

Trees for scenic quality management

Introduction

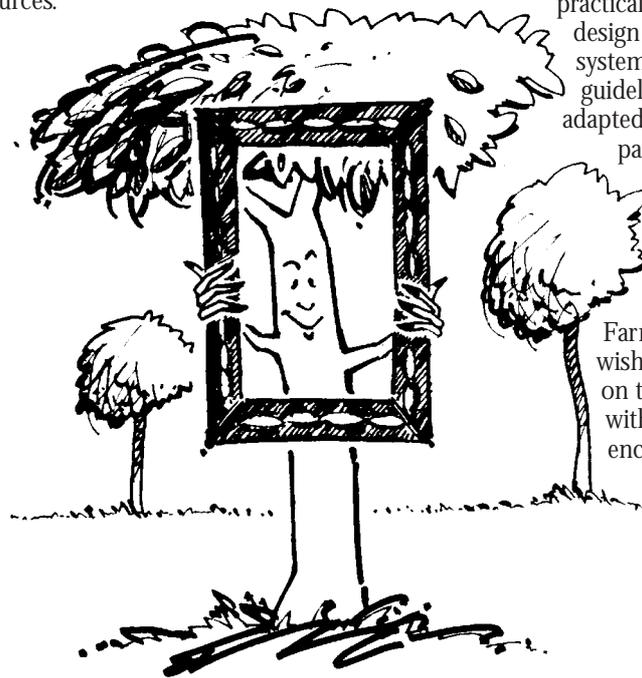
Agroforestry systems are fast becoming major features of Australian rural landscapes. Their type and placement in the landscape can significantly improve a farm or catchment's scenic value or, conversely, degrade it.

Often, scenic improvements can only be achieved if suitable landscape designing is integrated into the overall agroforestry planning process. Failure to do this may cause unacceptable levels of social, environmental and economic impact whilst reducing the potential multiple use value of agroforestry resources.

From the outset, it should be noted that the management of scenic quality on farms must follow sound ecological design principles and is usually site specific. Whilst farm landscapes can be appreciated as large 'gardens' they should not be designed to significantly compromise conservation requirements of the wider catchment environment. Often, the aesthetic character of farms can be simply and creatively managed as a designed by-product of tree planting for wildlife and soil conservation, salinity control, shelter, fodder, and windbreak and timber production requirements.

The aim of this chapter is to provide a general, practical background to the landscape design requirements of agroforestry systems. The design principles and guidelines presented have been adapted from various works, in particular Revell (1994), Van Pelt (1980) and Crowe (1978). Details of these publications and others are provided as further reading at the end of the chapter.

Farmers and land managers who wish to obtain more information on this topic and who are working within sensitive landscapes are encouraged to seek further assistance from qualified landscape architects, environmental designers and/or land conservation agencies working in your farming region.



The what, why, how and when of scenic quality design

Here are the most commonly asked questions (and the answers) to the needs and practices of scenic quality management of agroforestry landscapes.

What is scenic quality management?

Scenic quality management is a positive and integral component of agroforestry planning and management processes. Its prime goal is to ensure that all agroforestry uses and activities are planned and implemented so as to complement rather than detract from the inherent visual qualities of the environments in which they occur.

Why should we design for scenic values in agroforestry management?

The Australian countryside has a wide range of visual qualities. As a part of multiple resource land management farmers are often committed to sensitively managing such landscape scenic qualities. Some areas are scenically outstanding, and there are others that are severely degraded and are major visual blights on the landscape. When tree planting areas are selected, planned and designed, established and harvested, such landscape scenic qualities should be taken into account. With proper planning, we can visually protect, maintain, or enhance natural or cultural landscapes with tree plantations.

When is a farm landscape scenic?

Scenic qualities vary from district to district depending upon such factors as landform, vegetation, waterform and landuse patterns. As a general rule, scenic quality increases with:

- greater degrees of uniqueness in rock outcropping, water and other natural features;
- greater degrees of naturalness and lesser degrees of human alteration;
- greater degrees of relative topographic relief and ruggedness;



Scenic agroforestry setting with a mixture of exotic pine and native vegetation cover

- greater degrees of vegetation diversity and general landscape variety;
- greater degrees of naturally appearing transitions between open agricultural landuses and adjacent forested land; and
- greater degrees of vegetation mixture (species, age, height and/or density) and edge diversity in plantations.

Landscape appreciation should also consider the position and numbers of viewers – both public and private. Generally speaking, scenic views from major travel routes or look-out areas are more visually sensitive than from the ‘back-blocks’. However, local communities or individual farmers may insist that their landscapes be as sensitively managed as the more populated and visited areas of the countryside.

Classifying farm areas into ‘scenic importance zones’ and whether they are seen in the foreground, middleground or background from prime viewing locations will help determine management priorities and attention to planting design detail.

When does a landscape become scenically degraded?

Scenic degradation is usually due to changes in landscape naturalness. Examples include over-clearing, excessive planting, over-grazing, soil erosion, poor paddock design, the construction of buildings, roads, dams and other structures and the impacts associated with mining, harvesting, fire and disease.

The scenic significance of tree planting and management

The following aspects of agroforestry need to be considered for their scenic significance:

- plantation planning – location, scale, species selection, age class, etc;
- planting boundary definition – are plantation boundaries straight or curvilinear?
- fire protection – are firebreaks straight, curvilinear, mown, slashed, or bare-earthed? Do they become major focal points?
- spraying – if possible, select a time when vegetation colour contrasts are minimal;
- thinning and subsequent vegetation debris management; and
- harvesting – location, scale and shape of harvest area. Gaps should reflect the open space patterns of the surrounding landscape. If necessary, use harvest sequencing techniques to avoid major vegetation cover contrasts.

Major landscape design principles and guidelines to consider

Design principles and guidelines for background scale landscapes

The scale of the plantation should reflect the scale of the surrounding landscape. For example, large

open valley type landscapes can accommodate a greater area of plantation establishment and harvest area than smaller ones. Scale impacts can be minimised by separating plantation areas with existing vegetation or by creating cells of varying age classes.

Patterns of the plantation areas should reflect or imitate surrounding landuse patterns.

Plantation design should, where possible, follow existing landscape lines – treeline, roadline, fenceline, creekline, ridgeline, etc. The delineation of the plantation establishment or harvest area should respect these lines. Avoid reinforcing lines if they are incongruous with the surrounding landscape. For example, in a landscape setting which predominantly exhibits free-flowing lines, avoid breaking skylines and reinforcing property and fencelines that are geometric in nature.

Plantation access roads and firebreaks should be of low visual impact, preferably screened, with alignments following contours, existing road patterns or vegetation lines as opposed to artificial property boundaries.

In visually sensitive areas, potential plantation impacts can be reduced by enhancing and extending existing vegetation areas with similar species plantings. These plantings could be protected from future harvesting, optimising wildlife, soil, water and recreation values. If harvested, the sequence and timing of cut should be separate from the main plantation harvest schedule.

Design principles and guidelines for middleground scale landscapes

At this scale, middleground areas dominate the landscape. The local appreciation of ridges, valleys and plains is offered. In comparison to background scale plantation areas, the whole plantation is unlikely to be viewed at one time. Perception of detail increases, colour and texture replaces shape,

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and pattern and line become the major visual or scenic elements.

The outline of the plantation area at this scale should be defined by gullies, spurs and ridges and borrow from the lines offered by the surrounding landscape. Plantation areas should be defined as individual units broken up by ridges, drainage lines and dominant landuse patterns.

Avoid over-reinforcing areas of maximum visual contrast such as treelines, skylines, vegetation changes, etc. Ensure that such contrasts are reflecting other contrasts (if present) in the surrounding landscape. For example, in 'natural' settings, edges of vegetation change can be softened by sympathetic boundary lines, gradual changes in density or age class across the interface or with the use of species of different form, colour and texture.

For skyline edges, maintain ridges with species typically dominant within the surrounding landscape. For example, avoid pines in a hardwood forest setting. If pines are necessary then locate them below the skyline and vary age class and planting density where possible. The harvesting of ridge or skyline plantation areas should be sequenced to reduce the extent of clearing disturbance visible at any one time or to enable adjoining areas to be regenerated successfully.

The upper margins of any planted area are prominent components of the planting design. In settings of a strong 'natural' character these margins should rise and point up in the valleys and depressions and fall or point down on the spurs. The upper margin should be located so that any open ground above the planting area is of sufficient size to reflect the scale of the hill cap, knoll or ridge.

The visual impacts of powerlines, transmission towers and corridors can be reduced by creating a series of irregular planting spaces. Trees can be

planted closer to powerlines opposite pylons or towers than in mid-span, while smaller trees and shrubs can be grown closer still.

Design principles and guidelines for foreground scale landscapes

At this scale, foreground areas dominate the landscape. All perception of the background and middleground landscapes is lost. The microscale dominates with occasional glimpses extending to the middle and background areas. The observer is virtually in the plantation or revegetated landscape. There is total perception of details of individual trees, their colours and textures, their diversity or uniformity. Visual change to the plantation is most easily detected at this scale. These plantation landscapes require a high degree of scenic quality management throughout all stages of the plantation program.

Follow the visual expression of the surrounding foreground landscape. Avoid contrasts to these details. For example, in a uniform, colourful patchwork, geometric, foreground agricultural landscape setting the visual character of an exotic, regimented-looking belt of blue gums or pines could enhance the local landscape.

In 'natural', non-uniform settings encourage diversity through the physical separation of plantation sections or compartments. These areas may differ with age, species mix, planting density or thinning regime.

Maintaining visual penetration through the plantation can enhance visual quality of the plantation landscape. This can be achieved by an open or clumped planting density or through thinning techniques. In 'naturally' appearing landscape settings, thinning regimes should be non-uniform. Conversely, in geometric or culturally dominated landscapes thinning regimes should be regular and uniform.

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Access tracks and firebreaks should be designed and constructed with low visual impact.

Within sensitive areas, avoid visual impacts created by plantation debris or slashed material. Reduce impacts by screening, burning, mulching or scattering debris away from seen areas.

In visually sensitive areas, harvest areas should be of minimal size in relation to the overall plantation landscape. Felled areas should not dominate over unfelled areas.

In visually sensitive areas, employ harvest sequencing techniques. Near-roadside vegetation, for example, can reduce the visual impacts of adjoining harvest areas. Final harvesting of near-roadside vegetation should take place after surrounding coupe areas have been regenerated or replanted and have grown to become a strong visual element. Near-roadside vegetation could also be treated as multi-aged stands and harvested sequentially within themselves.

The essential steps in the scenic quality design of agroforestry landscapes

In summary, the major steps to follow in the scenic quality design process are:

- observe the plantation landscape setting. Take some time to see and appreciate the visual character of the surrounding landscape. What are the local, district or regional scenic attributes or features of these landscapes? Try mapping these features on suitably scaled topographic maps and aerial photographs. Try to identify any patterns in landform, hydrography or vegetation cover;
- ask yourself – will the proposed tree planting maintain, enhance or have a negative visual impact on these natural or cultural landscape features? How will the planting area look in 5, 15, or 30 years time? What impacts will the plantation have on major private or public views and vistas of the landscape during all establishment and harvest periods?
- are there any other local community landscape design ideas and aspirations that should be respected?
- how then can the planting area be planned and designed to accommodate such scenic quality considerations?
- refer to guidelines and principles noted above;
- prepare preliminary planting design plans and prescriptions to suit integrated agroforestry management objectives and share these with neighbouring property owners/residents; and
- in scenically sensitive areas, maintain a landscape evaluation and monitoring program. Take periodic photographs and monitor public and private feedback.

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Reference / Further reading

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Capturing benefits in addition to scenic qualities

If you have chosen to plant trees to enhance the scenic beauty of the farm, nature conservation benefits are the easiest next benefit to capture. With careful design, shelter, timber and soil conservation benefits can also be captured.

Other benefits to capture	Opportunity	Conflict
Wood	The need to maintain and improve scenic quality may require alternative and creative silvicultural and harvesting practices but these need not affect economic output	Visual impacts of standard silvicultural prescriptions and harvest operations can lower scenic quality
Salinity and waterlogging	Appropriate tree species planted around discharge areas for management of scenic quality could help stabilise these areas	Poor tree growth and potential death in discharge areas will reduce scenic quality
Soil conservation	Good planting locations for the purpose of scenic quality often coincide with good locations for soil conservation (vegetation along valleys, ridgelines, streamlines and around water bodies and discharge areas)	A desire to locate tree planting in harmony with natural landscapes may be in conflict with areas most in need of conservation management
Shade and shelter	Planting locations for scenic quality are likely to be compatible with locations requiring shelter	A need to locate tree planting in harmony with the natural landscape may be in conflict with optimal windbreak position and layout
Fodder	With careful choice of location and layout, fodder species could be used to improve the scenic quality of the farm	Exotic and/or heavily grazed stands can be visually obtrusive in the landscape, especially in foreground areas
Nature conservation	Planting for scenic beauty gives the opportunity to add to, protect and link remnant vegetation	There is no conflict between planting for nature conservation and scenic beauty