Scenic Amenity Study

Whitsunday Region Scenic Amenity Study

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Whitsunday Regional Council

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Cardno
Shaping the Future

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Contents

1 Introduction

1.1 Background

The Whitsunday region in tropical North Queensland includes one of the most scenic parts of the State's coastline, as well as an extensive and attractive rural hinterland. Whitsunday Regional Council (*Council*) commissioned Cardno to prepare this scenic amenity study to provide planning inputs to the Draft Regional Planning Scheme, consistent with the broader regional plan for the Mackay, Isaac and Whitsunday Region (*MIWR*).

The identification, protection and management of regional landscape values are important principles of the Mackay, Isaac and Whitsunday Regional Plan (*MIWRP*; s. 2.1.1). This document defines regional landscape values as including rural production areas, natural resources, scenic amenity and landscape heritage areas, which play a major role in defining the character of the region. Landscape values are associated with natural environmental features and also with small towns and rural activities, such as cropping and grazing, which contribute to the regional landscape character. These qualities are appreciated by visitors and are economically important for tourism, but communities across the region also recognise their importance for the character and quality of places where they choose to live.

The desired outcomes of the MIWRP acknowledges the need to develop a consistent methodology for identifying and managing landscape values (s 2.1.3) to plan for the protection of scenic amenity and landscape character, and recognising the extent to which these are valued by the community.

This Study aims to provide Council with a geographical information system (GIS) identifying and mapping scenic amenity and other landscape values of the Whitsunday region. Using a methodology based on Queensland Government guidelines[1], the significant landscape values, scenic amenity and scenic preferences of the Whitsunday community have been defined and mapped as an input to planning and policy development to protect and manage these values.

1.2 Study Area

The Whitsunday region is a large, irregularly shaped local government area of approximately 23,790 km^2 (excluding marine area) situated along the north eastern Queensland coastline. It is bounded to the north by the town of Ayr, to the south by Mackay City, and to the west by the Burdekin River. . The eastern marine part of the region extends into the Great Barrier Reef Marine Park and World Heritage area. A number of islands form part of the region, including the 'Whitsunday group' (centred around Whitsunday Island, including Hamilton Island, Hook Island, Dent and Hayman Islands) the 'Molle group' (Daydream Island, South Molle Island and Long Island) and the 'Lindeman Group' (Lindeman Island). There are four major centres in the region, including the Town of Whitsunday (Airlie Beach), the commercial and administrative centre of Proserpine, and the towns of Bowen on the north coast, and Collinsville in the west. The narrow coastal corridor which links the two coastal centres (Airlie and Bowen) with Proserpine, is via a series of major connector roads, including the Bruce Highway, Shute Harbour Road and the Cannon Valley highway. Despite Collinsville being almost due west of Proserpine, there are no direct routes as the Clarke and Normanby Ranges prevent east-west access. Major road access to Collinsville is via Bowen and the Collinsville Developmental Road, or via Mackay and the Suttor Developmental Road and Mt Coolon, although there is limited access via local connector roads and unsealed roads.

[1] South East Queensland Regional Plan 2005-2026 (2007) *Implementation Guideline No.8* 'Identifying and Protecting Scenic Amenity Values'

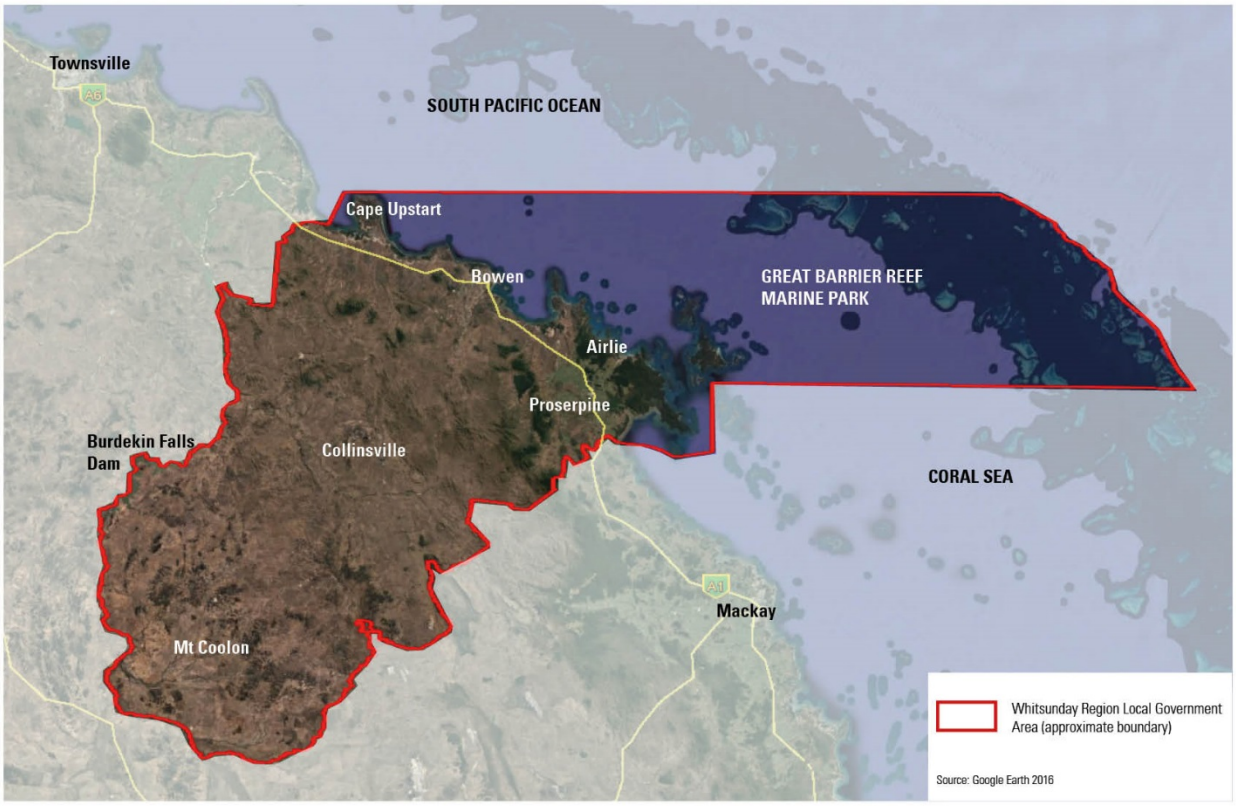


Figure 1-1 Study Area (Source: Google Earth)

The Bruce Highway and North Coast Railway are the main north-south access and travel routes along this part of the coast. The Burdekin River is the largest river catchment in the region and defines the local government boundary. Subregional catchments include the Bowen catchment and the Beylando-Suttor catchment. There are a number of other major river and creek systems in the region, many of which are seasonal

The landform, vegetation and scenery differ markedly between the coastline and the hinterland areas, both of which exhibit considerable landscape diversity). The coastal landscapes include the attractive continental islands and semi-enclosed waterways of the Whitsunday Passage and adjacent mainland, comprising forested rocky mountain ranges and headlands between Cape Gloucester and the Conway Ranges. These contrast with a main valley forming the flat fertile plains around Proserpine and the cane growing region of Cannon Valley. Mangrove inlets define the coastline, while white sandy beaches and clear waters form attractive features of the islands, and contribute to the tourist attraction of the Whitsunday region. The Clarke Range forms a forested backdrop to the Whitsunday coastline, but also helps to visually and physically separate the coastal areas from the 'outback' areas to the west. Although renowned for its natural landscape character, the region is also characterised by extensive areas of sugar cane on the flat coastal plains, as well as mining, horticulture and grazing.

Just as there is a contrast in the landscape settings between east and west, there is a similar contrast north-south along the coastal areas, between the subregional systems of the 'Burdekin Dry Tropics' of the Lower Burdekin in the north, to the wetter tropics of parts of the Bowen catchment in the south of the local government area. The inland areas of the Lower Burdekin, Bowen and Belyando-Suttor Catchments experience a hotter, drier climate than those subregions along the coastal zone.

2 Approach and Method

2.1 Reviews

A review of relevant planning instruments including Queensland Planning Provisions, State Planning Policy, the Mackay, Isaac and Whitsunday Regional Plan and the planning schemes for the former Whitsunday Shire (2009) and the former Bowen Shire (2006) was undertaken with respect to their landscape character and scenic amenity considerations. The scenic amenity methodology described in the South East Queensland Regional Plan (SEQRP) Guideline 8, and applied to local government areas throughout south east and coastal Queensland, has also been reviewed and adapted as the methodology for this Study.

2.2 Landscape Character and Features Assessment

An initial desktop assessment of landscape character types was based on the study team's familiarity with the region plus aerial imagery, topographic maps, Google Earth '*streetview*' and Geoscience Australia data. Tourist maps and online brochures helped identify the major landscape frame and the features of the region, and provided an initial input to the broad character types which were later verified or amended though field assessment. The major landscape features and landform frame of the study area have been described as broad geographic Landscape Character Types ('LCTs')[2], including natural areas (ie. including watercourses and coastline, bush, forested mountain ranges, sandy beaches), rural land uses and developed areas (including urban/township settlements). The combination of landform and land cover / land use are determining factors in the broad patterns of landscape character which provide the image and 'sense of place' to any area.

2.3 Scenic Amenity Assessment and Methodology

The MIWR Plan recognises the value of regional landscapes and their contribution to the *biodiversity, rural production, scenic amenity and landscape heritage of a region.* The MIWR Plan's Desired Regional Outcome for the protection of regional landscapes requires that these values are *identified and secured and* must be *responsibly planned and well managed,* through a robust and integrated planning program.

This has been addressed by mapping scenic amenity in accordance with Guideline 8 and follows the methodology as outlined below:

2.3.1 Scenic Amenity

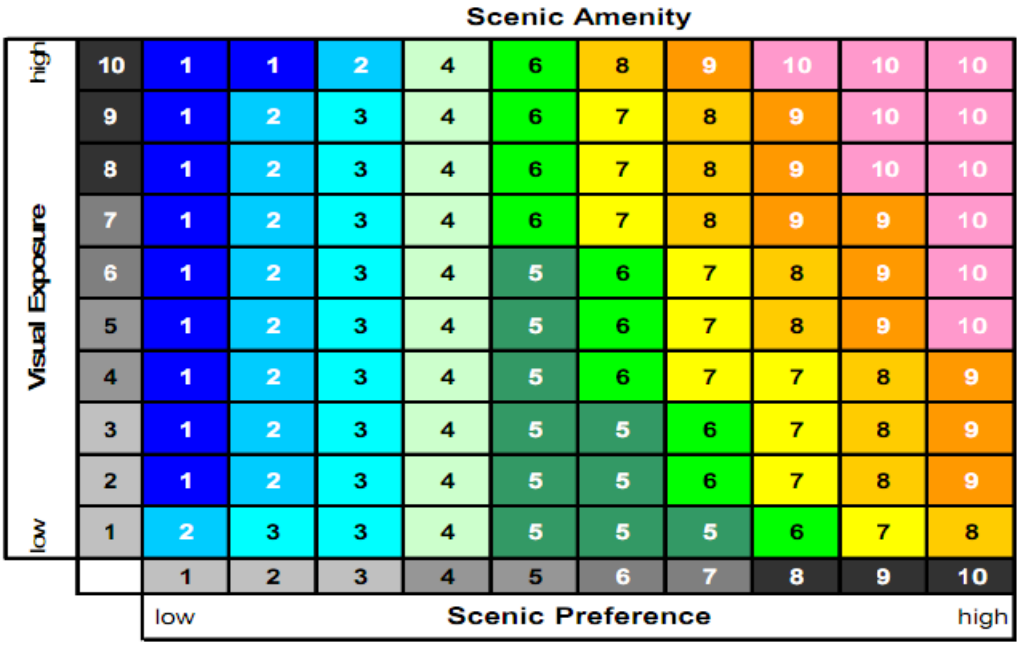
Scenic amenity is defined as "*a measure of the relative contribution of each place in the landscape to the collective appreciation of open space as viewed from places that are important to the public*" (Department of Natural Resources, 2001). Scenic Amenity is a combination of two independent factors, each of which is defined below in 2.3.2 and 2.3.3:

> Scenic preference – a measure of the relative contribution of community preference for different landscapes, and
> Visual exposure – a measure of relative visibility of different parts of the landscape.

These factors are combined using the matrix shown in Table 1

[2] For this study, the 7 Landscape Character Types described in Section 3 below in effect replace the four Visual Domains (Bush, Coast, Urban and Rural) of the SEQ Scenic Amenity Methodology in Guideline 8.

Table 1: Scenic Amenity Matrix



Visual Exposure \ Scenic Preference	1	2	3	4	5	6	7	8	9	10
10	1	1	2	4	6	8	9	10	10	10
9	1	2	3	4	6	7	8	9	10	10
8	1	2	3	4	6	7	8	9	10	10
7	1	2	3	4	6	7	8	9	9	10
6	1	2	3	4	5	6	7	8	9	10
5	1	2	3	4	5	6	7	8	9	10
4	1	2	3	4	5	6	7	7	8	9
3	1	2	3	4	5	5	6	7	8	9
2	1	2	3	4	5	5	6	7	8	9
1	2	3	3	4	5	5	5	6	7	8

Scenic Amenity rating is influenced strongly by low Scenic Preference Ratings (SPR), but Visual Exposure exerts a stronger influence where SPR is higher than 4.

2.3.2 Scenic Preference

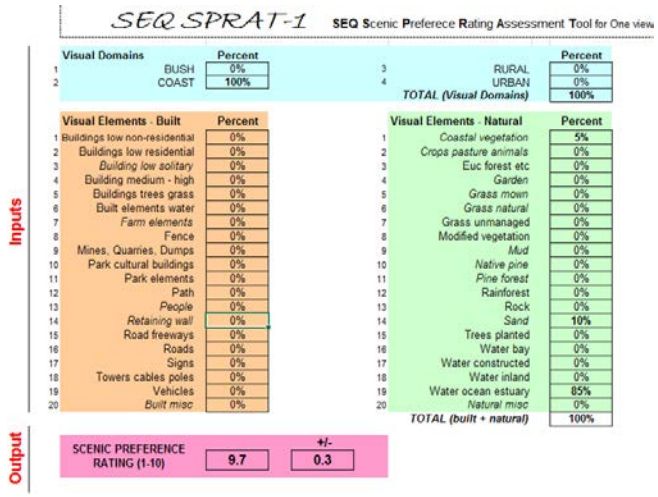
Scenic Preference Ratings

Scenic preference ratings are a measure of community preferences for different landscapes. To gauge this, community surveys rate photographs of different landscapes (with various combinations of built and natural landscape elements) between 1 and 10, in terms of their preference for particular scenery relative to their context ('visual domains' or landscape character types).

For the Whitsunday Scenic Amenity Study, a local evaluation (the *Scenic Preference Survey*) was undertaken by Cardno in collaboration with the Whitsunday Regional Council (thereby replacing the SPR ratings derived from SEQ surveys and adopted in Guideline 8). This comprised four focus group sessions in November 2016, as well as an online survey option, for which public invitations were advertised in local newspapers and on Council's Web page, and supplemented by invitations to community groups and Council staff.

Session participants were presented with 48 photos of local scenery, selected to represent a diversity of landscapes in the Whitsunday region, with various combinations of natural and built visual elements. Two photo sets (A and B) consisting of 24 photos each were selected from several hundred photos taken for this study, all with similar focal length lens, time of day, weather pattern and proportion of open sky. Participants were asked to each rank one set from 1 – 10 according to personal scenic preferences. The seven broad Landscape Character Types (LCTs) (**Table 4**) were represented in various photographic combinations, as recommended by Guideline 8 with respect to Visual Domains[3]. Results of the Whitsunday scenic preference survey are presented in Appendix A.

[3] 'What's in a View?' SEQ Regional Scenic Amenity Study 2004



The modified SPR was subsequently compared to Guideline 8's mean rating tool ('SPRAT-1'), which predicted SPR based on visual elements in a photo (see left).

This comparison showed an overall consensus between the mean SPR ratings assessed in the Whitsundays Region and those previously assessed in the South East Queensland survey (see Appendix A) although there were some differences between rural and urban, requiring further qualification in terms of scenic preference ratings (see section 4).

2.3.3 Visual Exposure

The first stage of Visual Exposure mapping has been to identify public viewing locations, based initially on Annual Average Daily Traffic (AADT) analysis and desktop review of major road hierarchies, tourist routes, ferry routes and lookouts. This review, together with advice from Council and Department of Transport and Main Roads, identified major roads, lookouts and the coastline (including headlands) as the basis for computer modelling of visibility.

Visual Exposure (VE) was mapped using the visibility tool in ArcGIS to analyse relative visibility of parts of the landscape as seen from public viewing locations (major roads and other public viewpoints). The visibility tool determines whether line of sight exists between mapped features and observers to points in the landscape and counts the frequency of exposure from a series of viewpoints. For this study, observer features (representing vehicle based, ferry and boat-based, and lookout-based viewing platforms) were assessed using a digital terrain model with a cell size of 25m x 25m. A series of viewpoints were created from road centrelines and ferry and boat passage routes at 1km spacing.

All viewpoints were then classified according to the volume of traffic (measured in equivalent vehicles per day) and the view time (in minutes) to accord weight to each class. Six classes of road viewpoints were created as detailed in the assumptions below. The boat routes classified into two classes, high volume ferry routes and low volume ferry and boat passage routes. The Lookouts were also classified into high and medium volume based on proximity to population centres and accessibility.

To calculate visual exposure based on users' views and public viewpoints, the following viewpoint 'weighting' was adopted using VPD data (Vehicles per Day) and viewing time at intervals, to provide total viewing minutes for each viewpoint classification:

Table 2: Viewpoint Locations, Observer Numbers and Viewing Time and assump

Viewpoint	VPD	View Time	Weight (total vehicle view minutes)	Viewpoint	VPD	View Time	Weight (total vehicle view minutes)
Road Class A	8000	0.02	160	Tourist Ferry & Boat Passage - Medium Volume	200	0.25	50
Road Class B	2500	0.02	50	Tourist Ferry - High Volume	1000	0.25	250
Road Class B Coastal	2500	0.03	75	Lookouts Low volume	50	4.25	213
Road Class C & Class C Coastal	1000	0.03	30	Lookouts High volume	250	4.25	1063
Road Class D	100	0.03	3				

Additional details of the Visual Exposure method and assumptions are given in Section 4 below.

2.4 Lookouts, View Corridors and Scenic Route Sections

Visual Exposure mapping does not *per se* identify scenic sections of roads. The Region includes a number of roads which offer scenic driving experiences, such as coastal routes, roads through canefields or rocky countryside, and these have been separately identified as Scenic Route Sections (see section 3.4.3).

Similarly, VE mapping takes into account lookouts, and mapping of Scenic Amenity identifies valued parts of the landscape, but the views from lookouts towards such places require separate identification. Guideline 8 and associated scenic amenity mapping tools recommend that 'View Corridors' be identified, representing the arc of view from lookouts and public viewpoints, as a useful basis for identifying places where significant views may require protection including attractive features visible from popular lookouts (see Landscape features map).

Field assessment of regional landscape features and values for verification of landscape character types also included photographs for the scenic preference study and a survey of lookouts. The field assessment and sequential photographs along major roads which offered scenic drive opportunities also allowed identification of view corridors and scenic route sections. View corridors have been identified in terms of significant arcs of view from particular sections of road, as well as from public lookouts. Given the size of the Study area and lack of accessibility, not all places were inspected. Local knowledge (derived from comments as part of the SP surveys) therefore provided an important input to some of the lesser known lookouts and view corridors to landform features and scenic routes.

2.5 Mapping layers & methodology

A number of base mapping is required in order to complete the scenic amenity map, in addition to Scenic Preference and Visual Exposure, including viewpoint mapping, identifying and mapping land cover and important landscape features, as described above. Viewpoint mapping was used as part of an analysis to simulate visual exposure throughout the study area (section 4.2) while the land cover mapping forms the basis for spatially depicting landscape elements, as component parts of Landscape Character Types (Section 3.3) and which provides an important input into calculating scenic preference ratings (Section 4.1) for particular combinations of scenery. Combining the Scenic amenity mapping layers and the Landscape Character types forms a composite 'Landscape Values' map intended as part of a future strategic framework for the recognition and protection of scenic amenity in the Region.

Mapping and spatial analysis was conducted in ArcGIS desktop version 10.5. As the land cover mapping was compiled from different sources the spatial accuracy and mapping scale variable dependant those sources on a per land cover type basis. Mapping is on average at a scale of 1:25,000. The land cover types digitised from high resolution aerial imagery included towns and sugarcane have a map scale of > 1:10,000. Those detected and mapped from recent Landsat OLI sensor imagery (beaches, mangroves and disturbed (mining) areas have a map scale of between 1:50000 to 1:80000. Spectral enhancements used included a water index and NDVI as well as a short-wave infrared density slice for identifying bright beaches against their surroundings. These land cover types were reviewed and supplemented using high-resolution aerial imagery to improve their accuracy. Transportation corridors and utility corridors were derived from course scale (1:250000) digital topographic layers from Geoscience Australia but were improved for position before being buffered by 25m (to a total width of 50m) and generally have a scale of 1:25000. The delineation of dry hilly and forested mountain landscapes were undertaken using slope and elevation benching analysis applied to a digital elevation model at 25m grid. The forested areas were delineated using an NDVI spectral enhancement applied to recent Landsat OLI satellite imagery and have a scale of 1:80000.

A final aggregation step was completed in ArcGIS desktop to remove spatial slithers and other spatial inconsistencies, borne of compilation separate layers, to produce a single coherent land cover layer.

3 Existing Landscape

3.1 Overview

The Whitsunday Region in tropical northeast Queensland spans a large area (approximately 23,900 km^2) extending along the coastal band between Bowen and Airlie Beach to Proserpine, and extending west to the the Burdekin River and including the outback Queensland towns of Collinsville and Mt Coolon.. The region includes a number of island groups and semi-enclosed waters, including the spectacular Whitsunday Passage and Islands, which contribute in part to its popularity as a tourist attraction.

Figure 3-1 Typical ocean-island scenery of the Whitsunday Passage and Islands

The region comprises a diverse combination of landscapes, from the forested mountain ranges of the coastal strip between Gloucester Island, Dryander National Park, and the Conway Ranges which frame the coastal plains of Airlie Beach and the Cannon Valley, to the open plains and rocky hills and headlands of Bowen. The coastal forested mountains forms a distinctive landscape frame of the region. Further west, heading through the Bowen Basin along Bowen-Collinsville Developmental Road, the Bogie River Hills subregion features distinct volcanic landforms and a number of prominent mountains including Mount Abbot, Edinburgh Castle, Mount Aberdeen and Highlanders Bonnet.

The region generally experiences a warm climate although there are some notable subregional climatic differences in temperature and rainfall. Airlie and parts of the south eastern coastline share a tropical climate and 'wet tropics' weather pattern typically dominated by summer rainfall, while Bowen forms part of the 'dry tropics' of the Burdekin catchment. Annual rainfall varies considerably throughout the region though there is a marked rain shadow on the western side of the Clarke, Normanby, and Broken River ranges, which has resulted in one of the steepest rainfall gradients in Australia between east and west. However, there is also a marked difference in rainfall between the 'wet tropics' of the southern coastline and the 'dry tropics' in the north. The Leichhardt Range, part of the Great Dividing Range, is located between Collinsville and Mt Coolon and includes a number of smaller ranges (Rottenstone Range, Percy Douglas Range) characterised by rugged granitic hills and has an average elevation of 355 metres above sea level. The highland plateau of the Redcliffe

Tablelands in the south of the region provides a long wall of sandstone cliffs characterised by the distinctive flat 'table' top.

Figure 3-2 View of the Redcliffe Tablelands along the southern boundary of the region

The difference in rainfall contributes to the lush tropical vegetation on the forested mountains, along the southern coastal plains and on the islands, compared to the woodland savannah forest and rocky outcrops of the 'dry tropics'. The Bowen, Proserpine, Bogie and Burdekin Rivers are the main river systems within the region, with the Burdekin River forming the western boundary. The Suttor River defines the southwestern boundary of the LGA. Drainage is also partly toward Bowen via the Don River, and towards Proserpine via the upper Proserpine and Andromache rivers. The Peter Faust Dam and Lake Dalrymple (Burdekin Falls) are also located within this subregion.

Between the mountain ranges and the shoreline, the fertile Cannon Valley is intensively farmed, mainly for sugar cane, punctuated by rivers and riparian vegetation, farm houses, and, closer to the coast, by nodes of urban development.

Cannon Valley separates the Conway Peninsula and Airlie Beach/Shute Harbour from other parts of the region, and the stretch of cane fields provides an inter-urban break between urban settlements and rural townships of Proserpine and Bowen.

The region is also an important gateway to the city centres of Townsville in the north, and Mackay in the south. The road network in the region is largely determined by the topography, with main arterial roads such as the Bruce Highway located along the flat coastal plains and the inland developmental roads located along deltas and through hilly country or around mountainous ranges. For this reason, there are no direct routes (along sealed roads) linking the region's east to west from its coast to its rocky mountain ranges. However, there are many lesser known routes (locally known dirt roads) which provide some connectivity between towns and places. The region is also connected through a regional rail network, and accessed by boat and plane with a domestic airport servicing tourists and residents.

3.2 Landscape Character & Features

The Whitsunday region is renowned for its spectacular scenery along the coastline and islands **(Figure 3-1)**, and in the mountains and valleys dividing the coast from the outback. Most coastal settings and views include a variety of landforms and combinations of natural and urban elements, with lush tropical vegetation and views of water, and a combination of forested mountains (Airlie and Gloucester), or rocky outcrops and prominent headlands (Bowen). Rural settings are characterised by red rocky soils and granite outcrops offset by the silver green of the savannah woodland and Brigalow forest which form the backdrop to agricultural and pastoral land uses. Ephemeral watercourses form 'gateways' to rural townships, which are more noticeable in times of wet.

Rural land use patterns contribute to the sense of place of each locality, together with the mountain ranges, rainforest, rocky wooded hills, coastline, rivers and creeks. These combinations form particularly attractive patterns of rural and natural landscapes (**Figure 3-3**).

Figure 3-3 View overlooking rural and natural areas near Gumlu

Rural production areas such as cropping are concentrated on the coastal plain and alluvial lowlands associated with the Cannon Valley, and around Proserpine, and extend into adjacent foothills. The scenic qualities of rural lowlands are dominated by the distinctive North Queensland cane fields which also contribute significantly to the character, landscape qualities and appeal of the region generally (**Figure 3-4**). Produce such as vegetables and fruits including mango farms are also significant contributors to the agricultural industry in the region, particularly around Bowen. In the outback region, outside of the alluvial lowlands, cattle stations and pasture are more evident agricultural activities. A number of mines are also located in the central and western parts of the region.

Figure 3-4 Cane fields are a distinctive landscape in the region (especially at maturity)

The urban character is generally limited to four centres; Airlie Beach, Proserpine, Bowen and outback Collinsville. The civic centre of the region is Proserpine; an attractive, 'old country town' centre, with wide streets, and 'strip shopping' in adapted art deco buildings located close to the region's domestic airport. The chimneys of the sugar mill form a prominent landmark in an otherwise low-density town, and, with its plumes of smoke, provides a 'sense of place' and identity for the township and a reminder of the canefields which surround it (**Figure 3-5)**. The principal commercial centre has more recently become Airlie Beach township, which has a high influx of tourists and '*seachangers*' and is the main departure point for island tourism, including the Whitsunday Islands, Hamilton Island and the Molle Island group. Out west, Collinsville is the main township servicing the outback region. Alternately wet and dry, it is a small country town framed by the rocky ranges and savannah woodlands of the Bogie River Hills and the Brigalow Belt bioregion. Coal mining is a major industry at Collinsville, and a dedicated railway line runs from there to a coal loading facility at Abbot Point.

The Bowen Development Road is the sealed road between Bowen and Collinsville which then continues southward. The Bruce Highway passes through the coastal area in the north-east. Other roads are gravel, with low-level concrete stream crossings.

Figure 3-5 The sugar mill behind the post office in Proserpine

3.3 Character Types & Mapping

The character of the region has been mapped as combinations of landscape (land cover) elements which make important contributions to the 'distinctiveness' or '*sense of place'* of the Whitsunday Region.

Following fieldwork and consultation, seven Landscape Character Types (LCTs) have been identified as significant to the region (**Table 4** and mapped in **Figure 3-6)**. Some of these (on their own, or in combination) are particularly distinctive and characteristic of the Whitsunday region and some are noted as "valued character types" irrespective of their visual exposure or scenic amenity rating. These are recognised as such due to their local distinctiveness and value to the regional community (derived from the survey responses) but also as the scenic amenity rating may not accurately reflect their landscape values. Canefields, for example, may not have a high scenic amenity rating (because they are typically flat lands with tall-growing cropping, which obscures roadside views and visual exposure, or because when cane is fallow it is less 'scenic' and preferred) however, they are nonetheless characteristic of the northern Queensland coastal plains and convey a distinctive 'sense of place'. Similarly, forested mountains are, where visible, rated high scenic amenity, however, those forested mountains which form part of a range that are not visible, have a lower SA rating.

This recognises that these are important landscapes in the region which, regardless of visibility or seasonal changes, are worthy of protection.

Table 4: Landscape Character Types

Character Type and Description	
1. Forested Mountains (a Valued Character Type) Generally, the uplands of the mountain ranges such as the Conway Ranges, the Clarke Ranges, Gloucester NP along the eastern coastline, help create the landscape 'frame' and form the scenic frame for inland views looking east, and also from offshore island views.	
2. Rocky wooded hills Wooded or sparsely forested rocky hills characterised by dry sclerophyll forest and grassy understorey. More commonly inland associated with the Bogie Hills subregion and the outback regions, including the Leichhardt Ranges. This area includes a number of granite peaks at elevations of 300m (or more) and forms the background frame in the west.	
3. Rural The rural areas are concentrated outside of the coastal plains, and occupy much of the western outback areas as well as the 'dry tropics' around Bowen. This includes agriculture, grazing and cattle on pasture, and includes cropping, food production and horticulture such as mango and melon farms around Bowen ** Canefields are a separate Character Type below*	

Character Type and Description	
4. Canefields (a Valued Character Type) Generally flat areas used for sugar cane on coastal plains or river deltas, such as through Cannon Valley. When cane is tall (and fields are not fallow) cane fields form a distinctive part of the wet tropics identity and contribute to a "boulevard effect" along roadsides contributing positively to the driving experience of the region	
5. Coast The coast is a mixture of sandy beaches, mangroves, rocky headlands and sandy beaches, plus bays and inshore ocean. The area mapped as the 'Coast' LCT includes the above in addition to islands, ocean waters, bays, mangroves and intertidal wetlands. Some of the beaches (including island beaches) have an 'iconic' combination of white sand, fringing vegetation, and long views over waters of the Great Barrier Reef framed by mountain ranges.	
6. Watercourses & waterbodies Dams and waterbodies include Faust Dam, Dalrymple Dam (Burdekin Falls). The major rivers include the Burdekin, Bowen, Gregory, Andromache, Proserpine and Don Rivers, + many tributary creeks (and falls) which feed into these. Where river estuaries meet the sea, the intertidal mangroves typically form part of the coastal LCT. Wetlands include Caley Valley and Goorganga Plains.	

Character Type and Description	
7.Urban/ development Urban areas in the region include diversity of buildings and gardens and street scaping, and include coastal mainland areas such as Airlie Beach, Bowen & Cannonvale, as well as smaller towns such as Proserpine. This LCT also includes development associated with human settlement, including industrial land uses (mines, quarries etc), and infrastructure.	

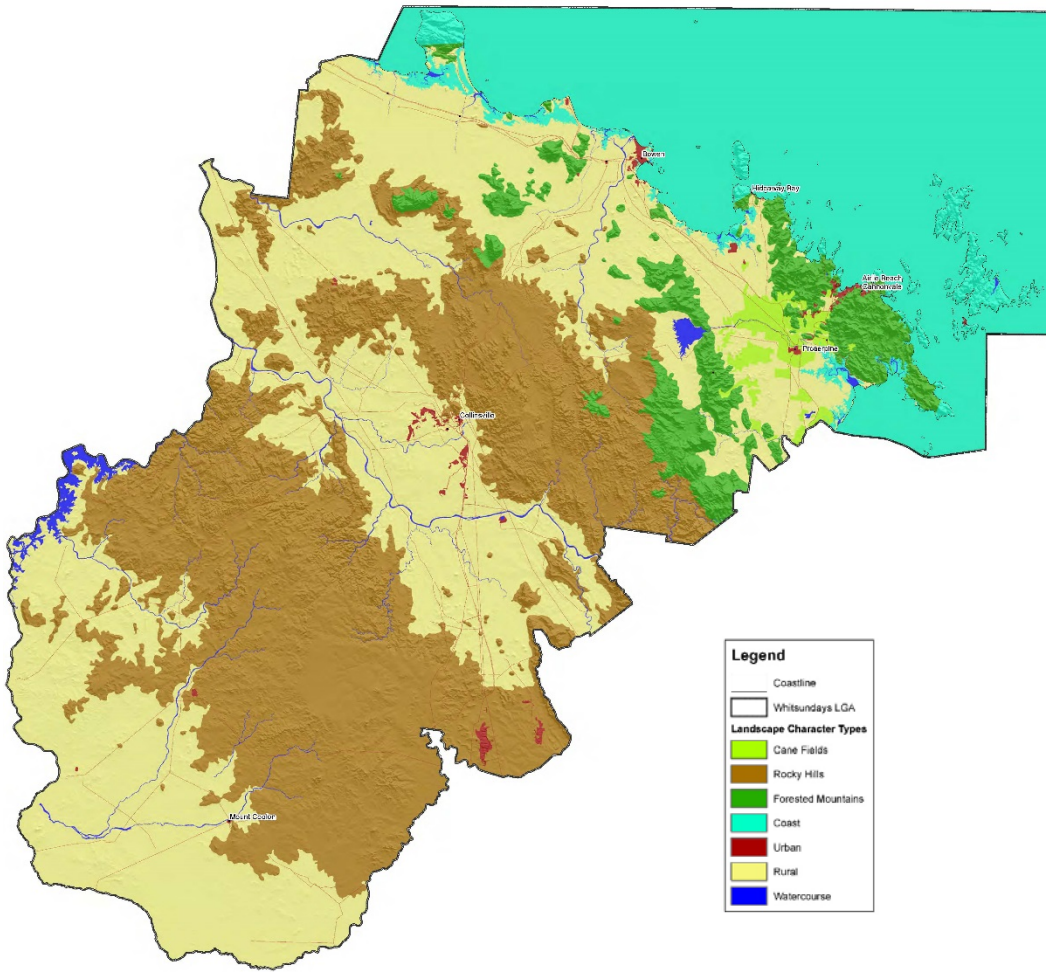


Figure 3-6 Landscape Character Types in the Whitsunday Region (See Figures for full sized version)

3.4 Significant Landscape Features

3.4.1 Landform Features

The Whitsunday region is characterised by spectacular topographic features ranging from forested ranges and National Parks, rocky outcrops, ridges, capes and islands as described below. Some of the hills, headlands and islands listed below are visually exposed to offshore viewers, irrespective of their mapped visual exposure to major roads and ferry routes.

(a) Mountain Ranges and prominent peaks

Great Dividing Range:

- Leichhardt Range (355m) includes Whitestone Peak (425m), Mt Sambo 343m, Mt Constance 572mm The Garth 346m, Mt Razor Back 302m, Black Jack 330m, Mt Leslie 606m, Mt St Martin 280m, Tent Hill 334m
- Rottenstone Range including Mt Battery 305m, Fairview Hill 350m, Cramoisie Cliff 399m, Mt Stone 306m, Mt Harry Marsh 375m,
- Percy Douglas Range including House and Kitchen Hills 356m, Mty William Philpott 455m
- Wyarra Hills including Mt Patterson 430m, Mt Loudon 418m , Mt Carmel 290m, Mt Manaman (Mt Coolon)

Clarke Range:

- Beaks Mountain 421m, Mt Dillon 267m, Mt Aberdeen 901m, , The Seven Sisters 167m, Mt Curlewis 222m, Mt Luce 286m (Abbot Point), Mt Roundback 728m, Mt Pring 412m, Mt Mackenzie 515m, Piccaninny Mountain 189m, The Knobblers 359m, Mt Challenger 517m, Mt Pluto 559m, Mt Quandong 780m, Mt Marion 468m, Mt Crompton 792m, Dingo Mountain 214m

Gloucester Range

- Includes unnamed peaks and ridges ranging from 180m to 590m elevation
- Includes Ben Lomond 429m, Cork Hills 165m, Mt Dryander 820m

Bogie Range

- Bogie Hills unnamed peaks elevation ranging from 120m to 360m
- Bonnie Doon Hills 211m, Edinburgh Castle 542m, Mt Abbot 1059m, Mt Aberdeen 901m, Mt Gilbratar 299m, Mt Buckley 259m, Scrub Mountain 385m, One Mile Mountain 279m, Black and White Hill 276m, Roma Peak 671m, Monte Christo 521m
- Mt Devlin (Collinsville)

Conway Range

- Mt Conway 430m, The Hump 329m, Mt Merkara 373m, Notch Hill 347m, Mt Rooper 221m
- Mt Proserpine 444m, High Mtn 555m, Mt Marlow 354m, Mt Hayward 441m, Mt Maclear 385m, Mt Sunter 354m, Mt Kangaroo 271m

Island Peaks:

- Mt Bertha 568m (Gloucester Island)
- Mt Sharp 172m, Mt Chaine 231m (North Molled Island),
- Long Island Peak 270m (Long Island)
- Passage Peak 235m (Hamilton Island)
- Whitsunday Peak 435m, Mt Robison 390m, Whitsunday Cairn 385m, Whitsunday Craig 354m Babieca Summit 191m (Whitsunday Island)
- Mt Sydney 390m, Pinnacle Peak 160m, Rocky Hill 408m, Hook Peak 459m (Hook Island)
- Mt Carousel 250m (Hayman Island)

(b) Prominent Headlands & Capes*

- Cape Gloucester
- Cape Conway
- Cape Grafton
- Cape Upstart
- Flagstaff Hill

(c) Islands

- Whitsunday Island
- South Molle Island
- Daydream Island
- Long Island
- Hamilton Island
- Gloucester Island
- Hook Island
- Plus many smaller islands

(d) Gorges and Semi Secluded Valleys

- Parts of the Cannon Valley
- Burdekin River gorge

(e) Scenic Places- Watercourses, lakes, waterfalls and wetlands**

- Burdekin Falls (spillway)
- Waterholes and parts of Bowen River
- Waterholes and parts of Don River
- Caley Wetlands
- Faust Dam
- Goorganga Wetlands
- Lethebrook waterfall
- 3 Mile Creek (Scottville Waterhole)
- 40 foot (waterfall at Mt Devlin)

** Headlands have been mapped based on the definition that they are projections of land into sea assuming a width & length criterion (rationalised with elevation and contrast) either >200 m long and >100m wide but <500m wide; OR > 200 m long and >100m wide and with a length / width ratio >5:1 to pick up some of the ling narrow headlands*

*** Watercourses have been mapped based on stream bank band width (to 25m), however there have been some difficulties in mapping some of the creeks and river tributaries particularly in dry times, such as occurring during the course of fieldwork for this study (October 2015) and local surveys (November 2016).*

Although rivers and creeks are mapped as 'watercourses' they have been mapped as part of the coastal LCT where the estuaries meet the sea. As a guide, for most river systems, the presence of intertidal mangroves typical at the river mouth has helped delineate between 'watercourses' and 'coastal' LCTs

3.4.2 Lookouts and Gateways

Particular places which provide important experiential 'nodes' for viewers to experience the scenery and character of the region include lookouts and gateways. The mountains and headlands as well as many coastal roads offer multiple lookout opportunities, but for the purposes of this Study, lookouts that are accessible by sealed roads are identified, although lookouts accessed by walking trail or 4WD have been identified where they are significant or popular, offering important viewsheds, as indicated on **Figure 3-9**. These include:

(f) Lookouts

- Tongue Point, Hill Inlet lookout, Whitehaven Beach (Whitsunday Island)
- Lions Lookout Shute Harbour (Airlie)
- Hilltop Lookout (Hamilton Island)
- Mt Hayward, Mt Rooper, Honeyeater Lookout (Conway Range)
- Burdekin Falls
- Gloucester Passage and Gloucester Road (Proserpine)
- Coral Beach walk (Shutehaven)
- Flagstaff Hill, Mt Nutt Lookout, Reservoir Hill & Horseshoe Bay lookout, World War II Radar Station Lookout and Mother Beddock (Bowen)
- Town Reservoir Hill, Scottville Reservoir hill, Mt Devlin (Collinsville)

Headlands and beaches also offer important viewing opportunities, as do various sites along the Bruce Highway (eg. ''truck stop" at Proserpine) and other scenic routes within the coastal zone and particularly around the Town of Whitsunday and Airlie Beach.

Figure 3-7 View from Flagstaff Hill, Bowen

'Gateways' identified on the 'Landscape Features' map are distinctive 'junctions' or landmark features that orientate the viewer or the driver and often form an entrance marker into (or out of) a place. In general, the combinations of elements that help to contribute to 'gateways' include:

- Road crossings of rivers/creeks at entrance to a town or city (particularly when flowing);
- The start of scenic route sections, eg. at a band or crest in the road;
- Avenues of trees or other distinctive markers or views at a town entrance;
- Transition points at the interface between different landscape character settings.

(g) Gateways

- T-intersection: Entry into Cannon Valley at Gregory Cannon Valley Rd and Shute Harbour Rd
- Bruce Highway/Proserpine River (entry to Proserpine town)
- Bruce Highway/Eden Lassie Creek (Gregory River)
- Bowen Developmental Road/North Coast rail line/Bowen River crossing
- Burdekin Falls Dam Road/Burdekin River spillway crossing (useable dry only, western LGA boundary)
- Bruce Highway/Don River (Bowen)
- Bruce Highway/North Coast Railway crossing (Bowen)
- Bowen Developmental Road/Pelican Creek (Scottville)

3.4.3 Scenic Routes and View Corridors

Several roads in the region offer scenic driving experiences with multiple or sequential opportunities to enjoy attractive scenery, as well as site-specific lookouts. Sections of those routes have been identified as regionally significant on the Landscape Features map **Figure 3-9.** The roads within 100m distance of the coast have all been nominated as being important scenic routes, potentially offering long open views of the coastline, islands and the waters of the Great Barrier Reef. Other scenic route sections listed below offer:

- Winding mountain roads through forested mountains ('forest drives') or through rugged and/or rocky hills;
- Long sightlines over open plains (often with distant mountain backdrop);
- Views from elevated positions over rural countryside and combinations of landscape character types; and

- Semi-enclosed vistas into valleys, waterfalls and gorges from roads.

(h) Scenic Route sections

- Peter Wyche Drive, Kings Beach Road and Margaret Reynolds Drive (Bowen)
- Flagstaff Hill and drive to Queens Beach, Rose Bay Road and Horseshoe Bay Rd (Bowen)
- Shute Harbour Road (Airlie Beach)
- Burdekin Falls Dam Road (at Burdekin Falls spillway)
- Bogie River Hills (crest, approaching Collinsville)
- Crystalbrook Road drive along Proserpine River to Faust Dam
- Section of Conway Road to Conway Beach
- Section of Bruce Highway between Mt Pring and Mt Roundback and Sprole Castle (Bowen)
- Ferry routes

In addition to views from scenic routes, other view corridors have also been identified:

(i) View corridors

- Views from the Airlie Esplanade, Bowen Esplanade and marinas
- Views from ferries looking back to mainland
- Views from Bowen-Developmental Rd looking down to Collinsville
- View to Mt Wickham (from Strathmore Rd Collinsville)
- Views over Edgecumbe Bay, the North Head lighthouse and Stone Island (Bowen)
- Views at Brisk Bay turnoff (view to Roma Peak) and along Kings Beach to Rose Bay (Bowen)

3.4.4 Towns & Urban Development

The Town of Whitsunday (Airlie) is the largest urban area in the region, with other smaller urban concentrations such as the localities of Bowen, Proserpine, and Collinsville in the west. The spread of Airlie around its beach includes smaller suburbs such as Cannonvale and Jubilee Pocket.

Small outback settlements dot the region, separated by extensive tracts of conservation land and freehold pastoral leases, as well as mining leases in areas in the west. There are only two coastal towns – Airlie Beach and Bowen in the Whitsunday region, though there are isolated nodes of development on the islands. The following settlements form part of the urban/settlement landscape character of the study area:

(j) Cities and Towns

Urban:

- Town of Whitsunday (Airlie Beach & suburbs)

Smaller townships & settlements:

- Proserpine
- Bowen
- Collinsville/Scottville
- Mt Coolon
- Various small towns along the Bruce Highway

Island settlements:

- Daydream Island
- Hamilton Island

Development & Infrastructure

Mines:

- Collinsville coal mine
- Sonoma Coal mine
- Newlands mine (now decommissioned)
- Mt Coolon mine

Other:

- Collinsville power station (now decommissioned)
- Aquaculture farms (Hideaway Bay)
- Abbot Point port
- quarries

(k) Scenic Places - Character Towns

Several towns have a distinctly historic character due to the proportion of older main street buildings and their landscape setting, which form attractive scenic combinations:

- Proserpine (including its sugar mill)
- Collinsville
- Bowen

In general the following are considered as contributing to town identity and '*sense of place*':

- Scenic watercourses which form part of town entry areas along major routes, or which form part of town edges or major intra-urban breaks through towns;
- Often a sharp transition between hinterland towns and edges with inter urban breaks comprised of either natural forest or canefields;
- Historic building sand icons (such as sugar mills and cane trains) and railway routes which form part of the historic pattern of settlement and transport;
- Existing or disused cane-train tracks (and infrastructure) on the edges of towns;
- Most urban areas are framed by a skyline of forested ranges visible from within or from the edges of towns, in addition to towns with water views (eg. Town of Whitsunday and Bowen).

Although not mapped *per se*, inter-urban breaks form extensive tracts of rural or conservation land which provide large 'green breaks' between towns and urban settlements. Inter-urban breaks are important for sense of place and community identity, and in some instances provide a sharp transition from urban form to adjacent rural and forested areas, thus sharing a close visual and physical relationship (**Figure 3-8**). However acreage development on the outskirts of towns can blur the boundaries, such as the transition from Airlie - Cannonvale - Cannon Valley, affecting not only the image and identity of townships, but also the experience of scenic drives through the countryside.

Figure 3-8 New housing estate in Cannonvale

3.4.5 Mining and industry

This LCT also includes development associated with industry as an intrinsic part of human settlement patterns. Although the majority of industry (as a landcover) is located on the fringes of urban settlement (and is therefore captured as part of the town 'cluster'), there are also nodes of industrial land uses and linear infrastructure in

the region outside of these urban settlements. This includes a number of mines in the western and south western parts of the region, including both operational and decommissioned mines (eg. Collinsville mine, Sonoma, Newlands and Mt Coolon), power stations (Collinsville), quarries and ports (Abbot Point). Linear infrastructure such as road and rail lines and high voltage powerlines have also been mapped in the region, as industrial land cover, and included as part of the urban LCT.

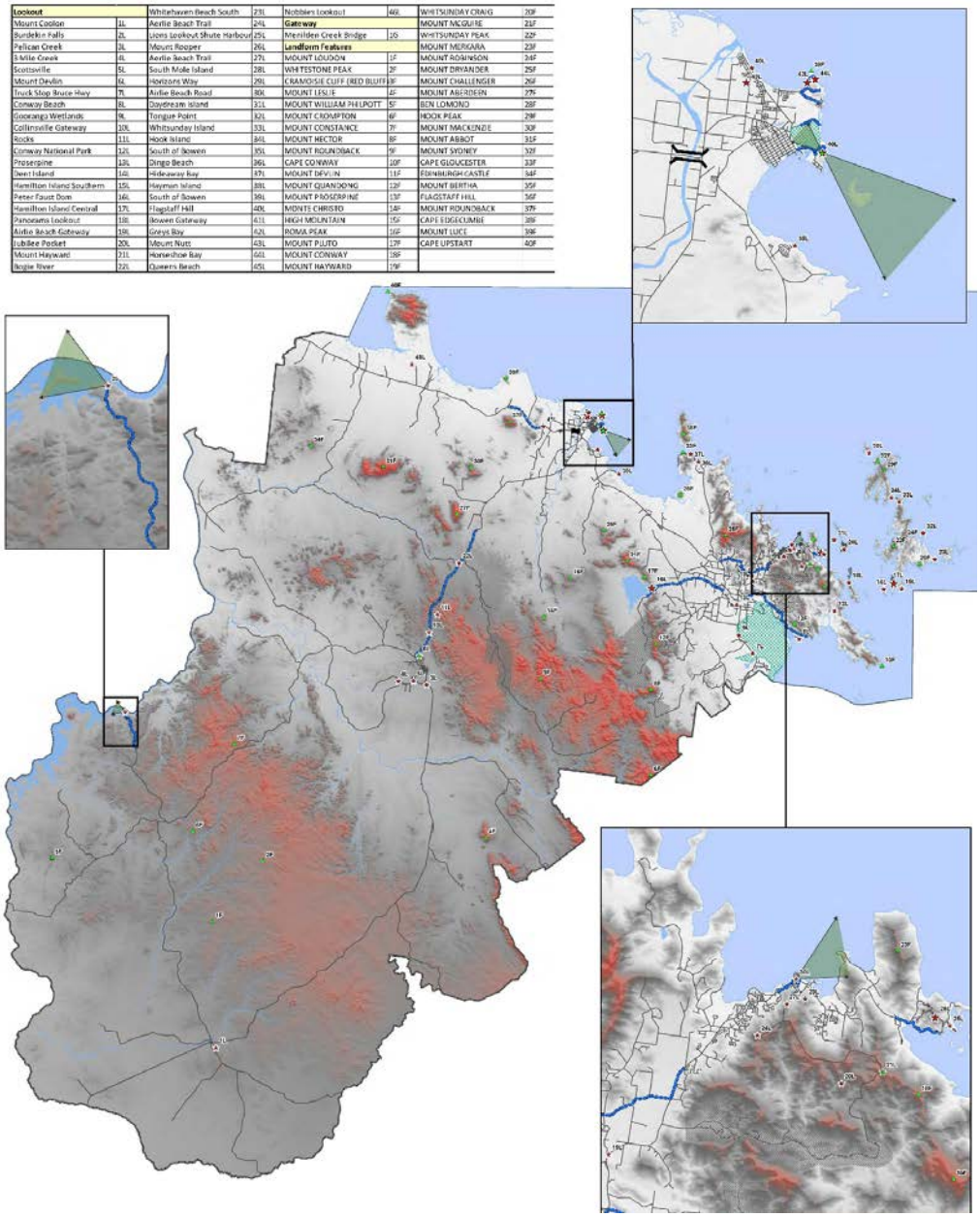


FIGURE 3-9 Landscape Features Map (see Figures for full-sized versions)

4 Scenic amenity

Scenic Amenity has been mapped as a combination of Visual Exposure and Scenic Preference, based on the methodology of Guideline 8 and the outcomes of the scenic preference survey undertaken in the Whitsunday region (Appendix A). In addition to this, the Landscape Character Types (shown in map **Figure 3-6**) recognise important landscape values irrespective of their Scenic Amenity rating.

4.1 Scenic Preferences

As part of the Scenic Preference Survey undertaken for the Whitsunday Region, 7 broad Landscape Character Types (LCT) were identified in various photographic combinations as recommended by the Guidelines for undertaking public preference surveys[4]. In summary, the mean ratings for preferences for various combinations of natural and built visual elements in the region were calculated in terms of their Landscape Character Type, as indicated below.

Table 5: Correlation between Visual Elements of LCTs and SPR for Whitsundays Region

LCT	Mean Survey rating
Coast	**7.54**
Watercourses	**6.28**
Forested Mountains	**7.38**
Rocky hills	**5.63**
Caneland	**5.03**
Rural	**4.80**
Urban	**4.80**

The Scenic Preference Rating (*SPR*) was subsequently compared to the 'SPRAT-1' mean rating tool (to predict *SPR* based on visual elements in a photo, see section 2.3.2 and Appendix A) with the comparison showing an overall consensus between mean ratings, with the exception of the rural and urban classifications. Unusually, in the Whitsunday survey, the urban classification was rated considerably higher in terms of scenic preference than the rural classification. To address any anomalies in ratings between these two LCTs, the mean rating was compared with the SPR of similar images from the *SEQ* library and the SPRAT-1 tool. The resulting SPR, although still relatively high for an urban landscape, nevertheless provides a more feasible consensus between the mean ratings, which can also be explained[5]. These ratings inform the Scenic Preference mapping shown in **Figure 3-10**, with a sliding scale of 1 (being least preferred) to 10 (being most preferred).

Table 6: Scenic Preference Ratings for Whitsunday Region

Land Cover	Scenic Preference Rating (1-10)
Ocean (water)	10
Islands	10
Sandy Beach	9
Headlands	9
Mangroves	8
Forested Mountains	8

[4] 'What's in a View?' SEQ Regional Scenic Amenity Study 2004

[5] Although this increased the rural rating the relative urban ranking remained high. This relationship could perhaps be explained by the tropical character of the Whitsundays, including its urban form, which is generally low, surrounded by lush tropical gardens and dominated by forested skylines

Watercourses & Lakes	7
Dry wooded hills	7
Canefields	6
Rural	5
Urban/Towns	5
Roads & transport corridors	3
Infrastructure & land disturbance	1

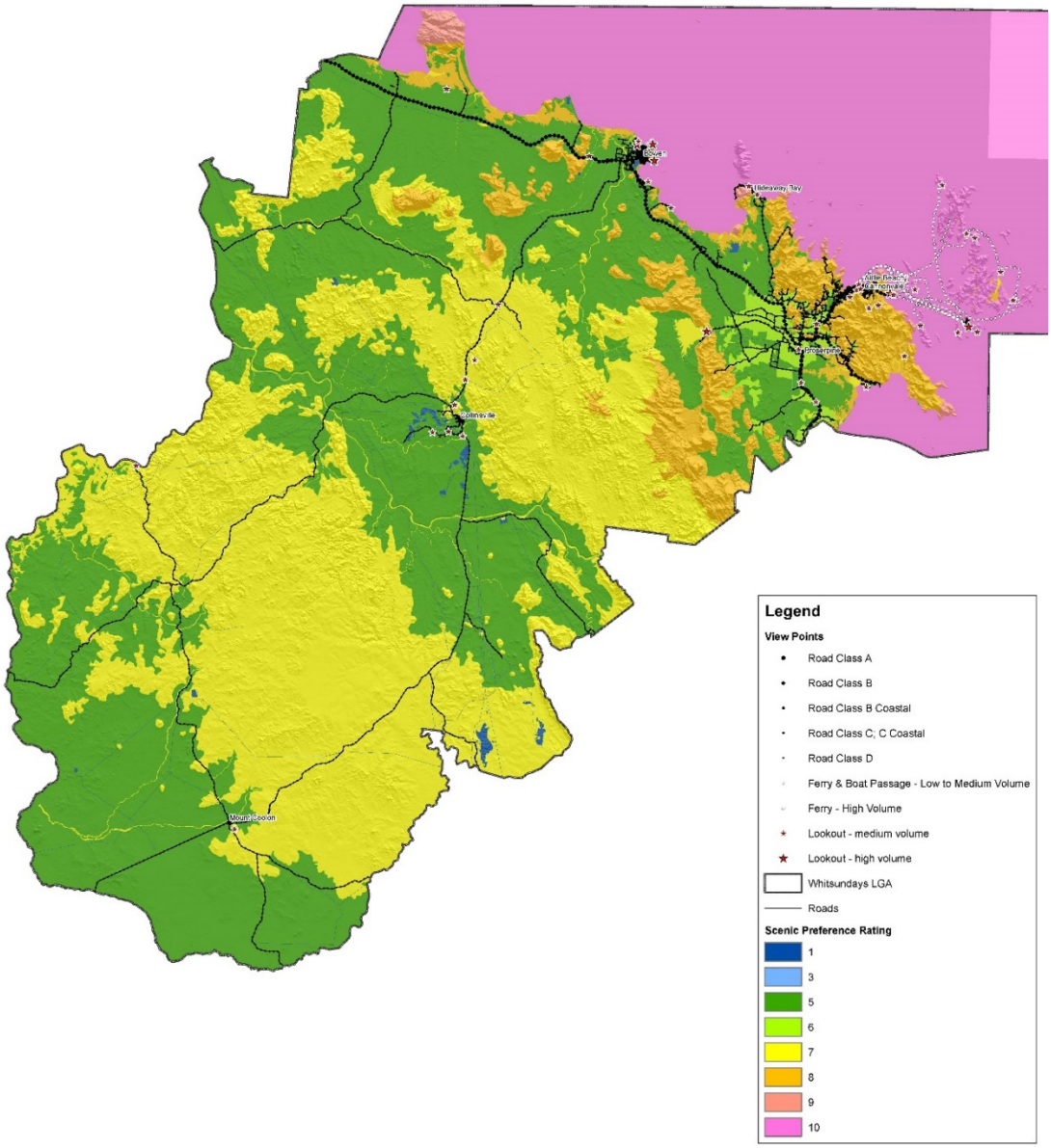


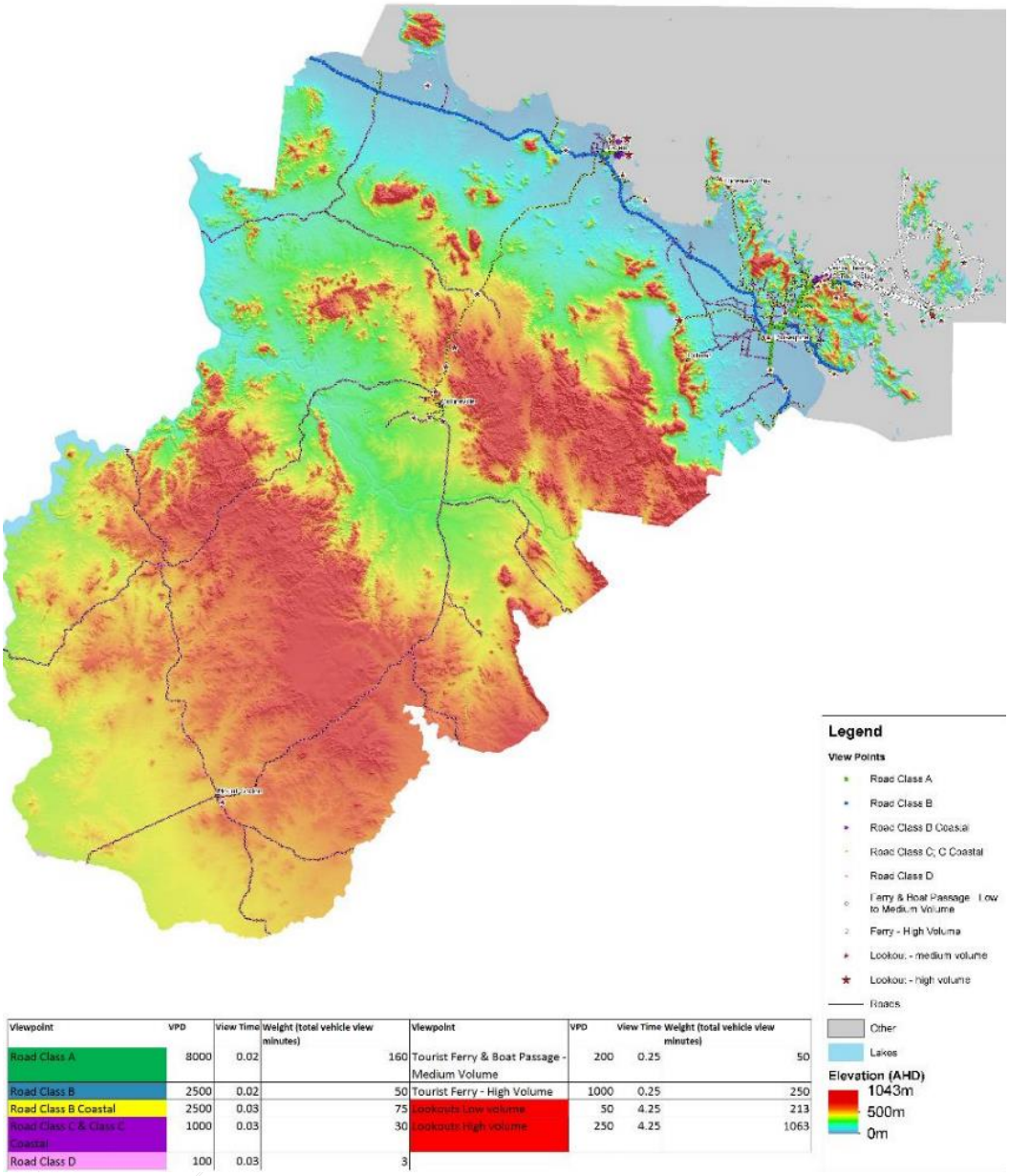
Figure 4-1 Scenic Preference Rating map (see full-sized figures)

4.2 Visual Exposure

Visual Exposure (VE) has been mapped from a DTM based on viewpoints from all roads in various road hierarchies (Class 1-4 roads, and all other roads within 100m of the coastline[6]) plus ferry routes and lookouts,

[6] 'Coastal' classification to make sure smaller, local roads such as Hideaway Bay Road are captured, even if there is no available traffic data

as outlined in section 2. This VE mapping is a time-consuming and computationally intensive process and has been based on assumptions discussed below.



Viewpoint	VPD	View Time	Weight (total vehicle view minutes)	Viewpoint	VPD	View Time	Weight (total vehicle view minutes)
Road Class A	8000	0.02	160	Tourist Ferry & Boat Passage - Medium Volume	200	0.25	50
Road Class B	2500	0.02	50	Tourist Ferry - High Volume	1000	0.25	250
Road Class B Coastal	2500	0.03	75	Lookouts Low volume	50	4.25	213
Road Class C & Class C Coastal	1000	0.03	30	Lookouts High volume	250	4.25	1063
Road Class D	100	0.03	3				

Figure 4-2 Viewpoints & VE in the Whitsunday Region (see full-sized figures)

Assumptions:

- All 100 – 110km/hr roads have viewing times of 0.02 min and all <100km/hr roads have viewing times of 0.03 min;
- The volume of traffic was interpreted to sections of road from two baseline sources, the QLD Traffic Census (QTC) and data supplied by Whitsunday Shire Council (WSC) both measured in AADT.
- Classification based on four classes (A, B, C & D) where all A & most B are 0.02 min; and all C and some of B are 0.03 min; except for ferries & lookouts which have longer viewing times:
  - Class A Routes: Highways & major secondary roads: with >4054 (QTC) or >4066 (WSC) AADT: Weighted as if they are 8000 vpd at 0.02 min per point
  - Class B Routes: Highways & major secondary roads: with 1936 – 4055 (QTC) or 1169 – 4065 (WSC) AADT: Weighted as if they are 2500 vpd at 0.02 min per point
  - Class B Coastal* Routes: road sections: with 582 – 1935 (QTC) or 433 – 1168 (WSC) AADT within 0.5km of coastline: Weighted as if they are 2500 vpd at 0.03 min per point

- Class C Routes: All other roads with 582 – 1935 (QTC) or 433 – 1168 (WSC) AADT, not within 0.5km of coastline. Weighted as if they are 1000 vpd at 0.03 min per point
- Class C Coastal* Routes: road sections: with < 581 (QTC) or < 432 (WSC) AADT within 0.5km of coastline: Weighted as if they are 1000 vpd at 0.03 min per point
- Class D: road sections: with < 581 (QTC) or < 432 (WSC) AADT greater than 0.5km of coastline: weighted as 100 vpd at 0.03 min per point

- *Lookouts: high volume weighted equivalent to 250 vpd and low volume weighted equivalent to 50 vpd but with viewing time 4.25 minutes*
- *Tourist Ferry Routes: high volume weighted equivalent to 1000 vpd and medium volume weighted at equivalent to 200 vpd but with viewing time of 0.25 minutes per point*.

The visibility analysis is completed for each class of view point with the frequency throughout the landscape multiplied by the weight (in total vehicle view time in minutes) and then combined for all classes to provide total visual exposure for all viewpoints. This data is then combined to create a composite Visual Exposure (VE) map with a resolution of 25 metres. It should be noted that the DTM represents landform (topography) hence visual exposure modelling does not take into consideration vegetation or built form, nor any associated screening of views from roads or lookouts. Although it is not practical to confirm each viewpoint by field survey across the region, the large number of viewpoints used in the model provides assurance that polygons mapped as highly visible are in fact those exposed to views.

During the final stage, multiple viewsheds are combined and divided into 10 classes[7] as mapped in **Figure 4-3 (left)**. These have also been simplified as three categories (high, moderate and low visual exposure) in the map (on right).

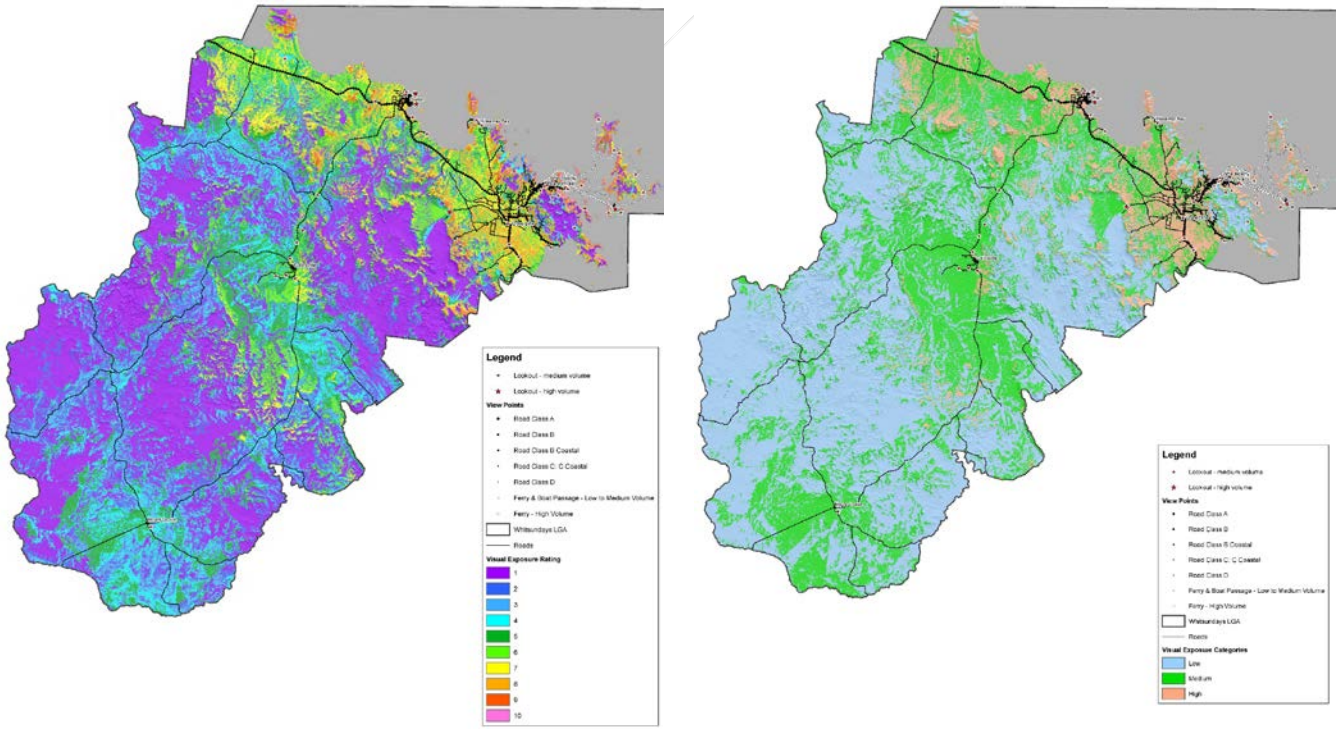


Figure 4-3 VE in the Whitsunday Region (see full-sized figures)

[7] The 10 classes are based on Standard Deviation multiples for this Whitsunday study, as these provided a better 'spread' of values for mapping than 10 equal deciles (each covering 10% of the landscape) used in the SEQ Study (SAM 2008) and adopted as the method in Guideline 8.

4.3 Scenic Amenity Ratings

The combination of Scenic Preferences and Visual Exposure (see Table 1 Matrix) has been mapped as scenic amenity, with polygons rated as 8, 9 & 10 identified as of State/Regional significance (**Figure 4-3**). These are mainly the coastline areas, islands and forested mountain ranges, visible from lookouts, scenic routes and experienced more directly on forest drives or coastal esplanades.

Higher scenic amenity ratings (8 -10) are also included in a Landscape Values map and recommended for inclusion in a planning scheme landscape overlay map as 'high scenic amenity areas'. Areas of moderate scenic amenity (with ratings of 6-7) are of local significance but are also important for the Whitsunday Region, as these contribute to the overall regional landscape character, scenic amenity, tourist image and sense of place.

The distinction between scenic amenity ratings (and thus the difference in local and regional significance) has been simplified by classifying the ratings into three categories (high / medium / low), shown in Figure 4-3 (right).

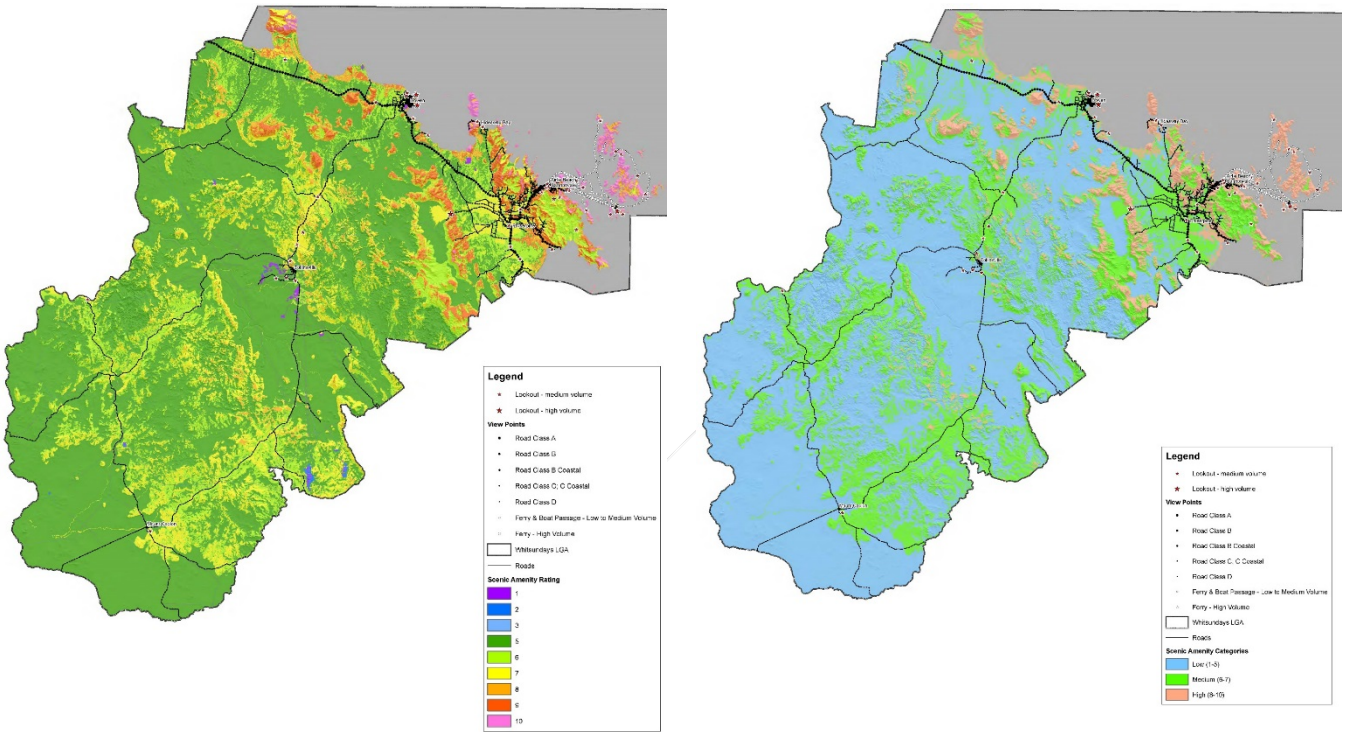


Figure 4-4 Scenic Amenity maps – rating categories 1-10 (left) **and Low-Medium-High** (right) (see full-sized figures)

4.4 Landscape Values Overlay

Scenic Amenity mapping *per se* does not identify all the landscape values worthy of recognition and protection, including, for example, regionally-distinctive landscape character types (such as canefields) or highly scenic places, which may be hidden from view (such as forested mountains, not seen as part of a larger range). Scenic places or landscape features (eg. gateways, specific scenic route sections and view corridors) are also important for their contribution to regional identity, but may not be identified and mapped as part of the Guideline 8 methodology.

A "Landscape Values Overlay" map is therefore a useful composite analysis in that it captures both the Scenic Amenity ratings (1-10) and also the valued Landscape Character Types (**Figure 3-6**), in addition to other valued features (headlands, lookouts, gateways and scenic routes) located on **Figure 3-13** that are worthy of protection.

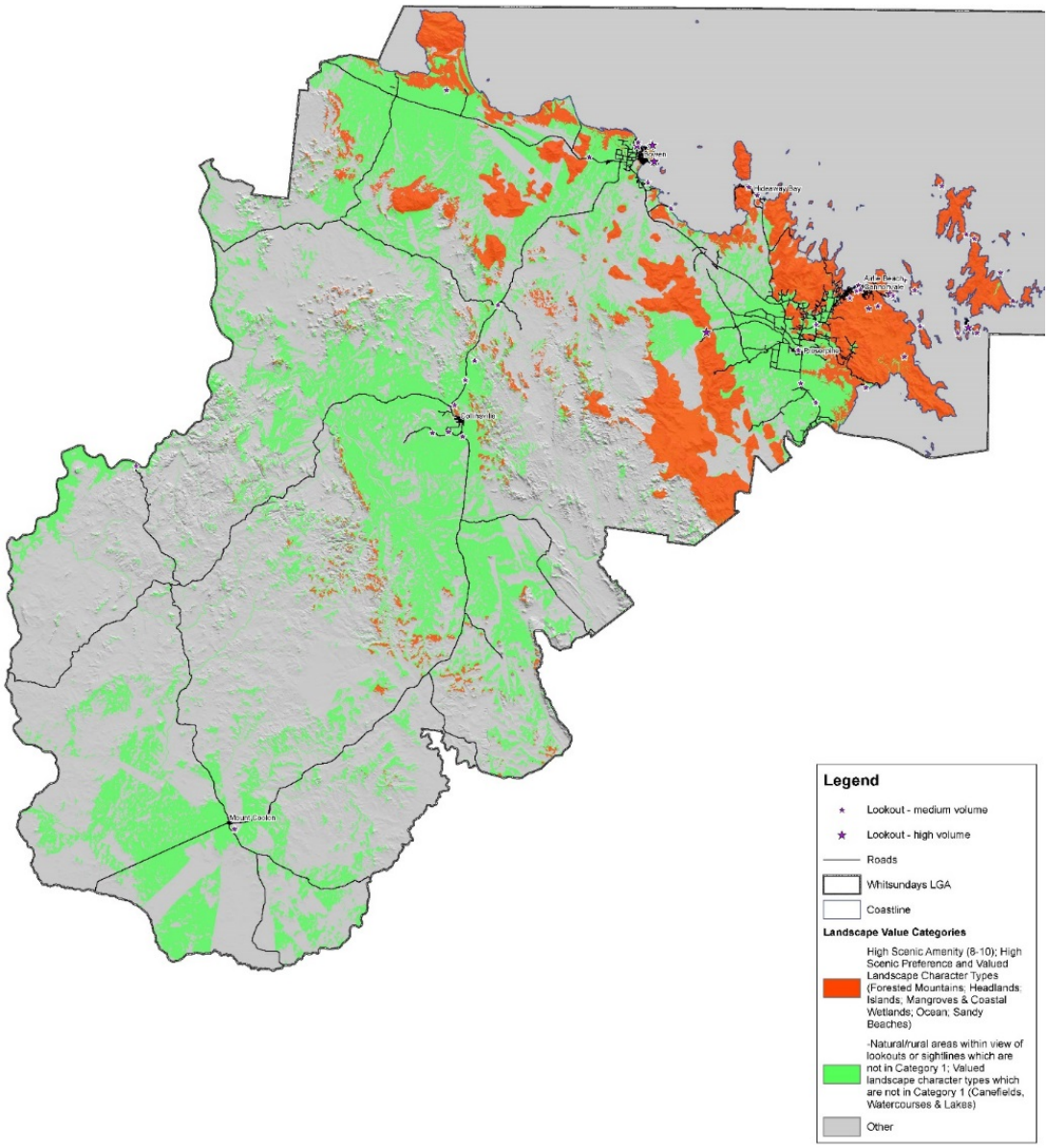


Figure 4-5 Landscape Values overlay map (see Figures for A3 maps)

4.5 Mapping Summary

The mapping highlights the diverse scenic quality of the landscapes of the Whitsunday Region. Not surprisingly, coastal areas (in particular islands, ocean and sandy beaches) are rated 'high' scenic amenity. This is consistent with the scenic and aesthetic attributes and Outstanding Universal Values of the Great Barrier Reef World Heritage Area (GBRWHA). Similarly, the forested mountain ranges of the coastal ranges, including the Conway Range, Gloucester and parts of the Clarke Range also rated high scenic amenity (9-10). In the outback hinterland, there were areas around the Bogie Ranges and the Leichardt Range that similarly had a high scenic amenity rating, notwithstanding that the visual exposure ratings out west were comparatively lower. This is largely due to the limitations of the existing road network outside of the coastal zone, including limited sealed connector roads out west and often inaccessible terrain, or simply serviced by dirt tracks.

The rocky hills and granite outcrops, as a scenic and distinctive landscape of the outback, also reflected a relatively high scenic preference rating in the community survey (2016). 'Canefields', on the other hand, had a lower rating, however, based on a review of the survey comments it became clear that it was nonetheless a valued landscape character in terms of its image and identity distinctive to north Queensland. Although the scenic preferences are largely representative of the local community (most survey respondents were residents of the Whitsunday region) the survey preferences, and overall scenic amenity ratings, are generally consistent with the tourist image and visitor expectations of the region.

5 Implications for Planning and Development

5.1 Landscape Values

The diverse scenery of the Whitsunday region includes a range of places and features considered to contribute to the distinctive character of the region, its natural assets, and other scenic preference attributes. Areas, places and features of landscape significance have been identified and mapped in terms of the following:

- Landscape Character Types (Figure 3-6)
- Scenic Preference, rated on a scale of 1 (lowest) to 10 (highest) (Figure 4-1)
- Scenic Amenity, rated on a scale of 1 (lowest) to 10 (highest) and also simplified on a Low-Medium-High scale (Figures 4-4)
- Landscape Features (Landform features and frame, Lookouts, Gateways, Gorges and semi-secluded valleys, and other Scenic Places) (Figure 3-9)
- Scenic Routes and Sections, and View Corridors, also shown in Figure 3-9.

Many high Scenic Amenity areas and 'valued character types' (such as forested mountains) are already protected in conservation areas such as local parks, National Parks and State Forests, as well as areas within the coastal zone. However other areas and features of landscape significance are on private land where future development may affect landscape values (such as canefields). In these areas, the Planning Scheme has the potential to restrict or control undesirable forms of development, and to encourage more desirable forms.

Of particular significance in the Whitsundays are views of natural undisturbed landscape elements, especially as seen from designated lookouts, where they include water and forested skyline ridges or where they form interfaces and settings for towns, scenic roads and public places. These are particularly sensitive to land clearing and development. Views of rural landscapes which also include canefields, water (such as rivers, waterbodies or coastlines) with forested hills in the background are also a distinctive and attractive combination, and rate considerably higher than a rural scene without these elements[8]. Places and features which show or help define these elements and their edges, such as gateways, lookouts and view corridors are significant for scenic amenity and character and require consideration in terms of planning and development control.

5.2 Desirable & Undesirable Forms of Development

As the regional population grows and prospers, undeveloped land with landscape values will undoubtedly come under pressure for development and other forms of land use change. Where sensitive areas of regional landscape significance are associated with high visibility and naturalness, protection of landscape values can best be achieved by Planning Scheme restrictions on development. However, existing land use rights, competing demands and pressures for growth will affect some scenic areas, especially in the already developed coastal plain and foothills surrounding Airlie Beach. Previous Planning Schemes have addressed these issues by a range of zoning restrictions and development controls.

In order to recommend effective development controls for amendments, it is useful to consider forms of development which are desirable and undesirable with respect to landscape sensitivity (**Table 8**) as informed by both the mapping process as well as derived from the scenic preference surveys undertaken in the Whitsunday region in 2016 (see Appendix A).

[8] Which may help to explain the comparative lower rating of 'rural' LCTs in this survey due to photographic fieldwork conducted during conditions of drought

Table 8: Generally Desirable and Undesirable Forms of Development

Landscape Values	Desirable Development	Undesirable Development
Hillsides with high Scenic Amenity and that are visible, forested, rocky, steep)	▪ Built form visually subordinate to and sensitively integrated with the natural landform and vegetation; ▪ Buildings are screened or only partly seen through trees; ▪ Roads and earthworks conforming with the natural landform and vegetation; ▪ Powerlines visually integrated at base of forested hills.	▪ New built form that is visually intrusive and appears 'imposed' on the landform; ▪ Obtrusive and inconsistent signage or billboards; ▪ Earthworks and tree clearing are extensive and/or highly visible as scars on the landscape ▪ Powerlines, pylons and telecommunications facilities (and associated 'notch' clearing) on the skyline
Views from lookouts across rural valleys to high scenic amenity features	▪ Unobstructed views across a diverse landscape pattern to distant natural frame ▪ New development in the view corridor is of a scale and extent which is visually compatible with the existing pattern and character	▪ New development in the view corridor obstructs or intrudes upon views; ▪ New development in the view corridor is of a type, scale or extent which is visually prominent and which changes the prevailing landscape pattern and character
Coastal foreshores and headlands	▪ Natural beaches, foreshore vegetation and headlands dominate the coastal scenery, with built form scattered, screened, sensitively integrated and visually subordinate ie. Not intrusive from onshore (eg. Foreshores and headlands) and offshore (water) views ▪ Unobstructed views to bays, islands and the Coral Sea.	▪ Visually prominent buildings and infrastructure on headlands and above the height of foreshore vegetation. ▪ Jetties, breakwaters or industrial port facilities intrude on ocean views
Grassy or wooded foothills visible over canefields (as seen from scenic roads); or as the landscape setting for existing urban development	▪ Rural land uses with scattered farm houses or high-set 'Queenslander' homes; ▪ Rural residential housing in suitable places with extensive landscaping and large trees, ▪ Revegetation, with a distinct forested edge between plains and hillside; ▪ Roads and earthworks conforming with the natural landform and vegetation ;	▪ Visible benching, retaining walls, long straight driveways, solid barrier fencing and scarring of the hillside ; ▪ New built form is visually intrusive and appears 'imposed' on the landform; ▪ Obtrusive and inconsistent signage, billboards and/or linear infrastructure (power lines and pylons, telecommunications facilities etc.).

Country and coastal towns, and gateways	▪ Distinct town edges with inter-urban breaks of open space (natural or rural) separating townships and retaining a countryside setting ▪ Industrial / commercial developments on edge of towns are buffered, screened and integrated. ▪ Major road gateway entrances to towns, river crossings and other gateways between different character types or districts, mark and enhance the distinct transition.	▪ Urban areas and per-urban rural residential areas and which sprawl into their countryside setting and merge with adjacent towns. ▪ Major roads into and out of towns 'blighted' by a clutter of billboards, service stations, fast food outlets and semi-industrial uses. ▪ Views at gateways and river crossings obstructed or intruded upon by insensitive siting and design of structures, or lost by road upgrades.
Scenic driving experiences on coastal, forested and mountain or rocky hillside roads	▪ Scenic routes framed by natural vegetation with views to attractive landscape patterns ▪ Wide road reserves and/or setbacks	▪ Road upgrades which straighten, widen or remove roadside trees ; ▪ Adjacent development with inadequate setbacks from a scenic route sections.

5.3 Landscape Values Overlay

5.3.1 Combined Landscape Values and Constraints

The required level of protection and development control is best achieved by a Landscape Values overlay map (**Figure 4-5**) to manage the scenic amenity in the region, and combines:

- Scenic Amenity values (**Figure 4-4**)
- Valued Landscape Character Types (**Figure 3-6**) and
- Landscape Features (significant features) (**Figure 3-9)**

For simplicity, landscape values have been rated according to 'high', 'medium' and 'low' and include the following combinations:

High Landscape Values

- High scenic amenity areas (with ratings of SA 8-10);
- High scenic preference ratings (SPR 8 – 10)
- Valued Landscape Character Types - Forested Mountains and Coast (including headlands, islands, mangroves and coastal wetlands, ocean and sandy beaches)

Medium Landscape Values

- Natural/rural areas within view of lookouts or view corridors, which are not already in High Landscape Values category 1;
- Landscape Features and significant 'scenic places' not included in High Landscape Values;
- Landscape Character Types not already in Category 1 (Canefields, Watercourses and Lakes)

Other Landscape Values on Landscape Features Map (Figure 3-9)

- Lookouts
- Scenic route sections
- Gateways

5.4 Planning Scheme Recommendations

Although not part of the scope of this study, the outcomes of this study and the regional surveys could inform some general recommendations for the management of scenic amenity and other landscape values in the Whitsunday region. These could include reference to a number of mapping layers, as inputs to landscape overlay maps or strategic framework maps, including:

(1) the Landscape Values Map (Figure 4-4) as an Overlay Map.

(2) the Landscape Character Types Map (Figure 3-6) and the Landscape Features Maps (Figure 3-9) as Strategic Framework Maps.

(3) identify levels of assessment in regard to the Landscape Values Overlay Map;

(4) local plans;

(5) a Landscape Values Overlay Code;

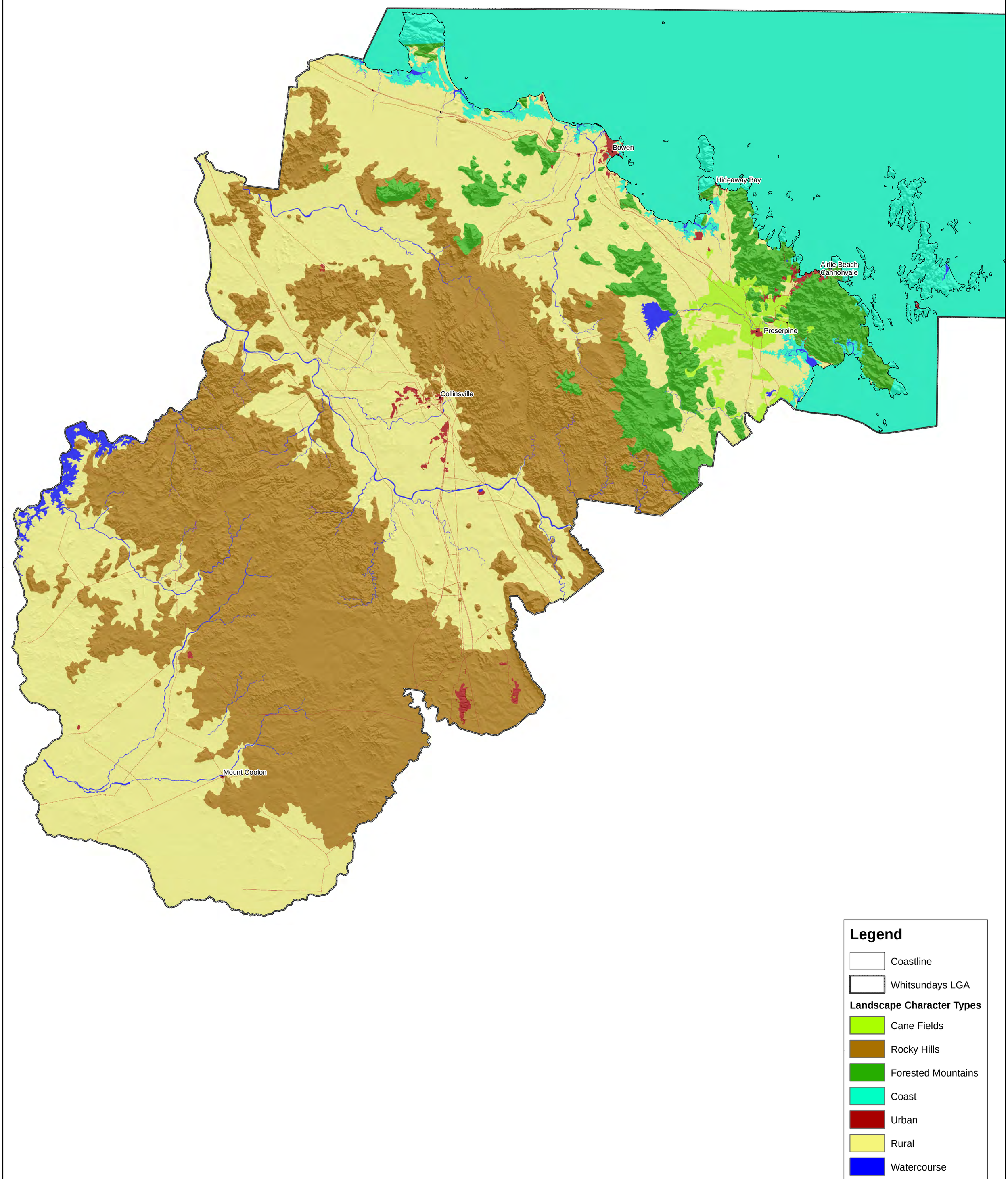
(6) consider Visual Impact Assessments (tailored to different Landscape Values) as a Planning Scheme policy for assessment.

6 Conclusion

Through mapping the scenic amenity and unique landscape values of the Whitsunday region, this Study intends to provide Council with a comprehensive GIS tool that can assist decision-makers in managing and protecting the scenic qualities of the region.

Figures

Full-Sized Figures



Legend

- Coastline
- Whitsundays LGA

Landscape Character Types

- Cane Fields
- Rocky Hills
- Forested Mountains
- Coast
- Urban
- Rural
- Watercourse

Whitsunday Regional Council

1:600,000 Scale at A3

Kilometres

0 20 40

Whitsundays Regional Scenic Amenity Assessment

LANDSCAPE CHARACTER TYPES

N W E S

Cardno

Map Produced by Cardno QLD Pty Ltd (4303)
Date: 2017-03-14
Coordinate System: GDA 1994 MGA Zone 55
Project: WE15037-GS_001
Map: WE15037-GS_002LandChar_.mxd 01

Bowen
Hideaway Bay
Airlie Beach
Cannonvale
Proserpine
Dittmer
Collinsville
Mount Coolon

Legend

View Points

- Road Class A
- Road Class B
- Road Class B Coastal
- Road Class C; C Coastal
- Road Class D
- Ferry & Boat Passage - Low to Medium Volume
- Ferry - High Volume
- Lookout - medium volume
- Lookout - high volume
- Roads
- Other
- Lakes

Elevation (AHD)

1043m
500m
0m

Viewpoint	VPD	View Time	Weight (total vehicle view minutes)	Viewpoint	VPD	View Time	Weight (total vehicle view minutes)
Road Class A	8000	0.02	160	Tourist Ferry & Boat Passage - Medium Volume	200	0.25	50
Road Class B	2500	0.02	50	Tourist Ferry - High Volume	1000	0.25	250
Road Class B Coastal	2500	0.03	75	Lookouts Low volume	50	4.25	213
Road Class C & Class C Coastal	1000	0.03	30	Lookouts High volume	250	4.25	1063
Road Class D	100	0.03	3				

Whitsunday Regional Council

1:600,000 Scale at A3

Kilometres

0 20 40

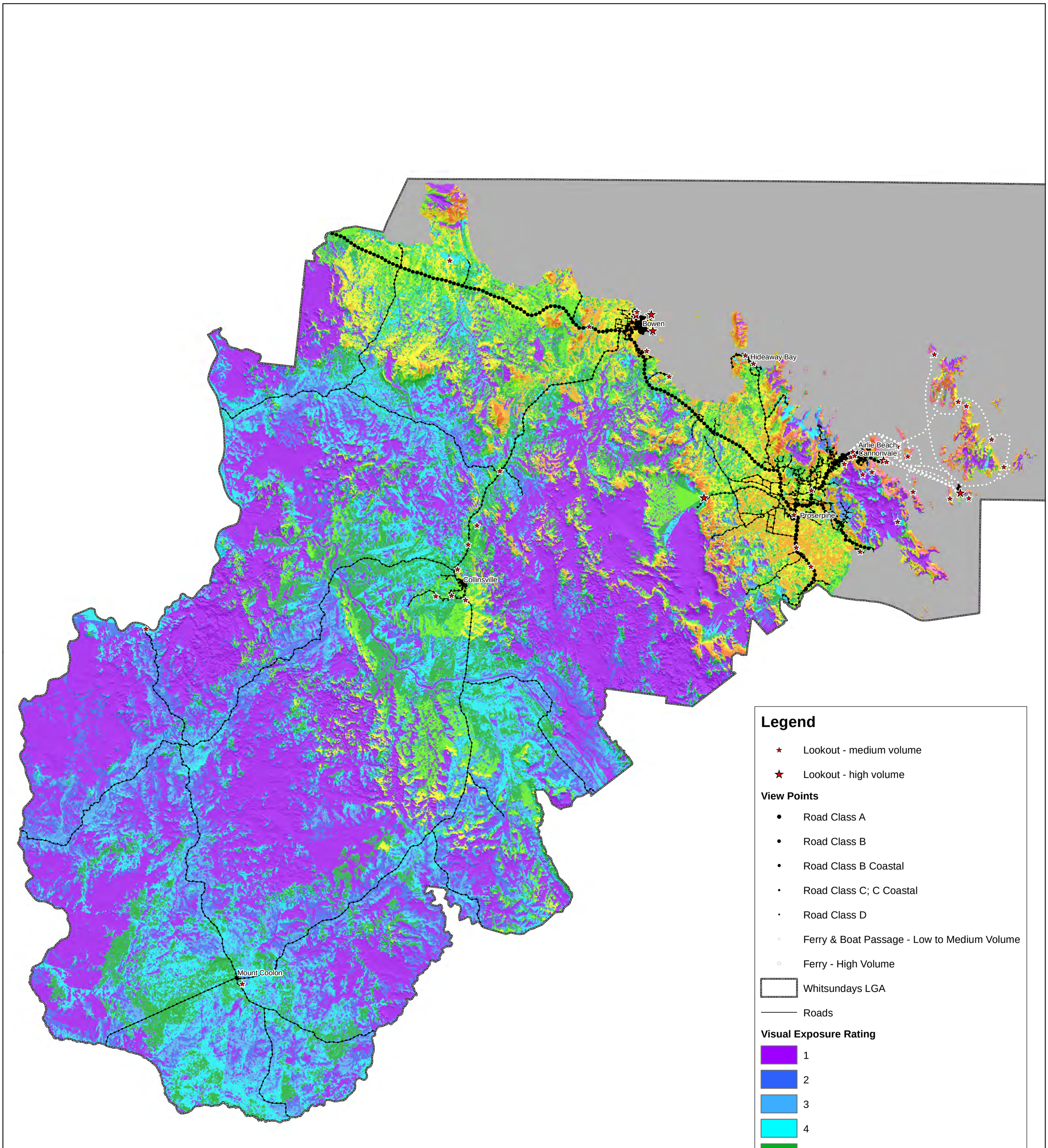
Whitsundays Regional Scenic Amenity Assessment

VIEWPOINTS AND DTM

N W E S

Cardno

Map Produced by Cardno QLD Pty Ltd (4303)
Date: 2017-03-14
Coordinate System: GDA 1994 MGA Zone 55
Project: WE15037-GS_001
Map: WE15037-GS_001Viewpoint.mxd 03



Whitsundays Regional Scenic Amenity Assessment

VISUAL EXPOSURE RATINGS

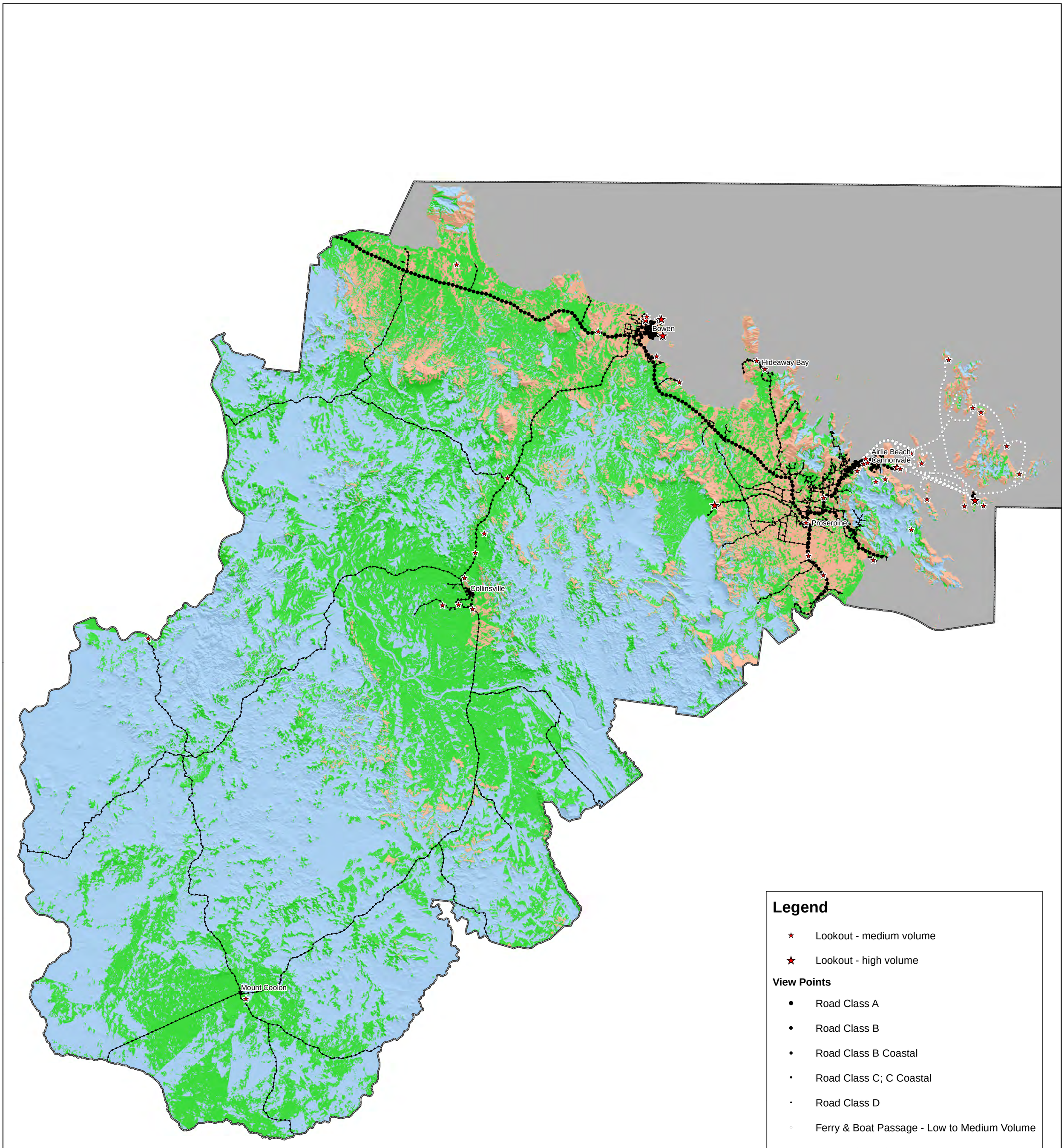
1:600,000 Scale at A3

Kilometres

0 20 40

N W E S

Map Produced by Cardno QLD Pty Ltd (4303)
Date: 2017-03-14
Coordinate System: GDA 1994 MGA Zone 55
Project: WE15037-GS_001
Map: WE15037-GS_003VisualExposure.mxd 01



Legend

- Lookout - medium volume
- Lookout - high volume

View Points

- Road Class A
- Road Class B
- Road Class B Coastal
- Road Class C; C Coastal
- Road Class D
- Ferry & Boat Passage - Low to Medium Volume
- Ferry - High Volume
- Whitsundays LGA
- Roads

Visual Exposure Categories

- Low
- Medium
- High

Whitsundays Regional Scenic Amenity Assessment

VISUAL EXPOSURE CATEGORIES

Whitsunday Regional Council

1:600,000 Scale at A3

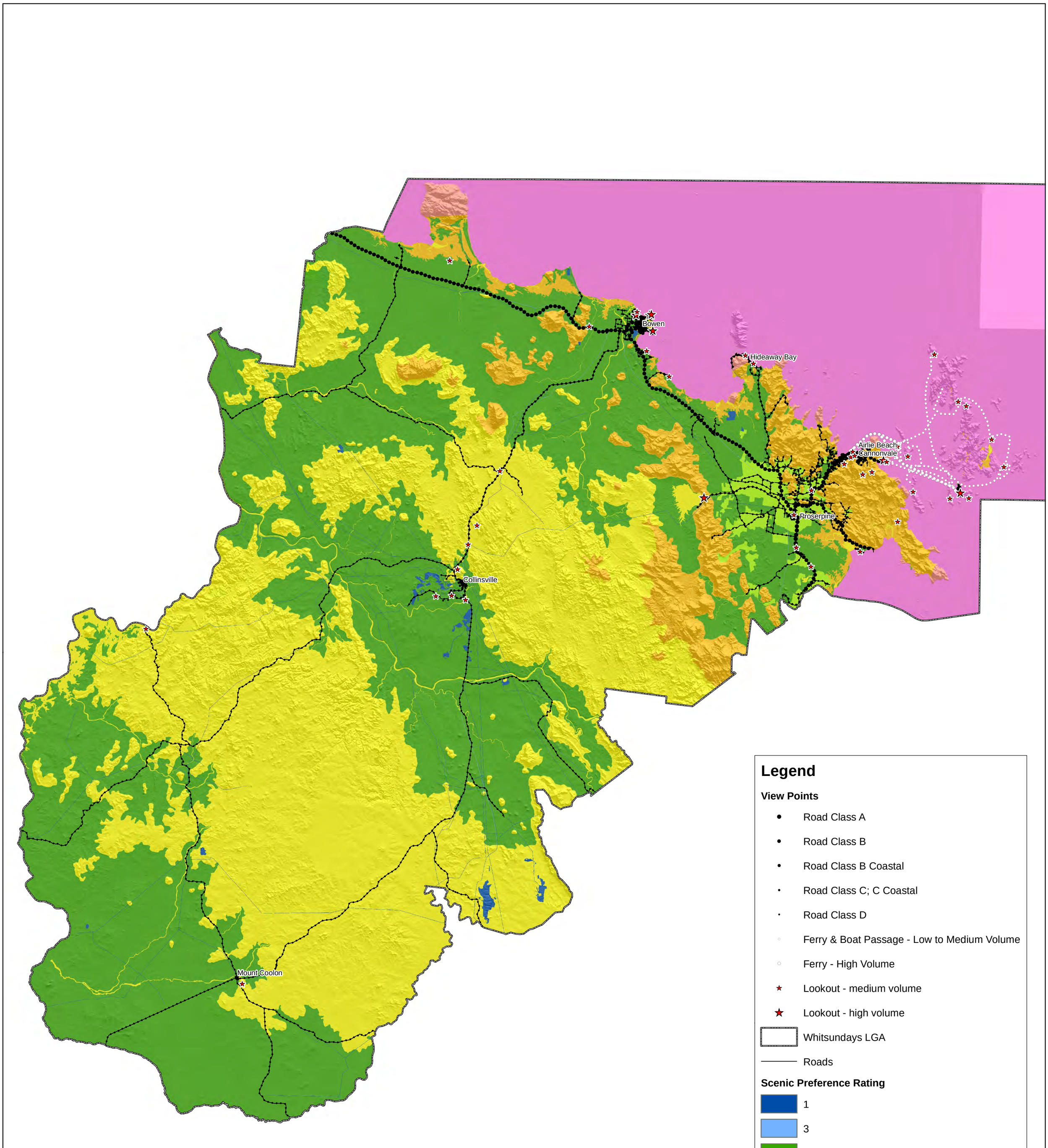
Kilometres

0 20 40

N W E S

Cardno

Map Produced by Cardno QLD Pty Ltd (4303)
Date: 2017-03-14
Coordinate System: GDA 1994 MGA Zone 55
Project: WE15037-GS_001
Map: WE15037-GS_004VisualExposureCat.mxd 01



Legend

View Points

- Road Class A
- Road Class B
- Road Class B Coastal
- Road Class C; C Coastal
- Road Class D
- Ferry & Boat Passage - Low to Medium Volume
- Ferry - High Volume
- Lookout - medium volume
- Lookout - high volume
- Whitsundays LGA
- Roads

Scenic Preference Rating

- 1
- 3
- 5
- 6
- 7
- 8
- 9
- 10

Whitsundays Regional Scenic Amenity Assessment

SCENIC PREFERENCES

Whitsunday Regional Council

1:600,000 Scale at A3

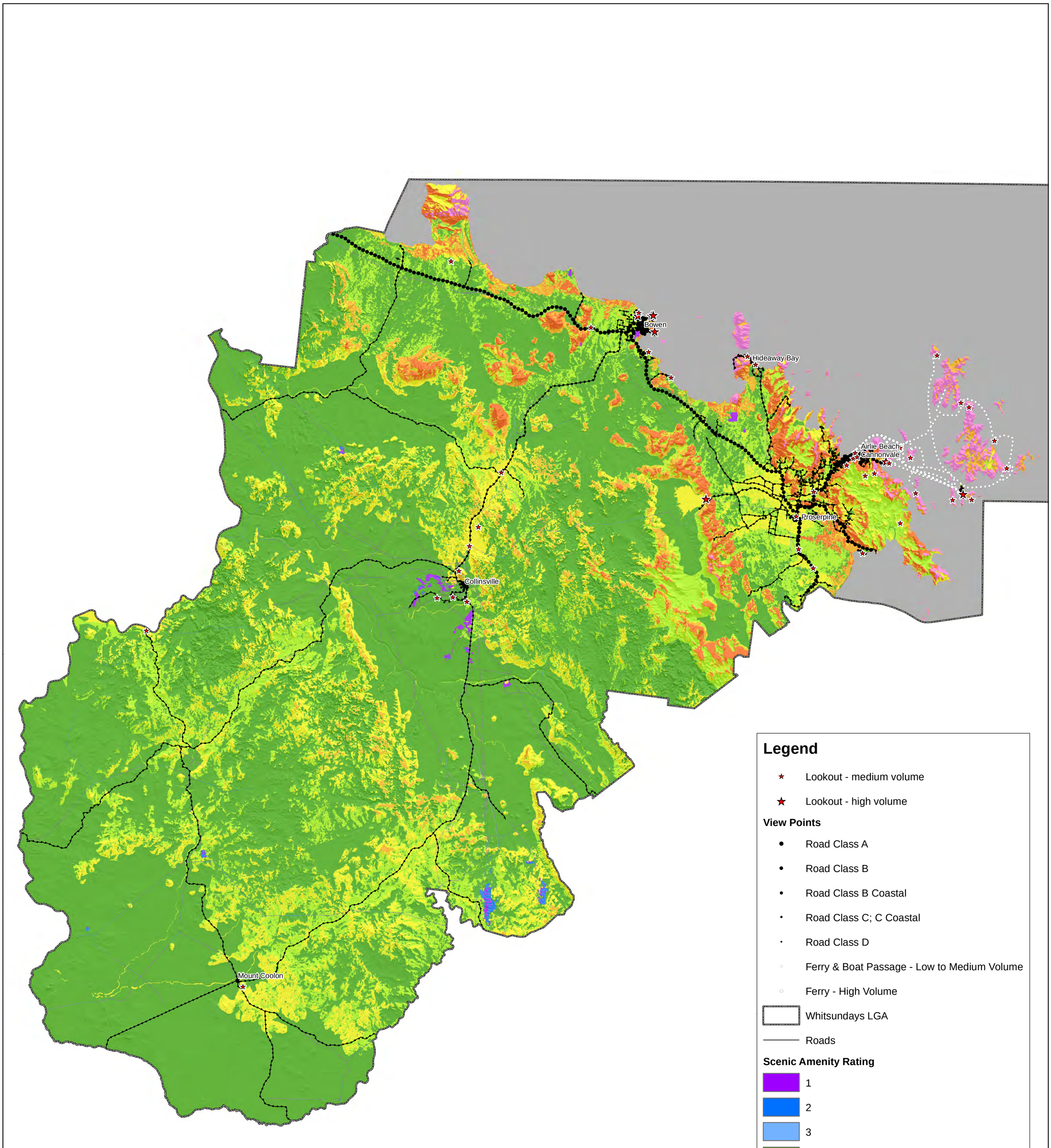
Kilometres

0 20 40

N W E S

Cardno

Map Produced by Cardno QLD Pty Ltd (4303)
Date: 2017-03-14
Coordinate System: GDA 1994 MGA Zone 55
Project: WE15037-GS_001
Map: WE15037-GS_005ScenicPreference.mxd 01



Whitsundays Regional Scenic Amenity Assessment

SCENIC AMENITY RATING

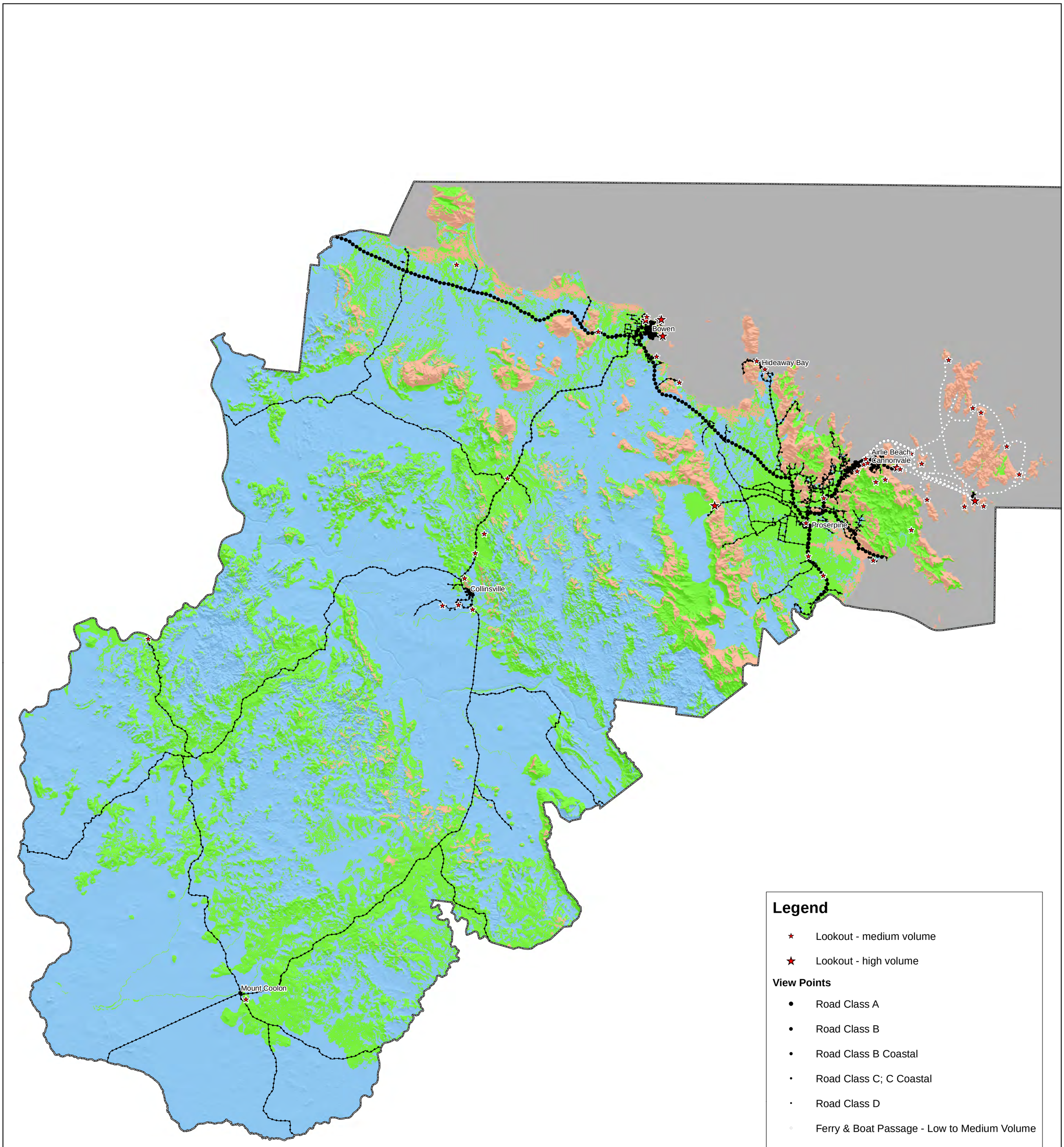
1:600,000 Scale at A3

Kilometres

0 20 40

N W E S

Map Produced by Cardno QLD Pty Ltd (4303)
Date: 2017-03-14
Coordinate System: GDA 1994 MGA Zone 55
Project: WE15037-GS_001
Map: WE15037-GS_006ScenicAmenity.mxd 01



Legend

- Lookout - medium volume
- Lookout - high volume

View Points

- Road Class A
- Road Class B
- Road Class B Coastal
- Road Class C; C Coastal
- Road Class D
- Ferry & Boat Passage - Low to Medium Volume
- Ferry - High Volume
- Whitsundays LGA
- Roads

Scenic Amenity Categories

- Low (1-5)
- Medium (6-7)
- High (8-10)

Whitsundays Regional Scenic Amenity Assessment

SCENIC AMENITY CATEGORIES

Whitsunday Regional Council

1:600,000 Scale at A3

Kilometres

0 20 40

N W E S

Cardno

Map Produced by Cardno QLD Pty Ltd (4303)
Date: 2017-03-14
Coordinate System: GDA 1994 MGA Zone 55
Project: WE15037-GS_001
Map: WE15037-GS_007ScenicAmenityCat.mxd 01

Lookout		Whitehaven Beach South	23L	Nobbies Lookout	46L	WHITSUNDAY CRAIG	20F
Mount Coolon	1L	Aerlie Beach Trail	24L	**Gateway**		MOUNT MCGUIRE	21F
Burdekin Falls	2L	Lions Lookout Shute Harbour	25L	Menilden Creek Bridge	1G	WHITSUNDAY PEAK	22F
Pelican Creek	3L	Mount Rooper	26L	**Landform Features**		MOUNT MERKARA	23F
3 Mile Creek	4L	Aerlie Beach Trail	27L	MOUNT LOUDON	1F	MOUNT ROBINSON	24F
Scottsville	5L	South Mole Island	28L	WHITESTONE PEAK	2F	MOUNT DRYANDER	25F
Mount Devlin	6L	Horizons Way	29L	CRAMOISIE CLIFF (RED BLUFF)	3F	MOUNT CHALLENGER	26F
Truck Stop Bruce Hwy	7L	Airlie Beach Road	30L	MOUNT LESLIE	4F	MOUNT ABERDEEN	27F
Conway Beach	8L	Daydream Island	31L	MOUNT WILLIAM PHILPOTT	5F	BEN LOMOND	28F
Gooranga Wetlands	9L	Tongue Point	32L	MOUNT CROMPTON	6F	HOOK PEAK	29F
Collinsville Gateway	10L	Whitsunday Island	33L	MOUNT CONSTANCE	7F	MOUNT MACKENZIE	30F
Rocks	11L	Hook Island	34L	MOUNT HECTOR	8F	MOUNT ABBOT	31F
Conway National Park	12L	South of Bowen	35L	MOUNT ROUNDBACK	9F	MOUNT SYDNEY	32F
Proserpine	13L	Dingo Beach	36L	CAPE CONWAY	10F	CAPE GLOUCESTER	33F
Dent Island	14L	Hideaway Bay	37L	MOUNT DEVLIN	11F	EDINBURGH CASTLE	34F
Hamilton Island Southern	15L	Hayman Island	38L	MOUNT QUANDONG	12F	MOUNT BERTHA	35F
Peter Faust Dam	16L	South of Bowen	39L	MOUNT PROSERPINE	13F	FLAGSTAFF HILL	36F
Hamilton Island Central	17L	Flagstaff Hill	40L	MONTE CHRISTO	14F	MOUNT ROUNDBACK	37F
Panorama Lookout	18L	Bowen Gateway	41L	HIGH MOUNTAIN	15F	CAPE EDGECUMBE	38F
Airlie Beach Gateway	19L	Greys Bay	42L	ROMA PEAK	16F	MOUNT LUCE	39F
Jubilee Pocket	20L	Mount Nutt	43L	MOUNT PLUTO	17F	CAPE UPSTART	40F
Mount Hayward	21L	Horseshoe Bay	44L	MOUNT CONWAY	18F		
Bogie River	22L	Queens Beach	45L	MOUNT HAYWARD	19F		

Whitsundays Regional Scenic Amenity Assessment

LANDSCAPE FEATURES

1:600,000 Scale at A3

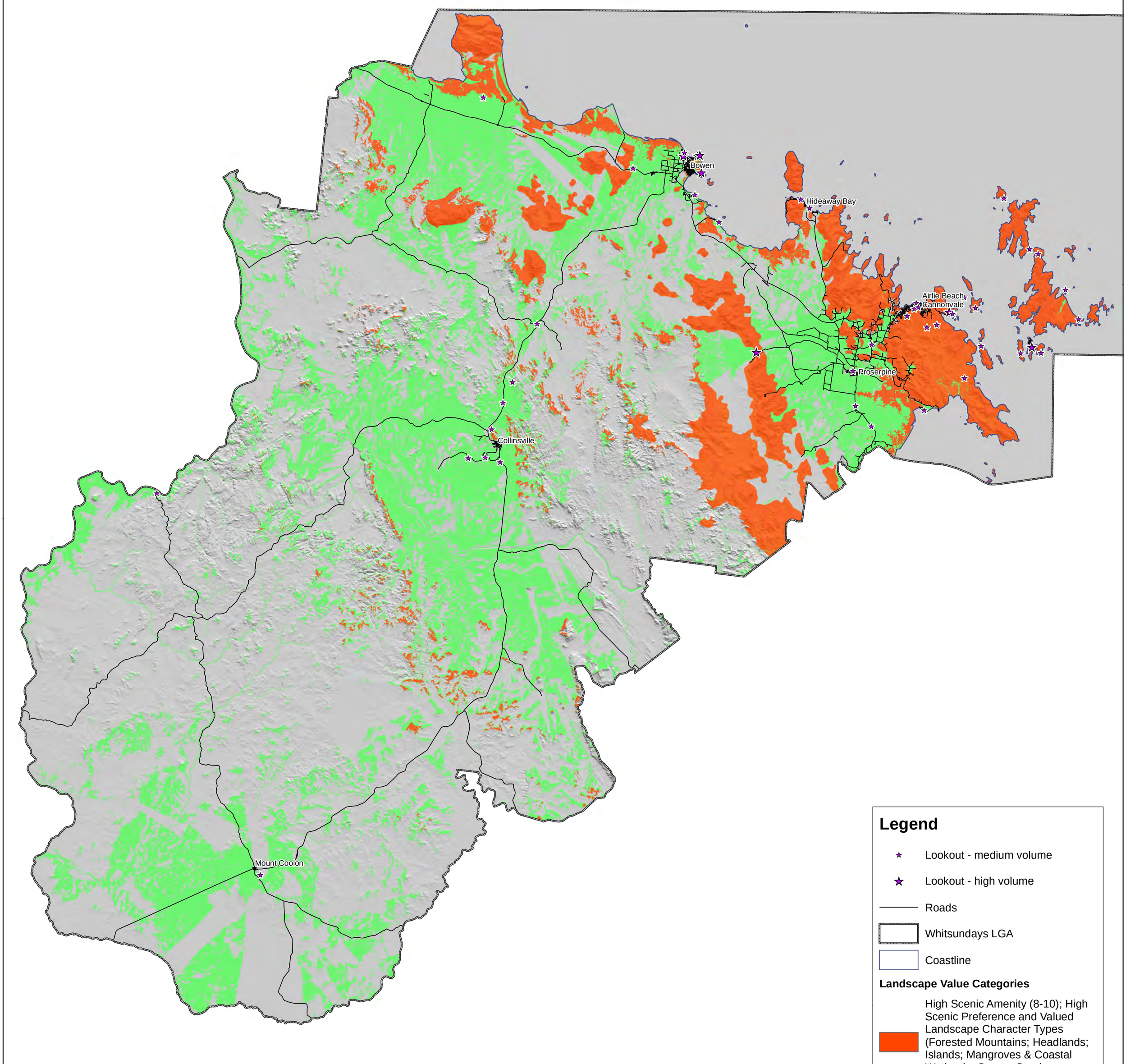
Kilometres

0 20 40

N W E S

Cardno

Map Produced by Cardno QLD Pty Ltd (4303)
Date: 2017-03-17
Coordinate System: GDA 1994 MGA Zone 55
Project: WE15037-GS_001
Map: WE15037-GS_009LandscapeFeatures.mxd 01



Legend

- Lookout - medium volume
- Lookout - high volume
- Roads
- Whitsundays LGA
- Coastline

Landscape Value Categories

- High Scenic Amenity (8-10); High Scenic Preference and Valued Landscape Character Types (Forested Mountains; Headlands; Islands; Mangroves & Coastal Wetlands; Ocean; Sandy Beaches)
- -Natural/rural areas within view of lookouts or sightlines which are not in Category 1; Valued landscape character types which are not in Category 1 (Canefields, Watercourses & Lakes)
- Other

Whitsundays Regional Scenic Amenity Assessment

LANDSCAPE VALUES

Whitsunday Regional Council

1:600,000 Scale at A3

Kilometres

0 20 40

N W E S

Cardno

Map Produced by Cardno QLD Pty Ltd (4303)
Date: 2017-03-14
Coordinate System: GDA 1994 MGA Zone 55
Project: WE15037-GS_001
Map: WE15037-GS_008LandscapeValues.mxd 01

Appendix A

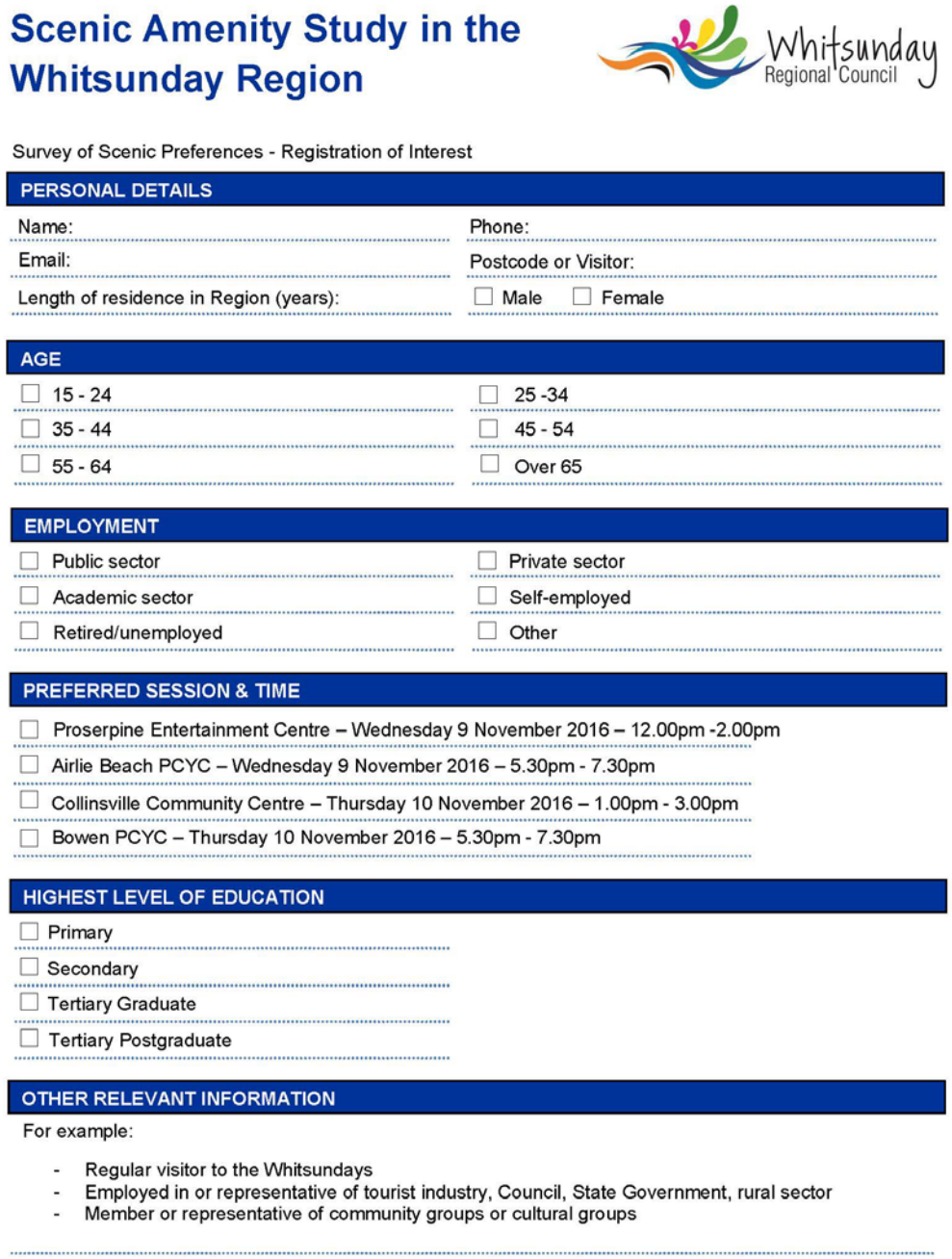
Whitsunday Scenic Preference Surveys - Overview

Introduction

The initial stage of the scenic preference survey involved a public preference survey in the Whitsunday region to identify characteristics of views that influence people's preference for scenery. The subsequent stage uses the survey data in the preparation of maps to show the location of areas with highly preferred scenery through to areas of least preferred scenery.

Public Preference Survey

A total of 66 people participated in the Whitsunday Region Public Preference Surveys, including 24 on the online surveys and 42 in the survey sessions held at Bowen, Airlie, Proserpine and Collinsville in November 2016. The surveys included a broad cross section of people of various ages and from different demographic groups and regions. Each participant was requested to complete survey forms requiring basic demographic data (see **Figure A1-2**) and rate each photo between 1 and 10. Additional comments were optional.



Scenic Amenity Study in the Whitsunday Region

Whitsunday Regional Council

Survey of Scenic Preferences - Registration of Interest

PERSONAL DETAILS

Name: Phone:

Email: Postcode or Visitor:

Length of residence in Region (years): ☐ Male ☐ Female

AGE

☐ 15 - 24 ☐ 25 -34

☐ 35 - 44 ☐ 45 - 54

☐ 55 - 64 ☐ Over 65

EMPLOYMENT

☐ Public sector ☐ Private sector

☐ Academic sector ☐ Self-employed

☐ Retired/unemployed ☐ Other

PREFERRED SESSION & TIME

☐ Proserpine Entertainment Centre – Wednesday 9 November 2016 – 12.00pm -2.00pm

☐ Airlie Beach PCYC – Wednesday 9 November 2016 – 5.30pm - 7.30pm

☐ Collinsville Community Centre – Thursday 10 November 2016 – 1.00pm - 3.00pm

☐ Bowen PCYC – Thursday 10 November 2016 – 5.30pm - 7.30pm

HIGHEST LEVEL OF EDUCATION

☐ Primary

☐ Secondary

☐ Tertiary Graduate

☐ Tertiary Postgraduate

OTHER RELEVANT INFORMATION

For example:

- Regular visitor to the Whitsundays
- Employed in or representative of tourist industry, Council, State Government, rural sector
- Member or representative of community groups or cultural groups

Figure A1-Survey Registration Form

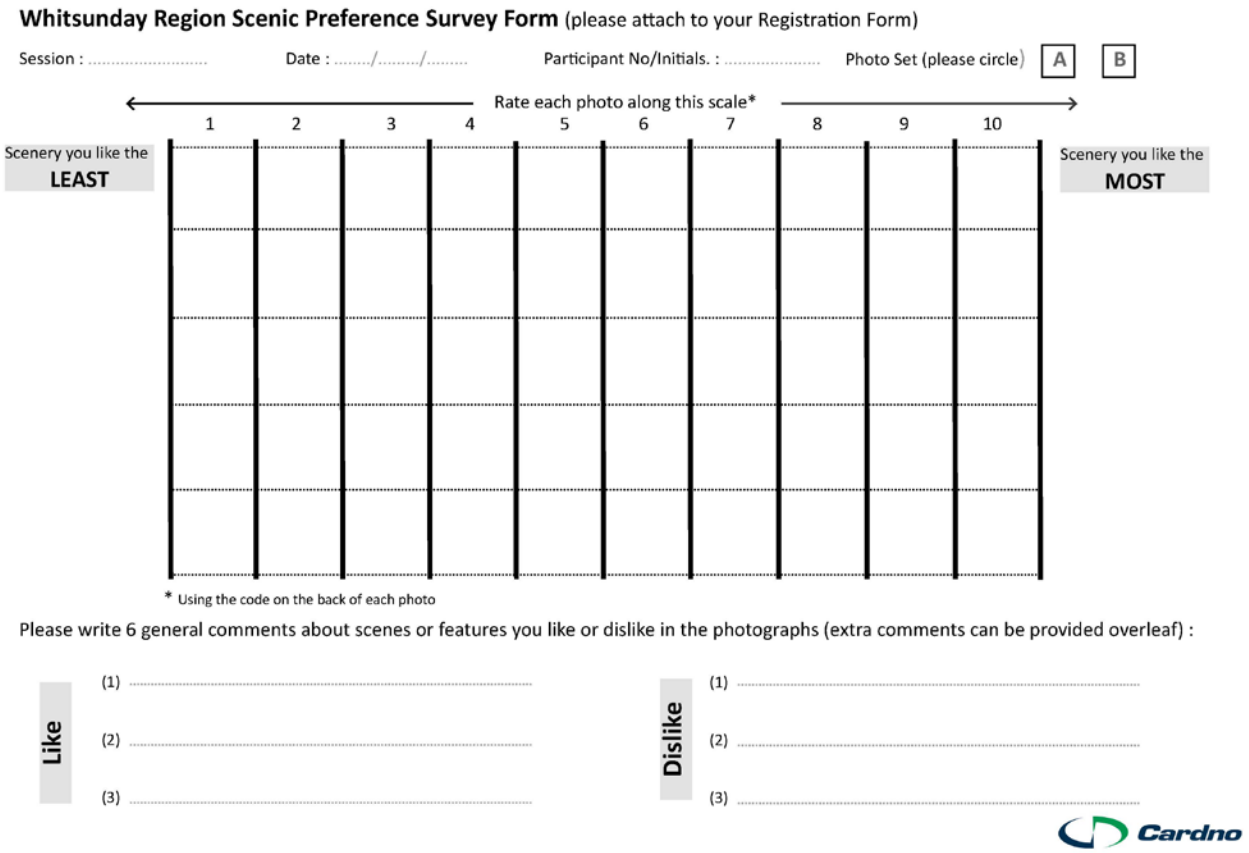


Figure A2 - Survey Form

Public Preference Survey Results assessment

A classification system was developed to enable scenic preference assessment. The two categories in this survey are Landscape Character (to describe the context of view), and Visual Elements (to describe the components of a view). Unlike the SEQ Scenic Preference Survey which used Visual Domains to define the context of view (such as 'Bush, Coast, Urban, Rural')[9], this study uses Landscape Character categories to define the view, as it provides more accurate assessment of landscape, particularly as part of people's experience of the Whitsundays region.

Seven Landscape Character types were defined to encompass the major visual contexts throughout the Whitsunday Region that people experience in the landscape. 48 photos in two sets (24 in each – A and B) were selected from the photo library created for the Whitsunday Region in order to include all different combination of visual elements within each landscape character type (See Figure **). A sketch outline of visual elements in each photo was undertaken to record the percentage of visual elements for each photo (see Figure * below). On the other hand mean ratings were calculated for each photo in each photo set. Analysis of trends of scenic preference mean ratings and the % breakdown of each visual element resulted in estimating scenic preference ratings for different visual elements; both natural and built. These included either standalone ratings, or were compared to similar SEQ library archive images and SPRAT-1 ratings to help determine a more reliable, median SPR for particular classifications, particularly where there were anomalies or differences, such as urban and rural categories. As an outcome of this Survey, a Scenic Preference Map was created which reflects the preferences of the region (Figure 3-9).

[9] Queensland Government Office of Urban Management (2007) SEQ Regional Plan 2005-2026 Implementation Guideline No.8 "Identifying and protecting scenic amenity values"

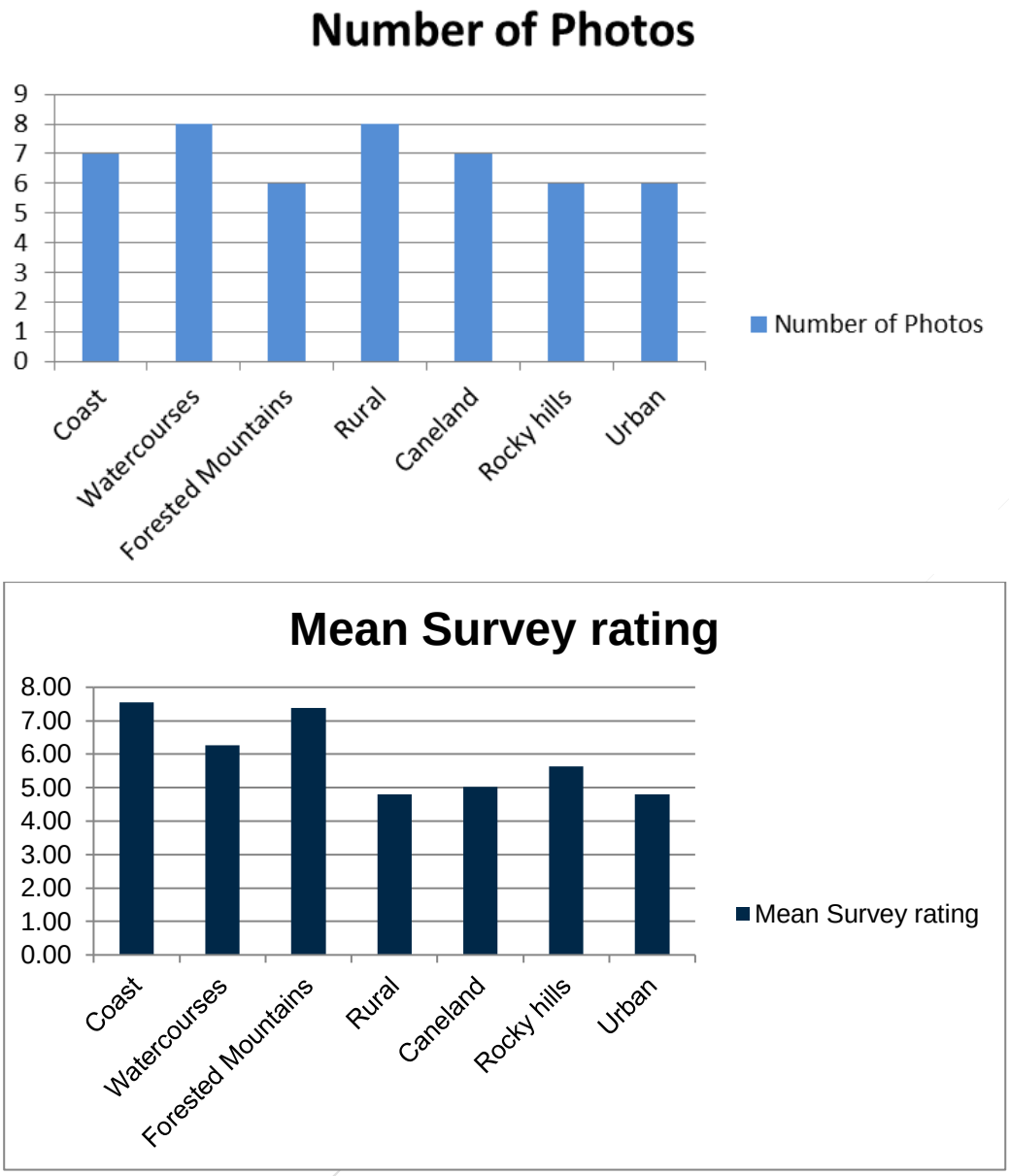


Figure A9-Number of selected photos and mean rating of each Landscape Character Type

Interestingly, in the Whitsundays survey, the 'rural' LCT is rated equal to 'urban' LCT with a rating of just under 5. Similarly, 'watercourses' rated considerably lower than 'forested mountains'. These are considerable deviations from the SEQ SA study, where 'rural' rated higher than 'urban' and 'watercourses' also rated higher than 'forested mountains'. It is proposed that the differences between the Whitsundays and the SEQ SP study results relate to a combination of factors:

- In the tropics, urban LCTs are usually accompanied by gardens and greenery for shade and climate control, which often helps to soften built form (if not dominate it) and could account for a higher urban rating than SEQ;
- Urban LCT's in the Whitsundays also include many 'townscapes' – including heritage buildings and wide main streets vs prefabricated concrete buildings;
- 'Rural' LCT's in the western part of the Whitsundays region are characteristically hot, dry and dusty (image library coincided with significant drought) with scant pasture for stock and grazing, sandy dry watercourses, although cropping and irrigated horticulture potentially increased the ratings for rural landscapes (preference for 'greenery');

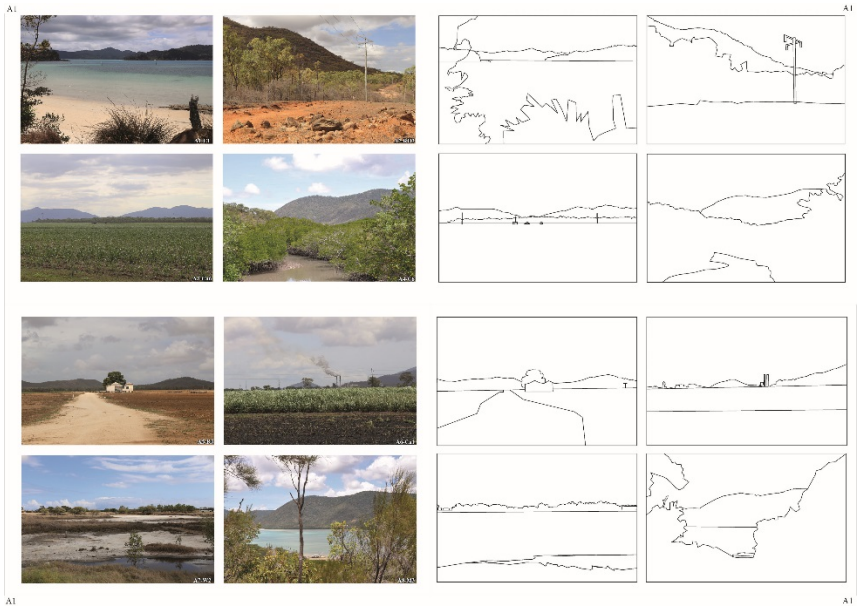
- ‘Watercourses’ in the Whitsunday region are often dry or reduced stream rating (as mentioned, image library coincided with significant drought) while forested mountains retain their dominant forest canopy, which could explain the difference in rating between watercourses and forested mountains in the two studies;

Some of these differences can best be explained by comments offered by respondents, see table below:
.

Comments	Like	Dislike
Airlie Survey	▪ *Mountains* ▪ *Lookouts* ▪ *Ocean views*	▪ *Dry Land* ▪ *Flat land* ▪ *Creeks*
	▪ *Waterways (ocean, creek etc)* ▪ *Forest* ▪ *Sandy beach*	▪ *Industrial* ▪ *Large scale farming equipment* ▪ *Dry, scrubby*
	▪ *Beach* *"Like the low tide along the beaches"* *"Like the unspoiled seascapes"*	▪ *"Don't like messy shots Cannonvale"* ▪ *"Don't like ugly powerlines"* ▪ *"Like to see more trees planted in Proserpine main street"*
	▪ *"Coastal scenes without built up areas"* ▪ *"Forest and tree covered hills are good"* ▪ *"Natural settings, ungrounded scenes are appealing"*	▪ *"Empty cane fields, coal trains"* ▪ *"Built up areas not too stimulating. Mono-culture fields not too good"* ▪ *"Power lines and industrial agriculture not pretty"*
	▪ *Passage views* ▪ *Lagoons* ▪ *Beaches*	▪ *Power poles* ▪ *RH3* [Rocky hills image RH3] ▪ *Low tide*
	▪ *"Heritage character should be maintained"* ▪ *"Waterways for tourism and farming"* ▪ *"Low rise buildings below views and roofs in trees"*	▪ *Power lines* ▪ *"Tall buildings out of scale with natural surrounds"* ▪ *"Untidy looking development / signage"*
	▪ *Natural views* ▪ *Open space* ▪ *Water*	▪ *Ugly development* ▪ *Power lines* ▪ *High rise*
	▪ *"Blue water, Sandy beaches, Interesting rock formations"* ▪ *"Tranquil Creekscape, Rainforest"* ▪ *"Beachscapes, Sailing and islands"*	▪ *Boring houses* ▪ *Ugly drain, dead grass* ▪ *Bare fields, power pylons*
Collinsville Survey	▪ *Outback scenes* ▪ *Bowen river*	▪ *Canefields* ▪ *Town centre*
	▪ *Natural waterholes* ▪ *Historical buildings* ▪ *Moments in time of significance*	▪ *"No contrast to textures or colours"* ▪ *"Must have significance"*
	▪ *"Sandy, clean beach, clear water"* ▪ *"Colours of the ocean"* ▪ *"Beach scene at low tide"*	▪ *"Stark landscape, isolated"* ▪ *"RH-3 Not attractive at all"* [Rocky hills image RH3] ▪ *"R-5 Drought and starving cattle are never pretty"*
	▪ *Creek with water* ▪ *Ocean beaches* ▪ *"Rural scenes with livestock"*	▪ *Cane fields* ▪ *Hills with residences*
	▪ *Outback landscapes* ▪ *Natural waterholes* ▪ *"Lovely blues of the ocean"*	▪ *"Dislike dark clouds blending with scenery"* ▪ *"Dislike photos with no cultural significance"*
	▪ *Ocean, Water, Rivers* ▪ *Green vegetation*	▪ *Dry, arid*
	▪ *"Natural unspoilt scenes – vistas"* ▪ *"Natural coastline, rivers, waterways, forests"*	▪ *"Dusty roads, railways and carriages"* ▪ *"Unattractive development, powerlines, high rise"*

	▪ *"Heritage buildings, character buildings with sympathetic surroundings"*	▪ *"Sugar refinery, over cleared paddocks"*
	▪ *Rural scenes* ▪ *Waterways and roads* ▪ *Old structures*	▪ *"Empty cane fields"* ▪ *"Indistinguishable entrance to Bowen"* ▪ *Power lines*
Proserpine Survey	▪ *Ocean* ▪ *Cane and mountains* ▪ *Cattle*	▪ *Power lines* ▪ *Quarry*
	▪ *Natural environment* ▪ *"Windows to the natural environment"* ▪ *"Green belts must be visible"*	▪ *"Need iconic views"* ▪ *"Need cultural references"* ▪ *"Buildings and sculptures"*
	▪ *"Undisturbed natural vegetation"* ▪ *"Undisturbed natural rocky hills"* ▪ *"Undisturbed natural beaches/coastline"*	▪ *"Weedy, degraded vegetation"* ▪ *"Powerlines and earthworks"* ▪ *"Crowded overdeveloped urban areas with mansions"*
	▪ *"Ocean views with greenery"* ▪ *"Sugar cane and mountains"* ▪ *"Dirt roads somewhere new to explore"*	▪ *"open empty spaces where ground and trees look dead"*
	▪ *"Islands unspoilt were great"* ▪ *"Natural shots were good"* ▪ *"Rainforest great"*	▪ *"Powerlines were terrible"* ▪ *"Brown landscapes looked unappealing"* ▪ *"Bowen tank terrible"*
Bowen Survey	▪ *Mountains* ▪ *Ocean and coastal bias* ▪ *Rural views in coastal communities*	▪ *Saltpans* ▪ *Summer heat influenced least liked* ▪ *Weed infestation* ▪ *Main development in scenic scape*
Online comments	▪ *Aqua water and sandy beaches are beautiful* ▪ *The prevalent mountain and green landscape in photo 7 was very attractive.* ▪ *Photo 8 had a number of elements in fore, mid and background making it most attractive.* ▪ *Photo 9 was nice with the mountain backdrop* ▪ *Photo 12 was nice with the greenery but less desirable with the muddy water. Photo 13 was nice with the aqua water and big boats.* ▪ *If the cane was larger in photo 16 this would make it more attractive.* ▪ *Photo 15 was made nicer by the rocky outcrops.* ▪ *Photo 22 had a great variation of warm contrasting colours. Photo 23 had a variety of foreground, mid ground and background elements of attractive features.* ▪ *Forest & hills*	▪ *Dirt and muddy water* ▪ *The lack of vegetation around the water in photo 6 was quite boring.* ▪ *Photo 10 lacked landscape items and was boring* ▪ *Buildings on the hill in photo 14 took away from the amenity* ▪ *Photo 11 was ugly with the big electricity tower* ▪ *Photo 17 was bland* ▪ *Photo 24 lacked features* ▪ *power lines look ugly* ▪ *Dry & hot - quarry is unsightly* ▪ *Dry and lonely*
	▪ *Photo 1 is a beautiful picture & seems like it would be a lovely place to spend some time. Photos 2 & 3 were ranked lower - photo 2 because it looks very dry (not good for the livestock); and photo 3 because of the industry* *Photo 4 is a beautiful natural environment & breeding ground for fish and crabs - an integral part of our region*	▪ *Powerline not interesting, Cannonvale* ▪ *foreshore not too interesting looking at Scrub hill* ▪ *harvested canefarm not interesting* ▪ *"I don't like the barren look of the land in 21 and 22"* ▪ *Photo 10 shows neglect for the immediate surrounds and a lack of vegetation*

	▪ *"I appreciate water views more than anything else"* ▪ *"Residential and tourist accommodation without major detraction from natural elements"* ▪ *"High quality, low density tourism development. Type of beach I like to escape to, with a surprising density of urbanisation* ▪ *yet minimal visual impact. Under utilised resource for locals and visitors"* ▪ *"tidal coast at Bowen mildly interesting, as a boater"* ▪ *Mangoes interesting to fisherman a bit, Hamilton harbour slightly interesting to boatie,* ▪ *"water views, even in the dry, is better"* ▪ *"images show well maintained areas with ensuring the natural background environment remains unspoilt"* ▪ *"Background natural vegetation is retained but still allowing for the agricultural needs in the foreground (Photo 9)"* ▪ *Well integrated housing with the natural environment (Photo 18)* ▪ *Serene beach with low rise housing (19)* ▪ *Dams are essential for drought proofing - a well maintained dam (Photo 20)*	▪ *Ugly Power cables should have been buried particularly given a high cyclone area. Visual amenity would improve exponentially*
Additional comments	▪ *Forests and rocky hills* ▪ *Rainforest walks/roads* ▪ *Beaches mostly natural, some/few yachts* ▪ *Weathered timber fences* ▪ *Character house streets* ▪ *Historic machinery* ▪ *Good quality signs – attractive* ▪ *"the interaction with built form and nature is working well"* ▪ *"agriculture is an outstanding scenic aspect of our community"* ▪ *"When promoting the Whitsundays the general public engage more with water and the islands than cane farms"* ▪ *"I like the combination of green and blue (water or sky). Much more appeasing to the eye than brown with hints of green".* ▪ *Any view with water or greenery is cooling and calming. There is nothing to impede the views of this water and greenery. I would not vote the same way should there be any break in the view, such as buildings, rooflines* ▪ *A break in the dry look of these photos with greenery makes them more visually appealing* ▪ *Strange having a town image with buildings and vehicles in photos of nature. The old style of the buildings is appealing* ▪ *however because of the low rise and early architecture*	▪ *Environmental weeds and soil erosion* ▪ *Industrial sheds and machinery* ▪ *Coal mine voids and spoil heaps* ▪ *Ugly steel fencing and piping* ▪ *Poor quality signs – ugly* ▪ *"Natural beauty versus rural industry. While having some economic value, the environmental damage caused and chemical run off delivered into reef waterways has to be considered"* ▪ *"Scarred landscape of quarrying and cane farming less liked* ▪ *than natural hillside with low impact tourism amenities"* ▪ *"Cattle damaged land often seen without enough natural corridor or fencing between them and road".* ▪ *Photos 8 and 9 offer the feeling of cool winds, water Photo 10 feels hot and dry, a little desolate without the crops or more trees* ▪ *The continuity of greenery and the uninterrupted line of sight to the greenery is appealing*

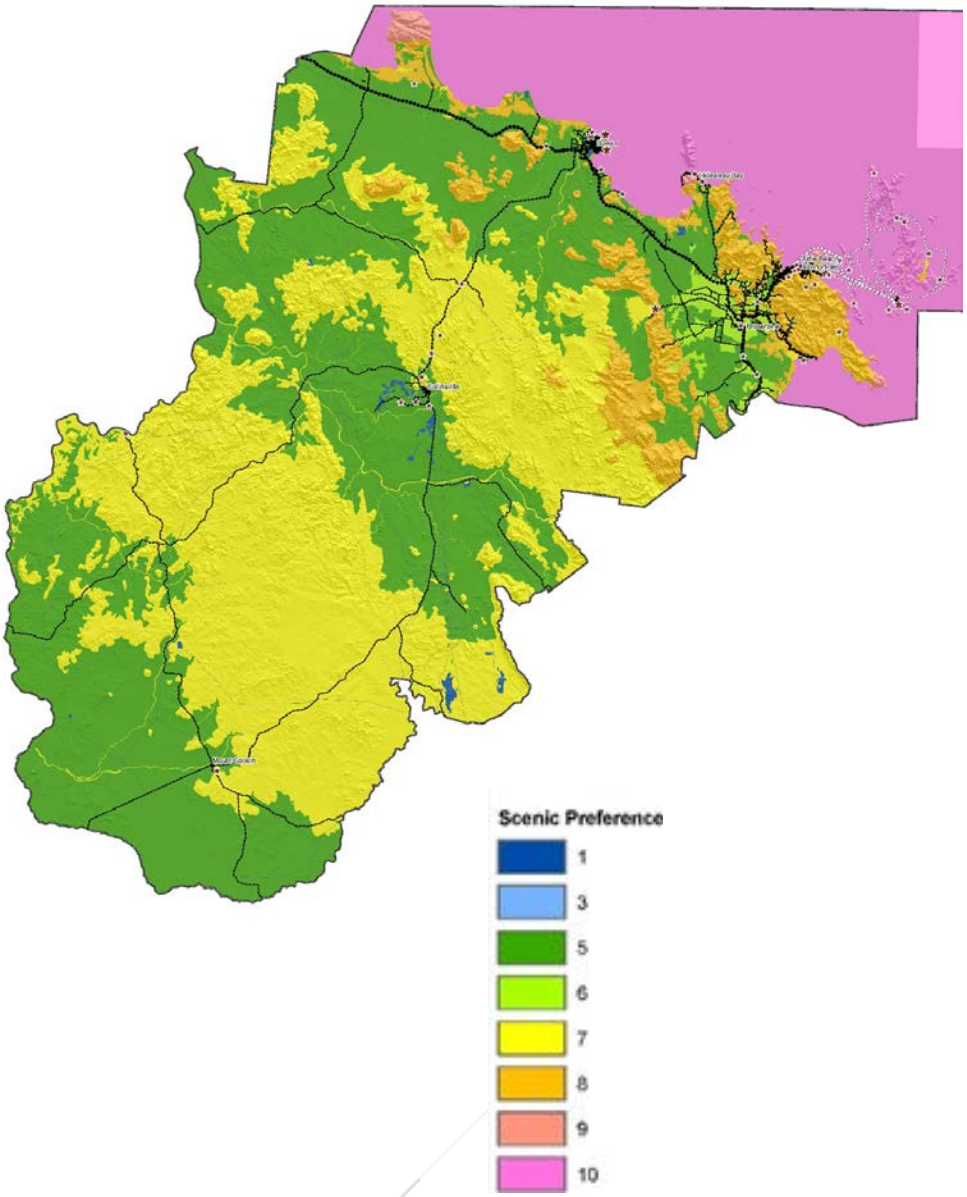


Photos	Survey Mean Rating
A1-C1	9.0
A2-RH3	4.6
A3-Ca6	5.7
A4-C6	6.1
A5-R3	4.5
A6-Ca1	4.6
A7-W2	4.1
A8-M3	8.1
A9-M1	5.7
A10-U1	5.8
A11-C4	6.6
A12-R4	3.1
A13-W8	7.3
A14-RH4	5.2
A15-U4	5.4
A16-Ca4	4.7
A17-Ca2	6.1
A18-W5	6.2
A19-C2	8.7
A20-R5	4.9
A21-U3	8.5
A22-M5	7.2
A23-W4	5.9
A24-RH2	7.5

Figure 6-1 Figure A10-Survey photos Set A- 24 Photos and outlines

Photos	Survey Mean Rating
B1-C5	4.7
B2-Ca7	4.1
B3-W3	7.0
B4-W6	8.1
B5-M6	8.4
B6-U2	6.9
B7-C3	9.3
B8-Ca3	5.2
B9-Ca5	4.8
B10-R7	5.0
B11-RH2	2.9
B12-RH5	7.4
B13-M7	8.6
B14-M4	6.3
B15-U6	2.8
B16-C7	8.4
B17-W7	8.1
B18-U5	3.3
B19-R2	1.5
B20-R8	4.3
B21-R6	4.8
B22-R1	3.3
B23-RH1	6.2
B24-W9	3.5

Figure 6-2 Figure A11-Survey photos Set B- 24 Photos and outlines



Land Cover	Scenic Preference Rating(1-10)
Sandy Beach	10
Coast	9
Forested Mountains	8
Inland watercourses	8
Coastal Mangroves	7
Canefields	5
Rural residential	5
Urban Settlement	4
Industrial building	3
Roads	2
Electricity Corridors	2
Earthworks	1