, Greg  
**Sent:** Tuesday, 4 April 2006 2:06 PM  
**To:** Green, Mike  
**Subject:** RE: The FMIS story attached.

Thanks Mike that sounds pretty good. I will try to dig up some old photos of the coding process, and otherwise we might just have to include some screen dumps of the old and new environments. I'll pass this on to the editors to play with (Caris). Greg

-----Original Message-----

**From:** Green, Mike  
**Sent:** Monday, 3 April 2006 3:52  
**To:** Strelein, Greg  
**Subject:** The FMIS story attached.

Greg,

Both Pat & Danny have told me the same thing – people were too flat out working on management plans and RFAs etc to think about taking photos. The best we could manage up here would be a couple of dot grid foils and an empty FMIS coding sheet.

Regards,

Mike

Michael A Green  
Systems analyst/programmer  
Department of Conservation & Land Management  
20 Dick Perry Avenue  
Kensington

5/4/2006

Western Australia 6151

## **The story of FMIS, the Forest Management Information System.**

There was a time when neither Windows nor FMIS existed, a time when no-one imagined how much the world could be changed by the coming into being of two mere software packages, a time when innocence prevailed ...

Long ago, in a different century, when petrol cost just 12 cents per litre, the West Australian woodchip industry was born. This was in the 1970s, way before computerised geographical information systems existed and years before the then Forests Department owned even a single computer. But with the advent of woodchip industry an urgent need arose to be able to monitor and predict timber volumes over the woodchip licence area, predominantly the Southern Region (now the Warren Region). In those days, the only way to do it was manually: teams of people would lay small dot-covered foils over printed maps so that they could count the hectares of this and that in each of thousands of squares, to produce a summary table the size of a table-cloth. That was how the 1977 working plan was made: it took 6 people almost 3 years to produce it. Clearly, this method was impossibly slow and expensive, and with the woodchip industry in operation the department was going to need this sort of information on a weekly or even daily basis: some magic was required.

Enter Jack Bradshaw. Jack had seen an American system that used a computer to overlay pairs of coded maps. It required that all participating maps be notionally divided into small cells, with a code assigned to each cell to represent some value from the map. The computer would then "overlay" these maps according to a set of predefined rules to produce a table of results. The only trouble was, this system required a large investment of time in order to capture the original data from all the old maps – it also required a huge dose of faith that any such effort was worthwhile. But Jack knew that it was, and inspired 4 staff to spend most of the next year "dot gridding" data from maps for the new system. A sizeable carrot in all this was the knowledge that if it worked, the next working plan would not require 18 person-years to complete.

Early in 1981, in the hands of a new programmer (Colin Pearce), the new system was put to the test. In one afternoon, at the University Computing Centre, Colin produced results that would have taken two or three person-years by the old method, a truly staggering result at that time. The Forest Management Information System was born.

The greatest effort associated with this early FMIS, and its most vulnerable part, was the collection and loading of raw data. The method was this: staff would lay a transparent sheet bearing a grid of cells over an existing map and scan the cells, noting on the sheet where the underlying data changed. The completed sheets were sent to a "punching bureau" where the raw data was turned into computer files written on reel-to-reel tape. It then had to be transported and loaded to the computer. If the coding sheets were ever placed in the wrong order, or worse, with the wrong data set, both serious and comical errors could arise – for example, records of timber harvesting from the middle of Lake Muir persisted for some years undetected.

However, the system had proved its value, and not only was the 1982 working plan produced with comparative ease, but the type of question commonly asked in State Parliament could be answered within an hour or two rather than weeks later. This soon became a minor industry in its own right, with FMIS becoming the victim of its own success – those who asked the questions very quickly forgot that FMIS was at all unusual in its ability to provide such speedy answers.

By the mid 1980s, when the Forests Department had been subsumed under the new Department of Conservation and Land Management, it was clear that an upgrade was required. CALM acquired its own computer (a VAX) and a new computer programmer (Mike Green), and FMIS was rewritten from scratch to run in the totally new VAX (VMS) environment. Although the new system was initially no faster than the old, it was much easier to use since it incorporated some revolutionary ideas – menus for example: you could do useful things without having to rewrite parts of the program for the purpose. For several years thereafter, developments in FMIS consisted of making it ever easier to use and the adding of more tools. In this respect, the greatest achievements were the development of a graphics system (users could actually see what their data looked like and if it was wrong, could correct it on screen) and the means to communicate directly with the so-called vector data systems such as Microstation and Arc/Info. This did away with the time consuming and error prone input coding sheets, and strangely enough, no-one seemed to regret that.

In the late 1990s Forest Management Branch was given the challenging task of working, along with the Commonwealth Government, on the Regional Forest Agreement for WA. There was competition for a system to take on the work, but it was eventually agreed that FMIS could do the job since by this time it had a data resolution of 0.5 Ha (compared with the 2 Ha it originally had), and still had the analytical edge over other systems in terms of its raw speed. (It could knock spots off 'em!)

A major expansion of the capabilities of FMIS followed. The primary focus of the RFA work was to set aside an agreed area of reserves in the various ecosystems in the old-growth forest, and then to be able to answer seemingly countless “what if” questions – “what if we expand this reserve to here, how would it affect timber supply, potential mining, flora, landscape values, ...?”. There were 33 such layers in this equation, and every time any change was made to even a single reserve boundary the analysis needed to be repeated. Behind the scenes, the ever present Jack spurred on development, and with Pat Collins behind the wheel, the FMIS formula one racing car completed the RFA grand prix with relative ease. The only down side to all this was the fact that, capable as it was, FMIS had grown to become a benign monster – difficult to manage at the programming level, and having a 1980s look and feel about it.

But as the Buddhists say, nothing is permanent, and another upheaval was in store.

By about the year 2000 rumours were beginning to circulate that CALM would one day abandon the OpenVMS operating system on which FMIS depended, although its demise was always spoken of as being “two or three years away”. Some contingency plans were



made for the potential loss of OpenVMS and a few tentative steps towards a new look FMIS were taken, but there was no need to rush; two or three years would be plenty of time. In April 2004 the news came through – “you’ve got ’til May 31<sup>st</sup> 2005”, in other words, 13 months to recast FMIS to run under Windows.

It was done. True, it was rushed and not properly documented, and when it was released it contained a number of show-stopping bugs, but the deadline was achieved. The old and new systems overlapped by about 3 weeks, which gave just enough time to get the major bugs out of the new system, with the result that FMIS has still never been out of commission since its inception in 1981.

The new FMIS (known as version 4) looks and feels like any other Windows system, complete with pop-up menus, buttons to click, an interactive graphics display operated by mouse input, and on-line user help. The geographical coverage of FMIS has expanded to include the SCRIPT project region along the south coast of WA, and future plans include improving the hard-copy plotting system, developing and extending the algorithm for modelling fire and dieback spreading, creating a seamless interface to MapInfo, and encouraging as many people as possible to use it.

FMIS has been a powerful management tool for 25 years. Petrol now costs more than 10 times what it cost when the FMIS story began, and that other software package, the Johnny-come-lately Windows, seems to have taken over the world. But let’s not forget, FMIS is older than Windows, and deserves a little respect!

Mike Green. 3 April 2006

**Bailey, Caris**

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**From:** Green, Mike  
**Sent:** Wednesday, April 12, 2006 2:03 PM  
**To:** Bailey, Caris  
**Subject:** The story of FMIS

Hi Caris,

I believe Greg Strelein has already sent you a version of "The story of FMIS". Since then, Pat Collins has pointed out one or two factual errors to me and suggested some other small improvements. I have made the required changes in the attached document – I hope it's not too late for you.

Have a great Easter break,

Regards,  
Mike

Michael A Green  
Systems analyst/programmer  
Department of Conservation & Land Management  
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## **The story of FMIS, the Forest Management Information System.**

There was a time when neither Windows nor FMIS existed, a time when no-one imagined how much the world could be changed by the coming into being of two mere software packages, a time when innocence prevailed ...

Long ago, in a different century, when a litre of petrol cost just 12 cents, a problem became apparent in the management of Western Australia's forests. The concept of "multiple use" came into being, meaning that often mutually exclusive issues such as conservation, mining, water production, timber production, etc, somehow had to be reconciled. Then to cap it all, the West Australian woodchip industry was born, bringing with it an urgent need to be able to predict timber volumes over the woodchip licence area, predominantly the Southern Region (now the Warren Region).

This was in the 1970s, way before computerised geographical information systems existed and years before the then Forests Department owned even a single computer. In those days, the only way to do this kind of work was manually: teams of people would lay small dot-covered foils over printed maps so that they could count the hectares of this and that (and each this and that required a separate count) in each of hundreds of forest blocks, to produce a summary table the size of a tablecloth. That was how the 1977 General Working Plan was made: it took 6 people almost 3 years to produce it. Clearly, this method was impossibly slow and expensive, and with the woodchip industry in operation the department was going to need this sort of information on a weekly or even daily basis: some magic was required.

Enter Jack Bradshaw. Jack had seen an American system that used a computer to overlay pairs of coded maps. It required that all participating maps be notionally divided into small cells, with a code assigned to each cell to represent some value from the map. The computer would then "overlay" these maps according to a set of predefined rules to produce a table of results. The only trouble was, this system required a large investment of time in order to capture the original data from all the old maps – it also required a huge dose of faith that any such effort was worthwhile. But Jack knew that it was, and inspired 4 staff to spend most of the next year coding data from maps for the new system. A sizeable carrot in all this was the knowledge that if it worked, the next Working Plan would not require 18 person-years to complete.

Early in 1981, in the hands of a new programmer (Colin Pearce), the new system was put to the test. In one afternoon, at the University of WA Computing Centre, Colin produced results that would have taken two or three person-years by the old method, a truly staggering result at that time. The Forest Management Information System was born.

The greatest effort associated with this early FMIS, and its most vulnerable part, was the collection and loading of raw data. The method was this: staff would lay a transparent sheet bearing a grid of cells over an existing map and scan the cells, noting on the sheet where the underlying data changed. The completed sheets were sent to a "punching bureau" where the raw data was turned into computer files written on reel-to-reel tape. It

then had to be transported and loaded to the computer. If the coding sheets were ever placed in the wrong order, or worse, with the wrong data set, both serious and comical errors could arise – for example, records of timber harvesting from the middle of Lake Muir persisted for some years undetected.

However, the system had proved its value, and not only was the 1982 General Working Plan produced with comparative ease, but the type of question commonly asked in State Parliament could be answered within an hour or two rather than weeks later. This soon became a minor industry in its own right, with FMIS becoming the victim of its own success – those who asked the questions very quickly forgot that FMIS was at all unusual in its ability to provide such speedy answers.

By the mid 1980s, when the Forests Department had been subsumed under the new Department of Conservation and Land Management, it was clear that an upgrade was required. CALM acquired its own computer (a VAX) and a new computer programmer (Mike Green), and FMIS was rewritten from scratch to run in the totally new VAX (VMS) environment. Although the new system was initially no faster than the old, it was much easier to use since it incorporated some revolutionary ideas – menus for example: you could do useful things without having to rewrite parts of the program for the purpose. For several years thereafter, developments in FMIS consisted of making it ever easier to use and the adding of more tools. In this respect, the greatest achievements were the development of a graphics system (users could actually see what their data looked like and, if it was wrong, could correct it on screen) and the means to communicate directly with the so-called vector data systems such as Microstation and Arc/Info. This did away with the time consuming and error prone input coding sheets, and strangely enough, no-one seemed to regret that.

In the late 1990s CALM was given the challenging task of working, along with the Commonwealth Government, on a Regional Forest Agreement for WA. There was competition for a system to take on the work, but it was eventually agreed that FMIS could do the job since by this time it had a data resolution of 0.5 Ha (compared with the 2 Ha it originally had), and still had the analytical edge over other systems in terms of its raw speed. (It could knock spots off 'em!)

A major expansion of the capabilities of FMIS followed. The primary goal of the RFA work was to set aside areas of reserves that met reservation targets for forest ecosystems and old-growth forests, and then to be able to answer seemingly countless “what if” questions – “what if we expand this reserve to here, how would it affect timber supply, potential mining, flora, landscape values, ...?”. There were 33 such layers in this equation, and every time any change was made to even a single reserve boundary the analysis needed to be repeated. Behind the scenes, the ever present Jack spurred on development, and with Pat Collins behind the wheel, the FMIS formula one racing car completed the RFA grand prix with relative ease. The only down side to all this was the fact that, capable as it was, FMIS had grown to become a benign monster – difficult to manage at the programming level, and having a 1980s look and feel about it.

But as the Buddhists say, nothing is permanent, and another upheaval was in store.

By about the year 2000 rumours were beginning to circulate that CALM would one day abandon the OpenVMS operating system on which FMIS depended, although its demise was always spoken of as being “two or three years away”. Some contingency plans were made for the potential loss of OpenVMS and a few tentative steps towards a new look FMIS were taken, but there was no need to rush; two or three years would be plenty of time. In April 2004 the news came through – “you’ve got ’til May 31<sup>st</sup> 2005”, in other words, 13 months to recast FMIS to run under Windows.

It was done. True, it was rushed and not properly documented, and when it was released it contained a number of show-stopping bugs, but the deadline was achieved. The old and new systems overlapped by about 3 weeks, which gave just enough time to get the major bugs out of the new system, with the result that FMIS has still never been out of commission since its inception in 1981.

The new FMIS (known as version 4) looks and feels like any other Windows system, complete with pop-up menus, buttons to click, an interactive graphics display operated by mouse input, and on-line user help. The geographical coverage of FMIS has expanded to include the heath lands along the southern coast of WA, and future plans include improving the hard-copy plotting system, developing and extending the algorithm for modelling fire and dieback spread, creating a seamless interface to MapInfo, and encouraging as many people as possible to use it.

FMIS has been a powerful management tool for 25 years. Petrol now costs more than 10 times what it cost when the FMIS story began, and that other software package, the Johnny-come-lately Windows, seems to have taken over the world. But let’s not forget, FMIS is older than Windows, and deserves a little respect!

Mike Green. 3 April 2006



**Bailey, Caris**

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**From:** Jack Bradshaw [jbrad@karriweb.com.au]  
**Sent:** Friday, April 21, 2006 10:57 AM  
**To:** Strelein, Greg; Bailey, Caris  
**Subject:** see attached

for ten years, so it really does not much matter whether the Act is repealed or not. I am afraid, however, that the storm that will be created over the amendment of the Forests Act will cloud the main issue, that is the extension of Millars' holdings. In the meantime I have received tentative offers from other parts of the world. The New Zealand people are establishing a Forestry School, and will be looking for a professor and a lecturer in the course of the next two months. This seems rather attractive, only I do not possess the quality of imparting knowledge, even if I possess the knowledge, which is doubtful. The Commonwealth Government want me to go to Papua for twelve months to report on the forest possibilities there, and I think perhaps this is the best thing to do. It is, of course, very difficult to decide because all the time one is hoping against hope that the people here will take a sensible view of things and will not wreck the forest policy that has been laid down, and which is really working extraordinarily well, having regard to the fact that it is an entirely new departure in Western Australia.

You will be sorry to hear that my wife has been very seriously ill, but I am glad to say she is recovering very rapidly now, and I am arranging for her to go away to the extreme South West for a complete change for three months. I think it is really that she has taken on her shoulders a great deal of my worries. I think this three months change can only be a preliminary to a very much longer journey, that is to the Old Country. If I go to Papua then she will certainly go Home with the children.

With kindest regards from us both to Lady Helen and yourself,

Yours very sincerely,

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anything that you could do to prevent this calamity. Gibson is certainly the best possible man they can get and he should be appointed. It would be no use at all my recommending him, but I am getting foresters in the other States of Australia to do so, and Mr. Kingsmill is trying to work up some sort of public opinion in regard to forestry and the necessity of a professional man taking charge of the Department. I hope to see Sir Francis Newdegate and ask him to give what assistance he can in this matter.

I am forwarding you herewith copies of cuttings from the papers showing how things have gone. The leader in the "West Australian" on the Forestry Commission was very good reading to me, and Mr. Carson, the associated editor, took the trouble to go and see the Premier on the subject, but the latter turned a deaf ear to his pleading for a technical commission.

I am also sending you my Annual Report.

With kind regards,  
Believe me,  
Yours sincerely,

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8th September, 1921.

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The Viscount Novar,  
Novar,  
Rothshire,  
SCOTLAND.

Dear Lord Novar,

I am forwarding you herewith further cuttings regarding the forestry impasse - I am afraid this is the only name for it. I am also sending you extracts from Hansard from the 18th onwards. You will see by to-day's "West Australian" that the debate on Mr. Pickering's motion asking for a Select Committee to go into the whole matter, was started last night. I was up at the House and was able to judge, to a certain extent, of the feeling, and I am sorry to say that things look pretty bad. Indeed, I shall be very much surprised if the Forests Act comes out of the business with any of its important clauses intact. It is extraordinary what a tremendous influence a large firm like Millars' Timber & Trading Company can exercise on legislators. There has been, of course, a regular campaign among the members to poison their minds against forestry work generally, and particularly against the Conservator who has been represented as a sort of Kaiser. This misrepresentation has gone a great length, for instance the other day the permit-holders - that is the men who hold cutting rights under somewhat more satisfactory, from a forestry standpoint, conditions than Millars' Timber & Trading Company - waited on the Premier and asked that the regulation regarding royalty should be repealed or amended, and the Premier replied that a regulation once passed on the advice of the Conservator could only be repealed on his advice. Put politely, the Premier was misinformed, for of course the Governor in Council has the right to repeal or amend any regulation without reference to the Conservator, and there is nothing in the Act giving the Conservator such autocratic powers as this.

From what I could gather from listening to members in the House speaking on the debate, there is a good majority for granting the extensions of leases and concessions, and a still larger majority for whittling down the most important sections of the Act. Of course if Millars get their concessions, forestry must come to an end