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The Meaning and Intent of Scenic Amenity and Related Terms for Urban and Rural Planning

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for **Gold Coast City Council**

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Cover photograph: Surfers Paradise *(Robert Preston)*

1. Introduction

City and town planners in Australia and across the globe have always recognised that the importance of landscape and building aesthetics in the design of towns, cities and the rural countryside. In many cases, the aesthetics, or the visual appeal of the city design is given equal consideration with functional matters such as transport, sewerage, water supply, leisure and recreation opportunities, and the protection of environmental and natural features.

One of the best known Australian examples of aesthetics in urban planning is the design of Canberra by Walter Burleigh Griffin. The winning design of Canberra by Griffin integrated public buildings and transport into the natural landscape features of the area, enhanced by an artificial lake and gardens. Burleigh Griffin was greatly influenced by traditional about the gentle integration of 'town' and 'country' elements espoused by English town planner Ebenezer Howard (1850 - 1928), who is said to have been influential in the uptake of 'green belts' as a key ingredient of city plans.

In contrast to cities founded on traditional town-country principles, the shape of many modern coastal cities has evolved in response to the magnetic appeal of the ocean and people's desire to capture this experience from high-rise buildings for the enjoyment of visitors, new residents and business. Coastal cities such as Vancouver, Seattle, Sydney, and the Gold Coast have tremendous appeal to the tourism and commercial sectors because of the commanding views of the ocean they offer.

Real estate prices provide an illustration of the drawing power of ocean views. For example, research on the influence of property prices in New Zealand indicates that properties with a full view of the ocean demand an average premium of 59% for waterfront views. Mountain views also provide a premium of approximately 9% (Bourassa, Hoseli et al. 2003). It is possible that these estimates are conservative given the demand for ocean-front real estate on the Gold Coast.

In some cases, the importance of ocean, river and mountain views to the city's image and tourism industry have been recognised by the introduction of special policies and regulations to ensure these features continue to be recognisable as part of the city's key assets. For example, the Vancouver City Council introduced view protection guidelines in 1989 which protect Visual Corridors to surrounding mountains, the city skyline and surrounding water bodies.

Tourism and Strategic Plans by the Gold Coast City Council clearly recognise and showcase the scenic attractions of the coast and the hinterland. For example, the web site of the City Council proclaims: *"Famous for its sun, surf and sand, Gold Coast City stretches along 57 kilometres of coastline. Beyond our beautiful beaches, is vast rainforest hinterland with breathtaking scenery - all a short drive from our regional centres."*

The importance of Scenic Amenity to the quality of life and prosperity of the region is also recognised by the South East Queensland Regional Plan, which identifies Scenic Amenity as one of the values to be identified and protected through Local Growth Management Strategies (Office of Urban Management 2006) and other processes as rural precinct planning (Office of Urban Management 2005).

While the Gold Coast is clearly a beautiful place, and it is the intent of governments to protect its scenic resources, there are opportunities for explicit recognition of these value and intent through adoption of refined assessment procedures and planning policies.

One of the first steps towards adoption of improved assessment procedures and planning policies would be adoption of consistent operational definitions of aesthetic and related terms in order to provide greater clarity and efficiency in the measurement, management, and protection of scenic resources.

This report examines the meaning and intent of Scenic Amenity and related terms as used in the SEQ Regional Plan (Office of Urban Management 2005) with special reference to their possible application for the development of local growth management strategies by the Gold Coast City Council.

2. Variables that affect meaning and interpretation

2.1. Scope of values

Some of the greatest challenges in Scenic Amenity and related assessments is the scope of values or characteristics that are included in the appraisal. In some cases it is possible to conduct a purely visual assessment, and in other cases, factors such as history, heritage and association with place are also important considerations. The range of values that considered, and the language used to describe them

will influence the precision of interpretation and ability to communicate with others about the appraisal.

Typically, the scope of values may include one or several of the following factors:

- Visual characteristics. This concerns those things that can be seen by the eye and their description, without an evaluation or judgement about whether the objects are pleasant or not. Visual characteristics are the attributes that someone might notice when looking out from a window. For example a person might say “There’s the beach!” without necessarily commenting on whether the beach was pleasant to look at.
- Visual appraisal. A visual appraisal is an evaluation by a person whether the objects a person can see at are pleasing to the eye. A person might say “that scene is just beautiful” or “that rubbish tip is an eyesore”. Their assessment can be made without a thorough understanding of the history of the view or objects they can see.
- Sounds and smell. Aesthetics in contemporary landscape assessment usually includes consideration of visual and non visual sensory characteristics and appraisals. Noise and smell are common considerations. A person might say “Its not very beautiful around here, but isn’t it nice to be somewhere quiet”
- Historical or heritage values. Formally or informally recognised historical and cultural associations with a place are often recognised in some assessments. A place may be of importance because of its antiquity or have significance as representing a particular era. In some cases people’s historical associations can be personal and individual, such as the place someone was married.
- Sense of place. Some places are important to people because they help with orientation and build familiarity and a sense of belonging. These places may nor may not be visually pleasing, and may or may not have formal or informal historical values. Elevated natural objects such as trees or hills and mountains, and tall buildings or towers serve as landmarks that contribute to people’s sense of place.
- Nature conservation value. Some places have appeal to people because of the actual or perceived natural values of an area, especially the potential presence of fauna. A stretch of ocean with whales or dolphins becomes more interesting than the ocean itself, as does an area of bush where you can see birds or other animals. There is a strong connection between natural values and visual appeal.
- Climatic and weather values. Some places may have more or less appeal because of their temperature, exposure to the sun, or weather.
- Artistic merit. Some places may have artistic merit because of the particular colours, form and line they represent. In some cases some people may see artistic merit of an object or place, which other people may not find beautiful.
- Recreational value. Some places have appeal to people because of what they do at a place, or the possibilities that people think of when they see a place. A person might say “Look at the waterhole, I bet there are some fish in there”.
- Holiday value. Some places might have appeal to people because they think that would be a great place to stay for a while to visit and enjoy the surroundings.
- Residential value. Some places might have appeal to people because they think they would like to live there. A person might say “Wouldn’t it be great to build a home just there.”
- Personal safety or danger. Some places may look great, but people may perceive them as being dangerous or unsafe. Unsafe characteristics can reduce the overall appeal of a place to some people.

One or several of these above factors can be explicitly or implicitly considered by professional or the public when undertaking appraisals of the Scenic Amenity or related characteristics. It is helpful to be explicit about which values are considered in any appraisal, and if so, what weighting each factor is given in the appraisal.

2.2. Range of environments

Visual descriptions or appraisals can be made of buildings and man-made objects, naturally occurring objects, or any combination of the two. Typically, a visual assessment may include one or several of the following environments:

- Urban environments, including elements such as buildings, roads, parks, rivers through cities, patches of bush, or electricity lines.
- Rural environments, including crops, pastures, farm houses, dams, creeks, rivers or patches of trees.
- Bushland environments, including extensive areas of rainforest, eucalypt forest, melaleuca forest or wetland, or rivers creeks or dams.
- Coastal environments, including the ocean, estuaries, beaches, mudflats and dunal vegetation.

Scenic Amenity can be assessed all four environments, and include consideration of natural as well as built elements, as demonstrated by the SEQ Regional Scenic Amenity Study (South East Queensland Regional Scenic Amenity Study 2005).

2.3. Characterisation, evaluation, qualitative description

Informal or formal visual assessment involves three distinct stages. Firstly a person recognises and categorises a scene by characterising those things that are evident or special about that place. Secondly, the person evaluates the relative level of appeal of that scene compared to other places. Thirdly, the person describes the affective or cognitive qualities of the place. These three stages are described in more detail below.

- Basic characterisation. This process requires identification of various spatial elements of a location to discern common or distinguishing features, and associating these features with memories or knowledge of similar features, so that they can be labelled as 'types'.
- Evaluation. This process requires comparison of the visual appeal of this "type" of scene against a range of scenes in a person's memory. Professionals may also assess certain places as having high, medium or low visual quality, or give the place a score or rating if they have some system of measuring the relative appeal of different places.
- Qualitative description. People are then able to describe the affective and cognitive qualities of a scene. For example a person might say they "love the deep blue water", and they "think it looks inviting".

These three processes are best applied in sequence depicted in Figure 1.

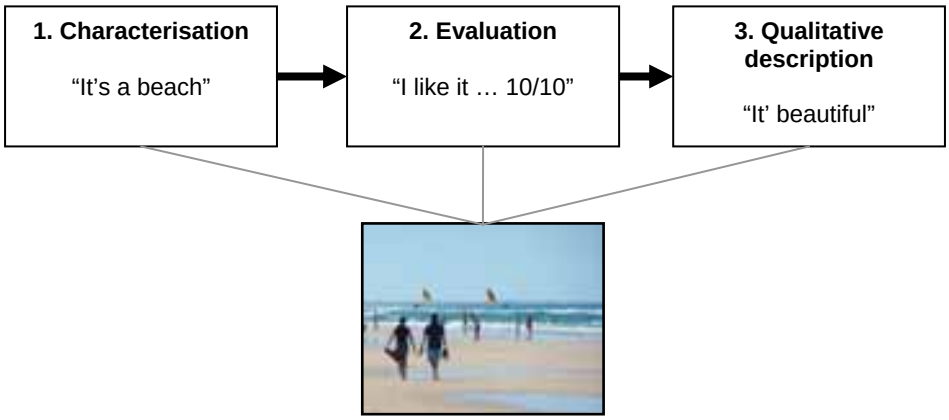


Figure 1. Relationship between assessment stages

Some assessment projects may implement only one of these stages. New procedures of landscape assessment developed by the US Forest Service in the mid 1990's identified the importance of all three stages and identified strategies for operational assessment of landscapes using this approach (USDA-FS 1995).

2.4. Relative importance of functional and other values

Perhaps the greatest confusion about Scenic Amenity and related terms is the interaction with functional and other values. Something might be beautiful but not very functional, or it may be very functional and not at all beautiful. The trade-off or complementary nature of Scenic Amenity and other values are experienced in the every-day decisions that people make about the purchase of motor vehicles or houses.

This confusion also extends into the area of visual impact assessment where there is often confusion between what is "acceptable" and what is visually unappealing. Many roads and buildings are designed entirely for their functional value. They are 'necessary' but not 'beautiful'.

It is therefore very helpful to make a clear distinction between the two processes of (a) assessing visual appeal, and (b) assessing the relative importance of visual appeal, compared to functional and other values. Combining these two processes can lead to considerable confusion of visual assessment or visual impact process.

2.5. Popular and professional appraisals

Descriptions or appraisals of the above characteristics can be undertaken by professional or popular judgements. Typically, an aesthetic assessment may be undertaken by one or several of the following groups of people:

- Town planners usually have training and experience in aesthetic evaluation, particularly as it relates to the order and arrangement of various city components. Their expertise is often oriented towards seeking a balance of various social, economic and environmental needs.
- Artists are able to discern particular colours, forms and lines in pleasing or inspiring arrangements that may or may not be recognised by the untrained eye.
- Architects are trained in the aesthetics of building design, and its relationship with the surrounding environment. As with artists, the appeal of some building designs may contain elements which are not recognised by the untrained eye.
- Landscape architects are usually trained in the theory and appreciation of aesthetics based on classic traditions in the artistic and functional blend of built and natural elements.
- Geographers usually have some training in the visual appreciation and nomenclature of landforms, vegetation and water forms, and their fundamental appeal to people.
- Nature conservation or environmental scientists are trained in the biological characteristics of natural environments and the optimal management of natural areas required to maintain their values.
- Foresters receive training in techniques to assess the fundamental visual qualities of forested environments and techniques for mitigating visual impacts of harvesting operations in otherwise natural environments.
- The general public have little or no formal training in aesthetics, but carry a fundamental appreciation of aesthetics through everyday living as exhibited through people's choice of home sites, holiday and recreational destinations. Particular members of any public group may be influenced by their cultural traditions and their familiarity with particular types of landscapes and environments (eg. snow, desert, farms, mountains, modern cities, rural towns).
- Public interest groups of residents may have an interest in protecting the scenic values of a particular locality or in exploiting opportunities for residential or tourism development.
- Representative selection of visitors and tourists often have a particular and sometimes discerning interest in the visual qualities and other values of buildings and natural areas in the vicinity of actual or potential destinations. They are often strongly drawn by visual images of locations that may be promoted to them prior to their arrival at the destination.

There is a considerable range of professionals and public groups with an interest and capability in Scenic Amenity description and evaluation. While there good agreement between some of these groups, there is also often considerable room for differences in interpretation.

There is a growing trend towards acceptance of public preference surveys as the most acceptable method for establishing benchmarks for recording visual appeal. Other non-visual aesthetic appraisals, and assessments of historical or sense-of place values are also often undertaken by professionals with some input by public interest groups.

2.6. Spatial components

Just like nature conservation, water or many other forms of environmental and social assessment, scenic or visual assessment also has a complex spatial arrangement. As depicted in Figure 2, there are three key elements of a view: a viewpoint, a landmark or scenic landscape area, and a Visual Corridor.

Figure 2. Spatial elements of visual assessment

These three components are described in more detail as follows:

- Landmarks or scenic landscape areas are outstanding buildings or natural features such as hills, the ocean, a river that are recognisable and draw attention to the eye. The can often be seen from several directions and many different viewpoints.
- Viewpoints can be informal places or recognised lookouts. Linear viewpoints exist as roads or walkways. Point-base viewpoints are features like picnic tables, seats or lookouts. Public viewpoints include roads, paths, parks, rivers and beaches. Private viewpoints include verandas, balconies, backyards or front yards, tracks, or rooms with a view.
- Visual Corridors are the 3-dimension spaces that connect viewpoints with Landmarks or Scenic Landscape Areas. They have a foreground, midground and background that can require special management. Visual corridors, sometimes also referred to as vistas, are located from any and every viewpoint. However in urban and town planning situations, it is common practice to use several different levels of recognition and designation of Visual Corridors. Visual Corridors can also be panoramic (ie.up to 360^0) or narrow (6^0). Visual Corridors should be adequate to include the landmark or scenic landscape area of interest, including critical surroundings.

2.7. Scale and levels of planning

One of the challenges in visual assessment is the need for integration of concepts and assessment procedures between different levels of planning and different scales. As depicted in Table 1, regional and city-wide appraisals and policies provide an important context for local and site assessments. There is a need for congruency or efforts to manage views at all levels of planning.

Table 1. Opportunities for alignment of concepts and assessment procedures at different scales and levels of planning

Extent	*Level of planning*	*Common scale of mapping*	*Visual assessment concepts*	*Visual assessment procedures*
Regional	Regional planning	1:100,00 - 1:50,000	Need for congruency	Need for congruency
City-wide	Planning scheme	1: 10,000 - 1:25,000		
Local area	Local area plans	1:5,000 - 1:10,000		
Site	Development assessment	1:500 - 1: 1:5,000		

2.8. Close, intermediate and distant views

Visual management ideally includes consideration of views at all distances from an observer: close, intermediate and distant (see Figure 3). Robust visual management requires attention to all three perspectives.

People experience close-up or intimate views when they are walking through a garden or bushland, or along the beach. Intermediate distance views are often experienced when driving through the countryside or along suburban roads where adjacent parks, rivers or the ocean can be seen. Distant views are usually seen as hills and mountains in the background. Combined views are experienced when people can see things in the foreground, midground and the background.

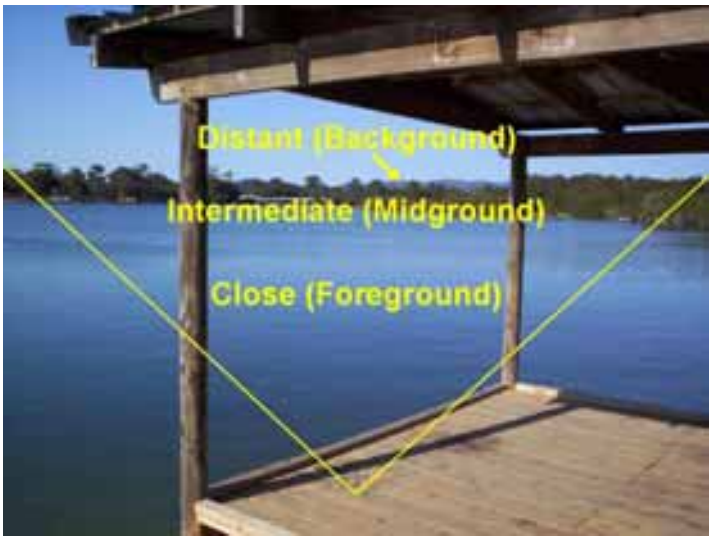


Figure 3. Depiction of close, intermediate and distant views

Consideration of all three elements is particularly important for the effective management of Visual Corridors. Some examples of the importance of visual management opportunities and challenges include:

- In foreground situations, it is common to plant flower beds and maintain grass at a high standard near road or path edges because of the attention and pleasure given to these places. Tall healthy trees can also be planted or maintained alongside paths and roads to provide shade and visual interest to people traversing such routes. In some cases it also helpful to plant trees at a wide spacing alongside roads to maintain opportunities for more distant views to the mountains or ocean beyond. Sound barriers or high fences can also block pleasurable intimate views or distant views. Tall trees or vegetation at actual or potential lookout sites can also obstruct or obscure distant views. Buildings alongside streets and roads are also seen as intimate views.
- Many forms of scenery are often experienced at intermediate distances. We commonly see rivers, waterways, trees and buildings in mid-ground situations. Tall objects in the mid-ground can either contribute to, or detract from an otherwise pleasant foreground or distant view. For example a white industrial or commercial building 100 meters from a well maintained roadway would interrupt the harmony of a view of the mountains. Likewise, an artificial lake at a similar distance from a roadway would enhance a view of the mountains.
- Mountains and hills are the most common types of distant view, as well as city centres with tall buildings. Mountains and hills have universal appeal, and city centres with tall buildings provide well-recognisable landmarks. Communication towers are often placed on highly visible hilltops because of the geographical efficiency these locations provide for direct line-of-sight contact with relay stations or telephone users. Sensitive design and placement is in an important factor in the development of communications towers, buildings or other infrastructure exposed hilltops. In some places it is commonplace to restrict the height and colour of buildings on prominent hills.

2.9. Visibility

The visibility, exposure, access or prominence of a location can affect the benefits of that location to people able to see it. For example, the side of a mountain which can be seen from the city is enjoyed by millions of people, whereas the opposite side of the mountain may be seen by hundreds of people each day. The visibility of topographic features and buildings varies greatly across a city from one side to another in response to changes in geography and the number of people at different viewpoints.

In general, prominent locations that are also visually appealing are more sensitive to some forms of development which may reduce their visual appeal. Some forms of development at such locations can also enhance the location's visual appeal or have negligible impacts.

Particular locations with high visibility include:

- Hill-sides or mountains-sides facing towns, cities, roads or popular walking trails. These are usually distant views.
- Transport corridors near freeways, major roads or railways. These are usually intimate views.
- Popular lookouts.
- High use parks and public open space like beaches and rivers or National Parks and their surrounds.

Visibility has been assessed as Visual Exposure in SEQ Scenic Amenity studies (Preston 2001).

2.10. Impact or baseline assessment

Base-line visual assessment is ideally undertaken as a strategic initiative on a national, state-wide, regional or city-wide level to provide context to any local or site specific decisions about protection or management of visual impacts. Any base-line study would preferably identify (a) the spatial variation and range of "types" represented in the region, (b) the locations of landscapes with high visual appeal seen from multiple viewpoints that could be afforded special management or protection, (c) the location of landscapes where remedial works would improve their visual appeal, and (c) a framework and standards for determining the acceptability of visual impacts and mitigation measures.

Within the context of a regional or city-wide base-line assessment, it would also be possible to undertake local or neighbourhood scale base-line assessments. These assessments would refine the geographical precision and local significance of regional base-line assessment.

A site specific visual impact assessment would then ideally be undertaken using standards established by regional or city-wide assessment. A visual impact assessment would ideally include representation before and after images of alternative development placements and designs as seen from several important viewpoints, usually prepared by computer generated photo-montage techniques. The assessment would also ideally include a description of the acceptability of impacts against regional standards.

3. Underlying theories

3.1. Evolutionary psychology

The most well accepted theory of aesthetic preference is that humans are predisposed to the appearance of landscapes that we evolved in, which are conducive to human survival (Appleton 1975). Almost universally, people of different cultures have been found to have a higher visual preference for natural landscapes and landscapes with water, than despoiled landscapes or highly developed landscapes. This theory is supported by psycho-biology theorists and empirical studies by environmental psychologists.

This theory is also supported by evidence that finds people also adapt their visual preferences to their local environment and range of experiences. For example, European settlers to Australia some 200 years ago did not find the grey-green eucalypts, brown-green grass and flat plains as attractive as the woods and fields that there heralded from. Since the days of early colonisation most Australian's have come to 'love' the country they now live in, while still retaining many of the notions of beauty held by their fore-bearers. These are collective values expressed by many Australians today.

3.2. Congruence

The second relevant theory is that people carry an intuitive sense of what elements of a landscape are in harmony or in discord (Berlyne 1960). In a rural area, people would expect to see things like cattle, farm machinery and crops; whereas a tractor in the city park would be as 'out of place' as an office block in the middle of a cane paddock. Theories regarding congruence are also supported by empirical data that measures the level of cogitative conflict that can occur when contrasting types of land use are located next to one-another.

4. Benefits

4.1. Social benefits

Scenic Amenity is one of the values or services that we derive from ecosystems which contribute to people's security, contributes to good health, and good social relations, as depicted in Figure 4 (de Groot, Wilson et al. 2002; Millennium Ecosystem Assessment 2005).

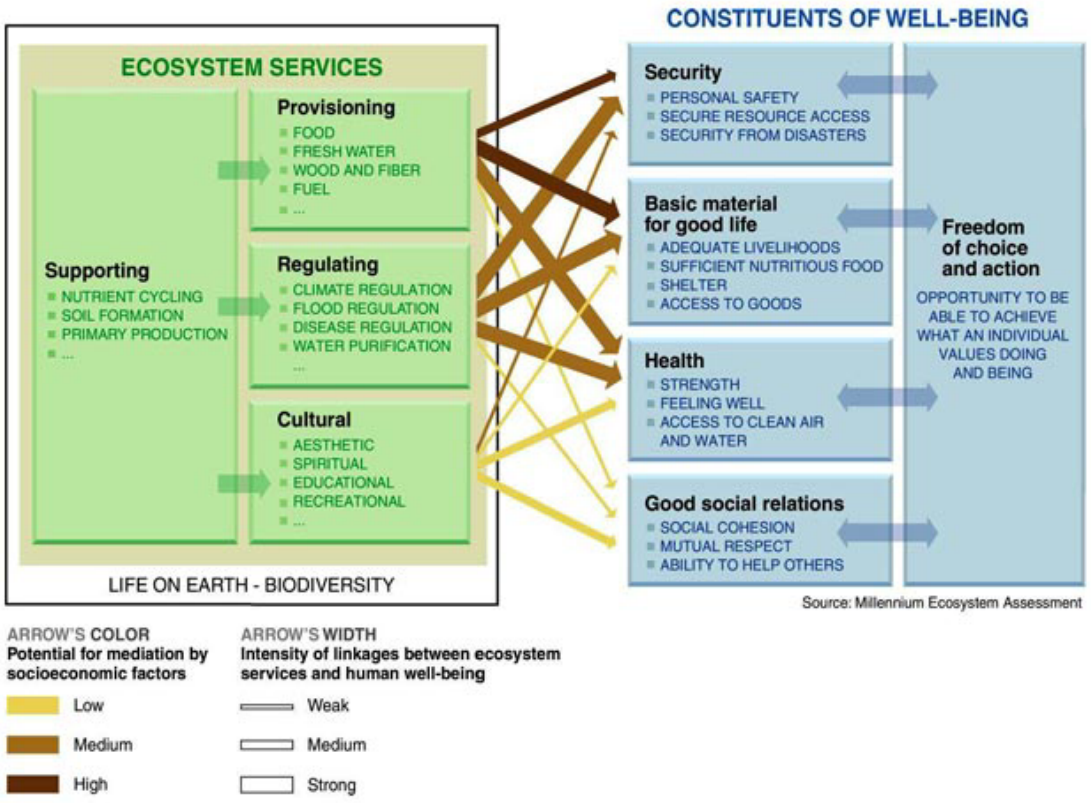


Figure 4. ***Linkages between Scenic Amenity (aesthetic value) and Ecosystem Services (Millennium Ecosystem Assessment 2005)***

The most widely documented contribution of Scenic Amenity to human well-being is in the area of mental health and functioning (Wolf 2005). Urban living and modern work practices can lead to stress, cognitive fatigue, reduced function and more severe physical symptoms ranging from chronic fatigue to depression (Evans 2003; Grahna and Stigsdotter 2003).

The experience of nature, including the viewing of nature, provides restorative benefits such as faster recovery from illness (Ulrich 1984), restful brain activity (Ulrich 1981),and greater perceptions of well-being and neighbourhood satisfaction (Kaplan 2001). Underlying these positive responses to nature is the theory of attention restoration (Kaplan 1995) which suggests that the mental health of people under stress will benefit from the experience of natural areas.

4.2. Economic benefits

The Scenic Amenity in cities surrounded by outstanding natural beauty such as the Gold Coast or Hawaii is likely to be the primary generator of economic wealth provided through their tourism and urban development industries. In the Gold Coast, Scenic Amenity is attributable to a large proportion of the $2.9 billion annual contribution[1] that tourists on the Gold Coast make to the regional economy.

[1] Based on 1996-97 estimates from the CRC for sustainable tourism, Gold Coast Tourism Visioning Project, Economic and Employment Impacts of Tourism Profile 9.

4.3. Environmental benefits

Areas with high Scenic Amenity values often coincide with areas with high environmental values because of people's underlying preference for areas with natural values. The scenic value of many of the Gold Coast's coastal and hinterland National Parks and Reserves was a key factor that contributed to their original reservation.

5. Alternative assessment methods

5.1. Professional rule-based methods

The principal methodology used for visual assessment in Australia to date is based on the 'Visual Quality' assessment methodology first developed by the US Forest Service in 1974 (USDA-FS 1974; Brodbeck 2005). This method is based on the assumption that particular combinations of topographic features and land cover can be interpreted to produce maps depicting areas of high, medium or low scenic quality. Professional judgements can be modified according to community opinions expressed through media, organised workshops, consultation programs and public surveys.

Secondly, maps of visual sensitivity are developed by professional assessment of the prominence of landscapes featured, the number and type of people viewing various parts of the landscape, and the capacity of the landscape to 'absorb' changes.

This approach is practical and rapid to apply. The main limitations relate to assumptions about the selection and combination of landscape features that constitute high, medium and low quality; and the visual impact of different forms of development required to assess landscape sensitivity.

The other major methodology used in Australia for visual assessment is landscape character assessment developed from procedures used in the United Kingdom (Swanwick 2002).

5.2. Quantitative methods

5.2.1. International trends

Because of uncertainty about the relationship between land cover types and visual quality, and between types of development and public sensitivity, the US Forest Service has developed revised procedures for landscape assessment (USDA-FS 1995). One of the main improvements to this process is the adoption of formalised of public opinion surveys (ie,. constituent information) (Figure 5).

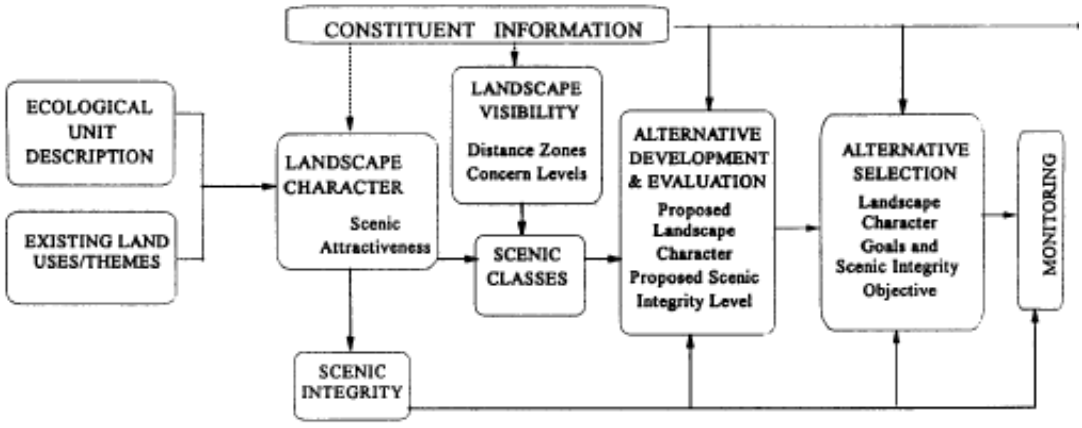


Figure 5. Flow chart of the USFS Scenery Management System process

Other leading forest service agencies also appear to be placing greater emphasis on public survey approach in-lieu of professional rule-based methods (British Columbia Ministry of Forests and Range 2006).

5.2.2. Economic valuation

Economic valuation methods such as hedonic pricing (Benson, Hansen et al. 1998; Bourassa, Hoseli et al. 2003), contingent valuation (Quah and Tan 1999), and travel cost methods (Adamowicz, Louviere

et al. 1994) can also be used to assess the relative importance of different views. Unfortunately, economic techniques are rarely used to evaluate the relative importance of scenic landscape areas.

The most common economic valuation method is hedonic modelling, which identifies the premium that people pay for quality views when purchasing a property. Most these studies report that a view has a positive impact on residential values of between 1% and 147%, depending on the quality of the view (Bourassa, Hoseli et al. 2003).

The main limitation of econometric approaches is that available data from hedonic pricing, contingent valuation, or travel cost studies, only provides a surrogate value for the "real" benefits of aesthetics, particularly when it comes to aggregating individual values to a socially and geographically relevant unit (Farber, Costanza et al. 2002).

5.2.3. Rating scale methods

As noted above, recent development of assessment procedures in the United States (USDA-FS 1995) give emphasis to a rating scale approach based on public appraisals. Many of these new procedures have yet to be embraced by practicing landscape architects in Australia (Chenoweth 2004; Brodbeck 2005). These principles also underpin the Scenic Preference methodology developed by the SEQ Regional Landscape Strategy (Preston 2001). Other examples of rating scale approaches include the recently completed coastal viewscapes strategy for South Australia (Lothian 2005) and studies of scenic beauty in Victoria (Bishop 2002).

5.2.4. Physical geography

Evaluation of landscape visibility can be readily assessed by application of simple geographical and geometric principles using manual procedures or a Geographic Information System (Wheatley 1995). These basic principles also underpin the Visual Exposure methodology developed by the SEQ Regional Landscape Strategy (Preston 2001).

5.3. Comparison of methods

The important distinctions between professional are summarised in Table 2.

Table 2. ***Comparison of alternative perspectives for measuring aesthetic value***

Approach	*1. Professional rule-based*	*2. Economic valuations*	*3. Rating scale*	*4. Physical geography*
Draws theory from	Art, landscape architecture	Econometrics	Environmental psychology	Geography, geometry
Characterisation by	Professionals	Professionals	Professionals	Professionals
Evaluation by	Professionals	Public	Public	Professionals
Qualitative description by	Professionals	N/A	Public	Professionals
Applied to	Views from View Points, Landscape areas	Views from View Points	Views from view points, Landscape areas	Landscape areas, Viewpoints
Major assumptions	Relationship between land cover and importance, Professionals can accurately assess importance of views, sensitivity to developments	Property values reflect importance Public can accurately assess views	Photos represent views, Public can accurately assess views	Measured and mapped landscape coincides with people's experience. Does not consider the appeal or quality of landscapes

Professional rule-based methods, including both those based on the original US Forest Service Visual Management System (USDA-FS 1974) and the UK Landscape Character system (Swanwick 2002) are founded on theory drawn from art, and landscape architecture. The three stages of characterisation, evaluation and qualitative description is undertaken by professionals, and may be informed by public opinion or other sources (eg, paintings, historic records). The method can be applied to views from viewpoints, and landscape areas. The major assumptions are that professionals are able to assess the

importance, sensitivity and important characteristics of views; and determine the relationship between land cover types and their visual or landscape importance or quality.

Economic evaluations are conducted by professionals based on econometric theory such as hedonic pricing to determine the marginal price that the public pay for a house when purchasing a property. It is commonly applied to assessing views from particular viewpoints. The main assumptions of the approach is that the marginal value of properties provided by views provide a reasonable surrogate for the public benefits of scenery to the community. Rating scale approaches are underpinned by theory from environmental psychology.

Characterisation of landscapes is undertaken by professionals, but evaluation and qualitative descriptions are undertaken by the public.

The method can be applied to views from viewpoints and to landscape areas. The main assumptions are that representative images of landscape elements can be used to assess views, and that the public can accurately assess the appeal and qualities of views.

Physical geographic approaches are base on theory informed by geography and geometry. The three stages of characterisation, evaluation and qualitative description are undertaken by professionals. The approach can be applied to viewpoints and landscape areas. The main assumptions of the approach are that the measured and mapped landscape coincides with people's actual experience of the landscape. The methods also does not take account the appeal or preference that people have for particular landscape features.

6. Key terms

6.1. Landscape character and associated terms

6.1.1. Introduction

The process of characterisation is intuitive, closely associated with the human process of learning. Almost automatically, people detect objects in a scene, identify diagnostic features, compare those against existing knowledge of those features, then label or categorise the scene as belonging to a particular recognisable 'type'. While we may not be conscious of this process, our minds and visual perception systems use this approach all the time that sighted people have their eyes open.

The formal system of characterisation follows a similar approach to classify built, natural rural or natural landscapes into 'types' based on the land cover, land form, buildings and infrastructure.

The following section examines some of the terms used to describe 'building blocks' for Landscape Character Types and geographically specific applications of the term.

6.1.2. Land cover

Land cover is a basic description of what exists on the land surface, such as trees, crops, water or buildings. It does not assume that these objects are used for any particular purpose. For example, a similar patch of trees may exist in an area used for farming or in a National Park. Land cover can be used a primary input to the mapping of Scenic Preference. The main difference between Land Cover and Landscape Character Types (see below) is that Land Cover Types often exist as finer scale elements within a larger geographical unit.

6.1.3. Land use

Land use is a term often used in mapping or planning to identify a particular suite of permitted, past or future activities. For example an area of bushland may be designated for future urban land use. Land use often requires greater knowledge of land ownership boundaries and permitted uses than can be discerned by eye, and is rarely used in visual assessment.

6.1.4. Land form

Land form is about the divisions of topography into classes such as mountain, range, ridgeline, hills, plains and valleys. These spatial units can also be described using other topographic characteristics such as steepness or position on slope. Land form is a key consideration in visual assessment as many studies have found that people readily identify, classify and evaluate landscapes according to their land form.

6.1.5. Visual elements

Visual elements are moderately small objects that can be discerned by the eye that assist in characterisation and evaluation of scenes. Visual elements are analogous to Land Cover Types. The term is used in the SEQ Regional Scenic Amenity Study (South East Queensland Regional Scenic Amenity Study 2005) which describes a Visual Element as follows:

"A Visual Element is a recognisable object that represents a component of a view that influences people's preference. A Visual Element is usually more common in one Visual Domain than other Visual Domains. Examples of Visual Elements include built elements such as boats, buildings, bridges, fences, quarries, roads, trails, park furniture, signs, vehicles, and natural elements such as animals, crops, grass, rock, sand or mud, trees or shrubs and water. "

6.1.6. Landscape character

The word 'character' generally relates to the aggregate of distinctive features that distinguish one thing from another, or in the case of town character case one place from another (Green 1999). This basic definition is supported by the US Forest Service (USDA-FS 1995) which provides the following definition

"Landscape character is the particular attributes, qualities, and traits of a landscape that give it an image and make it identifiable or unique."

The United Kingdom has adopted a more expansive yet similar definition (Swanwick 2002), being

"Landscape character is the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how these are perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement. It creates the particular sense of place of different areas of the landscape"

The greatest distinction between work of Green (1999) and both the UK approach (Swanwick 2002) and US (USDA-FS 1995) approaches, is that Green (1999) gives strong emphasis on a relatively unfiltered community process for evaluation of both built and natural landscapes.

While the above authors have identified a wide range of environmental features and associated meanings to be associated with Landscape Character, it would be fair to say that Character has three sub-elements, being (a) aesthetic appeal, (b) historic or heritage values and (c) identity and sense of place. The word landscape here embraces both natural and built form elements (urban, rural, bushland and coastal landscape character types).

6.1.7. Urban character

Urban character is a geographically specific adaptation of landscape character which borrows the same concepts. Greater attention is given to variations of built form and other infrastructure elements. The description and appraisal of urban character includes open space elements.

6.1.8. Rural character

Rural character is another geographically specific adaptation of landscape character. Greater attention is given to rural elements and land form. The description and appraisal of urban character includes built elements.

6.1.9. Visual domains

Visual domains are analogous to broad Landscape Character Types and used in the SEQ Regional Scenic Amenity Study to provide context for the analysis of Land Cover types (Natural and Built Visual elements. The term is used in the SEQ Regional Scenic Amenity Study (South East Queensland Regional Scenic Amenity Study 2005) which describes a Visual Domain as follows:

"A large, geographically distinct and contiguous area that defines the context and principal expectations by which people response to the elements of a view. A Visual Domain is characterised by a repeatable set of mostly congruent Visual Elements. Four Visual Domains have been used to encompass the full range of major visual contexts in South East Queensland – Bush, Coast, Rural and Urban."

The relationship between these four Visual Domains and Visual Elements is depicted in Figure 6.

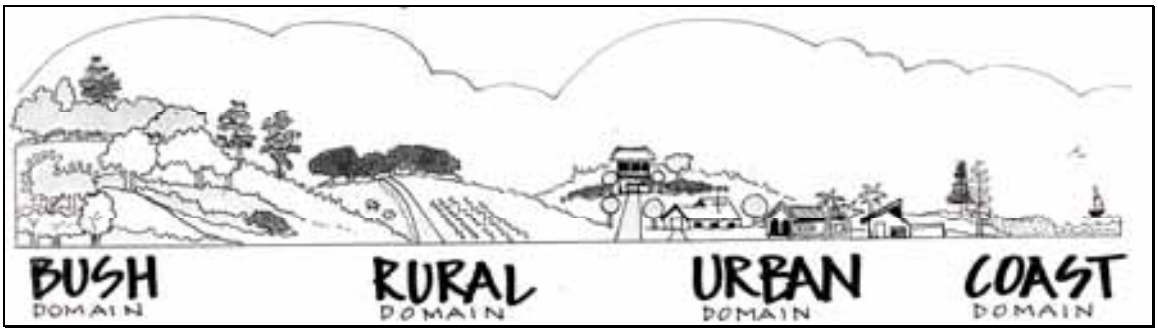


Figure 6. Some Visual Elements seen in each Visual Domain[2]

6.1.10. Comparison of terms

As summarised in Table 3, all of the terms are descriptive of objects in scenes. Landscape character (including urban and rural character) embrace visual, historic and sense-of-place factors. Other terms refer purely to visual concepts (eg. land cover, visual elements, visual domains).

Table 3. Comparison of Landscape Character and related terms

	Land cover	*Land use*	*Land form*	*Visual elements*	*Landscape character*	*Urban character*	*Rural character*	*Visual domains*
Purpose	Descriptive	Descriptive	Descriptive	Descriptive	Descriptive	Descriptive	Descriptive	Descriptive
Aggregation	Basic	Complex	Basic	Basic	Complex	Complex	Complex	Complex
Factors	Visual	Activities	Topography	Visual	Visual, history, sense of place	Visual, history, sense of place	Visual, history, sense of place	Visual

6.2. Scenic preference and related terms

6.2.1. Introduction

Scenic preference and associated terms are used to describe measures used to evaluate the level of visual appeal for different types of landscape, as distinct from the characterisation of landscapes described above.

6.2.2. Visual or scenic quality

The terms scenic or visual quality have been developed by the US Forest Service (USDA-FS 1974) and are widely used throughout the world. In the original Visual Management System, visual quality was seen as an intrinsic attribute of landscapes which may or may not be perceived by people. The more recent Scenic Management System (USDA-FS 1995) recognises that visual appreciation is a perceptual rather than intrinsic property. It provides the following definition:

"Scenic Quality - The essential attributes of landscape that when viewed by people, elicit psychological and physiological benefits to individuals and, therefore, to society in general. "

6.2.3. Scenic attractiveness

The term *Scenic Attractiveness* was developed by the US Forest Service (USDA-FS 1995) to overcome shortcomings of the term Visual or Scenic Quality and to explicitly recognise the role of the public (ie constituents) in determining what aspects of landscapes have visual appeal (Figure 5). It is defined as follows:

"Scenic Attractiveness: The scenic importance of a landscape based on human perceptions of the intrinsic beauty of landform, rockform, waterform, and vegetation pattern."

[2] Diagram courtesy of Jan Houghton

6.2.4. Scenic beauty

The term Scenic Beauty is analogous to Scenic Attractiveness, having been described in the 1970's by a research unit of the US Forest Service (Daniel and Boster 1976) with the exception that Scenic Beauty is measured using a 10 point scale. It is quantitative measure of esthetic preferences for alternative wildland management systems.

6.2.5. Scenic preference

The term Scenic Preference (Preston 2001), as applied in South East Queensland (South East Queensland Regional Scenic Amenity Study 2005) is highly analogous to the US Forest Service term "Scenic Attractiveness" as it also is informed by community preferences.

"Scenic Preference is a rating of the community's liking for scenery of open space compared to areas occupied by built structures, measured using photographs."

While the term infers that it is only applicable to open space or natural landscapes, the term and assessment method is equally applicable to built or natural landscapes.

6.2.6. Comparison of terms

A comparison of the above terms highlights their major differences and similarities according to the agent undertaking the evaluation, the usual range of environments it is applied to, and the number of classes produced in any evaluation Table 4.

Table 4. Comparison of scenic preference and related terms

Consideration	*Visual or scenic quality*	*Scenic attractiveness*	*Scenic beauty*	*Scenic preference*
Evaluated by	Professional judgement	Public	Public	Public
Range of environments	Mainly natural, rural or coastal	Mainly natural, rural or coastal	Mainly natural, rural or coastal	Mainly natural, rural or coastal
Number of classes	Usually three	Usually three	Ten	Ten

6.3. Visual exposure and related terms

6.3.1. Viewpoint

For the purposes of this report, a viewpoint is any outdoor location, or indoor location where the outdoors is clearly visible, which has a clear view of some open space. In most landscape studies, only public viewpoints are considered along linear routes such as roads, ferry routes, walking trails, and at points like lookouts, picnic areas or recreation areas.

6.3.2. Seen area

The seen area is the total landscape area what can be observed from a viewpoint when taking into account occlusion of visibility by land cover (eg. trees, buildings) and land form.

6.3.3. Viewshed

A viewshed is the cumulative seen area from a series of points along a segment of a route or a series of associated destinations.

6.3.4. Visual corridor

A visual corridor is the three dimensional area between a viewpoint and a segment of its seen area which is focussed on a landmark or scenic landscape area, including the foreground, midground or background of that view. A synonym for Visual Corridor, used in the UK, is visual envelope.

6.3.5. Visual sensitivity

Visual sensitivity has been defined as follows (Brodbeck 2005) based on an interpretation of the US Forest Service Visual Management System (USDA-FS 1974)

"Visual Sensitivity: the degree to which any visual change to the landscape is likely to socially affect humans, taking into account the two factors of visual prominence (how easily a site is seen) and visual accessibility (how closely and often a site is seen)."

6.3.6. Landscape visibility

The term Landscape Visibility has been adopted in preference to Visual Sensitivity in recognition that the term sensitivity is overly complex and includes simple assessment of visibility as well as assumed sensitivity to change. The US Forest Service (USDA-FS 1995) proposes the following definition:

"Landscape Visibility: Accessibility of the landscape to viewers, referring to one's ability to see and perceive landscapes."

6.3.7. Visual exposure

Visual exposure is analogous to Landscape Visibility and is defined as follows by the SEQ Regional Landscape Strategy:

"Visual Exposure is a measure of the extent to which a place in the landscape is seen from important public viewing locations (e.g. roads, recreation areas, schools, golf courses)."

6.3.8. Comparison of terms

A summary of Visual Exposure and related terms (Table 5) highlights that terms such as viewpoint, seen area and Visual Corridor refer to the one viewpoint, whereas viewshed, visual sensitivity, landscape visibility and visual exposure refer to views from several viewpoints. Visual sensitivity, landscape visibility and visual exposure take into account more factors such as the number of people at viewpoints.

Table 5. Comparison of Visual Exposure and related terms

	Viewpoint	*Seen area*	*Viewshed*	*Visual corridor*	*Visual sensitivity*	*Landscape visibility*	*Visual exposure*
Number of points	One	One	Many	One	Many	Many	Many
Considerations	Visibility	Visibility	Visibility	Visibility	Visibility, Number of people at viewpoints public response	Visibility, Number of people at viewpoints	Visibility, Number of people at viewpoints

6.4. Scenic Amenity and related terms

6.4.1. Introduction

This group of terms includes only two items, scenic class and Scenic Amenity, as currently there are only two known measures of scenic value applicable to landscape areas that take into account both visibility and visual appeal.

6.4.2. Scenic class

In the US Forest Service Scenery Management System (USDA-FS 1995) Scenic classes are formed by overlaying Scenic Attractiveness maps and Landscape Visibility maps. This report provides the following definition:

"Scenic classes measure the relative importance, or value, of discrete landscape areas having similar characteristics of scenic attractiveness and landscape visibility."

6.4.3. Scenic Amenity

Scenic Amenity has been applied in landscape assessment studies in various parts of South East Queensland since 2001 through projects sponsored by the SEQ Regional Landscape Strategy. The following definition has been used in these studies (Preston 2001):

"Scenic Amenity is a measure of the relative contribution of each place in the landscape to the collective community appreciation of open space as viewed from places that are important to the public. Its two components are Scenic Preference Rating and Visual Exposure Rating."

The definitions for these two components are:

"Scenic Preference is a rating of the community's liking for scenery of open space compared to areas occupied by built structures, measured using photographs." (Preston 2001) and

"Visual Exposure is a measure of the extent to which a place in the landscape is seen from important public viewing locations (e.g. roads, recreation areas, schools, golf courses)" (Preston 2001).

6.4.4. Comparative evaluation of terms

As seen in the summary of Scenic Amenity and related terms Table 6, Scenic Amenity and scenic class are closely related, having similar inputs and outputs.

Table 6. Comparison of Scenic Amenity and related terms

	Scenic class	*Scenic Amenity*
Components	Scenic attractiveness Landscape visibility	Scenic preference Visual exposure
Major inputs	Landscape character maps Public ratings of visual appeal Topographic maps and viewpoints	Land cover maps, Land form Public ratings of visual appeal Topographic maps and viewpoints
Classes generated	7 ratings of value	10 ratings of value

6.5. Evaluation of terms

The above section covers a wide variety of terms from land cover, to landscape character and Scenic Amenity. It describes the major terms used in contemporary internationally accepted best practice, those used in the SEQ Regional Plan, previous Scenic Amenity studies in SEQ, and the Gold Coast City Council Planning Scheme.

As summarised in **Figure 7**, Scenic Amenity is a component of Landscape Character alongside other character values such as Sense of place, and Heritage and historical values. Scenic Amenity and other components of Landscape character are applicable un urban, rural, coastal, natural, and combined environments. The three major components of Scenic Amenity are Viewpoints, Visual corridors, and Scenic Landscape Areas. Scenic Landscape areas are defined by combining Visual exposure and Scenic preference.

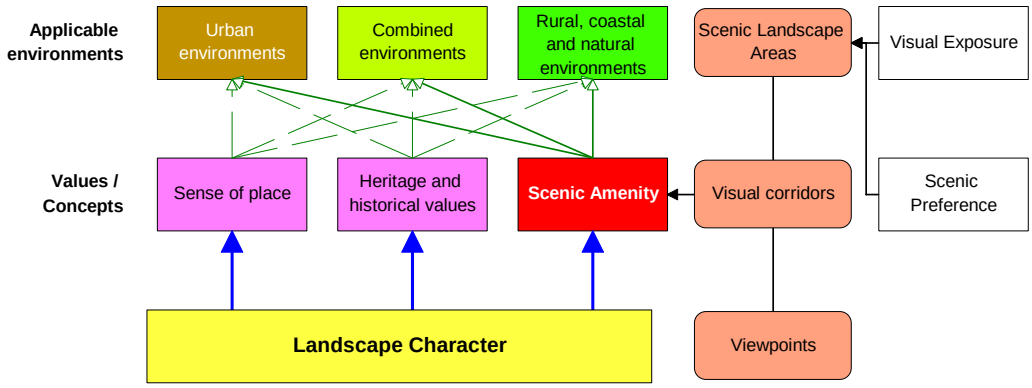


Figure 7. Scenic Amenity is an element of Landscape Character which is applicable in a range of environments

7. General planning and management options

7.1. Identifying Scenic Amenity

The identification of places with Scenic Amenity values usually involves identifying the location of scenic components (viewpoints, visual corridors, scenic landscape areas), their characteristics, and their relative importance. An inventory of this type does not infer that management objectives are associated with areas of higher or lesser value. A Scenic Amenity inventory can be conducted either as a thematic study, or as part of a broader inventory of other landscape values (eg. landscape character). Experience from previous Scenic Amenity studies is that it is useful to concentrate on a thematic assessment scenic

values, since it is common to encounter a divergence of values (eg. some historic places are very valuable, but just ugly).

7.2. Protecting Scenic Amenity

Protection of Scenic Amenity values is a specific management intent which usually entails adherence to particular scenic thresholds involving minimal reduction of those values. Protection can entail stringent maintenance of high values, or less stringent protection to moderate thresholds.

One of the primary vehicles for stringent protection of landscapes with outstanding scenic values is through dedication as a scenic reserve. Protection of scenic values is often achieved as a secondary outcome from protection of biodiversity values. In some instances however the two values are not coincident. It is not uncommon for example to situate communication towers on hill-tops in National Parks or State Forest, which may be incompatible with scenic protection objectives.

A common vehicle for protection of scenic values is through local government regulations that prohibit the construction of buildings or other structures on certain landscape areas.

7.3. Enhancing Scenic Amenity

Areas with low Scenic Amenity can be enhanced through activities such as tree planting, landscape works, and recolouring and refurbishment of buildings to ensure the development blends into the landscape.

7.4. Recognising complementary landscape values

The Scenic Amenity value of a feature may be complimented by or compete with spatially coincident or adjacent features. The most common complimentary value with Scenic Amenity is nature conservation, since most areas of natural vegetation with biodiversity value also have high Scenic Amenity value. Tall eucalypt forest or rainforest in particular have high Scenic Amenity value, especially where these areas have high visual exposure

The relative importance of complimentary values or competing values compared to Scenic Amenity values is important when nominating acceptable Scenic Amenity thresholds for visual impacts, developing mitigation strategies, and development of management strategies.

The complimentary nature of other values is helpful in developing overall management priorities for a scenic feature. Table 7 provides some examples of landscape values which are generally complementary with Scenic Amenity.

Table 7. Some examples of complementary landscape values

Generally complimentary values	*Generally neural*
• Nature conservation • Passive outdoor recreation (eg. swimming, bushwalking) • Paths, minor roads (sensitive and context appropriate design) • Amenity tree planting • Landscape heritage values • Water production values	• Occasional to low density housing (sensitive and context appropriate design) • Agricultural production and rural land use (except industrial farming) • Recreation infrastructure (amenity blocks, signs etc) (sensitive and context appropriate design)

7.5. Monitoring changes in Scenic Amenity

Establishing thresholds for visual impacts to visual corridors or scenic landscape areas requires consideration of a number of factors. This includes the relative importance of the view or area, the visual impact of likely developments, and the relative importance of other land uses.

In some localities the economic benefits from non-complimentary developments may outweigh benefits from maintaining Scenic Amenity values. In other locations with high scenic values, acceptable thresholds of development may be set at a high level. Visual impact thresholds would preferably be set following strategic consideration of Scenic Amenity values and other land use values.

Visual impact thresholds for Scenic Landscape Areas usually indicate a maximum percentage of allowable evident development. For visual corridors, it is common to indicate the acceptable limits of

obstruction from built structures or adjoining vegetation. For viewpoints, it is appropriate to ensure signs and features used to enhance accessibility (eg. lookouts) use context-appropriate design principles.

7.6. Communicating Scenic Amenity policies and practice

A key consideration in ensuring government and community support for protection of Scenic Amenity is a building of awareness through a communications program. Protection of Scenic Amenity is like similar programs for protection of water quality or for biodiversity. Policies are only one part of the equation, and need to be supported by education programs to build common language and awareness of the location and importance of the value to the community and industry sectors.

7.7. Training and building of capacity

Local government, community and industry require a capacity to respond to Scenic Amenity policies through training and provision of resources. While some professions within Government have a good grounding in Scenic Amenity issues and management, there is considerable variation in how Scenic Amenity is learned at various universities and between different professions.

Different professions, including planning professionals, architects, ecologists, environmental officers, cultural heritage experts, engineers, landscape architects and recreation planners all have an interest in Scenic Amenity management, but often have quite different understandings of its importance and how it should be managed. Training of Government officers is an important component of capacity-building. This can involve preparation of guidelines, manuals and face-to-face training programs.

Similarly, communities and industry have a major stake in Scenic Amenity management. Land developers, community land care groups, tourism providers and members of recreation groups are only some of the groups with an interest in Scenic Amenity. Education programs aimed at building the capacity of these groups can be an efficient strategy for achieving management and planning objectives.

7.8. On-ground measures

Management of Scenic Amenity requires alignment of existing and new on-ground programs to achieve Scenic Amenity objectives. Some examples of on-ground management strategies may include:

- Enhance the visual appeal of existing council structures in scenic landscape areas by either tree planting or repainting structures using appropriate colors.
- Construction of lookout points along existing paths, trails or roadways at locations with scenic views.
- Providing grants to community groups to beautify parks or open space areas.

8. Current policy and regulatory framework

8.1. Gold Coast City Council Planning Scheme

8.1.1. Landscape Strategy

The principal planning tool for management of visual characteristics of the Gold Coast is its Landscape Strategy (GCCC 2000) prepared as two separate documents being a Landscape Character assessment (Part 1) a Landscape Works manual (Part 2).

The Landscape Character assessment divides the Gold Coast City into ten character areas and six sub areas. This assessment of character areas is based on an assessment of historical knowledge of areas including buildings, scenic and other qualities of landscapes and man-made landscapes, social and recreational aspects, views and vistas, visual structure, and desirable and non-desirable character components (GCC 2000).

An important section of Landscape Character assessment process is the identification of desirable and non-desirable character elements through a ‘Visual Diary’ process derived from a community consultation process used to rate landscape elements through the evaluation of representative photos (Figure 8).

Figure 8. Some 'desirable' and 'not desirable' character elements

8.1.2. Planning scheme policies

The control of development and its visual impacts on the Gold Coast are administered through its 2003 Planning Scheme prepared in accordance with the Queensland Integrated Planning Act (1997).

The Planning Schemes identifies five Desirable Outcomes that have key relevance to the protection of Scenic Amenity. They are:

- Ecological Processes DEO 1.2: to preserve natural foreshore areas so as to enhance coastal ecosystems and **Scenic Amenity** values
- Economic Development DEO 4.4: to ensure that the city's natural assets and **Scenic Amenity** values are protected and, where possible, enhanced to add further value to the visitor experience.
- Community Wellbeing DEO 1.1: to preserve the **distinctive character** of designated rural and non-urban areas, thereby facilitating a clear distinction from urban areas.
- Community Wellbeing DEO 1.2: to protect and enhance the value of **significant landscape features**, within both the built and natural areas of the City, as characteristics contributing to the distinctive form of the city.
- Community Wellbeing DEO 1.4: to ensure that new development promotes a high standard of urban design which contributes to the **attractiveness** and efficient functioning of the City's built environment and which reflects the values and aspirations of local communities.

In addition, the Planning Scheme also specifies a number of Performance Criteria and Acceptable Solutions for particular domains or land use designations. These provisions describe practices relating to factors such as building height, building density, building appearance, landscape work, siting, and amenity protection. By way of example, the following provisions apply to Development that is self assessable, code assessable or impact assessable in the Rural domain.

- *Building height:* Performance Criteria 1. All buildings must be of a height which is **in keeping with the predominantly rural character** of the surrounding area. Building height must not result in a significant loss of **visual amenity**. Acceptable Solution 1. The building has a maximum of two storeys.
- *Building density:* Performance Criteria 2. Accommodation density must be low to **maintain and enhance the quality of rural landscape, farmland, natural landscapes and the hinterland scenic backdrop**. Acceptable Solution 2. The dwelling density does not exceed one detached dwelling per lot.

8.1.3. Implications

The Gold Coast City Council is fortunate to have a comprehensive planning study of landscape character areas and visual elements. Planning provisions also provide several opportunities for consideration of character and visual amenity in managing impacts of buildings, signs and infrastructure.

The greatest limitation of Gold Coast measures to protect Scenic Amenity is the absence of a spatially explicit definition of scenic landscape areas or visual corridors of value that is associated with explicit measures to protect areas of high scenic or visual value. While the mapping and definition of character values is a helpful starting point to protection of its constituent components (visual aesthetic, noise,

smell, cultural heritage, other cultural associations) it would be helpful to improve the precision of measurements afforded to these component elements of character or amenity, and to improve the specifically of planning regulations.

8.2. Regional Policies

8.2.1. 2005 SEQ Regional Plan

The SEQ Regional Plan for the period 2005-2026, released in June 2005, provides an agreed policy position by the Queensland Government and SEQ Local Governments on growth management in the region. The document includes a series of regional policies on issues including sustainability, the natural environment, rural futures, transport, water, and regional landscape values.

The report establishes clear policies for management of Scenic Amenity values in the Regional Landscape (Part F Section 3.2 – see Figure 9).

Principle

Acknowledge, protect and manage significant Scenic Amenity areas and features.

Policy

3.2.1 Identify and manage areas of high Scenic Amenity in the regional landscape.

3.2.2 Improve knowledge and understanding of the region's Scenic Amenity and its contribution to the liveability and sense of place for residents and the attraction for visitors and tourists.

3.2.3 Retain and enhance public access to significant and popular viewpoints and protect important views from intrusive development.

3.2.4 Inform regional and local planning and decision making by adopting a common method of assessing Scenic Amenity, including design and siting of prominent developments and infrastructure.

Notes

The region has a diverse range of outstanding landforms and seascapes that combine to create the region's unique Scenic Amenity. These include mountain ranges, beaches, rivers, valleys, natural areas, wetlands, estuaries and islands. The quality of these scenes relates mainly to the natural visual features or combinations of natural and made elements. Many of the region's landforms and seascapes have high environmental, cultural, traditional and/or spiritual values. The region's scenery contributes significantly to the quality of life of local communities and to visitors' experience of SEQ. Areas of high Scenic Amenity with outstanding natural beauty include the Gold Coast hinterland, Moreton Bay Islands, Glass House Mountains, Currumbin Valley, Tamborine Mountain, Beechmont, Montville, Blackall Range, Locker Valley, Scenic Rim and Loganholme Wetlands.

Public access to significant and popular viewpoints is important for both local residents and visitors. Access to viewpoints may include public access to privately-owned lands where voluntary arrangements have been formally established to effectively manage public access and use. The design and siting of buildings and infrastructure must consider potential impacts on Scenic Amenity values.

Figure 9. SEQ Regional Scenic Amenity Policies in the Regional Landscape (Part F Section 3.2)

In addition, the SEQ Regional Plan recognizes that Scenic Amenity is also to be considered in other parts of the landscape of SEQ including Urban Footprint areas. Other references to Scenic Amenity in the SEQ Regional Plan include:

- Part E Regional Land Use Pattern: Land in the Urban Footprint may otherwise be unsuitable for urban development for a range of more local reasons, including constraints such as flooding, land slope, **Scenic Amenity,** and protection of biodiversity values of state, regional or local significance.
- Part F Regional Policies Section 2.4 Managing the Coast: SEQ's coastline supports diverse values and resources, including biodiversity, **Scenic Amenity,** outdoor recreation, economic activities and cultural heritage.
- Part F Regional Policies Section 2.5 Waterways and wetlands: Waterways, wetlands and associated floodplains and riparian areas support a range of natural and economic functions, including habitat for aquatic and terrestrial wildlife, nursery grounds for river and bay fisheries, potable water supplies, stormwater conveyance, dilution of sewage effluent disposal,

provision of sand and gravel for building materials, ecological linkages, **Scenic Amenity** and recreational opportunities.

- Regional Landscape Area (Table 4): Regional landscape areas support one or more regionally significant landscape values: High **Scenic Amenity** areas displaying high levels of regional Scenic Amenity, including areas or features with high visual exposure containing scenery highly preferred by the community.

8.2.2. Local Growth Management Strategies

Guidelines for the development of Local Growth Management Strategies for local governments in South East Queensland (Office of Urban Management 2006) reinforce components of the SEQ Regional Plan by specifying the need for recognition of Scenic Amenity values in areas of Open Space within the Urban Footprint. An extract from these guidelines (pages 12, 13) is provided in Figure 10.

The SEQ Regional Plan makes it clear that not all land within the Urban Footprint can or should be developed for urban purposes. The Urban Footprint includes some national parks, State forests and wetlands, and land with a range of physical constraints and values including **Scenic Amenity** and biodiversity values of State, regional or local significance.

In addition to protecting ecologically sensitive areas and wildlife corridors, an urban open space network should:

• provide accessible sport and recreation opportunities;

• enhance the identity and character of urban communities; and

• contribute to water quality management and flood mitigation.

Urban open space planning is an integral component of planning to accommodate growth and change, particularly in greenfield and major redevelopment areas as part of the structure and master planning processes.

A LGMS should:

• identify the open space hierarchy, distinguishing between PIP and non-PIP deliverables, and detailing the different open space functions and requirements;

• identify the strategic urban open space network including strategic open space linkages and needs in areas for which it is proposed to prepare a structure plan and master plan, and ensure that these are addressed as part of the development intents for these areas;

• detail measures to encourage, promote and protect **Scenic Amenity**, cultural heritage, ecologically sensitive areas and deliver a quality public domain; and

• describe the measures to be employed in encouraging, promoting and protecting quality open space.

Figure 10. Guidelines relating to Urban Open Space

9. Recent applications of Scenic Amenity

9.1. Details of the methodology

There has been a trend toward quantitative methods of visual assessment in South East Queensland since development of a Scenic Amenity assessment methodology by the South East Queensland Regional Landscape and Strategy in conjunction with the Brisbane City Council for a study area at Moggill (Department of Natural Resources 2001).

The Scenic Amenity methodology has been applied in five other case studies at Glen Rock (Department of Natural Resources 2001), the Lockyer Valley (Gatton Shire Council 2002), Caboolture (Caboolture Shire Council 2003), Interim Scenic Amenity Maps and Guidelines for South East Queensland (South East Queensland Regional Scenic Amenity Study 2004) and Brisbane City (Brisbane City Council 2005). The method has also been applied in Stage 1 of the SEQ Regional Scenic Amenity Study (South East Queensland Regional Scenic Amenity Study 2005).

The methodology has been recognised in several awards for excellence in planning from the Queensland Division and National Congress of the Planning Institute of Australia in 2003, 2005 and 2006.

The methodology measures then combines two measurable factors to produce maps of Scenic Amenity, which is defined as "*a measure of the relative contribution of each place in the landscape to the*

collective community appreciation of open space as viewed from places that are important to the public." (Preston 2001).

Its two components are Scenic Preference Rating and Visual Exposure Rating.

These two factors are combined using a look-up table which has been iteratively refined since the first Scenic Amenity in 2001. The most recent version of this table (Figure 11) has been applied to the assessment of regional Scenic Amenity for Brisbane. This table illustrates that Scenic Amenity rating increases with Scenic Preference. Scenic Amenity also increases with higher levels of Visual Exposure where Scenic Preference is greater than 4, and Scenic Amenity decreases with higher levels of Visual Exposure where Scenic Preference is lower than 4. This change-over at the preference rating of 4 reflects people's positive response to landscapes with a rating of 5 or more, and people's negative reports to landscapes with a rating of 3 or less. The table reflects the assumption that seeing more of something with a positive response increases community benefit, whereas seeing more of something with a negative response decreases community benefit.

The table also indicates that amenity is more influenced by preference than exposure, to reflect the societal tendency to place a high intrinsic value on landscapes. Landscapes with a Scenic Preference Rating of 10 can only vary by 3 points between 8 and 10, whereas landscapes with a Visual Exposure Rating of 10 can vary 10 points between 1 and 10.

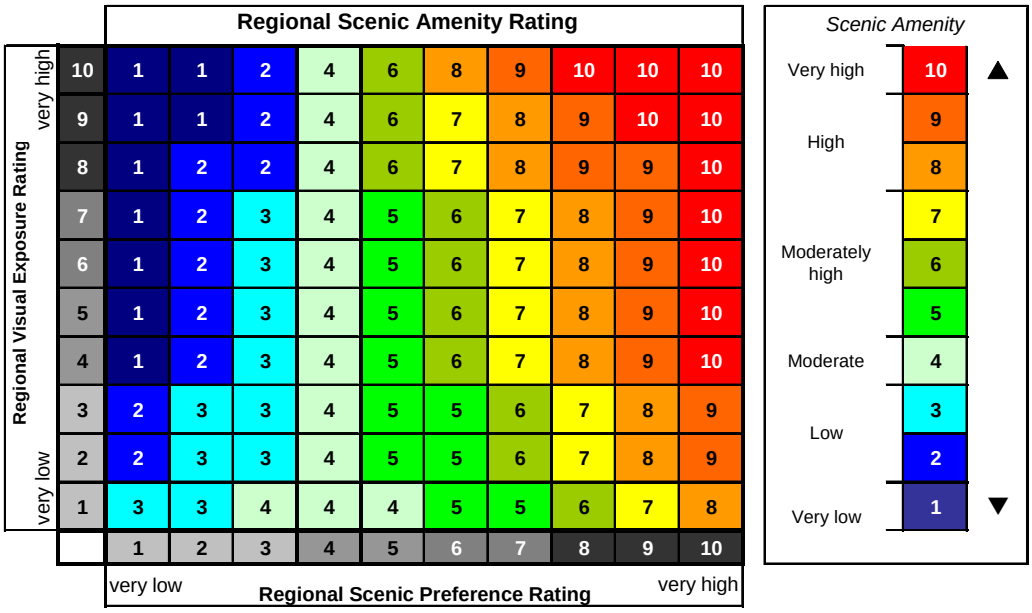


Figure 11. ***Scenic Amenity Look-up Table (Brisbane City Council 2005)***

The Scenic Amenity mapping approach divides the full landscape into a series of grid cells, where each cell has a particular land cover type (eg. eucalypt forest, ocean) and a geographic position. A Scenic Preference Rating is allocated to each type of Land Cover from survey data about people's preferences for various components of the natural and built environment.

Scenic Preference is recorded as a rating between 1 and 10 based on community surveys of public preference.

An example of this scenic preference rating was developed by the Caboolture Shire Scenic Amenity Study and subsequently applied across the South East Queensland Region as an interim measure to identify the Scenic Amenity of the region (South East Queensland Regional Scenic Amenity Study 2004). As seen in **Table 8**, highest scores were allocated to beaches and water (9, 8), and lowest scores were allocated to Electricity corridors and earthworks (3,1).

Table 8. ***Interim Scenic Preference Ratings applied to the SEQ Region (South East Queensland Regional Scenic Amenity Study 2004)***

		Topographic Steepness		
Land cover type	All slopes	*Flat*	*Moderate*	*Steep*
Sandy beach	9			
Rivers, creeks, dams	8			
Ocean	8			
Eucalypt forest or rainforest	⇨	7	7	8
Native plantations	⇨	7	7	8
Mangrove forest	7			
Melaleuca forest	7			
Sedgelands	7			
Open parkland	7			
Muddy beach	7			
Grassland (Pastures, low native veg)	⇨	6	7	8
Pine forest	6			
Crops	5			
Industrial farming	5			
Parkland with buildings	5			
Rural - residential	5			
Electricity corridor	3			
Earthworks	1			

Visual Exposure reflects the relative visibility of landscape areas as seen from public viewing locations, taking into the estimated number of people who visit the location and time they approximate time they would spend looking at the view.

It is calculated in a 4 step process as follows:

- Identify viewing locations. Estimate number of viewers and viewing duration for each point.
- Divide landscape into cells (eg 25m) and record its location, height, and land cover.
- Calculate the total time each landscape cell is seen from all viewing locations
- Divide the landscape into 10 classes with equal area.

The Visual Exposure method produces map with 10 classes of equal area as depicted in Table 9.

Table 9. ***Visual Exposure Map has 10% of the land area in each class***

	Least visible									*Most visible*
Class no.	1	2	3	4	5	6	7	8	9	10
Percent of landscape	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Cumulative %	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

9.2. Interim SEQ Regional Scenic Amenity maps

An appropriate demonstration of the methodology are the Interim Scenic Amenity Maps South East Queensland (Figure 12) (South East Queensland Regional Scenic Amenity Study 2004). This study found that:

- Ranges and hills covered by forests or pastures have a scenic preference rating of between 6 and 8. Sandy beaches on parts of Moreton Bay, and along the Sunshine Coast and the Gold Coast, have a scenic preference rating of 9. Farm land (crops and pasture) also contributes positively to people's appreciation of scenery.
- Areas with highest visual exposure are the mountains and hills facing populated areas and open space near major roads, beaches and the Brisbane River. Much of the open space in Brisbane City has a high visual exposure with the exception of western parts of the City in the

D'Aguilar Range. Large areas in northern Esk Shire, southern Gatton Shire, Laidley Shire, and Beaudesert Shire have a relatively low visibility, as well as parts of Moreton Island.

- Areas with highest Scenic Amenity are the steep mountain ranges and hills, and waters of the Pacific Ocean (esp. near the Gold Coast and Sunshine Coast), Moreton Bay, and central parts of the Brisbane River. Relatively unseen areas of open space in more remote parts of the region have a lower Scenic Amenity rating. The interim maps also show the importance of highly visible areas of open space around urban parts of Brisbane which have a Scenic Amenity rating of 8 or 9.
- Approximately 5% of the open space land in SEQ has a Scenic Amenity rating of 10 (Figure 13). A further 14% of land has a Scenic Amenity rating of 9. The relatively small area of classes 1, 2, 3 is present on open space occupied by transmission lines, quarries and refuse facilities.
- Areas with a high Scenic Amenity rating of 10 could be protected by limiting evident development when:
    1. An area is mapped as having an Interim Scenic Amenity Rating of 10.
    2. Field inspection and reference to available maps or aerial photographs indicates that the mapped Scenic Amenity and scenic preference classes are correct.
    3. A Government Planning Officer has determined that the community benefits from Scenic Amenity from this area are significant when compared to the social and economic benefits to the community of any proposed development.
    4. A Government Planning Officer has determined that other guidelines or authority do not exempt the area from these guidelines.

The study suggested that the following limits to development should apply in areas where the Scenic Amenity rating is 10:

Table 10. ***Maximum evident development where Scenic Amenity is 10.***

Scenic Preference Rating	*Maximum level of evident built development*
10	0%
9	5%
8	10%

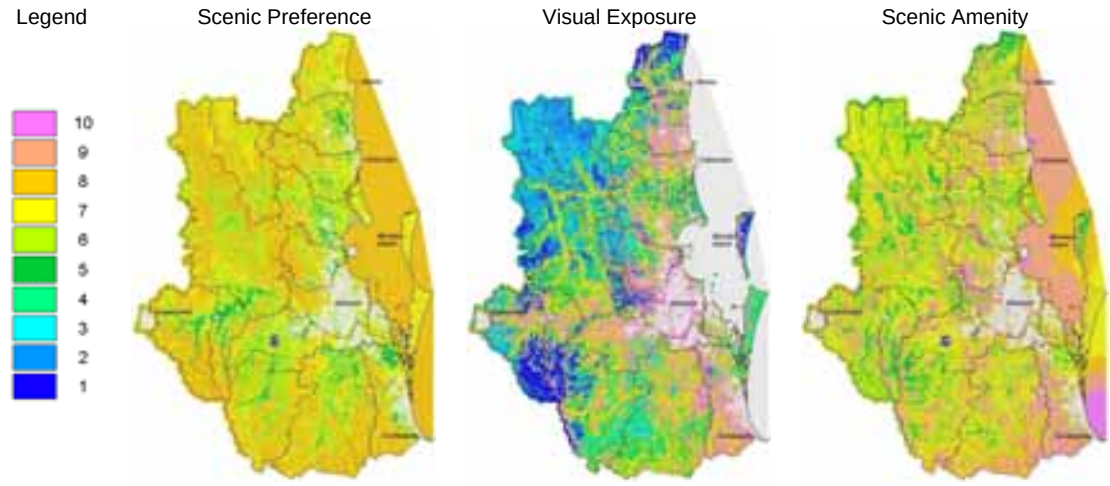


Figure 12. Interim Scenic Amenity Maps for SEQ (South East Queensland Regional Scenic Amenity Study 2004)

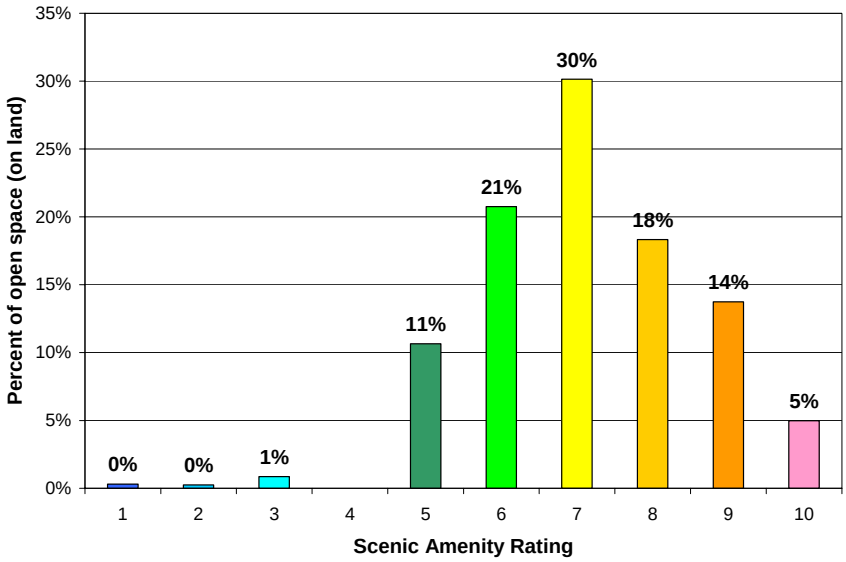


Figure 13. ***Percentage of open space (on land) in SEQ by Scenic Amenity Rating (South East Queensland Regional Scenic Amenity Study 2004)***

9.3. SEQ Public Preference Survey

A second example of application of the methodology is the 2004 Public Preference Survey undertaken during Stage 1 of the SEQ Regional Scenic Amenity Study (South East Queensland Regional Scenic Amenity Study 2005).

As in earlier iterations of the methodology, each participant in the SEQ regional survey evaluated 20 different views during a 1 hour interview by placing a photo on a grid with columns numbered from one (least preferred) to ten (most preferred) (South East Queensland Regional Scenic Amenity Study 2005). A section of this grid is shown in Figure 14.

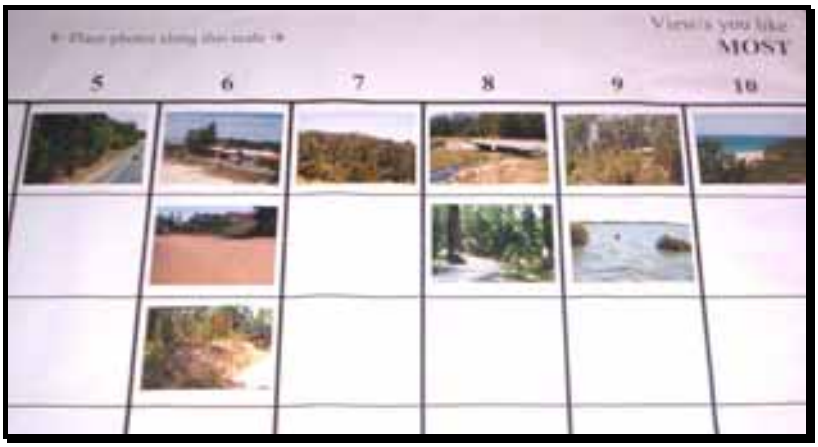
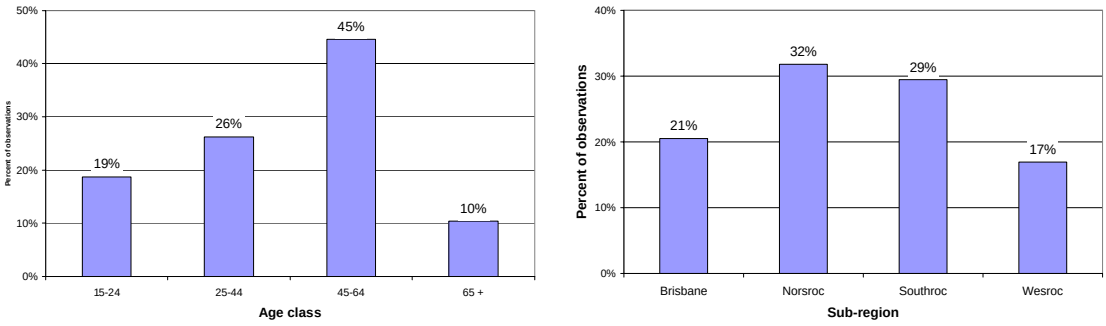


Figure 14. A section of the photo grid used in survey interviews

Most of the field work for the SEQ Regional Scenic Amenity Study was conducted by members of Community Research Teams, each consisting of between two and 10 people (South East Queensland Regional Scenic Amenity Study 2005). Two teams operated to the north of Brisbane (Sunshine Coast, Moreton Bay Coast), four teams covered western parts of the region (Esk / Kilcoy, Toowoomba, Ipswich, Lockyer / Scenic Rim), three teams conducted assessment for the southern parts of SEQ (Gold

Coast / Beaudesert, Redland, Logan) and one team assessed scenery for Brisbane. Members of Community Research Teams attended between one and three formal training sessions conducted by the study's Project Manager with the support of other consultants (South East Queensland Regional Scenic Amenity Study 2005).

A total of 964 people participated in interviews for the Scenic SEQ Public Preference Survey. The survey included a broad-cross-section of people from different demographic groups and all parts of the SEQ region, including people from different ages and sub-regions of SEQ as illustrated in Figure 15.



Proportion of participants by age class

Proportion of participants from each sub-region

Figure 15. Proportion of survey participants by age class and subregion.

The main quantitative results of the survey are the (a) mean preference rating for each view and (b) an equation derived from survey data which predicts preference ratings. Mean preference ratings and other statistics for the 3 highest scoring views and 3 lowest scoring views are reproduced in Table 11 (South East Queensland Regional Scenic Amenity Study 2005).

Table 11. Statistics for the 3 highest scoring views and the 3 lowest scoring views in the survey

PhotoID	*Mean SPR*[3]	*Lower C.I. Mean*	*Upper C.I. Mean*	*n*	*Std dev*
C101	10.0	10.0	10.0	36	0.0
C017	9.8	9.7	10.0	31	0.4
B020	9.8	9.7	9.9	43	0.4
…	…	…	…	…	…
U044	1.1	1.0	1.2	40	0.3
B006	1.0	1.0	1.0	31	0.0
U045	1.0	1.0	1.0	18	0.0

An impression of major results can be formed by examining the views with the lowest and highest overall scores. As depicted in Figure 16, the highest scoring view (C101) is of a natural coastal headland, and the lowest scoring view (U045) is of a rubbish dump with some trees in the background.

[3] SPR: Scenic Preference Rating

Lowest scoring view
(Mean Rating = 1)

Photo U045 by Wally Wight

Highest scoring view
(Mean Rating = 10)

Photo C101 by Jan Haughton

Figure 16. Lowest and highest scoring views from the 2004 SEQ survey

The above tables highlight the 'extremes' of preference that are likely to be close to 'universal' high and low preference across all ecosystems.

The project also developed an equation derived from survey data which predicts preference ratings of views based on an analysis of photo content (Figure 17 and Table 12)

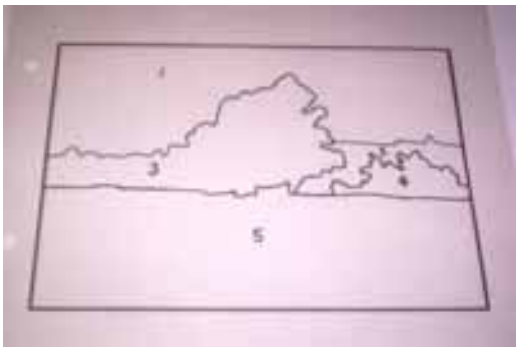


Figure 17. Method used to delineate and code photos (example for U111)

Table 12. Information recorded to characterise photos (example for photo U111)

Polygon	*Visual Domain*	*Visual Element*	*Polygon Area (sq cm)*	*Proportion of terrestrial photo area*	*Distance to element*	*Steepness*
1		Sky	n/a	n/a	n/a	n/a
2	Urban	Building low non-residential	6.75	0.06	10-100 m	Flat
3	Urban	Trees planted native	30.46	0.25	10-100 m	Flat
4	Urban	Trees planted exotic	6.15	0.05	10-100 m	Flat
5	Urban	Grass mown	78.77	0.64	10-100 m	Flat
Total			122.13	1.00		

This data was used to develop a predictive equation (Table 13) consisting of four terms being: (a) an additive term which varies in magnitude depending on which two major Visual Domains are present in the view, (b) a series of multipliers based on the proportion of each Visual Element in the View (c) a constant term and (d) the predicted Scenic Preference Rating between 1 and 10.

Table 13. Statistical equation used to predict the Scenic Preference Rating of views

(a) Visual Domains present	*(b) Proportion of Visual Element*	*(c) Constant*	*(d) Predicted Result*
–1.3 x Rural and Urban	–20.2 x Signs	6.7	= Scenic Preference Rating (between 1 & 10)
–1.2 x Urban (only)	–11.2 x Building medium high		
–1.1 x Bush and Urban	–11.0 x Building low non-residential		
–1.0 x Rural (only)	–10.6 x Vehicles		
+ 0.8 x Bush and Coast	– 9.9 x Mines quarries dumps		
+ 1.4 x Coast (only)	– 9.1 x Towers cables poles		
	– 7.3 x Building low res (multiple)		
	– 7.1 x Built elements water		
	– 6.4 x Road freeways		
	– 6.3 x Park elements		
	– 5.4 x Park buildings cultural		
	– 4.8 x Grass unmanaged		
	– 4.5 x Roads (not freeways)		
	– 1.8 x Fence		
	– 1.8 x Building trees grass		
	+ 0.5 x Water bay		
	+ 0.6 x Trees planted		
	+ 0.7 x Modified vegetation		
	+ 1.3 x Rainforest		
	+ 1.5 x Euc and associated forest		
	+ 1.6 x Path		
	+ 1.7 x Water constructed		
	+ 1.8 x Water ocean or estuary		
	+ 2.5 x Rock		
	+ 3.8 x Water inland		

The above regression equation has also been implemented as a spreadsheet tool for use by local government and other planners in SEQ to evaluate the impact of alternative development scenarios (South East Queensland Regional Scenic Amenity Study 2005).

10. Implications for future planning in the Gold Coast

10.1. Urban planning

The Gold Coast City Council and the Queensland Government are fortunate to have recognised and protected so many of the city's key visual assets through early planning initiatives, and to have provided opportunities for the enjoyment of these areas. Some of the best examples include coastal walkways and headland reserves.

Continued intensive growth in the urban footprint of the Gold Coast provides opportunities for further recognition of visual corridors which will connect with coastal, natural and rural scenic landscape areas. Well planned visual corridors will be able to connect with other recreational, nature conservation, and transport corridors to ensure the Gold Coast maintains its great appeal to new residents and visitors.

The first stage of this process would require identification of strategic locations of high value with the urban footprint, and evaluation of urban design strategies that could be adopted to reinforce the benefits that can be made from showcasing these scenic resources.

The second stage of the process would be to adopt city-wide guidelines for regulating development in these locations to protect their values for future generations. This would entail detailed evaluation of planning scheme policies and regulations that would simplify and support this initiative.

10.2. Rural planning

The Regional Landscape and Rural Production Area contains many spectacular places of high Scenic Amenity which are of considerable interest to limited tourist and low impact development. Future rural precinct planning in these areas will identify opportunities for economic development that are commensurate with the objectives of this area. The Regional Landscape and Rural Production Area is also required for infrastructure and transport corridors.

Scenic Amenity management plans would be ideally undertaken for this area to ensure locations of particular importance are protected for the enjoyment of existing residents, new residents and tourists who use these areas.

As with urban planning, this will entail identification of strategically important locations including key scenic landscape areas, visual corridors, and viewpoints to ensure these areas are recognised and receive appropriate management. In many cases this will require identification of complementary landscape values.

A second stage of planning will require development of Scenic Amenity management guidelines for the Regional Landscape and Rural Production Area within the Gold Coast City Council area.

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