

Forest Landscape Aesthetics

Lessons for Australia's Plantations from the Pacific Northwest



BACKGROUND

Modern plantation landscapes in Australia are very utilitarian, with planting location and extent largely based around site quality, land availability and operational feasibility. Pre 1980's plantations were established at a modest rate on land cleared of native vegetation on sites not desired for agriculture. However in the 1990's government policy ignited a rapid expansion of private plantation forests through the 1997 Plantations 2020 Vision, a scheme to treble Australia's plantation resource to three million hectares by the year 2020. The following rapid expansion of plantations was unprecedented, peaking near 140,000 hectares annually in 2000. The majority of this expansion was of hardwood species (notably *Eucalyptus globulus* or 'blue gums') in short rotations for the woodchip export market. As native vegetation clearing laws were tightened, most of the new expansion occurred in rural areas on land previously used for pasture and agriculture.

This unprecedented rate of expansion was welcomed with mixed emotions by rural communities. Perception and socio-economic studies were undertaken for many communities in key plantation regions, confirming a range of attitudes towards plantations, but tending towards negative, especially for the recent blue gum expansion (Schirmer et al, 2008; Williams, 2008a, 2008b, 2008c; Williams et al, 2003). These studies have revealed that plantations are not viewed as just another form of agricultural production, they are often viewed disproportionately negative to the amount of land use change attributed to plantations regionally. This is a concern to the plantation industry as expansion efforts will be easier and more beneficial to all stakeholders if the community is supportive of further expansion.

INTRODUCTION

This project explores if aesthetics management is a worthy preoccupation for commercial plantation managers in Australia to use as a tool to help gain community support. The value of aesthetics management has been recognized by many international forest managers through aesthetics management programs. There is overarching agreement that landscape preferences and acceptability for the average person are significantly influenced by an emotional and intuitive aesthetic response, partly derived from visual information (Ribe, 2009; Parsons and Daniel 2002). Unfortunately, aesthetic value is often overlooked until public opinion reaches the tipping point at which a management practice becomes unacceptable and business-as-usual is no longer a viable option.

Information was gathered for this project from a series of conversations, field visits and interviews with professionals involved in forest and aesthetics management throughout the USA and Australia. The report investigates the drivers and effectiveness of aesthetics management to influence social acceptability of the forest industry, with a focus on the Pacific Northwest of North America (PNW).

The outputs from the project were:
 • **A report:** *Visual Landscape Management for Australia's Plantations: Insights from North America*. A document explaining the importance of aesthetics to plantation managers by drawing on experiences from North America.
 • **A guide:** *"Seeing is Believing!" Visual Landscape Management for Australia's Plantations: Justification & Application for Planners, Managers and Operators*. A document providing practical assistance for land managers who would like to begin incorporating aesthetics into planning.

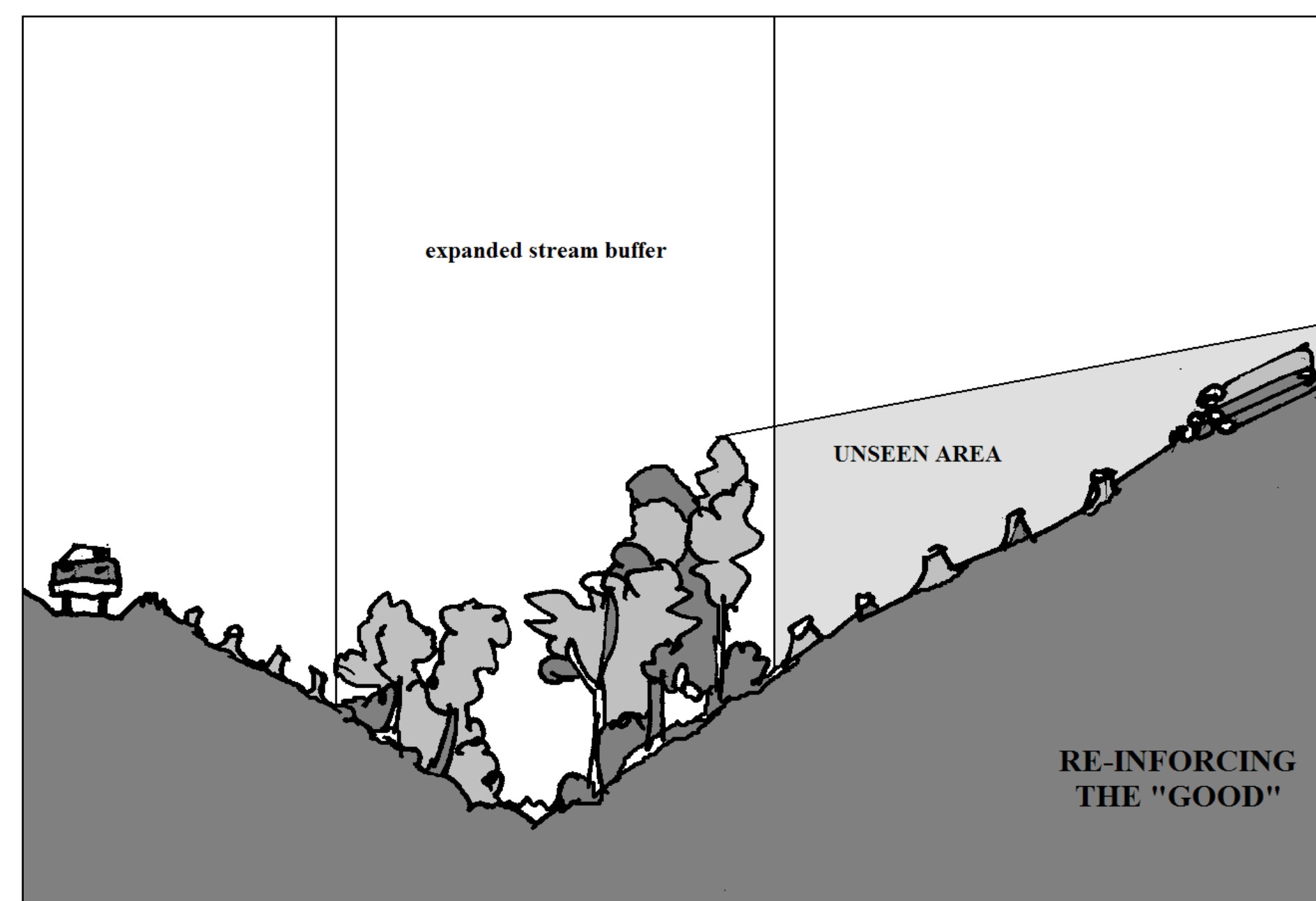
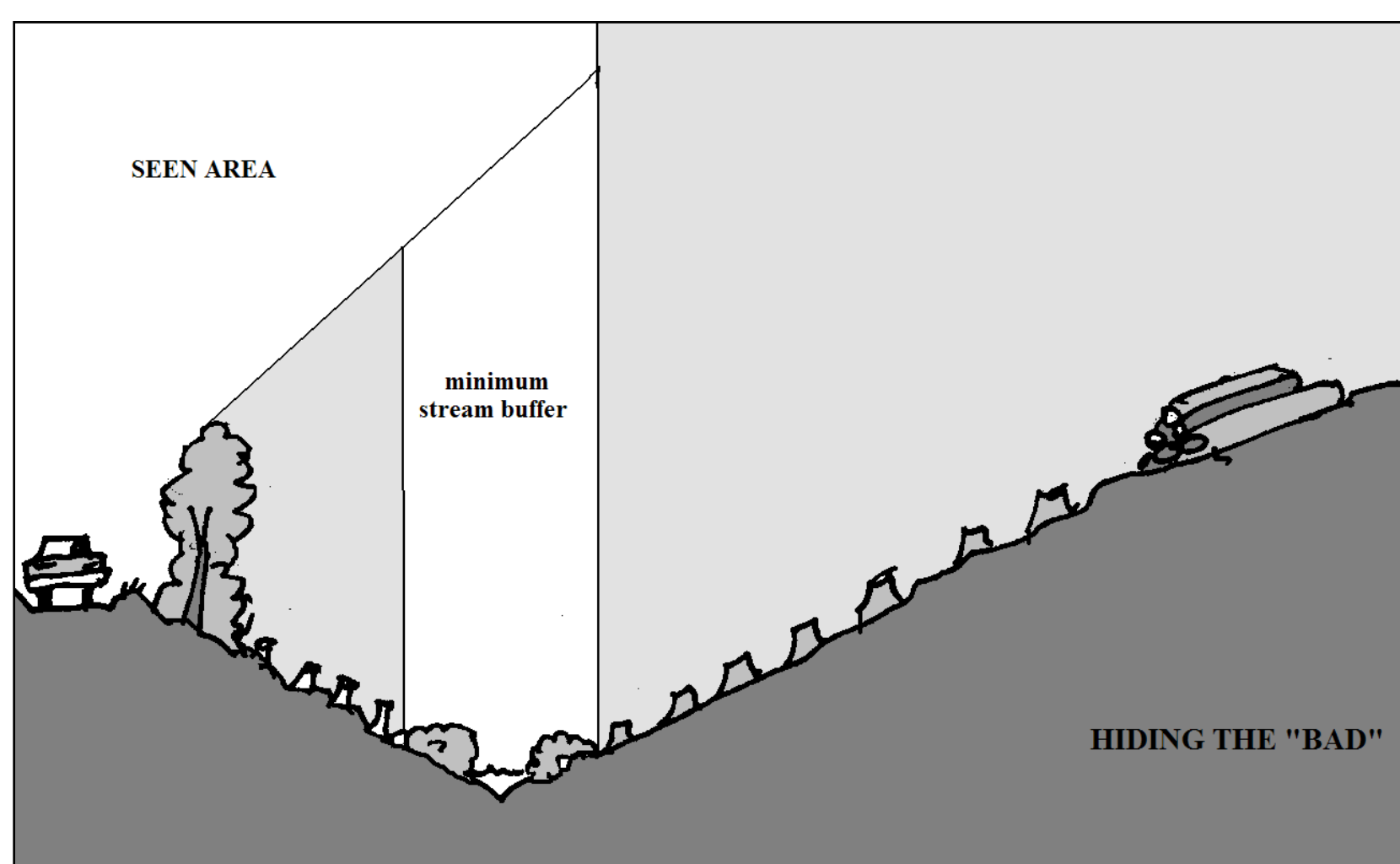
FINDINGS IN THE PACIFIC NORTHWEST

The PNW was an appropriate region for this project due to its turbulent history surrounding public perceptions and forest management. Increasing regulation stemming from conflict instigated by the appearance of clear-fell harvest has been the main driver behind adoption of aesthetics management by public and private forest managers in the USA (Ribe, 2009). In the 1960's timber harvest levels on USA public forestland increased to meet consumer demand, and although they were operating under a multiple-use management objective, it soon became evident that the level of harvest was impacting other forest values, including aesthetics. In 1969 the National Environmental Policy Act was introduced, requiring federal land managers to consider all resource values in land management decisions (USDA, 1995). This included mandates for agencies to develop methods for scenery assessment, to be documented with all other values in an Environmental Impact Statement (EIS).

Many early EIS reports were condemned by judges because of their insufficient analysis of aesthetic values which left harvest proposals more vulnerable to litigation. So in 1970 the US Forest Service to launched its official Visual Management System to address the need for rigorous landscape assessment and improved scenery in forest management (USDA, 1995). The 1970's document had good intentions, but relied too heavily on "window dressing" and screening harvest operations. This further fuelled distrust as the public felt foresters were just getting better at hiding harvests in an act of deception.

In the 1990's the full consequence of ignoring public perceptions reached a critical point on public lands. As the full visual weight of the unsustainably high harvest levels of previous years became evident, the public relations situation reached boiling point. 'Clear cuts as far as the eye could see' became the irrefutable image of industrial forestry. In fact, the ability of environmental lobby groups to slay the forest industry with deeply emotional marketing (often using forestry's own images to trigger an aesthetic and emotional reaction), and forestry's faith in rational science as a response, would be the Achilles heel of the USA forest industry over the following decades. For instance, the widely publicized coffee table book entitled "*Clearcut: The tragedy of industrial forestry*" was launched by the Sierra Club in 1993 during the war on industrial forest management at the height of the clear-cutting controversy (Sierra Club, 1993). The layout of the book was simple yet undeniably successful: 250+ oversized photos of clear-cuts, and another 50 or so of supporting poems and essays. The 1994 response issued by the American Forest & Paper Association entitled "*Closer Look: An on-the-ground investigation of the Sierra Club's book, Clearcut*" uses science and silviculture in an embarrassingly insufficient 30 page response (AF&PA, 1994). Environmental groups were effectively using the industry's own images as the final nail in the coffin that would be widespread industrial clear-felling on federal lands.

Images taken from the guidebook to help demonstrate practical measures managers and planners can take to incorporate aesthetics into forest management and planning.



However, the legal standing of the 'ugly clear-cut' under NEPA or the NFMA was not strong enough to bring about the change required to appease the public and environmental stakeholders. So through the Endangered Species Act (ESA), the listing of the northwest spotted owl (an old growth indicator species) effectively brought timber harvest on public lands in the PNW to a virtual standstill in 1993. The subsequent decade would see timber harvest levels on 9.7 million hectares of public lands under the jurisdiction of the 1994 North West Forest Plan, drop by nearly 94% due to continued litigation and lack of political support.

Following the adoption of the NWFP, the Visual Management System was revised to better reflected the new ecological management goal of the Forest Service. The key improvement of the new Scenery Management System was the inclusion of constituent analysis to help encourage and facilitate public consultation and interdisciplinary teams (USDA, 1995). The approach, asking local communities and other stakeholders to express what they valued in the landscape (be it visual or more intangible), has been widely regarded as a success in an otherwise cumbersome document which was difficult to implement in the field. The follow-up to feedback on the Scenery Management System, has been the unpublished Appendix J: Recommended SMS Refinements (USDA, 2007).

Private forest managers in Oregon and Washington also required to consider forest aesthetics as mandated in state forest practices legislation. As urban regions expanded and remote forest resources began to deplete, private forest companies were finding their harvest practices under increasing scrutiny by the public in popular viewing areas. The 1971 Oregon Forest Practices Act (FPA) was initiated collaboratively with industry as a response to social and political pressure to help promote sustainable forest practices following a period of heavy timber harvest which was reflecting poorly on the entire local industry.

Under the current Oregon FPA, forest managers are required to address specific rules regarding maximum harvest unit size, green-up growth periods between adjacent harvest units, specific retention requirements along state designated scenic highways, and training for planners and managers in forest aesthetics (ODF, 1998). Many of the requirements under the FPA were very prescriptive which did create some operational difficulties in the field, and it was felt some of the measures actually worked against forest aesthetics when they resulted in large wind-thrown areas and screening of scenic views. The inclusion of aesthetics in the FPA launched an outreach effort by Oregon State University and Oregon Department of Forestry to train forest planners and harvest operators about the importance of forest aesthetics. The effort was considered a success by organizers for raising the awareness of forest workers regarding impacts to aesthetic values by presenting operationally feasible suggestions.

Voluntary certification under the Sustainable Forestry Initiative (SFI) is a key driver behind aesthetics management among private forest managers in North America. The SFI program is unique among certification schemes internationally as it contains specific indicators concerning aesthetics in forest operations (Sheppard et al, 2004). This means private companies not otherwise required under state legislation, are voluntarily bound to managing for aesthetics to maintain market access. SFI requirements around visual aesthetics include maintaining an average harvest unit size, an adjacency and green-up period between harvest units, harvest slash management, and training for employees in forest aesthetics (SFI, 2004). Some of the SFI aesthetic criteria are to be applied uniformly to all the forest areas, regardless of public visibility. This has been cited as an issue by many who manage large tracts of forestland in remote and rarely accessed regions, such as the interior of Canada and remote parts of many southern states in the USA (SFI, 2008).

Few (if any) economic comparisons have been published on additional costs specifically related to the aesthetics criteria of SFI. There have been some studies covering restrictions to harvest unit area, adjacency, and green-up requirements. One study in a south eastern USA pine plantation shows a reduction of around 0.7% of Net Present Value when a 21,000 hectare plantation is constrained to a maximum 60 hectare harvest unit for each one year of green-up required between immediately adjacent compartments (Boston and Bettinger, 2001). This was mostly attributed to the reduction in sawlog volume and increase in pulpwood resulting from early harvest of some compartments to work around adjacency requirements.

Regardless of the associated costs, SFI's inclusion of aesthetics has been widely accepted by the forest industry, which may be one indicator of its effectiveness. Comments from forest managers interviewed found a decrease in complaints in recent times regarding visuals, and a greater awareness by forest industry employees on the importance of aesthetics generally. It was found that most SFI certified companies had a system in place to identify visually sensitive areas, as well as a training resource for new employees, usually in the form of a guidebook, presentation or video. These have been produced through consultation with landscape architects, or by local educational or industry institutions (Bradley, 1996; FRA, 1998; Garland, 1998). In a public review of the 2005-2009 SFI Standard in preparation for the 2010-2014 SFI Standard, it was generally agreed the aesthetics criteria should remain, but with a few changes to allow more flexibility on remote sites. This may be one indication that the industry does not feel overwhelmingly burdened by aesthetics under voluntary programs which are generally less prescriptive than state legislation such as the Oregon FPA.

Urban expansion and rural migration also played a role in restricting forest operations for aesthetic reasons in North America. Conversion of working forestland to non-forest uses, such as rural residential development, is emerging as a big concern in the PNW. As public pressure continues to raise the bar (and the costs) of maintaining social license, the profitability of managing forests for timber is decreasing locally. This in turn encourages alternative land use as a source of income for forestland owners (Donegan, 2007). In the Puget Sound region of Washington, forest landowners are selling developable working forests within commuting distance to the greater Seattle region, providing competitive investor returns through a process commonly referred to as higher and better use (HBU). Some forest managers are then purchasing other timberlands further afield that are more profitable and less likely to be subject to scrutiny from a large urban population which holds different forest values to traditional rural forestland communities.

APPLYING THIS TO AUSTRALIA

In light of discussions in the PNW, it can be seen that aesthetic management is important for plantation landscapes in Australia because perceptions of management remain a considerable problem in the face of industry expansion which may restrict operations if preventative action is not taken.

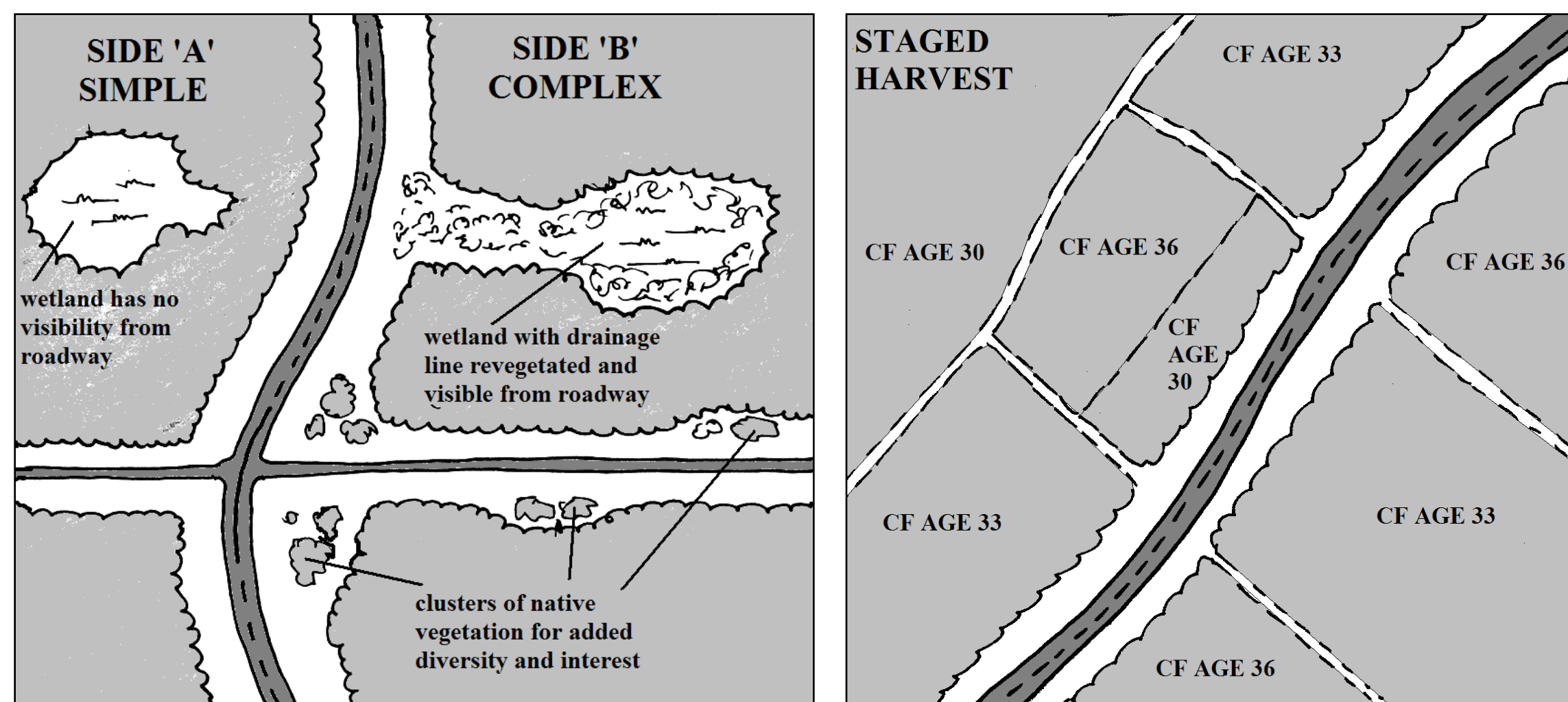
Research in Australia concludes that plantations are not just another crop in the eyes of many. New plantations tend to be located in the most accessible and prominent landscapes when expansion occurs on cleared farmland, making them highly visible to a wider audience. The vertical structure of a plantation also tends to enclose and restrict views, and contrasts drastically with previous and adjacent land uses (Bell and Apostol, 2008). The dominance of plantations in the landscape means they tend to be subject to more intense public scrutiny. When plantations are compared to other rural land uses including dairy, cropping, pasture and rural residential, a clear distinction is made regarding their social acceptability.

Studies also show that aesthetic preference and acceptability of management between forest managers and the average (or non-affiliated) member of the public, differ significantly. Foresters generally have a higher tolerance for obvious signs of forestland management, whereas those non-affiliated members of the public and tourists tend to rely more on visuals and emotional aesthetic response to explain their preferences. There is evidence to suggest that the emotional and aesthetic response to landscape evaluation is suppressed through training. It is also suggested industrial training makes foresters able to see beauty in timber plantations. This reveals a fundamental divergence of values which will result in conflict when plantation managers undertake planning without input from an agency that can express wider aesthetic landscape values more akin to the general public.

Plantations are also perceived differently by local governments through plantation specific regulations in planning provisions which are not placed on other rural land uses. Many local governments have tried to 'control' plantation development by implementing policies to address community concerns regarding impacts of plantation expansion on infrastructure, scenic amenity, recreation and tourism potential. In the 2008 Progress Report compiled by the 2020 Vision Partners, irregularities in planning and approval among local governments was listed as a major impediment to future plantation investment. Previous actions to address this have largely removed power from local governments, limiting their ability to influence plantation planning within their municipality (Thompson, 2008). This is of big concern to those involved in landscape planning interviewed in Australia, and a major impediment to future incorporation of aesthetics management into plantations.

Under current legislation the balance of power for directing local plantation expansion and operations is determined by state timber production codes of practice. There is no binding recognition of visual landscape values and general aesthetics in any state timber production code for plantations. If aesthetic or landscape values are mentioned in these codes relating to plantations, it is as a guideline (a "should") rather than a mandatory (a "must") action. Any recognition of landscape aesthetic value is up to the discretion of the forest manager at time of planning, with little room for injunction by a third party unless local planning provisions are in effect.

Changing plantation ownership further magnifies diverging views between plantation managers and other stakeholders regarding landscape values in Australia. Beginning in the mid 1990's, state plantation assets began moving into the private sector or a more business directed state management model. State forest management was largely divided into a plantation based, commodity driven sector, and a multiple-use/conservation native forest sector. This essentially limits public control of plantation management activities to what is designated under codes of practice developed and enforced by each state. With visual aesthetics poorly represented in these codes, and management transitioning into MIS, superannuation and investment companies, there is little incentive to manage for landscape aesthetics, largely considered a public good with no direct financial return.



IDENTIFY OPPORTUNITIES:

Viewing area from important rest stop on major hwy

