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The need to manage native forests on an ecologically sustainable basis is a basic tenet of Australia's 1992 National Forest Policy Statement (NFPS) and has been incorporated into the NSW Forestry Act (2012). Sustainability can, in part, be defined as a requirement of our generation to manage the resource base such that it is not depleted and can potentially be shared by future generations.

Trees are long lived organisms, in native forests eucalypt trees may not reach large sawlog size until they are 80-100 years old, may not develop hollows until they are 120-180 years old and may live until they are 300-500 years (or more) old. Forest management needs to be based on the life-spans of the trees to ensure essential resources are provided in perpetuity.

The concepts of "sustained" or "sustainable" yields of sawlogs have been around since the inception of the Forestry Commission of NSW in 1916. Historically the Forestry Commission's resource assessments are at best estimates of sustained yield, i.e. the volume of "quota" sawlogs that can be maintained over some specified period, rather than in perpetuity, and without consideration of environmental constraints.

Sustainable yield is generally taken to be a specified annual volume of "quota" sawlogs which is expected to be able to be maintained at that level in perpetuity, generally taken to be for at least 100 years. The addition of "ecologically" emphasises also sustaining the ecological values of the forest.

Public forests in north-east NSW have never been managed on a sustainable yield basis.

It was not until the NSW Forestry Reform Process began to be implemented in 1995 that the framework for ecologically sustainable forest management envisioned by the NFPS began to be holistically implemented, notably through the establishment of a CAR reserve system and

the application of prescriptions designed to minimise impacts of forest operations on soils, streams and biodiversity. Within these constraints the key requirement is to manage logging on a sustainable yield basis.

Forests NSW (2005) consider:

*Ecological sustainability of wood supply is assured by incorporating an ecological framework in the modelling and applying the Integrated Forestry Operations Approval (IFOA) and licence conditions during operations.*

*The ecological framework is comprised of:*

- *A comprehensive, adequate and representative (CAR) reserve network of dedicated reserves, informal reserves, and values protected by prescriptions which exclude harvesting ...;*
- *A complementary system of adaptive management in planning, implementing and monitoring of harvesting to protect rare or threatened flora and fauna and their habitats along with soils and water quality ...;*
- *Maintenance of forest cover by using appropriate silviculture during harvesting and ensuring natural regeneration or rehabilitation where appropriate ...;*
- *Periodic review of timber availability and supply commitments based on performance monitoring and improvement of the FRAMES models.*

Regrettably the national minimum reservation targets for north-east NSW have still not been satisfied (see **CAR Reserves**), the prescriptions for threatened fauna and flora are inadequate and poorly applied (see **Threatened Species** and **Habitat Trees**), as are those for soil conservation and stream protection (see **Stream health**). This paper is limited to reviewing the sustainability of logging of large high quality (quota) sawlogs from public forests.

Timber allocations have historically been on the basis of “quota sawlogs” which are now called “large high quality sawlogs”, generally these are required to have minimal defect and a centre diameter of >40 cm. Some Management Areas (Kendall, Coopernook, Bulladelah, Casino and Taree) had run-down the large sawlog resource long before the forest reform process was initiated in 1995 and had included small logs down to 25 cm small end diameter as quota for many years. Quota used to refer to the annual commitment of quota sawlogs to industry.

Since the 1950’s there have been attempts to undertake yield assessments and regulate yields of quota sawlogs, though at best the yield assessments have been indicative and invariably over-estimate resources. Fortunately for the Forestry Commission yield shortfalls have been able to be compensated for greater utilisation of lower quality wood and once undesirable species, as well as access to areas once considered inaccessible. Unfortunately historical commitments were often the basis for establishing yields, with the intent being to sustain set yields until an area was cut out.

In 1976 the Forestry Commission’s Indigenous Forest Policy aimed to go on cutting oldgrowth forests until they were cut-out, with the goal of meeting future timber commitments from the regrowth forests of the coastal plain and pine from plantations by 2010. The intent was to reduce commitments from the coastal forests down to a sustainable level as

opportunities occurred, often this meant completing cutting in the 1980-90s and stopping logging until the regrowth matured in 2020-40.

The intent was not met due to the sawmiller's insistence in maintaining access to the coastal forests and the Forestry Commission's desire to maximise revenues. More recently conservationists' attempts to protect oldgrowth forests interfered with the Forestry Corporation's attempts to completely liquidate them.

By 1995 only two of the 20 Management Areas in north-east NSW had quotas set at the estimated sustained yield level, with 4 set marginally higher and 12 with quotas set well above the sustained yield (2 did not identify sustained yield). Overall quotas were set at around 138% of the Forestry Commission's own estimates of sustained yields, and many of these were known to be over-estimates or predicated upon reducing yields once the oldgrowth was cut out.

Quotas did not establish a legal long-term right, though were treated as if they did. Since 1987 quota commitments were progressively converted into Wood Supply Agreements (WSA). From 1995-2000, as the promised CAR reserve system was established, quotas were reduced by 50% down to 269,000m<sup>3</sup> of large high quality sawlogs per annum. Despite a detailed appraisal by NEFA identifying gross over-estimations, these volumes were issued as WSAs in 1999 for 20 years at 124% of the then estimated sustainable yield.

Within 3 years monitoring showed that actual yield was 87 per cent of predicted, so the renamed State Forests stopped monitoring, but not before a yield review identified that short term yields should be reduced by 18% and long-term sustainable volumes by 40%. In 2001 the NSW Government decided to forgive a \$1 million debt in return for their WSA of 15,000m<sup>3</sup> per annum, which reduced commitments by 6% down to 254,000m<sup>3</sup>.

New WSAs were signed in 2003/4 for 215,422 m<sup>3</sup> of large high quality sawlogs per annum for 20 years until 2023. While annual volumes were decreased by 15%, the 5 year extension increased overall volumes of large high quality sawlogs committed by 17%. In issuing these new WSAs the NSW Government entrenched and increased intentionally unsustainable logging for a further 5 years and further reduced long term sustainable yields. WSA were also expanded to apply to massive volumes of Small High Quality Sawlogs, Low Quality Sawlogs and pulpwood.

In grossly irresponsible acts the NSW Government removed both the need for a yield review in 2006 and the clause from the WSAs that allowed yields to be adjusted in line with revised resource assessments. At the same time a series of State Forests' reviews showed their resource estimates were fatally flawed and unreliable.

Ever since the new WSA's were issued to the sawmillers for free, the (again) renamed Forests NSW have been unable to supply commitments. Over the 8 years 2004-12 there was a 19% shortfall between commitments given in WSA and actual yields of large high quality sawlogs, averaging 41,314 m<sup>3</sup> per annum. So far NSW taxpayers have had to pay over \$12.3 million to the millers to buy back resources that never existed, had to pay hundreds of thousands of dollars to compensate mills for the Forestry Corporation's inability to supply committed volumes, and had to pay millions of dollars to buy timber from private properties to make up for shortfalls from public lands.

To increase the area available for logging, the Government has allowed the felling of trees into exclusion areas, removed 10m buffers from unmapped streams and now intends to allow logging of extremely steep slopes. Undoubtedly it has also contributed to the poor implementation of many logging prescriptions.

The desperation to supply commitments has led to running down of the productive capacity of public forests, rather than husbanding the future large sawlog resource the Forestry Corporation are prematurely taking the large sawlogs of the future.

The now corporatized Forestry Corporation have rapidly declining yields of large high quality sawlogs and compensatable WSAs until 2023 for volumes that don't exist. While they may be able to satisfy commitments by logging areas now excluded and getting taxpayers to buy back more WSAs, the environmental costs will be high. After 2023 the public forests will be in a severely degraded state.

The battle for ecologically sustainable forestry has been lost.

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# 1. The Early Days

One of the prime motivations for the creation of the Forestry Commission expressed in the 1907 Royal Commission of Inquiry on Forestry was the dwindling timber resources and the need to sustain them into the future (PAC 1990).

In 1937 Mr. E.H.F. Swain, NSW Forestry Commissioner, commented:

*"People do expect that their Australian Forest Services and their Australian Forest Industries, together, will conserve, in never ending benefit to them, both the Australian timberlands and their commerce.*

*If there be disagreement between the strategy of the one and the tactics of the other, the battle is at hazard. The community for which the war was lost may be entitled to put a disagreeable end to its disagreeing generals, at the disagreeing ends of the cross-arms of the nearest lamp post."*

The history of the Forestry Commission's management has been the exploitation of a species or a product until it is exhausted and then to switch to another. In north-east NSW it started with the rainforests, first Red Cedar was exhausted and then Hoop Pine as the rainforests were logged for the highest value products of the time, in wave after wave. By the time the Government decided it was time to stop logging of rainforests, they were principally being logged to make plywood used in concrete pours then discarded, with ancient Antarctic Beech being used for roof battens. The vast majority of NSW's rainforests had been exhausted of commercially desirable sawlogs and large areas converted to dense regrowth, weeds, or pine plantations.

Similarly with the eucalypt forests it was the prize specimens of the prize species that were picked over first. As these were exhausted the range and quality of species were expanded and logging moved onto the steeper slopes and into less accessible areas. Woodchipping was introduced in the 1970s to try to make logging of the dwindling sawlogs more economical, though because of high profitability it quickly became the industry driver in many areas.

The Forestry Commission (1976) identify that:

*"In 1937-38 total sawlog input for sawmills converting logs grown in NSW amounted to 81 500m<sup>3</sup> log measure. By 1946-47 this had risen to 1350 000m<sup>3</sup> and by 1952 to 1 800 000m<sup>3</sup>. These increases in log supplies were achieved by extending roads into forest areas previously considered inaccessible and too far from market. Also higher prices which permitted the economic utilisation of lower log grades, improved yields from the cutover forests.*

## 1.1. The Indigenous Forest Policy

The Forestry Commission's (1976) Indigenous Forest Policy appears to have been their first attempt to develop an overall sustained yield strategy. Though this was still based upon a loose approach to achieving sustained yield and a focus on maintaining yields until softwoods could replace a significant portion of the resource from native forests in 2010. The 1976 Indigenous Forest Policy states:

*“The increased production pressures prompted the Forestry Commission in 1952 to estimate its resources and future forest yields, and to compare them against the existing rate of cut and the projected consumption of sawn timber. Although these estimates were necessarily rough, due to the inadequacy of available data, they clearly indicated a limited supply of merchantable sized growing stock in the native forest. Furthermore, it was predicted that reduced availability of indigenous sawlogs would occur so soon that it could not be remedied solely by the silvicultural treatment of the indigenous forest itself. The only possibility of meeting this deficit in the time available, lay in establishing plantations of fast growing exotic conifers and once again the need for accelerating the softwood plantation programme was emphasized.” (pp. 4-5)*

*“Although industry expanded into the more remote and mountainous areas to tap additional supplies, the volumes of accessible timber was limited. Today it is recognised that the rate of logging necessary to maintain established industry in these areas, is greater than their current sustained yield capacity.*

*“A reduction in the overall yield of sawlogs from indigenous forests is inevitable over the next few decades. The current level of cut cannot be sustained in many forest management areas. Production from softwood plantations will probably meet most of the deficit in sawn timber requirements for NSW by 2010 AD and the plantation programmes can be adapted to these ends.” (p. 26)*

*“On the balance of the indigenous forests the cheapest regeneration methods should be sought, which would re-establish an environmentally and ecologically acceptable forest cover. If this should have future timber production potential, so much the better, but this aspect would be more a chance won bonus than a deliberate objective for which investment is justified.” (p. 30)*

The Forestry Commission (1976) identified two categories of forests; (a) the accessible forests of the coastal plain, which have been subject to long-term logging and management, and (b) the more mountainous and less accessible forests behind the coastal plain and which have only been subject to significant harvesting since World War II. In relation to their attempts to establish a sustained yield strategy the Forestry Commission (1976) outline their general intent:

*“As most coastal districts are heavily forested, it would be possible to create zones within feasible haulage distance of logical milling centres. However in most cases such supply zones contain a mixture of forest area under both categories (a) and (b). Yields from the former are mostly limited to the current rate of increment, but present yields from the latter are higher than can be sustained. Some scope exists for gradually increasing the productivity of the coastal plain forests, and where the life of the merchantable crop on less accessible forests is sufficiently long, this increased productivity could offset losses due to termination of logging on the latter. In this way sustained yield for the supply zone as a whole may be achieved.”*

*“Yield should not be increased above existing commitments except in rare instances where the committed yield for a supply zone is below the calculated sustained yield at present standard of marketability. Where commitments for a supply zone are above the sustainable yield, these commitments should be regarded as a maximum*

*and should be decreased towards the sustainable level whenever opportunities arising from economic and industrial changes occur.” (p. 30)*

*“The accessible forests of the coastal plain should be managed for sawlog and miscellaneous round timber production and for recreation. This management should aim to maximise sawlog production in the next 30 years, consistent with sustained yield concepts.”*

*“The more mountainous and less accessible forests behind the coastal plain should be logged for sawlogs to the limit of economic accessibility.” (p. 35)*

*“In the medium term, the yield of hardwood sawlogs from the forests in these [Tablelands] zones may be increased to help meet demand in the expected period of sawlog shortage. If such an increase does become necessary, this would be logically based on the harvesting of remaining resources over the period necessary to phase in a replacement industry based on the developing softwood resource.” (p. 36)*

The Indigenous Forest Policy began to be translated into action in subsequent Management Plans. In Management Areas with large areas of oldgrowth attempts were made in some Management Areas to regulate yields from the oldgrowth until the regrowth forests were sufficiently mature to sustain quota operations. In those Management Areas with limited oldgrowth the strategy was simply to cut out what was left of the oldgrowth at the current unsustainable levels. For example, for the Forestry Commission’s Ewingar Working Circle a 1983 amendment to the Casino West Management Plan states:

*“the current hardwood sawlog yield of 21,000 m<sup>3</sup> nett quota per annum from the Ewingar forests could only extend until about mid 1995..., before the economically accessible old-growth resource would be utilised. Because of the general dearth of intermediate sized growing stock in these natural forests, it is estimated that a replacement mature sawlog crop could not be recruited for approximately a further sixty years. Consequently, the sustained yield rate of sawlog production from the Ewingar forests would be only about one quarter of the present rate of cut.” (p23a)*

The Tableland Management Areas were not regarded as good areas for long-term production from regrowth so the strategies adopted were generally to continue conversion of the better areas to pine plantations and continue logging of the oldgrowth forests at unsustainable levels before ceasing quota operations. For example the 1984 Management Plan for Gloucester Management Area notes that:

*“With the commencement of the Gloucester Management Plan in 1968, dramatic increases in quota allocations and hence yields occurred due to the perceived need at the time to remove the hardwood resource to make way for a proposed Barrington Tops pine plantation program.”*

In those coastal Management Areas without significant stands of oldgrowth, some operated on a strategy of trying to achieve a sustained yield while many initially expected to continue logging unsustainably until the quota resource was gone and then cease quota operations (often in the late 80’s or 90’s) until the regrowth matured sufficiently. There was no real attempt to reduce yields down to minimal levels to allow the forests to recover while the remaining oldgrowth was logged, rather the emphasis was on maintaining yields and thus revenue.

For example, in the late 1960's for the Murwillumbah Management Area the decision was made to set quotas at 16,970m<sup>3</sup> per annum on the expectation that the quota sawlog resource would be progressively cut out from 1985 to 1989, after which there would be a cessation of quota sawlog operations until 2020. For the Murwillumbah Working Circle (one of 2 in the Management Area) the 1984 Murwillumbah Management Plan notes:

*The long standing approved yield of 9 970 m<sup>3</sup> net for this Working Circle had been maintained in the expectation that liquidation of the over-mature sawlog resource would be completed in the mid 1980s, and that there would be a cessation of logging until regrowth resulting from the earliest logged stands was of merchantable size, towards the year 2020.*

## **1.2. Managing for Sustainability**

Pugh and Flint (1999) reviewed Forestry Commission's latest Management Plans for north east NSW and found they dated from 1978 to 1990, sometimes with various amendments over that time. They were only meant to be operative for five years, with a maximum of ten years specified, though they had evidently been in force for far longer than they were meant to be. This included a review of a number of the associated annual reports.

Pugh and Flint (1999) considered it is revealing that most of the baseline yield assessments relied upon to inform yield regulation in the Management Plans date from the early 1960's to the late 1970's. Most yield reassessments were merely reviews of the earlier data taking into account yields since then.

In 1980 the Commissioner for Forests, Dr. S.W. Gentle noted that there were many management areas not being logged on a sustained yield basis and emphasised the need to bring operations onto sustained yield (PAC 1990).

From the mid 1980's to the early 1990's pressure was increasing on the Forestry Commission to manage forests on a sustainable yield basis although they, abetted by millers and politicians, resisted in most Management Areas.

Pugh and Flint (1999) found that of the 20 Management Areas in north east NSW, 12 had quota commitments significantly above the Forestry Commission's estimated sustained yields, with another 4 with over-allocations of 1-5%. The sustained yield was not identifiable for 2 areas, leaving only 2 actually being managed in the early 1990s in accordance with the estimated sustained yield. Overall quotas were set at around 138% of the Forestry Commission's own estimates of sustained yields. Though the situation was a lot worse, as by the mid 1990s it was evident that many yields had been over-estimated and that there had been many years of overcutting since the sustained yields were identified.

Most Management Areas were still being intentionally overcut. For example the 1986 Glen Innes Management Plan based its yield assessments upon the premise of continuing the current quotas of 17,000 m<sup>3</sup>, with an additional parcel sale of up to 1,458 m<sup>3</sup>, until the remaining oldgrowth was logged out "by about 2007" after which the most advanced regrowth "would not support current commitments for more than about 10 years". (Pugh and Flint 1999)

Similarly in the Gloucester Management Area in 1984 the Forestry Commission, as well as a quota of 35,280 m<sup>3</sup>, had a terminating parcel sale and an area being logged until it was

exhausted, even though it was recognised that “*current sawlog yields ... are in excess of long term sustained yields and it is desirable that yields be reduced as expeditiously as possible.*” The sustained yield identified in the 1984 Management Plan was 13,175 m<sup>3</sup> per annum until the regrowth matured after 2020, after which it was anticipated the yield would have to be halved for the second cutting cycle. The Management Plan proposed that all opportunities should be taken to reduce yields to a sustainable level. However quotas weren’t reduced until 1989 and even then only by 47% to 18,700 m<sup>3</sup>. (Pugh and Flint 1999)

The Taree Management Area appears to be the exception to the rule, as a yield assessment in 1977 identified the yield as 10,860 m<sup>3</sup> net per annum, but the allocated yield of quota sawlogs was only set at 5,730 m<sup>3</sup> net. This was fortunate because even at this greatly reduced level a review undertaken for the 1985 Management Plan identified that on current trends there was likely to be a shortfall in the length of the cutting cycle. (Pugh and Flint 1999)

There are many reasons why the Forestry Commission have failed to manage for a sustained yield even in the areas where they try to; erroneous and inflated resource assessments, maximizing commitments of assessed resources leaving no room for error or adjustments, deliberate cutting above quota limits to pacify industry and politicians, increasing yields and abandoning yield strategies to maintain or increase revenue flows, industry refusing to saw poorer quality sawlogs, and failure to reduce quotas when shortfalls are recognised.

## **1.1. Maintaining Revenue**

As it increasingly became apparent in the late 1970s that the resource was finite and fast running out it also became apparent that Forestry Commission’s revenue base (royalties) would decline along with it. The imperative to maintain revenue flows led to a reluctance to reduce yields, overcutting and more significantly, to increases in sales of quota quality sawlogs as other products or in special parcel sales in conflict with yield regulation.

In the 1980’s the need to increase revenue saw significant increases in the off-take of other products such as poles, piles, girders, veneer, sleepers, ex-quota and woodchips, particularly from the coastal forests. Quota sawlogs were often used to satisfy these increasing requirements, while the forests also became depauperate in the size classes and quality required for the sawlogs of the future. It was in this decade that the potential of having a sustainable regrowth industry, albeit substantially reduced, was lost as the coastal forests were increasingly degraded. For example, ex Kempsey forester, John Gwaller (29 April 1993), highlighted the problems with the sustainability of yields in the Kempsey Management Area, giving the reasons for Kempsey yield estimates becoming “unstuck” as:

*(a) The Liquidation period was shortened, so as to allow industry a ‘Phasing in’ period. (This generally means industry will shut mills a little later)*

*(b) The Assessed Total Merchantable Volume of the uncut forests was overestimated due to areas not being economically, or environmentally accessible.*

*(c) To maximise revenue many additional sleeper cutters were allowed entry onto Crown Timber Lands.*

*(d) These sleeper cutters were allowed to cut timber species which in all other Forestry Districts are considered quota sawlog species.*

*(e) The sleeper cutters were allowed to cut regrowth trees down to one or two sleepers in cross section.*

*(f) As the great majority of the coast and foothill regrowth forests are of dry hardwood type that cuts durable sleepers, these forests were stripped of the size classes required to sustain the yield immediately following the liquidation period.*

*(g) The problem in the regrowth forests has been exacerbated by three further actions;*

*1) Blackbutt forests are being thinned for pulpwood, with merchantable sawlogs not capable of further net merchantable growth being felled and removed with the intent of transferring increment to the retained sawlogs and just undersized sawlogs. As these forests must now be the first to be harvested, there is insufficient time available for this growth to transfer, let alone make up for the removed volume.*

*2) Flooded Gum forests have been harvested for veneer timbers.*

*3) Pole operations proceed without annual limitation to the extent that this industry has now all but ceased.*

*...In essence the yield cannot be sustained, even at the proposed lower level, as the regrowth forests of the Kempsey area have been made depauperate in those size classes which will be required for harvesting in the short term, following the liquidation period.*

## **1.2. Failing Yields**

Forestry Commission yield estimates were often inaccurate due to inadequate data and methodology upon which they base estimates (e.g. PAC 1990, Forestry Commission 1991, RAC 1992). Models that were used to determine future sustainable yields were suitable for single species and single aged plantations but unsuitable for native forests (PAC 1990, RAC 1992a), with estimations of future wood availability noted by CSIRO to vary by as much as 50% (RAC 1992a).

From their review of Management Plans, Pugh and Flint (1999) found.

*There is a definite history of declining yields across the Management Areas. There is also an observed decline in actual as compared to predicted yields within logging cycles. This effect has been masked in some areas due to yields from 'bonus' areas which were considered inaccessible at the time of the assessment. Given this consistent trend of yields being below those predicted it is interesting that in most Management Areas State Forests continually identify yields at just that bit more than they identify as the sustained yield at the time. On those rare occasions when quotas are reduced to meet revised yields they are also set a bit higher.*

Given that the Forestry Commission generally log those compartments with the highest volumes early in a cutting cycle, yield shortfalls become more apparent later in cutting cycles as the poorer stands are required to be cut.

Wyong District Forester, C.M. Mackowski, (1991) outlines the subjective nature of resource assessments:

*"Estimates [of yields] observed on the north coast of N.S.W. over the past decade appear very sensitive to variation in subjective product identification, more sensitive to variation in survival of these products over cutting cycles and even more sensitive to variation in growth rate applied to these subjectively identified products."*

The 1990/91 Kempsey MA Annual Report highlights the unreliability of resource estimates in that area, stating "*The General Harvesting Series does somewhat remain a rough estimate, as not enough yield data is available. Most of the original estimates are based upon very old aerial photographs and incomplete harvesting maps.*", and "*There is a real need in Kempsey Management Area of new aerial photography and A.P.I. assessment of the resource. Until this is done no accurate yield estimates can be made.*"

Many of the yield reviews undertaken by the Forestry Commission were of questionable veracity, with new resources sometimes being found to match shortfalls in other areas. For example, in the Dorrigo Management Area a yield review in 1980 identified that the current quota of 41,250 m<sup>3</sup> net needed to be reduced by 23.25%. Consequently by June 1983 the quota was reduced by 19% to 33,429 m<sup>3</sup> net. In the interim the Forestry Commission had decided that they wanted to transfer quota from Dorrigo to Grafton to offset the major yield reductions identified as necessary for Grafton. So in 1982 another yield review was done for Dorrigo which took "*an optimistic view of future yield availability*" to "*find*" the required extra resources needed to enable the transfer to occur. The quota was increased to 40,000 m<sup>3</sup> net although from 1985 there were repeated references in Annual Reports to over-estimation of the resource. Apparently the 1980 yield review had been right all along. (Pugh and Flint 1999)

Sometimes the Forestry Commission simply made mistakes. For example, the 1985 Cooperook Management Plan identified significant errors in the 1976 yield assessment and concluded that from 1974 until 1984 the sustained yield should have been set at 76% of what had been identified. While the Forestry Commission subsequently reduced yields to just above the identified level they ignored the fact that 23% more resource had been removed over the 10 years from 1974 to 1984 than should have been. (Pugh and Flint 1999)

The significance of this failure to take into account overcutting that occurs in the intervening years between the identification of a sustained yield and its implementation means that there is less overall resource and thus the reductions need to be greater to accommodate this. This was a common problem. As another example, the 1983 Tenterfield Management Plan identified a need to immediately reduce yields by 29%. This wasn't implemented until 1989, with no allowance for the six years of over-cutting.

### **1.3. Maintaining Private Profits**

Another aspect of the problem with reducing yields to sustainable levels was the unwillingness of sawmills to do so. The NSW Public Accounts Committee (PAC 1990) notes

*"In the long-term, sustainable harvesting is in the industry's best interest, but in the short-term many mills would prefer to process tomorrow's timber today, gaining tomorrow's profit today, then relocate once the resource is too degraded to be useful. Under these circumstances, it would be naive not to recognize that short-term economics is in direct conflict with regulation and the principle of sustained yield."*

This is demonstrated by the discussions between the Forestry Commission and the major Crown sawmiller in the Walcha-Nundle/Styx River Management Area, Fenning Timbers P/L, which display the company's unwillingness to reduce its intake and the Forestry Commission's unwillingness to impose an estimated sustained yield.

L. Fenning in a letter to the Commissioner for Forests Dr. H. Drielsma (12 July 1991) stated:

*"At a meeting in 1984 with Len Moore and Armidale and Glen Innes Forestry Representatives, Fenning Timbers Pty Ltd were advised that the full quota in that area would be available until pine saw logs were made available, or when the forest was completely cut. The Forestry Commission suggested that would occur in 1992, but have long since agreed that this was a mistake on yield of the forest.*

*"... I am aware that the Resource Assessment Committee suggest forests should be brought on to a sustained yield, however, this was not planned for our areas.*

*"Would you confirm that our Logging Quota will remain stable (i.e. at present level) as agreed."*

The Commissioner for Forests (Drielsma 1991) notes:

#### ***"Styx River Management Area***

*"A yield assessment of the Styx River Management area was carried out in 1982. This showed that the level of cut, previously determined in 1970/71, was too high and a quota reduction would be needed to achieve sustained yield.*

*"The Company was approached by the Commission in 1983 on the subject of reducing quota in the interests of sustained yield. The Company rejected any proposal to reduce yield because of the belief that improvements in yield would be achieved and that the Company should be able to change over to plantation pine sawlogs when hardwood supply reduced. The Commission advised the Company in a letter that it could continue at 1983 levels until around 1990 when the forecast supply of sawlogs would be exhausted or considerably reduced. However, no firm commitment was made to the Company on the allocation of future pine sawlogs.*

#### ***"Walcha/Nundle Management Area***

*"A similar yield situation exists in the Walcha/Nundle Management Area, where the level of sawlog cut is considerably above sustainable yield. Yield monitoring has shown that a reduction of 66 percent is needed to give a resultant sustainable annual quota of around 18 000m<sup>3</sup> in total for the Management Area. ...*

*"The Company has been advised of the need for quota reduction in Walcha/Nundle but no details have been discussed at this stage."*

## **"Summary**

*"The Company and the Commission are both in a difficult position. The Commission has made a clear commitment to sustained yield and has undertaken strategies to move to sustained yield as quickly as possible to maintain its overall forest management credibility. Credibility of the Ben Halls Gap EIS is also at issue in the context of a sustained yield strategy for the Management Area.*

*"The likely yield of small pine sawlogs, if allocated to Fennings, is in the order of 10,000m<sup>3</sup> per year for the next 7 years, rising to over 50,000m<sup>3</sup> per year beyond. This yield is subject to the sale of pulpwood.*

*"The hardwood yield situation has potential for enhancement if adequate pulpwood markets were available and if the Company decided to take a lower grade log. However, this potential is unlikely to be realised in the short term.*

*"Mr. Fenning has made very strong representation to the Government on previous occasions in the interests of maintaining his business at present levels. It is regrettable that a firmer stance was not taken in the early 1980's to reduce yield as the Company would now be operating on sustained yield, albeit at a lower level.*

*"... The timing of further quota reductions for Walcha/Nundle is under review and options regarding plantation supplies are included in that review."*

As well as wanting to overcut, a further problem has been the frequent refusal by millers to harvest poorer quality sawlogs or less desirable species as quota (i.e. taking the cream).

## **1.4. Environmental Impact Statements**

In accordance with the Timber Industry (Interim Protection) Act 1991 the Forestry Commission embarked upon an ambitious series Environmental Impact Statements (EISs) for most Management Areas in north east NSW. This was an opportunity to redo yield estimates based upon new data and bring yields down to sustainable levels. Regrettably the Forestry Commission refused to do so.

In general most of the EISs prepared by State Forests in the early 1990s relied upon the relevant Management Plans for their consideration of timber resources and sustained yields. Often they simply relied upon the old yield assessments used in the Management Plans without bothering to even compare actual and predicted yields. For example, the 1995 Urbenville Management Area EIS based its consideration of resources upon a 1985 resource assessment while totally ignoring that monitoring was showing that actual yields were only 75% of predicted yields.

Even where they did try to adjust the yields to account for resource reviews undertaken subsequent to the Management Plans, or in a few cases give some consideration to comparisons between actual and predicted yields, Pugh and Flint (2000) found they sometimes made significant mistakes. For example, the 1992 Glen Innes EIS based its desktop review of sustainable yields upon a total quota volume of 365,000 m<sup>3</sup> remaining when the annual reports relied upon identify that only 318,000 m<sup>3</sup> remained six months earlier.

The 1993 Kempsey and Wauchope Management Areas EIS relies upon the Management Plan resource assessments and makes no attempt to verify or adjust the sustained yield estimates, despite the Management Plans and Annual Reports identifying significant problems with resource estimates. Annual reports had identified that actual yields in the Carrai Working Circle were only 55% of those claimed in the Kempsey Management Plan and actual yields were only 86% of those predicted in the Wauchope MP (Pugh and Flint 2000). In its submission on the Kempsey/Wauchope EIS Beechwood Timbers (1993) note:

*"Beechwood Timbers has on record, and we assume that the Commission has too, numerous instances where the assessed volumes of individual blocks varied as much and more as 100% either side of the actual volumes available. These records immediately invalidate the figures as presented in the EIS, we would say that they are blue sky figures supported only by wishing and hoping ..."*

*"We take that to be an admission that the data upon which the yield assumptions are based is recognised to be at fault, if that is the case, and we assure you that it is, then the whole yield basis of the EIS is invalid, and therefore the conclusions derived must necessarily be invalid. In short, the 1976 assessment was a guesstimate upon which successive estimates have been made, this has merely compounded the original shortcomings of the assessment to the point where, quite bluntly, nobody has a blind clue as to what is left out there."*

## **1.5. Confusing the Issue**

It is apparent from estimates in Management Plans that the Forestry Commission have historically considered 'sustained yield' to mean the volume of timber that can be obtained from an area in perpetuity. Though in the light of growing criticism they tried to justify their unsustainable logging of some areas by adopting two definitions of sustained yield, one is for "even-flow" sustained yield and the other is termed "variable flow" (or long term) sustained yield. The later definition is used to allow currently unsustainable logging to continue until the available resource is exhausted, this is called "sustainable" on the basis that some time in the future regrowth will again provide the yields currently being obtained. State Forests (1993) use PR spin to claim that:

*On some management areas with a long management history, medium-term sustained yields are expected to increase towards long-term sustainable yields in the near future, but it could be well in excess of 100 years before some management areas achieve a stand structure able to supply yields at long-term sustainable levels. Yields for the State as a whole should be approaching long-term sustainable levels when the youngest regrowth stands (regenerating about 2030) are maturing in about 2110-2130.*

## 2. A New Beginning

In August 1993 the Forestry Commission tried to change its image by adopting the new trading name of State Forests of NSW.

At the start of the forestry reform process, even without consideration of environmental constraints, it was evident that timber was grossly over-allocated. For the incoming ALP Government in 1995, State Forests (1995) identified that an overall reduction of 23% was required in the 1995 allocations of quota sawlogs to reduce yields from north-east NSW down to a sustainable level.

Pugh (1996) reviewed State Forests' documents and actual yields to estimate that a reduction of well over 50% in 1995 allocations was likely to be required to compensate for past overcutting and achieve a sustained yield of quota sawlogs, without any conservation outcome.

State Forests started to introduce Gaps and Clusters (staged clearfelling) to increase yields and restart forests as single-aged regrowth, as identified by Attiwill, Burgman and Smith (1996):

*“Another motivation for the implementation of Gaps and Clusters is evident from discussions with State Forests staff ... is that yields in selectively logged forests are perceived to be declining. The reason given for this conclusion is that selective logging has removed the high quality trees, leaving behind a legacy of older, suppressed, poorly formed, slower growing and defective individuals. Australian group selection, where it has been applied, is believed not to have resulted in successful regeneration in many cases. This scenario has fostered a belief in the need to ‘restart’ stands, so that there will be a supply of high quality timber in the future.”*

Part of the problem was that in an effort to maximise revenue many regrowth forests had been logged too early, with logging focussing on the largest and best trees. So rather than using thinning to remove the worst performing trees and transfer growth onto the best performing trees so they could grow into large sawlogs, it was the largest and best performing trees that were being logged. This was termed “thinning from above” and was widely practiced.

Conservation groups protested and the Minister ordered a review. The expert Review Panel to the Ministerial Committee into Gaps and Clusters (Attiwill, Burgman and Smith 1996) found against Gaps and Clusters and recommended the way forward for forestry in north east NSW needed to include the following principles:

1. *A greater focus on collection and analysis of existing quantitative data on timber yields and biodiversity impacts under current silvicultural treatments within major forest types and regions.*
2. *Proper evaluation of silvicultural alternatives ... through long term (3-8 year) trials designed to provide conclusive data on yield, biodiversity and socio-economic costs and benefits.*
3. *Achieving a balance between wood production and biodiversity objectives through forest zoning at the landscape scale (after finalization of the proposed CAR reserves and proper trialing of silvicultural alternatives).*

4. *Promotion of the north-east forests as a region for production of high value-added specialty hardwood products ... and biodiversity conservation, by management under low cost, low intensity (less than 35% canopy removal) selection logging techniques and discouragement of management for low-value products including scantling (housing frame), woodchips and wood fibre."*

While this would have greatly enhanced the ecological sustainability of forestry it would have reduced short-term yields so neither State Forests nor the Government would countenance it.

Sawlog quotas from state forests were reduced to 70% of the 1995 quota allocations in July 1996.

## **2.1. Wood Resources Study**

For the 1996 NSW Interim Assessment Process State Forests undertook a Wood Resources Study (WRS). State Forests maintain this attempt to get it right as a *"state of the art"* methodology with *"error bounds in the order of  $\pm 15-20$  percent"* (though they noted that this *"cannot be demonstrated objectively"*). O'Hara (1996) notes *"Each management area had its own WRS model"*. As each management area (or District) separately provided the data underpinning the WRS then the accuracy of WRS output is directly linked to the accuracy of the imputed data on a management area basis.

By way of example, for the Bulahdelah MA there were a number of potential errors identified in this approach (Slayter 1996): source cartographic errors (*"Some boundaries as marked in the compartment histories are probably incorrect"*); summarising errors (*"The student forester made an undetermined number of cartographic errors in summarising logging histories"*); digitising errors (including *"incorrect PMP information, incorrect compartment boundaries, incorrect strata boundaries and incorrect strata numbers being attributed to resource units"*); and variable strata (*"where the strata was variable, the data imputed into the system can not be relied upon to give a good estimate of volume across the strata"*).

There was also some confusion on behalf of various Districts as to what they were meant to be doing, undoubtedly leading to inconsistent data entry between Districts. For example the Glen Innes District (Groenhout 1996) notes *"There appears to have been some confusion with regard to the definition of standing unit commercial volume as expressed in the raw data input for the project. The description in the relevant notes was a little ambiguous ..."*

Though perhaps the largest sources of error was the reliance upon local knowledge, as noted by Bruce (1996):

*"5) There seems to persist in Head Office a belief that District Foresters and foreman have an intimate knowledge of their forests and of the volumes and BA's they carry compartment by compartment.*

*"In my experience, that has never been the case. As a young forester in Taree District in the 1960's my essential duties were the management of what is now Cooperbrook MA of about 7,500 ha.*

*"I re-measured the Coopernook CFI system, established a Lansdowne SF CFI system, and worked up the data for both. And I spent an average of about 2 days a week tree marking with the foreman.*

*"I would not have felt confident about providing for Coopernook MA on a compartment basis, the information we are now expecting Districts to provide for vastly greater areas from far less acquaintance.*

*"Further, foresters spend little time in the bush these days, and harvesting foremen are totally occupied with current operations and have no time to become familiar with other compartments. The older-style foremen who did have a good knowledge of broader areas have mainly retired."*

The errors in data entry at the District level were compounded by the analyses undertaken at Head Office. For example Slayter (1996) reviewed the data outputs for the Bulahdelah MA and concluded *"THESE VOLUMES CAN NOT BE RELIED UPON"*, identifying a sequence of gross over-estimations at head office.

There appears to have been other errors or changes in data manipulation which occurred at head office. For example Elsley (1996) identifies a variety of significant errors, noting:

*"Consequently, until much more refinement has gone into all aspects of WRMS (not least of which is error checking), the Sustained Yield figures generated by WRMS must be treated as interim. ... so don't blindly accept the WRMS version as closer to the truth until all the "ifs and buts" are sorted out."*

The General Manager of Central Region (Bruce 1996) wrote in response to Tony O'Hara's requests for yet a further version of the WRS:

*"2) I have to express my alarm at the prospect of having District, Regional, and HO people spending 'the next couple of months' working on yet another set of bodgie, quick-fix figures that will NOT provide 'data which District accepts as valid and can use very effectively for management, as well as significantly enhancing our external credibility in statements on resource availability.'*

*"I am concerned that we would merely generate another set of numbers that would be little more precise than the ones we have, and that would only add to the confusion.*

*"3) As you acknowledge –*

*'Regrettably and as usual, it will require significant District and Region work'.*

*"From a period leading up to the March '95 election, we seem to have been involved in a continual series of exercises to provide best-estimate, best guess figures in impossibly-short time frames.*

*"Inevitably, this has led to anomalies that are naturally causing State Forests some embarrassment – and the problem is appreciated by Regions and Districts.*

*"However, the pressures on the Districts have reached the stage where they are saying that too much is enough, and have almost reached the stage of rebellion.*

*"I was almost told where I could shove a recent request for urgent information, and I think that your current proposal could well be the straw that breaks the camel's back.*

*"4) That would not be the case if the Districts were to believe that your proposal would lead to reliable data.*

*"Even if I was convinced that it would, I would be prepared to wear the consequences.*

*"I am not convinced."*

The NPWS (Wall and Flint 1996) undertook a review of the WRS, in part comparing historical trends in areas logged per annum, volumes obtained per annum and rotation lengths, noting:

*"The WRS ...obscures the extent of overcutting and the current state of the forest resource because it continues SFNSW historical pattern of overestimation in relation to timber resources."*

*"Timber harvesting on a sustained yield basis should theoretically harvest a similar net loggable area in successive years. However, investigation of the area logged by year in northern New South Wales reveals large increases in cutting area with each year and provides testimony to the practice of continued overcutting. A corollary is that the volume of timber extracted per hectare has decreased markedly over time as old growth and mature trees have been exhausted and smaller regrowth trees harvested prematurely."*

*"Therefore, it is most probable that actual sustained yield is less than 50% of the WRS yield estimates."*

*"Wood supply agreements would promote levels of harvesting in excess of sustained yield, and would increase the pressure on forest ecosystems. Furthermore, such agreements would jeopardise the development of a Comprehensive, Adequate and Representative reserve system, encourage further depletion of the timber resource, and compromise the long term viability of the timber industry in northern New South Wales."*

Despite the internal dissent State Forests (O'Hara 1996) maintained *"the WRS has provided an objective, defensible and generally logical solution to the required task of predicting the volume of quota sawlogs"*. The forester's, and NEFAs, concerns were ignored in State Forests efforts to maintain the charade that WRS provides reliable estimates of quota sawlogs in order to achieve resource security for the industry and thus themselves.

Based on the WRS the Carr Government issued 5 by 5 Wood Supply Agreements in 1996, which dispensed with the ability to change commitments in response to identified resource shortfalls. These agreements were issued across the board to every quota sawmiller who wanted one at 50% of their 1995 allocations. They only allowed for a review after 5 years on the basis of token "value adding" criteria, and virtually guaranteed extensions, making them 10 year WSAs.

## 2.2. FRAMES and Unsustainable Logging

For the Comprehensive Regional Assessment (CRA), State Forests introduced a revised resource estimation methodology called the Forest Resource and Management System (FRAMES). After the creation of the new (1998) national parks, and with the protection of the Government's HCV oldgrowth forest, rainforest, streams and allowance for threatened species protocols, FRAMES identified the 100 year sustainable yields of *High Quality Large Sawlogs* as 80,319 m<sup>3</sup> gross per annum for the Upper North East CRA region (UNE) and 136,902 m<sup>3</sup> per annum in the Lower North East (LNE). Thus 217,221 m<sup>3</sup> per annum was identified as the sustainable yield of large quota sawlogs at that time.

As an outcome of the CRA, and based upon the FRAMES estimates, the NSW Cabinet determined in November 1998 that supplies to industry from public forests would be 109,000 m<sup>3</sup> of High Quality Large sawlogs (quota sawlogs) and 2,000 m<sup>3</sup> High Quality Small sawlogs per annum from the Upper North East, and 160,000 m<sup>3</sup> of high quality large sawlogs (quota sawlogs) and 8,500 m<sup>3</sup> High Quality Small sawlogs per annum from the Lower North East. The intent was thus to log at the unsustainable rate of 269,000 m<sup>3</sup> per annum until 2018, before reducing yields by a third down to an estimated sustainable yield of 183,500 m<sup>3</sup> per annum thereafter. The NSW Government thereby intended to deliberately commit NSW to unsustainable logging.

In an effort to forestall the issuing of Wood Supply Agreements for 20 years foresters and conservationists raised concerns that the FRAMES methodology was fatally flawed and that resources had again been grossly over-estimated.

Pugh and Flint (1999) reviewed FRAMES and undertook a variety of comparisons of FRAMES to earlier resource assessments, actual yields and the WRS. They found that FRAMES estimates of large sawlogs outside the new reserves were 217% of the WRS estimates in the UNE region, and 244% of the WRS estimates for the 11 management areas which have both WRS and FRAMES data in the LNE region. Similarly they found that comparisons of FRAMES quota estimates with actual quota volumes removed were 194% of the volumes actually harvested from 108 compartments in the UNE logged since January 1997, and 212% of the volumes actually harvested from the 115 compartments in the LNE logged since January 1997.

Pugh and Flint (1999) were particularly concerned with the lack of sensitivity of FRAMES to logging history and the attribution of massive volumes of quota sawlogs to recently logged areas, noting:

*It is apparent that not only do the forests come back again as soon as they are logged, but in many cases they apparently reappear even bigger than before. Across all areas with records available that have been logged since 1990 FRAMES is showing that they can now be logged again and yield 114% of the quota sawlogs that they did last time (even if it was only a couple of years ago).*

It was not just conservationists who were concerned that FRAMES was grossly over-estimating resources and that the Government was about to over-commit timber in Wood Supply Agreements, State Forests' Northern Rivers Sales Manager (Sigley 1998) wrote:

*“Don’t we have a much greater responsibility than the one to this government don’t we have a responsibility to the people of this State and those that work within this organisation.”*

*“I keep saying it but you can’t forget it. Just because a volume is said to be standing somewhere don’t assume that a percentage of it is loggable. It is not even right to assume that any of it is loggable. A percentage of hardly anything spread thinly over a large area doesn’t make for a viable operation and simply won’t happen.”*

*“We have just one last chance to come clean and be honest about the way things are before this UNE RFA is signed. State Forests will be held accountable for whatever happens as a result of the RFA decision and if the industry has been lead to believe that the volume is there in this part of the State then we should be held responsible.”*

The Carr Government’s decision on the north-east forests included a reduction in timber volumes from the 1997/98 level of 297,781 cubic metres of quota sawlogs down to the Wood Supply Agreement levels of 269,000 cubic metres of quota sawlogs in two stages from the 1<sup>st</sup> January 2000. This proposed reduction was anticipated to cost some 80 jobs, though the industry changed their mind and instead claimed the industry would increase jobs under this scenario.

Carr’s package included the promise of up to 160 new jobs in the timber industry, a further industry assistance package worth more than \$53 million on top of the existing \$120 million Forest Industry Structural Assistance Package, and 105 new jobs in National Park management. This meant that there was anticipated to be no negative employment outcome from Carr’s decision. To the contrary, according to the Government and industry more jobs would be created. It was therefore hard for Carr to use socio-economic impacts as a justification for delivering such a poor reserve outcome.

As part of the strategy, over the next five years the NSW Government committed \$18 million for the purchase of 180,000m<sup>3</sup> of sawlogs from private property, and \$30 million for an expansion of eucalypt plantations by 10,000 hectares, so as to reduce the crash after 2018.

In clear recognition of the failure to apply sustainable yield in north-east NSW, the Regional Forest Agreements (Anon 2000) now claim to be implementing a strategy of over-logging for 20 years before reducing yields by around a third down to a sustainable level:

*“**Sustainable Wood Supply Strategy**” means the intent to manage yields of High Quality Large Sawlogs and Large Veneer Logs from the forest at a specific and constant level for twenty years under a given management strategy and suite of sustainable use objectives. It recognises that a transition to long term Sustainable Yield will be phased in to accommodate social and economic considerations;*

In 2000 the NSW and Commonwealth Governments’ signed the Regional Forest Agreement for North East New South Wales (Upper North East and Lower North East Regions) (Anon2000), which states:

*Under the Sustainable Wood Supply Strategy, NSW agrees to supply 129,000m<sup>3</sup> per annum for 20 years in the Upper North East Region and 140,000 m<sup>3</sup> per annum in the Lower North East Region of High Quality Large Sawlogs and Large Veneer Logs. Annually, approximately 20,000 m<sup>3</sup> of High Quality Large Sawlogs and Large Veneer*

*Logs allocated in the Upper North East Region will be sourced from the Lower North East Region over the period of the Agreement.*

...

*... It is estimated that the 100 year supply levels after 2018 will average approximately 70,000 m<sup>3</sup> per annum in the Upper North East Region and 113,500 m<sup>3</sup> per annum in the Lower North East Region of High Quality Large Sawlogs and Large Veneer Logs from existing native forests and Plantations on State forests and other land owned by SFNSW, assuming harvesting under existing terms and conditions.*

...

*Both Governments aim to provide additional sawlog and other wood products that will become available through purchase by SFNSW of private native forest property and through Plantations established on purchased land or as joint ventures. These measures are currently predicted to bring the average annual available High Quality Large Sawlog and Large Veneer Log yield from State forests beyond the 20 years of this Agreement to within approximately 15 per cent of the 20 year contracted levels for Upper North East Region and Lower North East Region.*

The RFA (Anon2000) reconfirmed NSW commitment to provide supplementary resources:

- *Subject to availability of suitable land, New South Wales will spend the allocated \$18 million between 1999 and 2004 to purchase Private Land and/or timber rights to provide approximately 180,000 m<sup>3</sup> of High Quality Large Sawlogs and Large Veneer Logs for the Upper North East and Lower North East regions within the term of this Agreement.*
- *Subject to the availability of suitable land, New South Wales will spend the allocated \$30 million by 2004 to establish at least 10,000 ha of hardwood Plantations across both the Upper and Lower North East Regions to supplement supplies of High Quality Large Sawlogs and Large Veneer Logs from public forests. This initiative is expected to produce approximately 125,000m<sup>3</sup> per annum for 10 years commencing in approximately 40 years time.*

In response to the concerns identified by NEFA, the North East RFA (2000) committed to reviewing and readjusting commitments by 2006:

*The volumes in clause 0 are subject to a FRAMES and wood supply review to be completed by 1 December 2006. The review will be an input to the determination of the annual volume of High Quality Large Sawlogs and Large Veneer Logs to be made available to industry for the balance of the term of this Agreement.*

NEFA hoped that by that time the manifest deficiencies in FRAMES would be apparent and that the required monitoring and proposed enhancements would provide a more realistic sustainable yield.

The UNE Forest Agreement (Anon 2000, 3.5) requires that monitoring be used to improve FRAMES, noting:

*Monitoring of FRAMES performance will also comprise comparison of actual and predicted volume each 12 month period at the RFA Region level, and assessment of the progressive 20 year supply at the RFA Region level.*

*The results of resource inventory and annual monitoring must be used to review the performance in achieving the implementation of sustainable yield of timber products.*

## 2.3. FRAMES Quickly Fails

FRAMES quickly got into trouble. In 2002 Forestry NSW reported on a comparison of actual to predicted yields as part of their North Coast Timber Supply Monitoring Estimate, as noted by the Auditor General (2009):

*Forests NSW completed two studies comparing harvest results with yield estimates for the north coast between 1999 and 2001. The longest study, covering a two and a half year period, showed that actual yield was 87 per cent of predicted.*

The results of this monitoring were used to inform a subsequent review, though Forests NSW found the results so distasteful they stopped doing any monitoring or reporting of actual and predicted yields for the next decade.

In 2002 Jerry Vanclay (2002) undertook a desktop “Review of Projected Timber Yields for the NSW North Coast” which was a review of FRAMES “based on an examination of documentation and on interviews with State Forests staff and other stakeholders involved in preparing the estimates ... no field visits were made and no new field data were obtained”. It appears the only new data was a correction to account for the North Coast Timber Supply Monitoring Estimate.

From his superficial review Vanclay (2002) found that for both the UNE and LNE “With these assumptions, it is evident that the harvest able to be sustained during the next 20 years is 220,000 m<sup>3</sup>/year at most ... In the longer term (21-100 years), production from native forests is expected to range between 175 and 110,000 m<sup>3</sup>/year, and will need to be supplemented from hardwood plantations.”. This reduction in predicted short-term unsustainable log volumes by 18% and long-term sustainable volumes by 5–40% is significant. He recommended monitoring of a large range of key variables to improve his estimate.

### **2002 North Coast Timber Supply Monitoring Estimates of large high quality sawlogs compared to FRAMES 1998** (Adapted from Vanclay 2002)

Item & Source	RFA-FRAMES	NCTS Monitoring
Short-term yield (20 yrs)	269,000 m <sup>3</sup> /yr	220,000 m <sup>3</sup> /yr
Medium-term yield (21-40 yrs)	183,500 m <sup>3</sup> /yr	175,000 m <sup>3</sup> /yr
Average Long-term yield (41-100 yrs)	183,500 m <sup>3</sup> /yr	110,000 m <sup>3</sup> /yr

Under the North East Regional Forest Agreement the NSW Government had committed to undertake a “review of sustainable yield by 1 December 2006”, to NEFA’s disgust the NSW Government decided to rely on Forests NSW’s limited monitoring results and Vanclay’s superficial desktop review as meeting this requirement. The chance to reduce WSA commitments down to a sustainable level was squandered.

By 30 June 2001 Ford Timbers owed Forests NSW \$1 million, so Forests NSW retired the debt in return for their 15,000 cubic metres of large quota sawlogs, which was to take effect from 1 January 2003. The Public Accounts Committee (2002) conducted an investigation which found:

*The Committee understands that State Forests has never sold a resumed log allocation before and that [Ford Timbers], as with all customers, was never required to pay an up front fee for the original allocation.*

... as [Ford Timbers] never paid for the original allocation, treating the subsequent reduction as a “repurchase” of that allocation is not consistent with commercial practice.

...

The Committee was concerned that this action by State Forests was in fact a forgiveness of debt. This is not State Forests’ view as they expect to reassign the log allocation and obtain an up front payment from the purchaser of the allocation as well as continuing royalties

It appears that the 15,000 m<sup>3</sup>/annum was never resold, but rather later gifted to millers in new WSAs.

NEFA was campaigning for 14 forest icon areas in north east NSW and the Government was trying to sort out what to do about the yield review. To placate NEFA in 2003 the NSW Government created 42,522ha of new national park and reserves (the Icon decision) from Forests NSW’s estate on the north coast, as well as gazetting some 19,000ha of oldgrowth forest as Special Management Zones (SMZ).

Despite the reduction in the area of state forest the “net harvest area”, which is the basis of yield estimates, was actually increased by some 700ha according to Forests NSW’s (2004) FRAMES modelling, primarily because of the decision to remove “buffers on buffers”. This was achieved by amending the IFOA to allow the accidental felling of trees into most exclusion areas and the entry of machinery into some exclusion areas to fell trees. This significantly increased the proportion of the gross area that could be harvested, theoretically compensating for the new reserves.

Timber availability at that time had also been increased by new plantations and additions to State Forests’ estate from private property purchases, while commitments had been reduced by the buy-back of quota from Ford Timbers. So if resource estimates were accurate there should have been no resource problems caused by the new reserves.

Relying on Vanclay’s assessment, in 2003/4 the NSW Government issued new Wood Supply Agreements to north coast sawmillers for quota, small and low quality sawlogs and extended them for 5 years (until 2003) past the expiry of the NSW Forest Agreements. Most significantly the NSW Government removed the clause that allowed for a non-compensable reduction in commitment following a review of available timber resources.

Forests NSW’s (2005) ESFM Plan provides the details of Wood Supply Agreements for north east NSW.

**Table 9. 2004 Wood Supply Agreement Strategy.** From Forests NSW ESFM Plan (2005)

Product	WSA Volume	WSA Type
High-quality large Products	215,422	A
	7,655	B
High-quality small Products	57,759	A
	31,100	B
Low Quality Sawlogs	14,897	A&B
	190,000	C
<b>Total Volume</b>	<b>516,833</b>	

Forests NSW (2005) explain:

*The Type A agreements are for a fixed volume for a twenty-year period.*

*The Type B agreements provide 75% of the volume fixed for the first 10 years, with future volumes subject to resource assessment review in years 10 and 15 of the agreement. The remaining 25% is a share of production capped at 25% of the total agreement, also subject to review in years 10 and 15.*

*The Type C agreements are based on a share of production and if there is insufficient production in any year, the available volume will be distributed equitably amongst customers as a share of the total production in that year. The figure under WSA for Type C is a target volume rather than a fixed commitment.*

For quota sawlogs this set a volume of 215,422m<sup>3</sup> per annum for 20 years, five years past the end of the LNE and UNE Forest Agreements, and resulted in firm commitments for a total supply of 4,365,852m<sup>3</sup>, and tentative commitments for a further 95,687m<sup>3</sup>. At the time the new WSA were made there were remaining commitments of 254,000m<sup>3</sup> of large quota sawlogs for 15 years, which is a total of 3,810,000m<sup>3</sup>. These new WSAs thus resulted in an increase in committed volumes of large quota sawlogs of 555,852 to 651,539m<sup>3</sup> - not a bad windfall for millers, particularly as Ford Timbers' quota had been bought back for some \$1million and yield reviews were showing that commitments needed to be substantially reduced.

The Government was even more generous, giving millers commitments of up to 1,777,180m<sup>3</sup> of high quality small sawlogs and 4,097,940 m<sup>3</sup> of low quality sawlogs, increasing the total volume of sawlogs committed in WSAs by up to 271%. While such commitments of tradeable timber rights are worth a fortune to the millers, they were again given freely with no tender process.

The Auditor General (2009) comments:

*In this new agreement, the Government waived its rights to reduce commitments without compensating industry for any loss. This removed Forests NSW's ability to better manage supply risks by adjusting commitments.*

As if State Forests and the timber industry had not already been given enough, the area available for logging was again significantly increased in 2004 by amendments to the Environment Protection Licence that effectively allowed logging within the buffers of most unmapped streams. This was simply achieved by excluding non-scheduled forestry activities from the requirements of the Environment Protection Licence on 17 May 2004. As a result of this change over 90% of logging operations no longer required Environmental Protection Licences. By removing the requirements for 10m buffers on unmapped streams this significantly increased the areas and volumes available for logging. It has also resulted in significantly increased environmental harm and stream pollution.

Thus, despite actual yields being found to be significantly below predicted yields and the reduction in State forests resultant from the 2003 Icon decision, the total volumes of timber committed to industry and the actual areas available for logging were significantly increased.

## 2.4. The Inconvenient Truth

Presumably associated with issuing the new WSAs, over the next year Forests NSW published 3 reviews of wood resources that discredited their own yield assessments and the basis of the new wood supply agreements:

1. State Forests, July 2004 , “State of the Resource, A Review of Wood Resources on the North Coast of NSW”.
2. State Forests, September 2004 “A Review of Wood Resources on the North Coast of New South Wales
3. State Forests (Partington and Stevenson 2004), - ‘Forests NSW: Review of North Coast Standing Volumes for the 2004 Valuation,’ undated, late 2004, Report for the NSW Auditor General.

Two of these are available on line, though there is no documentation to put them in context, the only reference found to the July 2004 report was in Partington and Stevenson (2004), and the Partington and Stevenson report itself does not have a date or identify where it was published.

It is assumed that all the data and arguments underlying these yield reviews were available to the Ministers for Forests when they issued new Wood Supply Agreements in 2003 and 2004, particularly when they removed the ability to reduce commitments in line with new yield assessments. It is particularly worrying that even the Auditor General (2009) ignores the damning Partington and Stevenson report despite its being identified as specifically prepared for him.

In July 2004 State Forests prepared a report “State of the Resource, A Review of Wood Resources on the North Coast of NSW”. This document is not available on the web and has not apparently been referenced in the various RFA reports or yield reviews, though a subsequent report by Partington and Stevenson (2004) consider that it “*clearly described*” the deficiencies with the “*process of estimating merchantable volume*”, stating that:

*... for some time there has been concern about actual volumes being less than those predicted by the FRAMES process. And recently a report by State Forests highlighted deficiencies in just about every aspect of the process of estimating merchantable volume ...*

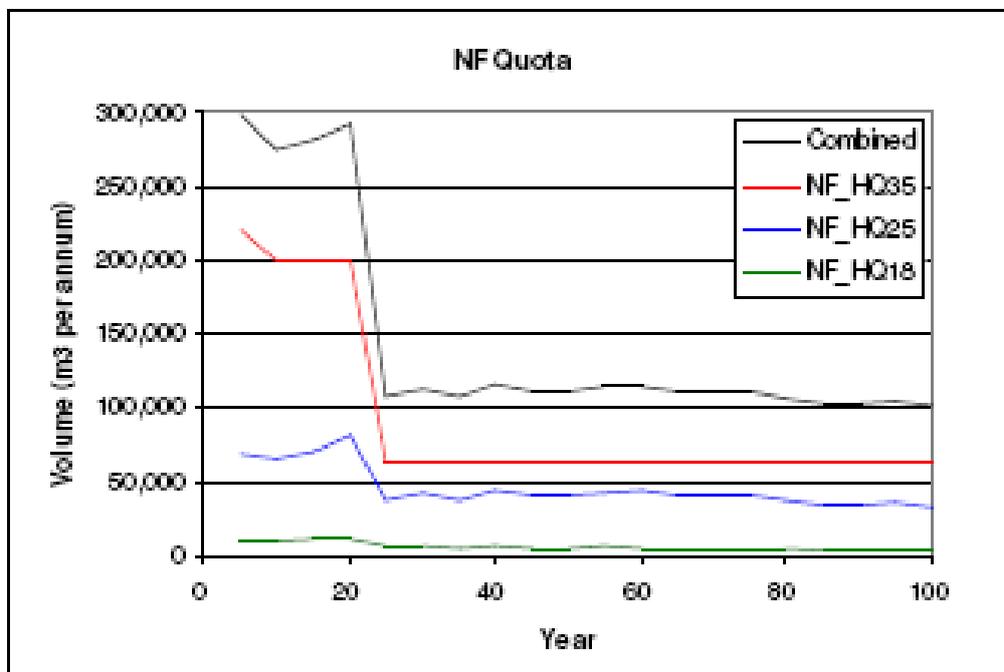
*...*

*The deficiencies described include the following: merchantable classification of species that are never harvested; inaccurate estimates from some of the tree volume, taper, and height equations; problems of consistency, reliability and ease of use in relation to tree proportionment, issues in relation to defect modifiers and the division of losses due to inherent defect and those due to sub-optimal log making practices; the limitations of the GIS system in adequately handling the complexity of net harvest area analysis and the difficulty of verifying the results of such analysis; technical problems with the net harvest area modifiers, their lack of currency and the small sample sizes on which the defect modifiers are based; a single strike rate is used but studies suggest different strike rates apply in different areas; growth models and the records on which they are based need to be overhauled; and most importantly the inventory data was no longer considered a reliable description of the resource due to the effect of harvesting and a lack of replacements for the harvested inventory plots.*

In September 2004 State Forests released the simplistic report “A Review of Wood Resources on the North Coast of New South Wales”. Unfortunately only bits of data are poorly presented in a confusing and contradictory manner that appears designed to make it hard to interpret.

The outcome of the revised modelling for large quota sawlogs applying a set “high level of cut in the next 20 years” was “220,000m<sup>3</sup> per annum of HQL for the first five years, decreasing to 200,000m<sup>3</sup> per annum for years six to twenty”. The graph indicates that this drops to a “sustainable” yield of something like 63,500m<sup>3</sup> per annum after year twenty, though no details of this dramatic reduction in long-term sustainable yield are provided or discussed.

**Modelled Native Forest Quota Sawlog availability** (From State Forests 2004). Note that HQ35 (red) corresponds to high quality large sawlogs. Also that “the modelled outcome is generally 10-15% above the likely outcome”.



Though the new assessment cautions that:

*Interpretation of these results and their translation into management actions requires some care. In particular, the modelled outcome is generally 10-15% above the likely outcome due to factors that cannot be incorporated for practical reasons or cannot be adequately represented mathematically.*

This caveat was subsequently ignored by both the NSW and Commonwealth Governments. If allowance is made for a 15% over-estimation, as a precautionary approach demands, then the 5 year cut is reduced to 187,000m<sup>3</sup> per annum and the 6-20 year cut is reduced to 170,000 m<sup>3</sup> per annum. There is an identified major reduction in large high quality (LHQ) sawlogs from Native Forests after year 20 (to around 65,000m<sup>3</sup>), though the corresponding information from plantations is not provided, which prevents any identification of the 100 year sustainable yield of LHQ sawlogs.

Partington and Stevenson (2004) undertook a review for the NSW Auditor General - 'Forests NSW: Review of North Coast Standing Volumes for the 2004 Valuation' which reached significantly different conclusions than Vanclay, stating *"it has been clear for some considerable time that the timber volumes predicted by the FRAMES process are proving difficult to achieve. This naturally creates a question-mark over valuations derived from the FRAMES data."*

Partington and Stevenson (2004) found that the FRAMES data was in disarray for many reasons, including that 500 of the 2000 inventory plots had been logged, noting:

*Unfortunately, following the FRAMES process the intensity of effort that went into inventory management diminished. The responsibility for inventory management was allocated to the regions until this was changed in 2003. During this time, about 500 of the original 2000 or so north coast inventory plots were lost to harvesting. Many of these plots were not replaced. We are not critical of this; it may have been an entirely appropriate choice by regional management to invest their resources in other areas that they saw as more important. However, the consequences in Forests NSW own words, was that, "The inventory data can no longer be considered a reliable description of the resource due to the level of harvesting over the last five years and the lack of a replacement programme for harvested plots."<sup>1</sup>*

*There were also a number of other issues requiring attention including the need for a new system of management for the area records, the limited data on which estimates of the net harvest area modifier were based, variation in strike rates across the region, a need for new growth and product proportionment models, and various other issues that needed to be addressed. In short a complete overhaul of the native forest and hardwood plantation inventory was required.*

*... There will be a need for assessment and review and recalibration of some of the modelling. It is also apparent that the rebuilding of the inventory system is a work-in-progress. We think directions that are being taken are generally appropriate and the effort is admirable, but there is still some way to go.*

*It is also apparent that a number of interim measures have been employed in bridging the gap between the old system and the full implementation of the new system. This has been necessary in order to derive a set of numbers for the current valuation. For, example a single height diameter model was applied, irrespective of species, in order to estimate the height of trees from their diameter. Neither, with the functionality of the current system, was it possible to grow the forest forward from the date of original measurement of inventory plots. ...*

*There are also some technical sampling issues. ...*

Partington and Stevenson (2004) identified that State Forests were in the process of rebuilding the inventory system *"but there is still some way to go"*, noting:

*There was limited time to conduct a detailed statistical analysis of the inventory data and in our judgement little need to do so since it was clear that the prior basis of valuation had to be changed and that the new basis was still a work-in-progress the reliability of which could not be cost effectively determined. Consequently, we concluded that the 2004 valuation could differ substantially from the true value, and,*

*in our judgement, none of the possible statistical analyses were going to change that conclusion.*

Partington and Stevenson (2004) did identify a variety of problems with the work to date, such as errors in the data, inadequate data on some species, inadequate height models, poor estimates of loggable areas, flawed growth models, poorly specified models for estimating Total Standing Volume, etc., noting:

*For example, in the inventory plot data that we received there are 304 trees which are reported as each having a total standing volume (TSV) in excess of 100 cubic metres, and there is one remarkable tree with a TSV of 597 cubic metres! [1.6 cubic metres is considered the average per tree]*

...

*In past valuations height was modelled according to species group as a function of site and Dbhob. In the current valuation the height is estimated by a single model for all species as a function of Dbhob. ... This use of a single model across all species is a weakness in the valuation modelling and is only acceptable as an interim measure. We anticipate that when a wider range of models are implemented next year that volumes may change significantly as a result.*

...

*Another complicating issue is that areas previously considered unmerchantable are now being reclassified as merchantable as the constraints on available timber become more severe.*

Partington and Stevenson (2004) conclude:

*In our opinion the comprehensive improvement of the hardwood inventory is highly desirable, and we believe that good work is being done. However, it is clear that the process is incomplete with many of the new models untested, and some models are still under development. Consequently, while it is feasible to conclude that this year's estimate of value represents the best estimate currently available, it must also be concluded that there is the potential for the value estimated to differ substantially from the true value.*

In light of the issues raised in these three reports, no responsible person could have issued new Wood Supply Agreements for increased volumes and remove the ability to adjust them in line with yield reviews. It is thus not surprising that Ian McDonald was one of the Ministers responsible.

## **2.5. The Timber was Not There**

In November 2005 State Forests of NSW again tried to change its image by adopting the new brand name of Forests NSW.

Immediately after giving the new Wood Supply Agreements to the millers, the Auditor General identifies that Forests NSW had to compensate mills for not supplying commitments and start buying back wood supply allocations, for example paying one mill (Boral) \$550,000 for 34,000m<sup>3</sup> of high quality large sawlog they were unable to supply during 2004-2006. In September 2010 Boral Timber commenced legal proceedings against Forests NSW for failure to supply every year since 2006, though the outcome is confidential.

The Government then bought back 12,194m<sup>3</sup> of the annual commitments given in the Wood Supply Agreements. In answers to questions in parliament the Minister for Forests identified that in 2006 2,000m<sup>3</sup> was purchased for \$500,000 (\$250 per m<sup>3</sup>) and in 2007 10,194m<sup>3</sup> was purchased for \$2,277,000 (\$223.36 per m<sup>3</sup>).

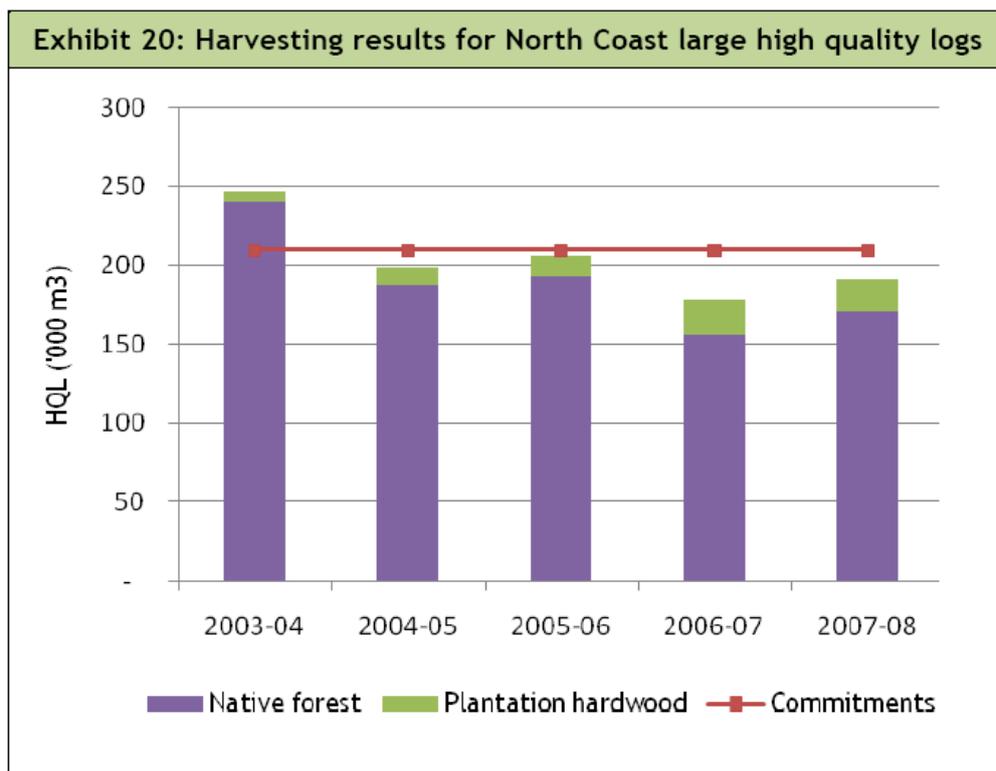
These purchases indicate that the Wood Supply Agreements are worth around \$14 per m<sup>3</sup> per annum. This gives a value of over \$61 million for the total 4,365,852m<sup>3</sup> of large high quality sawlogs committed in WSAs in 2003/4, with the remaining 11 years of commitments worth some \$32 million.

In 2009 the NSW Auditor-General, Peter Achterstraat, prepared the report “Sustaining Native Forest Operations: Forests NSW”. He reached the obvious conclusion that “*current yield from native forests in the north coast is not sustainable in the long term*” stating:

*To meet wood supply commitments, the native forest managed by Forests NSW on the north coast is being cut faster than it is growing back. This is especially the case for the blackbutt species. This does not mean that the forest will not regrow but there will be a reduction in yield in the future.*

The Auditor General (2009) “*found that Forests NSW has adequate estimates of how much timber is available from native forests, now and into the future*”. He also concluded that “*Forests NSW should have sufficient timber to meet its wood supply commitments which are fixed for periods up to 2023 using both native and plantation hardwood*”.

The Auditor General (2009) identifies that at 2008 there were wood supply agreements for some 209,500 m<sup>3</sup> per annum of large high quality sawlogs from north coast forests and that commitments are not being met (see below), and neither are commitments for low quality sawlogs.



Note that the Auditor General fails to account for increased WSA commitments pre 2006-7.

As well as possibly getting into the plantations and small sawlogs too early, the Auditor General notes that Forests NSW have not been meeting their target of 30,000m<sup>3</sup> per annum from private property for the north coast, instead averaging only 7,000m<sup>3</sup> per annum over 5 years. This increases the strain on public forests and plantations and further jeopardises future yields.

**NORTH EAST COMPARISON OF ACTUAL YIELDS TO COMMITMENTS** From NSW&CoA (2009).(based on WSA commitments therein rather than Forests NSW (2005) ESFM Plan, note that WSA figures for UNE and LNE have been significantly changed over these three years though as the timing of the changes and their distribution across the regions is not publicly available, the current figures have had to be used)

		Wood Supply Agreement m <sup>3</sup> per annum	2004/5 yields m <sup>3</sup> (% WSA)	2005/6 yields m <sup>3</sup> (% WSA)	2006/7 yields m <sup>3</sup> (% WSA)	3 year deficit m <sup>3</sup> (% WSA)
<b>High-quality large sawlogs (incl. veneer and girders)</b>	UNE	83,686	70,389 (84%)	70,333 (84%)	68,814 (82%)	-41,522 (-17%)
	LNE	125,814	127,539 (101%)	135,744 (108%)	111,537 (89%)	-2,622 (-0.7%)
<b>Small high quality sawlogs</b>	UNE	27,184	29,500 (109%)	32,763 (121%)	29,959 (110%)	+10,670 (+113%)
	LNE	36,588	24,780 (68%)	29,316 (80%)	31,127 (85%)	-24,541 (-22%)
<b>Low-quality sawlogs</b>	UNE	153,677	86,258 (56%)	88,219 (57%)	69,148 (45%)	-217,406 (-47%)
	LNE	176,867	147,401 (83%)	138,769 (78%)	148,788 (84%)	-95,643 (-18%)
<b>Pulp-grade and chipwood (domestic and export grades) (tonnes)</b>	UNE	45,000	11,648 (26%)	19,220 (43%)	12,269 (27%)	-91,863 (-68%)
	LNE	120,000	108,647 (91%)	97,170 (81%)	121,162 (101%)	-33,021 (-9%)

Annual shortfalls of at least 17% in large quota sawlogs and 47% in low-quality sawlogs in the UNE are significant. The failure to meet large sawlog commitments indicates an inability to meet supply commitments given in the Wood Supply Agreements. Given that this is one of the performance indicators the causes should have been documented by now.

Across north east NSW over the 8 years 2004-12 there was a shortfall between commitments given in WSA and actual yields of large high quality sawlogs of some 330,500 m<sup>3</sup> (19%), which equates to an average of 41,314 m<sup>3</sup> per annum.

In the UNE the cut of small sawlogs is significantly higher than commitments, presumably to help compensate for the significant undercut in large sawlogs. This just helps entrench unsustainable logging further as the future large sawlogs are cut early.

The problem is also with the species mix being provided. The Auditor General (2009) notes:  
*... Resource reviews were a key risk management tool for Forests NSW which is no longer available under wood supply agreements for large logs.*

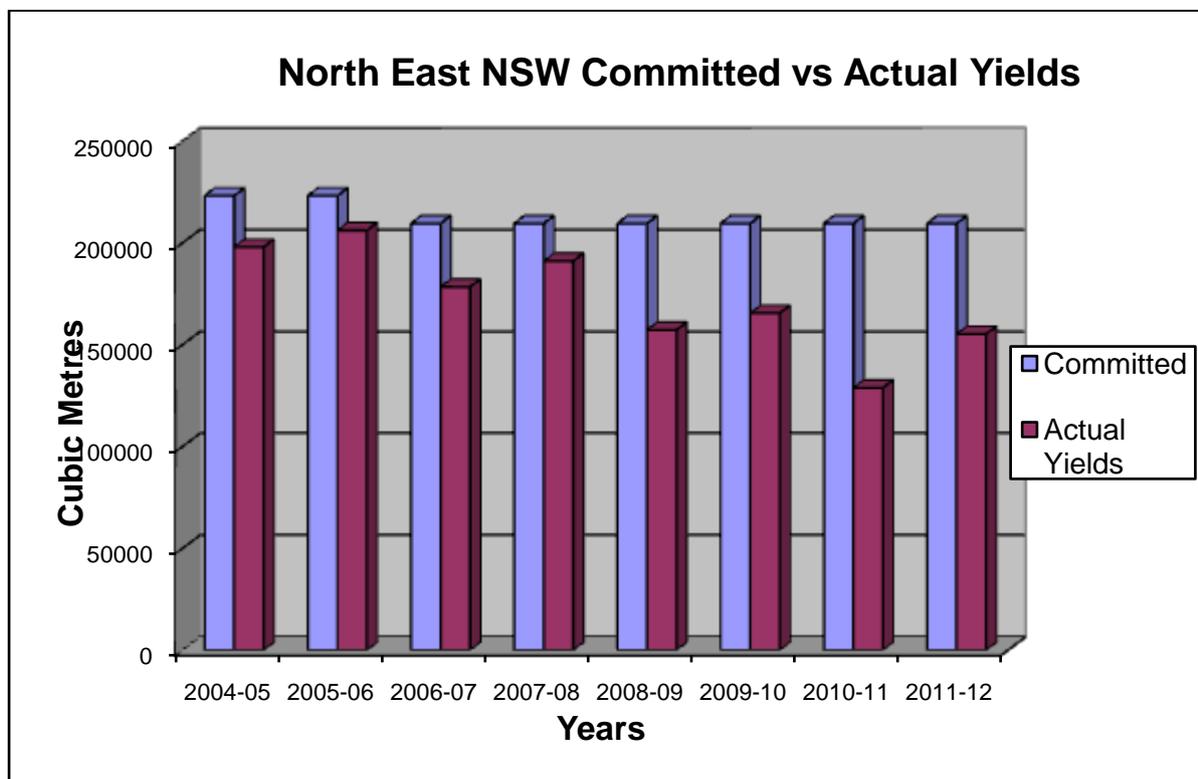
*...the North Coast region has been unable to meet its species commitment since 2004 for blackbutt, although this is based on 'best endeavours'. This commitment*

accounts for about 36 per cent of all high quality sawlog allocations on the north coast.

Regional staff report that the Blackbutt commitment forces them to harvest coastal timber when they would prefer to balance commitments between the less accessible tableland timber and other species. This is in order to sustain the resource on the coast and buffer the impact of cost increases as it accesses more tablelands timber. This issue could have been addressed if the review clause remained in the north coast wood supply agreements.

**NORTH EAST COMPARISON OF ACTUAL YIELDS TO COMMITMENTS.** Source DECCW 2010, Auditor General 2009, parliamentary responses, N. Roberts pers. comm.

	Wood Supply Agreements m3	HQ Large Yields m3	% Actual of WSA
2004-05	221700	197928	89
2005-06	221700	206077	93
2006-07	219700	178351	81
2007-08	209500	191086	91
2008-09	209500	157234	75
2009-10	209500	165422	79
2010-11	209500	128797	61
2011-12	209500	155195	74
<b>TOTAL</b>	<b>1710600</b>	<b>1380090</b>	<b>81</b>



**NORTH EAST COMPARISON OF ACTUAL YIELDS TO COMMITMENTS.**

The Auditor General also identified that Forests NSW were taking 56% more sawlogs from plantations than proposed, noting that if it is taking more than planned to meet commitments *“this could affect future production”* as plantations *“will form an increasing proportion of future supply”*, *“because current yield from native forests in the north coast is not sustainable in the long term; that is, beyond the term of the current contracts”*.

As well as possibly getting into the plantations and small sawlogs too early, the Auditor General notes that Forests NSW have not been meeting their target of 30,000m<sup>3</sup> per annum from private property for the north coast, instead averaging only 7,000m<sup>3</sup> per annum over 5 years. This increases the strain on public forests and plantations and further jeopardises future yields.

The Auditor General (2009) recommended that Forests NSW *“by June 2010, publicly report the results of yield estimates for high quality large sawlogs, high quality small sawlogs, low quality logs and pulpwood for each region”*.

Forests NSW's (2010b) latest yield offering made on their website in response to the Auditor General's recommendation, is dated November 2010. There is no explanatory report other than the statement that *“The charts included in this report show estimated annual yields by broad product category in cubic metres (m<sup>3</sup>) over the next 100 years”*. Forests NSW's latest yield estimates are presented without any methodology, explanation or review (independent or otherwise) and thus are of unknown veracity.

While no detailed data is provided, it is apparent from the graphs provided that for the 2010-14 period the assessed high quality large sawlog resource for both the north east and central regions is in the order of 163,000 m<sup>3</sup> per annum, and the high quality small sawlog resource 75,000 m<sup>3</sup> per annum, with this reducing by 2020-24 to 132,000 m<sup>3</sup> and 54,000 m<sup>3</sup> per annum (respectively). This compares to WSA commitments for 209,500 HQ large and some 63,772m<sup>3</sup> of HQ small sawlogs. This suggests a deficit in HQ large sawlogs growing from 46,500m<sup>3</sup> to 77,500m<sup>3</sup> per annum. It is not clear whether pre-1994 plantations were included in these figures.

In 2007/8 there were 11,181m<sup>4</sup> of high quality large sawlogs and 13,939m<sup>3</sup> of high quality small sawlogs logged from hardwood plantations in north east NSW (Flint 2011). Forests NSW did do an assessment of north coast post-1994 hardwood plantations in 2011, but estimated yields of products were not identified. Flint (2011) notes:

*... the initial FRAMES estimate from 1999 predicted 6,800m<sup>3</sup> of high quality large sawlogs available from plantations for the first 45 years (ie until about 2045), but FNSW current estimates predict 10 times that volume will be available annually by 2019. It is also notable that the Timber Supply Strategy referenced above seems to be based on plantations yielding high quality sawlogs within 30 years after establishment, which seems unlikely. Secondly, there is a risk that, in their desperation to meet current supply contracts, FNSW are already cutting the plantation resource too early, and will as a result severely compromise the long-term volume that will be available, exactly as they have done with native forests.*

Figure 7: Forests NSW North East Region wood flow statistics by timber quality class

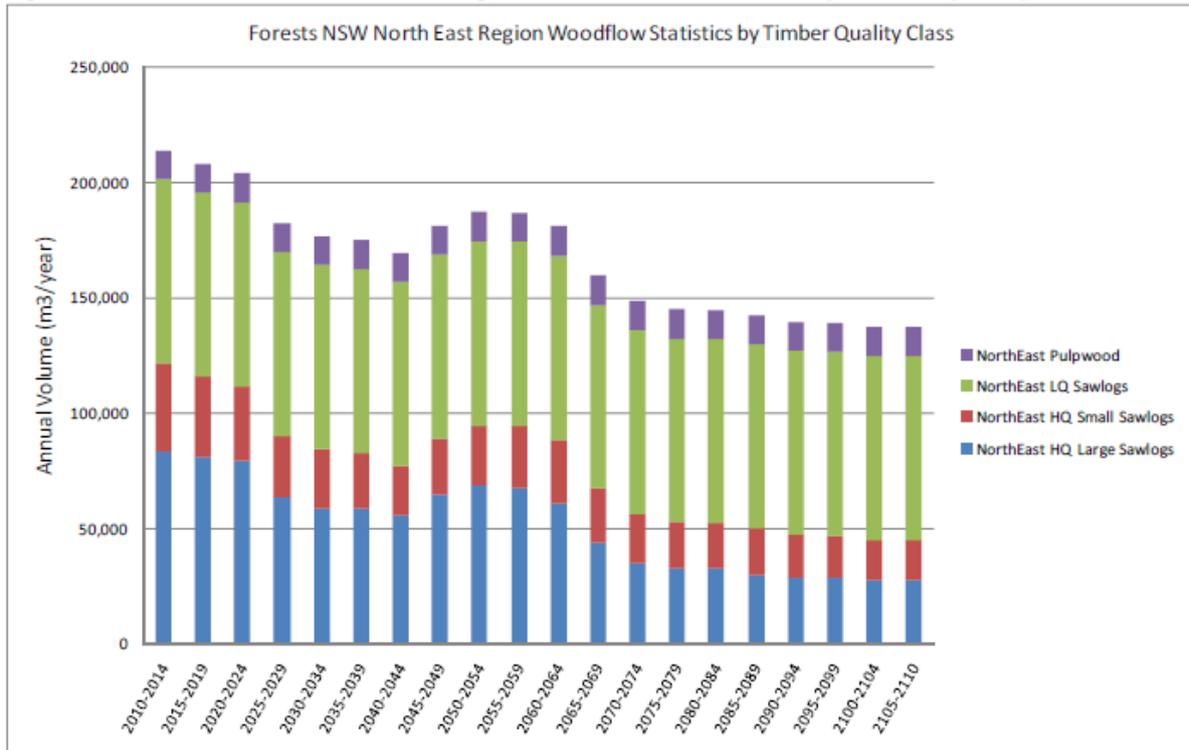
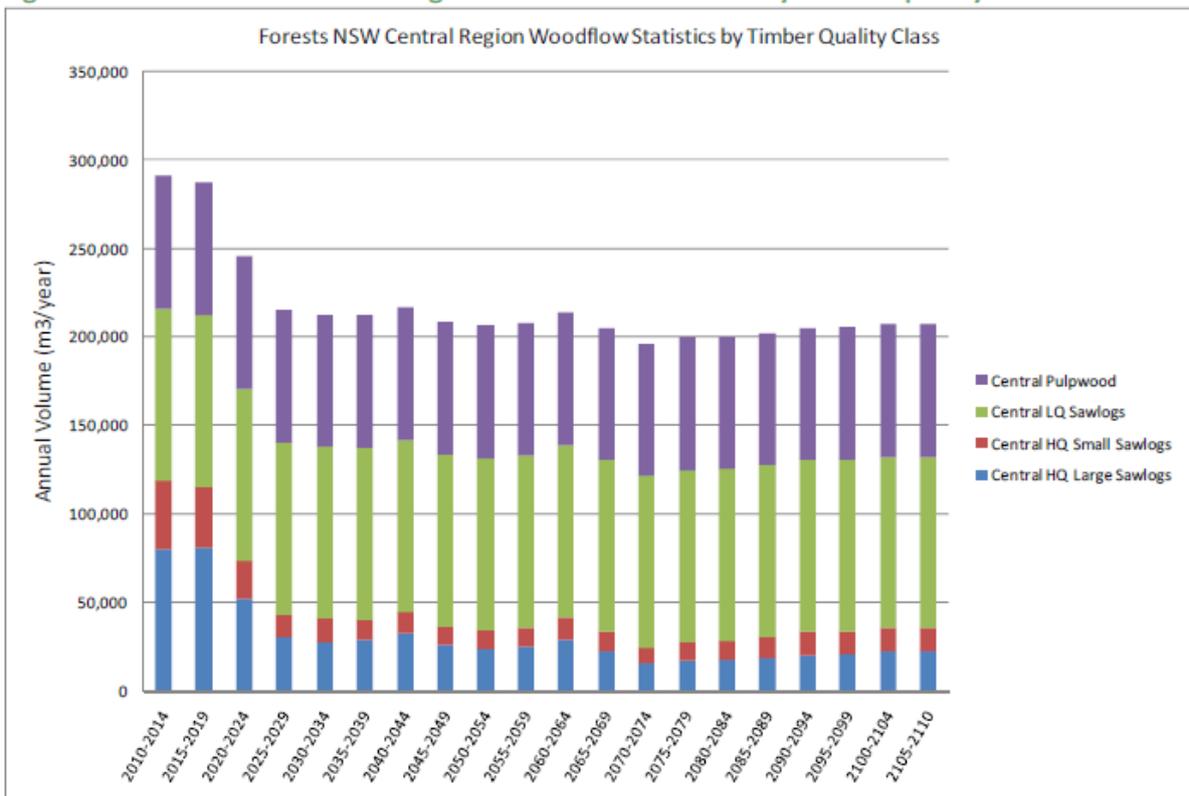


Figure 8: Forests NSW Central Region wood flow statistics by timber quality class



The Forestry Corporation appear intent on hiding the true state of their declining resources. It is apparent that they are having to over-cut future resources to prop-up current yields, meaning future yields of large sawlogs continue to decline. In his evidence to inquiry into the management of public land in New South Wales Grafton sawmiller, Bruno Notaras, (2012)

complained:

*I have stopped investing because we are not sure whether we are going to have wood. All indications are that by 2019 it will be pretty tough. I am not sure whether forestry can estimate really how much is out there, because what I have seen is that where we used to work in a 28-year rotation, we are now going back into the same areas in six to 10 years and it is surprising the amount of wood that you are getting out of those areas.*

In 2012 the Chair of the General Purpose Standing Committee No. 5 asked the Executive Director of the NSW Forest Products Association, how much area of land “*would need to be returned and made available for harvesting in order to meet the contractual obligations and the forecast timber delivery in those RFAs?*”, to which Mr. Ainley (2012) responded “*At a guess, I would suggest that we would need a little more than one million hectares to be returned. However, it depends on which hectares, where they are and how the regulations may affect them*”.

The General Purpose Standing Committee No. 5 (2013) inquiry into the management of public land in New South Wales reported:

**6.46** *Serious concerns over the sustainability of current logging practices have been raised by inquiry participants from the timber industry with particular concerns over future resources. Greensill Bros Pty Ltd expressed that the view that ‘under the current regulations restricting access, the small area of forests is being overcut’. Newells Creek Sawmilling Company similarly said that ‘we are overcutting the bush because we are limited to a small area for sustainable forestry while vast areas have been locked up for timber production and placed under the management of National Parks’. Mr Notaras highlighted the long term implications for the industry, contending that ‘they will not have high quality large logs in the future’.*

**13.44** *On the North Coast, wood supply agreements that were originally signed in 1998 were reviewed in 2003 following further reservation of native hardwood forests. Mr Douglas Head described the situation on the North Coast as being unsustainable post 2023, when the current agreements are due to expire. He commented that ‘At the moment, we are in an unsustainable pattern ... in the longer term’ and contended that ‘we will not be able to do in 2024 what we are doing now, and nor should we’.*

The General Purpose Standing Committee No. 5 (2013) recommended:

**Recommendation 10**

*That the NSW Government immediately identify appropriate reserved areas for release to meet the levels of wood supply needed to sustain the timber industry, and that the NSW Government take priority action to release these areas, if necessary by a ‘tenure swap’ between national park estate and State forests.*

## **2.6. Papering Over the Widening Chasm**

In 2012 the NSW Government (2014) established a Steering Committee of bureaucrats to review timber yields in north east NSW. The Steering Committee engaged URS Australia Pty Ltd to conduct a review of timber resources on the north coast though refused to release the URS reports. Instead the NSW Government (2014) would only selectively report on what they say URS found. The results are only considered for 275,000m<sup>3</sup> of high quality sawlogs,

which presumably includes 208,500 m<sup>3</sup> of large HQ sawlogs and 63,772m<sup>3</sup> of small HQ sawlogs.

The NSW Government (2014) recommended against opening up national parks for logging, and on 15 November 2014 the NSW Government formally responded to the inquiry, stating *“The NSW Government does not support logging in national parks and has no plans to allow it through the implementation of tenure swaps or by other means”*:

The NSW Government’s (2014) “Project 2023 - North Coast Resources Review” states:

*Updated modelling of the status quo indicates the volume of total HQ logs could be maintained at the level of existing Wood Supply Agreement (WSA) supply commitments, of around 275,000 m<sup>3</sup> per year until 2023. Beyond 2023, HQ sawlog volumes are predicted to decline markedly.*

*...The reduction in supply from native forests occurs primarily in the Blackbutt forest types. ... the current harvest levels for HQ Blackbutt cannot be maintained at a stable yield and ... this is forecast to result in a significant decline in the availability beyond 2023.*

The NSW Government’s (2014) Steering Committee *“determined the that the option of buyback of 50,000 m<sup>3</sup> per year of HQ logs including 40,000 m<sup>3</sup> per year of Blackbutt is the most effective way of bringing harvest levels to an even flow, sustainable yield”*.

On 24 June 2014 the NSW Minister for Primary Industries, Katrina Hodgkinson, announced the decision to pay Boral \$8.55 million to buy back 50,000 cubic metres of timber allocations annually for the next nine years. There is no detail of what proportion of this is small high quality sawlogs.

Given that over the 8 years 2004-12 there was an average shortfall between commitments given in WSA and actual yields of large high quality sawlogs of 41,314 m<sup>3</sup> per annum it is apparent that the timber bought back never really existed. It would seem that the \$8.55 million was spent on phantom resources and thus will not redress the over-cutting that is currently occurring and rapidly worsening.

The NSW Government (2014) also put forward as an option accessing blackbutt forest on slopes over 30° inland from Nambucca, Bellingen and Coffs Harbour. It was considered that with the use of cable-logging around 50,000 m<sup>3</sup> per year of HQ logs could be obtained for around 6-7 years by logging on extremely steep slopes. Though they recognise that *“the Integrated Forestry Operation Approvals (IFOA) currently prohibit harvesting on slopes greater than 30 degrees and the risks of damage to retained forest and the economic viability of selective harvesting on steep slopes are not yet tested”*.

While this option was not recommended by the Steering Committee, the EPA (2014) subsequently announced *“FCNSW will conduct a small scale trial to determine which techniques can be used to augment ground-based methods on steep country in coastal NSW”*. The intent is to *“reduce the prescriptive nature”* of Environment Protection Licence, allow clearfelling, and introduce cable-logging to be able to log slopes over 30°. While this may buy a few years of continued over-logging, there is nothing sustainable about it.

Flint (2011) identifies that there has a decline of 276,000 cubic metres per annum (31%) of sawlogs produced from NSW's public native forests over the ten year period from 1999/00 to 2009/10. Noting "*Over the same period there has been an increase of 381,000 cubic metres in softwood sawlog production. In 2009/10, native forest hardwood sawlogs accounted for only 22% of all sawlogs produced from State Forests. This data therefore illustrates the on-going decline of the native hardwood industry and its replacement by softwood.*" Flint (2011) considers:

*In north-eastern NSW, the future of the industry is characterised by a combination of a rapidly declining large high quality log resource from native forests, with a virtually irreversible collapse expected by 2018, and a substantial and still maturing high quality hardwood plantation resource, supplemented by a strong, mature softwood resource.*

The history of NSW's resource assessments has followed a consistent pattern of identifying inflated volumes of large sawlogs that are regularly downgraded as cutting-cycles progress. Large "quota" sawlogs are invariably allocated at above estimated sustainable levels in order to maintain Forestry Corporation revenues, satisfy industry desires, and pander to politicians.

This over-assessment and over-allocation has become extremely costly since the introduction of tradeable and compensatable Wood Supply Agreements, particularly since review clauses were removed in 2003/4. Environmental costs have included allowing felling of trees into exclusion areas, the removal of buffers on unmapped streams for logging and the intent to allow logging of extremely steep slopes. Undoubtedly it has also contributed to the poor implementation of many logging prescriptions.

The desperation to supply commitments has led to running down of the productive capacity of public forests, rather than husbanding the future large sawlog resource the Forestry Corporation are prematurely taking the large sawlogs of the future. As noted by CEO Nick Roberts (2012) "*We are certainly focusing very hard on recovering as much value as we can when we go into the stands and making sure we get as much volume as we can when we go into the stands*".

The economic costs are profound, sawmillers were given wood supply agreements for free and yet taxpayers have had to pay over \$12.3 million to buy back resources that never existed and had to pay hundreds of thousands of dollars in compensation for inability to supply. Taxpayers have also had to pay some undisclosed portion of the promised \$18 million to purchase timber to from private property that was intended to supplement supplies to increase long-term yields, but instead had been used to meet current shortfalls.

It is apparent that yields are still declining and that NSW taxpayers are going to have to pay millions more dollars in compensation to buy back resources that never existed before the current Wood Supply Agreements expire.

### 3. REFERENCES

Ainley, R. (2012), Public Land Use Inquiry, General Purpose Standing Committee No. 5, Report of Proceedings 14 September 2012 pp51-61

Anon 2000. *Regional Forest Agreement for North East New South Wales (Upper North East and Lower North East Regions) between the Commonwealth of Australia and the State of New South Wales*. Commonwealth of Australia, Canberra,

Attiwill, P., Burgman, M., and Smith, A. (1996) Gaps and Clusters silviculture: How well does it balance wood production and biodiversity conservation? A report by the Review Panel to the Ministerial Committee established to review the Principles and Application of the Gaps and Clusters Technique.

Bruce, J. (1996) Wood Resources Data. Unpublished response by General Manager Central Region to Tony O'Hara, 8<sup>th</sup> August 1996.

Department of Environment, Climate Change and Water NSW (2010) Review of NSW Forest Agreements and Integrated Forestry Operations Approvals: Upper North East, Lower North East, Eden and Southern regions

Drielsma, H. (1991) Fenning Timbers Log Supplies from Forestry Commission, Meeting with Len Fenning - 30th July, 1991. Unpublished briefing note from the Commissioner for Forests for the Minister for Conservation and Land Management, 29<sup>th</sup> July 1991.

Elsley, I. (1996) Sustained Yield Estimates. Unpublished Memo from Central Region Inventory Officer to all Districts, 19 June 1996.

EPA (2014) Remake of the Coastal Integrated Forestry Operations Approvals, Discussion Paper February 2014. Environment Protection Authority.

Flint, C. (2011) Independent appraisal of native forest timber resources and alternatives in New South Wales. Commissioned by the Nature Conservation Council of NSW, September 2011.

Forestry Commission (1976) Indigenous Forest Policy. FCNSW, October 1976

Forestry Commission (1991), Proposed Hardwood Operations Compartments 180, 198, 200 Chaelundi State Forest, Environmental Impact Statement 1990, Report, February 1991. Forestry Commission of NSW.

Forests NSW (2005) Regional Ecologically Sustainable Forest Management Plan for Lower North East NSW. July 2005.

Forests NSW (2004) A Review of Wood Resources on the North Coast of New South Wales.

Forests NSW (2010b) Forests NSW yield estimates for native forest regions.

General Purpose Standing Committee No. 5 (2013) Management of public land in New South Wales. Report no. 36 / General Purpose Standing Committee No. 5, New South Wales. Parliament. Legislative Council.

Groenhout, P. (1996) Comments regarding wood resources project, Glen Innes District. Letter from Glen Innes Planning Forester to Head Office.

Gwalter, J (1993) Letter on sustainability of Kempsey yields. Unpublished.

Kirwood, R. (1996). Unpublished message from Urunga District to Planning Branch, 6<sup>th</sup> December 1996.

Notaras, B. (2012), Public Land Use Inquiry, General Purpose Standing Committee No. 5, Report of Proceedings 5 October 2012

NSW&CoA (2009) A Draft Report on Progress with Implementation of the New South Wales Regional Forest Agreements (RFAs), North East RFA, Eden RFA, Southern RFA, A report providing information to enable public representations on the implementation of the RFAs. NSW State and Commonwealth Governments.

NSW Auditor-General (2009) Sustaining Native Forest Operations: Forests NSW. NSW Auditor-General

NSW Government (2014) Project 2023 - North Coast Resources Review

O'Hara, T. (1996) Comments on 'An Appraisal of the Reliability of State Forests' Wood Resources Study'. Unpublished report to NSW Treasury, September 1996.

Partington, G.H. and Stevenson, M.J. (2004) Forests NSW: Review of North Coast Standing Volumes for the 2004 Valuation, Report for the NSW Auditor General. Forests NSW

PAC - Public Accounts Committee (1990), Report on the Forestry Commission. Parliament of New South Wales, PAC report no. 52.

Public Accounts Committee (2002) State Forests of NSW : inquiry into the practice of trading with customers who have defaulted on renegotiated repayment terms . NSW Parliament, Public Accounts Committee Report ; no. 142, Sydney, N.S.W.

Pugh, D. (1996) An appraisal of the reliability of State Forests' Wood Resources Study. Unpublished report to RACAC.

Pugh, D. and Flint, C. (1999) The Magic Pudding, The Cut-an-Come-Again Forests. A Preliminary Appraisal of State Forests' Forest Resource and Management System (FRAMES). North East Forest Alliance.

RAC - Resource Assessment Commission (1992a), Forest and Timber Inquiry, Final Report, Volume 1. Australian Government Publishing Service.

Roberts, N. (2012) Public Land Use Inquiry, General Purpose Standing Committee No. 5, Report of Proceedings 7<sup>th</sup> September

Sigley, R (1998) Possible RFA Outcomes, the Northern Rivers Experience. Unpublished letter from Northern Rivers Sales Manager to Tim Parkes, Forest Resources.

Slayter, C. (1996) WRAMS (WRS) – Bulahdelah District. Unpublished file note, 7<sup>th</sup> November 1996.

State Forests (1993) Review of the Present Status of sustained timber yield on state forests and individual management areas. Unpublished draft position paper.

State Forests, July 2004 , "State of the Resource, A Review of Wood Resources on the North Coast of NSW".

State Forests, September 2004 "A Review of Wood Resources on the North Coast of New South Wales

State Forests (Partington and Stevenson 2004), - 'Forests NSW: Review of North Coast Standing Volumes for the 2004 Valuation,' undated, late 2004, Report for the NSW Auditor General.

Swain, E.H.F. (1937) Forest Policy and Timber Industry Policy. Address to the All Australia Timber Congress, 23<sup>rd</sup> March 1937. Forestry Commission of NSW.

Turner, B. (1998). Review of the FRAMES data for the Upper North East and Lower North East RFA Regions of NSW. Unpublished consultants report for State Forests of NSW and Bureau of Resource Sciences Commonwealth DPIE.

Vanclay J. (2002) Review of Projected Timber Yields for the NSW North Coast. Southern Cross University.

Wall, J. and Flint, C. (1996) Wood Resources in Northern New South Wales. Unpublished draft NPWS report.