A Biodiversity Planning Assessment for the Southeast Queensland Bioregion

Landscape Expert Panel Report

Version 4.1

Queensland Government

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Citation

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1 Introduction

This report summarises the proceedings and the output of expert landscape panels convened to discuss the landscape biodiversity values of the Southeast Queensland (SEQ). The expert panel to discuss the landscape biodiversity values of the northern half of the bioregion was held in Maryborough on 10 February 2016, and the southern panel was held in Brisbane on 3 - 4 March 2016. The areas covered by the northern and southern panels are shown in Figure 2. This report documents the panel's' findings using the regional ecosystem (RE) mapping dated Version 9 (released April 2015).

In order to fully capture biodiversity values and to accommodate local knowledge, the following three sets of values were considered for the SEQ study area:

- fauna
- flora
- landscape.

The Biodiversity Assessment and Mapping Methodology (BAMM, version 2.2) (EHP 2014) has been prepared to provide a consistent approach for assessing biodiversity values at the landscape scale in Queensland using vegetation mapping data from the Queensland Herbarium as a fundamental basis. It is being used by the Department of Environment and Heritage Protection (EHP) to generate Biodiversity Planning Assessments (BPAs) for bioregions in Queensland.

The BAMM is continually being refined and is published on the EHP website at www.ehp.qld.gov.au. The methodology was developed from a similar method initially devised by Chenoweth EPLA (2000), and can be used by agency staff, other government departments, local governments or members of the community to inform on a range of planning or decision making processes.

The methodology is applied in two stages (Figure 1). The first stage uses existing data to assess seven diagnostic criteria, which are relatively uniform and reliable across a bioregion. These account for ecological concepts including rarity, diversity, fragmentation, habitat condition, resilience, threats, and ecosystem processes. They are diagnostic in that they are used to filter available data and provide a 'first-cut' determination of significance. This initial assessment is generated on a geographic information system (GIS) and is then refined using a second group of expert panel criteria. These criteria rely more upon expert opinion than on quantitative data, and focus on data that may not be available uniformly across the bioregion.

Expert panels are convened to review and refine diagnostic criteria and to assess the expert panel criteria (Figure 1). A generalised terms of reference for expert panels is provided in the BAMM version 2.2.

Appendix 1 details the abbreviations included in the report.

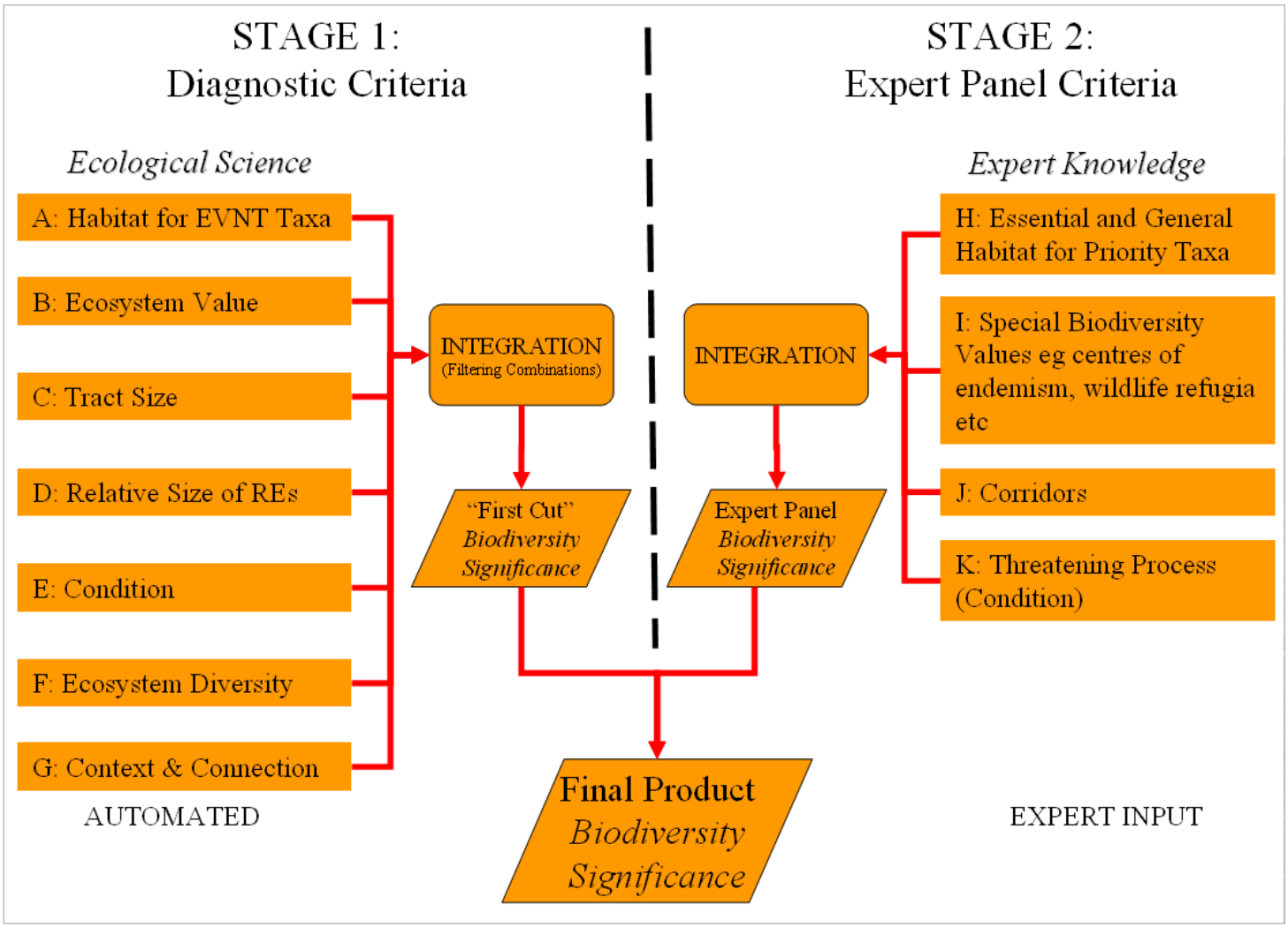


Figure 1 Biodiversity Assessment and Mapping Methodology (BAMM) process

2 Method

2.1 Study area

The SEQ Bioregion shares its western boundary with the Brigalow Belt Bioregion, and extends from the New South Wales border, north to the dry coastal corridor between Gladstone and Rockhampton that forms part of the Brigalow Belt Bioregion (Figure 2). The McPherson Range borders the southern boundary of the bioregion while the Great Dividing Range is to the west. Ranges extend north south through the central region creating an altitudinal gradient from the coast. Small volcanic plugs remain in the landscape offering unique conditions for taxa. Large sand islands off the coast offer unique environments and create sheltered bays and passages within which marine and coastal plants and animals thrive (Sattler & Williams 1999). The SEQ Bioregion is one of the most biologically diverse in Australia due to major climatic overlaps and the east-west altitudinal gradient from the coast to the Great Dividing Range (Ryan 2003). Additionally there are many endemic species. The area contains the most urbanised parts of Queensland but also some of the most exceptional natural areas in the state, including the Gondwana Rainforests of Australia and Fraser Island World Heritage Areas.

Southeast Queensland has a humid sub-tropical climate with mild winters and warm, wet summers. It is the most densely populated area of Queensland, accommodating over 70% of the state population (Queensland Treasury 2015), and is subject to a range of land uses including grazing, nature conservation, dryland and irrigated agriculture, urban uses (including industrial and residential) and rural living. The region's major agricultural products include dairy, beef, timber, fodder crops, cereal and a variety of horticultural produce.

The main pressure on the environment in SEQ is the impact of rapid population growth and concomitant growth of services that fragment the landscape. Other important threats are unsustainable land management practices, native vegetation clearing, point source and diffuse pollutants (from urban, industrial and agricultural areas) entering waterways and the impacts of introduced plants and animals.

There are 12 sub-regions within the Southeast Queensland Bioregion (Figure 2). The Department of Science, Information Technology and Innovation (DSITI) has mapped and classified regional ecosystems (RE) to a peer reviewed and published mapping and classification methodology. These RE maps were used as a platform for the conservation assessments reported here. BPAs accept the released RE maps unmodified and therefore, are limited by the REs inherent mapping and classification accuracy. Issues to do with RE mapping or classification errors are dealt with by DSITI’s mapping update processes and are not part of a BPA.

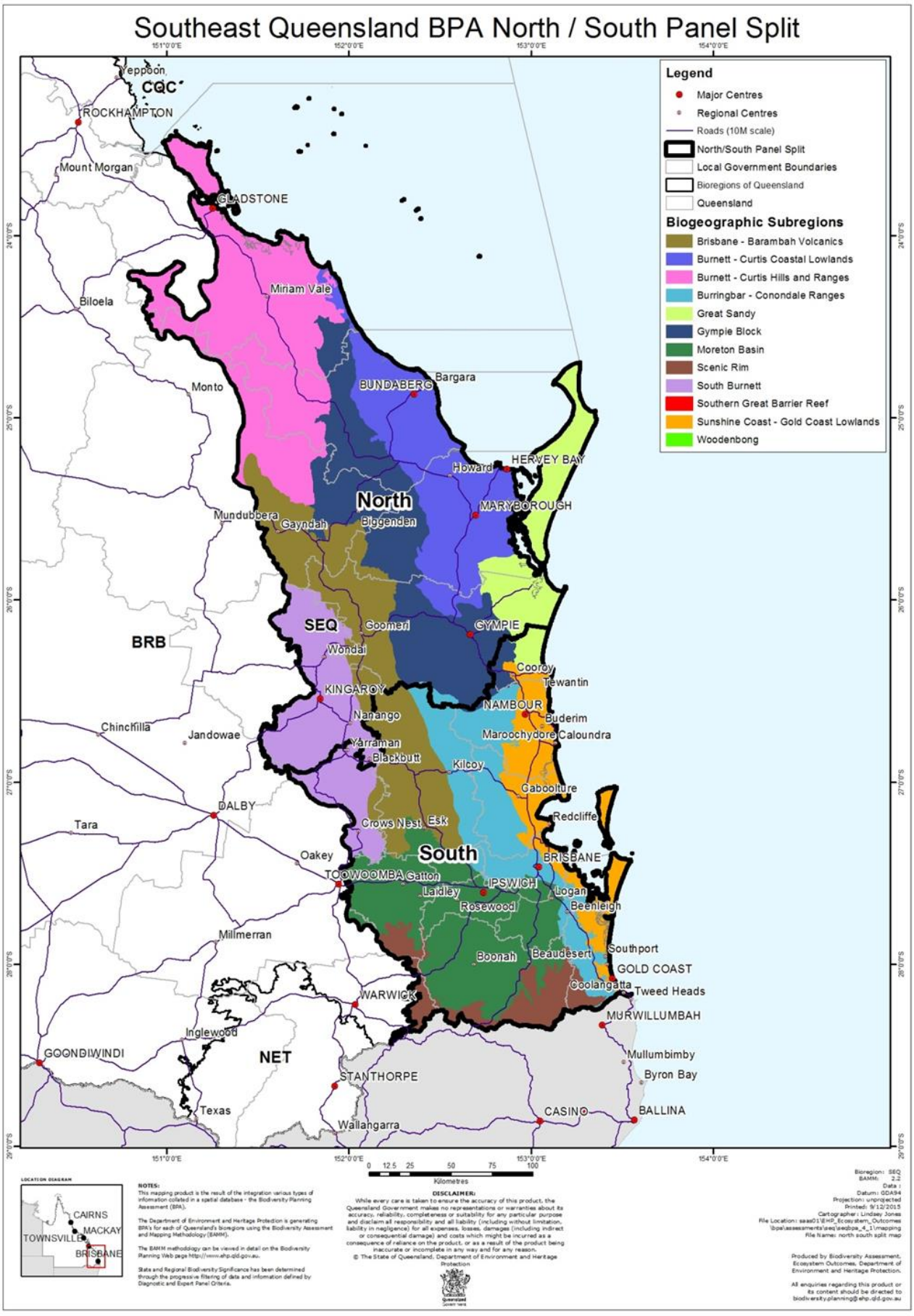


Figure 2 The Southeast Queensland Bioregion and its subregions showing the north/south panel split

2.2 Expert panel

The expert panel plays a significant role in the development of a BPA through:

- reviewing the suitability of data used in and arising from the GIS analysis
- identifying other information sources including expert and local knowledge, technical reports and papers, and modelled maps
- providing expert opinion where quantitative data is not available uniformly across the bioregion.

The biodiversity issues addressed at landscape panel workshops are:

- consideration of areas referred to the landscape panel by the flora and fauna panels
- review of corridors and linkages, based on consideration of the overall configuration of remnant and other vegetation and areas where landscape restoration would be desirable (criterion J)
- review of existing special areas with landscape values (criterion I)
- consideration of new special areas with landscape values. These may include areas that have been identified by both the flora and fauna panels which warrant a landscape scale decision, or areas that have not been previously identified. (criterion I)
- identifying data gaps.

The SEQ study area expert panel comprised invited persons with knowledge of the biodiversity and/or special biodiversity values of the SEQ Bioregion, as well as a sound understanding of ecological conservation and management principles. As far as possible, the combined expertise of participants covered the whole SEQ Bioregion and a range of planning and assessment processes (e.g. local government, regional Natural Resource Management (NRM) bodies, state government). The terms of reference for expert panels are provided in the BAMM documentation on the EHP website. Two landscape expert panels were convened, one for the Northern half of the bioregion and one for the Southern (Figure 2). All panel participants are listed in Table 1 and Table 2.

The output of the panel process aims to be justifiable and transparent. Data that is captured digitally and mapped is a result of consensus within the panel and ratified by the Manager, Biodiversity Assessment & Analysis, EHP and the relevant regional manager.

Further, significance ratings of State or Regional are attributed to the decisions produced at the expert panels. In general ratings were only given by the panel to areas of remnant REs, however some small areas of non-remnant vegetation have been given a biodiversity significance rating as part of corridors to improve landscape connectivity.

The ratings used by the panel were described as:

State significance—areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed as being significant at national or international scales

Regional significance—areas assessed as being significant for biodiversity at the sub-bioregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.

Table 1 Northern SEQ landscape expert panel participants on 10 February 2016

Name	Organisation
Rod Buchanan	BMRG
Tony van Kampen	Consultant
Bill Mcdonald	DSITI – Queensland Herbarium
Jason Halford	DSITI – Queensland Herbarium
Melinda Laidlaw	DSITI – Queensland Herbarium
David Field	EHP - Maryborough
Andrew McLaughlin	DNRM
Maria Zann	NPSR
Support Staff	
Shane Chemello	EHP
Lindsey Jones	EHP
Mark Kelton	EHP
Stephen Trent	EHP

Table 2 Southern SEQ landscape expert panel participants on 3 and 4 March 2016

Name	Organisation
Luke Shoo	University of Queensland
Ted Fensom	Brisbane Region Environment Council
Paul Grimshaw	Consultant
Alan Chenoweth	Consultant
Peter Young	Consultant
David Jinks	Consultant
Mik Petter	SEQ Catchments
Liz Gould	SEQ Catchments
Kristy Dalton	Toowoomba Regional Council
Nina Bishop	Gold Coast City Council
Candy Daunt	Redlands City Council
Dale Watson	Redlands City Council
Darren McPherson	Somerset Regional Council
Renee Domalewski	Logan City Council
Rodney Adam	Logan City Council
Annie Kelly	DSITI – Queensland Herbarium
Bill McDonald	DSITI – Queensland Herbarium
Melinda Laidlaw	DSITI – Queensland Herbarium
Tim Ryan	DSITI – Queensland Herbarium
Andrew Davidson	DILGP
Carole Rayner	EHP
Michael Robinson	EHP
Steven Howell	EHP
Support Staff	
Shane Chemello	EHP
Lindsey Jones	EHP
Mark Kelton	EHP
Stephen Trent	EHP

2.3 Expert panel format

The landscape expert panel workshop used an interactive approach of GIS software, spreadsheets, reports, laptops and data projectors. Prior to the panel being convened, relevant information was collated and disseminated to the workshop participants.

The resources made available to the participants during the workshop proceedings were:

- copy of the BAMM
- available regional ecosystem mapping and 1:100 000 topographic maps
- information from databases such as HERBRECS, CORVEG, WILDNET and the Queensland Museum
- published surveys
- informal sources
- ancillary GIS layers provided for local reference included roads and cadastral information, drainage, State forests and national parks and Landsat Thematic Mapper imagery; digital topographic maps where available.

Appendix 2 provides a full list of the resources made available to the panel at the workshop.

2.3.1 Special biodiversity values (criterion I)

The panel reviewed the criterion I decisions of the flora and fauna panels and nominated other areas of special biodiversity value for inclusion under criterion I. The panel assigned State or Regional significance to the nominated areas on the basis of presence of at least one of the following features:

- criterion Ia—the area supports a number of taxa endemic to the SEQ bioregion
- criterion Ib—wildlife refugia; natural wetland that is in good condition or continues to function as a major wildlife habitat when seasonal conditions permit
- criterion Ic—the area supports a number of taxa that are present in other bioregions and have a limited number of occurrences in the SEQ bioregion (outliers/disjunct populations)
- criterion Id—the area supports a number of taxa at or near the limits of their respective geographical ranges
- criterion Ie—the area supports a high species diversity
- criterion If—the area supports concentrations of relictual (ancient and primitive) taxa
- criterion Ig—the area contains a regional ecosystem or regional ecosystems that exhibit variation in species composition
- criterion Ih—an artificial waterbody or managed/manipulated wetland of ecological significance
- criterion Ii—the area contains a high density of hollow-bearing trees that provide animal habitat
- criterion Ij—the area is used by significant numbers of individuals for roosting or breeding
- criterion Ik—climate change refuge.

The panel took into account combinations of the features present in deciding on an overall rating of State or Regional significance. The diagnostic criteria in BAMM use prescribed thresholds for determining the relative importance of individual criteria and standard rules for assigning significance based on combinations of values present. However, BAMM version 2.2 (EHP 2014) provides limited guidance on how expert panels are to assess criteria. The SEQ bioregion landscape expert panel used a consensus approach in assigning overall significance.

2.3.1.1 Review of fauna and flora expert panels criterion I decisions

The panel reviewed the criterion I decisions of the flora and fauna panels and either accepted the decisions as they stood, recommended that additional values be added, recommended that certain decisions be combined into one landscape decision, or recommended that already identified areas be consolidated. The consolidation of already identified areas was achieved by including enclosed and other closely associated areas so as to increase the diversity of values present, increase habitat connectivity, or improve the long term viability of the area and its values.

2.3.1.2 Special biodiversity areas (criterion I)

The panel then considered areas not already identified by the fauna or flora expert panels for potential addition as special biodiversity areas. Members of the expert panel nominated areas for inclusion under criterion I based on an analysis of the above data sets and personal knowledge. Where there was consensus that an area was of State or Regional biodiversity significance the values were identified and the area mapped. Where there was uncertainty or further work needed, tasks were assigned for follow-up. In some cases the areas were specifically identified by RE polygons, in others a bounding box was drawn as a shape file to indicate the general location of the area, and

specific instructions given for the area to be more accurately mapped using RE polygons, geology, landform or some combination of these. Subsequently the areas were mapped, distributed to the expert panel for review, and then finalised.

2.3.2 Corridors (criterion J)

Landscape scale corridors have been defined and mapped at a statewide level for most of the state. The network is being expanded as BPAs are completed for additional bioregions. Their broad purpose is to provide for ecological and evolutionary processes at a landscape scale by:

- maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations over long periods of time
- maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change
- maintaining seasonal migrations and movement of fauna
- maximising connectivity between large tracts/patches of remnant vegetation
- identifying key areas for rehabilitation and offsets.

Corridors have been selected to reflect:

- major watershed and catchment boundaries
- intact river systems
- major altitudinal/geological/climatic gradients
- connectivity between remnant vegetation in good condition
- linkages between bioregions
- linkages between permanent waterholes.

The methods used to identify bioregional terrestrial and riparian corridors, and gaps and critical weaknesses in terrestrial corridors, are outlined in EHP (2015b). Corridors that form part of the statewide network are assigned State significance. Other corridors providing connectivity at a sub-regional scale are assigned Regional significance.

The landscape expert panel workshops reviewed the existing network of corridors from version 3.5 of the BPA, making amendments and adding new corridors. The panel also discussed whether the definitions of corridors need to be modified in a highly fragmented bioregion like SEQ.

2.3.3 Threatening processes: condition (criterion K)

The expert panel did not assess this criterion.

3 Results and discussion

Specific recommendations from the panel are recorded in several tables in the following sections.

3.1 Review of flora and fauna special area decisions (criterion I)

The panel reviewed the criterion I decisions of the flora and fauna panels and recommended that certain decisions be combined into one landscape decision, and that certain already identified areas be consolidated. All panel comments and recommendations relating to these areas of special biodiversity value are outlined in Table 5.

Only EVNT and priority species are specified for each decision.

3.2 Bioregional corridors (criterion J)

Traditionally in a BPA, corridors centrelines are drawn on a map, a buffer is applied, and then remnant polygons included in that buffer area are given a value for criterion J. This is done to recognise areas of potential habitat connectivity, and highlights areas of weakness that could be the focus of future revegetation work.

There are some areas of SEQ that challenge the traditional concept of wildlife corridors, due to heavy development pressures and historical vegetation clearing. In several areas corridor values have been compromised due to clearing, and bottlenecks of very narrow vegetation have been created. In such areas, the landscape panels felt that the corridor values of any remaining vegetation should be strengthened and given more importance as they are the last remaining link. Where corridor links have been completely severed by development, an attempt has been made to re-route the corridor to find a new connection. The panel took advice from several local governments on how to create linkages at a finer scale where necessary.

The panels made recommendations on changing the way that corridors are delineated in the BPA, for the highly fragmented SEQ bioregion. The first was to include the entirety of large tracts that form part of the corridor network as corridor ‘nodes’ with linear corridors providing the linkages between nodes. The panel felt that this would provide a more accurate ecological representation of the key landscape-scale linkages within the bioregion. They did not support reapplying the method implemented in the previous BPA, which was to give corridor values only to those remnant polygons which had at least 30% of their area within a corridor buffer.

The panels also stressed the importance of regrowth to the functionality of terrestrial corridors in SEQ. In many heavily cleared areas, such as Somerset Regional Council for example, there is quite a significant amount of regrowth being utilised by a variety of species. While regrowth is recognised as being important for supporting corridors, it was not mapped explicitly as part of the BPA (primarily a remnant based assessment). The advantage of mapping corridor centrelines and buffers is that vegetation mapping of any type can be overlayed to help inform planning decisions.

The panel also wanted to acknowledge the ‘stepping stone’ corridor which contains small isolated patches or mosaics of remnant or regrowth vegetation, spread across a relatively cleared landscape. While many species will not be able to utilise this type of corridor, stepping stone corridors can still be very important for the movement of some species (e.g. highly mobile groups such as woodland birds and certain flora, which employ medium to long distance disperser mechanisms). The southern landscape panel identified a stepping stone corridor in the Scenic Rim Regional Council area – a permeable matrix containing small vine scrub units important for the movement of small birds. In future it would be valuable to undertake a systematic analysis of vegetation and consult with experts to identify stepping stone corridors across the whole bioregion. However, this was not within the scope of the current BPA.

3.2.1 Terrestrial corridors

Using the functions and principles described in the previous section of this report, the panel reviewed the existing BPA corridor network in the bioregion, provided advice on re-aligning some corridors due to landuse intensification in certain areas since the previous version. They also made suggestions for extending the network, and nominating 'stepping stone' corridors the SEQ bioregion. These discussions resulted in several changes to the SEQ BPA corridor network. The final corridor network is listed in Table 3 and displayed in Figure 3, Figure 4 and Figure 5.

Table 3 Terrestrial bioregional corridors identified by the SEQ bioregion landscape expert panel

Corridor Number	Corridor description	Significance (width)	Justification
1	**Burnett Heads to Flat Top Range Terrestrial Corridor:** Corridor running southeast - northwest along the coast from Burnett Heads to Gladstone and extending north into the Brigalow Belt *(via Barubbra Island Conservation Park, Littabella NP, Broadwater Conservation Park, Deepwater NP, Eurimbula NP, Calliope Conservation Park, Rundle Range National Park and Flat Top Range Resources Reserve).*	State (5km)	- intersects two SEQ State and SEQ two Regional terrestrial bioregional corridors; - links vegetation tracts along the coast; - incorporates climatic gradient; - links protected area estates; - corridor path modified since v3.5; - falls partially within the Great Eastern Ranges corridor.
2	**Tannum Sands to Yarrol Terrestrial Corridor:** Corridor running north - south from the coast near Tannum Sands to Yarrol State Forest *(via Wild Cattle Island National Park, Castle Tower National Park, Bulburin National Park, Borilla State Forest and Yarrol State Forest).*	State (5km)	- links to three State significant corridors, two of which are major coastal and inland north - south corridors; - incorporates altitudinal and climatic gradients; - captures major remnant tracts and maintains continuity; - provides coast to inland connectivity; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
3	**Eurimbula to Monduran Lake Terrestrial Corridor:** Corridor running north – south from the coast at Eurimbula through Warro NP to Monduran Lake *(via Eurimbula National Park (& Conservation Park) and Warro National Park).*	Regional (5km)	- links to two State significant corridors; - incorporates altitudinal and climatic gradients; - intersects major remnant tracts; - provides coast to inland connectivity; - links protected area estates; - corridor path modified since v3.5; - falls completely within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
4	**Bulburin to Littabella Terrestrial Corridor:** Corridor running east – west from the coast near Baffle Creek to Bulburin NP *(via Littabella National Park & Conservation Park and Monduran State Forest 1).*	State (5km)	- links two State and one Regional terrestrial corridor; - incorporates altitudinal and climatic gradients; - intersects major remnant tracts; - provides coast to inland connectivity; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
5	**Kroombit to Maryborough Terrestrial Corridor:** Corridor running southeast – northwest from the mainland coast west of Fraser Island to Kroombit Tops National Park *(via Wongi, Cordalba and Booyal State Forests, Bania National Park and Kalpowar State Forest).*	State (10km changing to 5km east of the intersection point of corridor 13)	- intersects with four State and three regionally significant terrestrial corridors; - incorporates major altitudinal and climatic gradients; - connects major remnant tracts; - provides coast to inland connectivity; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
6	**Main Range National Park to Don River State Forest Terrestrial Corridor:** *(via Main Range National Park, Flagstone Creek Conservation Park, Crows Nest National Park, Mount Binga and Bunya Mountains National Parks, Diamondy State Forest, Nudley State Forest, Barakula State Forest, Allies Creek State Forest, Auburn State Forest, Coominglah State Forest and Kroombit Tops National Park).*	State (10km)	- links five State and two Regional terrestrial corridors; - forms part of a major north - south corridor (State corridors) which extends from NSW, meanders back and forth between SEQ and the Brigalow Belt and into northern SEQ Bioregion; - intersects with several riparian corridors; - links large remnant tracts; - incorporates climatic gradients; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
7	**Kolan River to Cordalba State Forest Terrestrial Corridor:** Corridor running north – south from just north of the Kolan River through to Cordalba National Park and State Forest *(via Bullyard Conservation Park).*	Regional (5km)	- links one State and one Regional terrestrial corridor; - intersects with the Kolan and Burnett River riparian corridors; - links fragmented endangered and of concern remnant vegetation in the Burnett catchment.

Corridor Number	Corridor description	Significance (width)	Justification
8	**Bania to Nour Nour Terrestrial Corridor:** Corridor running north – south from Bania National Park to Nour Nour National Park *(via Mungy State Forest).*	Regional (5km)	- links two State significant terrestrial corridors; - intersects major remnant tracts; - links protected area estates; - falls completely within the Great Eastern Ranges corridor.
9	**Burrum to Cordalba Terrestrial Corridor:** Corridor running east – west from Burrum Coast National Park to Cordalba SF *(via Bingera National Park and Elliott River State Forest).*	Regional (5km)	- links two State and one regionally significant terrestrial corridor; - intersects major remnant tracts; - provides coast to inland connectivity; - links protected area estates.
10	**Maroochy River to Elliott Heads Terrestrial Corridor:** Extends north along the coast from the Maroochy River mouth to Elliot Heads *(via Maroochy River Conservation Park, Mount Coolum National Park, Noosa National Park, the Great Sandy National Park, Tuan State Forest, Poona National Park, Vernon State Forest and the Burrum Coast National Park).*	State (5km)	- intersects with four State and three regionally significant terrestrial corridors; - links vegetation tracts along the coast; - incorporates climatic gradient; - intersect several riparian bioregional corridors; - links protected area estates.
11	**Fraser Island to Maryborough Terrestrial Corridor:** Extends southwest from central Fraser Island, across Hervey Bay, to the mainland coastal zone *(via the Great Sandy National and Conservation Parks).*	State (5km)	- links two State significant terrestrial corridors; - Indicates an important island - mainland coastal linkage for fauna.
12	**Fraser Island to Rainbow Beach Terrestrial Corridor:** Corridor running north - south from the northern end of Fraser Island to Rainbow Beach *(via the Great Sandy National Park).*	State (5km)	- links two State significant terrestrial corridors; - incorporates geological and coastal gradients; - Indicates an important island - mainland coastal linkage for fauna.

Corridor Number	Corridor description	Significance (width)	Justification
13	**Barker Gully to Eidsvold Terrestrial Corridor:** Extends east to west from Barker Gully (approx. 10km north - north - west of Goodnight Scrub NP) to Eidsvold in the Brigalow Belt *(via Grosvenor Timber Reserve, Mungy State Forest, Nour Nour National Park and Dalgangal State Forest).*	State (10km)	- links three State significant corridors and one Regional terrestrial corridor; - incorporates altitudinal and climatic gradients; - connects major remnant tracts; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
14	**Chin Chin to Yabba State Forest Terrestrial Corridor:** North - south corridor from Chin Chin south to Yabba SF *(via Good Night Scrub, Mount Walsh, Grongah, Oakview and Wrattens National Parks).*	State (5km)	- links three east - west State significant terrestrial corridors and one Regional terrestrial corridor; - incorporates altitudinal and climatic gradients; - connects major remnant tracts; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
15	**Wongi State Forest to Grongah National Park Terrestrial Corridor:** North - south corridor *(via Wongi National park, Glenbar State Forest 1 and Glenbar National Park).*	Regional (5km)	- links two State and one Regional terrestrial corridor; - connects major remnant tracts; -links protected area estates; - falls partially within the Great Eastern Ranges corridor.
16	**Tuan State Forest to Glenbar Terrestrial Corridor:** Corridor running east - west *(via St Mary State Forest 1 and Glenbar State Forest 1).*	Regional (5km)	- links one State and one Regional terrestrial corridor; - connects major remnant tracts; - provides coast to inland connectivity. - incorporates altitudinal gradient; - links protected area estates.
17	**Coast Range to Allies Creek SF Terrestrial Corridor:** Corridor running east - west from Grongah National Park to Allies Creek State Forest in the Brigalow Belt *(via Ban Ban National Park, Beninbi National Park, Woroon State Forest 2 and Wigton State Forest).*	State (10km)	- links two north – south State significant corridors; - incorporates altitudinal and climatic gradients; - connects major remnant tracts; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
18	**Tewantin to Mary River Terrestrial Corridor:** Corridor running southeast - northwest from the Tewantin National Park to the Mary River Riparian bioregional corridor *(via Tewantin, Woondum, Goomboorian and Gympie National Parks and then through Bauple, Tiaro and Young State Forests).*	Regional (5km)	- connects a major coastal State terrestrial corridor to the Mary River riparian corridor; - connects remnant tracts; - provides coast to inland connectivity; - intersects with riparian corridors; - links protected area estates.
19	**Elgin Vale State Forest to Peregian Terrestrial Corridor:** Corridor extending inland from the coast at Peregian through to Elgin Vale State Forest (*via Mapleton National Park, Imbil State Forest, Conondale National Park and Yabba State Forest*).	State (5km)	- links four State and two Regional terrestrial corridors; - intersects with riparian corridor; - incorporates altitudinal and climatic gradients; - connects remnant tracts; - provides coast to inland connectivity; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
20	**Elgin Vale State Forest to Blackbutt Range Terrestrial Corridor:** *(via Mount Stanley State Forest 1, East Nanango State Forest, Benarkin State Forest, Googa State Forest to Mt Binga National Park).*	State (10km)	- links to four State terrestrial corridors; - intersects with riparian corridors; - connects remnant tracts; - links protected area estates; - falls completely within the Great Eastern Ranges corridor.
21	**Mooloolah to Elgin Vale State Forest Terrestrial Corridor:** *(via Glasshouse Mountains, Bellthorpe and Conondale National Parks, Squirrel Creek State Forest and Diaper State Forest).*	State (5km)	- links two State and three Regional terrestrial corridors; - intersects with riparian corridors; - incorporates altitudinal and climatic gradients; - connects remnant tracts; - provides coast to inland connectivity; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
22	**Imbil State Forest to Conondale National Park Terrestrial Corridor**	Regional (5km)	- links two State corridors; - connects remnant tracts; - links protected area estates; - falls completely within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
23	**Mapleton National Park to Mooloolah River National Park Terrestrial Corridor:** (*via Mapleton Falls and Kondalilla National Parks*).	Regional (5km)	- links two State and two Regional terrestrial corridors; - connects patches of remnant vegetation in a fragmented landscape; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
24	**Mooloolah River NP/Caloundra, South to Sandstone Point Terrestrial Corridor:** (*connects to Bribie Island National Park and Beerburrum (East) and Beerwah State Forests*).	Regional (5km)	- links to two Regional terrestrial corridors; - provide coastal habitat/wetlands connectivity; - intersects with Mooloolah River riparian corridor; - connects patches of remnant vegetation in a fragmented landscape; - links protected area estates.
25	**Maleny to Kawana Terrestrial Corridor:** Glass House Mountains National Park through to Mooloolah River National Park *(via Crohamhurst Conservation Park, Dularcha National Park and Beerwah State Forest).*	Regional (5km)	- links one State and two Regional terrestrial corridors; - incorporates altitudinal and climatic gradients; - intersects with Mooloolah River riparian corridor; - connects patches of remnant vegetation in a fragmented landscape; - links protected area estates.
26	**Peachester to D'Aguilar Terrestrial Corridor:** Extends from D'Aguilar National Park northeast to Peachester *(via Delaneys Creek State Forest, Beerburrum West State Forest, Glass House Mountains National Park and Luttons State Forest)*.	Regional (5km)	- links one State and one Regional terrestrial corridor; - intersects with the headwaters of three riparian corridors; - connects remnant tracts; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
27	**Blackbutt to D'Aguilar Terrestrial Corridor:** Extends from Benarkin State Forest to Mt Byron (*via Deer Reserve State Forest, Deer Reserve National Park and Mount Mee State Forest*).	State (5km)	- links two State and one Regional terrestrial corridor; - intersects with riparian corridors; - incorporates altitudinal and climatic gradients; - connects fragmented lowland remnant vegetation to larger remnants at higher elevations; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
28	**D'Aguilar Range Terrestrial Corridor** – Follows the approximate ridge line of the D'Aguilar Range.	State (5km)	- links one State and five Regional terrestrial corridors; - the corridor contains continuous large tracts of habitat associated with the D'Aguilar Range; - provides a significant central linkage for a number of corridors extending north, east, south and west; - links protected area estates; - falls completely within the Great Eastern Ranges corridor.
29	**Emu Creek to Mount Lawson Terrestrial Corridor:** - Extends south from Emu Creek to Mount Lawson (*via Deongwar State Forest, Ravensbourne National Park and Lockyer National Park*).	Regional (5km)	- links one State and one Regional terrestrial corridor; - intersects with riparian corridors; - intersects and maintains the connectivity of large remnant tracts in its southern extent and fragmented patches of remnant vegetation in its northern extent; - significant fauna values, particularly in the south; - incorporates altitudinal gradients; - links protected area estates; - corridor path modified since v3.5.

Corridor Number	Corridor description	Significance (width)	Justification
30	**Deongwar to D'Aguilar Terrestrial Corridor:** Extends from Deongwar State Forest through Esk State Forest and National Park to the D'Aguilar Range National Park.	Regional (5km)	- links one State and one Regional terrestrial corridor; - intersects with the Brisbane River riparian corridor; - incorporates altitudinal gradients; - connects fragmented lowland remnant vegetation to larger remnants at higher elevations; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
31	**Deception Bay to D'Aguilar Terrestrial Corridor:** Extends northeast from D'Aguilar National Park to near the mouth of the Caboolture River (*via Samford, Bunyaville, Hays Inlet and Deception bay Conservation Parks Conservation Parks*).	Regional (5km)	- links one State and one Regional terrestrial corridor to the mouth of the North Pine River riparian corridor; - incorporates altitudinal gradients; - provides coastal connectivity in a highly fragmented landscape; - connects fragmented lowland remnant vegetation to larger remnants at higher elevations; - an identified regionally important corridor for raptors (altitudinal migration Czechura & Olsen (2001); - links protected area estates; - corridor path modified since v3.5 - falls partially within the Great Eastern Ranges corridor.
32	**South D'Aguilar Range Terrestrial Corridor:** Extends from the D'Aguilar Range National Park through to Mount Coot-tha.	Regional (5km)	- links the southern extent of the D'Aguilar range State terrestrial corridor through to the foothills of Mount Coot-tha; - intersects continuous remnant tracts; - falls partially within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
33	**Spring Mountain to D'Aguilar Terrestrial Corridor:** Extends from Spring Mountain (slightly southeast of White Rock Conservation Park) through to the D'Aguilar Range *(via Moggill Conservation Park)*.	Regional (5km)	- links two State terrestrial corridors; - intersects with Brisbane River riparian corridor; - incorporates altitudinal gradients; - connects fragmented lowland remnant vegetation to larger remnants at higher elevations; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
34	**Mt Barney to Karawatha Terrestrial Corridor:** Extends from Mount Barney National Park to Flinders Peak to Karawatha (*via Knapp Creek, Flinders Peak and Mount Perry Conservation Parks*). (note: Amalgamation of the previous two corridors 18 and part of 20 identified in the BPA v3.4.)	State (5km)	- links a major east - west State terrestrial corridor in the south (no. 47) to four Regional terrestrial corridors in the north; - intersects with riparian corridors; - incorporates altitudinal and climatic gradients; - connects large fragmented patches of lowland remnant vegetation to remnant at higher elevations at the southern end point of the corridor; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
35	**Karawatha to Stradbroke Terrestrial Corridor:** Extends from the eastern extent of Karawatha to just west of the Mouth of the Logan River at Carbrook *(via Daisy Hill Conservation Park, Venman Bushland National Park and Carbrook Wetlands Conservation Parks)*, and then through to Stradbroke Island.	Regional (5km)	- links one State and one Regional terrestrial corridor; - connects large fragmented patches of remnant vegetation, providing habitat for EVNT taxa; - provides a coastal connection; - links protected area estates; - corridor path modified since v3.5 - falls partially within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
36	**Mount Petrie to Venman Bushland National Park Terrestrial Corridor:** Corridor running north - south.	Regional (5km)	- links the Regional terrestrial corridor (no. 35) to the Tingalpa Creek riparian corridors; - connects remnant vegetation from Venmans to the Leslie Harrison Dam/ Tingalpa Reservoir; - forms part of a larger coastal lowland linkage; - connects large fragmented patches of koala habitat; - corridor path modified since v3.5; - falls partially within the Great Eastern Ranges corridor.
37	**Greenbank to Tamborine Terrestrial Corridor:** The corridor starts just east of Mount Tamborine National Park, extends through to the Logan River and heads north through the Greenbank Military Training Area where it intersects with a State terrestrial corridor *(via Tamborine National Park, Wickham National Park and Plunkett Conservation Park).*	Regional (5km)	- links two State and intersects one Regional terrestrial corridor; - intersects with Logan and Albert riparian corridors; - connects fragmented lowland remnant vegetation to larger remnant tracts; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
38	**Mount Perry to Yamanto Terrestrial Corridor:** Extends from Mount Perry to the intersection of Warrill Ck and the Bremer River, Yamanto.	Regional (5km)	- links the State terrestrial corridor (no. 34) to the Bremer River riparian corridor; - connects fragmented lowland remnant vegetation to large tracts at the corridor's eastern extent.
39	**Little Liverpool Range Terrestrial Corridor:** Extends from Main Range National Park through Mount Beau Brummell Conservation Park and north to the Hatton Vale area.	Regional (5km)	- links the State terrestrial corridor (no. 6) to the riparian corridor, Woolshed Creek; - intersects with three other riparian corridors; -connects large fragmented patches of lowland remnant vegetation to remnant at higher elevations at the corridor's southern extent; - incorporates altitudinal gradients; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
40	**Logan Village to Birnham Range Terrestrial Corridor:** Extends south from Logan Village / northern Jimboomba through Mundoolan to Birnham Range. Note: Consistent with Mt Lindesay North Beaudesert Study.	Regional (5km)	- connects remnant vegetation in a highly fragmented landscape; - falls partially within the Great Eastern Ranges corridor.
41	**Beenleigh to Springbrook Terrestrial Corridor:** extends south from Beenleigh to Springbrook National Park (*via Tamborine National Park*). Note: Northern limit is Logan River. Captures climatic gradient, outlier of basalt system.	State (5km)	- links/intersects four State and two Regional terrestrial corridors; - intersects with riparian corridors; - incorporates climatic gradients; - captures outlier of basalt system; - captures and maintains a relatively high level of remnant continuity throughout most of the corridor; - links protected area estates; - corridor path modified since v3.5; - falls completely within the Great Eastern Ranges corridor.
42	**Moreton Bay to Tamborine National Park Terrestrial Corridor:** The corridor extends inland from the Southern Moreton Bay Islands National Park and runs parallel to McCoys Creek to Tamborine National Park (West of Mount Wongawallen).	Regional and Rehabilitation (5km)	- links the State terrestrial corridor (no. 41) to the Regional terrestrial corridor (no. 43); - provides a coastal connection; - intersects with the Pimpama and Coomera riparian corridors; - incorporates altitudinal gradients; - contains and links significant koala habitat; - captures and maintains a relatively high level of remnant continuity throughout most of the corridor; - links protected area estates; - corridor path modified since v3.5; - falls partially within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
43	**Moreton to Stradbroke Island Terrestrial Corridor:** Extends south from the Northern tip of Moreton Island branching into the Southern Moreton Bay Islands National Park and South Stradbroke Island Conservation Park.	Regional (5km)	- links the Regional terrestrial corridor (no. 42) through to the northern tip of Moreton Island; - intersects with the Pimpama and Coomera riparian corridors; - maintains an important island - mainland coastal linkage for shorebirds; -the corridor captures and maintains continuous large tracts of habitat associated with North Stradbroke Island; - links protected area estates; - corridor path modified since v3.5; - falls partially within the Great Eastern Ranges corridor.
44	**Moreton Bay to Lower Beechmont Terrestrial Corridor:** Extends from just north of Lower Beechmont through to the Southern Moreton Bay Islands National Park (*via Nerang Conservation Park, Nerang National Park and Coombabah Lake Conservation Park*).	State (5km)	- links State terrestrial corridor (no. 41) to the Coomera River riparian corridor; - provides a coastal connection; - incorporates altitudinal gradients; - connects fragmented lowland coastal remnant vegetation to remnants at higher elevations; - links protected area estates; - falls completely within the Great Eastern Ranges corridor.
45	**Burleigh Heads/Springbrook NP Terrestrial Corridor:** East - west corridor extending from Burleigh Heads National Park through to Springbrook National Park.	State (5km)	- part of a major east - west corridor along the NSW border which provides coast to inland connectivity; - links heavily fragmented coastal remnant to more continuous inland remnant vegetation; - incorporates climatic gradients; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
46	**Tugun/Springbrook NP Terrestrial Corridor.** East - west corridor extending from Tugun through to Springbrook National Park.	State (5km)	- part of a major east - west corridor along the NSW border which provides coast to inland connectivity; - links heavily fragmented coastal remnant to more continuous inland remnant vegetation; - incorporates climatic gradients; - links protected area estates; - falls partially within the Great Eastern Ranges corridor.
47	**Springbrook NP to the Great Dividing Range Terrestrial Corridor:** Extends from just east of Killarney through to Springbrook National Park *(via Main Range National Park, Mount Barney National Park, Mount Chinghee National Park, Lamington National Park and Springbrook National Park).*	State (10km)	- part of a major east - west corridor along the NSW border which provides coast to inland connectivity; - links five State and one Regional terrestrial corridor; - intersects with several riparian corridors; - incorporates climatic gradients; - captures and maintains a relatively high level of remnant continuity throughout most of the corridor; - links protected area estates; - falls completely within the Great Eastern Ranges corridor.
48	**Main Range to South Killarney Terrestrial Corridor:** Extends from Main Range National Park through to South Killarney in the Brigalow Belt.	Regional & Rehabilitation (5km)	- a potential revegetation area to link into the southern Brigalow Belt Bioregion; - captures and maintains fragmented remnant tracts; - links protected area estates; - falls completely within the Great Eastern Ranges corridor.
100	**Lamington NP to Tamborine NP Corridor:** Extends from Lamington National Park through Canungra and Mt Tamborine to Tamborine National Park.	Regional (5km)	- new corridor recommended by panel; - falls completely within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
101	**Kangaroo Mountain to Rosewood Corridor:** Extends from Kangaroo Mountain (Main Range National Park) through to Mt Walker and Rosewood.	Regional (5km)	- new corridor recommended by panel; - comprised of fragmented remnant patches; - stepping stone corridor; - falls partially within the Great Eastern Ranges corridor.
102	**D'Aguilar National Park to Bellthorpe National Park Corridor:** Extends from Mount Byron in D'Aguilar National Park through Mt Delaney to Bellthorpe National Park.	Regional (5km)	- new corridor recommended by panel; - contributes to D'Aguilar – Conondale linkage - falls partially within the Great Eastern Ranges corridor.
103	**Plunkett Regional Park to Buccan Regional Park Corridor.** Extends from Wickham National Park along the Cooingee Hills over Bahrs Hill to Buccan Regional Park.	Regional (5km)	- new corridor recommended by panel; - falls completely within the Great Eastern Ranges corridor.
104	**Extends from Mt Grandchester to Mt Hancock Corridor.** Extends from Mt Grandchester to Mt Hancock.	Regional (5km)	- new corridor recommended by panel; - stepping stone corridor.
105	**Esk to D'Aguilar National Park Corridor.** Extends from Esk to D'Aguilar National Park.	Regional (5km)	- new corridor recommended by panel; - links Esk across northern Wivenhoe - stepping stone corridor - falls partially within the Great Eastern Ranges corridor.
106	**Mt Grandchester to Pine Mountain Corridor.** Extends from Mt Grandchester to Pine Mountain.	Regional (5km)	- new corridor recommended by panel; - stepping stone corridor through Pine Mountain/Sapling Pocket and following high country northeast to Lowood.
107	**Bribie Island Corridor.** Extends from Bribie Island to the mainland on the northern end of Bribie.	Regional (5km)	- new corridor recommended by panel.
108	**Beerwah Glass House Mountain to Pumicestone National Park Corridor.** Extends from Beerwah Glass House Mountain to Pumicestone National Park.	Regional (5km)	- new corridor recommended by panel.
109	**Mount Mee to Lake Kurwongbah Corridor.** Extends from Mount Mee to Lake Kurwongbah.	Regional (5km)	- new corridor recommended by panel; - falls partially within the Great Eastern Ranges corridor.

Corridor Number	Corridor description	Significance (width)	Justification
110	**Mt Bell to Wyaralong Dam Corridor.** Extends from Mt Bell in Main Range National Park through Mt French to Wyaralong Dam.	Regional (5km)	- new corridor recommended by panel; - Scenic Rim riparian corridor of regional significance - stepping stone corridor - small vine scrub units present - falls partially within the Great Eastern Ranges corridor.
111	**Tannum Sands to Curtis Island Corridor.** Extends from Tannum Sands to Curtis Island.	Regional (5km)	- new corridor recommended by panel.
112	**Imbil State Forest to Curra State Forest Corridor.** Extends from Imbil State Forest through Marys Creek State Forest and Brooyar State Forest to Curra State Forest.	Regional (5km)	- new corridor recommended by panel; - falls partially within the Great Eastern Ranges corridor.

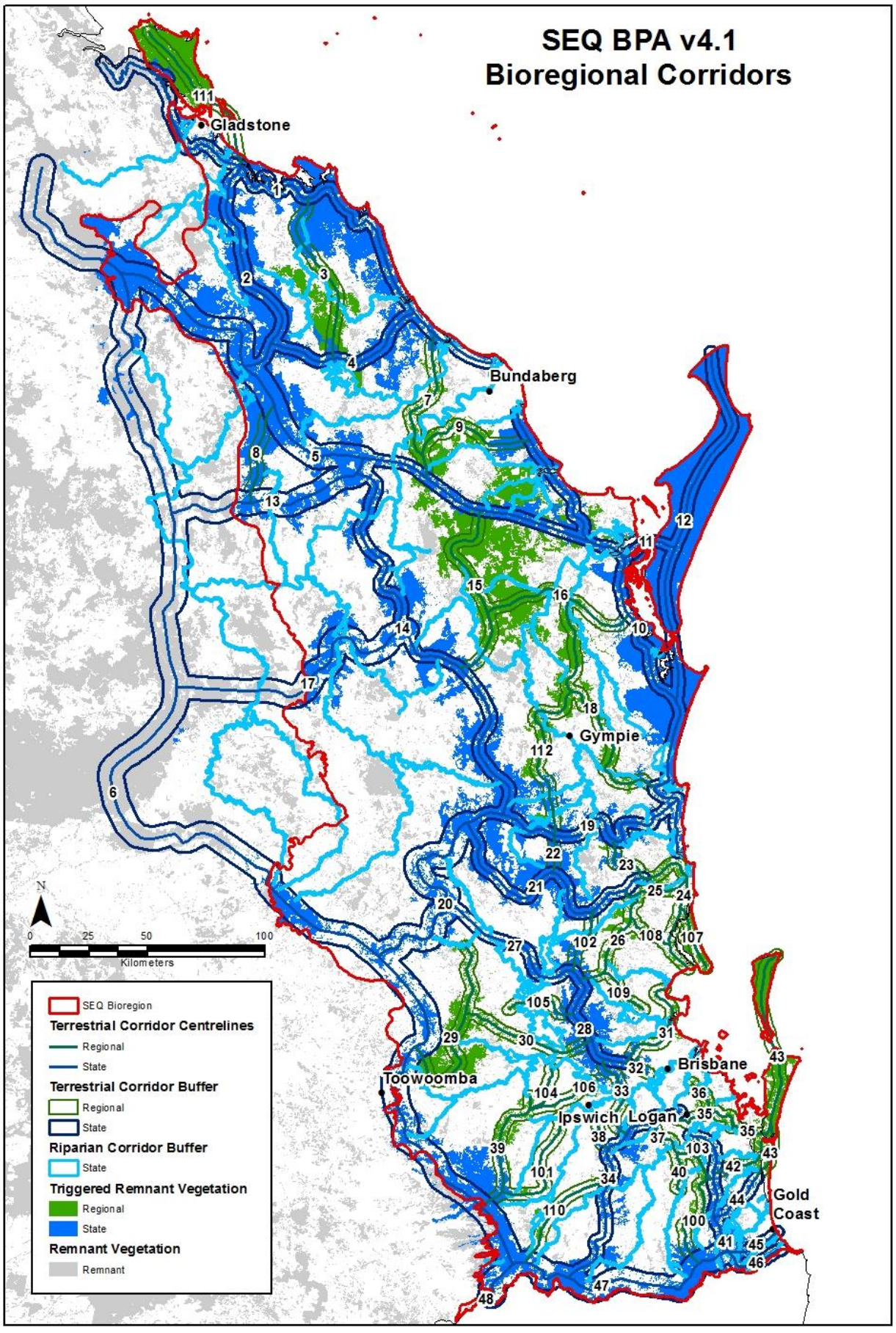


Figure 3 Southeast Queensland terrestrial and riparian bioregional corridors

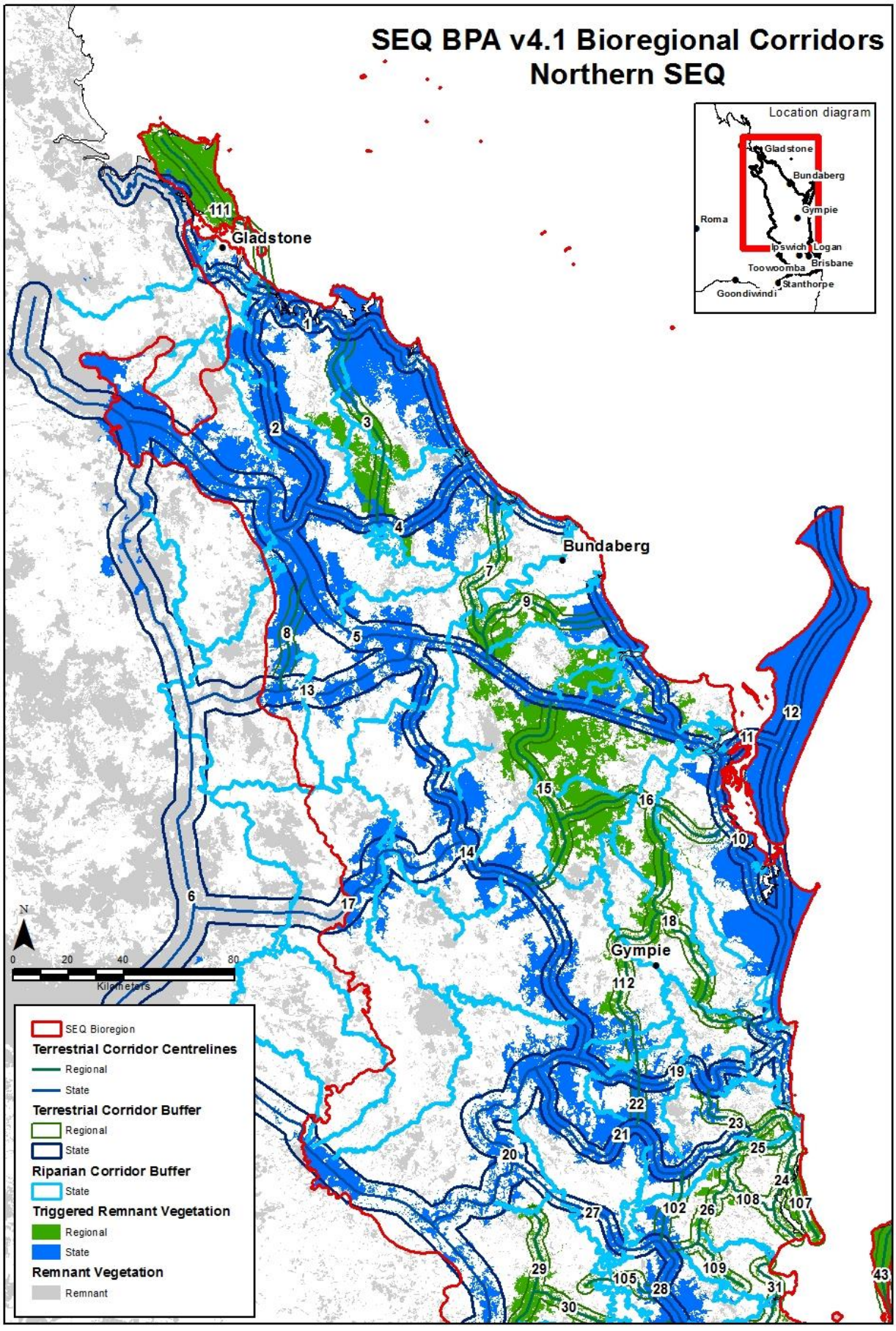


Figure 4 Northern Southeast Queensland terrestrial and riparian bioregional corridors

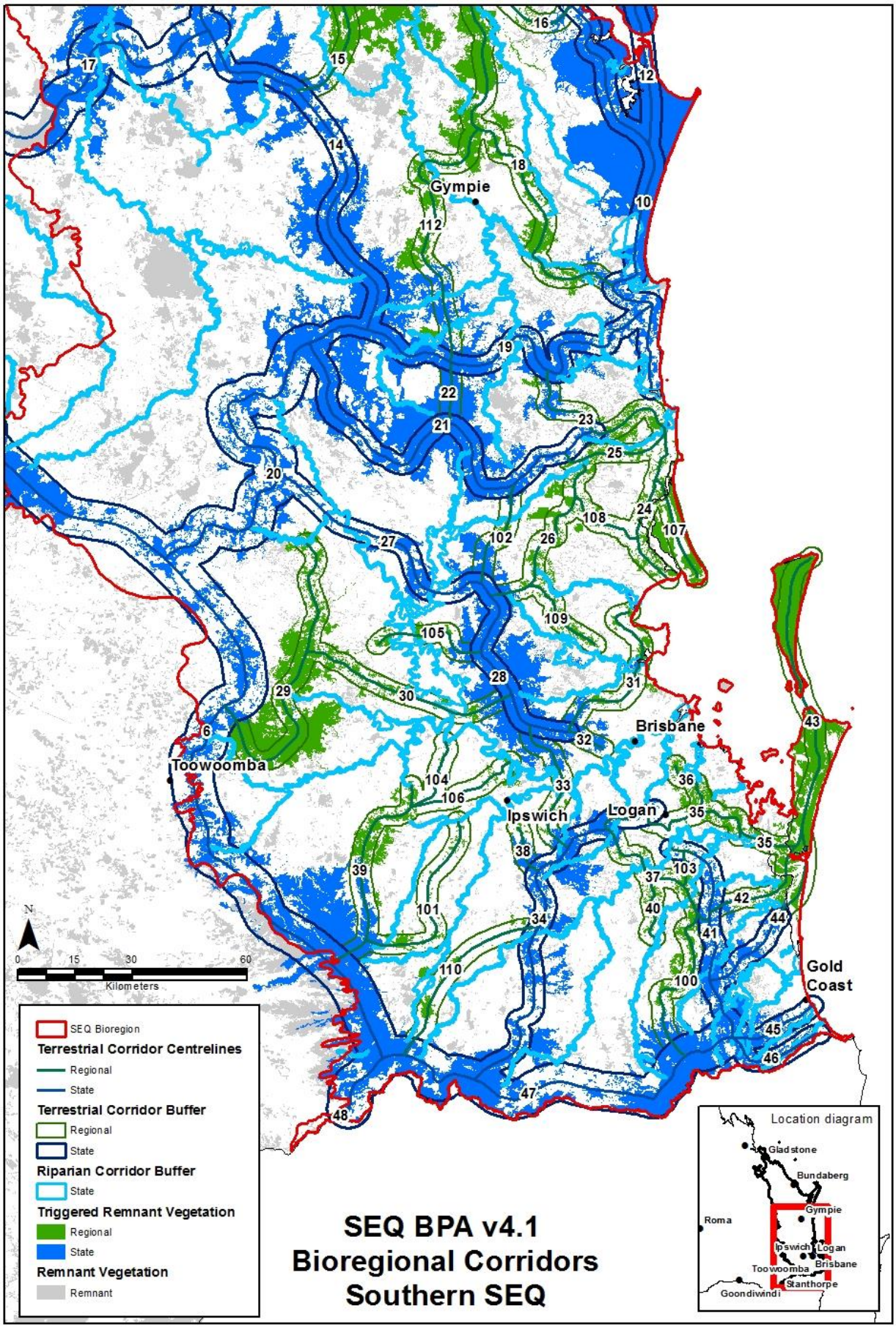


Figure 5 Southern Southeast Queensland terrestrial and riparian bioregional corridors

3.2.2 Riparian corridors

Riparian corridors in Southeast Queensland are particularly significant for biodiversity, both as a climatic refuge for plants and animals, and as a major element of habitat continuity. Watercourses provide the only remaining habitat connectivity in many areas due to extensive vegetation clearing and urban development. There were several larger watercourses identified by the panel as significant in SEQ BPA Version 3.5. These were reviewed by the panels and several additional watercourses were nominated for their riparian corridor values (Table 4). All watercourses were assigned State significance, and all remnant units with at least 30% of their area within a 200m buffer were given this value.

Table 4 Larger watercourses in the SEQ bioregion relevant for SEQ riparian corridor decisions seqs_l_49 and seqn_l_13

The following watercourses were designated as riparian corridors in SEQ BPA Version 3.5		
Albert River	Albert River (left branch)	Albert River (right branch)
Baffle Creek	Barambah Creek	Barker Creek
Boonara Creek	Boyne River	Bremer River
Brisbane River	Buaraba Creek	Bunya Creek
Burnett River	Burrum River	Caboolture River
Calliope River	Cattle Creek	Cherwell River
Clifton Creek	Clifton Creek (right branch)	Coomera River
Coomera River (north branch)	Coondoo Creek	Degilbo Creek
Eastern Boyne River	Elliott River	Emu Creek
Gin Gin Creek	Granite Creek	Gregory River
Gutchy Creek	Isis River	Kandanga Creek
Kingaham Creek	Kolan River	Lockyer Creek
Logan River	Ma Ma Creek	Maroochy River
Mary River	Mooloolah River	Mt Eaton Creek
Mt Hastings Creek	Mungore Creek	Munna Creek
Myrtle Creek	Nerang River	Noosa River
North Pine River	Perry River	Pig Creek
Pimpama River	Pine Creek	Reid Creek
Reynolds Creek	Sandy Creek	Sarahana Creek
South Maroochy River	South Pine River	Stanley River
Stuart River	Susan River	Tallebudgera Creek
Teebar Creek	Teviot Brook	Three Moon Creek
Tinana Creek	Tingalpa Creek	Warrill Creek
West Burnett River	Western Creek	Woolshed Creek

Yabba Creek		
The following watercourses were added to the riparian corridor network in SEQ BPA Version 4.1		
Bulimba Creek	Currumbin Creek	East Nerang Creeks
Eprapah Creek	Loders Creek	Mudgeeraba Creek
Oxley Creek	Six Mile Creek	West Nerang Creek
Woogaroo Creek		

3.3 Wetlands

The expert panel did not make any specific recommendations with regards to wetlands in SEQ. The significance of wetlands in the bioregion has been addressed in EHP (2015a).

3.4 Climate change

Climate change is difficult to measure and map at a bioregional scale. It is also a challenge to incorporate into a BPA, which is primarily a values-based assessment. Through the BAMM method review there are new categories under criteria H and I relating to climate change, and these have been given values for SEQ BPA Version 4.1. The climate change issues facing SEQ were specifically discussed at both the north and south landscape panels, and the panel made recommendations on the best way to incorporate climate change into this version of the SEQ BPA. The SEQ bioregion is seen as a climate change refuge from a state perspective, and there are several ecosystems that are thought to be particularly at risk from the effects of climate change in the region.

It is difficult to predict what the effects of climate change will be on the SEQ bioregion, as we don't yet fully understand current situations, including the frequency of events, interactions and cycles. We don't have a clear understanding of what the baseline conditions are, and how often we are deviating from them. Having said that, the panels thought it was clear that the effects of climate change are starting to be observed in the bioregion. There have been two 1 in 1000 year rain events in the last 3 years, which have damaged riparian vegetation and caused landslips. This has affected the area from Mount Kroombit to the Arcadia Valley quite severely. Drought dieback of ironbarks has been observed in recent years. Catastrophic bush fires have also been recorded in recent years, and it is predicted that they will worsen with climate change.

It is likely that coastal ecosystems will be seriously affected by sea level rise. There are several 'knife-edge' coastal wetland systems which are sitting on a freshwater lense at an elevation of 1 to 1.5 metres above sea level, which may fall into the sea. Mangroves are likely to move upstream, and the area of estuary will increase. But unconsolidated coastal sediments can't move, and neither can any ecosystems that are dependent on them. It is believed that landzone 2 may disappear, and much of landzone 3 will convert to landzone 1, which will have serious flow-on effects for vegetation.

It is thought that the cloud base will rise with increasing sea temperatures. Although it is unclear how much it will move, and what effect this will have, it is thought that it will result in a significant decrease in the available moisture for cloud forests such as Mount Kroombit, the Bunya Mountains, Many Peaks Range and more.

The panels expressed that the loss of connectivity for species and ecosystems to move in response to climate change is the biggest issue in SEQ. Maintaining landscape resilience in the face of an uncertain future climate is thought to be extremely important in the region. Landscape connectivity and conserving topographic variation are some ways to achieve this. Riparian areas will continue to concentrate resources and provide refuge. The impermeability of the developed landscapes of SEQ due to urban development, horticulture and grazing are a particular issue. But the stepping stones and mosaic patterns of vegetation will still allow for movement of some species (especially birds) through a highly modified landscape.

While rainfall pattern has been changing, water extraction has not been modified accordingly. The permanency of groundwater dependent ecosystems (GDEs) may be affected as a result unless extraction rates are reduced. Further work is required to highlight areas of vulnerability and those ecosystems that need specific management plans.

Another gap in our current knowledge is how the subtropics will be affected, as most of the current modelling work has focussed on tropical ecosystems, which don't experience heat extremes in the same way as the subtropics. Also, much of the current predictive modelling is based on forest-dependent vertebrates, which will produce a useful but biased result.

Local government planning schemes have a large role to play in the adaptation of ecosystems to climate change in SEQ. For those ecosystems that are patchy or at risk, they should identify 'breathing space' for them to move over time. Systems like coastal heath are naturally patchy and have been moving for the last 20,000 years. But they have much less space to do so now because of urbanisation.

Both the north and south landscape panels supported the proposal for using the work done by SEQ Catchments to identify climate change refugia (SEQ Catchments 2016). Their method uses factors such as altitude, ecosystem variation, landscape roughness, presence and connectivity to large tracts and other landscape attributes. The panel proposed to overlay existing special features with the highest categories of climate refugia from the SEQ Catchments layer, and add a criterion Ik: climate change refuge value to those feature descriptions. If there were large areas of climate change refuge that had not been covered by other special features, the expert panels recommended including them as new special features.

3.5 Special Areas

The panel was asked to identify areas with special biodiversity values within the SEQ bioregion under the BAMM supplementary criterion I. Areas with special biodiversity value are important because they contain multiple taxa in unique ecological and often highly biodiverse environments. Values can include centres of endemism, wildlife refugia, disjunct populations, geographic limits of species distributions, high species richness, relictual populations, high densities of hollow-bearing trees and breeding sites. Using expert knowledge and available information (records, maps, GIS derived datasets), panel members were able to identify eleven areas and describe their collective values. The special areas proposed by the panel are described in Table 5.

In relation to the following flora, fauna and landscape special feature tables:-

A to J refers to sub criteria under Criterion I: Special Biodiversity Values:-

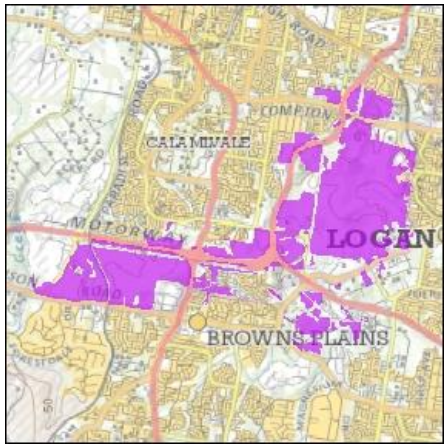
- Ia – Centres of endemism – areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib – Wildlife refugia (Morton et al. 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing.
- Ic – Areas with concentrations of disjunct populations.
- Id – Areas with concentrations of taxa at the limits of their geographic ranges.
- Ie – Areas with high species richness.
- If – Areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig – Areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih – An artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii – Areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij – Breeding or roosting sites used by a significant number of individuals.
- Ik – Climate change refuge.

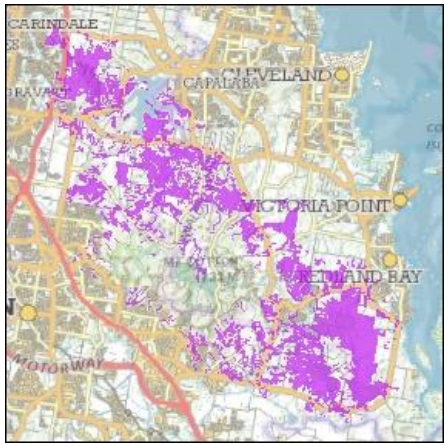
Significance is the overall level of biodiversity significance:-

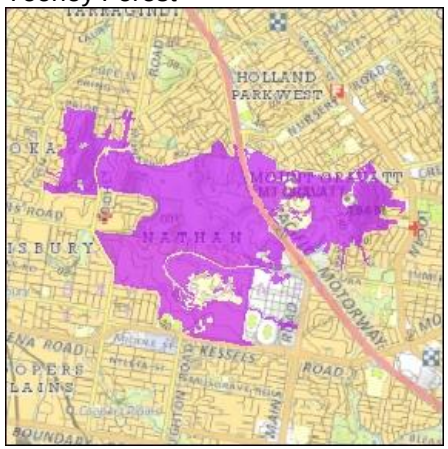
- State is equivalent to Very High and the special feature is significant at the bioregional scale.
- Regional is equivalent to High and the special feature is significant at the subregional scale.

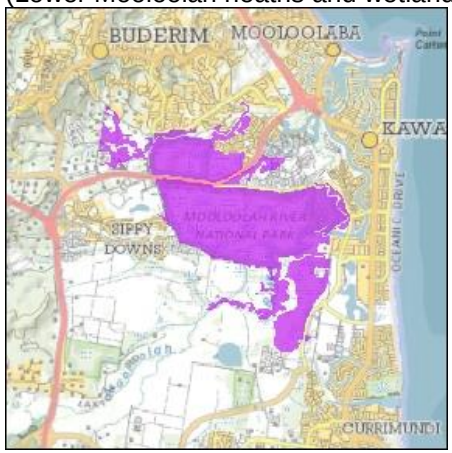
Please note that threatened EPBC listed communities that had previously been nominated as criterion I Special Biodiversity Value Areas have been implemented under criterion B due to their statutory nature.

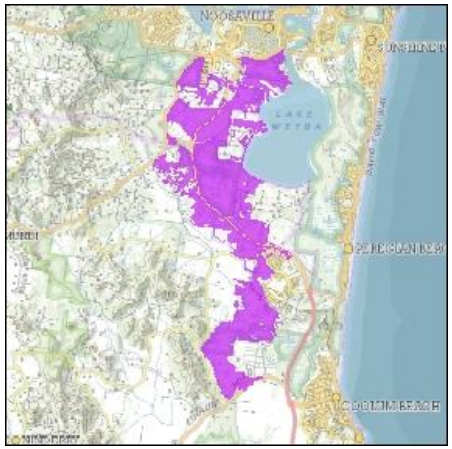
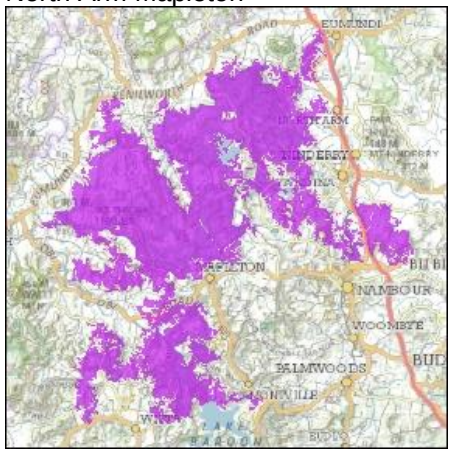
Table 5 Comments and recommendations relating to areas of special biodiversity values

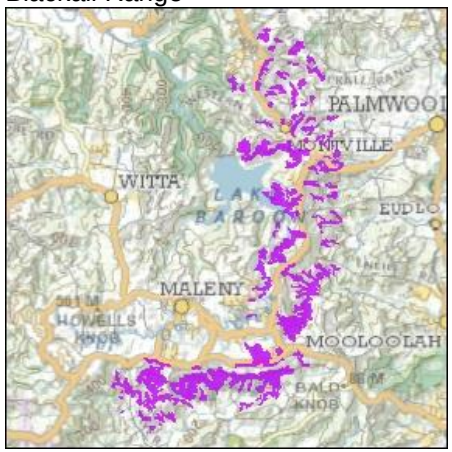
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
Southern Landscape Panel Decisions				
seqs_l_01	Vegetation on sandstone. Scrubby Creek – Karawatha, southern outskirts of Brisbane 	State	The panel identified the area as having a combination of flora, fauna and landscape values. • SEQ endemic taxa (Criterion Ia): including *Comesperma hispidulum, Hakea florulenta* and *Xylomelum benthamii*. • Wildlife refugia (Criterion Ib): the surrounding area is being increasingly developed for urban purposes. • Populations of taxa with disjunct distributions in bioregional context (Criterion Ic) including: *Acacia hispidula, Corymbia henryi, Eucalyptus baileyana, E. planchoniana, Daviesia wyattiana*. • Contains wetland/wet heath that supports acid frogs and species of special conservation interest. Most of the remnant area is now in a Brisbane City Council protected area.	Ia (SEQ endemic taxa): MEDIUM Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): MEDIUM

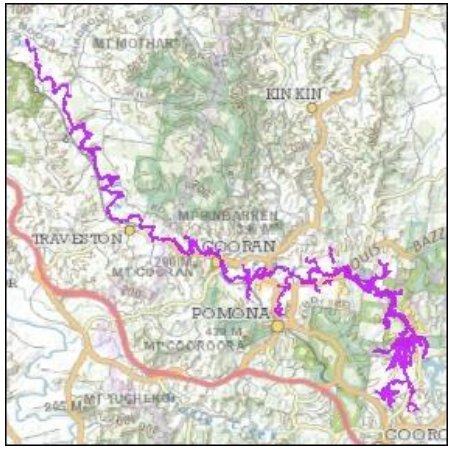
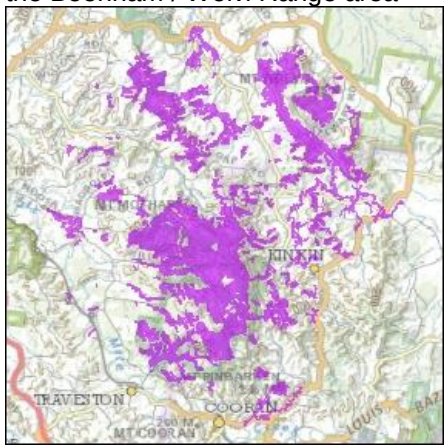
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_02	Remnant wetlands on lower Logan and Albert River floodplain 	Regional	Extensively cleared landscape, enhances the refugial values. There are 230+ bird species, flyway linkages to Cornubia wetlands and the Carbrook area. • Refugia from clearing/draining (Criterion Ib). • High avian species richness (Criterion Ie).	Ib (wildlife refugia): HIGH Ie (high species richness): VERY HIGH
seqs_l_03	Eucalypt forest on sedimentary and metamorphic rocks on the southeast outskirts of Brisbane 	State	The second highest aggregation of eucalypts on the east coast. There is a very distinctive patterning of eucalypts, changing quite quickly over gradients. Some reserves are present, however the perimeter is badly impact by development. The area is also identified as a Southeast Qld koala bushland area. The Panel identified the area as having a combination of flora, fauna and landscape values. • Wildlife refugia (Criteria Ib): remnant patches of eucalyptus forest in an urban and peri-urban landscape. • Area of high species richness (Criterion Ie): especially *Angophora/Eucalyptus/Corymbia* relative to other parts of SEQ (*Angophora leiocarpa, A. woodsiana, Corymbia citriodora, C. gummifera, C. henryi, C. intermedia, C. trachyphloia, Eucalyptus acmenoides, E. baileyana, E. carnea, E. crebra, E. curtisii, E. fibrosa, E. major, E. microcorys, E. moluccana, E. pilularis, E. planchoniana, E. propinqua, E. racemosa subsp. racemosa, E. resinifera, E.*	Ib (wildlife refugia): VERY HIGH Ie (high species richness): HIGH Ig (ecosystem variation): MEDIUM Ik (climate refugia): VERY HIGH

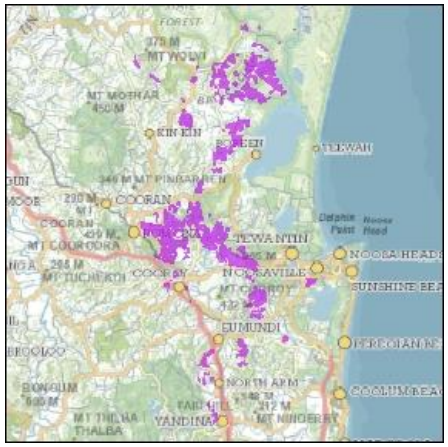
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			robusta, E. seeana, E. siderophloia, E. tereticornis, E. tindaliae). • RE variation (Criterion Ig): associated with the juxtaposition of sedimentary and metamorphic geologies. • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which faciliate adapation zones (SEQ Catchments, 2016). NB. The values described for the area are a compilation of information from many different sites. Any single location within the area defined is unlikely to contain all the features described. See also seqs_l_66 for Mt Cotton values which are slightly different due to altitude.	
seqs_l_04	Toohey Forest 	State	The Panel identified the area as having a combination of flora, fauna and landscape values. • SEQ endemic taxa (Criterion Ia): including *Bossiaea prostrata* var. (Tuan Creek M.S.Clemens AQ22827) *Comesperma hispidula, Hakea florulenta, E. psammitica*. • Refugia from clearing (Criterion Ib): remnant patch in an urban landscape. • Populations of taxa with disjunct distributions in bioregional context (Criterion Ic) including: *Acacia hispidula, Corymbia henryi, Eucalyptus baileyana, E. curtisii, E. planchoniana, Hakea plurinervia*. Panel recommended upgrading from Regional to State given the new extent of the decision and surrounding landuses. Upgraded Ib to VERY HIGH on this basis.	Ia (SEQ endemic taxa): MEDIUM Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): MEDIUM

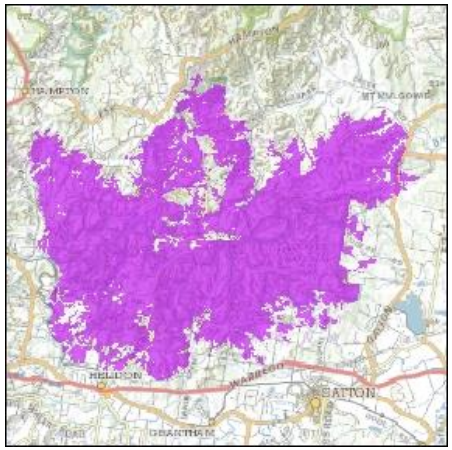
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_05	Wet heath with associated eucalypt emergence in greater Brisbane Area 	State	Particular examples include Karrawatha Forest and Leslie Harrison Dam area. Eucalypt emergence, with scribbly gum *E. racemosa* hollows. The regional ecosystem 12.9-10.4a is found nowhere else.	Ig (ecosystem variation):VERY HIGH Ii (hollow bearing trees): VERY HIGH
seqs_l_06	Relatively large coastal remnant centred on Mooloolah River National Park (Lower Mooloolah heaths and wetlands) 	State	This area Incorporates a heath and wetland complex within a large remnant tract in the lower Mooloolah area. The complex incorporates the most extensive melaleuca forest in the subregion if not the bioregion, as well as good representations of coastal heath in intact condition. The following flora, fauna and landscape values were attributed to the area: • SEQ endemic taxa (Criterion Ia): *Acacia hubbardiana, A. attenuata, Allocasuarina emuina, Eucalyptus conglomerata, Hakea actites, Hakea florulenta, Petrophile shirleyae, Westringia tenuicaulis*. • Wildlife refugia (Criterion Ib): much of surrounding area is either cleared for urban development or committed for development and also forms integral part of a wildlife corridor identified under Criterion J. • Intact examples of extensive melaleuca wetland and coastal heath communities (Criterion K)	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia): VERY HIGH K: VERY HIGH (Not implemented in GIS)

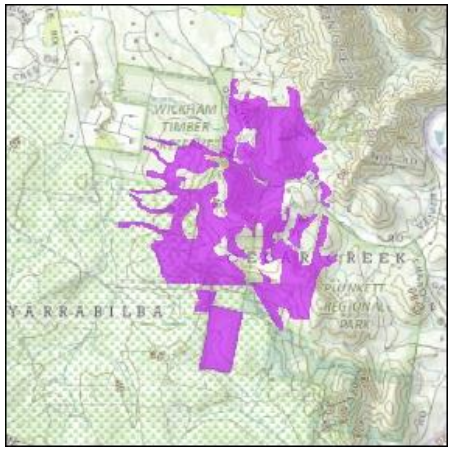
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_07	Peregian West / Doonan Creek immediately inland of the coastal "wallum" 	State	Major landscape elements are tall wet sclerophyll forests associated with Tertiary surface remnants sitting over Myrtle Creek sandstone and drainage lines with paperbark communities. Interspersed heaths part of the complex. The Panel identified the area as having a combination of landscape and flora values: • SEQ endemic taxa (Criterion Ia): *Lenwebbia* sp. (Blackall Range P.R.Sharpe 5387), *Pilidiostigma rhytispermum, Symplocos harroldii*. • Wildlife refugia (Criterion Ib): due to the clearing and fragmentation associated with urban development and road construction. • Ecosystem variation (Criterion g): associated with land zone 5 (duricrusted Tertiary surface remnants) and high rainfall.	Ia (SEQ endemic taxa): MEDIUM Ib (wildlife refugia): VERY HIGH Ic (ecosystem variation): HIGH
seqs_l_08	North Arm Mapleton 	State	The Panel identified the area as having a combination of flora, fauna and landscape values. The area delineated extends from the edge of the coastal lowlands onto the Blackall Range and encompasses a range of topography including higher landmarks such as Swains Peak and Mt Bottle and Glass. The rainfall is high and the geology is variable, comprising acid, intermediate and basic rocks of the North Arm Volcanics. The acid volcanic areas have low fertility soils. • SEQ endemic taxa (Criterion Ia): *Acacia bakeri, Arytera distylis*, *Astrotricha umbrosa, Comesperma hispidulum, Goodenia* sp. (Mt Castletower M.D.Crisp 2753), *Gossia inophloia, Hakea florulenta, Leucopogon rupicola, Macadamia ternifolia, Marsdenia coronata, Medicosma cunninghamii, Nothoalsomitra suberosa, Plectranthus torrenticola, Philotheca difformis subsp. smithiana, Romnalda strobilacea,*	Ia (SEQ endemic taxa): VERY HIGH Ie (species richness): VERY HIGH Ig (ecosystem variation): HIGH Ik (climate refugia): VERY HIGH

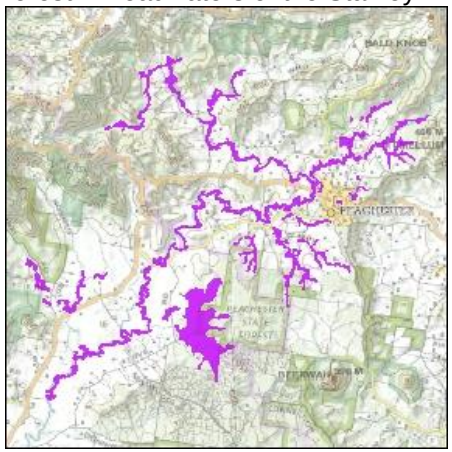
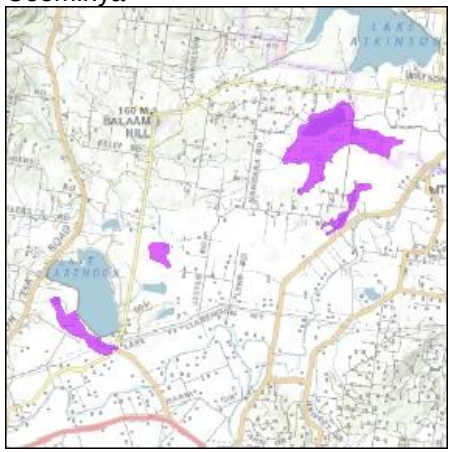
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			Triunia robusta, Westringia blakeana, Zieria furfuracea subsp. *euthadenia*. • Ecosystem variation (Criterion Ig): associated with high rainfall and range of different substrates – some noteworthy examples are patches of scribbly gum forest and simple notophyll gully rainforests with *Callicoma serratifolia* on rhyolite. • Surveys suggest high floristic species richness – approx. 800 sp (Criterion Ie) • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which facilitate adaptation zones (SEQ Catchments 2016).	
seqs_l_09	Rainforest remnants associated with the Tertiary basalts on the eastern fall of the Blackall Range 	State	Triunia NP lies on the eastern edge of the area delineated. The area has high fertility due to the influence of the basalt substrate. The Panel identified the area as being very important in terms of flora values. • SEQ rainforest taxa (Criterion Ia): including narrow endemic taxa – *Araucaria bidwillii, Argyrodendron* sp. (Kin Kin W.D.Francis AQ81198), *Arytera distylis, Bosistoa transversa, Bouchardatia neurococca, Backhousia subargentea, Corynocarpus rupestris* subsp. *arborescens, Cupaniopsis serrata, Graptophyllum reticulatum, Floydia praealta, Gossia inophloia, Jasminum jenniae, Macadamia integrifolia, Macadamia ternifolia, Medicosma cunninghamii, Neisosperma poweri, Nothoalsomitra suberosa, Parsonsia lilacina, Pouteria eerwah, Rhodamnia dumicola, Romnalda strobilacea, Triunia robusta*. • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which faciliate adapation zones (SEQ Catchments 2016).	Ia (SEQ endemic taxa): VERY HIGH Ik (climate refugia): VERY HIGH

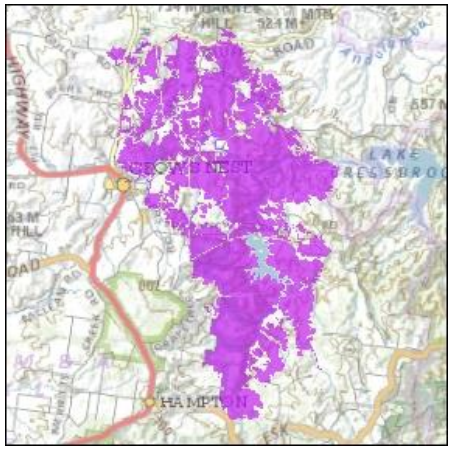
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_10	Riparian rainforest along Six Mile Creek below Lake McDonald 	State	The Panel identified the following values. • SEQ endemic taxa (Criterion Ia): *Cupaniopsis serrata, Medicosma forsteri*, *Triunia robusta, Xanthostemon oppositifolius*, Mary River cod *Maccullochella mariensis*, Mary River turtle *Elusor macrurus* nesting sites, Coxen's fig-parrot *Cyclopsitta diophthalma coxeni* habitat.	Ia (SEQ endemic taxa): VERY HIGH
seqs_l_11	Mesic eucalypt forest and rainforest on the Beenham / Wolvi Range area 	State	The wet sclerophyll complex comprises gully systems with interesting eucalypt ecosystems, such as spotted gum *Corymbia citriodora* communities on ridgetops which are moister than typical. The Panel identified the area as having a combination of flora and fauna values. • SEQ endemic rainforest taxa (Criterion Ia): *Acacia bakeri, Archidendron lovelliae, Argyrodendron* sp. (Kin Kin W.D.Francis AQ81198), *Arytera distylis, Bosistoa transversa, Corynocarpus rupestris* subsp. *arborescens, Cupaniopsis newmanii, Dissiliaria baloghioides, Floydia praealta, Macadamia ternifolia, Medicosma cunninghamii, Nothoalsomitra suberosa, Pararistolochia praevenosa, Samadera bidwillii, Rhodamnia acuminata, Romnalda strobilacea*. • Wildlife refugia (Criterion Ib): the area was subject to historical clearing for horticulture and presently expanding rural residential land use.	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Ik (climate refugia): VERY HIGH

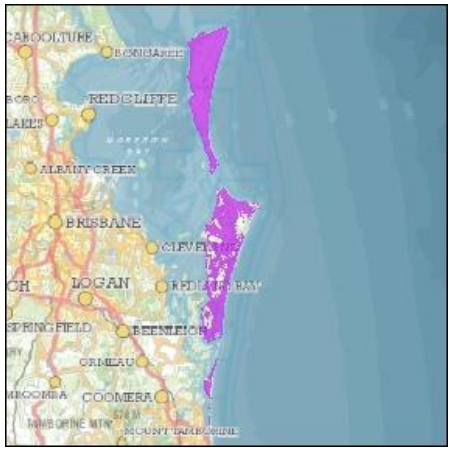
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			• Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which facilitate adaptation zones (SEQ Catchments 2016).	
seqs_l_12	Regional ecosystem 12.9-10.1, Sunshine Coast 	State	Distinctive tall open forest that is limited to the Sunshine Coast especially the northern end. It is associated with seasonally waterlogged soils on sedimentary rocks in a high rainfall area and could be termed a “swamp forest”. The overstory is predominantly *Eucalyptus* but *Melaleuca* spp. and *Lophostemon suaveolens* indicators of seasonally waterlogged conditions are present as a sub-canopy in places. It has been delineated as a regional ecosystem (12.9-10.1) with an “Of Concern” status. The occurrence of the regional ecosystem is identified by the panel under Criterion Ig (ecosystem variation) due to its distinctive floristic composition and unusual habitat relationship.	Ig (ecosystem variation): VERY HIGH
13	Igneous plugs in the Noosa – Tewantin area including Mts Cooroora, Coolum, Timbeerwah, Ninderry		Addressed in flora expert panel decision seqs_fl_23	
14	Mount Pinbarren		Addressed in flora expert panel decision seqs_fl_23.	
15	Western side of Lake Doonella - Remnant vegetation between Tewantin State Forest and Lake Doonella	Regional	Not implemented at this stage. The Panel noted that the remnant is important for maintaining connectivity (Criterion G) and has ecosystem values in local subregional context (Criterion B). Values are likely picked up through the diagnostic criteria.	

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
16	Eastern portion of Tewantin State Forest - remnant coastal vegetation	Regional	Not implemented at this stage. Wet blackbutt forest is an endangered regional ecosystem and will therefore be picked up in diagnostic criterion B. Values noted subsequent to the expert panel • Habitat for EVNT taxa (Criterion A): including *Acacia attenuata, Eucalyptus conglomerata*. • Refugia from clearing (Criterion Ib). • SEQ endemic taxa (Criterion Ia): *Acacia attenuata, A. hubbardiana, Melaleuca pachyphylla*, *Eucalyptus conglomerata, Philotheca queenslandica.* • Disjunct taxa (Criterion Ic): *Podocarpus spinulosus, Hibbertia* sp. (Blackdown Tableland S.G.Pearson 279).	
seqs_l_17	Helidon Hills  	State	Collectively, the area delineated has very high flora and landscape values. It is an area of sedimentary geology in places capped by the remnants of an old duricrusted surface of Tertiary age. It has weathered surfaces throughout. Watercourses have cut gorges through the sandstone beds especially on the western side. The values identified for the area include: • SEQ endemic taxa including narrow endemic taxa (Criterion Ia): SEQ endemic taxa - *Bertya lapicola* subsp. *lapicola, Bossiaea dasycarpa ,Eucalyptus dura, E. helidonica, E. taurina, Caustis blakei* subsp. *macrantha, Goodenia heterophylla* subsp. *teucriifolia, Grevillea quadricauda, Hovea impressinerva, H. ramulosa, Leionema obtusifolium, Paspalidium grandispiculatum, Syncarpia verecunda, Xylomelum benthamii*. • Wildlife refugia (Criterion Ib). • Disjunct taxa (Criterion Ic): largely species from sandstone areas in the Brigalow Belt region. Disjunct taxa: *Acacia baeuerlenii, A. blakei* subsp. *blakei, A. brachycarpa, A. julifera subsp. julifera, A. leichhardtii, Allocasuarina inophloia, Aotus subglauca* var. *filiformis, A. subglauca* var.	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Id (disjunct populations): VERY HIGH Ik (climate refugia): VERY HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			subglauca, Sannantha collina, Eucalyptus baileyana, Gompholobium foliolosum, Grevillea singuliflora, Hakea plurinervia, Leucopogon biflorus, Leptospermum lamellatum, Lysicarpus angustifolius, Mirbelia speciosa subsp. *ringrosei, Xanthosia stellata*. • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across parts of the general area described considered to provide refugial functions and/or which faciliate adapation zones (SEQ Catchments 2016).	
seqs_l_18	Plunkett Conservation Reserve and surrounds 	State	Collectively, the area delineated has high flora and landscape values due largely to its sandstone geology. • SEQ endemic taxa (Criterion Ia): *Eucalyptus dura, Hovea ramulosa, Kunzea flavescens, Leucopogon recurvisepalus*. • Wildlife refugia (Criterion Ib). • Disjunct taxa (Criterion Ic): *Acacia baeuerlenii, A. granitica, A. hispidula, Calytrix tetragona, Eucalyptus baileyana, E. curtisii Leucopogon biflorus, Podocarpus spinulosus*.	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): HIGH

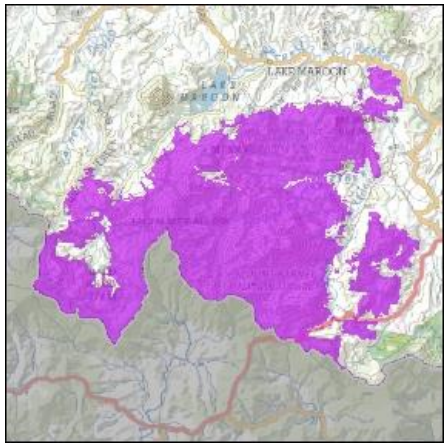
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_19	Gallery rainforest and wet sclerophyll forest in headwaters of the Stanley River 	State	The area delineated by the Panel has a range of flora, fauna and landscape values. • SEQ endemic plant taxa (Criterion Ia): including *Gossia inophloia, Helicia ferruginea, Macadamia integrifolia, Macadamia ternifolia, Romnalda strobilacea, Pararistolochia praevenosa, Syzygium hodgkinsoniae*. • Wildlife refugia (Criterion Ib). • Also see fauna report seq_fa_02. Note this decision has been excluded from the generic gallery rainforest decision seqs_fl_84 due to the identification of specific values.	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia): VERY HIGH
seqs_l_20	Ephemeral wetlands Gatton to Coominya 	State	• Wildlife refugia (Criterion Ib): ephemeral wetlands in inland part of region surrounded by intensive agriculture. When filled with water these provide a feeding/breeding/roosting site for waterbirds including the freckled duck *Stictonetta naevosa* and for large numbers of waterfowl. Also relatively large numbers of black swans *Cygnus atratus* and other native waterfowl breed in area when water levels permit. Occasionally, moderate numbers of oriental pratincoles *Glareola maldivarum* fly long distances from northern Australia apparently with Seven Mile Lagoon as a destination.	Ib (wildlife refugia): VERY HIGH

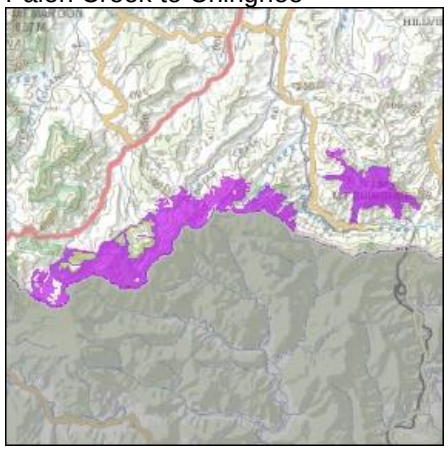
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_21	Remnant vegetation on granite and sandstone along Great Dividing Range near Crow's Nest 	State	The area delineated is outstanding in terms of: • SEQ endemic flora (Criterion Ia): including narrow endemic taxa - *Bertya cunninghamii* subsp. *rupicola*, *Eucalyptus dura, E. helidonica, E. montivaga, E. taurina, Hovea ramulosa, Kunzea flavescens, Leionema obtusifolium* • Wildlife refugia (Criterion Ib): much of the landscape has not been cleared because of its rugged nature and is surrounded by farming and rural life style lands, and: • Taxa with disjunct distributions (Criterion Ic): *Acacia brachycarpa, Acacia brunioides* subsp. *granitica, A. granitica, Acacia hispidula, Acacia venulosa, Actinotus helianthi, Allocasuarina inophloia, Bulbostylis pyriformis, Sannantha angusta, Baeckea diosmifolia, Bertya oleifolia, Melaleuca linearis, Melaleuca williamsii, Correa reflexa* var. *reflexa, Dichanthium setosum, Dodonaea multijuga, Eucalyptus amplifolia* subsp. *sessiliflora, E. conica, E. interstans, Hibbertia cistoidea, Leucopogon biflorus, Leucopogon neoanglicus, Lomandra filiformis* subsp. *coriacea, Mirbelia speciosa* subsp. *ringrosei, Notelaea* sp. (Barakula A.R.Bean 7553), *Olax stricta, Prostanthera nivea, Stylidium laricifolium, Zieria fraseri*. • (Criterion Id): several taxa associated with the mountains of northeast New South Wales and the Granite Belt – Main Range areas of southern Queensland reach their northern limit of distribution. • Very high species-richness (Criterion Ie): particularly among *Eucalyptus – Corymbia – Angophora* reflecting climatic/topographic gradients and different geologies. The species present in the area include: *Angophora leiocarpa, A. woodsiana, Corymbia citriodora, C. gummifera, C. henryi, C. intermedia, C. trachyphloia,*	Ia (SEQ endemic flora): HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): VERY HIGH Id (limits of geographic range): MEDIUM Ie (high species-richness): VERY HIGH

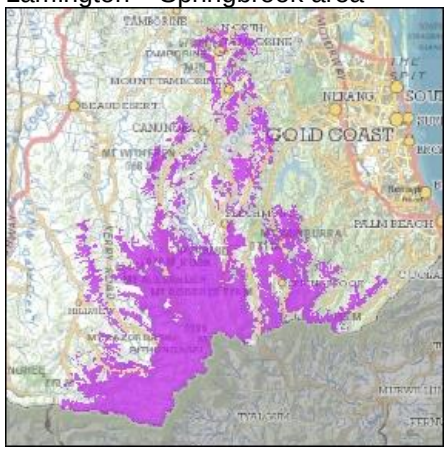
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			Eucalyptus acmenoides, E. amplifolia subsp. *sessiliflora, E. baileyana, E. biturbinata, E. carnea, E. crebra, E. dura, E. eugenioides, E. fibrosa, E. helidonica, E. interstans, E. major, E. melanophloia, E. microcorys, E. moluccana, E. montivaga, E. pilularis, E. planchoniana, E. propinqua, E. resinifera, E. saligna, E. siderophloia, E. taurina, E. tereticornis*.	
seqs_l_22	Terrestrial bioregional corridors	State or Regional	The expert panel reviewed the existing bioregional corridors for southern SEQ. Corridors were assigned as being of State or Regional significance. For further information, refer to section 2.3.2 and 3.2 of this report.	Criterion J
seqs_l_23	North Stradbroke, South Stradbroke and Moreton Island 	State	North Stradbroke and Moreton islands form the second and third largest sand islands in the world (respectively). Values identified by the panel include: • SEQ endemic taxa (Criterion Ia): includes narrow endemic taxa - *Acacia hubbardiana, Agiortia pedicellata, Astrotricha glabra, Comesperma hispidulum, Eleocharis difformis, Genoplesium psammophilum, Haemodorum tenuifolium, Hakea actites, Lepyrodia imitans*, *Macarthuria complanata, Monotoca* sp. (Fraser Island P.Baxter 777), *Olearia hygrophila, Petrophile shirleyae, Phaius australis, P. bernaysii, Pultenaea maritima, Schoenus ornithopodioides, Strangea linearis, Syncarpia hillii, Xylomelum benthamii*. • Wildlife refugia (Ib): coastal ecosystems and species populations on adjacent mainland extensively destroyed by urban settlement. Includes unique koala *Phascolarctos cinereus* population (Lee et al. 2009). • Areas with concentrations of disjunct populations (Criterion Ic): *Callitris rhomboidea, Lepyrodia imitans*, *Calytrix tetragona, Podocarpus spinulosus*, *Schoenus scabripes*.	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): MEDIUM If (relictual populations): MEDIUM Ig (ecosystem variation): MEDIUM Ik (climate refugia): VERY HIGH

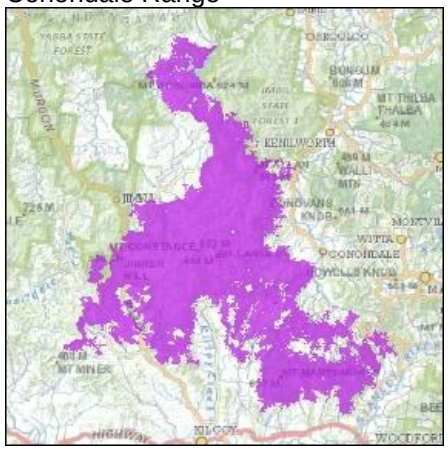
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			• Relictual populations (Criterion If): *Syncarpia hillii*. • RE variation (Criterion Ig): heaths contain mallee forms of trees absent from other heaths on mainland (e.g. *Eucalyptus planchoniana*). Large example of a restricted ecological community associated with swale (*Livistona australis*). • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across parts of the general area described considered to provide refugial functions and/or which facilitate adaptation zones (SEQ Catchments 2016).	
seqs_l_24	Main Range from Wilson's Peak to Mistake Plateau 	State	Collectively, the elevated Tertiary basalt and rhyolite of the Main Range support complex vegetation and flora assemblages that are outstanding in the SEQ regional context. Also part of the Scenic Rim Important Bird Area (Dutson et al. 2009). • SEQ endemic taxa (Criterion Ia): taxa more or less endemic to the Mt Warning Shield/Border Ranges extend north-west along Main Range albeit in attenuated numbers including rainforest taxa. There are also montane heath species associated with rhyolite (e.g. Hellhole Gorge, Mt Castle and The Steamers), such as *Bothriochloa bunyensis, Bulbine vagans, Clematis fawcettii, Cordyline congesta, Cupaniopsis baileyana, Doryanthes palmeri, Hovea similis. Lenwebbia prominens, Lenwebbia* sp. (Main Range P.R.Sharpe+ 4877), *Myoporum betcheanum, Pimelea umbratica, Plectranthus alloplectus, Rhodamnia whiteana, Seringia hillii, Veronica* sp. (Wilsons Peak D.A.Halford Q1521), *Wahlenbergia glabra, W. scopulicola, Xerochrysum bracteatum* subsp. (Mt Merino S.T.Blake 22869), *Zieria smithii.* • Wildlife refugia (Criterion Ib): the high range country has not been cleared because of the	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): VERY HIGH Id (limits of geographic range): VERY HIGH Ie (high species richness): VERY HIGH Ik (climate refugia): VERY HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			rugged terrain and is surrounded by farming and rural life style lands. • High numbers of taxa with disjunct distributions (Criterion Ic): *Acacia paradoxa, A. stricta, A. venulosa, Acaena novae-zelandiae, Babingtonia angusta, Bossiaea scortechinii, Callitris rhomboidea, Correa glabra* var. *glabra, Correa reflexa* var. *reflexa, Cryptandra amara* var. amara, *Cuttsia viburnea, Daviesia mimosoides* subsp. *mimosoides, Dillwynia sieberi, Dodonaea multijuga, Eucalyptus banksii, E. interstans, Kunzea ericoides, Mirbelia pungens, Olearia cydoniifolia, Phaleria chermsideana, Pomaderris crassifolia, Prostanthera phylicifolia, Santalum obtusifolium, Seringia corollata*. • Limits of range (Criterion Id): many basalt and montane species of the Border Ranges and northern ranges of New South Wales reach their northern and western limits of distribution along Main Range. Limits of range - *Acacia obtusifolia* (apart from outlier Mt Woowoonga), *Acradenia euodiiformis, Banksia integrifolia* subsp. *monticola, Cinnamomum virens, Cryptocarya foveolata, Cuttsia viburnea* (apart from disjunct population at Blackdown Tableland in BRB), *Veronica derwentiana subsp. derwentiana, Eucalyptus amplifolia* subsp. *sessiliflora* (apart from Crow's Nest), *E. campanulata, E. deanei, E. dunnii, E. laevopinea*, (apart from outlier Mt Moffatt in Carnarvon NP), *E. nobilis, E. obliqua, E. quadrangulata, Lomatia arborescens, Pimelea curviflora* var. *gracilis* (apart from couple outlying populations in south Burnett). • Area of high overall species richness (Criterion Ie) reflecting the habitat diversity of the area. • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or	

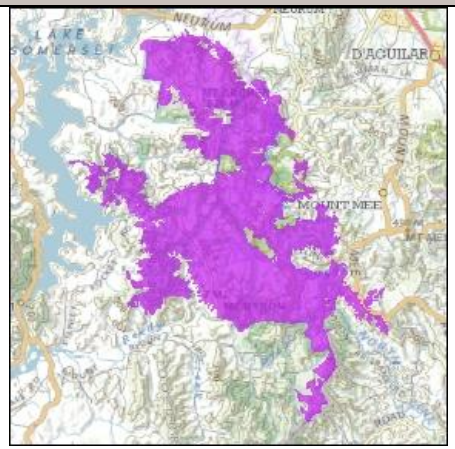
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			which faciliate adapation zones (SEQ Catchments 2016).	
seqs_l_25	Mt Barney National park and immediate surrounds 	State	The area includes Mts Ballow, Barney, Maroon, Lindsey, Ernest. This area does not include Mt Chingee. Known *Acacia* hotspot (González-Orozco et al 2016) and part of the Scenic Rim Important Bird Area (Dutson et al. 2009). The area delineated has outstanding flora values including: • Very high number of SEQ endemic flora (Criterion Ia): including a number of narrow endemic taxa. SEQ endemic flora - *Acacia brunioides* subsp. *brunioides, A. saxicola, Agiortia cicatricata, Astrotricha pauciflora, Banksia conferta, Bossiaea rupicola, Comesperma breviflorum, Coopernookia scabridiuscula, Corybas montanus, Eucalyptus dura, E. helidonica, Coronidium lindsayanum, Hibbertia hexandra, H. patens, Leptospermum barneyense, Persoonia volcanica, Philotheca obovatifolia, Pomaderris lanigera* var. (Mt Maroon L.S.Smith 12161) *Pultenaea whiteana, Ricinocarpos speciosus, Seringia hillii, Syncarpia verecunda, Tetramolopium vagans, Xerochrysum bracteatum* subsp. (Mt Merino S.T.Blake 22869). • Wildlife refugia (Criterion Ib): especially for montane species many of which have disjunct distributions (Criterion Ic). • Disjunct populations (Criterion Ic): *Acacia adunca, Actinotus gibbonsii, A. helianthi*, *Amperea xiphoclada* var. *xiphoclada, Sannantha angusta, Correa reflexa* var. *reflexa, Cuttsia viburnea, Eucalyptus interstans, E. michaeliana, E. oreades, Gahnia subaequiglumis, Gonocarpus hirtus, Grevillea linsmithii, Hakea sericea, Hibbertia riparia, Olearia chrysophylla, Isotoma axillaris, Agiortia cicatricata, Pomaderris ledifolia, Prostanthera nivea, Pultenaea pycnocephala, Thelionema grande*.	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): VERY HIGH Id (limits of geographic range): VERY HIGH Ik (climate refugia): VERY HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			• Some taxa associated with the mountain ranges of New South Wales reach their northern limit of distribution (Criterion Id), e.g. *Epacris longiflora, Eucalyptus codonocarpa, E. fusiformis, E. oreades, Acacia floribunda, Boronia anethifolia,, Hakea laevipes* subsp. *graniticola, Nothofagus moorei*. • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which faciliate adapation zones (SEQ Catchments 2016). Note that there are a few issues with the geology mapping in this area. There are some intrusives that have been mapped as sandstone.	
seqs_l_26	Palen Creek to Chinghee 	State	The area delineated has outstanding flora values including: • SEQ endemic flora (Criterion Ia): including a number of narrow endemic taxa - *Acacia acrionastes, Bulbine vagans, Gossia punctata, Persoonia volcanica, Commersonia salviifolia, Wahlenbergia scopulicola, Zieria smithii*, *Xerochrysum bracteatum* subsp. (Mt Merino S.T.Blake 22869) • Wildlife refugia (Criterion Ib): this part of the Scenic Rim has experienced greater disturbance than elsewhere and in places remnant vegetation is pretty much restricted to ridgelines. • Limits of geographic range (Criterion Id): northern limits of species of the northern tablelands of NSW, e.g. *Banksia integrifolia* subsp. *monticola, Epacris longiflora, Leionema elatius* subsp. *beckleri*. • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia): VERY HIGH Id (limits of geographic range): HIGH Ik (climate refugia): VERY HIGH

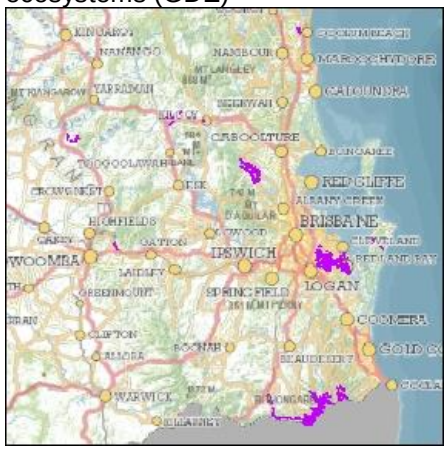
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			which faciliate adapation zones (SEQ Catchments 2016). Also part of the Scenic Rim Important Bird Area (Dutson et al. 2009).	
seqs_l_27	Lamington – Springbrook area 	State	The elevated country of Lamington and Springbrook has outstanding levels of flora, fauna and landscape values including: • Very high number of SEQ endemic flora (Criterion Ia): including narrow endemic rainforest taxa SEQ endemic flora – *Acmena ingens, Actephila grandifolia, Alloxylon pinnatum, Ardisia bakeri, Archidendron muellerianum*, *Argophyllum nullumense, Austrobuxus swainii, Baloghia marmorata, Banksia conferta, Bosistoa pentacocca, Brachyscome ascendens, Bulbine vagans, Melaleuca montana, Cassia marksiana, Citrus australasica, Clematis fawcettii, Comesperma hispidulum, Cordyline congesta*, *Corynocarpus rupestris* subsp. *arborescens, Cryptocarya meisneriana, Cupaniopsis baileyana, Daphnandra tenuipes, Endiandra hayesii, Eucalyptus dunnii, Euphrasia bella, Eucryphia jinksii, Gaultheria viridicarpa*, *Gossia fragrantissima, G. punctata, Helicia ferruginea, Helmholtzia glaberrima, Hovea similis, Lenwebbia* sp. (Main Range P.R.Sharpe+ 4877), *Lepiderema pulchella, Leucopogon* sp. (Lamington G.Leiper AQ633386), *Marsdenia longiloba, Melicope hayesii, Ochrosia moorei, Owenia cepiodora, Pandorea baileyana, Pararistolochia laheyana, Parsonsia tenuis, Pimelea umbratica, Pittosporum lancifolium, P. oreillyanum, Pomaderris lanigera* var. (Mt Maroon L.S.Smith 12161), *P. notata, Samadera sp. (Mt Nardi B.L.Walker AQ330746)*, *Randia moorei, Rhodamnia maideniana, R. whiteana, Commersonia salviifolia, Symplocos baeuerlenii, Syzygium moorei, Uromyrtus lamingtonensis, Veronica grosseserrata*, *Wahlenbergia glabra, W. scopulicola, Wilkiea*	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct taxa): VERY HIGH Id (limits of geographic range): VERY HIGH Ie (high species richness): VERY HIGH Ik (climate refugia): VERY HIGH

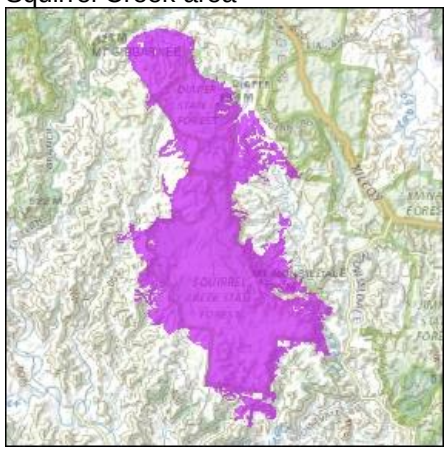
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			austroqueenslandica, Xerochrysum bracteatum subsp. (Mt Merino S.T.Blake 22869). • Wildlife refugia (Criterion Ib): especially for montane species many of which have disjunct distributions (Criterion Ic). • Some taxa associated with the mountain ranges of New South Wales reach their northern limit of distribution (Criterion Id), e.g *Anopterus macleayanus, Eucalyptus campanulata, E. codonocarpa, E. dunnii, E. oreades, E. quadrangulata, Melaleuca pallida, Hakea laevipes* subsp. *graniticola, Nothofagus moorei*. • Area of high species richness (Criterion Ie). • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which facilitate adaptation zones (SEQ Catchments 2016). Also part of the Scenic Rim Important Bird Area (Dutson et al. 2009).	
seqs_l_28	Conondale Range  	State	The Conondale Range is elevated country with a range of different flora, fauna and landscape values that contribute to the area being outstanding in the SEQ regional context. It is relatively large, receives high rainfall, and remains connected to other forested tracts. The area also contains remnants of old growth wet sclerophyll forest. Considered an Important Bird Area for bird conservation (Dutson et al. 2009). Much of the area lies on metamorphic rocks and the soils are of only moderate fertility. The Conondale Range has a distinctive vegetation pattern of wet and dry sclerophyll forest on ridges with rainforest or wet sclerophyll forest on lower slopes and along watercourses. QLD Herbarium modelling indicates this area is a threatened species hotspot.	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia) : VERY HIGH Ic (disjunct populations): MEDIUM Ie (high species richness): VERY HIGH Ii (hollow bearing trees): VERY HIGH Ik (climate refugia): VERY HIGH

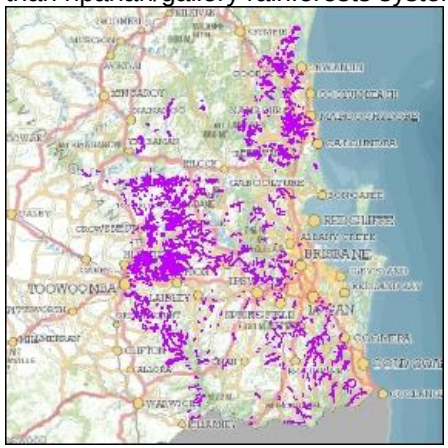
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			• SEQ endemic plant taxa (Ia): *Acmena ingens, Acomis acoma, Araucaria bidwillii, Arytera distylis, Bosistoa transversa, Citrus australis, Comesperma hispidulum, Eucalyptus montivaga, Gossia punctata, Macadamia ternifolia, Macrozamia lucida, Medicosma cunninghamii, Niemeyera chartacea, Pilidiostigma rhytispermum, Pararistolochia praevenosa*. • Wildlife refugia (Criterion Ib): it is a very large elevated area. • Disjunct species populations (Criterion Ic): *Atractocarpus benthamianus* subsp. *glaber, Blechnum wattsii, Dodonaea megazyga, Doryphora sassafras, Endiandra compressa, Galbulimima baccata, Prostanthera nivea*. • Area of very high species richness especially birds and frogs (Criterion Ie): reflecting the influences of altitude and micro-topographic variation. Additionally, habitat models produced by the Queensland Herbarium suggest that the area may contain habitat for a number of EVNT taxa. • The area also contains a high density of hollow bearing trees which provide habitat for hollow dependent fauna (Criterion Ii). • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which facilitate adaptation zones (SEQ Catchments 2016).	
seqs_l_48	Mt Byron Plateau and surrounds	State	The Panel identified a rugged plateau on the Mt Byron Volcanics west of Mt Mee as having landscape values and flora values that are outstanding in a regional context. The Mt Byron Volcanics are of the late Triassic age (about 227 million years old). They are mainly composed of rhyolite lava, rhyolitic agglomerate and rhyolitic welded tuff, but there is also some andesite in sequence (Willmott	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): VERY

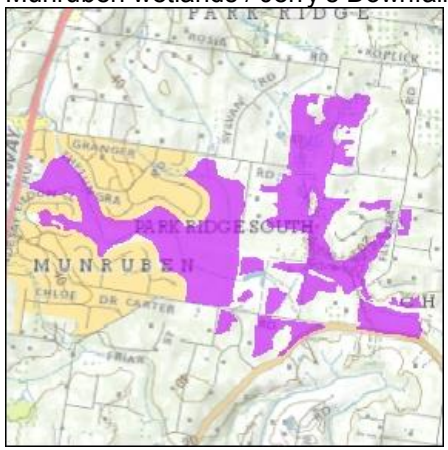
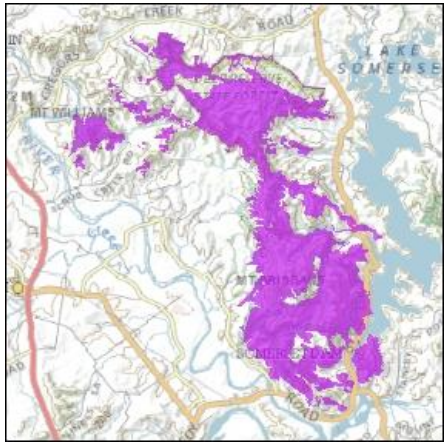
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			2004). The exposed rhyolite rock outcrops at Dianna's Bath are at an elevation of approximately 140m with the rhyolite extending to the ridge top at Mt Byron to a maximum elevation of approx. 630m asl. At this higher level the rhyolite forms an undulating plateau, which is incised by sharp gullies. The plateau surface is generally at an average level of about 500m asl. Due to the lower fertility soils on the rhyolites the flora of this plateau is quite different to most of the other parts of the D'Aguilar Range, which is mostly composed of the Bunya Phyllite and Neranleigh-Fernvale Beds (meta-sediments and meta-volcanics). A number of threatened speies of flora are known to occur within the area, including *Commersonia salviifolia, Leucopogon recurvisepalus, Melaleuca williamsii, Plectranthus leiperi and Pomaderris crassifolia.* The Mt Byron shrubby eucalypt open forests are mostly dominated by tree species such as *Eucalyptus racemosa*, *E. dura*, *E. tindaliae* and *Corymbia gummifera*. As well as being found on coastal sands similar species combinations are found on other rhyolite or trachyte mountains in Southeast Queensland. The intriguing feature of the Mt Byron rhyolites is the occurrence of a number of other plant species growing at this moderately high elevation, which usually grow in coastal heaths and woodlands on sands or sediments. Some of these species occurring in the Mt Byron/Dianna's Bath area also constitute disjunct populations or are threatened species. The area contains giant ironwood and macadamia species, whilst the scarps provide rocky habitat for fauna. • SEQ endemic taxa (Criterion Ia) including narrow endemic species: *Plectranthus leiperi* (restricted to the Mt Byron/ Somerset/ Wivenhoe area), *Commersonia salviifolia, Eucalyptus dura, Syncarpia verecunda, Pomaderris crassifolia, Persoonia iogyna, Pilidiostigma rhytispermum,*	HIGH Ig (ecosystem variation): High Ik (climate refugia): VERY HIGH

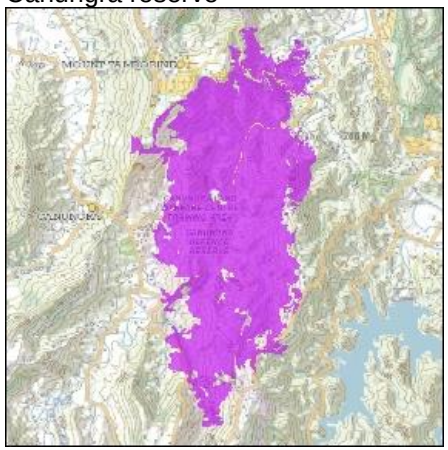
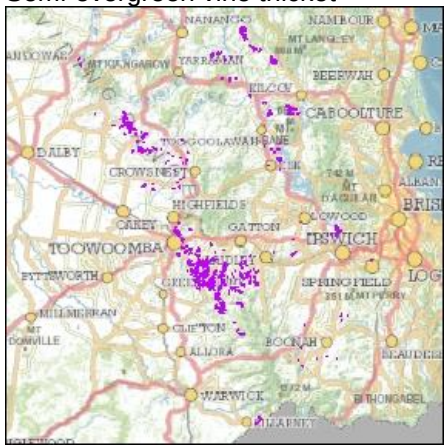
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			Argyrodendron sp. (Kin Kin W.D.Francis AQ811I98), *Leucopogon recurvisepalus*. • Wildlife refugia (Criterion Ib) – area forms part of an extensive tract of vegetation that is surrounded on the east and west by rural lifestyle and dairying and grazing lands – the latter two uses are quickly transitioning to rural life style land use. • Disjunct populations (Criterion Ic): *Acacia baeuerlenii, A. brachycarpa, A. hispidula, A. stricta, Sannantha collina, Bertya oleifolia, Melaleuca linearis var. linearis aris, Ceratopetalum apetalum, Commersonia salviifolia, Crowea exalata* subsp. exalata, *Crowea exalata* subsp. *magnifolia, Hibbertia* sp. (Isla Gorge P.Sharpe 598), *Eucalyptus curtisii, Hakea sericea*, *Leucopogon recurvisepalus, Logania pusilla*, *Marsdenia fraseri, Melaleuca linearis, Melaleuca williamsii, Mirbelia pungens, Mirbelia speciosa* subsp. *ringrosei, Notelaea* sp. (Barakula A.R.Bean 7553), *Pomaderris crassifolia, Pultenaea maritima*. • Ecosystem variation (Ig). A number of species which usually found in coastal heaths and woodlands on sands or sediments are present within communities within the Mount Byron area at a moderately high elevation. For example, *Banksia oblongifolia, Bossiaea heterophylla, Caustis blakei* subsp. *blakei, Epacris obtusifolia, Leptomeria acida, Pultenaea maritima, Woollsia pungens.* • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which facilitate adaptation zones (SEQ Catchments 2016).	

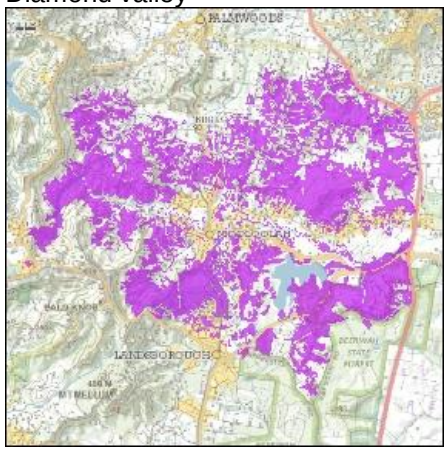
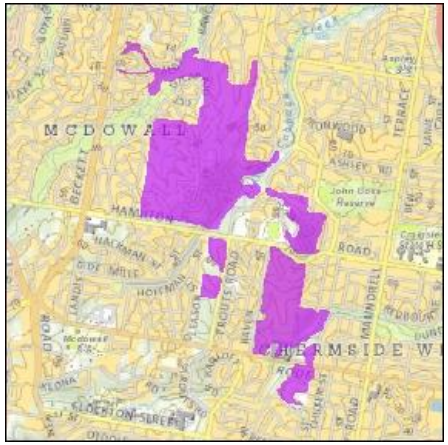
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_49	Riparian bioregional corridors	State	The riparian bioregional corridors provide connectivity through lowland areas of SEQ. See Table 4 for list of waterways considered riparian corridors. For further information, refer to sections 2.3.2 and 3.2 of this report.	Criterion J
50	Maria Creek area		Not implemented at this time, as derived grasslands are not mapped as a regional ecosystem. Last patchy of woody grassland on the east coast of Australia. Not covered by remnant vegetation mapping. These are grasslands originally derived from woodlands.	
seqs_l_51	Permanent groundwater dependent ecosystems (GDE) 	State	This decision relates to all ecosystems that have a permanent groundwater connection. Two examples include the Blue Lake on North Stradbroke Island and the upper Lamington plateau streams. Such systems are very rare in the Australian landscape. Additionally, given the expected increase in frequency of droughts and higher tempertatures, such areas may act as important drought refugia.	Ib (wildlife refugia): VERY HIGH Ie (high species richness): VERY HIGH Ik (climate refugia): VERY HIGH

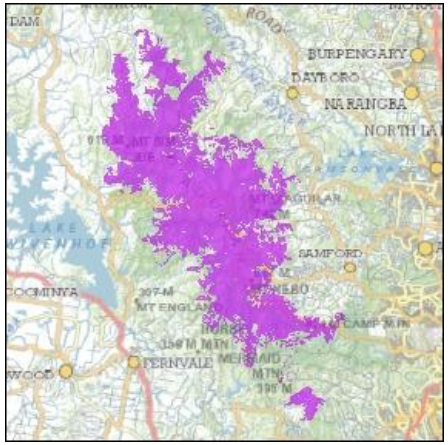
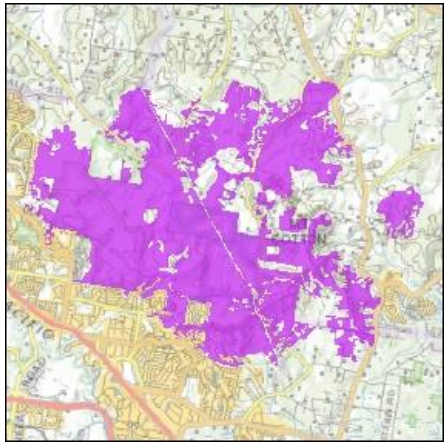
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_52	Squirrel Creek area 	State	The area has similar values to the nearby Conondale Range (i.e. refer to seqs_l_28) and contains areas of relatively undisturbed open woodland, notophyll rainforest and wet eucalypt forest, inclusive of old growth remnants. The area is considered important in terms of biodiversity in the upper Brisbane Valley. Expanses of native sorghum are present which may provide habitat for the eastern bristlebird *Dasyornis brachypterus*. • The area also contains a high density of hollow bearing trees which provide habiat for hollow dependent fauna (Criterion Ii) • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across parts of the general area described considered to provide refugial functions and/or which faciliate adapation zones (SEQ Catchments 2016).	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia) : VERY HIGH Ic (disjunct populations): MEDIUM Ie (high species richness): VERY HIGH Ii (hollow bearing trees): HIGH Ik (climate refugia): VERY HIGH
seqs_l_53	Peel and Coochiemudlo Islands 	State	Unique floristics and hydrology. These islands differ from other bay islands with the presence of red soils derived from deeply weathered Tertiary surfaces rather than sand.	Ib (wildlife refugia): VERY HIGH
54	Undisturbed sandy beaches		Not implemented at this time. Insufficient information with respect to special feature eligibility criteria.	

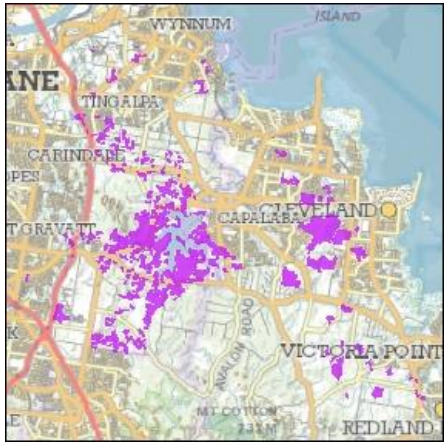
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
55	High energy beaches		Not implemented at this time. Insufficient information with respect to special feature eligibility criteria.	
56	Back dune / high dune country		Not implemented – the federally listed threatened ecological community, “Littoral Rainforest” is captured under criterion B1.	
seqs_l_57	Riparian lowland forest systems (other than riparian/gallery rainforests systems) 	State	Riparian lowland forest ecosystems are important components of the lowland landscape, frequently exhibiting higher species richness and abundance than surrounding habitats. They act as movement pathways along riparian systems for a number of species, especially birds. They also often provide critical resources for many species in terms of food, shelter and nesting sites. For example, the seasonal flowering of melaleuca is important for species of honeyeaters, whilst narrow bands of flooded gum along watercourses are significant habitat for koalas *Phascolarctos cinereus*, especially in times of drought. Large trees in these systems also act as a source of nest hollows for many species of birds, bats and arboreal mammals. (Lovett & Price 2007) Due to historical and preferential clearing in SEQ, remaining systems are often heavily fragmented and have undergone a substantial reduction in their extent. In many areas, condition is often poor and subject to considerable weed problems. Values include: • Wildlife refugia (Criterion Ib). • High species richness (Criterion Ie). • Larger trees in such systems are often a significant source of nest hollows (Criterion Ii). Note – for the same decision relevant to the northern portion of the SEQ bioregion refer to seqn_l_50.	Ib (wildlife refugia): VERY HIGH Ie (high species richness: HIGH Ii (hollow bearing trees): HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_58	Munruben wetlands / Jerry's Downfall 	Regional	The area reflects a large sand mass with permanent water which acts as a wildlife refugia, especially during periods of drought. Hollow bearing trees in adjoining hills provide roosting and nesting sites. The panel identified the area as biodiversity hotspot and is known to contain/be frequented by species including the glossy black-cockatoo *Calyptorhynchus lathami*, powerful owl *Ninox strenua*, 22 frog species, spotted-tailed quoll *Dasyurus maculatus maculatus* as well as gliders. A large macropod population also resides within the area. • Wildlife refugia (Criterion Ib). • High species richness (Criterion Ie). • Area contains a reasonable density of hollow bearing trees (Criterion Ii).	Ib (wildlife refugia): HIGH Ie (high species richness): HIGH Ii (hollow bearing trees): HIGH
seqs_l_59	Mt Brisbane massive 	State	The depicted area contains a diverse range of vegetation groups incusive of dry vine thicket, tall hoop pine forest and giant ironwood forest and is considered a local refugia. It contains the protected area estate Deer Reserve which is known to provide habitat for at least 13 species of conservation significance and a further four species listed under international agreements. Of particular interest are the brush-tailed rock-wallaby *Petrogale penicillata*, koala *Phascolarctos cinereus*, glossy black-cockatoo *Calyptorhynchus lathami*, black-breasted button-quail *Turnix melanogaster*, the giant ironwood *Backhousia subargentea* and Cudgerie *Hernandia bivalvis*. Each of these species has very specific habitat requirements (DNPRSR 2013). Additionally, a combination of ecosystem and landscape elements are present across much of the general area described are considered to provide refugial functions and/or faciliate adapation zones - Climate refugia (Ik). (SEQ Catchments 2016).	Ib (wildlife refugia): VERY HIGH Ie (high species richness): VERY HIGH Ig (ecosystem variation): VERY HIGH Ik (climate refugia): VERY HIGH

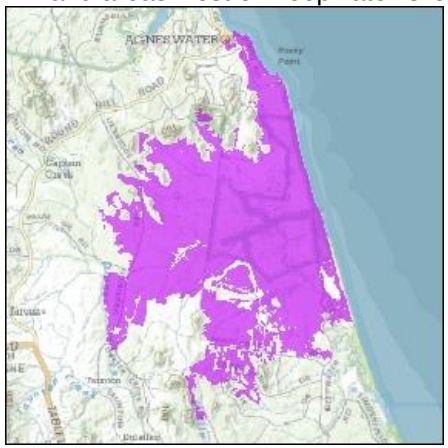
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_60	Canungra reserve 	State	A wide variety of hill and lowland landforms are present, encompassing communities on metamorphics in the east through to granite in the west, and blending to sandstone at the outer margin. The area is known to contain many species of conservation significance. Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which facilitate adaptation zones (SEQ Catchments 2016).	Ib (wildlife refugia): VERY HIGH Ie (high species richness): VERY HIGH Ig (ecosystem variation): VERY HIGH Ij (breeding / roosting sites): VERY HIGH Ik (climate refugia): VERY HIGH
seqs_l_61	Semi-evergreen vine thicket 	State	Good examples within the Brisbane region include Cameron's Scrub and the adjacent Edward Corbould Nature Refuge.	Ib (wildlife refugia): VERY HIGH Ie (high species richness): VERY HIGH Ij (breeding / roosting sites): VERY HIGH Ik (climate refuge): VERY HIGH

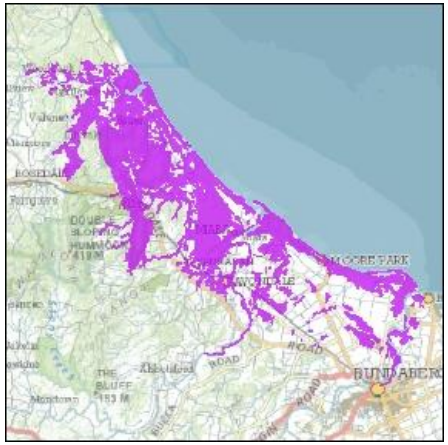
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_62	Diamond valley 	State	Habitat modelling by the Queensland Herbarium suggests the area is a threatened species hotspot (Criterion Ie). Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which facilitate adaptation zones (SEQ Catchments 2016).	Ie (high species richness): VERY HIGH Ik (climate refugia): VERY HIGH
seqs_l_63	Chermside hills 	Regional	The area has previously been heavily disturbed (logging) and few hollow bearing trees are present. Notwithstanding, the vegetated patch acts as a refugia (Criterion Ib) being an island in a highly modified urban landscape. It contains a unique suite of species situated on helodontic related geology. A new regional ecosystem, 12.11.5l has been identified (not present in the current mapping) specifically with respect to the site (Criterion Ig).	Ib (wildlife refugia): HIGH Ig (ecosystem variation): VERY HIGH

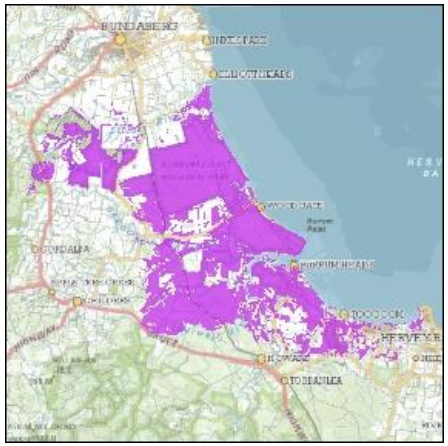
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqs_l_64	D'Aguilar Range upland communities Mt Cootha to Mt Mee area 	State	Upland communities of the D'Aguilar Range contain areas of old growth. A number of endemic species are present on basalt caps. The areas is considered to have considerable botanic diversity and specie richness. Modelling by the Queensland Herbarium suggests the site containing habitat for a number of threatened taxa. Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which facilitate adaptation zones (SEQ Catchments 2016).	Ie (high species richness): VERY HIGH Ig (ecosystem variation): VERY HIGH Ik (climate refuge): VERY HIGH
seqs_l_65	Mt Cotton 	Regional	Endemic species. High altitude native jute. Population of wild macadamia.	Ib (wildlife refugia): HIGH Ie (high species richness): HIGH Ig ((ecosystem variation): HIGH
66	Lowland rainforests and wet sclerophyll other than riparian		Not implemented - the federally listed threatened ecological community, "Lowland Rainforest" is captured under diagnostic Criteria B1.	Not implemented

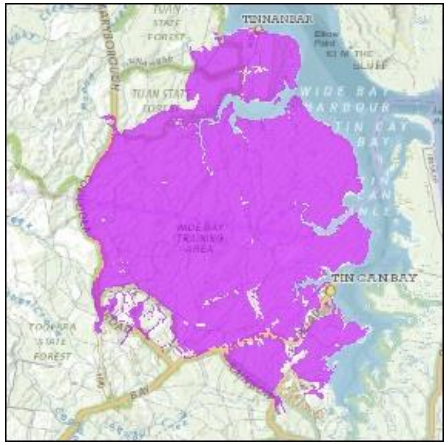
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
67	Climate change refugia		Not implemented as a separate decision. Where identified by panel members, or where indicated by modelling undertaken by SEQ catchments, existing landscape decisions have been flagged as being of refugial value in regards to climate change.	
seqs_l_68	Remnant patches of scribbly gum (*Eucalyptus racemosa*) open forest on sedimentary rocks in the Belmont – Cleveland area 	Regional	Scribbly gum forest on metamorphic rocks in the Burbank – Capalaba area; • Wildlife refugia (Criterion Ib): the patches occur within a heavily fragmented urban and peri-urban landscape. • Ecosystem variation (Criterion Ig): in SEQ scribbly gum occurs mostly on coastal sands – occurrences on sedimentary rocks are fairly restricted in SEQ. • In places there is a high density of hollow-bearing trees (Criterion Ii).	Ib (wildlife refugia): HIGH Ig (ecosystem variation): HIGH Ii (hollow-bearing trees): MEDIUM
Northern Panel Decisions				
seqn_l_01	Terrestrial bioregional corridors	State or Regional	The expert panel reviewed the existing bioregional corridors for northern SEQ. Corridors were assigned as being of State or Regional significance. For further information, refer to sections 2.3.2 and 3.2 of this report.	Criterion J

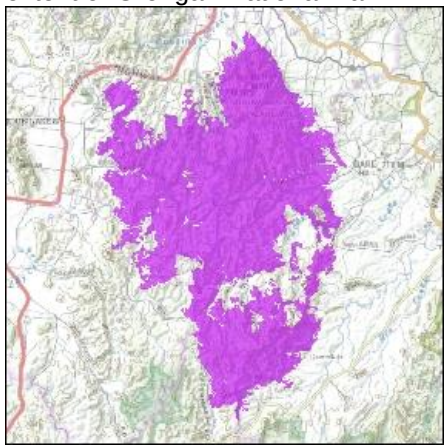
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_13	Riparian bioregional corridors	State	The riparian bioregional corridors provide connectivity through lowland areas of SEQ. See Table 4 for list of waterways considered riparian corridors. For further information, refer to sections 2.3.2 and 3.2 of this report.	Criterion J
seqn_l_14	Curtis Island 	State	A pest pig program implemented to reduce pig numbers, has been largely successful. General condition has improved and consequently biodiversity values are enhanced. The Panel recommended that the area warrants State significance due to : • Its value as a Wildlife refugia (Criterion Ib) as it has not been subject to intensive agricultural, pastoral and urban development land uses. • Unique mix of biogeographic elements (Criterion Ig): Curtis Island is very distinctive as the biodiversity is a mix of elements of the Southeast Queensland, Brigalow Belt and Central Queensland Coast bioregions. • The Panel also noted that most of the regional ecosystems on the island are considered to be in very good condition (Criterion K).	Ib (wildlife refugia): VERY HIGH Ig (ecosystem variation): HIGH K (condition): VERY HIGH (not implemented in GIS)

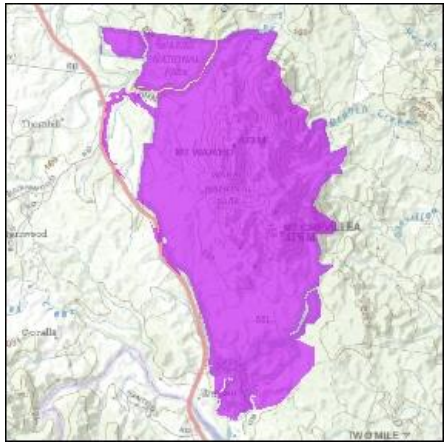
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_15	Coastal lowlands including Deepwater NP and areas west of Deepwater Creek 	State	The Panel noted that coastal landscapes including extensive freshwater swamps, wallum heath and beach scrubs (rainforest) east of Deepwater Creek have not been subject to intensive agricultural, pastoral and urban development pressure and remain in very good condition compared with the surrounding country. Low lying coastal areas are subject to storm impact. Likely vulnerable to climate change impacts. Access roads through the area have improved (i.e. now sealed). The area also has features important for biodiversity conservation including high habitat diversity and species richness and high numbers of species at or near their limits of range Consequently, it was recommended to upgrade all remnant units in the area to State significance under Criterion K and in recognition of other values present, including: • SEQ endemic taxa (Criterion Ia): coastal heath and rainforest species including *Acacia hubbardiana, Cupaniopsis shirleyana, Fitzalania bidwillii*, *Hakea actites, Pultenaea rariflora, Rhodamnia dumicola, Strangea linearis.* • Wildlife refugia (Criterion Ib): from clearing for coastal development. • Disjunct populations (Criterion Ic): *Dansiea elliptica, Germainia capitata, Hovea clavata.* • Limits of range (Criterion Id): close to or northern limits for some “wallum heath” species, for example *Acacia hubbardiana, A. suaveolens, Banksia aemula, Bauera capitata, Strangea linearis* and close to or southern limits of range for some beach scrub species, e.g. *Aglaia brownii, Dansiea elliptica, Ixora queenslandica, Litsea fawcettiana*. • Area of high species richness relative to other parts of SEQ (Criterion Ie). • Area nominated is in outstanding condition relative to surrounding landscape (Criterion K).	Ia (SEQ endemic taxa): MEDIUM Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): MEDIUM Id (limits of geographic range): HIGH Ie (high species richness): HIGH K (condition): VERY HIGH (not implemented in GIS)

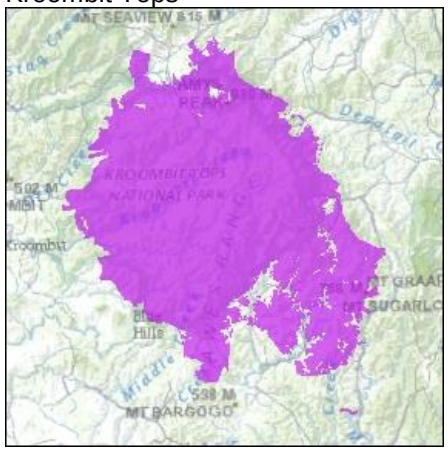
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_16	Coastal lowlands between Burnett River and Baffle Creek 	Regional	The Panel noted that coastal landscapes between the Burnett River and Baffle Creek are under increasing development pressure, including horticulture development. Consequently it is recommended to upgrade all planning units in the area designated by the panel to “Regional” based on criterion. • Criterion Ib: refugia from clearing.	Ib (wildlife refugia): HIGH

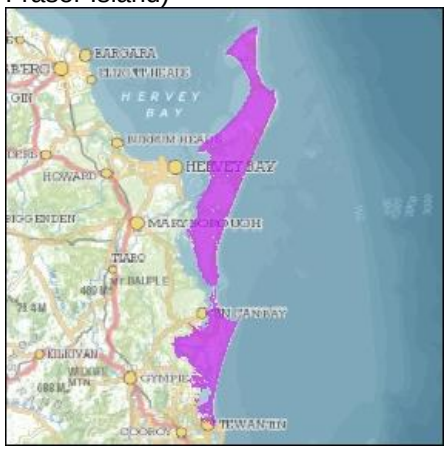
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_17	Areas adjacent to and including Burrum Coast National Park and Vernon State Forest 	State	Extensive “wallum” heath/sandplain landscapes at the confluence of four river systems (Burrum, Cherwell, Isis and Gregory) extending northward to the Elliott River. The tenure of the area includes protected area estate, unallocated state land and freehold country which is under increasing development pressure. “Wallum” heath/sandplain landscapes occur extensively throughout coastal mid-eastern Australia (McDonald and Elsol 1984). The examples on the mainland west of Fraser Island (Burrum Coast) form the northern section of the geographic range of these landscapes. As would be expected, many sandplain species are at or near the northern limits of geographic range within the Burrum Coast. The area also supports a number of narrow endemic taxa. • SEQ endemic taxa (Criterion Ia): including *Macrozamia lomandroides and Eucalyptus hallii, Melaleuca cheelii and Acacia attenuata* • Wildlife refugia (Criterion Ib): especially refugia from clearing associated with coastal development and sugar growing. • Disjunct populations (Criterion Ic): *Bossiaea brownii, Triodia marginata.* • Limits of range of flora species (Criterion Id), e.g. northern part of range of *Acacia baueri* subsp. *baueri, Brachyloma scortechinii, Petrophile shirleyae, Eucalyptus pilularis*.	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Ic: (disjunct populations): MEDIUM Id (limits of geographic range): HIGH

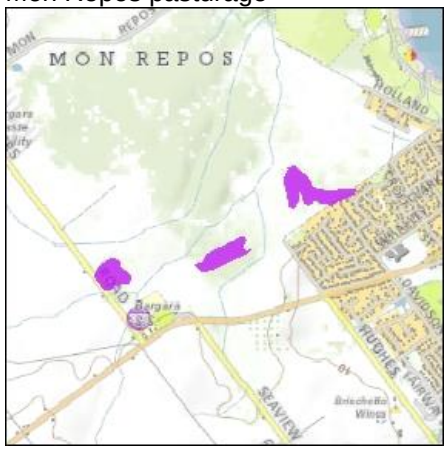
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_18	Wide Bay Military Training Area and surrounds 	State	"Wallum" heath/sandplain landscapes occur extensively throughout coastal mid-eastern Australia (McDonald and Elsol 1984). The examples on the mainland near Cooloola - southern Fraser Island including the Wide Bay Military Training Area are notable as there are concentrations of species with northern and southern limits of range. • SEQ endemic taxa (Criterion Ia): *Acacia attenuata, A. hubbardiana, Melaleuca pachyphylla, Grevillea reptans, Haemodorum tenuifolium, Macrozamia pauli-guilielmi, Micromyrtus littoralis, Petrophile shirleyae, Philotheca queenslandica, Strangea linearis, Westringia tenuicaulis, Xylomelum benthamii*. • Wildlife refugia (Criterion Ib): intact coastal landscape. • SEQ disjunct taxa (Criteria Ic) including *Acacia* sp. (Comet L.Pedley 4091), *Hovea clavata, Notelaea* sp. (Barakula A.R.Bean 7553). • Pronounced overlap zone between taxa with northern and southern range limits (Criterion Id) examples: northern – *Eucalyptus pilularis, Angophora woodsiana, Eucalyptus tindaliae, Tetratheca thymifolia*; southern – *Acacia flavescens, Melaleuca viridiflora, Eucalyptus latisinensis*. • High species richness (Criterion Ie). Faunal values include habitat for the water mouse *Xeromys myoides*, ground parrot *Pezoporus wallicus* and major shore bird habitats.	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): MEDIUM Id (limits of geographic range): HIGH Ie (high species richness): MEDIUM
19	Serpentinite country		Addressed in seqn_fl_5.	Addressed in seqn_fl_5
20	Fuzzy box *Eucalyptus conica* outliers		Not implemented. For further information, refer to the flora north decision 20.	Addressed in seqn_fl_20
21	Barambah Creek Gorge		Addressed in seqn_fl_6.	Addressed in seqn_fl_6

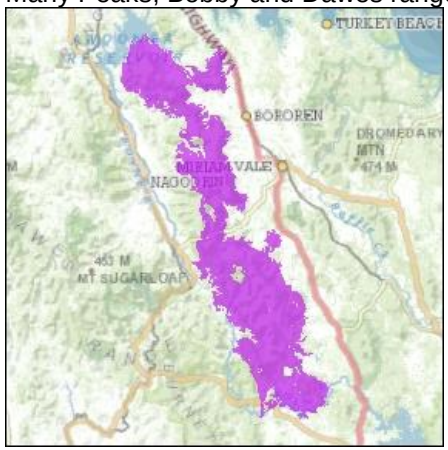
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_22	Coast Range from Mt Walsh to northern extent of Grongah National Park 	State	The area delineated contains rugged elevated granite (maximum altitude approx. 700m) as well as other volcanic rocks of Triassic age and small occurrences of metamorphic rocks. The topography and geology provides a complexity of microhabitats ranging from dry, exposed areas with minimal soils to moist sheltered valleys. Substantial areas of old growth eucalypt vegetation are present and a wide range of flora has been recorded from the area. • SEQ endemic taxa (Criterion Ia): including narrow endemics - *Acomis acoma, Argophyllum nullumense, Arytera microphylla, Argyrodendron* sp. (Kin Kin W.D.Francis AQ81198)*, Boronia foetida, Bossiaea rupicola, Melaleuca formosa, Melaleuca sp. (Mt Walsh P.I.Forster PIF7477)*, *Cassinia collina, Backhousia subargentea, Commersonia viscidula, Coopernookia scabridiuscula, Corynocarpus rupestris* subsp*. arborescens, Eucalyptus decolor, E. dura, E. major, E. montivaga, Hernandia bivalvis, Leucopogon rupicola, L.* sp. (Burrum Heads A.R.Bean 7802), *Lomandra confertifolia* subsp*. confertifolia, Macrozamia cardiacensis, Micromyrtus vernicosa, Triplarina volcanica* subsp*. borealis, Samadera sp. (Mt Goonaneman J.Randall 738)*, *Seringia hillii.* • Wildlife refugia (Criterion Ib): refugia from clearing and topographic isolate. • Disjunct populations (Criterion Ic): *Acacia blakei subsp. blakei, A. pubicosta, Astrotricha cordata, Harmogia densifolia, Backhousia oligantha, Bertya oleifolia, Boronia bipinnata, Calytrix tetragona, Cryptocarya onoprienkoana, Cupaniopsis simulata, Cycas megacarpa, Daviesia discolor, Dinosperma melanophloia, Doodia linearis, Gonocarpus oreophilus, Hibbertia cistoidea, H.* sp. (Isla Gorge P.Sharpe 598), *Hibiscus normanii, Homalanthus stillingiifolius,*	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): VERY HIGH Ie (high species richness): VERY HIGH Ik (climate change refuge): VERY HIGH

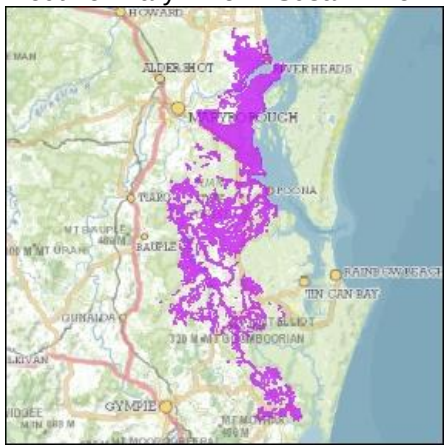
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			Isotoma axillaris, Kunzea flavescens, Olearia gravis, Lasiopetalum ferrugineum var. *cordatum, Lepidosperma elatius, Logania albiflora, Persoonia amaliae, Ricinocarpos linearifolius,Seringia corollata,* • High species richness relative to other parts of SEQ (Criterion Ie). • Given the heterogeneity of microhabitats available, the area is also considered as a potential refugia from climate change (Criterion Ik).	
23	Remnant rainforest in and adjacent to Mount Bauple National Park (Scientific)		Addressed in seqn_fl_22.	
24	Mt Benarige and Mt Woocoo		Addressed in seqn_l_45.	
25	Tinana and Coondoo Creek riparian corridors		Addressed in seqn_fl_17 and seqn_l_13.	
26	Freshwater wetlands		Not implemented.	
27	Central SEQ gallery rainforests		Addressed in seqn_fl_17.	
seqn_l_28	Warro National Park 	Regional	The area depicted is associated with Grevillea Range, a prominent local feature. Habitat modelling exercises by the Queensland Herbarium, suggest the area may contain habitat for a number of EVNT taxa. • Wildlife refugia (Criterion Ib). • High relative EVNT taxa species richness as modelled by the QLD Herbarium (Criterion Ie).	Ib (wildlife refugia): HIGH Ie (high species richness): HIGH

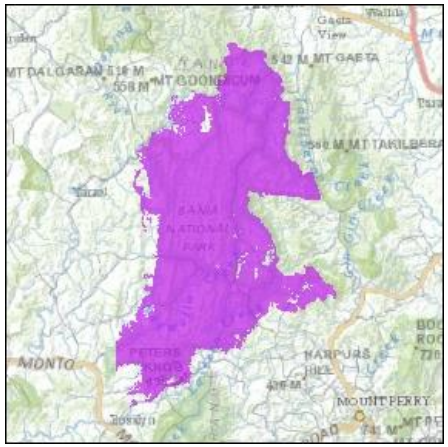
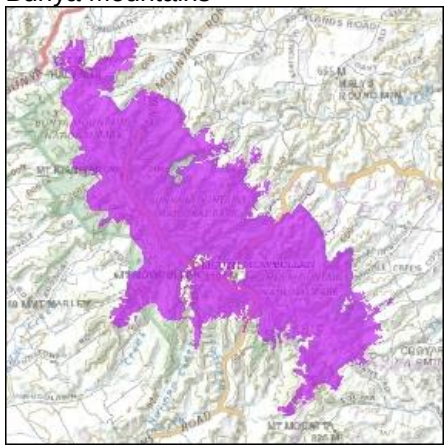
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_29	Kroombit Tops 	State	A large cool, moist, elevated area on the north-west margins of SEQ. Reflective of a complex geology, with residuals of Cretaceous sandstone over volcanics across higher parts. The area may be impacted by climate change in the future (already some dieback of ferns). • SEQ endemic taxa (Criterion Ia): including narrow endemic taxa – *Asperula conferta, Astrotricha brachyandra, A. umbrosa, Bossiaea rupicola, Bulbine vagans, Melaleuca formosa, Comesperma hispidulum, Eucalyptus major, E. montivaga, Goodenia* sp. (Mt Castletower M.D.Crisp 2753), *Hakea florulenta, Lomandra filiformis* subsp*. coriacea, Myrsine ireneae* subsp*. curvata, Parsonsia kroombitensis, Persoonia volcanica, Philotheca glasshousiensis, Triplarina volcanica* subsp*. borealis*; *Zieria vagans.* Also marginal populations of some BRB endemics including *Boronia palasepala*, *Eucalyptus corynodes, E. suffulgens*. Only known population of the Kroombit tinkerfrog *Taudactylus pleione*, and wide range of other vertebrate and invertebrate taxa (Hines 2014). • Wildlife refugia (Criterion Ib): associated with its large size and its function as a cool, moist topographic isolate. • Disjunct populations (Criterion Ic): *Acacia blakei* subsp*. blakei, A. floribunda, A. gnidium, A. leprosa, Bertya opponens, Blechnum wattsii, Bossiaea brownii, Ceratopetalum apetalum, Cycas megacarpa, Eucalyptus melanoleuca, Hibbertia riparia, H.* sp. (Isla Gorge P.Sharpe 598)*, Homalanthus stillingiifolius, Isotoma axillaris, Leptospermum brachyandrum, Leucopogon mitchellii, Oxylobium arborescens, Philotheca difformis* subsp*. smithiana, Poa cheelii, Ricinocarpos linearifolius, Thismia rodwayi.* • High species richness relative to other parts of SEQ (Criterion Ie).	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): VERY HIGH Ie (high species richness): VERY HIGH Ig: (ecosystem variation): VERY HIGH Ik: (climate change refuge): VERY HIGH

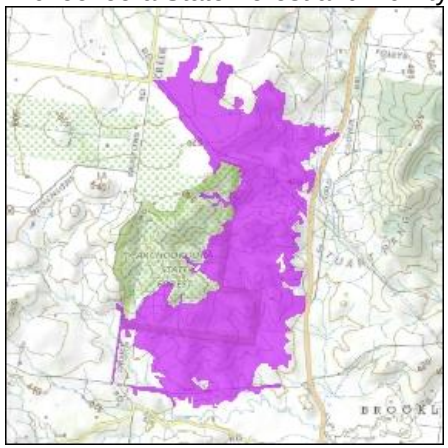
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			• Ecosystem variation (Criterion Ig) • Climate change refuge (Criterion Ik): Given the diversity of habitats, the areas large size and position as a moist topographic isolate, the area will likely provide a refugia to climate change.	
seqn_l_30	Great Sandy National Park (Cooloola & Fraser Island) 	State	This extensive and mostly intact landscape is an outstanding example of Quaternary coastal dune formation and succession, with at least six stages of dune-building evident above older sandbeds and estuarine deposits, resting on a basement of eroded Mesozoic sandstone. The Cooloola landscape exhibits very high ecosystem diversity (both terrestrial and aquatic), with plant communities of varying structural type namely open and closed heaths and sedgelands, scrubs and thickets, woodlands and open and closed-forests of varying height, including tall forests dominated by blackbutt, satinay/brushbox and rainforest. Freshwater and estuarine wetlands are extensive and include coastal creeks, rivers and lakes, swamps and patterned fens, wet heaths and melaleuca wetlands. High levels of habitat diversity are reflected in a commensurate large number of plant and animal species (e.g. >1000 vascular plant taxa), including many species classed as threatened and/or endemic to the region, as well as a number of distinctive groups or assemblages such as ‘acid’ frogs and ‘wallum’ heaths. Considered a key site for bird conservation in Australia (Cooloola & Fraser Coast Important Bird Area – Dutson et al. 2009). • SEQ endemic taxa (Criterion Ia): particularly “wallum” heath species including narrow endemics - *Acacia attenuata, Acacia baueri* subsp*. baueri, Archidendron lovelliae, Argyrodendron* sp. (Kin Kin W.D.Francis AQ81198)*, Astrotricha glabra, Boronia keysii, B. rivularis, Melaleuca pachyphylla, Callitris columellaris, Cryptocarya foetida, Eucalyptus latisinensis, Glycine argyrea, Grevillea leiophylla, G. reptans, Hakea actites, H. florulenta, Haemodorum tenuifolium, Lepyrodia imitans*,	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Id (limits of geographic range): HIGH

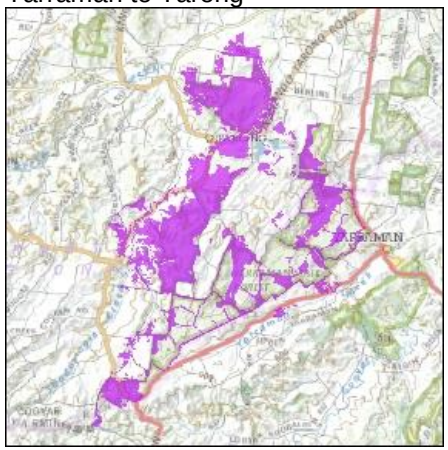
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			Macrozamia douglasii, M. pauli-guilielmi, Micromyrtus littoralis, Petrophile shirleyae, Philotheca queenslandica, Pultenaea robusta , Rhodamnia acuminata, Schoenus ornithopodioides, Strangea linearis, Symplocos harroldii, Syncarpia hillii, Tecomanthe hillii, Westringia tenuicaulis, Xylomelum benthamii. • Wildlife refugia (Criterion Ib): large area of undisturbed coastal landscapes. • Limits of range (Criterion Id): especially northern mainland e.g. *Blandfordia grandiflora, Corymbia gummifera, Cryptocarya foetida, Cyclophyllum longipetalum, Eriostemon australasius, Genoplesium psammophilum, Tetratheca thymifolia and Xanthorrhoea macronema.* • Fauna values – area contains protected river catchment with threatened fish, endemic invertebrate assemblages associated with dune habitats and core habitat for 'acid' frog species.	
31	Waterholes along Munna - Teebar Creek		Not implemented at this time.	
seqn_l_32	Mon Repos pasturage 	Regional	Wildlife refugia (Criterion Ib): it is the only surviving large patch of remnant vegetation associated with the unique basalt coastal landscape between Burnett Heads and Elliott Heads.	Ib (wildlife refugia): VERY HIGH

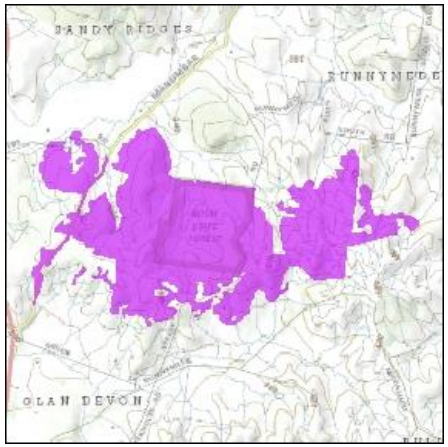
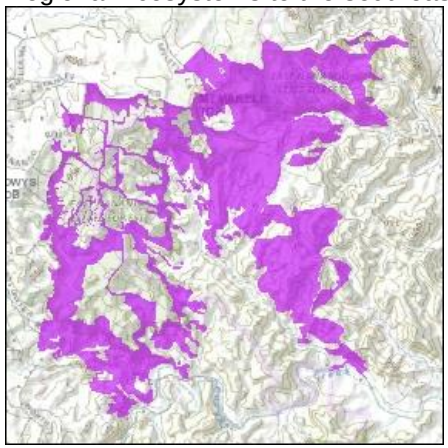
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_33	Many Peaks, Bobby and Dawes ranges. 	State	Yellow carabeen is dominant at high altitudes and is also found on the border ranges but not on Kroombit Tops. Other values include: • SEQ endemic taxa (Criterion Ia): including narrow endemics – *Acomis acoma, Actephila bella, Argyrodendron* sp. (Kin Kin W.D.Francis AQ81198), *Bosistoa transversa, Eucalyptus montivaga, Macadamia jansenii, Medicosma cunninghamii, M. elliptica, Niemeyera chartacea, Phyllanthus brassii, P. sauropodoides, Rhodamnia dumicola, R. glabrescens, Toechima dasyrrhache, Xanthostemon oppositifolius*. • Wildlife refugia (Criterion Ib): large topographic isolate. • Disjunct populations of species (Criterion Ic): species that grow in the high rainfall rainforests of SEQ such as *Brachychiton acerifolius, Sloanea woollsii*. • High species richness (Criterion Ie): QLD Herbarium species habitat modelling indicates this area may contain habitat for a number of threatened taxa. • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements are present across much of the general area described considered to provide refugial functions and/or which faciliate adapation zones (SEQ Catchments 2016).	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): HIGH Ie (high species richness): HIGH Ik (climate refugia): VERY HIGH

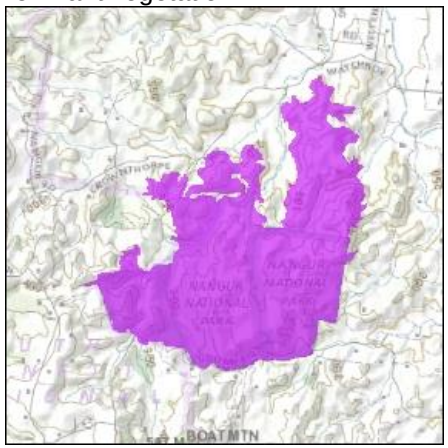
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_34	Coastal strip between Tinana Creek and mouth of Mary River – Susan River 	State	The panel noted that vegetation on the mainland between Tinnanbar and the Mary River has been retained between land cleared for pine plantations and Great sandy Strait part of which is included within fish habitat reserve. The remnants contain flora and fauna species of conservation interest. Consequently it is recommended to upgrade all planning units in an area designated by the panel to State significance based upon the flora and fauna values and the threat posed by coastal development. The northern end relatively unknown. Sandy soils marginal for grazing and sugarcane. Different to wallum areas to south which are sand. Tends to be alluvium / sandy depaurperate soils. Some nature refuges – Tandora and tandora wetlands. • SEQ endemic taxa (Criterion Ia): including *Acacia attenuata, A .baueri* subsp. *baueri, A. leiocalyx* subsp. *herveyensis, Boronia rivularis, Melaleuca pachyphylla, Grevillea leiophylla, G. reptans, Habenaria harroldii, Hakea actites, Petrophile shirleyae, Prasophyllum exilis, Pultenaea rariflora, Macrozamia pauli-guilielmii, Strangea linearis, Westringia tenuicaulis, Xylomelum benthamii* • Wildlife refugia (Criterion Ib): especially refugia from clearing for pine plantations and sugar growing. Refugia for fiddler crab species at their range limits *Uca signata*, *Uca seismella* • High species richness for ground orchids (Criterion Ie). The area delineated adjoins fish habitat reserves, a RAMSAR site and is otherwise strategically located with mainland frontage to Great Sandy Strait. For further information on the Wide Bay-Burnett area, refer to seqn_l_18.	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia): VERY HIGH Ie (high species richness): HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_35	Bania National Park 	Regional	Bania National Park is an extensive area of eucalypt open forest and rainforest at moderate altitude. It does not contain large numbers of species of conservation interest but being large it is an important wildlife refugia. • SEQ endemic taxa (Criterion Ia): *Arytera microphylla, Cupaniopsis shirleyana, Eucalyptus major, Rhodamnia dumicola*. • Wildlife refugia (Criterion Ib): Bania is a very large continuous tract of eucalyptus open forest and rainforest. • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements present across parts of the general area described are considered to provide refugial functions and/or which faciliate adapation zones (SEQ Catchments 2016).	Ia (SEQ endemic taxa): MEDIUM Ib (wildlife refugia): VERY HIGH Ik (climate refugia): VERY HIGH
seqn_l_36	Bunya Mountains 	State	Topographically isolated vegetation with high ecosystem diversity some of components of which are unique/geographically distinct, e.g. Bunya pine rainforest and grasslands (balds). The area also contains one of the only cloud forests present within the northern extent of the SEQ bioregion. Additional values include the western range limits and/or disjunct populations of many species of rainforest birds, frogs and other fauna, e.g. sooty owl *Tyto tenebricosa*, golden-tipped bat *Kerivoula papuensis*, giant barred frog *Mixophyes iteratus*, black-breasted button quail *Turnix melanogaster*. Considered part of Important Bird Area (Dutson et al. 2009). Pig damage has been observed in recent times, which has not been prevalent for many years. There is also possibly a decrease in the local dingo population. Extensive clearing has occurred outside the park. Identified values include: • SEQ endemic taxa (Criterion Ia): *Araucaria bidwillii, Bothriochloa bunyensis, Bulbine vagans, Callitris baileyi, Clematis fawcettii, Triflorensia cameronii*. • Wildlife refugia (Criterion Ib): moist topographic	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): MEDIUM Ie (high species richness): HIGH Ig (ecosystem variation): VERY HIGH Ik: (climate change refuge): VERY HIGH

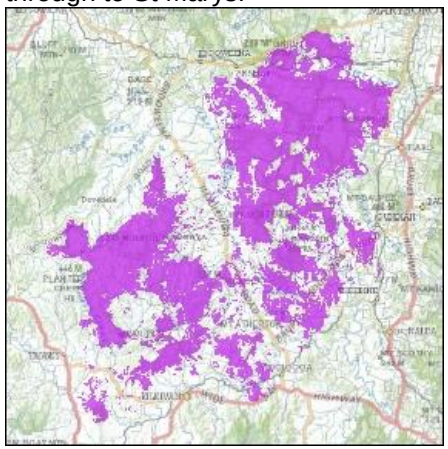
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
			isolate and refugia from clearing. • Disjunct populations (Criterion Ic): *Cryptocarya floydii, Haloragis exalata* subsp. *velutina, Pomaderris aspera*. • High species richness (Criterion Ie): Over 30 species of threatened or near threatened taxa have been recorded, including the endemic grass *Bothriochloa bunyensis* (V). • Unique rainforest-grassland ecosystems (Criterion Ig). • Climate change refuge (Criterion Ik): Given the diversity of habitats, the areas large size and position as a moist topographic isolate, the area will likely act as a refugia from climate change. Also see Brigalow Belt South Landscape Expert Panel report - brbs_l_2.	
seqn_l_37	Archookoora State Forest and vicinity 	Regional	There is limited flora data available for the area and as such it has not been assessed against several criteria, in particular Ia and Ic. The tract is largely composed of dry eucalypt woodlands, however also contains moist eucalypt woodlands/open forests, as well as dry rainforest remnants. Whilst some larger tracts of remnant vegetation are still present to the south east, extensive clearing has occurred to the west. • Wildlife refugia (Criterion Ib): refugia from clearing.	Ib (wildlife refugia): HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_38	Yarraman to Tarong 	Regional	• SEQ endemic taxa (Criterion Ia): *Araucaria bidwillii, Arytera foveolata, A. microphylla, Callitris baileyi, Erythrina numerosa*, *Paspalidium grandispiculatum, Triflorensia cameronii*. • Wildlife refugia (Criterion Ib): refugia from clearing.	Ia (SEQ endemic taxa): MEDIUM Ib (wildlife refugia): HIGH
39	Fragmented sub-regions (less than 30% remnant vegetation) – remnant vegetation		A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. Based on 2003 v5 Regional Ecosystem mapping, the following subregions have less than 30% remnant vegetation in the northern SEQ: South Burnett (26%). Remnant vegetation provides a refugia from clearing in fragmented subregions and should be retained to maintain biodiversity. Not implemented, considered to be largely addressed via existing diagnostic Criteria (e.g. Criteria C - tract size, Criteria B2 - ecosystem value at the subregion level and Criteria D – relative ecosystem size with respect to the subregional level).	

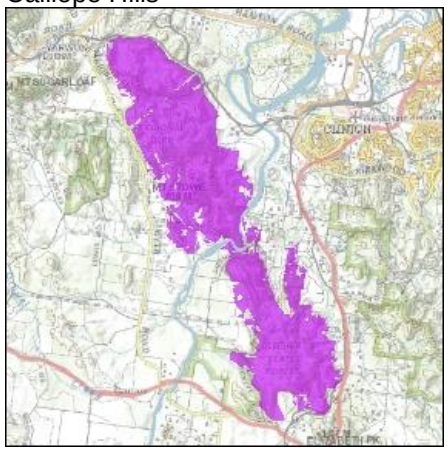
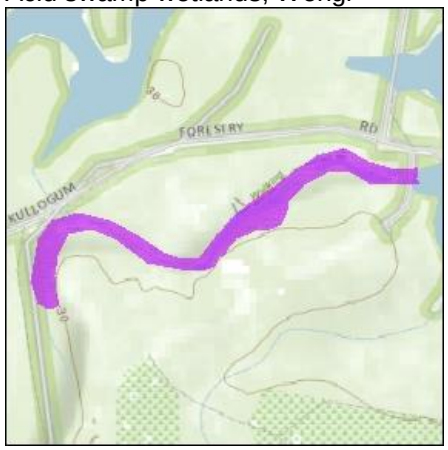
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_40	Booie State Forest and surrounds 	Regional	There is limited flora data available for the area and as such it has not been assessed against several criteria, in particular Ia and Ic. • Wildlife refugia (Criterion Ib).	Ib (wildlife refugia): HIGH
seqn_l_41	East Nanango State Forest and Regional Ecosystems to the southeast 	Regional	There is limited flora data available for the area and as such it has not been assessed against several criteria, in particular Ia and Ic. Notwithstanding, the remnant rainforest at the north-eastern extent has not been converted to pine forests, and is in relatively good condition. Bottle tree scrub is present on the slopes, whilst rainforest remnants to the east are important providing stepping stone links to the head of Brisbane River and Mt Stanley. • Refugia for wildlife (Criterion Ib). • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements present across parts of the general area described are considered to provide refugial functions and/or which faciliate adapation zones (SEQ Catchments 2016).	Ib (wildlife refugia): HIGH Ik (climate refugia): VERY HIGH
42	Wrattens Forest Reserve / Upper Kandanga Forest Reserve		Addressed in seqn_fl_42.	

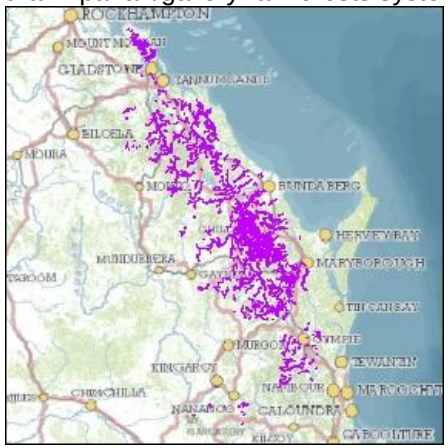
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_43	Nangur NP - including surrounding remnant vegetation 	Regional	In additions to eucalypt woodlands/open forest communities on igneous and sedimentary geologies, the area also encompasses both hoop pine *Araucaria cunninghamii* and bottle tree *Brachychiton rupestris* rainforest communities. • Refugia from clearing (Criterion Ib). • High species richness (Criterion Ie): QLD Herbarium species habitat modelling indicates this area may contain habitat for a number of threatened flora taxa. Additionally, the area is one of the two known locations for the endangered Nangur skink *Nangura spinosa*.	Ib (wildlife refugia): HIGH Ie (high species richness): HIGH

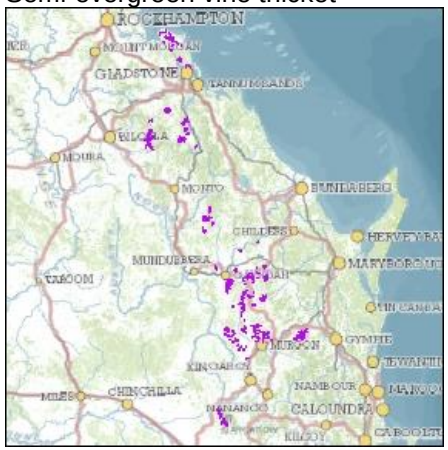
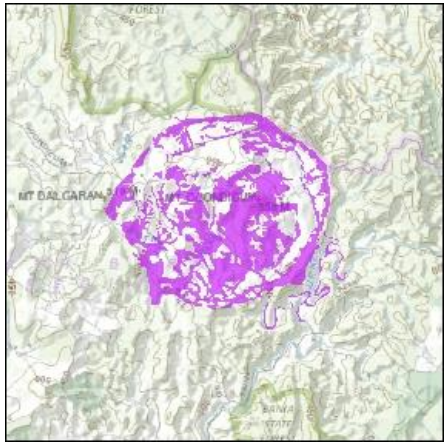
Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_44	SEQ Capricorn, Bunker Group and Lady Elliott islands 	State	• Wildlife refugia (Criterion Ib): for migratory shorebirds and seabirds, including large populations of black noddies *Anous minutus* and shearwaters • Disjunct populations of *Pisonia* forests (Criterion Ic). • Concentrations of taxa at the limits of their geographic ranges (Criterion Id): southern limit for *Boerhavia albiflora, Pisonia grandis, Scaevola taccada* and *Trachymene* (Lady Elliott Island). • Very high in shorebird and seabird species richness (Criterion I e). • Internationally significant nesting sites for endangered loggerhead turtles *Caretta caretta* and vulnerable green turtles *Chelonia mydas*; Significant shorebird nesting and roosting sites for little tern *Sternula albifrons* and whimbrel *Numenius phaeopus*; sooty oystercatcher *Haematopus fuliginosus* and red-tailed tropicbird *Phaethon rubricauda*; and white-bellied sea-eagle *Haliaeetus leucogaster*. Islands and drying reefs are significant roosting sites for migratory shorebirds. • Fauna migratory corridors for shorebirds/seabirds (including 20 JAMBA/CAMBA/ROKAMBA species) and turtles.	Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): HIGH Ie (high species richness): VERY HIGH Ij (Breeding / roosting sites): VERY HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_45	Complex system associated with Grongah Forest Reserve north-east through to St Marys. 	State	A large intact complex system. Values Identified by expert panels include: • SEQ endemic rainforest taxa (Criterion Ia): *Argyrodendron* sp. (Kin Kin W.D.Francis AQ81198), *Arytera foveolata, A. microphylla, Bosistoa transversa, Backhousia subargentea, Cupaniopsis shirleyana, Hernandia bivalvis, Medicosma cunninghamii, Macrozamia longispina, Rhodamnia dumicola. Samadera sp. (St Mary P.Grimshaw+ PG2159).* Also includes other taxa - *Commersonia leiperi, Macrozamia parcifolia, M. pauli-guilielmi.* • Wildlife refugia (Criterion Ib): very large forested expanse including elevated country (e.g. 730m Mt Boogooromunya). • Disjunct populations (Criterion Ic): *Atalaya rigida, Bosistoa pentacocca, Cupaniopsis simulata, Rhodamnia pauciovulata, Agathis robusta, Callitris endlicheri*, *Macrozamia longispina.*	Ia (SEQ endemic taxa): HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): MEDIUM

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_46	Coastal lowlands from Eurimbula to Wild Cattle Island 	State	The Panel noted that coastal landscapes including extensive coastal woodlands, freshwater swamps, wallum heath and beach scrubs (rainforest) between Eurimbula and Wild Cattle Island in the far north of SEQ remain relatively intact although there is increasing pressure for development and intensification of land use. The area also has features important for biodiversity conservation including high habitat diversity and as a zone of gradual transition between the SEQ and the Brigalow Belt containing species at or near their limits of range. Consequently it is recommended to upgrade all remnant units in an area to State significance under Criterion K and in recognition of the other values present. There has been a recent purchase of Turkey Creek Station. • Wildlife refugia (Criterion Ib): refuge from coastal development. • Limits of range (Criterion Id): close to or at northern limits for some species associated with the notophyll type beach scrub rainforest at Eurimbula, e.g. *Archontophoenix alexandrae, Lepiderema punctulata*. • Area of high species richness (Criterion Ie) relative to other parts of SEQ. • Coastal lowlands within the area identified are considered intact (Criterion K).	Ib (wildlife refugia): VERY HIGH Id (limits of geographic range): HIGH Ie (high species richness): HIGH K (condition): VERY HIGH – not implemented in the GIS

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_47	Calliope Hills 	Regional	This area incorporates parts of Mount Stowe and Beecher State Forests, as well as the Calliope Regional Park. • Wildlife refugia (Criterion Ib): Part of a large continuous tract of eucalypt woodland and open forest and rainforest. • Disjunct populations (Criterion Ic): *Dansiea elliptica, Barklya syringifolia*. • Climate refugia (Criterion Ik): A combination of ecosystem and landscape elements present across parts of the general area described are considered to provide refugial functions and/or which faciliate adapation zones (SEQ Catchments 2016).	Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): MEDIUM Ik (climate refugia): High
48	Woody island		Not implemented at this stage. No values nominated - to be considered in future iteration. Completely different geologically from Fraser Island.	
seqn_l_49	Acid swamp wetlands, Wongi 	Regional	These waterholes are within Wongi State Forest in the upper Burrum River above Lenthall's Dam. This series of very stable, deep pools has been persistent over thousands of years. It contains unique geomorphological features and aquatic fauna including honey blue eyes *Pseudomugil mellis* and the southern purple-spotted gudgeon *Mogurnda adspersa* (QPWS 2010 unpublished). The area also has high indigenous cultural heritage values including a women's site, and is one of the regionally prioritised wetlands by the Burnett-Mary Regional Group. • Wildlife refugia (Criterion Ib). The expert panel noted that the assessment of the conservation values of the area would benefit from more detailed information.	Ib (wildlife refugia): VERY HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_50	Riparian lowland forest systems (other than riparian/gallery rainforests systems) 	Regional	Riparian lowland forest ecosystems are important components of the lowland landscape, frequently exhibiting higher species richness and abundance than surrounding habitats. They act as movement pathways along riparian systems for a number of species, especially aves. They also often provide critical resources for many species in terms of food, shelter and nesting site. For example, the seasonal flowering of melaleuca is important for species of honeyeaters, whilst narrow bands of flooded gum along watercourses are significant habitat for koalas *Phascolarctos cinereus*, especially in times of drought. Large trees in these systems also act as a source of nest hollows for many species of birds, bats and arboreal mammals (Lovett & Price 2007). Due to historical and preferential clearing in SEQ, remaining systems are often heavily fragmented and have undergone a substantial reduction in their extent. In many areas, condition is often poor and subject to substantial weed problems. • Wildlife refugia (Criterion Ib). • High species richness (Criterion Ie). • Larger trees in such systems are often a significant source of nest hollows (Criterion Ii). Note – for the same decision relevant to the southern portion of the SEQ bioregion refer to seqs_l_57.	Ib (wildlife refugia): VERY HIGH Ie (high species richness: HIGH Ii (hollow bearing trees): VERY HIGH
51	Climate Change Refugia		Not implemented as a separate decision in itself, rather, where identified by panel members, or where indicated by modelling undertaken by SEQ catchments, existing landscape decisions have been flagged as being of refugial value in regards to climate change.	

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
seqn_l_52	Semi-evergreen vine thicket 	State		Ib (wildlife refugia): VERY HIGH Ie (high species richness): VERY HIGH Ij (breeding / roosting sites): VERY HIGH Ik (climate refuge): VERY HIGH
seqn_l_53	Goondicum Crater 	Regional	Encompasses a distinct geomorphological feature with a unique geology present. Communities were identified by the panel as having high ecosystem variation (criteria Ig).	Ig (ecosystem variation) : HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
Brigalow Belt BPA Version 1.3 Decisions that overlap the SEQ bioregion				
brbs_l_8	Fragmented Sub-regions (less than 30% remnant vegetation) - largest remaining examples of each regional ecosystem in a subregion.	State	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Tara Downs (6%), Taroom Downs (7%), Moonie – Barwon Interfluve (11%), Macintyre – Weir Fan (13%), Eastern Darling Downs (14%), Moonie River – Commoron Creek Floodout (15%), Dulacca Downs (15%), Balonne – Culgoa Fan (27%), Weribone High (28%) Dawson River Downs (10%), Callide Creek Downs (10%). In addition the panel recommended that the eastern part of the Southern Downs subregion be included (22%), separated east/west on a line supplied by Bruce Wilson. The largest remaining examples of each regional ecosystem in a subregion represent important refuges from clearing in these fragmented landscape.	Ib (refuge from clearing): VERY HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
brbs_l_9	Fragmented Sub-regions (less than 30% remnant vegetation) –stockroutes and associated reserves	State	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Tara Downs (6%), Taroom Downs (7%), Moonie – Barwon Interfluve (11%), Macintyre – Weir Fan (13%), Eastern Darling Downs (14%), Moonie River – Commoron Creek Floodout (15%), Dulacca Downs (15%), Balonne – Culgoa Fan (27%), Weribone High (28%) Dawson River Downs (10%), Callide Creek Downs (10%). In addition the panel recommended that the eastern part of the Southern Downs subregion be included (22%), separated east/west on a line supplied by Bruce Wilson. Stockroutes and associated camping and water reserves provide critical connectivity in fragmented landscape. They also offer opportunities to restore habitat and connectivity in highly cleared landscapes.	Ib (refuge from clearing): VERY HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
brbs_l_15	Fragmented sub-regions (less than 30% remnant vegetation) – remnant vegetation	Regional	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Tara Downs (6%), Taroom Downs (7%), Moonie – Barwon Interfluve (11%), Macintyre – Weir Fan (13%), Eastern Darling Downs (14%), Moonie River – Commoron Creek Floodout (15%), Dulacca Downs (15%), Balonne – Culgoa Fan (27%), Weribone High (28%) Dawson River Downs (10%), Callide Creek Downs (10%). In addition the panel recommended that the eastern part of the Southern Downs subregion be included (22%), separated east/west on a line supplied by Bruce Wilson. Remnant vegetation provides a refuge from clearing in fragmented subregions and should be retained to maintain biodiversity.	Ib (refuge from clearing): HIGH

Decision number	Description	Panel Recommended Significance	Identified values in BPA	Criterion Values
brbs_l_16	Core areas	Bioregional/State	Tracts are patches of continuous remnant vegetation. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Based on the Tract Size analysis (Criterion C), 10 core areas are identified for the southern Brigalow Belt. They are: 1. Blackdown Tableland, 2. Expedition Range /Amphitheatre, 3. Carnarvon Range, 4. Kroombit Tops, 5. Inglewood Sandstones, 6. Auburn Range / Concose, 7. Coominglah, 8. Barakula, 9. Thomby Range, 10. Yuleba.	Ib (wildlife refugia): Very High
brbn_l_71	Natural palustrine & lacustrine wetlands	State	Wetlands of the Brigalow Belt North bioregion have been mapped as part of the GBR catchments and incorporated into the BPA analysis with significance rating based on naturalness and size. Non-remnant, natural (H1 or H2) palustrine & lacustrine wetlands and waterbodies have had their significance classified according to the following rules: State - within a Directory of Important Wetland or RAMSAR boundary, else Regional – greater than, or equal to, 5 Ha, Local – less than 5 Ha. The following areas were identified by the panel as being of particular interest for conservation of wetlands: Frankfield Swamp Wetlands in the Dawson River Downs subregion.	Ib (wetlands): VERY HIGH

3.6 Data collection

Data collection has not been spatially uniform with regards to species records. Many areas are under surveyed relative to areas with high densities of records and known values. Poorly sampled areas can be identified relatively easily using species record datasets. Areas such as roads are clearly more heavily sampled, while ranges and escarpments and interior parts of major floodplain wetland systems are underrepresented and should be the focus of future survey effort. Access to private lands may be more achievable in the future by forming joint projects with the NRM groups, e.g. Burnett-Mary Regional Group and SEQ Catchments.

3.7 Data access and conditions

The public will be able to access the information contained in the BPA on the Queensland Government Spatial Catalogue website at http://qldspatial.information.qld.gov.au. Specific details for point records will not be included, thus end users will need to seek further advice from EHP when this detail is required.

4 Summary

The North and South landscape expert panels have made a significant contribution to biodiversity assessment and planning in the SEQ bioregion. Reviewing terrestrial and riparian corridor networks and special biodiversity areas could not have been achieved without the cooperation of these experts and their local expert knowledge.

The panels felt that the biggest issue facing SEQ is the loss of connectivity for species and ecosystems to move in response to climate change. Therefore maintaining landscape resilience in the face of an uncertain future climate will be extremely important. Landscape connectivity and conserving topographic variation are some ways to achieve this. Riparian areas will continue to concentrate resources and provide refuge. The impermeability of the developed landscapes of SEQ due to urban development, horticulture and grazing are a particular issue.

The highly fragmented vegetation of SEQ challenges many of the traditional concepts of wildlife corridors. However the landscape panels felt very strongly that in areas where corridor values have been compromised due to heavy development pressures and historical vegetation clearing, all remaining vegetation is incredibly important for connectivity. The stepping stones and mosaic patterns of vegetation that remain will still allow for movement of some species (especially birds) through a highly modified landscape.

The resulting planning assessment is now a useful basis for a variety of applications including the protection and management of areas of high conservation value, development assessment, local government planning, vegetation management and internal EHP policy and procedures.

The landscape expert panel process should be revisited on a regular basis. An appropriate review timeframe would be approximately every two years to coincide with a new release of Queensland Herbarium RE mapping.

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Appendix 1 Acronyms and Abbreviations

BAMM	Biodiversity Assessment and Mapping Methodology
BMRG	Burnett-Mary Regional Group
BPA	Biodiversity Planning Assessment
BRB	Brigalow Belt - a bioregion within the Interim Biogeographic Regionalisation for Australia (IBRA) framework
CAMBA	Agreement between the Australian Government and the government of the People's Republic of China for the Protection of Migratory Birds and their Environment
CORVEG	The site survey database maintained by the Queensland Herbarium
DCDB	Digital Cadastral Database—a spatial database of Queensland property boundaries.
DERM	Department of Environment and Resource Management (former Queensland Government department)
DILGP	Department of Infrastructure, Local Government and Planning
DNRM	Department of Natural Resources and Mines
DSITI	Department of Science, Information Technology and Innovation
EHP	Department of Environment and Heritage Protection
EVNT	Endangered, vulnerable or near threatened under the Queensland Nature Conservation Act (1992) and Commonwealth Environment Protection and Biodiversity Conservation Act (1999).
EPA	Environmental Protection Agency (former Queensland Government department)
EPBC	Environmental Protection and Biodiversity Conservation Act 1999
GBR	Great Barrier Reef
GDE	Groundwater dependent ecosystems
GIS	Geographic information system
HERBRECS	Specimen based register of plants held by Queensland Herbarium
JAMBA	Agreement between the Australian Government and the Japanese Government for the protection of migratory birds in danger of extinction and their environment
NPSR	Department of National Parks, Sport and Racing
QPWS	Queensland Parks and Wildlife Service (an agency within Department of National Parks, Sport and Racing)
RAMSAR	Intergovernmental treaty for the conservation of wetlands
RE	Regional ecosystem
REDD	Regional Ecosystems Description Database

ROKAMBA	Agreement between the Australian Government and the Republic of Korea Government for the protection of migratory birds in danger of extinction and their environment
SDRN	State Digital Road Network
SEQ	Southeast Queensland bioregion - a bioregion within the Interim Biogeographic Regionalisation for Australia (IBRA) framework
WILDNET	Department of Science, Information Technology and Innovation (DSITI)'s corporate wildlife application containing records and other information on Queensland flora and fauna

Appendix 2 Datasets available to the expert panel during the workshop

GIS

Geographic data

Catchment boundaries

Contours (10m interval)

Topographic maps (1:100 000).

Cadastral, government and locational data

Cadastral data (DCDB) for SEQ study area local government areas

Local government boundaries

Pastoral holdings database

Places

Towns

State Digital Road Network (SDRN)

Stockroutes.

Vegetation

Regional Ecosystem Description Database (REDD)

Draft pre-clearing vegetation

Remnant (RE09) RE mapping

Certified updates to remnant mapping.

Species

All fauna species records were obtained from Queensland Historical Fauna and WildNet databases. Flora species records were obtained from Herbrecs, WildNet and Corveg databases.

BriMapper (Herbrecs species records viewer).

Wetlands

Queensland Wetland Mapping

Directory of Important Wetlands

Drainage network—rivers

Drainage network—creeks.

Biodiversity Planning Assessment data

Queensland bioregion and subregion boundaries

Terrestrial and riparian state bioregional corridors

Results from SEQ bioregion BPA v3.5.

Protected areas

EPA estates

Nature refuges

Coordinated conservation areas.

Imagery

2009 Landsat mosaic of the SEQ bioregion

SPOT imagery (10 metres).

Documents available electronically

EHP 2014, *Biodiversity Assessment and Mapping Methodology. Version 2.2*, Department of Environment and Heritage Protection, Brisbane.

Hard copy maps

Landsat 7 mosaic of SEQ bioregion

SEQ bioregions and subregions (Queensland).