



NSW Forest Products Association

10 August 2014

Natural Resources Commission
GPO Box 4206,
Sydney, NSW, Australia, 2001
Email: nrc@nrc.nsw.gov.au

Dear Dr Keniry,

Re: Submission on Active and Adaptive Cypress Management in the Brigalow and Nandewar State Conservation Areas

Thank you for the opportunity to make a submission on the Natural Resources Commission (NRC) draft report.

The report is a very valuable contribution to our knowledge of Cypress management and the effort which has gone into producing it is highly commendable. The NSW Forest Products Association (NSW FPA) generally supports its findings and its recommendations.

The consideration of many aspects of Cypress ecology and silviculture within a single publication will mean that the final report is likely to become the unofficial compendium on Cypress management. For this reason alone it is important that it is of the highest possible standard.

In the submission which follows we offer some suggestions as to how you might further enhance the quality of the report. We also suggest the need for some additional content around prescribed fire and grazing which have been given less consideration than ecological thinning but are of equal importance.

After the report is finalised the real challenge will lie in the implementation of its recommendations. Our submission seeks to alert you to some of the potential pitfalls which may be avoided by the Government's careful management of the adaptive management planning process.

Yours sincerely,

Maree McCaskill
GENERAL MANAGER

A founding tenant for the management of Cypress in the Brigalow and Nandewar State Conservation Areas is that it is a product of a heavily modified landscape. The Cypress forests of today are very different to those which existed prior to European settlement. Large homogenous stands of dense even-aged White Cypress are unnatural and are generally recognised by ecologists as not supporting optimal biodiversity values.

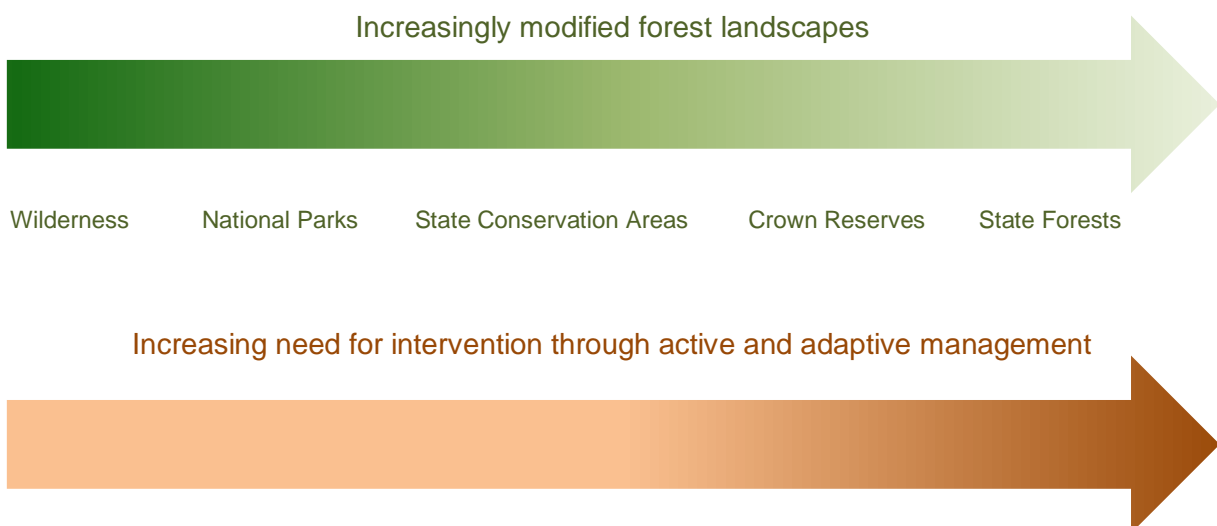
A New Paradigm

Over the last 20 years the prevailing paradigm has been that biodiversity conservation is best achieved through the creation of a world class system of conservation reserves and national parks. It may be argued that this aim has largely been achieved and that there is now a growing awareness of the need to look beyond tenure.

The case for active and adaptive forest management put forward by the NRC in its draft report is in many respects ground breaking work that shifts the focus away from tenure and onto achieving tangible on-ground conservation outcomes. The NRC’s thinking is in many respects a new conservation paradigm which must be embraced if we are to stem the trend of biodiversity decline. Its proposed approach sets the pathway for more active and adaptive management of forests through evidenced based knowledge.

Under the new conservation paradigm there is a much greater willingness to accept that forests are dynamic and that they are a product of their past management. Where forest landscapes have been heavily modified in the past then there is more likely to be a case for ongoing active intervention (refer figure 1)

Figure 1 - The case for human intervention through active and adaptive forest management



A review of the public submissions on the NRC’s original report reveals that there are some key stakeholders who are choosing to ignore the history of the White Cypress forests and as a consequence are not accepting of the need for active and adaptive management. If the need for active and adaptive management is to be embraced there is a need to work with these stakeholders to ensure that they are at least well informed.

An examination of the Office of Environment and Heritage (OEH) past record in relation to ecological thinning suggests that it is not aligned with the new thinking.

In 2005 the Brigalow decision saw the declaration of 350,000 hectares of new national parks and conservation reserves. As part of this decision the NSW government committed \$116 million to structural adjustment and the management of the newly created conservation reserve system. \$12 million of this fund was specifically allocated to ecological and silvicultural thinning of Cypress. This fund was allocated over a five year period and was to be shared between the then Forestry Commission of NSW (FCNSW) and OEH. At the end of the five year term OEH had not spend any money on ecological thinning. In contrast the FCNSW had spent its full entitlement and silviculturally treated 26,500 hectares.

Following the Red Gum decision in 2010 the government gave a directive to OEH to undertake ecological thinning trials. Four years on OEH have virtually nothing to show, apart from expenditure on administration and the development of a highly prescriptive guideline.

In early 2014 OEH policy makers were instructed by government to develop a self-assessment guide for thinning under the Native Vegetation Act. A review of the OEH draft reveals that it has taken a prescriptive approach and designed the guide in such a way that will ensure very few landholders ever qualify for self-assessment.

It is clear from OEH's record that it is unconvinced of the need for a new paradigm and that it is nervous about divesting control and decision making power to the local level. The continuation of this management model is not an appropriate framework for moving toward best management practice. For active and adaptive management to be adopted and understood, control must be relinquished from OEH's policy makers and State Conservation Area managers must be encouraged to utilise it. Consideration must also be given to some formal education and training for OEH staff to enable them to embrace the new paradigm.

The NRC has recommended that OEH engage independent experts to assist in the development of Adaptive Management Plans. A good ratio of independent experts to conservative policy thinkers will be essential if the NRC's recommendations are not to be blocked or diluted.

Building on Scientific Knowledge

For those who are experts in Cypress forestry and Cypress ecology the physiological and ecosystem responses to Cypress management are well understood. The knowledge of these people lies well beyond the notion of a mere hypothesis (NRC reference KP6.4 on pp 44).

It is accepted however that further experimentation is important for expanding the knowledge base of White Cypress management and to aid in broader awareness. It should not however be assumed that further experimentation will give rise to any major revelation. Rather, further experimentation will build on existing understanding and may give rise to some incremental improvements in future management practice.

The introduction of a cross tenure forest monitoring system would also go a long way toward providing more objective guidance for on ground decision making. Over the medium and longer term such a system would be highly effective in addressing knowledge gaps and assisting to reduce the need for the precautionary principle.

Within the Brigalow Bioregion the Forestry Corporation of NSW has already begun implementing a long term forest monitoring system. This system is currently limited to State forest but could be readily expanded to encompass the region’s conservation reserves and national parks.

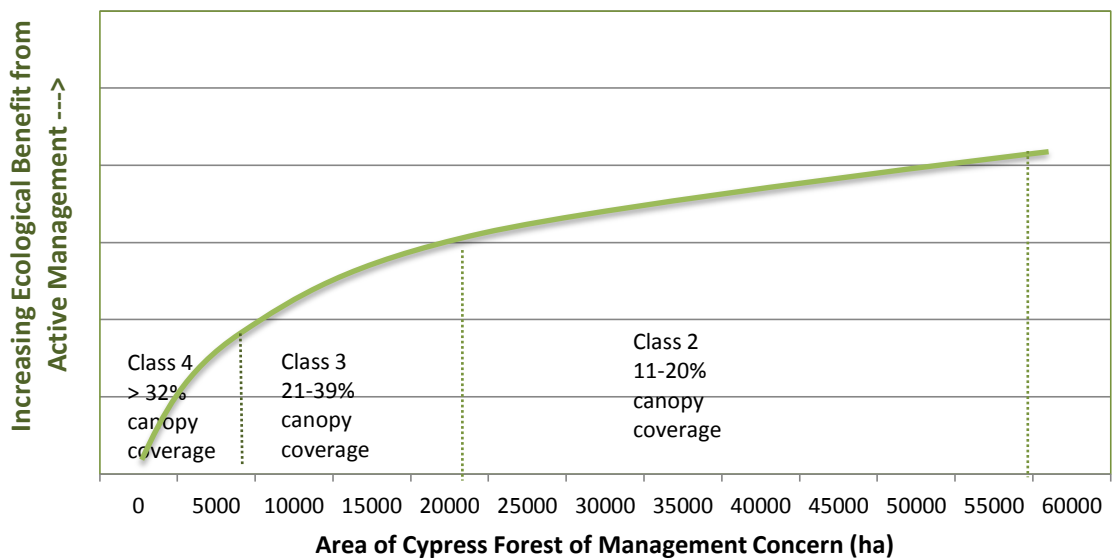
Cost-Benefit Analysis

In the NRC’s terms of reference it was asked to consider the cost-benefit of active and adaptive management. Some important cost-benefit concepts and principles need to be further fleshed out within the NRC’s final report.

The NRC recommended that a 57,145 hectare area be targeted for ecological thinning.

The first principle is that any White Cypress forest that is thinned within this area in accord with ecologically sound principles may be expected to accrue an ecological benefit. The only caveat will be that the benefits will be greater in more densely stocked stands and lower in stands that are less densely stocked, refer figure 2.

Figure 2 – Ecological benefit arising from active management of Cypress by canopy classes



It may be safely assumed that there will be a budget for ecological thinning within which State Conservation Area managers will be obliged to operate. This budget will be a major determinant of how much thinning can actually occur.

The second principle therefore should be to select the lowest possible cost operating model which still achieves a positive ecological outcome (e.g. the goods for services model). If this principle is not adhered to the scale and extent of the ecological benefits will be unnecessarily diminished.

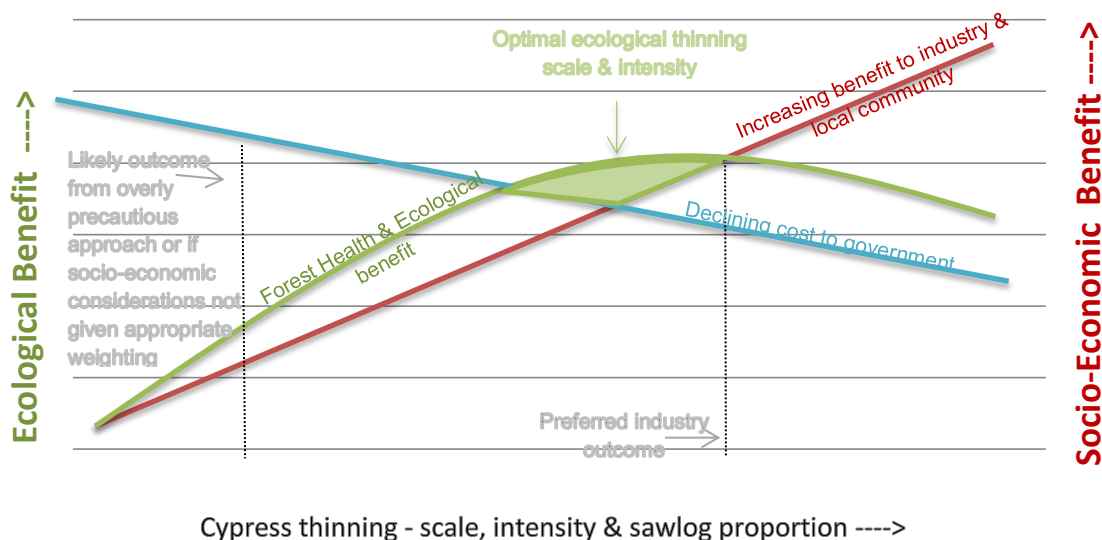
A third principle is to allocate as much money as practicable to on-ground activity. If this principle is not embraced there is a distinct risk that a disproportionate amount of expenditure will be directed to administration and prescriptive guidelines.

As detailed in the draft report the best way to keep costs low will be to engage private harvesting contractors to undertake the work. Where possible these contractors should be incentivised to produce saleable products that can offset the cost of harvesting non-commercial products. The proportion of thinnings which can be utilised as sawlogs will be an important determinant of the overall cost of their operations.

Another key determinant of cost will be the scale of work to be tendered. If a large amount of work is on offer, it will encourage greater investment on the part of the contractor. For example, if the area to be thinned was sufficient to employ a contractor full time for say three years he/she may be inclined to invest in specialised thinning equipment (ca. \$1.2M per fully equipped harvesting machine). If the contract was for a smaller area the contractor may choose to use second hand equipment that would be much less well equipped to thin small diameter stems.

Although the NRC has classified commercial interests as secondary they are inextricably linked to the desired environmental outcome. A fourth principle therefore is to carefully balance ecological costs and benefits with socio-economic costs and benefits. The theory behind this principle is illustrated in figure 3.

Figure 3 – Optimising ecological thinning outcomes by balancing environmental and socio-economic interests



Prescribed Fire and Grazing

Ecological thinning is a key tool for Cypress management. It cannot however independently solve the basic problem of woody thickening and homogenization over the longer term. Additional intervention is needed in the form of grazing and/or burning.

It has been suggested in the draft report that the current fire regimes are ecologically appropriate. If this were true then the current 'area of management concern' should be far less than what it actually is.

Current fire regimes are typified by long intervals between burning and moderate to high intensity prescribed burns. This pattern of burning is reinforcing the problem of woody thickening rather than solving it. It is also aiding the development of three dimensional continuous fuels that cannot be ignited under mild conditions but explode into firestorms under severe conditions, see Jurskis & Underwood (2013).

Lack of course woody debris should not be seen as an 'environmental problem' that may be used to justify delay in the introduction of more appropriate prescribed fire management practices. This statement is made on the understanding that woody debris has never been an important ecological resource because ancient Aboriginal burning practices never let it accumulate (for cited references see the Institute of Foresters of Australia (IFA) public submission).

Reference

Jurskis, V. & Underwood, R (2013) Human Fires and Wildfires on Sydney Sandstones: History informs management. *Fire Ecology* Volume 9, Issue 3, 2013