

Private Forestry Unplugged

Sean Ryan

Executive Officer

Private Forestry Southern Queensland Incorporated

Abstract

In Queensland, private forestry has developed in a policy and regulatory free zone up until the introduction of the Vegetation Management Act of 1999. Compared to the management systems developed within our state native forests, the private system generally was ad-hoc based on opportunistic harvesting and not good forest management. Silvicultural management was limited to state land and information on silvicultural techniques developed for state lands generally did not cross over into the private resource.

However within the private resource there are a scattering of exceptional forest managers who have developed their own systems, achieving much higher productivity within their forests than adjacent State owned forests. These managers have also positively influenced State forest management on specific issues such as fire management. This paper discusses the history of PNF management and compares the positive government policy initiatives for the future of the industry with the actual on ground constraints and impediments of legislation and lack of action on government initiatives. It isolates the champions and demonstrates their system's sustainability and productivity outcomes and outlines their involvement in furthering research and education for the industry.

Introduction

The Hardwood Timber industry is in decline, not quite Lazarus needing a triple by-pass, but more in line with a landscape in C condition and on the brink of dropping into D, a very difficult condition to return from.

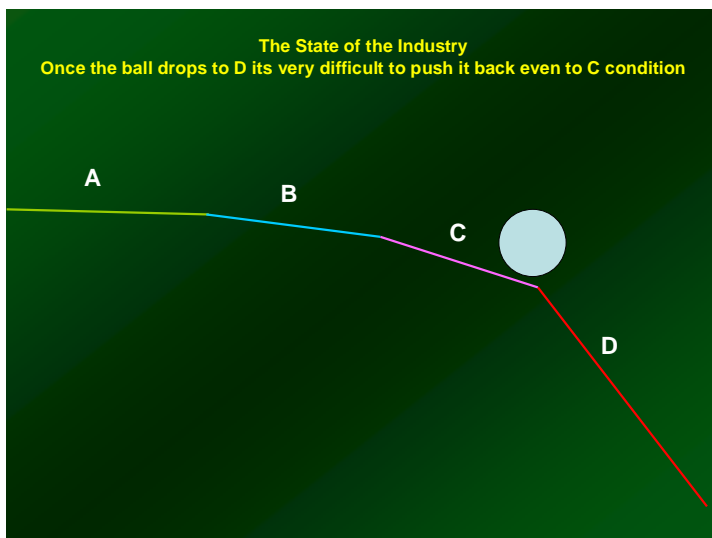


Figure 1. Diagrammatic example of the gradual deterioration in the state of the industry to the point of 'no return' (Q DPI& F Grazing Land Management; 2005)

Within 16 years with the closure of the State Government's Forest Hardwood Resource, the Private sector will need to double its output to meet current market demand or at least half the region's hardwood mills will close. This will not only adversely impact the small regional towns that rely on the local mill as a permanent source of employment, it will also limit the options landholders have to sell their timber, significantly increase haulage costs and reduce stumpage returns, while increasing the carbon footprint of the industry.

There is a strong risk of the Woolworths/Coles supermarket duopoly syndrome developing for the timber industry within our region if we are left with only two milling companies owning the remaining sawmills. The price of sawn timber goes up but the dollar returns to forest growers goes down.

It is imperative when considering the current state of the private timber industry that we understand the impacts of the milestones and government policy initiatives from the immediate past. Methodologies that may be considered for the future have to avoid the pitfalls from the past.

It has been 15 years since the Federal and State Governments signed the National Forest Policy Statement (1992). This Statement outlined agreed objectives and policies for the future of Australia's public and private forests.

The strategy and its policy initiatives were to lay the foundation for forest management in Australia into the next century. Some of the Policy Initiatives specifically relating to Private Native Forests in the document include:

- Sustainable management of private native forests will be encouraged through a combination of measures that may include dissemination of information about, and technical support for, forest management, education programs, conservation incentives, land-clearing controls, harvesting controls, and codes of forest practice.
- Encouraging private landowners to manage forests for long-term economic use by removing any unnecessary impediments or disincentives. The Governments will develop a range of incentives and programs to promote sustainable management of native forests on private land. These incentives and programs will be designed to ensure active management of private native forests for both ecologically sustainable wood production and nature conservation, so that the private native forest estate will remain a permanent resource

The Regional Forest Agreement (RFA) program also arose from the policy statement and it is worth considering how it unfolded in Queensland in the 97-99 period and how that is now impacting on the industry. The primary function of RFA process was to ensure:

- A comprehensive, adequate and representative conservation reserve system; in other words ensuring an adequate percentage of all of the regional ecosystems are protected within our conservation reserve system, and to
- Promote industry development and the sustainable use of forest resources and to,

- Ensure long term timber resource security based on Environmentally Sustainable Native Forest Management.

During the two year RFA arbitration process it was strongly argued that the social and economic implications of the RFA for Queensland would be significant, particularly in terms of the potentially adverse impacts on the native timber industry, its workers and the communities that are dependant on the native timber industries. (*DPI Ministerial Briefing Note (1999)*) Nine years on and these implications are finally being realised.

Ultimately the arbitration process resulted in a skewed version of an RFA being negotiated between the State Government and Timber Queensland (a member alliance of saw millers mainly comprised of those with a guaranteed quantity (cubic metres) of sawlog allocation per year from the State Government) and a conservation body, neither of which had any real understanding of the dynamics of our forests. The process resulted in half the State Forest Reserve system immediately being committed to the conservation reserve system and the other half destined to be subjected to a systematic 'high grading' harvest to meet the commitments of the timber allocation system until 2024 when Native forest harvesting on state lands would cease. The cutover state forests would then be added to the conservation reserve system. The proposed RFA was not accepted by the Federal Government as in place of providing a secure sustainable future for the industry it was to close down state based native forest production. The RFA ended up being a localised Forest Agreement only recognised by the State Government. (*South East Queensland Forests Stakeholder/Government Agreement (1999)*)

There were a number of fundamental mistakes in the ultimate SEQ Forest Agreement process, namely:

- Not meeting the RFA criteria resulted in no matching money contribution from the Federal Government, coupled with the loss of their additional promise of a significant contribution to a required structural adjustment for the native timber industry, a huge loss to the industry
- The State Forest based Timber Allocation System was maintained giving a false sense of security to those mills with allocation and ultimately no change to the harvesting or management practices on private land
- Poor understanding of the 'Enhanced Silviculture' concept (*Mannes and Taylor; 2000*) that was put forward as necessary to improve productivity from the state forest reserve. Ironically from the 'Enhanced Silviculture' concept only a significant rise in the harvest intensity and smaller log size were adopted by the SEQ Forest Agreement
- State Forests could be severely high graded and walked away from with no subsequent rehabilitation, setting a poor example and ultimate standard for the industry. We are no longer able to put the states management systems up as a benchmark of Best Management Practice.
- Section 2.20 of the agreement states 'The government will facilitate and provide incentives for ecologically sustainable management of private native forests and timber resources on private land'. This has never eventuated.
- State Government's Compensation money from the SEQ FA process was allocated to retooling and value adding capacity for the mills with allocation. This

- money should have been invested in the management of the resource to improve its productivity which was clearly going to be the limiting factor for the industry's future within a very short time frame
- The unsubstantiated notion that Hardwood plantations would fill the resource gap
 - The 17 million dollars allocated to plantation development from the SE Forest Agreement would have treated 100,000ha of private native forests. If we knew how much money the SEQ Forest Agreement process cost to date, we probably could have treated all of Queensland and half of NSW.

Implications for the Industry

- o The Hyne mills at Maryborough, Mundubbera, Monto, and Dingo have been bought by the government and sold to Dale and Meyers. A closure of at least one of these mills can be expected in the near future
- o In the last six months mills have closed at Gympie, Toogoolawah, and Fernvale with sawmills at Allies Creek and Jandowie being bought by the Government and closed by October
- o To maintain existing mills and processors, the private sector in SE Queensland needs to produce at least 120 000m³ of sawlog and 25 000 electricity poles per annum. Current outputs are around 60 000 m³.
- o Demand for hardwood sawn products in the short term will be met from unsustainable and often illegal logging being carried out in Indonesia, New Guinea and the Pacific islands.

Australia has an estimated \$400 million trade in illegal logging products. This trade is not only depressing world prices for forest products by between 7 and 16 per cent but, also, it robs poor nations of revenue, funds criminal activity, causes deforestation and adds to global warming (Jaakko Poyry Consulting 2005)

Two Key Questions linking Policy and Legislation

There are two questions that need to be considered in relation to Government Forest Policy Initiatives verses actual on ground Legislation, namely;

1. Has Queensland State Government legislation been developed to support the National Forest Policy objectives? and
2. Has Queensland State legislation achieved any objectives agreed to in the National Forest Policy Statement?

The following Table (Table 1.) provides a list of Pre and Post State Vegetation Management legislation outcomes.

Table 1. Pre and Post outcomes as a result of the introduction of the Vegetation Management Act (1999) and The Code Applying to a Native Forest Practice on Freehold Land

Area of Concern	Pre Legislation and Regulation		Post Legislation and Regulation	
	Positives	Negatives	Positives	Negatives
Resource Security	Unconstrained Access	Open slather harvest and undervalued resource	Forest Practice locks into legislation the right to harvest	Perceived loss of access security and general distrust of government, but continued over-harvesting
Extension Services	Large forestry extension service largely driven by State Government	Plethora of extension organisations, not necessarily delivering the same message	Drives people to seek management information to abide by legislation	No private forestry extension delivered by the State Government and very little funding support
Resource assessment	Total harvested volumes tracked by government	Resource size, volume, quality and productive capacity unknown	Remnant classified forests mapped	No account of harvested volumes, quality, productive capacity or quantifiable sustainable yield
Silvicultural systems	Ongoing management research and growth data from State Forests	Not transferred into private sector, Limited silvicultural systems	Limited silvicultural systems available.	Silvicultural systems restricted by Code when sometimes radical systems are required to reset forests
Cost of compliance	No compliance required	No understanding of limitations		Full cost of compliance born by the forest grower 10-15% loss of production area due to Code requirements
Innovation	Individual innovation and development		Drives innovation in non-remnant vegetation	Unsure of future security so reluctant to invest
Employment	Large scale employment			Reduction in employment in small regional towns
Public perception of forest industry		Poor public perception of forestry practices and very little understanding	Plantations considered part of solution for global warming	Government stopping native forest harvesting within state forests reinforces negative image
Accountability		No accountability for environmental impacts	Forest grower held accountable for non compliance to Code	Processors are not held accountable for future forest productivity
Environmental impacts		Broad scale clearing with wasted resource pushed and burnt particularly in lead up to legislation	Less environmental impact with broad-scale clearing banned and introduction of Code of Practice	No improvement in NF management or productivity.

Area of Concern	Pre Legislation and Regulation		Post Legislation and Regulation	
	Positives	Negatives	Positives	Negatives
Size of industry	Very large industry with a plethora of processors widely distributed throughout the state	Industry larger than a sustainable yield can support without significant investment into management	Development is regulated	Many small scale mills have closed. Many large mills closed due to world heritage listing of forests or forest agreements. Increased importation of hardwood products from dubious sources
Local Government regulation	Plantation able to be established without development applications and Material Change of Use	No identity as a land use	Improved values and recognised land use (Forest practice)	Many shires require a development application and material change of use for the establishment of new plantations (costs- up to \$1500)
Forest value		Resource seen as unlimited and perceived to be of little commercial value	Improved timber values and improving recognition of forest enterprise potential	Perceived future access security and long lead time for VMA and CoP pushed many forest growers to clear or heavily harvest resource
Forest Quality		Diminishing resource due to low management - Low productivity - Smaller piece log size - Smaller area of production forest - Reducing wood quality and available volume		Diminishing resource due to low management - Low productivity - Smaller piece log size - Smaller area of production forest - Reducing wood quality and available volume
Sustainability		Attempt to push the industry towards sustainability		No real impact upon sustainability for the industry

Legislation is a cumbersome and blunt instrument to meet Policy objectives. Ultimately with some assistance from Government the industry has to take responsibility for its own future and as a whole needs a major mindset change with a very significant investment into the management of the private resource, a framework for managing the resource and an improvement in the harvesting and utilisation processes able to clearly demonstrate the industries environmental and sustainability standards.

While the State Government has signed off on the National Forest Policy Statement committing itself to assisting the future of Private Native Forest Management, it is clear that it has developed an indifferent stance to the industry. The Government clearly sees the future for hardwood production being sourced only from plantation citing the specious argument that plantation development, with its significant carbon footprint,

costly establishment processes, genetic pollution and clear-fall processes have some form of esoteric environmental superiority. It is up to the advocates of the environmental benefits of native forest management to 'carry the torch' and prove through demonstration sites, case studies, extension processes and accredited management systems that the systems are creditable.

Industry Champions

(Excerpt from Case Study 'On Farm Value Adding' Ryan S. Taylor D; 2002)

The Thompsons own a 2000 ha property at Gundiah in south east Queensland. The property was gradually acquired over many years, the first portion being selected in 1912 by Mark Thompson's father. At that stage the property was mainly used for grazing and as a home paddock for his Bullock and Horse teams. The teams were used for hauling and snigging timber in the district up to the 1930s. The block was harvested (down to 40cm log centre diameter) and then ring-barked at the time of selection, being completely cleared on the flats and mostly cleared on the slopes. Eucalypt regrowth persisted through this period and due to Mark Thompson's subsequent interest in growing timber, began to be actively managed for timber production. In 1946 Mark bought an adjacent 860 acres (358 ha) specifically to grow timber as he considered it to be a good timber block.

This formalised his future management intentions, ie; to maintain and manage the forest on his property for timber production as well as cattle grazing.

The study area was heavily harvested in 1953 with all timber over 40 cm centre diameter removed due to tight economic conditions. In the 1960s the forest was extensively treated (silviculturally thinned), maintaining around 60 stems per acre (144 per ha) on the basis of retaining healthy, vigorous trees at a good spacing (approx. 9 metres). In 1970 a large number of electricity poles were harvested from the study area and since then only low intensity logging for girders or declining trees has taken place, usually to make up a load.

Current Farm Management

The farm has two main enterprises, cattle and timber production. Cattle graze the whole property. The prime grazing areas are generally not the best timber areas and are managed more for grass production. Timber production is carried out on 90% of the property but only 50% is considered good timber country worthy of treatment and further management. In these areas wide tree spacings are maintained for grass production and to maximise timber productivity (Photo 1.). The property and the adjacent 700 ha forestry-grazing lease currently carries 700 head of cattle.

Cattle have always been the main enterprise of the property, closely aligned with this has been timber production. It is the firm belief of Mark and Owen that maintaining tree cover improves and maintains



Photo 1. Thompson's Spotted Gum stand typical of the their resource

grass production over a longer period of the year than a bare paddock. Having timber as a second enterprise allows a safety net when cattle prices drop.

"Trees got me out of trouble on a number of occasions, 1964 was a bad recession, cattle were bad, building was slow but the price didn't really go down for timber only the quantities. Supplying the one mill for many years gave us steady sales through out that recession and things would have been a lot tougher without it." (Mark Thompson)

This property followed the pattern of most property selection in the early part of the last century. Properties were selected and progressively cleared for pasture and beef or dairy production. Little was known of the potential hazard of extensive landclearing and given the abundance of timber at the time, meagre value was placed on retaining timber. The early appreciation by Mark Thompson of the advantages of tree cover for improved grass and timber production resulted in most of the property being progressively managed for grazing and timber production over the last 60 years.

The forest is maintained at around 140 stems per hectare (> 10 cm DBH) by periodic silvicultural treatment (thinning), harvesting and fire. This allows sufficient light and moisture to allow a grassy understorey to be maintained under the forest canopy. Important to this strategy of multiple use is maintaining the highly productive areas with more fertile soils for pasture production alone. The forest is control burned on a 2 - 3 year cycle, depending on seasonal conditions, and the fire intensity is regulated by timing to manage regeneration of the timber species as well as Acacia regeneration and regrowth is kept to manageable levels. Occasionally the Acacia and eucalypt regrowth requires treating with herbicide when numbers get too prolific and impact on grazing and timber productivity values.

The forest has gradually been encouraged to regenerate back into the areas that were cleared in the past and these areas now support significant stands of high quality Spotted Gum. Anecdotal evidence by the Thomsons (observed growth from sapling to harvest) suggests the trees at this spacing (8 - 9 m, approx. 140 / ha for trees > 10 cm DBH) have an annual diameter growth increment of at least 1 cm which is consistent with well-managed Spotted Gum forest (*Henry 1960, Taylor and Annandale 2000*).

Salinity and Erosion

One of the main drainage lines of the property commences in the adjacent old dairy farm (now part of the property) which was totally cleared in the 1920s. The creek was originally a permanent water line with deep holes. In the 1940s, due to the nature of the sodic soils with its highly soluble clays, the banks started eroding and by 1960, after cyclonic flooding, the creek completely collapsed leaving a deep canyon. What water holes remained turned increasingly saline and scalding appeared on the low lying areas. An early decision to allow natural regeneration over large areas of the farm saw the forest gradually re-establish, causing the salt scalding to gradually disappear. The creek erosion still remains a problem that can only be ameliorated by expensive engineering works, however the erosion is slowed by maintaining tree and wattle cover. Any further gully erosion is allowed to regenerate to a heavy Acacia cover.

This is a graphic demonstration of the potential for severe erosion problems to develop with these soil types and the amelioration benefits of forest regrowth to salinity problems.

Forest Management

Annual harvests on the Thompson's property have averaged around 500 m³ over the last 10 years on a rotation interval of 15-30 years. Anecdotal observations by the Thompsens indicate that the forest growth rate is exceeding the rate of harvest. In this current harvest the total sawlog cut was 190.242 m³ and 43.013 m³ of landscape block. This equates to 10.569 m³/ha of the 28.58 m³/ha standing or approximately 37 % of estimated standing sawlog volume.

Criteria for tree removal is directed at harvesting trees that have reached their maximum economic value, are showing signs of defect or poor health and will decline prior to the next harvest or are suppressed and unlikely to develop to potential. In this way harvesting is used as a tool for stand improvement. Criteria include:

- Optimum product size,
- Declining tree health, usually assessed by crown condition,
- Defect such as a vertical dead limb or suspected decay from old wounds,
- Bad Mistletoe infestation,
- Suppressed trees indicated by crown shape and condition.

Trees are not marked for removal. However before a tree is harvested, its probable product range is considered, this may be a pole, girder, saw log or landscape block (Photo 2.). After a tree is cut, the log is examined and allocated to the correct product dump.



Photo 2. Base log, top log and salvage log cut from one tree

Forests Stands Suitable for Treatment

On this property only the higher quality areas for timber production are intensely managed. These areas are usually soil related and are indicated by the quality of the standing forest and forest type, ie, a predominance of Spotted Gum. Some areas are best suited to grazing and are consequently maintained with much lower tree cover. The areas managed for timber production are all regrowth forests and without management would develop high stocking levels resulting in very slow individual growth rates. Some criteria need to be formulated for this and the Thomson's have developed those listed below. Past work has demonstrated that not all forest are productive and like other enterprises,

investment in future growth needs to be targeted at those areas which will return the best profit.

Generally forests in need of treatment are made up of one of the following:

- Stands that require removal of suppressed and defective trees to release ‘advanced growth’ (20cm+ dbh) aiming to produce a rapid increase into merchantable size class by freeing them from immediate or overstory competition.
- Stands which require removal of suppressed and defective trees to activate the regeneration process or to speed regeneration into the ‘advanced growth’ stage.
- Stands which are overstocked with regeneration 6-10 m tall.

Linking Extension, Research and Policy Direction to the Champions

Private Native Forests have provided a minimum of half the processor’s hardwood timber resource for many years, however little is known about the extent and condition of that resource. Other than recent monitoring and growth measurement plots established by Private Forestry Southern Queensland (PFSQ) (8 years), no research into management impacts or growth data information has been available for the private resource. Assessing and evaluating long term management regimes such as the Thompson’s provide irrefutable evidence of the quality of the current stand, though uncorroborated from a scientific perspective. The sites are excellent to convince other landholders of the veracity of the regimes but require meaningful data collection on a range of tree growth, ground cover, products and environmental outcomes to affect the current negative attitude and policy direction of Governments to private native forest production.

In consideration of this PFSQ is not only maintaining its existing thinning trials and growth measurement plots but is establishing two new plot formats to acquire the required data to further the arguments in support of our management regimes, namely:

- Comparing ground cover response under a range of thinning regimes and tree density compared to an un-thinned forest and fully cleared land (Photo 3 and 4)
- Measuring the environmental impacts of managed private native forests against unmanaged forests, the plots measure:
 - Understorey floristic richness and ground cover
 - Mid-storey structure and tree regeneration
 - Soil erosion
 - Large woody debris
 - Biomass estimates as light and heavy fuels (tonnes/ha)
 - All trees >5 cm DBH considering tree health, crown condition and habitat potential



Photo 3. Grass cover and species mix plots on open grass land



Photo 4. Tree density, growth and ground cover plots within a thinned spotted gum forest

The sites are not only used for data collection but are also used as demonstration sites for field days and workshop training. These long term sites are imperative to form the basis of the positive argument for the environmental sustainability and productivity outcomes required by government.

Conclusion

Currently Queensland State Government Legislation and rhetoric does not align with the National Forest Policy Statement signed off by the State and Federal Governments. The Policy Statement will be reviewed in the near future and it is essential to gather enough data and evidence from the forests of the 'Champions' to prove where the industry needs to head in the next ten years. The management regimes developed by these champions need to be examined, analysed and promoted throughout the industry. The private Native Forest resource is very different to the State Forest resource and the management regimes need to be recognised for the outcomes they have achieved.

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