



Appendix 10-B

Terrestrial flora supporting information (Chenoweth, 2010)

Environmental Baseline Study

Terrestrial Flora Supporting Information

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1.0 METHODS

1.1 AERIAL PHOTOGRAPH ANALYSIS AND SITE LOCATION

Interpretation of SPOT 2.5m Satellite Imagery - Aug 2006 and SunWater Orthoimagery - 1:25,000 Aug 1994 allowed the establishment of preliminary vegetation line work and polygon attribution. The line work was completed with reference to the available remnant and pre-clearing regional ecosystem mapping to assign anticipated regional ecosystems.

Polygons of both remnant and regrowth vegetation were identified through aerial photographic review. To verify this mapping and it was necessary to undertake intensive field survey. Therefore, prior to field investigations, a number of target locations were identified including:

- a representative range of habitats within the study area;
- areas that appeared to be GAB Spring Communities through aerial photographic interpretation;
- communities that could not be adequately categorised through air photo interpretation. This included areas where pre-clearing of the Endangered Regional Ecosystem 11.9.12 "*Dichanthium sericeum* grassland with clumps of *Acacia harpophylla* on fine-grained sedimentary rocks" of which remnants might be easily misinterpreted in aerial photographic review;
- some areas of non-remnant Brigalow to assess species composition and structure; and
- areas that were considered highly likely to provide habitat for threatened plant species.

Additional opportunistic sites were added during the field survey.

1.2 FIELD SURVEY

Vegetation was mapped at a scale of 1:10,000 as per methodology developed by the Queensland Herbarium (Neldner *et al.*, 2005). The methods prescribed include a combination of secondary, tertiary and quaternary level sampling procedures. Additional informal site observations were also made. Where access could not be attained to properties, aerial photography and ground points were interpreted to the greatest extent possible. In some instances, there was insufficient information to make a judgement, therefore Regional Ecosystem mapping Ver 6.0 (DERM, 2009b) was utilised as a default.

Secondary sites consisted of a 50m x 10m plot located along the contour within vegetation communities that displayed homogeneity in terms of floristics, structure and age. A 100m tape measure was used to define plots with most Secondary site data collected in the first 50m and canopy cover recorded across the full 100m. A Mobile Mapper GPS was used to record the coordinates of the beginning and end of the 50m Secondary plot. Data collected in Secondary sites included:

- Representative sample of species present;
- Canopy height using a hypsometer;
- Canopy cover was recorded in using measured crown intercept transects over 100m;
- Bitterlich measurements, as described in Gosenbaugh (1952), were used to record community basal area; and
- The abundance of all woody species within the plot was recorded by stem counts and a visually assessed ranking of Dominant, Abundant, Frequent, Occasional and Uncommon.

Tertiary sites were conducted in a similar manner, but did not incorporate the full 50m x 10m plot or necessitate a full species list. In some instances, such as in grasslands, wetlands or GAB Spring Communities, Bitterlich measurements were not recorded either due to the absence of trees.

For Secondary and Tertiary site field data was captured according to pro formas included in Neldner *et al.* (2005). In order to adequately capture structural data from 100m transects information was recorded on additional field sheets.

Quaternary data primarily involved the recoding of dominant canopy elements for locations recorded by GPS.

Wherever a vegetation community was considered to be potential habitat for a threatened species scheduled under the EPBC Act or the *Nature Conservation (Wildlife) Regulation 2006* (NCWR), the search area was broadened. Frequently this involved broad searches of broad areas on foot to establish the range of a species if encountered in the field.

Informal observation sites were utilised where vegetation structure and floristic assemblage was observed remotely, generally from roadsides and where access could not be attained. Dominant canopy species were identified utilising binoculars and information recorded on printed aerial photographs and draft vegetation linework.

Where species could not be readily identified in the field or where a specimen was known to be a threatened species, botanical voucher specimens were collected. Specimens of a sufficient size and quality (where possible) was pressed and labelled for future identification by the author or by the Queensland Herbarium.

The field survey was completed in a number of phases to capture seasonal variation in floristics. Field surveys were undertaken in summer (26 March – 1 April, 2008), winter (12 June – 18 June, 2008), Autumn (29 April, 6 May – 8 May, 2008), Spring (4 September – 5 September, 2008) and a second summer survey (1 December, 2008). Field work for the the area between Wandoan and Chinchilla was undertaken in winter (15 – 24 June 2010).

1.3 REFERENCE SITES

Reference sites are established in undisturbed or lightly disturbed vegetation communities within the vicinity of the project area. Data collected from secondary plots at reference sites allow an assessment of the remnant/non-remnant status of a specific regional ecosystem against vegetation height, cover and floristics. The data also provides a reference point for the assessment of vegetation community condition.

The location of Reference sites was determined through review of existing regional ecosystem mapping and where aerial photography displayed an intact canopy pattern. On occasion, some Reference sites were located in areas currently not mapped as a given regional ecosystem or even as remnant vegetation. An example is the reference site for 11.9.5 “*Acacia harpophylla* and/or *Casuarina cristata* open forest on fine-grained sedimentary rocks”. This site has not been mapped by the Queensland Herbarium as remnant vegetation, but was found to be one of the most integral representations of this regional ecosystem in the local area. Review of historical aerial photography confirmed that the area was remnant as illustrated below.



1945 aerial photograph of the 11.9.5 reference site

Current spot image with mapped polygon. Red line illustrates the transect.

Photograph of the site from the edge of the polygon

The value of an area as a Reference site could sometimes only be determined through field assessment. The presence of remnant canopy trees were used as indicators of original canopy composition and structure and the presence of significant disturbance employed to discount the value of an area as a Reference site.

Secondary site data for Reference sites is incorporated in Appendix A. In two instances Reference sites have been established on the basis of Tertiary sites – these are incorporated in Appendix B.

1.4 CLASSIFICATION OF VEGETATION

1.4.1 The Regional Ecosystem Framework

The mapping of vegetation categories across the entire study area was based on the regional ecosystem framework (Sattler & Williams, 1999). Regional ecosystems are coded with a three-part number:

- The first number is the bioregion in which the site occurs. In some instances the combination of vegetation and geology typical of a certain bioregion may occur outside the bioregional boundary. In this instance the Regional Ecosystem is assigned to the Bioregion in which it typically occurs, rather than the Bioregion in which the site is located. The site vegetation in this case is within the Brigalow Belt Bioregion and is therefore numbered “11”.
- The second number is the geomorphic category or “Land Zone” that the ecosystem falls within (eg all Regional Ecosystems occurring on “Hills and lowlands on metamorphosed sedimentary rocks are Land Zone ‘11’).
- The third number is the ecosystem number, and relates to the dominant vegetation.

The Land Zone was determined through review of pre-clearing mapping, current geological mapping (NRME, 2004) and verified through ground observations. The base geological mapping is at a scale of 1:250,000 and therefore does not capture small areas of alluvium (Land Zone 3) evident in 1:10,000 scale mapping which had to be verified through field observations.

1.4.2 Conservation Significance

Under the *Vegetation Management Act 1999* (VMA), three levels of conservation status are defined for regional ecosystems:

- “Of Least Concern regional ecosystem” means a regional ecosystem that is prescribed under a regulation and has either more than 30% of its pre-clearing extent remaining and the remnant vegetation remaining is more than 10,000 ha;

- “Of Concern regional ecosystem” means a regional ecosystem that is prescribed under a regulation and has either:
 - (a) 10% to 30% of its pre-clearing extent remaining; or
 - (b) more than 30% of its pre-clearing extent remaining and the remnant vegetation remaining is less than 10,000 ha
- “Endangered regional ecosystem” means a regional ecosystem that is prescribed under a regulation and has either:
 - (a) less than 10% of its pre-clearing extent remaining; or
 - (b) 10% to 30% of its pre-clearing extent remaining and the remnant vegetation remaining is less than 10,000 ha

For this study the current conservation status (Queensland Herbarium, 2009) was applied to remnant polygons.

Brigalow (*Acacia harpophylla* dominant and co-dominant) communities and Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions are also regarded as ‘Endangered’ under the EPBC Act. These communities correlate with 11.9.1, 11.9.4, 11.9.5 and 11.9.6 which have been recorded in the study area. Where remnant or suitably advanced regrowth (see 1.4.3 below) of these communities have been encountered they have also been attributed with their status under the EPBC Act. Also recorded as an ‘Endangered’ ecological community in the study area is “The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin” (shortened to GAB Spring Communities for brevity) – these are discussed further in section 1.4.4.

1.4.3 Remnant / Non remnant vegetation

1.4.3.1 Native Woody Vegetation

A regional ecosystem can only be regarded as ‘remnant’ provided it meets the following criteria as defined by the EPA (2005):

“Remnant woody vegetation is defined as vegetation where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation’s undisturbed canopy”.

Therefore to adequately classify areas as remnant or non-remnant it is necessary to have a thorough understanding of the structural and floristic elements of Reference sites. These sites must be established in communities or locations where disturbance has been minimal and are representative of environmental conditions of the

community across the Dam and Surrounds. Reference sites can be utilised to provide a transparent and repeatable method of comparing relative canopy height and canopy cover data of target sites with a remnant condition.

The classification of remnant vegetation is based solely on the nature and floristic composition of the original canopy layer (T1). Sub-canopy and shrub layers (T2, S1 etc) are not considered in the assessment of non-remnant vegetation communities in this exercise.

Some areas have been mapped as non-remnant because they do not meet necessary height or cover thresholds. Only areas that are likely to achieve remnant status within the next 20 years on the basis of floristics, cover and height were mapped as non-remnant vegetation polygons. Each non-remnant polygon has been assigned with the regional ecosystem they would achieve if they were managed toward achieving remnant status.

In addition to remnant Brigalow, areas of regrowth also require further consideration under the EPBC Act as a potential Threatened Ecological Community. Advice prepared by DEWHA (2003) identifies the following in relation to this:

Brigalow regrowth is part of the Brigalow ecological community listed under the EPBC Act only if it retains the species composition and structural elements typical of that found in undisturbed areas of the listed Brigalow ecological community.

Brigalow regrowth is not considered part of the Brigalow ecological community that is listed under the EPBC Act if it is of poor quality. An activity that affects Brigalow regrowth of poor quality is, therefore, not subject to the EPBC Act.

In general, areas that have been cleared within the past 15 years will not have regained the structure and species composition typical of remnant Brigalow and, therefore, will not qualify as the listed Brigalow ecological community.

Accordingly, clearing of Brigalow regrowth that is less than 15 years old does not need to be referred for assessment and approval under the EPBC Act.

On this basis, areas of non-remnant Brigalow have also been mapped where they appear to achieve the 15 year age threshold utilising the median height of a patch as the defining criterion. Studies in the region indicate that Brigalow regrowth of $\geq 2\text{-}3\text{m}$ in height approximates with regrowth that is 15 years old (J.Dwyer, unpublished

data¹). It is evident that isolated Brigalow specimens or trees at the edge of regrowth achieve this height threshold faster than trees in the centre of a copse and these were therefore disregarded in estimation of Brigalow age. A sample site located in the vicinity of the study area was used to validate this method of assessing age through review of historical aerial photography:



1994 aerial photograph illustrating very young regrowth 14 years ago



2004 aerial photograph illustrating progressive regrowth



Current spot image with mapped polygon.



Photograph of the site from within the polygon.

Although some areas of ≥ 15 year old regrowth can be mapped at a scale of 1:10,000 they are in poor condition and in the context of determining significant impacts on a threatened ecological community should not be considered. The DEWHA's EPBC Act Policy Statement 1.2 "Significant Impact Guidelines" (2006) notes in relation to determining whether an action is likely to have a significant impact the 'environmental context' must be considered and this includes, amongst other things, an assessment of the level of disturbance an area has experienced. Although some areas contain the same floristic elements as remnant Brigalow communities, the relative abundance of these species varies significantly and/or exotic / ecologically detrimental species such as Buffel Grass (*Cenchrus ciliaris*) (Buttler & Fairfax, 2003) dominate the ground layer. That is, these areas are highly disturbed and of poor

¹ Preliminary data collected in the Tara, Taroom and Dingo districts between September and December 2007 as part of a current PhD project being undertaken at the University of Queensland

quality. Furthermore, some patches may not be ecologically viable in the long term because of their shape (e.g. some very narrow young regrowth in road reserves) or because they are small and isolated.

1.4.3.2 Native Grasslands

The literature review (Section 2.0) identified Native Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin as potentially occurring in the Dam and Surrounds study area and Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland as potentially occurring within the Pipeline Route study area. DEWHA (2010b) identified that the following regional ecosystems are included in the Native Grasslands of the Queensland Central Highlands and northern Fitzroy Basin:

- (11.3.21) Grassland of *Dichanthium sericeum* and or *Astrebla* species on Cainozoic alluvial clay plains; and
- (11.9.12) *Dichanthium sericeum* grassland with clumps of *Acacia harpophylla* on Cainozoic fine-grained sedimentary rocks.

DEWHA (2010c) identified that the following regional ecosystem is included in Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland:

- (11.3.21) Grassland of *Dichanthium sericeum* and or *Astrebla* species on Cainozoic alluvial clay plains.

DEWHA (2010b, 2010c) note that for the communities to be mapped they must meet certain diagnostic characteristics and condition thresholds reproduced in Tables 1 and 2.

For the study area, pre-clearing regional ecosystem mapping provides a useful basis for identifying where regional ecosystems 11.3.21 and 11.9.12 occurred prior to settlement. The accuracy of pre-clearing grassland mapping of the Darling Downs has been previously validated by Fensham and Fairfax (1997). Given this, polygons of pre-clearing regional ecosystem 11.3.21 and 11.9.12 were regarded as potentially supporting mappable areas of these vegetation communities unless aerial photography suggested past disturbance would mean otherwise. Therefore it was necessary to establish a condition class at key sites to identify their status as a threatened ecological community.

DEWHA (2010b, 2010c) notes where possible, assessments should be undertaken during a good season, allowing for a two month spell after the cessation of disturbance (fire/grazing) and within 2 months of effective rain. The assessment

should be based on a 0.1 ha quadrat (e.g. 100x10m) selected from within the area with the most native perennial grass species. The condition thresholds for the ecological community are set out at Table 1 below. The listed ecological community only covers the highest quality and good quality patches of the ecological community, as identified by the first two columns, both labelled 'Listed' in Table 1, below.

Table 1: Condition Classes for the Native Grasslands of the Queensland Central Highlands and northern Fitzroy Basin. From DEWHA (2010b).

	Best quality	Good quality
Patch size	At least 1ha; and	At least 5ha; and
Grasses	At least 4 native perennial grass species from the list of perennial native grass indicator species; and	At least 3 native perennial grass species from the list of perennial native grass indicator species; and
Tussock cover	At least 200 native grass tussocks; and	At least 200 native grass tussocks; and
Woody shrub¹ cover	Total projected canopy cover of shrubs is less than 30% ; and	Total projected canopy cover of shrubs is less than 50% ; and
Introduced species	Perennial non-woody introduced species are less than 5% of the total projected perennial plant cover.	Perennial non-woody introduced species are less than 30% of the total projected perennial plant cover.

1 The shrub layer is typically absent. However, where shrubs are present, they are defined as woody plants, more than 0.5 m tall that occupy the mid vegetation layer. The upper, or tree canopy layer, also is typically absent but may comprise scattered trees to less than 10% projective crown cover.

Indicator species include: *Aristida leptopoda*; *Aristida latifolia* *Astrebla elymoides*; *Astrebla lappacea*; *Astrebla squarrose*; *Bothriochloa erianthoides*; *Dichanthium sericeum*; *Dichanthium queenslandicum*, *Eriochloa crebra*; *Panicum queenslandicum*; *Panicum decompositum*; *Paspalidium globoideum* and *Thellungiadavena*.

DEWHA (2010c) note that condition assessment of Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland differs slightly from that of the Central Highlands and Fitzroy Basin assessment and is reproduced in Table 2 below.

Table 2: Condition Classes for the Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland. From DEWHA (2010c).

	Best quality	Good quality
Patch size	Minimum patch size at least 0.5 ha; and	Minimum patch size at least 2 ha; and

Grasses	At least 4 native perennial grass species from the indicator species list; and	At least 3 native perennial grass species from the indicator species list; and
Tussock cover	At least 200 native perennial grass tussocks and	At least 200 native perennial grass tussocks; and
Woody shrub1 cover	Total projected canopy cover of shrubs is less than 30%; and	Total projected canopy cover of shrubs is less than 50%; and
Introduced species	Perennial non-woody introduced weed species are less than 5% of the total projected crown cover.	Perennial non-woody introduced weed species are less than 30% of the total projected crown cover.

1 Shrubs are typically absent. When present, they are defined as woody plants more than 0.5 m tall that occupy the mid vegetation layer. The upper, tree canopy layer also is typically absent but may comprise scattered trees to less than 10% projective crown cover.

Indicator species include: *Aristida leptopoda*; *Astrebla elymoides*; *Astrebla lappacea*; *Austrodanthonia bipartita*, *Austrostipa aristiglumis*, *Bothriochloa biloba*; *Bothriochloa erianthoides*, *Dichanthium sericeum*; *Digitaria divaricatissima*, *Elymus plurinervis*, *Eriochloa crebra*; *Eulalia aurea*, *Panicum queenslandicum*; *Panicum decompositum*; *Thellungiadvena*, *Themeda avenacea*, *Themeda triandra* and *Walwhalleya proluta*.

To assist in calculating the total projected plant cover of perennial non-woody introduced species, the technique described in Neldner *et al.* (1999) was used, whereby cover is estimate by sub-sampling using a number of small quadrats. Percentages were estimated in a 1x1m quadrat for each species present, with single occurrences being recorded as '0.01'. A total of five quadrats were assessed at 10 m intervals along the first 50m of a 100m transect in which all species and woody cover were assessed.

1.4.3.3 Cropping

Areas of cropping were identified from aerial photographic interpretation only. Generally this included land that were clearly subject to cropping or cultivation and excluded areas that had been historically cropped and are now fallow. It also excluded minor areas of seeding of species such as *Leucaena leucocephala* and primarily captured major areas of cropping in the vicinity of Dalby of legumes and cotton.

1.4.4 GAB Spring Communities

The GAB Spring Communities of the Dawson Valley require separate consideration. As GAB Spring Communities vary in size and vegetation cover only some are can mapped as remnant vegetation (specifically, as remnant regional ecosystem 11.3.22). Others have been cleared of vegetation and vary in terms of their floristics. In all cases the GAB Spring Communities are regarded as a threatened ecological community under the EPBC Act.

Preliminary investigations found that the floristics and location of GAB Spring Communities recorded by Fensham & Wilson (1997) and Fensham & Fairfax (2005) were relatively thorough and of a high standard. However, the location of GAB Spring Communities within the Nathan Gorge was found to be slightly inaccurate, most likely as a consequence of GPS technology at the time of the 1997 survey. Survey effort for GAB Spring Communities therefore focussed on:

- identifying the location and floristics of previously unmapped GAB Spring Communities directed by aerial photographic interpretation and opportunistic field observations. Floristics for each spring were recorded as Tertiary sites;
- locating NCWR or EPBC listed flora recorded by Fensham & Wilson (1997) on GAB Spring Communities; and
- where possible improving the accuracy of mapped locations of GAB Spring Communities in the Nathan Gorge.

1.5 SCALE

The draft TOR for the Nathan Dam EIS indicates 1:10,000 scale vegetation mapping as a data requirement. In vegetation survey, scale is determined by sampling intensity, influenced by vegetation complexity and the areal extent of remnant vegetation.

Neldner *et al.* (2005) recommends 25 ground observations/km² for a 1:10,000 scale map. The frequency of secondary site observations is dependant on the vegetation complexity, the amount of remnant vegetation present and the quantum of existing data for nearby areas.

The mapping scale for the current study is based on the combined extent of mapped remnant vegetation and non remnant vegetation within the investigation area rather than the total study area, which contains large tracts of cleared land. The Entire Study Area covers 121.929km² which contains approximately 101.89 km² of remnant and non-remnant woody vegetation. This necessitates approximately 2,547 observations for a map at a 1:10,000 scale. For the mapping of vegetation along the pipeline route only vegetation patches were considered within 30m either side of the proposed route. This gives a total study area of 15.82 km² which contains approximately 3.35 km² of remnant and non-remnant vegetation. This necessitates a minimum of 84 observations for a map at a 1:10,000 scale. To assist in putting vegetation within the context of its broader extent, vegetation polygons were also mapped for a broader area around the pipeline route, but were not as intensively surveyed.

Data previously collected in the area by the Queensland Herbarium as either Quaternary or Corveg sites (the latter are equivalent with Secondary sites) were also used to assist with refining mapping. Table 3 below summarises the total number of observations made:

Table 3 – Number of Ground Observations

Sites	Number Dam and Surrounds (Incorporating Areas in FSL)	Number Inundation Area	Number Pipeline Route	Number Other Infrastructure
Secondaries	29	13	9	0
Previous Secondaries by Queensland Herbarium	3	1	2	0
Tertiaries	27	11	2	0
Quaternaries	219	68	89	12
Previous Quaternaries by Queensland Herbarium	71	12	12	0
Informal Observation Sites	264	160 (Approx)	0	0
TOTAL	613	263	105	12

Consideration should also be given to the scale of aerial imagery utilised in the study when considering the accuracy of mapping at a scale of 1:10,000. The Spot imagery used in the vegetation mapping component applies a spatial limitation on the scale and resolution of the vegetation mapping produced. The derivation of the vegetation community boundaries may not be as precise as those produced utilising larger scale aerial photography for interpretation.

1.6 DIGITAL PROCESSING AND ACCURACY

Linework was prepared directly in GIS (Mapinfo) utilising 2.5m pixel Spot Imagery to delineate the extent of vegetation boundaries.

1.7 FLORA ASSESSMENT METHODS

Secondary site selection was based on surveying representative vegetation communities within the Dam study area, along the proposed route and the associated infrastructure. An additional site was undertaken for the proposed pipeline route where pre-clearing mapping indicated the former presence of the Endangered Regional Ecosystem 11.9.12 “*Dichanthium sericeum* grassland with clumps of *Acacia harpophylla* on fine-grained sedimentary rocks” and therefore potentially small remnants of this community remaining in the road reserve. Floristic data was initially recorded on secondary site proformas (Nelder *et al.*, 2005) and subsequently

transferred to excel spreadsheets to compile a consolidated species list giving a representative sample of species for the route. The conservation status and vegetation community in which the species had been recorded is also tabulated for each species. Nomenclature follows Bostock & Holland (2007).

Reference to lists derived from HERBRECS, Corveg, Dowling & Halford (1997), Fensham & Wilson (1997) and Fensham (2008 *unpublished*), were assessed to assist in predictive analysis of species distribution.

State significant species are defined as those listed as Endangered, Vulnerable or Near Threatened under the *Nature Conservation (Wildlife) Regulation 2006* and nationally significant species are those listed as Endangered or Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*. Species were targeted on the basis of review of preferred habitat types and correlation of this with habitats mapped and encountered in the field.

1.8 TIMBER RESOURCE ASSESSMENT

1.8.1 Species Composition

The assessment of timber resource is based on data collected as part of the standard herbarium plot (500m²) and a plotless Bitterlich method for each secondary site. Only species identified as belonging to the T1 (canopy) and T2 (sub-canopy) layer were considered as part of the assessment. Species were regraded as suitable timber species if identified as such in Lazarides & Hince (1993).

1.8.2 Timber Resource Groupings

The timber assessment utilized remnant regional ecosystems as mapped as part of this study as the fundamental ‘resource unit’. Regional ecosystems are referred to throughout this text from this point as ‘resource units’.

1.8.3 Basal Area Measurements

The Bitterlich method as described in Grosenbaugh (1952) utilizes a radial sweep of a Bitterlich Stick with a basal area factor of 1, where each tree recorded in the sweep contributes a basal area of 1m²/ha to a subject resource unit. Although T2 was recorded as part of this assessment, it is likely that in some communities that this layer would not provide a millable yield.

1.8.4 Timber Volume Measurements

Whilst bitterlich measurements provide a measure of basal area (m^2), quantified estimates of timber volume also require the height of the contributing vegetation to be considered. Canopy heights of vegetation communities were measured utilising a hypsometer for each secondary site. The median value for each site was used for the purpose of volume measurements. The rule applied in this assessment assumed the average length of the millable bole (trunk) as one half of the median canopy height (for T1 and T2).

The volume of potential resource can be calculated by extrapolating the average data from secondary sites for specific regional ecosystems/ ‘resource unit’ to the full extent of the ‘resource unit’ within the study area.

1.8.5 Study Limitations

This study provides only a relative assessment of timber species and a quantitative estimate of the maximum available resource and most likely overestimate the available resource. The efficacy of the method is limited by:

- The investigation area is linear in shape which affects the reliability of bitterlich data for some locations;
- Survey sites are generally located in the best type examples of each resource unit represented;
- The bitterlich method for basal area measurement fails to take into account poorly formed trees, or trees with Diameter at Breast Height (DBH) below the minimum cutting requirements;
- Some species are not regarded as high quality timber. For instance, although *Acacia harpophylla* has been included, its uses are limited; and
- The limited number of survey sites in each regional ecosystem used in the assessment could potentially bias the calculated resource of some species.
- Timber volume calculations were based in part on current regional ecosystem mapping (DERM, 2009b) (for the pipeline and associated infrastructure) which included some heterogeneous polygons. Where heterogeneous polygons were intersected by the linear features, the area was divided according to the percentage assigned to each ecosystem type. In the case of the narrow linear infrastructure this may misrepresent regional ecosystem based timber volumes as it is highly unlikely that the percentage assigned to the overall polygon will be represented exactly within the 30m easement.

2.0 LITERATURE REVIEW

2.1 LITERATURE ASSESSED

To establish the extent of existing information and determine information gaps a number of studies, reports, maps and databases relevant to the project area were reviewed.

These studies are summarised in Table 4 along with ranking indicating their relevance to the project, where:

Rank 1 = High. These studies have generally been completed within the project area or were a directly relevant regional study and therefore includes data specific to the project area. The methodology included in the study is robust and may be applied to the terrestrial flora study process.

Rank 2 = Moderate. These studies have generally been completed within the same bioregional area however they may not be specific to the project area. The data may be provided in a way that limits the basis of interpretation (e.g. HERBRECs records may include a level of precision that is relatively coarse).

Rank 3 = Low. Although the study was not directly relevant to the area of proposed impact because it was completed outside of the project area the broad interpretations and methods can be applied to the current investigation.

Table 4: Relevance ranking of Literature Reviewed

Title	Author (s)	Relevance Rank
Project Specific Studies		
Impact Assessment Study for Proposed Dawson Dam	Hyder Environmental (1997)	1
Dawson Dam Proposal: Flora	Dowling, R. & Halford, D. (1997)	1
Dawson River Project Impact Assessment Study: Boggomossess and other spring-fed areas.	Ingram, G.J. & Stanisic, J. (1997)	1
Dawson River Dam Flora and Fauna Assessment	Ison Environmental Planners (1996)	1

Biological and ecological data (excluding fisheries) on the Dawson River system with particular reference to the proposed Nathan Dam	Duivenvoorden, L.J. (1995)	2
Boggomosses in the Dawson River Valley Queensland A report commissioned by the Department of Natural Resources	Fensham, R.J. & Wilson, B.A. (1997)	2
Regional Flora Investigations		
State of the Rivers Dawson River and Major Tributaries	Telfer, D. (1995)	2
Floristic communities of the lower Dawson River plains, mid-eastern Queensland	Pollock, A.B., Butler, D.W. & Price, R.J. (2004)	2
Local Flora Investigations		
Ranking spring wetlands in the Great Artesian Basin of Australia using endemism and isolation of plant species	Fensham, R.J. & Price, R.J. (2004)	3
Vegetation/Regional Ecosystem Mapping		
Lands of the Dawson-Fitzroy Area	Speck, N.H., Wright, R.L., Sweeny, F.C., Perry, R.A., Fitzpatrick, E.A., Nix, H.A., Gunn, R.H. & Wilson, I.B. (1968)	2
Lands Inventory and Technical Guide Miles Area - Queensland	Dawson, N.M. (1972a)	2
Land Inventory and Technical Guide Jandowae Area Queensland	Dawson, N.M. (1972b)	2
Land Management Field Manual Wandoan District	Gray, H.J. & Macnish, S.E. (1985)	2
Central Darling Downs Land Management Manual	Harris, P.J., Biggs, A.J.W., Stone, B.J., Crane, L.N. & Douglas, N.J. (1999)	2
Survey and Mapping of 2003 Remnant Vegetation Communities and Regional Ecosystems of Queensland", Version 5.0 (December 2005) GIS Mapping.	Environmental Protection Agency (2005a)	1
Regional Ecosystem, Version 6.0 (2009) GIS Mapping.	DERM (2009)	1
Survey and Mapping of pre-clearing Vegetation Communities and Regional Ecosystems of Queensland	Environmental Protection Agency (2005b)	2
Regional Ecosystem Description Database (REDD). Version 5.1. Updated June 2007	Environmental Protection Agency (2007)	3
REDD version 6 updated November 2009	Queensland Herbarium (2009)	3

Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland. Version 3.1. Updated September 2005.	Neldner, V.J., Wilson, B. A., Thompson, E.J. & Dillewaard, H.A. (2005)	3
Essential Habitat v2.1 Polygons	Environmental Protection Agency (2008)	2
2003 Regional Ecosystem Map 149.7713, -25.6007	Environmental Protection Agency (2008)	2
2003 Regional Ecosystem Map 149.7849, -25.5279	Environmental Protection Agency (2008)	2
2003 Regional Ecosystem Map 149.9077, -25.5473	Environmental Protection Agency (2008)	2
2003 Regional Ecosystem Map 149.9175, -25.5673	Environmental Protection Agency (2008)	2
2003 Regional Ecosystem Map 150.0339, -25.5569	Environmental Protection Agency (2008)	2
2003 Regional Ecosystem Map 150.0241, -25.4341	Environmental Protection Agency (2008)	2
2003 Regional Ecosystem Map 150.1599, -25.4359	Environmental Protection Agency (2008)	2
2003 Regional Ecosystem Map 150.0488, -26.2538	Environmental Protection Agency (2008)	2
2003 Regional Ecosystem Map 150.6511, -26.7599	Environmental Protection Agency (2008)	2
2003 Regional Ecosystem Map 151.0592, -27.0278	Environmental Protection Agency (2008)	2
Databases		
EPBC Protected Matters Database (-25.35694,149.7272, -25.35444,150.2183, -25.76388,150.2138, -25.67416,149.7341)	Department of the Environment, Water, Heritage and the Arts (2004, accessed 31/03/2008)	2
EPBC Protected Matters Database (-25.4666, 150.1156 to -26.0767, 149.9466 to -27.1659, 151.25)	Department of the Environment, Water, Heritage and the Arts (2008, accessed 4/6/2010)	2
EPBC Protected Matters Database ((-25.35694,149.7272, -25.35444,150.2183, -25.665,150.2136, -25.67416,149.7341; -25.4666,150.1156, -26.0767,149.9466; -26.0767,149.9466, -27.1659,151.25).	DEWHA, (2010a)	2
Herbrecs (approximated by the polygon 149.7625, -25.497; 150.1557, -25.367; 150.176, -25.723, 149.981, -26.083; 150.203, -26.629; 150.6465, -26.7; 151.297, -27.16; 151.254, -27.225; 150.416, -26.71; 150.148, -26.69; 149.89, -26.07; 150.12, -25.63; and 149.76, -25.67)	Queensland Herbarium, Environmental Protection Agency (2005)	2
Herbrecs (approximated by the line 150°7'44", -25°27'57"; 149°57'10", -26°5'27"; 151°15'39", -27°10'15").	Department of Environment and Resource Management (2009a)	2
Corveg (approximated by the polygon 149.7625, -25.497; 150.1557, -25.367; 150.176, -25.723, 149.981, -26.083; 150.203, -26.629; 150.6465, -26.7; 151.297, -27.16; 151.254, -27.225; 150.416, -26.71; 150.148, -26.69; 149.89, -26.07; 150.12, -25.63; and 149.76, -25.67)	Queensland Herbarium, Environmental Protection Agency (2000)	2

Wildnet (26.1-26.1, 149.8-150.2; 26.602, 26.85, 150.189-150.839; 26.81-27.26, 150.75-151.37; 25.442-25.579, 149.9-150.039; and 25.5-26.12, 149.8-150.2)	Environmental Protection Agency (2008a)	2
Wildnet (-26.803, 150.727 to -27.1659, 151.25; -25.4666, 150.1156 to -26.0767, 149.9466; -26.0767, 149.9466 to -26.577, 150.401 and -26.577, 150.401 to -26.803, 150.727)	Environmental Protection Agency (2010)	
Springs of Queensland – Distribution and Assessment (Version 4.0)	Fensham, R.J and R.J. Fairfax (2005)	2
Boggomosses Area No 1, Glebe Weir Rd, Taroom, Qld, Australia	Department of the Environment, Water, Heritage and the Arts (1999a)	2
Boggomosses Area No 2, Cracow, Qld, Australia	Department of the Environment, Water, Heritage and the Arts (1999b)	2

2.2 VEGETATION MAPPING

2.2.1 Early Vegetation Assessments in the Area

A number of early studies prepared between 1968 and 1999 have mapped the major vegetation communities occurring in land system units or land resource areas covering various portions of the entire study area. A number of the areas described in these studies overlap and because they have been prepared at differing scales provide varying degrees of detail regarding the vegetation communities occurring in an area. Table 5 summarises the reports and the vegetation communities recorded in them.

Table 5: Major Vegetation Communities mapped for the project area

Study	Vegetation Community	Inundation Area	Pipeline Route
Speck et al, 1968	Brigalow scrub	y	y
	Grassy woodland with coolibah	y	
	Grassy woodland with poplar box	y	y
	Grassy woodland with silver-leaved ironbark	y	y
	Sandstone forest	y	y
	Shrub woodland	y	y
	Softwood scrub	y	y
Dawson, 1972a	Brigalow – belah forests		y
	Ironbark – bulloak – cypress pine layered open forest		y
	Ironbark – wattle layered open forest		y
	Angophora – cyperus pine – poplar box – Queensland blue gum tumbledown gum woodland		y
	Poplar box layered and shrubby woodlands		y
	Poplar box open grassy woodlands		y
	Fringing forest and woodlands		y
	Bluegrass grassland		y
Dawson, 1972b	Grassland		y
	Brigalow Scrub		y
	Poplar Box Woodland		y
	Mixed Forest Woodland		y
	River Frontage Country		y
Gray and Macnish, 1985	For the Brigalow Uplands Land Resource Area: Brigalow open forest and softwood scrub. Brigalow open forest with either poplar box, or belah or Dawson gum, or bauhinia. Scattered wilga and softwood scrub species frequently occur.	Y	y
	For the Coolibah Alluvia Land Resource Area: Predominately coolibah woodland. Some Queensland blue gum and poplar box in transitional area.	Y	
	For the Glenhaughton Forest Land Resource Area: Narrow-leaved Ironbark, spotted gum, silver-leaved ironbark, poplar box and cypress pine open forest to woodland. Softwood scrub species frequently occur as an understorey.	Y	y
	For the Poplar Box Alluvia Land Resource Area: Predominantly poplar box grassy woodland. Scattered false sandalwood and softwood scrub species frequently occur.		Y
	For the Contoi Land Resource Area: Predominantly rough barked apple grassy open woodland. Some poplar box and Queensland blue gum may be present.		Y
Harris et al, 1999	Brigalow, belah forest with wilga		y
	Poplar Box open woodland		y
	Poplar box or Queensland blue gum open woodland, or grassland		y
	Queensland blue gum, river red gum and Moreton Bay ash woodland		y
	Open grassland		y

Although these studies are sometimes coarse (up to a scale of 1:250,000) and diverge where there is overlap, they provide a good record of vegetation associations occurring in particular points in the landscape. As such, they represent a useful tool to assist with mapping vegetation within the project area (for example, they would prove useful in ‘splitting’ areas of natural grassland with areas of woodland where trees have since been cleared).

2.2.2 Site Specific Investigations

The immediate area associated with the proposed Nathan Dam inundation area has been previously investigated. The Impact Assessment Study (IAS) for the proposed Dawson Dam (Hyder, 1997) and associated reports (Dowling & Halford, 1997 and Ingram & Stanisic 1997) included detailed accounts of the vegetation assessments within the then project area. The IAS was preceded by a broad study of Fauna and Flora of the Area by Ison Environmental Planners (1996). These studies are discussed as follows.

2.2.2.1 Ison Environmental Planners, 1996

The investigation was limited to four study sites located at:

1. Taroom Town Common ($25^{\circ} 38.45S$, $149^{\circ} 48.19E$);
2. Munbulla Bridge ($25^{\circ} 34.47S$, $149^{\circ} 51.75E$);
3. Above Nathan Gorge ($25^{\circ} 27.48S$, $150^{\circ} 07.66E$); and
4. Cockatoo Creek ($25^{\circ} 34.21S$, $150^{\circ} 04.24E$).

Only generalised descriptions of dominant floristic elements are included in the study with no specific reference to vegetation communities.

2.2.2.2 Dowling & Halford , 1997

Dowling & Halford (1997) identified and described 14 vegetation communities and mapping units as summarised in Table 6.

Table 6: Vegetation Communities and Mapping Units identified in “Impact Assessment Study for Proposed Dawson Dam” (After Hyder Environmental 1997).

Vegetation Community and Mapping Unit	Description
1	Tall Open Forest of <i>Eucalyptus camaldulensis</i> (river red gum), <i>Eucalyptus tereticornis</i> (forest red gum) and <i>Eucalyptus coolabah</i> (coolabah).
2	Very Tall Open Forest-Tall Woodland of <i>Eucalyptus camaldulensis</i> (river red gum) and <i>Eucalyptus tereticornis</i> (forest red gum)
3	Tall Woodland – Mid High Open Forest of <i>Eucalyptus coolabah</i>
4	Tall Open Forest of <i>Callitris glaucophylla</i> (white cypress pine)

5	Tall Open Forest – Mid High Open Forest – Mid High Woodland of <i>Eucalyptus crebra</i> (narrow leaved ironbark) and <i>Callitris glaucophylla</i>
6	Tall Woodland – Mid High Open Forest of <i>Acacia harpophylla</i> (brigalow), vine thicket and <i>Eucalyptus spp.</i>
7	Tall Open Forest – Mid High Woodland of <i>Eucalyptus populnea</i> (poplar box)
8	Tall Woodland – Mid High Open Forest – Mid High Woodland of mixed <i>Eucalyptus spp.</i>
9a	Tall Open Forest of vine thicket
9b	Tall Woodland of <i>Brachychiton rupestris</i> (narrow leaved bottle tree)
10	Tall Woodland of <i>Casuarina cristata</i> (belah)
11	Mid High Open Forest – Mid High Woodland of <i>Acacia rhodoxylon</i> (rosewood)
12	Mid High Open Forest – Mid High Woodland of <i>Acacia rhodoxylon</i> (rosewood), <i>Acacia shirleyi</i> (lancewood) and <i>Acacia harpophylla</i> (brigalow)
13	Cleared. Lands used for agriculture, grazing, urban purposes
14	Water

Of the communities mapped the study identified that Map Unit types 1, 2, 3 and 7 were regarded as Of Concern and Map Unit 10 was regarded as Endangered. Based on floristics it was suggested that Map Unit 9b also warranted an Endangered status.

It is noted at the time of the Dowling & Halford study the regional ecosystem framework (Sattler & Williams, 1999) for ‘standardising’ vegetation community descriptions across the state had not yet been formally established. At the time of the study Dowling & Halford endeavoured to equate the Vegetation Communities outlined above with regional ecosystems outlined a draft report prepared by the Department of Environment. As the codes and conservation status identified at the time do not relate to the current regional ecosystem framework, they are not discussed further herein. Appendix C lists Dowling & Halford vegetation communities and endeavours to correlate these current recognised regional ecosystems.

The report identified that a total of 30 Tertiary sites and 107 quaternary sites were conducted as part of the study. Despite this, the report provided only limited guidance as specifically where these were undertaken. To assist in identifying where these sites were conducted a meeting was held with Mr Ralph Dowling of the Queensland Herbarium on 11 March 2008. Although broad areas could be identified the precise locational data for specific sites could no longer be located.

2.2.2.3 Fensham and Wilson, 1997

Within the project area are vegetation associated directly with mound springs, locally referred to as Boggomosses. They provide perennial wetland habitat in an area subject to seasonal and frequently prolonged drought. Consequently, GAB Spring Communities are significant because they provide specialised habitat for many species of endemic flora and fauna and habitat for species that would otherwise not occur in that region (Fensham and Price, 2004).

The groundwater feeding most of the GAB Spring Communities is contained within the aquifers of the Great Artesian Basin. They largely occur where erosion from the Dawson River and its tributaries has resulted in a relatively thin mantle of material over the aquifer. Mounding occurs as a result of sediment brought to the surface by the groundwater in addition to accumulation of peat from the vegetation associated with the spring. Within Nathan Gorge some GAB Spring Communities occur where the river intersects the top of the aquifer.

Fensham and Wilson (1997) mapped a total of 69 GAB Spring Communities in the Dawson River Valley categorised into four groups:

1. Springs associated with sandy and relatively infertile surface soils;
2. Springs associated with fertile and heavy soils and relatively large mounds;
3. Springs associated with fertile and heavy soils, but with little or no mound development; and
4. Springs that are linear in shape and flood prone at the base of a sandstone gorge.

Of the four categories Group 1 was regarded as having the highest botanical conservation values because of an eclectic complex of species and the presence of biogeographically significant populations including rare species. A total of 203 vascular plant species associated with the 69 GAB Spring Communities they mapped.

Another study associated with the IAS (Ingram and Stanisic, 1997) mapped a total of 32 GAB Spring Communities, some of which were previously mapped, mainly from locations along the Dawson River on properties including Mt Rose Station, Balcarris Station, Boggomoss Station, Spring Creek Station and Farnham Station. The Ingram and Stanisic (1997) study identified additional GAB Spring Communities not located in the Fensham and Wilson (1997) study.

2.2.3 Regional Ecosystem Mapping

2.2.3.1 Remnant Regional Ecosystem Mapping

The Queensland Herbarium, as part of the Environmental Protection Agency (EPA), has mapped the Regional Ecosystems (RE) of the project area at a scale of 1:100,000. This mapping underpins the State's *Vegetation Management Act 1999* (VMA). The VMA defines a "Regional Ecosystem" as a vegetation community in a bioregion that is consistently associated with a particular combination of geology, landform and soil.

Regional Ecosystems are coded with a three-part number:

- The first number is the bioregion in which the site occurs. In some instances the combination of vegetation and geology typical of a certain bioregion may occur outside the bioregional boundary. In this instance the Regional Ecosystem is assigned to the Bioregion in which it typically occurs, rather than the Bioregion in which the site is located. The project area vegetation in this case is within the Brigalow Belt Bioregion and is therefore numbered "11".
- The second number is the geomorphic category or "Land Zone" that the ecosystem falls within (eg all Regional Ecosystems occurring on "Hills and lowlands on metamorphosed sedimentary rocks are Land Zone '11').
- The third number is the ecosystem number, and relates to the dominant vegetation.

Under the VMA, three levels of conservation status are defined for regional ecosystems:

- "Of Least Concern" means a regional ecosystem that is prescribed under a regulation and has either more than 30% of its pre-clearing extent remaining and the remnant vegetation remaining is more than 10,000 ha;
- "Of Concern" means a regional ecosystem that is prescribed under a regulation and has either:
 - (a) 10% to 30% of its pre-clearing extent remaining; or
 - (b) more than 30% of its pre-clearing extent remaining and the remnant vegetation remaining is less than 10,000 ha
- "Endangered" means a regional ecosystem that is prescribed under a regulation and has either:
 - (a) less than 10% of its pre-clearing extent remaining; or
 - (b) 10% to 30% of its pre-clearing extent remaining and the remnant vegetation remaining is less than 10,000 ha

A total of 24 RE's are mapped within the proposed Dam and Surrounds, of these 6 are listed as 'Of Concern' and 4 are listed as 'Endangered'.

A total of 24 RE's are mapped within the proposed Pipeline Route, of these 5 are listed as 'Of Concern' and 5 are listed as 'Endangered.'

2.2.3.2 Supporting Data

Important to the mapping of regional ecosystems is the collection of field data by the Queensland Herbarium through CORVEG. Specifically, within the Entire Study Area, the Queensland Herbarium has undertaken a number of Secondary and Quaternary sites that provide value information to support regional ecosystem mapping decisions and also important floristic information.

2.2.4 Federally Identified Vegetation Communities

A search of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) Protected Matters database identified four threatened communities listed as 'Endangered' located within the Entire Study Area. These are summarised in Table 7 below.

Table 7: EPBC Protected Matters search for Threatened Communities for Nathan Dam Area

Community Name	Status	Associated Regional Ecosystems within the project area
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	11.3.21
Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin	Endangered	11.3.21 & 11.9.12
Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant)	Endangered	11.3.1, 11.4.3, 11.9.1, 11.9.5 & 11.9.6
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	11.9.4
The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin	Endangered	The listing, The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin, includes springs within the GAB discharge area (Great Artesian Basin Consultative Council, 2000) that are the natural surface discharge points of aquifers in the Triassic, Jurassic and Cretaceous sedimentary sequence of the Great Artesian Basin (Habermehl, 1982). Not included are those springs arising from Tertiary sediments and basalts.
Weeping Myall Woodlands	Endangered	Can form part of 11.3.2
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	-

Note: The search area was bounded by the following coordinates 149 43 38, -25 21 25; 150 13 6, -25 21 16; 150 12 49, -25 39 54; and 149 44 3, 25 40 27; -25.35694, 149.7272, -25.35444, 150.2183, -25.665, 150.2136, -25.67416, 149.7341; -25.4666, 150.1156, -26.0767, 149.9466; -26.0767, 149.9466, -27.1659, 151.25..

A total of 25 GAB Spring Communities are registered on the Australian Heritage Database in the Taroom area (DEWHA, 1999a; DEWHA, 1999b).

2.2.5 Other Literature

2.2.5.1 State of the Rivers

The State of the Rivers report (Telfer, 1995) of the Dawson River and tributaries assesses the in stream habitat and ecological condition of the catchment in relation to their presumed natural or original condition. The Dam and Surrounds incorporates a number of subsections of the total of 173 subsections surveyed with the total catchment area.

The riparian vegetation eastern most part of the Dam and Surrounds is rated as in ‘very good’ condition with a rating of ‘moderate’ condition across the balance of the Dawson River. Cockatoo, Cabbage Tree and Downfall Creeks are regarded as having a ‘poor’ condition scores and Spring and Bentley Creeks are regarded as ‘very poor’.

This report has also classed the surrounding vegetation into 6 predominant vegetation types. Most of the project area is described as Tussocky Grasslands, with eastern parts supporting Acacia/Eucalypt woodland moving into Open Eucalypt Forest with a shrubby understorey.

The overall assessment of the Dawson River within the Dam and Surrounds (incorporating vegetation, reach environs condition, bank stability, bed and bar stability, channel diversity, riparian vegetation condition, aquatic vegetation condition, aquatic habitat condition, scenic and recreational values) is ‘moderate-good’ condition whilst the tributaries are regarded as ‘poor’.

2.2.5.2 Floristic communities of the lower Dawson River plains

Pollock, Buttler and Price (2004) investigated the flood plains of the lower reaches of the Dawson River, located to the east and north of the project area, from Gyrenda Weir to the Mackenzie River junction. The purpose of reviewing this information is to understand the impact of altered flow regimes on flood inundation areas downstream. All sites sampled vegetation on either alluvium or adjacent clay plains. The rare fan-palm, *Livistona nitida* was identified as a characteristic component of some riverine forests in the lower reaches of the Dawson River. The authors described three broad vegetation associations which were strongly correlated with soil type, landform and proximity to the river channel. These groups were:

- **Group 1-** Always associated with alluvial plains. Included *Eucalyptus coolibah/Eucalyptus camaldulensis/Eucalyptus populnea* with *Eucalyptus tereticornis/Lophostemon suaveolens* associated on near by levees;
- **Group 2 –** Deep sandy substrates associated with backplains or sandy river channels. The dominant species of Group 2 were *Eucalyptus tereticornis* and *Corymbia tessellaris*; and
- **Group 3 –** Occur on very heavy vertosols or kandosols. The dominant communities are *Acacia harpophylla/Eucalyptus camaldulensis*/semi-evergreen thicket.

These broad groups were further divided into “Floristic site groups”. The authors discussed that Regional Ecosystems form reasonable associations with the floristic site groups.

2.3 SPECIES

2.3.1 Records of Flora

Several databases and reports were reviewed to identify species scheduled under either the *Nature Conservation (Wildlife) Regulation 2006* or the *Environment Protection and Biodiversity Conservation Act 1999* that are known to occur within, or within the vicinity, of the project area. Specifically these included:

- Herbrecs (EPA 2005; DERM, 2009a). This is the state wide Queensland Herbarium database of all specimens held in their collection along with a location. Although some records have a low spatial precision (generally older records predating GPS technology) the dataset for a defined location provides assistance as to species potentially encountered during field work including threatened species;
- Wildnet (EPA, 2008a; EPA, 2010). This database incorporates information from a number of datasets held by the EPA. The reliability of some of the data is variable depending on the original source (e.g. HERBRECs data is more reliable than data collected from community based programs);
- Corveg (EPA, 2000). This database includes raw data from Queensland Herbarium field sites. The data provides, amongst other things, an indication of the level of previous survey effort in an area and the species encountered;
- EPBC Protected Matters Database (DEWHA, 2008; DEWHA, 2010a). The database provides an indication of species likely to occur in an area, in part, based on habitat modelling;
- Ison (1996). The report provided a limited assessment of flora and fauna values within the then proposed project area.
- Dowling & Halford (1997). The report commissioned as part of a previous Environmental Impact Assessment (Hyder, 1997) provides the most comprehensive assessment of the flora of the project area. Dowling & Halford's flora list and associated vegetation communities is attached as Appendix D; and
- Fensham & Wilson (1997). Also commissioned as part of a previous Environmental Impact Assessment (Hyder, 1997) the study provides a detailed assessment of the floristic assemblages associated with GAB Spring Communities. The results are included herein as Appendix E.

The EIS summarises threatened species identified in these databases/studies along with the habitat requirements of each species. A total of 54 threatened plant species were identified, of which 7 are known to occur, 4 are likely to occur, 26 are possible to occur, 21 are unlikely to occur and 2 are absent within the Enitre Study Area.

The specific location of some of these species is discussed in the various reports reviewed. Some of these have coordinates provided in databases and reports that have a known high degree of accuracy (with a 100m+ precision) or can be relied on because of the specific nature of the study. By their nature, some of these points are located within areas mapped as Essential Habitat. Descriptions of the specific location of species include:

- *Acacia calantha* was described as occurring upstream of Nathan Gorge by Ison Environmental Planners (1996);
- The specific location of *Thelypteris confluens* (associated with 1 GAB Spring Communities) and *Arthraxon hispidulus* (associated with 12 GAB Spring Communities) are identified by Fensham and Fairfax (2005) as occurring along Spring Creek and its tributaries. *Eriocaulon carsonii* and *Myriophyllum artesium* as described by Fensham and Wilson (1997) are associated with GAB Spring Communities located to the south of the Dam and Surrounds, but in close proximity to proposed Other Infrastructure;
- A detailed survey for *Rutidosis crispata* identified a total of approximately 250 individuals or approximately 56% of the then known population of the species within the project area (Dowling & Halford, 1997);
- A widespread occurrence of *Cryptandra ciliata* was recorded from sandstone in an area adjacent to the north of the then proposed dam wall and upstream of it on the northern side of the Dawson River (Dowling & Halford, 1997);
- *Bertya pedicellata* was recorded on the lower northern eastern slope of Mt Glebe well above the then maximum design FSL (Dowling & Halford, 1997); and
- Colonies of *Livistona nitida* were recorded at a number of locations within the project area, including Palm Tree Creek, Price Creek and Spring Creek (Dowling & Halford, 1997).

It is likely that the name ‘Palm Tree Creek’ and ‘Cabbage Tree Creek’ have been applied to tributaries of the Dawson River on the basis of the presence of *Livistona nitida*.

Additional noteworthy species are discussed in some reports. Specifically, these include species that occur in disjunct populations and are regarded as having biogeographic significance. Dowling & Halford (1997) recorded a natural occurrence of Silky Oak (*Grevillea robusta*) on the Station ‘Bookabie’. The locality was approximately 200km west of the nearest previously known locality of this species and represented a substantial extension of the known range of silkoak in south east Queensland.

Fensham & Wilson (1997) note the nearest population of two species *Fimbristylis tetragona* and *Myriophyllum artesium* is greater than 500km from the GAB Spring Communities at Taroom and a further 21 species are not known within 200 km of their populations in the GAB Spring Communities at Taroom. Three species, *Cyperus unioloides*, *Eleocharis tetraquetra* and *Leptospermum juniperinum*, have their only known populations other than the GAB Spring Communities within 50km of the coast.

2.3.2 Weeds

Most studies reviewed identify that exotic vegetation is located within the project area. Dowling & Halford (1997) note that with the exception of Buffel Grass (*Cenchrus ciliaris*) no one species is particularly common or forms dense stands within the area, with most species being widespread and occurring in most vegetation types. The only species noted of particular importance as weeds are *Opuntia stricta* var. *stricta*, *Opuntia tomentosa* and *Opuntia aurantiaca* which are widespread throughout the area. These species of Opuntia are now recognised as ‘Class 2’ declared plants under the *Land Protection (Pest and Stock Route Management) Act 2002*.

Additional literature searched in order to identify exotic species known or likely to occur in the study area include Herbrecs (Queensland Herbarium and EPA, 2005; DERM, 2009a), Corveg database (Queensland Herbarium and EPA, 2000) and the “Invasive Plants of Taroom Shire” (Taroom Shire Council, 2006). Furthermore local government officers responsible for weed management were consulted regarding the likely weed species that occur in the area. The results are tabulated in Table 8.

The declared plants are identified according to their status under the *Land Protection and Stock Route Management Act 2002*:

- Class 1 -** It is not commonly present or established in the State; and has the potential to cause an adverse economic, environmental or social impact in the State; if established they are subject to eradication; reasonable steps must be taken to keep land free of Class 1 pests;
- Class 2 -** Are established in the State and have, or could have, an adverse economic, environmental or social impact; reasonable steps must be taken to keep land free of Class 2 pests;

Class 3 - Are established in the State and have, or could have, an adverse economic, environmental or social impact; their impact is primarily environmental; control notices can be issued for land that is, or is adjacent to an environmentally significant area.

In addition to species declared under the *Land Protection (Pest and Stock Route Management) Act 2002*, the Taroom Shire Council identifies a number of 'Invasive plants' that are generally low control priority but should be controlled where possible. Table 8 also lists exotic species that have previously been recorded in the area.

Table 8: Exotic species known to or are likely to occur within the project area.

Species	Common Name	FAMILY	Status	Recorded Dowling & Halford, 1997	Recorded Corveg 2008	Recorded Herbrcs 2008 Inundation Area	Herbrcs 2008 Dam and Surround	Herbrcs 2008 Pipeline Route	Herbrcs 2010 Pipeline Route	GAB Spring Communities	Pers comm. Mick Gleeson (Dalby Regional Council) road reserve	Pers. Comm. Geoff Frame (Stock Route Supervisor Chinchilla) road reserve	Cameron Hansen/Gord Twiner (Bana Shire Council)
<i>Acacia farnesiana</i>	Mimosa bush	MIMOSACEAE	* (invasive plant of Taroom Shire)	x	x								
<i>Achyranthes aspera</i>	Chaff flower	AMARANTHACEAE	*	x						x			
<i>Alternanthera sessilis</i>		AMARANTHACEAE	*		x								
<i>Amaranthus graecizans subsp. <i>Sylvestris</i></i>		AMARANTHACEAE	*	x									
<i>Amaranthus viridis</i>	Green amaranth	AMARANTHACEAE	*	x			x						
<i>Anoda cristata</i>		MALVACEAE	*					x					

<i>Argemone ochroleuca</i> subsp. <i>Ochroleuca</i>	Mexican Poppy	PAPARVERACEAE	* (invasive plant of Taroom Shire)	x										
<i>Aster subulatus</i>	Wild aster	ASTERACEAE	*	x		x	x			x				
<i>Avena fatua</i>		POACEAE	*				x							
<i>Baccharis halimifolia</i>	Groundsel bush	ASTERACEAE	* (Class 2)	x										
<i>Bidens bipinnata</i>	Bipinnate beggar's ticks	ASTERACEAE	*	x										
<i>Bidens pilosa</i>	Cobblers peg	ASTERACEAE	*			x	x			x				
<i>Brachiaria eruciformis</i>		POACEAE	*	x										
<i>Bromus catharticus</i>		Poaceae	*					x						
<i>Bryophyllum delagoense</i>	Mother of Millions		* (Class 2)					x			x		x	x

<i>Bryophyllum x houghtonii</i>		Crassulaceae	*				x						
<i>Bursaria incana</i> var. <i>incana</i>		PITTOSPORACEAE		x									
<i>Cenchrus ciliaris</i>	Buffel grass	POACEAE	*	x	x								
<i>Centaurea melitensis</i>	Maltese cockspur	ASTERACEAE	*	x			x						
<i>Centaurium erythraea</i>	Common centaury	GENTIANACEAE	*	x									
<i>Cestrum parqui</i>		Solanaceae	*					x					
<i>Chamaesyce hyssopifolia</i> (L.) Small		Euphorbiaceae	*					x					
<i>Chamaesyce maculata</i> (L.) Small		Euphorbiaceae	*				x						
<i>Chamaesyce prostrata</i> (Aiton) Small		Euphorbiaceae	*				x						

<i>Chenopodium ambrosioides</i>	Mexican tea	CHENOPodiACEAE	*	x			x						
<i>Chloris gayana</i>	Rhodes grass	POACEAE	*	x						x			
<i>Cirsium vulgare</i>	Spear thistle	ASTERACEAE	*	x		x	x						
<i>Conyza bonariensis</i>	Flaxleaf fleabane	ASTERACEAE	*	x			x						
<i>Conyza sumatrensis</i>		ASTERACEAE	*				x			x			
<i>Coreopsis lanceolata L.</i>		Asteraceae	*					x					
<i>Crotalaria incana</i> subsp. <i>Incana</i>	Wooly rattlepod	FABACEAE	*	x									
<i>Cuscuta campestris</i>	Dodder	CONVOLVULACEAE	*	x			x						
<i>Cyclospermum leptophyllum</i>	Slender celery	APIACEAE	*	x	x	x	x			x			

<i>Cynodon dactylon</i>		POACEAE	*			x	x						
<i>Cyperus rotundus</i>	Nutgrass	CYPERACEAE	*	x			x						
<i>Datura ferox</i>	Fierce thornapple	SOLANACEAE	* (invasive plant of Taroom Shire)	x			x						
<i>Digitaria ciliaris (Retz.) Koeler</i>		Poaceae	*				x						
<i>Digitaria violascens Link</i>		Poaceae	*				x						
<i>Echinochloa crusgalli</i>	Barnyard grass	POACEAE	*	x		x	x	x					
<i>Eragrostis curvula</i>	African Love Grass	POACEAE	*									x	
<i>Fallopia convolvulus</i>		POLYGONACEAE	*	x			x	x					
<i>Gaura parviflora</i>	Clockweed	ONAGRACEAE	*	x			x						

<i>Gnaphalium polycaulon</i> Pers.		Asteraceae	*				x							
<i>Gomphocarpus physocarpus</i> E. Mey	Balloon cotton bush	ASCLEPIADACEAE	*	x						x				
<i>Gomphrena celosioides</i>	Soft khakiweed	AMARANTHACEAE	*	x										
<i>Grevillea rosmarinifolia</i> A.Cunn.		Proteaceae	*					x						
<i>Heliotropium amplexicaule</i>	Blue heliotrope	BORAGINACEAE	*	x			x	x						
<i>Heliotropium indicum</i>		BORAGINACEAE	*	x			x							
<i>Hypochaeris glabra</i>	Smooth catsear	ASTERACEAE	*	x		x	x							
<i>Lepidium africanum</i>	Common peppercress	BRASSICACEAE	*	x			x							
<i>Lepidium bonariense</i>	Argentine peppercress	BRASSICACEAE	*	x										

<i>Lepidium didymum</i>	Lesser swine-cress	BRASSICACEAE	*	x									
<i>Lepidium draba L.</i>		Brassicaceae	*					x					
<i>Leucaena leucocephala subsp. <i>glabrata</i> (Rose) Zarate</i>		Mimosaceae	*				x						
<i>Ludwigia octovalvis</i>	Willow primrose	ONAGRACEAE	*	x						x			
<i>Ludwigia peploides subsp. <i>montevidensis</i></i>		ONAGRACEAE	*	x						x			
<i>Macfadyena unguis-cati</i>	Cats claw	BIGNONIACEAE	* (Class 3)	x									
<i>Macfadyena unguis-cati</i>	Cats claw	BIGNONIACEAE	* (Class 3)								x		x
<i>Macroptilium atropurpureum (DC.) Urb.</i>		Fabaceae	*				x						
<i>Macroptilium lathyrioides</i>	Phasey bean	FABACEAE	*	x			x						

<i>Malva parviflora</i>	Marshmallow w	MALVACEAE	*	x									
<i>Malvastrum americanum</i>	Spiked malvastrum	MALVACEAE	*	x				x					
<i>Malvastrum coromandelianum</i>	Prickly malvastrum	MALVACEAE	*	x									
<i>Medicago minima</i> (L.) Bartal. var. <i>minima</i>		Fabaceae	*				x						
<i>Medicago polymorpha</i>		FABACEAE	*	x			x						
<i>Megathyrsus maximus</i>	green panic	POACEAE	*	x						x			
<i>Melilotus indicus</i>	Hexam scent	FABACEAE	*	x				x	x				
<i>Melinis repens</i>	Red natal grass	POACEAE	*	x	x								
<i>Neptunia gracilis</i>	Sensitive plant	MIMOSACEAE	*	x	x								

<i>Oenothera indecora</i> subsp. <i>Bonariensis</i>	Small flower evening	ONAGRACEAE	*	x									
<i>Opuntia aurantiaca</i>	Tiger pear	CACTACEAE	* (Class 2)	x									
<i>Opuntia stricta</i> var. <i>stricta</i>	Prickly pear	CACTACEAE	* (Class 2)	x	x								
<i>Opuntia tomentosa</i>	Velvety tree pear	CACTACEAE	* (Class 2)	x						x	x	x	
<i>Oxalis corniculata</i> *		Oxalidaceae	*										
<i>Parthenium hysterophorus</i>	Parthenium		* (Class 2)									x	
<i>Paspalum urvillei</i>		POACEAE	*			x	x						
<i>Pennisetum ciliare</i> (L.) Link		Poaceae	*					x	x				
<i>Perotis rara</i>	Comet grass	POACEAE	*	x									

<i>Phyla canescens</i> (Kunth) Greene		Verbenaceae	*				x	x					
<i>Physalis lanceifolia</i>		SOLANACEAE	*	x		x	x						
<i>Richardia brasiliensis</i>	Mexican clover	RUBIACEAE	*	x									
<i>Rumex crispus</i>		POLYGONACEAE	*			x	x						
<i>Sacciolepis indica</i>	Indian cupscale grass	POACEAE	*	x						x			
<i>Salix babylonica</i>	Weeping willow	SALICACEAE	*	x			x						
<i>Salsola kali</i>	Soft roly-poly	CHENOPodiACEAE		x									
<i>Salvia reflexa</i>	Mintweed	LAMIACEAE	*	x			x						
<i>Sida rhombifolia</i>	Sida retusa	MALVACEAE	*	x		x	x						

<i>Silybum marianum</i>	Varigated thistle	ASTERACEAE	* (invasive plant of Taroom Shire	x			x						
<i>Sisymbrium thellungii</i>	African turnip-weed	BRASSICACEAE	*	x			x						
<i>Solanum americanum</i>	Glossy nightshade	SOLANACEAE	*	x		x	x			x			
<i>Solanum semiarmatum</i>	Prickly nightshade	SOLANACEAE	*	x									
<i>Soliva anthemifolia</i>	Dwarf jo jo weed	ASTERACEAE	*	x									
<i>Sonchus oleraceus</i>	Common sowthistle	ASTERACEAE	*	x			x						
<i>Sorghum halepense</i>		POACEAE	*			x	x						
<i>Spergularia rubra</i> (L.) J.Presl & C.Presl		Caryophyllaceae	*				x						
<i>Sporobolus coromandelianus</i>		POACEAE	*	x									

<i>Sporobolus elongatus</i>	Slender rat's tail grass	POACEAE	*	x									x
<i>Sporobolus mitchellii</i>	Rat's tail couch	POACEAE	*	x	x								
<i>Urochloa mosambicensis</i>	Sabi grass	POACEAE	*	x									
<i>Verbena aristigera</i>	Maynes pest	VERBENACEAE	*	x					x				
<i>Verbena littoralis</i>	Verbena	VERBENACEAE	*	x									
<i>Verbena halei Small</i>		Verbenaceae	*							x			
<i>Verbesina encelioides</i>	Wild sunflower	ASTERACEAE	*	x			x						
<i>Vicia sativa subsp. nigra (L.) Ehrh.</i>		Fabaceae	*						x				
<i>Xanthium spinosum</i>	Bathurst burrr	ASTERACEAE	*	x									
<i>Zinnia peruviana</i>	Wild zinnia	ASTERACEAE	*	x							x		

2.4 GAP ANALYSIS

The following provides a brief analysis of the relevance and adequacy of the available information discussed in Section 5.3 as a basis to inform the EIS process.

2.4.1 Vegetation / Regional Ecosystem Mapping

Mapping prepared for the Hyder IAS (Dowling & Halford, 1997) was reputably at a scale of 1:25,000. The linework would therefore not be suitable for mapping required at a scale of 1:10,000. Furthermore, the mapping predated the current regional ecosystem framework and advent of the *Vegetation Management Act 1999*. Review of aerial photograph predating and following the *Vegetation Management Act 1999* indicates that the vegetation coverage in the Dam and Surrounds has been significantly modified since the Dowling & Halford (1997) undertook their mapping. Although the mapping is useful at providing a guide, it is not appropriate for regional ecosystem mapping at a scale of 1:10,000 because of the finer scale required, the changes in vegetation coverage and the vegetation communities identified by Dowling & Halford (1997) do not correlate directly with regional ecosystems.

Existing regional ecosystem mapping (DERM, 2009) is presented at a scale of 1:100,000. Mapping scale is based primarily on the number of representative survey sites within a given area. Neldner *et al.* (2005) defined survey requirements as 25 sites/km² for mapping at a scale of 1:10,000; 4 sites/km² for mapping at scale of 1:25,000, and 0.25 sites/km² for mapping at a scale of 1:100,000. Approximately 326 previous survey sites (incorporating the 30 tertiary and 107 quaternary sites identified in Dowling & Halford (1997) for which no data was available from the Queensland Herbarium) are located in the Dam and Surrounds. With a mapping scale of 1:10,000 identified as the appropriate scale at which to map vegetation for the current study, a more detailed delineation and description of regional ecosystems is a specific information requirement to be addressed in the terrestrial flora field survey.

2.4.2 Aerial Photography

The most recent available digital aerial photography available for the study area is SunWater Orthoimagery - 1:25,000 Aug 1994. Also available digitally was SPOT 2.5m Satellite Imagery - Aug 2006.

Although not ideal for the generation of vegetation mapping at a scale of 1:10,000, it represents a suitable base from which to define line work which can be refined through detailed on ground assessments.

2.4.3 Flora Data

2.4.3.1 General Floristics

Within the Dam and Surrounds Dowling & Halford (1997) undertook 30 tertiary and 107 quaternary sites. This resulted in a list of 492 species attributed to 12 vegetation communities. Fensham & Wilson (1997) recorded floristic data at 69 GAB Spring Communities sites that can be tied to specific locations, although some points, particularly in the Nathan Gorge, may be slightly inaccurate. Within the Dam and Surrounds are 3 Quaternary sites and 71 Secondary sites (Queensland Herbarium and EPA, 2000) that also provide valuable base information. Generally, floristic data for the Dam and Surrounds is satisfactory, however, sampling has largely been based on vegetation communities rather than regional ecosystem and there has been insufficient seasonal variation in sampling times.

The proposed pipeline route has been inadequately surveyed. Only 76 Quaternary sites and 2 Secondary sites (Queensland Herbarium and EPA, 2000; DERM, 2009a) represents most of the floristic data collected from this area. Given much of the narrow linear vegetation has not been mapped along the course of the route; it is evident that further detailed investigations are required of remnant regional ecosystems and non-remnant areas. Similar to the Dam and Surrounds seasonal variation in sampling times will also be necessary.

2.4.3.2 EVR Flora

The review of existing databases and literature identified a total of 54 species of threatened flora that may potentially occur within the project area. Assessment of the existing locational information and data relating to the species 7 are known to occur, 4 are likely to occur, 26 are possible to occur, 21 are unlikely to occur and 2 are absent within the Entire Study Area.

An analysis of the specimen-backed data (Herbrecs) indicates only 16 confirmed EVR species records in the Entire Study Area. This may only be a reflection of the extent of existing surveys or alternatively may represent an accurate indication of a paucity of rare or threatened flora species. Adopting a precautionary approach, given the number of species that have been recorded, are likely or possible to occur further detailed targeted surveys are necessary.

2.4.4 Condition of Vegetation

2.4.4.1 Vegetation Community Condition

At a very broad level condition assessment forms part of the certified regional ecosystem maps (DERM, 2009b) where vegetation is mapped as remnant or non-remnant vegetation.

It is reasonably fair to assume that areas mapped as remnant regional ecosystems by DERM (2009b) are in good condition (subject to field confirmation). However, given the mapping exercise requires vegetation to be mapped at a scale of 1:10,000 it is likely that some areas that are highly edge affected will be mapped. Condition of all polygons mapped at a scale of 1:10,000 can in part be defined in terms of remnant status determined through comparison with relatively undisturbed reference sites. Given Brigalow regrowth that is greater than 15 years old can meet the requirements for referral for assessment under the EPBC Act it will be necessary to map these areas also. However, a clear delineation will be necessary to differentiate between the condition of narrow bands of regrowth Brigalow and broader, more viable patches.

Clearly existing information is insufficient and additional work will be necessary to adequately describe vegetation condition.

2.4.4.2 Exotic Species

Knowledge of the location of existing weeds within the Entire Study area is based largely on records contained within existing studies (primarily Dowling & Halford, 1997; and Fensham & Wilson, 1997) along with HERBRECS and CORVEG. Although this information provides some indication of the location of some species and likely distribution based on vegetation assemblages, it is not complete, particularly for the proposed Pipeline Route where very little information is available. Furthermore, it has been over a decade since the Hyder IAS was prepared – this is sufficient time for weed dynamics to change within the Dam and Surrounds.

2.4.5 Summary of Information Gaps

Table 9 below summarises the findings of the information gap analysis along with the required action to address the specific information gap.

Table 9 - Summary of existing information, data adequacy and further study requirements.

		Existing Information	Reports/Databases	Information Status	Requirement
Regional Mapping		Vegetation Community and RE Mapping	DERM (2009b)	Inadequate	Detailed vegetation mapping at a scale of 1:10,000.
Raw Data		Existing Flora Surveys/Data (including EVR species)	Queensland Herbarium and EPA (2005) Queensland Herbarium and EPA (2000) DERM (2009a) DEWHA (2004) DEWHA (2010a)	Inadequate	Detailed targeted field survey at selected sites.
Condition of Vegetation		Vegetation Condition	DERM (2009b)	Inadequate	Detailed vegetation mapping at a scale of 1:10,000 and assessment against condition criteria.
		Weeds	Taroom Shire Council (2006); Queensland Herbarium (2005, 2010) and EPA (2005); Queensland Herbarium and EPA (2000); & EPA (2008a); DERM (2009a)	Inadequate	Requires ground survey, detailed site data and vegetation community mapping.

3.0 RESULTS – FIELD ANALYSIS

3.1 CLASSIFICATION OF LAND AND VEGETATION

3.1.1 Land Zones

The Entire Study Area incorporating the dam and pipeline is complicated in terms of geology and consequently land zones. Pre-clearing regional ecosystem mapping, geological mapping and subsequent field confirmation identified the presence of 6 land zones in the Study Area, accounting for half of the land zones recorded in Queensland (Sattler and Williams, 1999). In summary the following land zones were recorded (Table 10):

Table 10 – Land Zones recorded within the Entire Study Area

Land Zone	EPA (2005) Description
3	<p>Central concept: Quaternary alluvial systems Lay terminology: alluvium (river and creek flats) Description: Quaternary alluvial systems, including floodplains, alluvial plains, alluvial fans, terraces, levees, swamps, channels, closed depressions and fine textured palaeo-estuarine deposits. Also includes estuarine plains currently under fresh water influence, inland lakes and associated dune systems (lunettes). Excludes talus slopes, colluvial deposits and pediments. Includes a diverse range of soils, predominantly Vertosols and Sodosols, also with Hydrosols in higher rainfall areas.</p>
4	<p>Central concept: flat to gently undulating Tertiary clay plains Lay terminology: clay plains not associated with current alluvium Description: Cainozoic clay deposits, usually forming level to gently undulating plains above current alluvial systems. Excludes clay plains and downs formed in-situ on bedrock. Mainly Vertosols with gilgai microrelief, but includes small areas of thin sandy or loamy surfaced Sodosols and Chromosols.</p>
5	<p>Central concept: plains and plateaus on Tertiary land surfaces, generally with medium to coarse textured soils Lay terminology: old loamy and sandy plains Description: Extensive, uniform near level or gently undulating Cainozoic plains with sandy or loamy soils. Includes dissected remnants of these surfaces. Also includes plains with sandy or loamy soils of uncertain origin, and plateau remnants with deep soils usually overlying duricrust. Excludes Quaternary alluvial deposits (land zone 3), exposed duricrust (land zone 7), and soils derived from underlying bedrock (land zones 8 to 12). Soils are usually Tenosols and Kandosols, also minor deep sandy surfaced Sodosols and Chromosols. There may be a duricrust at depth.</p>
7	<p>Central concept: exposed or shallowly covered duricrusts Lay terminology: ironstone jump-ups Description: Cainozoic duricrusts formed on a variety of rock types, usually forming mesas or scarpas. Includes exposed ferruginous, siliceous or mottled horizons and associated talus and colluvium, and remnants of these features, for example low stony rises on downs. Soils are usually shallow Rudosols and Tenosols, with minor Sodosols and Chromosols on associated pediments, and shallow Kandosols on plateau margins and larger mesas.</p>
9	<p>Central concept: gently undulating landscapes on more or less horizontally bedded fine grained sedimentary rocks Lay terminology: undulating country on fine grained sedimentary rocks Description: Fine-grained sedimentary rocks, generally with little or no deformation, forming undulating landscapes with a broad range of fine textured soils of moderate to high fertility. Siltstones, mudstones, shales, calcareous sediments, and lithic and labile sandstones are typical rock types although minor interbedded volcanics may occur. Excludes areas of duricrust (land zone 7). Includes a diverse range of soils of moderate to high fertility, predominantly Vertosols, Sodosols, and</p>

	Chromosols.
10	<p>Central concept: plateaus, scarps and ledges with shallow soils on more or less horizontally bedded medium- to coarse-grained sedimentary rocks</p> <p>Lay terminology: sandstone ranges</p> <p>Description: Medium to coarse-grained sedimentary rocks, with little or no deformation, forming plateaus, ledges and scarps. Includes siliceous sandstones, conglomerates and minor interbedded volcanics, and springs associated with these rocks. Excludes overlying Cainozoic sand deposits (land zone 5). Soils are predominantly shallow Rudosols and Tenosols of low fertility, but include sandy surfaced Kandosols, Kurosols, Sodosols and Chromosols.</p>

Despite being quite distinct in terms of their geological origin there have been numerous polygons mapped incorporating heterogeneity of land zones. Some specific examples include some areas of land zone 7 and 5 where there are no clearly defined breakaways or where the boundary of land zone 3 from surrounding land zones is and is not discernable through aerial photographic review.

There are some minor areas where some sandstone outcropping along the proposed pipeline route in the vicinity of Miles. Despite not displaying any obvious signs of weathering, they were regarded as part of the much broader areas of land zones 5 and 7 in which they were recorded.

3.1.2 GAB Spring Communities

For each new GAB Spring Communities mapped a tertiary site form was completed recording the species present (theses are included within Appendix F). A total of 17 additional GAB Spring Communities were identified as part of the current study, although some of these are likely to replicate the work by Fensham & Wilson (1997). Table 11 groups these 17 newly mapped GAB Spring Communities into the 4 categories described by Fensham & Wilson (1997).

Table 11: Newly mapped GAB Spring Communities within the study area.

Groups (as per Fensham & Wilson, 1997)	Dam and Surrounds (outside of FSL)	Inundation Area
Group 1 springs associated with sandy and relatively infertile surface soils	-	-
Group 2 springs associated with fertile and heavy surface soils and relatively large mounds	-	-
Group 3 springs associated with fertile and heavy surface soils, but with little or no mound development (probably young springs)	1 (B7)	6 (B1-B6)
Group 4 springs that are linear in shape and flood prone at the base of a sandstone gorge	10* (B8-B17)	-

* - It is likely 7 of these 10 correspond with springs already described by Fensham & Wilson (1997) and mapped by Fensham & Fairfax (2005)

Examples of each spring grouping are illustrated below.



A Group 1 spring mapped as #65. Previously described by Fensham & Wilson (1997)



A Group 2 spring mapped as #33. Previously described by Fensham & Wilson (1997)



A Group 3 Spring mapped as B5. A new spring identified as part of the current study.



A Group 4 Spring mapped as B3 and likely to correlate with Spring #36 as mapped by Fensham & Fairfax (2005)

3.2 REFERENCE SITES

Although transects were established throughout the Entire Study Area to for the purposes of mapping vegetation, condition and floristics only some were regarded as suitable for use as reference sites. The suitability of sites was based largely on the condition of the remnant (i.e. was it clearly remnant and/or subject to little disturbance) and whether they represented the best type example of the regional ecosystem in the immediate vicinity.

Attempts were made to establish reference sites for all regional ecosystems mapped as part of the study. Despite this, reference sites were not established for the following:

- 11.10.1 – this regional ecosystem has been mapped in the far northwest of the study area by the Queensland Herbarium (DERM, 2009b). The Queensland Herbarium's regional ecosystem mapping for this area was integrated into mapping undertaken for the current study. As it is located well outside of the inundation area efforts were not made to establish a reference site in the community.
- 11.10.3 – this community is also mapped outside of the inundation area and is largely confined to areas above 240m elevation although a minor occurrence is located at approximately 200m elevation in which a quaternary site was located (site MAR38). This regional ecosystem is equivalent to Map Units 11 and in part 12 described by Dowling & Halford (1997).

Given the poor representation of some regional ecosystems in the study area reference sites for some regional ecosystems was limited the actual extent of vegetation accessible. Specifically the following are of note:

- 11.4.12 – a small area of this regional ecosystem has been mapped by the Queensland Herbarium (DERM, 2009b) adjacent to the proposed pipeline route near Warra. Its remnant occurrence is located well outside of the road reserve. The Herbarium's allocation of the regional ecosystem was accepted as accurate in this instance, although the polygon boundary was adjusted to align with the 1:10,000 mapping. Additional minor areas of non-remnant were also mapped in this vicinity and closer to Chinchilla. Given the relatively minor extent of this vegetation community and location, efforts were not made to establish a reference site. A single Tertiary site was undertaken for this regional ecosystem;
- The transect for 11.3.19 was located in a copse of *Callitris glaucophylla* that may have been advanced regrowth. Wherever encountered in the field this regional ecosystem displayed a similar structural signature;

- A transect located in an area mapped as 11.9.12 by the Queensland Herbarium (DERM, 2009b) indicated that the area, at least for the location of the transect, was marginally remnant at best on the basis that >50% of the transect supported exotic species. However a Tertiary site (site MD 87) located in the immediate vicinity of the Herbarium polygon revealed a system dominated by native species. On this basis the original Herbarium polygon was accepted and expanded to include the area dominated by native grass species.
- 11.7.2 – non remnant elements of this regional ecosystem were present in a single location. No integral representations of ecosystem could be accessed during the study;
- The patches in which transect were located for 11.3.21, 11.4.3, 11.7.4 and 11.9.6 were entirely located within the road reserve. This, in part, is indicative the rarity of these regional ecosystems in that historic clearing has limited much of their remnant extent to road reserves and isolated patches.

Table 12 below summarises floristic data for each reference site used as indicators for remnant status.

Table 12– Reference Sites for Regional Ecosystems recorded within the Entire Study Area

Regional Ecosystem	Site Number	Dominant Canopy Species (T1)	Dominant Sub-canopy Species (T2)	Canopy Height (T1)	Canopy Cover (T1)	Sub-canopy Height (T2)	Sub-canopy Cover (T2)	Stem Count in 500m ² plot (T1/T2)
11.3.1	MD23	<i>Eucalyptus coolabah</i>	<i>Lysiphyllum carronii</i>	16	38.5	4.5	7.5	9/14
11.3.1 (regional variation)	SP8	<i>Acacia harpophylla</i>	<i>Acacia harpophylla</i>	17	16	7	34.5	3/46
11.3.2	MD96	<i>Eucalyptus populnea</i>	<i>Eucalyptus populnea</i>	15	29.5	8	19	9/11
11.3.3	MD1	<i>Eucalyptus coolabah</i>	<i>Eucalyptus coolabah</i>	17	53	6	-	13/1
11.3.4	MD21	<i>Eucalyptus tereticornis</i>	<i>Melaleuca linariifolia</i> var. <i>trichostachya</i>	29	100	9	41.5	5/3
11.3.14	Pw54	<i>Eucalyptus camaldulensis</i>	<i>Eucalyptus chloroclada</i>	30	58.6	8	11.4	3/6
11.3.19	W88	<i>Callitris glaucophylla</i>	<i>Callitris glaucophylla</i>	15	78.5	3	2.3	70/4
11.3.21	W1	<i>Dichanthium sericeum</i>	-	-	-	-	-	-
11.3.25	W18	<i>Eucalyptus camaldulensis</i>	<i>Eucalyptus coolabah</i>	27	51.5	13	22.5	4/3
11.3.27	W89	<i>Eucalyptus tereticornis</i>	<i>Livistona nitida</i>	20	-	6	-	-
11.3.22	MD156	<i>Eucalyptus camaldulensis</i>	<i>Eucalyptus coolabah</i>	25	52	18	27	10/8

11.4.3	SP14	<i>Acacia harpophylla</i>	<i>Casuarina cristata</i>	11	39.5	4	12	15/7
11.4.12	D1	<i>Eucalyptus populnea</i>	<i>Acacia pendula</i>	13	-	6	-	-
11.5.1	D7	<i>Eucalyptus crebra</i>	<i>Allocasuarina luehmannii</i>	14	39.5	6	25	10/27
11.5.1a	SP30	<i>Eucalyptus populnea</i>	<i>Eucalyptus populnea</i>	16	43	10	23	2/17
11.5.4	SP29	<i>Callitris glaucocephala</i>	<i>Callitris glaucocephala</i>	17	55.5	12	13.5	21/24
11.5.21	PW59	<i>Corymbia bloxsomei</i>	<i>Eucalyptus exserta</i>	10	15.8	6	9.7	-
11.7.5	SP33	<i>Eucalyptus exserta</i>	<i>Eucalyptus exserta</i>	10	11.5	4	2	0/0
11.7.6	W105	<i>Corymbia citriodora var. citriodora</i>	<i>Acacia crassa</i>	23	45	10	33.2	7/26
11.7.7	SP35	<i>Eucalyptus fibrosa subsp. nubila</i>	<i>Callitris glaucocephala</i>	15	41.5	5.5	23.5	11/29
11.9.1	MD163	<i>Eucalyptus cambageana</i>	<i>Acacia harpophylla</i>	17	42	10	12	4/19
11.9.4a	MD57	<i>Brachychiton rupestris</i>	<i>Erythroxylon</i> sp Spit Yard Creek	7	13.5	4	11	6/12
11.9.5a	SP46	<i>Acacia harpophylla</i>	<i>Acacia harpophylla</i>	15	25.5	5	20.5	14/7
11.9.5a (regional variation)	SP56	<i>Casuarina cristata</i>	<i>Eremophila mitchellii</i>	13	40.5	7	19	12/6
11.9.5	MD85	<i>Acacia harpophylla</i>	<i>Geijera parviflora</i>	15	44.1	8	51.5	13/23
11.9.6	W103	<i>Acacia harpophylla</i>	<i>Acacia harpophylla</i>	12	27.1	7	28.3	9/58
11.9.7	MD100	<i>Eucalyptus populnea</i>	<i>Eucalyptus populnea</i>	15	19	7	10.9	3/7
11.9.7 (regional variation)	W19	<i>Eucalyptus melanophloia</i>	<i>Psydrax odoratum</i>	14	43.7	8	22.5	6/12
11.9.10	MD67	<i>Eucalyptus populnea</i>	<i>Acacia harpophylla</i>	16	33.5	10	37.5	6/25
11.9.12	MD87	<i>Bothriochloa bladhii*</i>	-	-	-	-	-	-
11.10.7	DF T17	<i>Eucalyptus crebra</i>	<i>Alphitonia excelsa</i>	15	48	7	17.5	14/2
11.10.7a	MD20	<i>Eucalyptus crebra</i>	<i>Callitris glaucocephala</i>	10	38	5	2	1/8
11.10.9	MD145	<i>Callitris glaucocephala</i>	<i>Callitris glaucocephala</i>	17	45	9	10.5	18/7

The complete Secondary or Tertiary site field data is provided in Appendices A and B respectively.

4.0 RESULTS ANALYSIS AND DISCUSSION

4.1 REMNANT REGIONAL ECOSYSTEM & NON-REMNANT COMMUNITY DESCRIPTIONS

Regional Ecosystem	11.3.1
Short Description (as per Queensland Herbarium, 2009)	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> open forest on alluvial plains
Occurrence	Dam and Surrounds / Inundation Area / Pipeline Route
VMA Status	Endangered
EPBC Act Status	Endangered
Number of Secondary sites	3 (Remnant), 1 (non-remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	6 (Remnant), 2 (non-remnant)
Description	<p>The regional ecosystem occurs in the vicinity of the inundation area predominantly in the vicinity of the Glebe Weir and Spring Creek and in the southwest of the Pipeline Route between Chinchilla and the township of Brigalow. The canopy is frequently dominated by <i>Acacia harpophylla</i>, although in some locations <i>Casuarina cristata</i> is locally dominant. <i>Eucalyptus coolabah</i> is sometimes present, particularly where the regional ecosystem intergrades with 11.3.2. In the Inundation area was rarely possible to separate this regional ecosystem from others and hence it is frequently present as a subdominant element of heterogeneous polygons.</p> <p>Between Chinchilla and the township of Brigalow only narrow strips of the regional ecosystem remain in road reserves, with remnant regional ecosystem mapping (EPA, 2005a) indicating few integral patches occur in broader environment. The application of 11.3.1 to stands of Brigalow in this area has been applied as a 'best fit' in lieu of better geological information. Geological mapping (DNRME, 2004) indicates the area in which these stands of Brigalow occur are poorly consolidated sediments of the Tertiary period, which does not equate with land zone 3. Preclearing regional ecosystem mapping (EPA, 2005b) indicates the area supported 11.3.1 (95%) and 11.9.6 (5%) "Acacia melvillei ± A. harpophylla open forest on fine-grained sedimentary rocks". As no Acacia melvillei was recorded in the area attributing 11.9.6 to the stands of Brigalow would also be inappropriate. It is therefore possible that the patches would be better mapped as regional ecosystem 11.4.3 "Acacia harpophylla and/or Casuarina cristata shrubby open forest on Cainozoic clay plains", however more detailed geological information would be required to definitively ascribe the regional ecosystem.</p> <p>Although this ecosystem is likely to support the Vulnerable grass species <i>Homopholis belsonii</i>, active searches failed to record its presence.</p>

Regional Ecosystem	11.3.2
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus populnea</i> woodland on alluvial plains
Occurrence	Dam and Surrounds / Inundation Area / Pipeline Route / Other Infrastructure
VMA Status	Of concern
EPBC Act Status	Not applicable

Number of Secondary sites	None
Number of Tertiary Sites	None
Number of Quaternary Sites	8 (Remnant), 1 (non-remnant)
Description	<i>Eucalyptus populnea</i> dominates in the T1 and T2 Layers. Other species in the T2 layer include occasional <i>Eremophila mitchellii</i> and <i>Geijera parviflora</i> . These species also form part of the shrub layers in addition to species such as <i>Acacia decora</i> . The ground layer is dominated by native grass species. Buffel grass was present at all sites assessed, but it did not dominate the ground layer.

Regional Ecosystem	11.3.3
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus coolabah</i> woodland on alluvial plains
Occurrence	Dam and Surrounds / Inundation Area
VMA Status	Of concern
EPBC Act Status	Not applicable
Number of Secondary sites	1 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	4 (Remnant)
Description	<p>The T1 canopy averages around 15-18m and is dominated by <i>Eucalyptus coolabahs</i> with occasional <i>Eucalyptus populnea</i>. The T2 sub canopy supports younger trees of the upper canopy in addition to species such as <i>Lysiphylum carronii</i>, <i>Acacia excelsa</i> and <i>Alectryon oleifolius</i>. Occasional <i>Acacia harpophylla</i> are present and may be an ecotonal affect of 11.3.1. The sparse shrub layer includes wattle species, <i>Citrus glauca</i> and <i>Geijera parviflora</i>. The ground layer is grassy and may include minor depressions supporting sedges and <i>Marsilea drummondii</i>.</p> <p>The regional ecosystem is wide spread across the flood plains of the Dawson River within the study area. One of the broadest patches (outside of the proposed inundation area) is associated with the Taroom common.</p>

Regional Ecosystem	11.3.4
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus tereticornis</i> and/or <i>Eucalyptus spp.</i> tall woodland on alluvial plains
Occurrence	Dam and Surrounds / Inundation Area / Pipeline Route
VMA Status	Of concern
EPBC Act Status	Not applicable
Number of Secondary sites	5 (Remnant)
Number of Tertiary Sites	10 (remnant)
Number of Quaternary Sites	3 (Remnant)
Description	<i>Eucalyptus tereticornis</i> is the dominant element in this tall community which averages 21-26m in height, but attaining heights of up to 33m. Other canopy elements include <i>Eucalyptus camaldulensis</i> , <i>E. coolabah</i> , <i>E. populnea</i> , <i>Corymbia tessellaris</i> and <i>Angophora floribunda</i> . Species recorded in the T2 layer, in addition to juveniles of the T1 layer include <i>Melaleuca linariifolia</i> var. <i>trichostachya</i> , <i>Acacia pendula</i> , <i>Lysiphylum carronii</i> , <i>Allocasuarina luehmannii</i> and at one site <i>Callitris glaucophylla</i> . The shrub layer is generally sparse. Where shrubs are present

	species include <i>Ficus opposite</i> , <i>Acacia decora</i> , <i>A. excelsa</i> , <i>Geijera parviflora</i> , <i>Alstonia constricta</i> and <i>Psydrax odorata</i> . A diversity of native grasses, forbs and herbs dominate the ground layer. Some sites also supported abundant weeds in the ground layer including <i>Cenchrus ciliaris</i> , <i>Megathyrsus maximus</i> and <i>Xanthium pungens</i> . The Rare <i>Livistona nitida</i> was recorded at a number of locations within the inundation area in this regional ecosystem.
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Regional Ecosystem	11.3.14
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus spp.</i> , <i>Angophora spp.</i> , <i>Callitris spp.</i> woodland on alluvial plains.
Occurrence	Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not Applicable
Number of Secondary sites	1 (remnant)
Number of Tertiary Sites	none
Number of Quaternary Sites	1 (remnant)
Description	This tall community with heights between 15-36 but median of 30m includes canopy elements of <i>Eucalyptus camaldulensis</i> , <i>Eucalyptus chloroclada</i> , <i>Angophora floribunda</i> , <i>Corymbia blossomei</i> and <i>Callitris glauacophylla</i> . The T2 layer was dominated by <i>E. chloroclada</i> . The shrub layer is generally sparse and consists of several wattles including <i>Acacia semilunata</i> and <i>A. conferta</i> . A number of native grasses and herbs occur in the understorey. These include <i>Arundinella nepalensis</i> , <i>Chrysocephalum apiculatum</i> , <i>Dianella longifolia</i> and <i>Heteropogon contortus</i> .

Regional Ecosystem	11.3.19
Short Description (as per Queensland Herbarium, 2009)	<i>Callitris glauacophylla</i> , <i>Corymbia spp.</i> and/or <i>Eucalyptus melanophloia</i> woodland on Cainozoic alluvial plains
Occurrence	Inundation Area
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	1 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	None
Description	Although mapped widely by the in certified regional ecosystem mapping immediately upstream of the Glebe Weir, property based mapping indicates that this regional ecosystem covers less area. As much of the area supporting a dominance of <i>Callitris glauacophylla</i> is elevated and on a sedimentary substrate it was more accurately mapped as 11.10.9. Despite this, minor areas of 11.3.19 are present with 11.10.9 frequently merging into it. The regional ecosystem is dominated by <i>Callitris glauacophylla</i> and supports scattered <i>Eucalyptus populnea</i> . The dense canopy (78.5% cover) achieves a height of up to 19m. The ground layer is sparse, but nonetheless supports a diversity of species including native grasses shrubs such as <i>Carissa ovata</i> and <i>Petalostigma pubescens</i> . Exotic species are present <i>Cenchrus ciliaris</i> and the Land Protection (Pest And Stock Route Management) Act 2002 scheduled <i>Opuntia aurantiaca</i> and <i>O. tomentosa</i> .

Regional Ecosystem	11.3.21
Short Description (as per Queensland Herbarium, 2009)	<i>Dichanthium sericeum</i> and/or <i>Astrebla spp.</i> grassland on alluvial plains. Cracking clay soils
Occurrence	Pipeline

VMA Status	Endangered
EPBC Act Status	Critically Endangered
Number of Secondary sites	3 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	2 (remnant), 2 (non-remnant)
Description	<p>This regional ecosystem only occurs along the proposed pipeline route between Warra and Dalby. The regional ecosystem merges with the 'Of Concern' 11.3.2, which frequently attains a more open structure, compared with areas in the vicinity of the proposed dam, in the vicinity of Dalby. As the ground layer elements of 11.3.2 and 11.3.21 are similar in this area it was necessary to carefully consider whether the ground layer was a relict of previously cleared 11.3.2. To achieve this preclearing regional ecosystem mapping provided significant guidance in addition to locating regrowth <i>Eucalyptus populnea</i>. Given the community frequently abuts the road pavement it was not possible to extract the road from the mapped polygons and on this basis the mapped extent of the regional ecosystem is probably an over representation. Only two polygons of remnant were mapped based on a minimum polygon width of 20m (representing the distance between the edge of pavement and adjacent cropping). A 13km stretch has been mapped as non-remnant based on its width frequently being <20m. This area supports the same floristic values as the slightly wider 'remnant' areas.</p> <p>The community is regarded as highly significant as only approximately 1% of its original extent remains (Fensham, 1997). The significant species <i>Thesium australe</i> has been collected from this stretch of road previously and other species that occur in nearby road reserves including <i>Digitaria porrecta</i> and <i>Solanum papaverifolium</i> are also likely to occur amongst the diverse species cover.</p> <p>Generally it was observed the community was in poor condition immediately adjacent to the carriageway with <i>Chloris gayana</i> frequently dominating. Areas away from the carriageway edge were frequently dominated by native grass species including <i>Dichanthium sericeum</i>, <i>Themeda avenacea</i>, <i>T. triandra</i> and <i>Panicum decompositum</i>. A diversity of herbs are also present including, amongst others <i>Atriplex muelleri</i>, <i>Brachyscome dentata</i>, <i>Haloragis aspera</i>, <i>Ixiolena brevicompta</i>, <i>I. tomentosa</i>, <i>Maireana microphylla</i>, <i>Mentha satureioides</i> <i>Rhynchosia minima</i> and <i>Verbena aristigera</i>. Given the location of the remnants between linear infrastructure (road and rail) and cultivated lands weeds such as <i>Bidens bipinnata</i>, <i>Brassica tournefortii</i>, <i>Cirsium vulgare</i>, <i>Lactuca serriola</i>, <i>Malvastrum americanum</i>, <i>Melinis repens</i> and <i>Verbena tenuisecta</i> are present, but are generally in relatively low numbers.</p> <p>Some areas have been mapped as 'non remnant' on the basis of their width, but despite this support a diversity of floristic elements and may potentially support significant species.</p>

Regional Ecosystem	11.3.25
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines
Occurrence	Dam and Surrounds / Inundation Area / Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	3 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	3 (Remnant)
Description	<p>The canopy is fairly open in this regional ecosystem with a maximum cover recorded of 51.5%. Some of the large remnant trees attain a height of 35m, but the canopy generally averages a height of 19-25m. The canopy is dominated by either <i>Eucalyptus camaldulensis</i> and/or <i>Eucalyptus tereticornis</i> and sometimes supports <i>Eucalyptus coolabahs</i>. The sub canopy (T2) supports juveniles of T1 species in addition to <i>Acacia stenophylla</i> and <i>Melaleuca linariifolia</i> var. <i>trichostachya</i> with these latter species also occurring in the shrub layers. The ground layer supports</p>

	dense grass often dominated by <i>Chrysopogon filipes</i> . Depressions often support <i>Muehlenbeckia florulenta</i> . The regional ecosystem was found to be in generally good condition with little weed invasion.
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Regional Ecosystem	11.3.27
Short Description (as per Queensland Herbarium, 2009)	Fresh Water Wetlands
Occurrence	Dam and Surrounds
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	1 (Remnant)
Number of Tertiary Sites	2 (Remnant)
Number of Quaternary Sites	3 (Remnant)
Description	This regional ecosystem only occurs in one small area along Palm Tree Creek. The area had been highly modified through grazing and 'enhancement' of the water storage capacity of the water bodies through minor earthworks in some locations. Despite this sufficient the vegetation of the area is predominately native and therefore would still be regarded as remnant. Where a canopy is present species include <i>Eucalyptus tereticornis</i> and <i>E. coolabah</i> in the canopy (T1) layer and <i>Livistona nitida</i> and <i>Lophostemon suaveolens</i> in the subcanopy (T2) layer with a sparse disturbed ground layer including natives such as <i>Arundinella nepalensis</i> . In marshy areas <i>Eleocharis equisetina</i> , <i>Leptochloa digitata</i> and <i>Phragmites australis</i> are present. Open bodies of water support <i>Nymphaea gigantica</i> and <i>Ottelia ovatifolia</i> . It appears three of the wetlands are associated with the floodplain and are recharged through surface flow, whilst a further two are associated with GAB Spring Communities (numbers 28 and 38 as described by Fensham & Wilson, 1997).

Regional Ecosystem	11.3.22
Short Description (as per Queensland Herbarium, 2009)	Palustrine wetland (e.g. vegetated swamp).
Occurrence	Inundation Area
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	1 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	1 (Remnant)
Description	Previously mapped at a scale of 1:100,000 by the Queensland Herbarium (EPA, 2005a) to describe woody vegetation associated with some GAB Spring Communities near Boggomoss Creek, this regional ecosystem has been applied to describe similar vegetation where it was mapped at a scale of 1:10,000. Compared to the surrounding landscape trees associated with GAB Spring Communities are relatively tall achieving heights of 23-30m and averaging 25m. By comparison a nearby reference site for 11.3.3 similarly positioned on the alluvial plain achieved heights of 14-23m and averaging 18m. The canopy (T1) and subcanopy (T2) support <i>Eucalyptus camaldulensis</i> and <i>Eucalyptus coolabah</i> . These trees are frequently growing at angles or are sometimes prostrate likely to be a consequence of the underlying marshy GAB Spring Communities substrate. The shrub layer is virtually absent although <i>Alectryon diversifolius</i> was recorded. The ground layer is dense supporting native species such as <i>Phragmites australis</i> and the fern <i>Cyclosorus interruptus</i> in addition to abundant exotic species in some locations such as <i>Megathyrsus maximus</i> . The less woody GAB Spring Communities associated with Boggomoss Creek and

	also mapped as 11.3.22 tended to support a greater floristic diversity. These are discussed further in section 6.1.4.
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Regional Ecosystem	11.4.3
Short Description (as per Queensland Herbarium, 2009)	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> shrubby open forest on Cainozoic clay plains
Occurrence	Pipeline Route
VMA Status	Endangered
EPBC Act Status	Endangered
Number of Secondary sites	1 (remnant)
Number of Tertiary Sites	
Number of Quaternary Sites	
Description	The community only attains a maximum height of 15m and averages 8-14m. The canopy is dominated by <i>Casuarina cristata</i> ,. The subcanopy (T2) supports <i>Geijera parviflora</i> , <i>Notelaea microcarpa</i> and <i>Cassine australis</i> var <i>angustifolia</i> . The shrub layer supports <i>Acacia excelsa</i> , <i>Acacia semilunata</i> , <i>Alstonia constricta</i> , <i>Callitris glaucophylla</i> , <i>Psydrax odorata</i> and the weed <i>Opuntia stricta</i> . The ground layer contains exotic species such as <i>Megathyrsus maximus</i> . A number of native species were also recorded from the ground layer including <i>Ancistrachne uncinulata</i> , <i>Chenopodium cristatum</i> , <i>Ehretia membranifolia</i> , <i>Einadia hastata</i> , <i>Solanum semiarmatum</i> and <i>Tetragona tetragonioides</i> .

Regional Ecosystem	11.4.12
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus populnea</i> woodland on Cainozoic clay plains
Occurrence	Pipeline Route
VMA Status	Endangered
EPBC Act Status	Not applicable
Number of Secondary sites	None
Number of Tertiary Sites	None
Number of Quaternary Sites	1 (remnant) 1 (non-remnant)
Description	The EPA (2005) describes this regional ecosystem as follows: “ <i>Eucalyptus populnea</i> predominates forming a distinct but discontinuous canopy (12-19m high). Scattered <i>Eucalyptus</i> spp. may be present at some sites, but most frequently <i>E. populnea</i> alone forms the canopy. Scattered trees such as <i>Callitris glaucophylla</i> and <i>Acacia excelsa</i> may also be present and occasionally form a distinct low tree layer (8-10m high) There is generally a low tree/tall shrub layer (4-8m high) dominated by <i>Eremophila mitchellii</i> , <i>Acacia pendula</i> and <i>Geijera parviflora</i> . A low shrub layer may occur, particularly on upper slopes. The ground layer is generally open but may be moderately dense in disturbed areas. The perennial grasses <i>Aristida</i> spp. and <i>Eragrostis</i> spp. are usually dominant, and forbs are conspicuous.”. A single tertiary site undertaken near Warra identified a similar species and structural assemblage.

Regional Ecosystem	11.5.1
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus crebra</i> , <i>Callitris glaucophylla</i> , <i>Angophora leiocarpa</i> , <i>Allocasuarina luehmannii</i> woodland on Cainozoic sand plains/remnant surfaces.

Occurrence	Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	3 (remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	12 (remnant), 3 (non-remnant)
Description	The regional ecosystem is present to the east of Miles and to the north where it intergrades with regional ecosystem 11.7.7. The regional ecosystem attains heights of up to 23m, but averages around 13m. <i>Eucalyptus crebra</i> dominates the canopy (T1), but species such as <i>E. populnea</i> and <i>Angophora leiocarpa</i> can also be present. The subcanopy (T2) supports species such as <i>Allocasuarina luehmannii</i> and <i>Callitris glauacophylla</i> . The shrub layer supports <i>Dodonaea viscosa</i> , <i>Acacia shirleyi</i> , <i>A. spectabilis</i> and <i>A. conferta</i> .

Regional Ecosystem	11.5.1a
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus populnea</i> woodland with <i>Allocasuarina luehmannii</i> low tree layer.
Occurrence	Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	1 (remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	
Description	<i>Eucalyptus populnea</i> and <i>E. fibrosa</i> subsp. <i>nubila</i> dominate the canopy of this community attaining heights of up to 23m but averaging 16m. The Subcanopy (T2) layer supports <i>Allocasuarina luehmannii</i> , <i>Eremophila mitchellii</i> , <i>Atalaya hemiglaucha</i> and <i>Acacia tenuinervis</i> . Shrubs present include <i>Eremophila mitchellii</i> , <i>Geijera parviflora</i> and saplings of <i>Allocasuarina luehmannii</i> .

Regional Ecosystem	11.5.4
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus crebra</i> , <i>Callitris glauacophylla</i> , <i>C. endlicheri</i> , <i>E. chloroclada</i> , <i>Angophora leiocarpa</i> on Cainozoic sand plains/remnant surfaces. Deep sands
Occurrence	Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	1 (remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	7 (remnant) 3 (non-remnant)
Description	<i>Eucalyptus fibrosa</i> subsp. <i>nubila</i> , <i>Corymbia clarksoniana</i> , <i>E. chloroclada</i> and <i>Callitris glauacophylla</i> are found in the canopy (T1) with the latter two species also occurring in the subcanopy (T2). The shrub layer is virtually absent although occasional young <i>Acacia excelsa</i> are present. The ground layer supports a diversity of grasses and forbs.

Regional Ecosystem	11.5.21
Short Description (as per Queensland)	<i>Corymbia bloxsmelei</i> ± <i>Callitris glauacophylla</i> ± <i>Eucalyptus crebra</i> ± <i>Angophora leiocarpa</i> woodland on Cainozoic sand plains/remnant surfaces

Herbarium, 2009)	
Occurrence	Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	1 (remnant)
Number of Tertiary Sites	1 (remnant)
Number of Quaternary Sites	1 (remnant)
Description	T1 is 8-20m tall and dominated by <i>Corymbia bloxsomei</i> . The T2 layer includes <i>Eucalyptus exserta</i> , <i>Allocasuarina luehmannii</i> , <i>Callitris endlicheri</i> and <i>C. glaucocephala</i> . The understorey in this community is heath and includes the following species <i>Hakea purpurea</i> , <i>Leucopogon pleiospermus</i> , <i>Persoonia sericea</i> , <i>Daviesia villifera</i> , <i>Boronia bipinnata</i> , <i>Dodonaea peduncularis</i> , <i>Homoranthus decumbens</i> , <i>Laxmannia gracilis</i> , <i>Leucopogon biflorus</i> and <i>Trachymene ochracea</i> .

Regional Ecosystem	11.7.2
Short Description (as per Queensland Herbarium, 2009)	Acacia spp. woodland on Cainozoic lateritic duricrust. Scarp retreat zone
Occurrence	Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not Applicable
Number of Secondary sites	None
Number of Tertiary Sites	None
Number of Quaternary Sites	1 (non-remnant)
Description	Queensland Herbarium (2009) describes this community as "monospecific stands of <i>Acacia</i> spp. forest/woodland on Cainozoic lateritic duricrusts. <i>Acacia shirleyi</i> and/or <i>Acacia catenulata</i> usually predominate the woodland to low woodland to low open-forest tree canopy (7-12m high). Other <i>Acacia</i> spp. that commonly occur and occasionally dominate the tree layer include <i>A. rhodoxylon</i> , <i>A. burrowii</i> , <i>A. sparsiflora</i> , <i>A. crassa</i> and <i>A. blakei</i> . Emergent eucalypt species such as <i>Eucalyptus thozetiana</i> , <i>E. crebra</i> , <i>E. decorticans</i> and <i>E. exserta</i> may be present. A low shrub layer is sometimes present and dominated by species such as <i>Acalypha eremorum</i> , <i>Croton phebaliodes</i> and <i>Carissa ovata</i> . The ground layer is extremely sparse and dominated by grasses such as <i>Aristida caput-medusae</i> , <i>Paspalidium rarum</i> , <i>Urochloa foliosa</i> . Forbs are usually rare although <i>Sida filiformis</i> may be conspicuous. Occurs on scarp and adjacent tops and slopes of dissected tablelands, mesas and buttes formed from chemically altered sediments and duricrusts. The soils are shallow to very shallow lithosols with surface stone and boulders. The vegetation is often growing in pockets of shallow lithosol soil between bare rock."

Regional Ecosystem	11.7.5
Short Description (as per Queensland Herbarium, 2009)	Shrubland on natural scalds on deeply weathered coarse-grained sedimentary rocks
Occurrence	Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	
Number of Tertiary Sites	None
Number of Quaternary Sites	1 (remnant)

Quaternary Sites	
Description	Two small areas of this regional ecosystem were identified immediately outside of the road reserve near Gurumlundi and another minor area was recorded to the east of Miles. A very sparse tree canopy is present only reaching a height of 10m. Species present in the canopy (T1) and subcanopy (T2) include <i>Eucalyptus exserta</i> , <i>Acacia tenuinervis</i> and <i>Corymbia trachyphloia</i> . The shrub layer in one location is utterly dominated by <i>Calytrix tetragona</i> , whereas other sites were dominated by <i>Acacia triptera</i> .

Regional Ecosystem	11.7.6
Short Description (as per Queensland Herbarium, 2009)	<i>Corymbia citriodora</i> or <i>Eucalyptus crebra</i> woodland on lateritic duricrust
Occurrence	Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	
Number of Tertiary Sites	None
Number of Quaternary Sites	1 (remnant) pipeline
Description	<i>Corymbia citriodora</i> subsp. <i>variegata</i> , <i>Eucalyptus crebra</i> , <i>E. fibrosa</i> subsp. <i>nubila</i> and <i>Angophora leiocarpa</i> dominate the 16-30m tall canopy (T1). The subcanopy (T2) supports additional species including <i>Callitris glauophylla</i> , <i>Alphitonia excelsa</i> , <i>Acacia excelsa</i> and <i>Eucalyptus chloroclada</i> . A sparse shrub layer is present including <i>Leucopogon biflorus</i> , <i>Dodonaea viscosa</i> and young <i>Alphitonia excelsa</i> . The ground layer is sparse supporting scant tussocks of grass species including <i>Digitaria formosa</i> , <i>Aristida caput-medusae</i> and <i>Panicum effusum</i> . The regional ecosystem is located in undulating terrain between Gurumlundi and Kowguran.

Regional Ecosystem	11.7.7
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus fibrosa</i> subsp. <i>nubila</i> ± <i>Corymbia</i> spp. ± <i>Eucalyptus</i> spp. on lateritic duricrust
Occurrence	Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	2 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	
Description	The community was generally dominated by a canopy of <i>Eucalyptus fibrosa</i> subsp. <i>nubila</i> of 15-18m tall. Where this species was absent a canopy of <i>Eucalyptus crebra</i> . . . The T2 layer included the same suite of species as in the T1. The shrub layers also support juveniles of canopy species and <i>Acacia ixiophylla</i> . The ground layer is generally open supporting a diversity of grasses, forbs and herbs.

Regional Ecosystem	11.9.1
Short Description (as per Queensland Herbarium, 2009)	<i>Acacia harpophylla</i> , <i>Eucalyptus cambageana</i> open forest to woodland on fine-grained sedimentary rocks

Occurrence	Dam and Surrounds / Pipeline Route
VMA Status	Endangered
EPBC Act Status	Endangered
Number of Secondary sites	1 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	12 (Remnant)
Description	Located primarily to the north of the Dawson River this regional ecosystem is characterized by a canopy (T1) of <i>Eucalyptus cambageana</i> and <i>Acacia harpophylla</i> . The subcanopy is predominated by <i>Acacia harpophylla</i> . Although relatively sparse a diverse shrub layer is present including species such as <i>Geijera parviflora</i> , <i>Alectryon diversifolius</i> , <i>Psydrax johnsonii</i> , <i>Alstonia constricta</i> , <i>Capparis mitchellii</i> and <i>Notelaea microcarpa</i> . The ground includes a diversity of native grasses, herbs and low shrubs, but inevitably support <i>Cenchrus ciliaris</i> as remnant patches abut improved pastures.

Regional Ecosystem	11.9.4a
Short Description (as per Queensland Herbarium, 2009)	Semi-evergreen vine thicket on fine grained sedimentary rocks
Occurrence	Dam and Surrounds / Pipeline Route
VMA Status	Endangered
EPBC Act Status	Endangered
Number of Secondary sites	2 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	3 (Remnant)
Description	<p>This diverse community supports a low (13m) canopy (T1) of <i>Acacia fasciculifera</i>, <i>Brachychiton rupestris</i>, <i>Casuarina cristata</i>, <i>Eremophila mitchellii</i>, <i>Geijera parviflora</i> and <i>Lysiphylloum carrii</i>. The sub canopies (T2 & T3) support <i>Alectryon connatus</i>, <i>A. diversifolia</i>, <i>Bridelia leichhardtii</i>, <i>Denhamia oleaster</i>, <i>Diospyros humilis</i>, <i>Elaeodendron austale</i>, <i>Erythroxylum sp</i> Spit Yard Creek, <i>Geijera parviflora</i>, <i>Pouteria cotinifolia</i> var. <i>pubescens</i>, and <i>Psydrax odorata</i>. Species recorded in the shrub layers include <i>Acalypha eremorum</i>, <i>Capparis lasiantha</i>, <i>C. mitchellii</i>, <i>Carissa ovata</i>, <i>Pittosporum spinescens</i>, <i>Psydrax odorata</i>, <i>Turraea pubescens</i>. Vines such as <i>Sarcostemma viminale</i> subsp. <i>austale</i> and <i>Secamone elliptica</i> are common.</p> <p>A significant element of the canopy (T1) in the far west of the Dam and Surrounds is the 'Vulnerable' <i>Cadellia pentastylis</i>. Within the study area, this species is restricted to areas to the north of the Dawson River and West of Palm Tree Creek.</p>

Regional Ecosystem	11.9.5
Short Description (as per Queensland Herbarium, 2009)	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> open forest on fine-grained sedimentary rocks
Occurrence	Dam and Surrounds / Inundation Area / Pipeline Route / Other Infrastructure
VMA Status	Endangered
EPBC Act Status	Endangered
Number of Secondary sites	4 (Remnant)
Number of Tertiary Sites	1 (non-remnant)
Number of Quaternary Sites	7 (remnant), 6 (non-remnant)
Description	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> dominates the upper canopy (T1) with either species forming monospecific stands in some areas. In addition to the

	<p>upper canopy elements <i>Eremophila mitchellii</i>, <i>Geijera parviflora</i>, <i>Psydrax johnsonii</i> and <i>Alectryon oleifolius</i> are present in the sub canopy (T2) and shrub layers. The ground layer supports a diversity of herb species and few species of grass although <i>Paspalidium caespitosum</i> and <i>Ancistrachne uncinulata</i> are present in most integral stands. Where highly edge effected stands tend to support <i>Cenchrus ciliaris</i> in the ground layer.</p> <p>The community readily regenerates where it has been cleared as <i>Acacia harpophylla</i> suckers from its rootstock.</p>
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Regional Ecosystem	11.9.5a
Short Description (as per Queensland Herbarium, 2009)	<i>Acacia harpophylla</i> predominates and forms a fairly continuous canopy (10-18m high).
Occurrence	Dam and Surrounds
VMA Status	Endangered
EPBC Act Status	Endangered
Number of Secondary sites	2 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	8 (Remnant)
Description	EPA (2005) note in relation to this 'major vegetation community' that "other tree species such as <i>Eucalyptus populnea</i> , <i>Casuarina cristata</i> , <i>Cadellia pentastylis</i> and <i>Brachychiton</i> spp. may also be present in some areas and form part of the canopy or emerge above it. Scattered <i>Eucalyptus orgadophila</i> may occur, especially on upper slopes and crests....". That is, rather than a continuous canopy of <i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> , other species are present. Within the broader study area, the 'major vegetation community' also supports <i>Eucalyptus populnea</i> . Present in the subcanopy (T2) layer are <i>Eremophila mitchellii</i> , <i>Geijera parviflora</i> , <i>Myoporum deserti</i> , <i>Acacia excelsa</i> and <i>Pittosporum phylliraeoides</i> . The ground layer is virtually the same as 11.9.5.

Regional Ecosystem	11.9.6
Short Description (as per Queensland Herbarium, 2009)	<i>Acacia melvillei</i> ± <i>A. harpophylla</i> open forest on fine-grained sedimentary rocks
Occurrence	Pipeline Route
VMA Status	Endangered
EPBC Act Status	Endangered
Number of Secondary sites	1 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	4 (Remnant) 2 (non-remnant)
Description	This regional ecosystem is present in roadside remnants between the Great Dividing Range and Wandoan, but also occurs between Chinchilla and Brigalow. Very few highly integral patches remain in the road reserve. This community is floristically similar to 11.9.5a, but primarily differs by the presence, and frequent dominance, of <i>Acacia melvillei</i> in the canopy. Other species present in the canopy layer include <i>Acacia harpophylla</i> , <i>Casuarina cristata</i> , <i>Eucalyptus populnea</i> and <i>Brachychiton rupestris</i> . These species also occur in the subcanopy (T2) along with <i>Alectryon diversifolia</i> , <i>Eremophila mitchellii</i> , <i>Pittosporum phylliraeoides</i> , <i>Santalum lanceolatum</i> and <i>Geijera parviflora</i> , with the latter forming a dense shrub layer.

Regional Ecosystem	11.9.7
Short Description	<i>Eucalyptus populnea</i> , <i>Eremophila mitchellii</i> shrubby woodland on fine-grained

(as per Queensland Herbarium, 2009)	sedimentary rocks
Occurrence	Dam and Surrounds / Inundation Area / Pipeline Route
VMA Status	Of concern
EPBC Act Status	Not applicable
Number of Secondary sites	5 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	8 (remnant), 3 (non-remnant)
Description	The canopy (T1) is relatively short in the study area attaining a maximum height of 19m and averaging around 14m. The canopy is dominated by <i>Eucalyptus populnea</i> and may also support <i>E. melanophloia</i> . In one location <i>Lysiphylloum carronii</i> occurs in the upper and mid (T2) canopies, but this may be an ecotonal effect of the nearby vine forest. Canopy species tend to also occur in the subcanopy, but so do species including <i>Casuarina cristata</i> , <i>Eremophila mitchellii</i> , <i>Psydrax oleifolia</i> and <i>Geijera parviflora</i> , which also occur in the shrub layers.

Regional Ecosystem	11.9.10
Short Description (as per Queensland Herbarium, 2009)	<i>Acacia harpophylla</i> , <i>Eucalyptus populnea</i> open forest on fine-grained sedimentary rocks
Occurrence	Dam and Surrounds / Inundation Area / Pipeline Route
VMA Status	Of concern
EPBC Act Status	Not applicable
Number of Secondary sites	4 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	6 (Remnant), 1 (non-remnant)
Description	<i>Eucalyptus populnea</i> and <i>Acacia harpophylla</i> dominate the 16m tall (average) canopy (T1) and subcanopy. A tall shrub layer of <i>Geijera parviflora</i> and <i>Eremophila mitchellii</i> is present.

Regional Ecosystem	11.9.12
Short Description (as per Queensland Herbarium, 2009)	<i>Dichanthium sericeum</i> grassland with clumps of <i>Acacia harpophylla</i> on fine-grained sedimentary rocks
Occurrence	Dam and Surrounds / Inundation Area / Pipeline Route
VMA Status	Endangered
EPBC Act Status	Endangered
Number of Secondary sites	1 (Remnant)
Number of Tertiary Sites	1 (Remnant)
Number of Quaternary Sites	None
Description	This regional ecosystem is typified by scattered clumps of <i>Acacia harpophylla</i> and/or <i>Lysiphylloum carronii</i> in a grassland environment. The grassland includes a diversity of species such as <i>Bothriochloa bladhii</i> , <i>Bracteantha bracteata</i> , <i>Cymbopogon refractus</i> , <i>Heteropogon contortus</i> , <i>Indigofera linnaei</i> , <i>Rhynchosia minima</i> var. <i>australis</i> and <i>Themeda triandra</i> . It appears that grazing pressure in some parts of the mapped polygon have altered the floristics to such a degree it can almost be regarded as non-remnant.

Regional	11.10.1
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Ecosystem	
Short Description (as per Queensland Herbarium, 2009)	<i>Corymbia citriodora</i> open forest on coarse-grained sedimentary rocks
Occurrence	Dam and Surrounds
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	None
Number of Tertiary Sites	None
Number of Quaternary Sites	None
Description	The EPA (2005) describes this regional ecosystem as follows: " <i>Corymbia citriodora</i> predominates and forms a distinct but discontinuous open-forest (to woodland) canopy (20-30m high). On rocky slopes, <i>Eucalyptus crebra</i> and <i>C. hendersonii</i> may be scattered throughout the canopy. On flats and foot slopes, scattered <i>E. crebra</i> , <i>C. clarksoniana</i> and <i>C. tessellaris</i> may occur. <i>Corymbia trachyphloia</i> and <i>E. cloeziana</i> often occur on crests and plateaus while <i>E. apothalassica</i> and <i>E. longirostrata</i> sometimes occur in moister microhabitats. Scattered tall to low shrubs, such as <i>Acacia leiocalyx</i> , <i>Acacia</i> spp., <i>Bursaria spinosa</i> , <i>Persoonia falcata</i> , <i>Alphitonia excelsa</i> , <i>Petalostigma pubescens</i> and <i>Xanthorrhoea johnsonii</i> are usually present and sometimes form a conspicuous layer. The ground layer varies from sparse to moderately dense (depending on the rockiness) and is dominated by perennial grasses. Occurs on hills and ranges, particularly on colluvial lower slopes, formed from medium to coarse-grained sediments (usually sandstone). Associated soils are often texture contrast with a thin sandy or loamy surface horizon and some uniform sandy and lithosol soils."

Regional Ecosystem	11.10.3
Short Description (as per Queensland Herbarium, 2009)	<i>Acacia catenulata</i> or <i>A. shirleyi</i> open forest on coarse-grained sedimentary rocks. Crests and scarpas
Occurrence	Dam and Surrounds
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	None
Number of Tertiary Sites	None
Number of Quaternary Sites	None
Description	<p>The EPA (2005) describes this regional ecosystem as follows: "<i>Acacia catenulata</i> and/or <i>A. shirleyi</i> form a distinct but discontinuous low open-forest to open-forest canopy (8-12, rarely 18m high). Other <i>Acacia</i> spp. such as <i>A. sparsiflora</i> and <i>A. rhodoxylon</i> may form part of the canopy and in places may predominate. Scattered <i>Eucalyptus</i> spp. emergents (up to 25m high) occur, the most frequent being <i>E. decorticans</i>. <i>Eucalyptus exserta</i> is conspicuous in places. Scattered tall shrubs may occur. A low shrubby layer is usually conspicuous. The ground layer is sparse and composed of both grasses and forbs. Occurs on crests and ridge tops formed on consolidated, medium to coarse-grained sediments."</p> <p>The community was assessed by Dowling & Halford (1997). The regional ecosystem is likely to include Dowling & Halford's Vegetation Type 11 and portions of vegetation type 12. Vegetation type 12 is also likely to incorporate regional ecosystem 11.9.1 and both descriptions may also include 11.7.5 given the description includes laterised soils. The communities were described by Dowling & Halford as follows:</p>

	<p>11. Mid high open forest - mid high woodland of <i>Acacia rhodoxylon</i> (Rosewood)</p> <p>This unit consists of an almost pure stand of <i>Acacia rhodoxylon</i> though <i>Eucalyptus crebra</i> and <i>Eucalyptus exserta</i> may also be present. It generally occurs on areas of laterised soils. The shrub layer tends to be sparse and consists of <i>Alphitonia excelsa</i>, <i>Alstonia constricta</i>, <i>Croton phebaloides</i>, <i>Flindersia australis</i> and <i>Owenia venosa</i> the ground layer varies from dense to sparse depending on the depth of soils and grazing pressure. In highly disturbed areas <i>Cenchrus ciliaris</i> may be common</p> <p>12. Mid high open forest - mid high woodland of <i>Acacia rhodoxylon</i> (Rosewood), <i>Acacia shirleyi</i> (Lancewood) and <i>Acacia harpophylla</i> (Brigalow)</p> <p>This unit mainly occurs on a mixture of lateritic soils and sandstone outcrops. It is made up of a mosaic of small patches of relatively pure stands of each of these species. <i>Acacia harpophylla</i>, <i>Acacia shirleyi</i> and <i>Acacia rhodoxylon</i> occur in pure stands or mixed in together. It is more common to find <i>Acacia shirleyi</i> and <i>Acacia rhodoxylon</i> together than it is to find them associated with <i>Acacia harpophylla</i> which tends to form pure stands. Occasionally <i>Eucalyptus cambageana</i> may also be present. The shrub layer is sparse and consists mainly of <i>Eremophila mitchellii</i> and <i>Geijera parviflora</i>. The shrub layer is sparse and consists of a mixture of grasses and herbs as well as <i>Carissa ovata</i>.</p>
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Regional Ecosystem	11.10.7
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus crebra</i> woodland on coarse-grained sedimentary rocks
Occurrence	Dam Study Area/Inundation Area/Pipeline Route
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	3 (Remnant)
Number of Tertiary Sites	1 (remnant)
Number of Quaternary Sites	16 (remnant)
Description	The canopy layer of 14-16m tall is dominated by <i>Eucalyptus crebra</i> . The T2 layer consists of <i>Alphitonia excelsa</i> , <i>Eucalyptus crebra</i> and <i>Psydrax oleifolia</i> . The shrub layer is sparse (<i>Geijera parviflora</i> and <i>Alstonia constricta</i>) and the ground layer includes species such as <i>Abutilon oxycarpum</i> , <i>Cheilanthes lasiophylla</i> , <i>Aristida capitulum</i> , <i>Iselema membranaceum</i> and <i>Senecio pinnatifolia</i> .

Regional Ecosystem	11.10.7a
Short Description (as per Queensland Herbarium, 2009)	<i>Eucalyptus crebra</i> +/- <i>Callitris glaucocephala</i> +/- <i>Angophora leiocarpa</i> +/- <i>Eucalyptus</i> spp woodland.
Occurrence	Dam Study Area
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	1 (Remnant)
Number of Tertiary Sites	
Number of Quaternary Sites	1 (remnant)
Description	The canopy is dominated by <i>Eucalyptus crebra</i> (7-15m tall) and includes <i>Eucalyptus fibrosa</i> , <i>Angophora leiocarpa</i> and <i>Callitris glaucocephala</i> . The T2 layer is dominated by <i>Callitris glaucocephala</i> and includes <i>Eremophila mitchellii</i> , <i>Psydrax johnsonii</i> , <i>Allocasuarina luehmannii</i> and <i>Geijera parviflora</i> . The shrub layer contains a diversity of wattles including <i>Acacia deanei</i> , <i>A. decora</i> ,

	<i>A. excelsa</i> and <i>A. leiocalyx</i> . The ground layer contains a diversity of native grasses and herbs.
--	--

Regional Ecosystem	11.10.9
Short Description (as per Queensland Herbarium, 2009)	<i>Callitris glauophylla</i> woodland on coarse-grained sedimentary rocks
Occurrence	Dam and Surrounds / Inundation Area
VMA Status	Of Least Concern
EPBC Act Status	Not applicable
Number of Secondary sites	1 (Remnant)
Number of Tertiary Sites	None
Number of Quaternary Sites	7 (Remnant)
Description	The canopy layer is utterly dominated by <i>Callitris glauophylla</i> . Other species in the upper and sub canopy include <i>Corymbia tessellaris</i> and <i>C. clarksoniana</i> . The regional ecosystem appears to be directly related to Vegetation Community 1 described by Dowling & Halford (1997), which also identified the presence of <i>Eucalyptus melanophloia</i> in the canopy. For the sites inspected the shrub layer was very sparse to absent although Dowling & Halford (1997) noted the presence of <i>Acacia decora</i> , <i>A. excelsa</i> and <i>A. leiocalyx</i> in addition to young <i>Callitris glauophylla</i> . Although the ground layer is sparse there is a diversity of species present.

4.1.2 Additional Areas of Mapped Native Vegetation

As part of the mapping exercise areas of “non-remnant” vegetation were mapped. That is these are areas that would achieve remnant status within approximately 20 years if adequately managed. Mapped in Figure 2 are these areas each assigned with the regional ecosystem they would attain under adequate management regimes.

4.2 FLORISTICS

Individual sites are identified in Appendix G which links species to regional ecosystems and where these regional ecosystems are distributed within the Entire Study Area. Because of the difficulty with tying the vegetation communities described by Dowling & Halford (1997) and the current regional ecosystem framework (see Appendix C) it is not possible to link the species. However, some correlations can be established by reviewing Appendix H in conjunction with Appendix D.

Consolidated species lists of reliable data are presented for the Dam and Surrounds and the Pipeline Route in Appendices H, and I respectively.

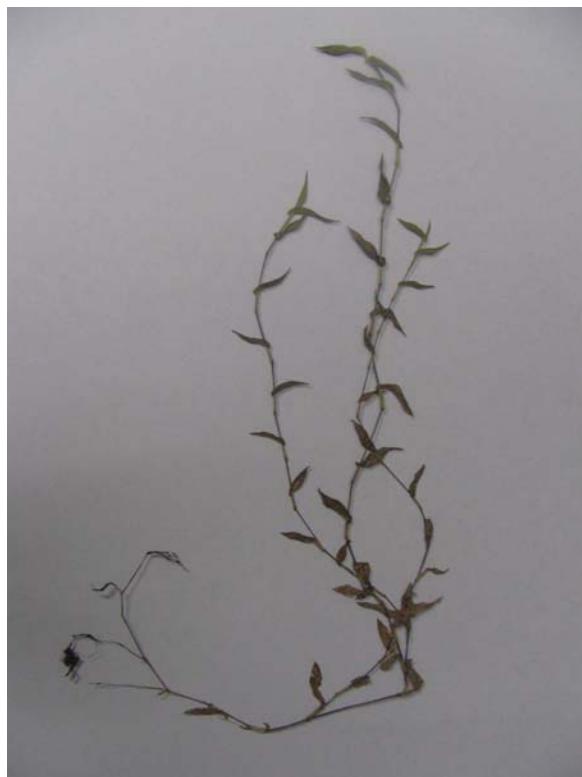
Of the significant species previously recorded in the study area, no effort was made to re-locate *Bertya pedicellata* as its distribution was adequately recorded by Dowling & Halford (1997) well outside of the Inundation Area and it was not found in any other

nearby habitat. Searches for *Thelypteris confluens* and *Thesium australe* yielded no results, but this does not discount their continuing presence in GAB Spring Communities and remnant/non-remnant grasslands near Dalby respectively.

4.2.1 Flora of National Significance

4.2.1.1 *Arthraxon hispidus*

The species *Arthraxon hispidus*, listed as ‘Vulnerable’ under the EPBC Act and the *Nature Conservation (Wildlife) Regulation 2006* was recorded in GAB Spring Communities 1, 4, 6 22-25, 27, 30, 32, 59 and 60 by Fensham & Wilson (1997). It was recorded again during the current study in the vicinity of GAB Spring Communities 1 and 27. Given the spread of GAB Spring Communities in this vicinity, it is likely the species is well distributed in swampy environments associated with areas of regional ecosystem 11.3.27b located around Boggomoss Creek. Accordingly, this area has been mapped in a habitat model in Figure 3a-b.



Voucher specimen of *Arthraxon hispidus*

4.2.1.2 *Cadellia pentastylis*

Cadellia pentastylis is listed as ‘Vulnerable’ under the EPBC Act 1999 and the *Nature Conservation (Wildlife) Regulation 2006*. It was previously recorded as a dominant canopy species within a large patch of a heterogeneous polygon of regional ecosystems 11.9.5a/11.9.4a located in a road reserve along the Leichhardt Highway

north of the Taroom Township by the Queensland Herbarium (Queensland Herbarium and EPA, 2000). The current survey identified that the species also occurs as isolated specimens and in non-remnant patches of 11.9.4a to the east of this large polygon that are bound by the Dawson River to the south and the Palm Tree Creek to the east. These patches have been incorporated into the habitat model Figure 3a-b.



A stand of *Cadellia pentastylis* photographed in the west of the study area outside of the proposed FSL

4.2.1.3 *Eriocaulon carsonii*

These species are discussed together as they were integrally linked where they occur. *Eriocaulon carsonii* is listed as “Endangered” under both the *EPBC Act 1999* and *Nature Conservation (Wildlife) Regulation 2006*. Together with the *Nature Conservation (Wildlife) Regulation 2006* listed *Myriophyllum artesium*, these species are associated with GAB Spring Communities 64 and 65 located on Sandy Creek. These GAB Spring Communities drain directly to Sandy Creek. Searches of the creek bed and banks failed to locate further specimens of the species indicating they are intrinsically associated with the moundspring environment.



Eriocaulon carsonii is the small grass like plant (with white flowers), interspersed with the small leafed plant, *Myriophyllum artesium*

4.2.1.4 *Thesium australe*

Despite searches the ‘Vulnerable’ (*EPBC Act 1999* and *Nature Conservation (Wildlife) Regulation 2006*) *Thesium australe* recorded as part of the current survey despite it being previously documented along the Warrego Highway by the Queensland Herbarium (Queensland Herbarium and EPA, 2005). The remnant and non-remnant grasslands in this area are diverse and visually stunning when in bloom (see plate below). It is probable that the species remains in this area and is possibly more widely distributed than a single specimen. Accordingly these areas have been integrated into the habitat model (Figure 3a-b).



Native grasslands to the west of Dalby along the proposed Pipeline Route photographed in December 2008

Recorded in nearby grasslands outside of the proposed Pipeline Route on Yaralla Road is the *EPBC Act 1999* ‘Endangered’ *Digitaria porrecta* (Queensland Herbarium and EPA, 2005). It is possible the species may also occur within areas of remnant and non-remnant grasslands and therefore the habitat model for *Thesium australe* also extends to this species.

4.2.2 Flora of State Significance

4.2.2.1 *Cryptandra ciliata*

The ‘Near Threatened’ species *Cryptandra ciliata* was previously recorded by Dowling and Halford (1997) as a widespread occurrence on sandstone on the northern bank of the Dawson River near the proposed dam wall. The current study confirmed this occurrence, but also identified a number of other large populations associated with regional ecosystem 11.10.9 around Spring Creek and in wooded areas approximately 3km to the north of the Dowling and Halford (1997) record.

The species occurred on sloping country where close to or amongst sandstone outcropping. It was recorded on southern, eastern and western facing slopes. Accordingly areas of regional ecosystem 11.10.9 where this species was recorded have all been integrated in the habitat model (Figure 3a-b).

Cryptandra ciliata was also recorded from the pipeline route, sporadically within heath communities and vegetation communities with heath understorey dominated by *Corymbia blaxsomei* (11.5.21).



***Cryptandra ciliata* occurs as a common understorey plant in some areas of regional ecosystem 11.10.9 around Spring Creek and to the north of the proposed dam site**

4.2.2.2 *Livistona nitida*

This ‘Near Threatened’ species was relatively widespread in the Dam and Surrounds with dense occurrences present on Palm Tree Creek, Spring Creek, Price Creek and the Nathan Gorge. All of these areas have therefore been integrated in the habitat model for *Livistona nitida* (Figure 3a-b). It is likely that additional isolated specimens occur along the Dawson River and other tributaries such as Cockatoo Creek. A single observation of the species was made along the Proposed Pipeline Route.



A single specimen of *Livistona nitida* on Price Creek

4.2.2.3 *Myriophyllum artesii*

The Endangered species *Myriophyllum artesii* was always found in association with *Eriocaulon carsonii* as discussed in 7.5.1.3. Habitat requirements for the two species appear identical within the study area.

4.2.2.4 *Rutidosis crispata*

The ‘Vulnerable’ species *Rutidosis crispata*, was previously estimated to occur in a population of approximately 250 individuals or approximately 56% of the then known population of the species within the project area (Dowling & Halford, 1997). Comparison with the extent of mapped remnant vegetation mapped by Dowling & Halford (1997) to that mapped during the current study indicates that a large portion of its previous habitat has been cleared. Despite this, the species was found in relative abundance on south facing sandstone slopes to the immediate west of Blackboy Creek in regional ecosystem 11.10.7 and in areas directly north of this and the Dawson River in regional ecosystem 11.10.9. These areas have been integrated in the habitat model (Figure 3a-b).



Rutidosis crispata photographed in Summer

4.2.2.5 *Thelypteris confluens*

This ‘Vulnerable’ fern was recorded on GAB Spring Communities 23 by Fensham and Wilson (1997) and appeared to be restricted to this spring. Although *Thelypteris confluens* was not recorded during the current survey it is anticipated that the Fensham and Wilson (1997) record remains valid.

4.2.3 Flora of Regional and Local Significance

4.2.3.1 *Corymbia blossomei*

Corymbia blossomei is listed as regionally significant in the Southern Brigalow Belt Flora Expert Panel report (EPA, 2008). This species occurs as the dominant canopy element of RE 11.5.21. This species was also recorded from RE 11.3.14 and RE 11.5.4.



Corymbia bloxsomei photographed in winter.

4.2.3.2 *Acacia melvillei*

Acacia melvillei is listed as regionally significant in the Southern Brigalow Belt Flora Expert Panel (EPA, 2008). *A. melvillei* was recorded within the pipeline route in RE 11.5.1 and RE 11.9.6.

4.2.3.3 *Acacia omalophylla*

Acacia omalophylla is listed as regionally significant in the Southern Brigalow Belt Flora Expert Panel report (EPA, 2008). *A. omalophylla* was recorded within the pipeline route in RE 11.7.7.

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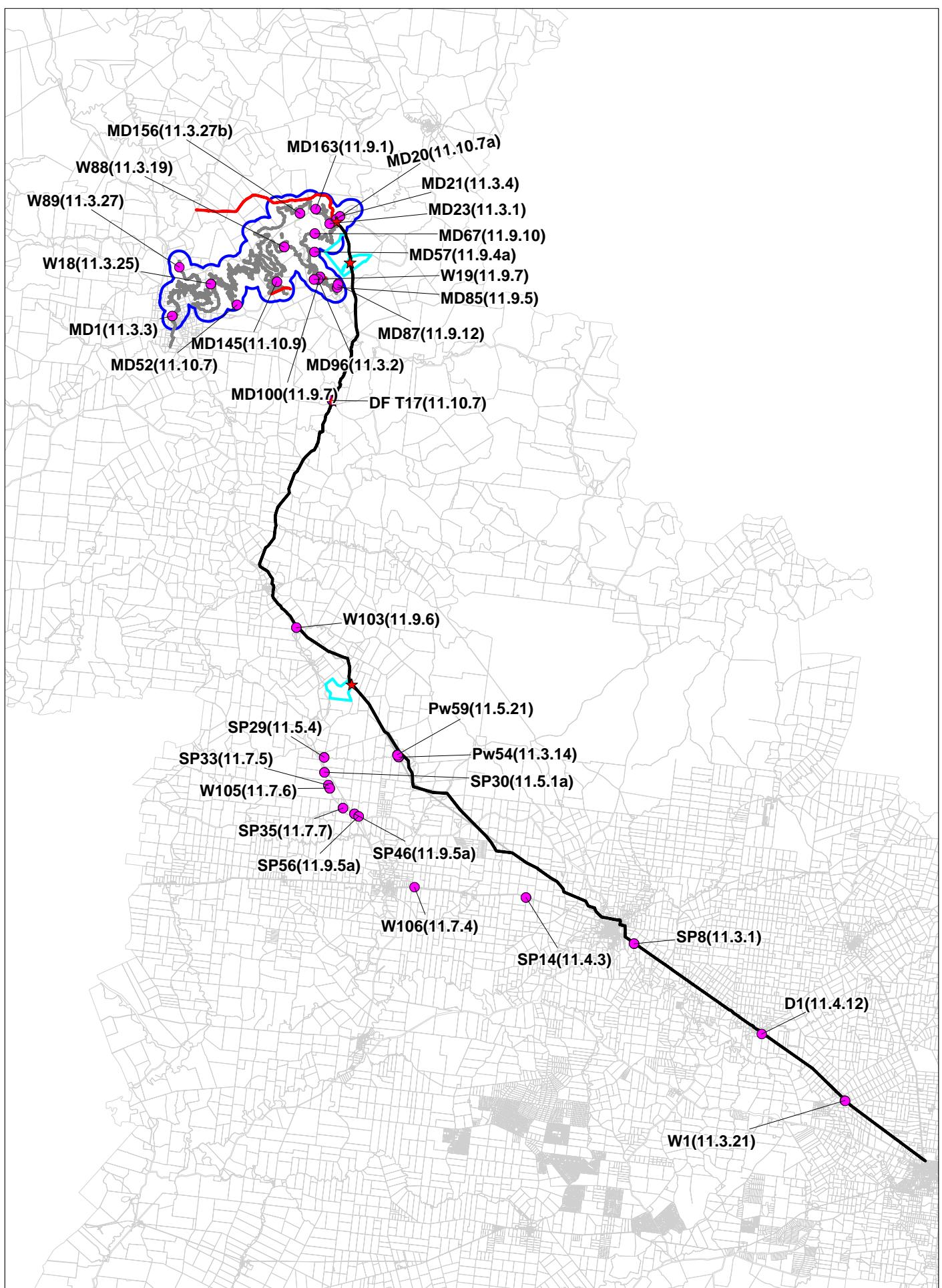
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LEGEND

- Reference Sites
- Dam Study Area
- Inundation Area
- Cadastral Boundaries
- Pipeline Route

Associated Infrastructure

- Road Upgrade
- Land Parcels for Pump Stations
- Pump Stations

Projection: GDA94 Zone 56

Figure 1

0 5 10 20
Kilometres

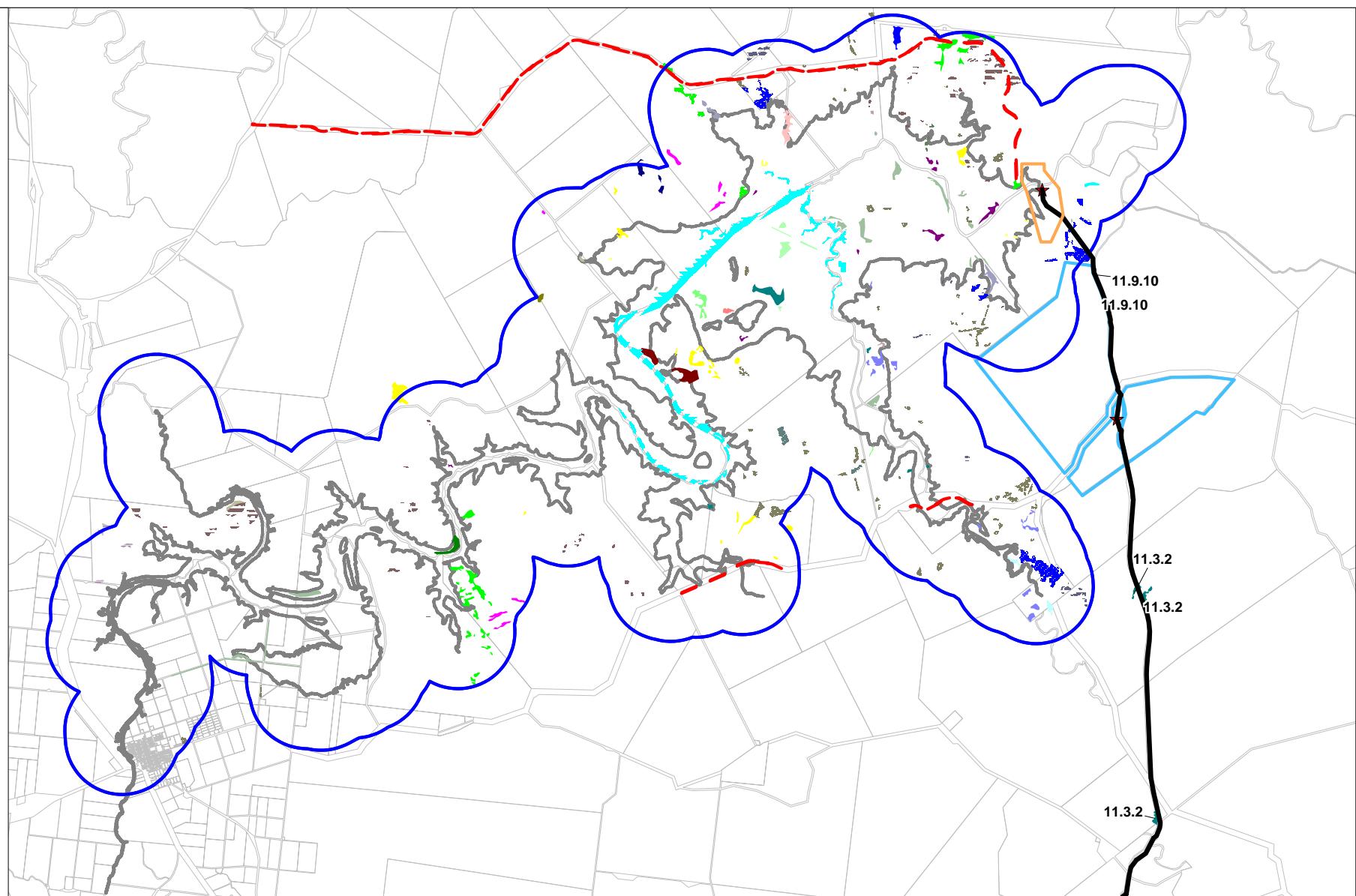
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NATHAN DAM AND PIPELINES EIS
SUPPORTING INFORMATION
Reference Sites

Non-remnant Vegetation

- 11.10.7
- 11.10.7/11.9.7
- 11.10.7a
- 11.10.9
- 11.10.9/11.10.7
- 11.10.9/11.3.19
- 11.10.9/11.9.1
- 11.10.9/11.9.5
- 11.3.1
- 11.3.19
- 11.3.2
- 11.3.2/11.10.9
- 11.3.2/11.3.3
- 11.3.2/11.9.5
- 11.3.21
- 11.3.25
- 11.3.25/11.3.2
- 11.3.27b
- 11.3.3
- 11.3.3/11.3.1
- 11.3.3/11.3.2
- 11.3.3/11.3.25
- 11.3.4
- 11.3.4/11.3.27b
- 11.4.12
- 11.4.3
- 11.5.1
- 11.7.6/11.7.7
- 11.7.7
- 11.9.1
- 11.9.1/11.9.10
- 11.9.10
- 11.9.4a
- 11.9.5
- 11.9.5/11.9.10
- 11.9.6
- 11.9.7
- 11.9.7/11.9.10
- 115.1
- crop
- water



LEGEND

- Cadastral Boundary
- Dam Study Area
- Inundation Area

★ Pump Stations

- Road Upgrade
- Pipeline Route
- Land Parcels for Pump Stations
- Dam Construction Footprint

Projection: GDA94 Zone 56

Figure 2

0 1 2 4
Kilometres

Scale - 1:200000 (at A4) SW

 
NATHAN DAM AND PIPELINES EIS
SUPPORTING INFORMATION
 Non-remnant Vegetation Assemblages mapped according to the Regional Ecosystems that they would achieve if allowed to recover and cropping

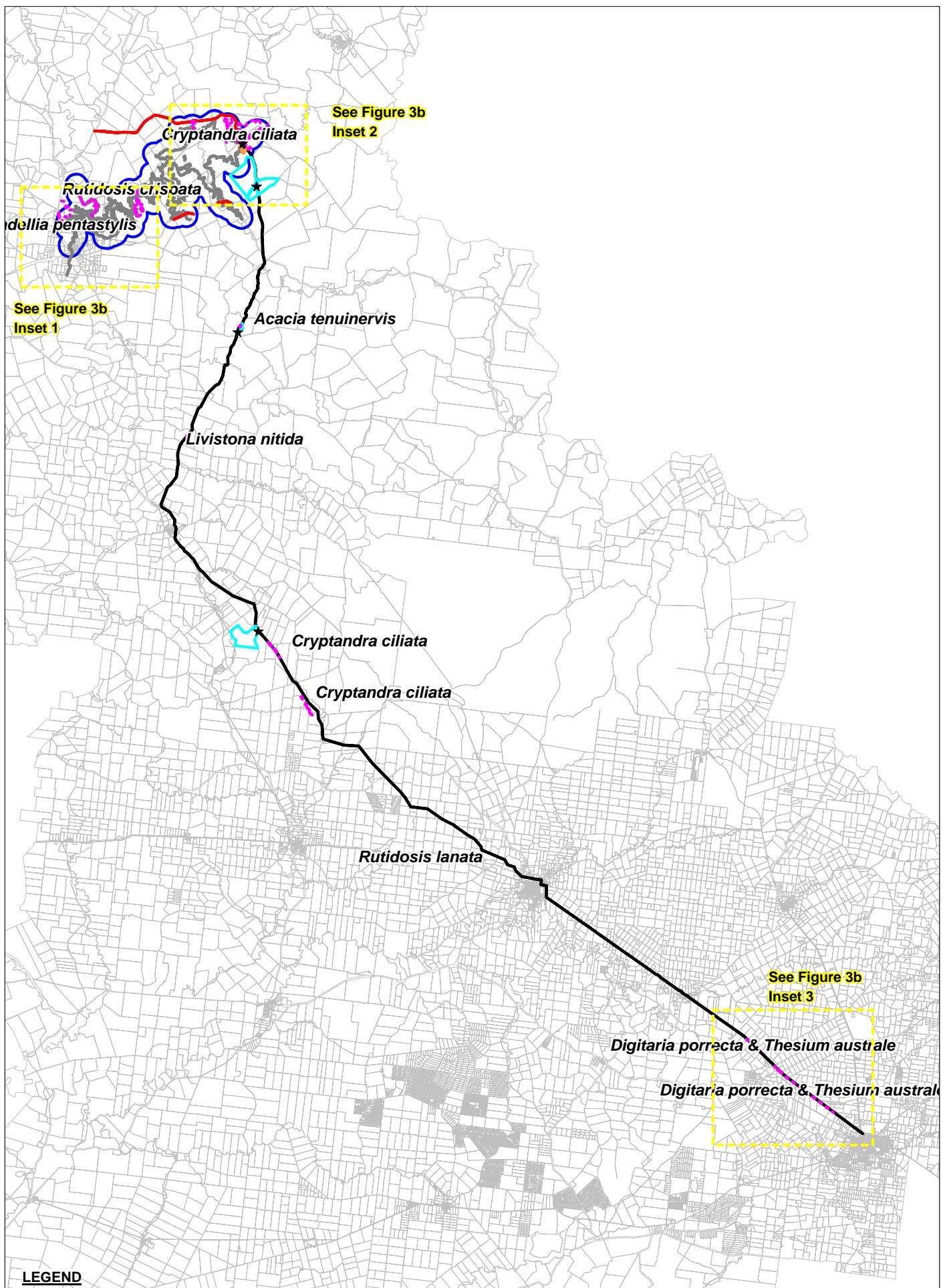
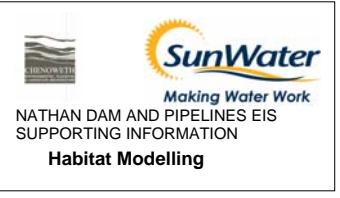
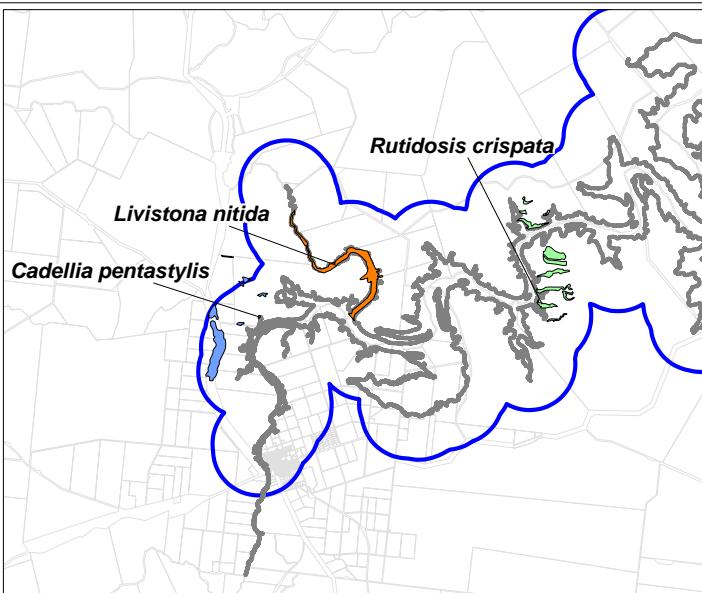
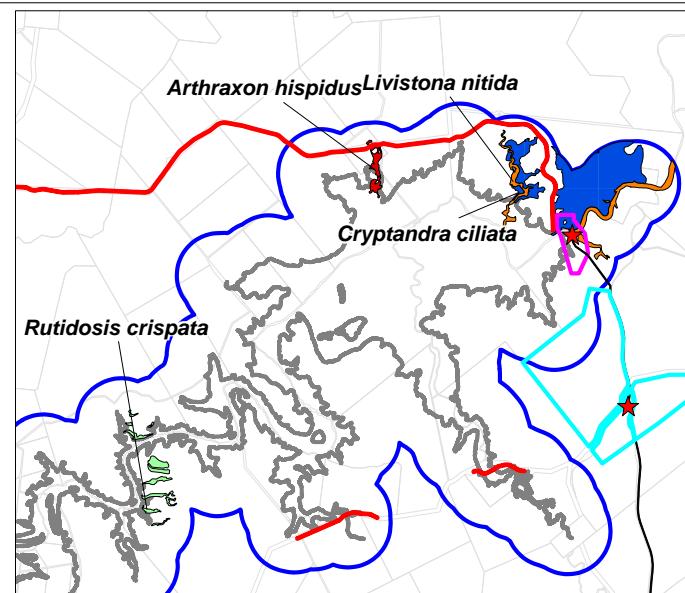


Figure 3a

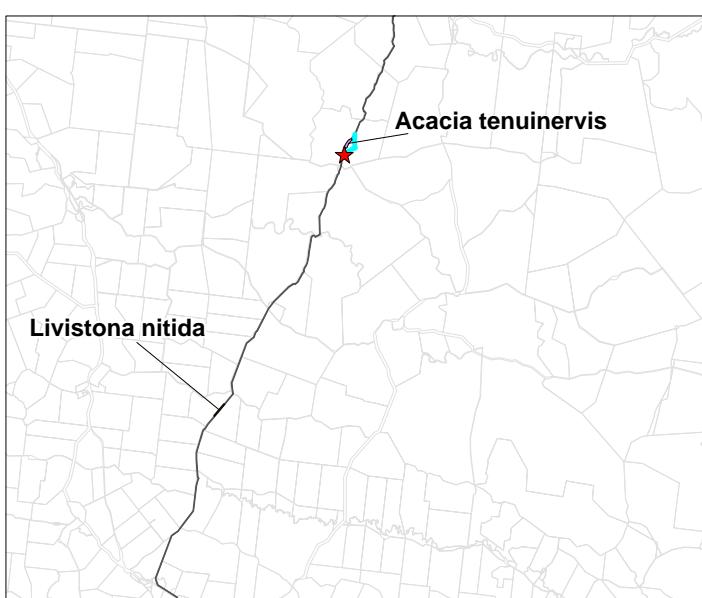




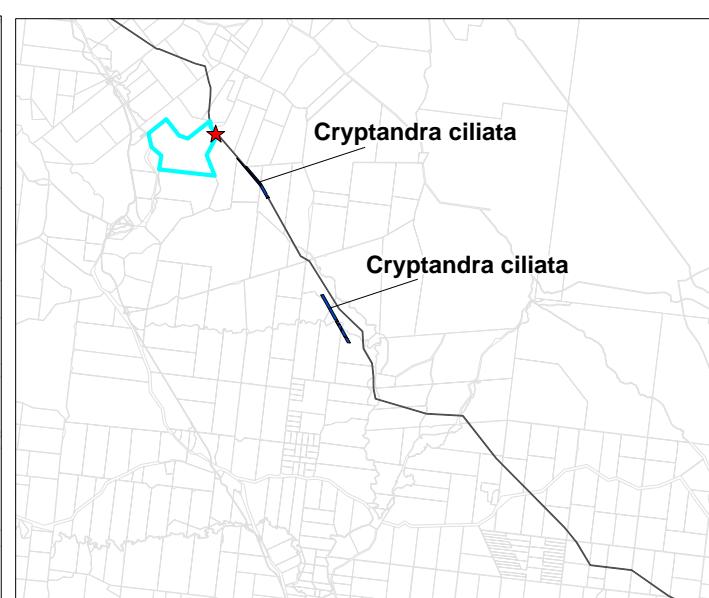
INSET 1



INSET 2



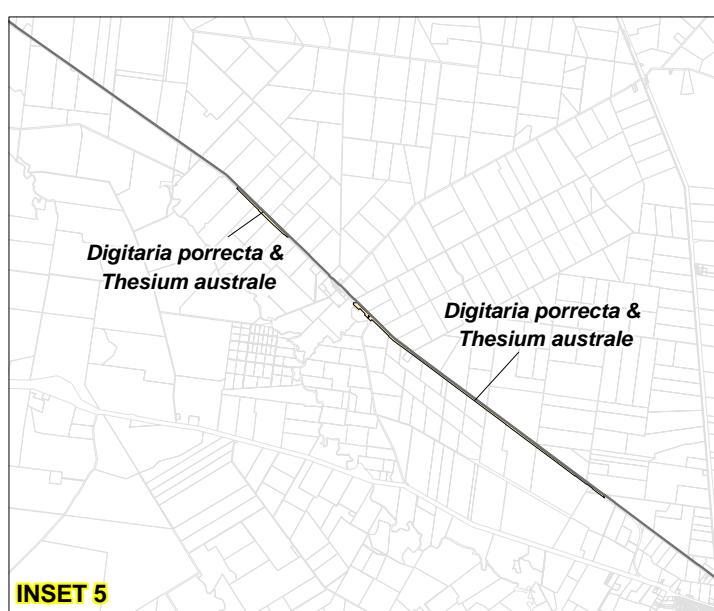
INSET 3



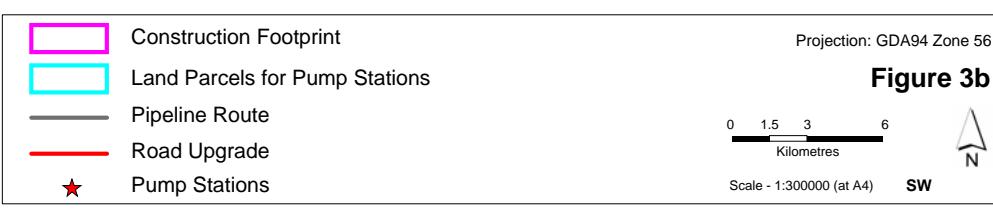
INSET 4

LEGEND

- [Purple Box] Acacia tenuinervis
- [Red Box] Arthraxon hispidus
- [Blue Box] Cadellia pentastylis
- [Dark Blue Box] Cryptandra ciliata
- [Yellow Box] Digitaria porrecta & Thesium australis
- [Orange Box] Livistona nitida
- [Green Box] Rutidosis crispata
- [Grey Box] Inundation Area
- [Blue Box] Dam Study Area
- [White Box] Cadastre



INSET 5



Projection: GDA94 Zone 56

Figure 3b

0 1.5 3 6
Kilometres
Scale - 1:300000 (at A4) SW



NATHAN DAM AND PIPELINES EIS
SUPPORTING INFORMATION
Habitat Modelling

APPENDIX A
Site data – Secondary Sites

**Nathan Dam Secondary Sites
Summer
26 March – 1 April 2008**

MD1 - Reference Site for RE 11.3.3

SITE NUMBER	MD1												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.3												
DATE	26/03/2008												
RECORDER	David Francis and John Dwyer												
LOCALITY	Taroom												
SITE DESCRIPTION	Eucalyptus coolabah woodland												
GENERAL NOTES													
COMMUNITY AREA (ha)	F		COMMUNITY WIDTH (m)		F								
MAPPED (Current RE)	11.3.3		REFERENCE SITE		Y								
LANDFORM													
Situation	A	Element	Fbo	Eros pattern	P	Pattern	ALP						
SLOPE													
Type	F	Slope (%)	<5	Aspect (°)	120								
SOILS													
Source	S	Reliability	Low	Code	Q	Add data	No	ISB/MU	-	Colour	B	Texture	A
GEOLOGY													
Source	I	Reliability	Low	Code	B	Map Unit	Qa						
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	10	Rock	0	Bare ground	5	Cryptophyte	0	Vegetation	85				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-		Road Works (Proportion/Age)		-								
Fire (Proportion/Age/Height)	-		Salinity		-								
Logging (#)	5		Ringbarking /Thinning (#)		-								
Grazing	2		Feral Digging		Yes								
Weeds (% Cover)	-		Remnant		Yes								
Erosion (Type/Severity)	-												

SITE NUMBER		MD1				continued								
STRUCTURAL SUMMARY														
Stratum	Height Range in Strata (m)	Median Height (m)		Cover (%) (100m transect)	Species									
Emergent														
Tree 1	16 - 18.5	17		53	<i>Eucalyptus coolabah</i>									
Tree 2	5 - 8	6			<i>Eucalyptus coolabah</i>									
Tree 3														
Shrub 1														
Shrub 2	0.5-1.5	1			<i>Acacia stenophylla</i>									
Ground	0-0.5	0.4			<i>Aeschynomene indica</i> <i>Atriplex muelleri</i> <i>Brunoniella australis</i> <i>Cenchrus ciliaris*</i> <i>Cyperus concinnus</i> <i>Dichanthium sericeum</i> <i>Eleocharis pallens</i> <i>Eragrostis leptocarpa</i> <i>Eulalia aurea</i> <i>Malvastrum americanum*</i> <i>Marsilea drummondii</i> <i>Mimulus gracilis</i> <i>Minuria integriflora</i> <i>Neptunia gracilis*</i> <i>Panicum larcomianum</i> <i>Sclerolaena muricata</i> <i>Senecio pinnatifolia</i> <i>Sida rhombifolia</i>									
BASAL AREA & STEM COUNTS														
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)					
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3		
<i>Eucalyptus coolabah</i>		18				153				13	1			
<i>Acacia stenophylla</i>													2	

CANOPY COVER DATA (100m TRANSECT)				
Canopy Start (m)	Canopy finish (m)	Species	Strata	
0	9.5	<i>Eucalyptus coolabah</i>	T1	
21.5	28.5	<i>Eucalyptus coolabah</i>	T1	
33	53	<i>Eucalyptus coolabah</i>	T1	
83.5	100	<i>Eucalyptus coolabah</i>	T1	
0	9.5	<i>Eucalyptus coolabah</i>	T1	
21.5	28.5	<i>Eucalyptus coolabah</i>	T1	
33	53	<i>Eucalyptus coolabah</i>	T1	
83.5	100	<i>Eucalyptus coolabah</i>	T1	

MD20 - Reference Site for RE 11.10.7a

SITE NUMBER	MD20											
LEVEL	2°											
DETAIL SP. LIST	Complete											
REGIONAL ECOSYSTEM	11.10.7a											
DATE	27/03/2008											
RECORDER	David Francis and John Dwyer											
LOCALITY	Spring Creek											
												
SITE DESCRIPTION	<i>Eucalyptus crebra</i> and <i>Callitris glauophylla</i> open woodland											
GENERAL NOTES												
COMMUNITY AREA (ha)	F				COMMUNITY WIDTH (m)				F			
MAPPED (Current RE)	11.10.9/11.10.7				REFERENCE SITE				Y			
LANDFORM												
Situation	B	Element	GUL	Eros pattern	GP	Pattern	ALP					
SLOPE												
Type	GE	Slope (%)	5	Aspect (°)	140							
SOILS												
Source	I	Reliability	LOW	Code	D	Add data	N	ISB/MU	Colour	B	Texture	F
GEOLOGY												
Source	I	Reliability	Low	Code	F	Map Unit	Jlp					
SPECHT STRUCTURE CODE	OW											
GROUND (%)												
Litter	20	Rock	20	Bare ground	5	Cryptophyte	5	Vegetation	50			
RAINFOREST												
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X			
DISTURBANCE												
Storm damage (Proportion/Age)	-				Road Works (Proportion/Age)				-			
Fire (Proportion/Age/Height)	-				Salinity				-			
Logging (#)	5				Ringbarking /Thinning (#)				-			
Grazing	-				Feral Digging				-			
Weeds (% Cover)	-				Remnant				-			
Erosion (Type/Severity)	-				-							

SITE NUMBER		MD20 continued											
STRUCTURAL SUMMARY													
Stratum	Height Range in Strata (m)	Median Height (m)		Cover (%) (100m transect)	Species								
Emergent													
Tree 1	7-15	10		38	<i>Eucalyptus crebra</i> <i>Eucalyptus fibrosa</i> subsp. <i>nubila</i> <i>Angophora leiocarpa</i> <i>Callitris glauophylla</i>								
Tree 2	3-6	5		2	<i>Eremophila mitchellii</i> <i>Psydrax johnsonii</i> <i>Allocasuarina luehmannii</i> <i>Geijera parviflora</i>								
Tree 3													
Shrub 1					<i>Acacia deanei</i> <i>Acacia decora</i> <i>Acacia excelsa</i> <i>Acacia leiocalyx</i>								
Shrub 2													
Ground					<i>Ancistrachne uncinulata</i> <i>Bothriochloa decipiens</i> <i>Brunoniella australis</i> <i>Cryptandra ciliata</i> <i>Cymbopogon bombycinus</i> <i>Entolasia stricta</i> <i>Eragrostis sororia</i> <i>Gahnia aspera</i> <i>Jasminum simplicifolium</i> <i>Lomandra multiflora</i> <i>Pittosporum phylliraeoides</i> <i>Prostanthera cryptandroides</i> subsp. <i>euphrasiooides</i> <i>Santalum lanceolatum</i> <i>Spartothamnella juncea</i>								
BASAL AREA & STEM COUNTS													
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)				
	E	T1	T2	T3	S1	T1	T2		E	T1	T2		
<i>Eucalyptus crebra</i>	5	1				30	2.5		1	1	1		
<i>Eucalyptus melanophloia</i>	2					10			1	1			
<i>Callitris glauophylla</i>		8					20			8			
<i>Psydrax johnsonii</i>				1						6	10		
<i>Santalum lanceolatum</i>											11		
<i>Eucalyptus fibrosa</i> subsp. <i>nubila</i>		1				5			1				
<i>Eremophila mitchellii</i>										3			
<i>Pittosporum phylliraeoides</i>											1		
<i>Acacia leiocalyx</i>											1		
<i>Acacia excelsa</i>									1				
<i>Geijera parviflora</i>										2	2		
<i>Acacia deanei</i>											3		
<i>Acacia decora</i>										1	4		
<i>Cryptandra ciliata</i>											9		
<i>Allocasuarina luehmannii</i>									1	5	2		
<i>Angophora leiocarpa</i>									1				
<i>Spartothamnella juncea</i>											1		
<i>Prostanthera cryptandroides</i> subsp. <i>euphrasiooides</i>											1		
<i>Jasminum simplicifolium</i>											2		
CANOPY COVER DATA (100m TRANSECT)													
Canopy Start (m)	Canopy finish (m)			Species			Strata						
0				2			<i>Eremophila mitchellii</i>						
8				10.5			<i>Acacia excelsa</i>						
19.5				26			<i>Eucalyptus melanophloia</i>						
27.5				31			<i>Eucalyptus crebra</i>						
39				45			<i>Angophora leiocarpa</i>						
61.5				80.5			<i>Angophora leiocarpa</i>						
77.5				81			<i>Callitris glauophylla</i>						

MD21 - Reference Site for RE 11.3.4

SITE NUMBER	MD21	Photo of small mound spring at the immediate edge of the plot 												
LEVEL	2°													
DETAIL SP. LIST	Complete													
REGIONAL ECOSYSTEM	11.3.4													
DATE	1/04/2008													
RECORDER	David Francis and John Dwyer													
LOCALITY	Glebe													
SITE DESCRIPTION	Eucalyptus tereticornis and Eucalyptus camaldulensis woodland													
GENERAL NOTES														
COMMUNITY AREA (ha)	F			COMMUNITY WIDTH (m)			D							
MAPPED (Current RE)	11.3.4			REFERENCE SITE			Y							
LANDFORM														
Situation	B	Element	BAN	Eros pattern	GP	Pattern	ALP							
SLOPE														
Type	VG	Slope (%)		1	Aspect (°)		-							
SOILS														
Source	I	Reliability	LOW	Code	A	Add data	N	ISB/MU		Colour	K	Texture	F	
GEOLOGY														
Source	I	Reliability		Low	Code	B	Map Unit	Jlp						
SPECHT STRUCTURE CODE														
W														
GROUND (%)														
Litter	5	Rock	0	Bare ground	20	Cryptophyte	0	Vegetation	75					
RAINFOREST														
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X					
DISTURBANCE														
Storm damage (Proportion/Age)	-				Road Works (Proportion/Age)			-						
Fire (Proportion/Age/Height)	-				Salinity			-						
Logging (#)	-				Ringbarking /Thinning (#)			-						
Grazing	-				Feral Digging			-						
Weeds (% Cover)	-				Remnant			-						
Erosion (Type/Severity)	0				-									

SITE NUMBER		MD21						continued								
STRUCTURAL SUMMARY																
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)	Species										
Emergent																
Tree 1	27-31	29			100	<i>Eucalyptus tereticornis</i> <i>Eucalyptus camaldulensis</i>										
Tree 2	5-12	9			41.5	<i>Melaleuca linariifolia</i> var. <i>trichostachya</i>										
Tree 3																
Shrub 1	1-1.5	1.5				<i>Ficus opposita</i>										
Shrub 2																
Ground	0-1	0.5				<i>Cyclosorus interruptus</i> <i>Dichondra repens</i> * <i>Juncus usitatus</i> <i>Livistona nitida</i> <i>Lomandra hystrix</i> <i>Lomandra longifolia</i> <i>Paspalidium distans</i> <i>Pseuderanthemum variable</i> <i>Xanthium pungens</i> *										
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Eucalyptus camaldulensis</i>	10					145	4.5		5	2						
<i>Eucalyptus tereticornis</i>	6	1				87	4.5									
<i>Melaleuca linariifolia</i> var. <i>trichostachya</i>										1	2	1				
<i>Ficus opposita</i>													3			

CANOPY COVER DATA (100m TRANSECT)				
Canopy Start (m)	Canopy finish (m)	Species	Strata	
0	100	<i>Eucalyptus camaldulensis</i>	T1	
32	34	<i>Melaleuca linariifolia</i> var. <i>trichostachya</i>	T2	
56	60	<i>Melaleuca linariifolia</i> var. <i>trichostachya</i>	T2	
62	67	<i>Melaleuca linariifolia</i> var. <i>trichostachya</i>	T2	
69.5	100	<i>Melaleuca linariifolia</i> var. <i>trichostachya</i>	T2	

MD23 - Reference Site for RE 11.3.1

SITE NUMBER	MD23												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.1												
DATE	27/03/2008												
RECORDER	David Francis and John Dwyer												
LOCALITY	Spring Creek												
													
SITE DESCRIPTION	Eucalyptus coolabah and Acacia harpophylla woodland												
GENERAL NOTES													
COMMUNITY AREA (ha)	D	COMMUNITY WIDTH (m)	E										
MAPPED (Current RE)	11.3.25	REFERENCE SITE	Y										
LANDFORM													
Situation	B	Element	CBE										
SLOPE													
Type	G	Slope (%)	5										
Aspect (°)				140									
SOILS													
Source	S	Reliability	Low	Code	G	Add data	N	ISB/MU		Colour	B	Texture	A
GEOLOGY													
Source	I	Reliability	Low	Code		B		Map Unit		Qa			
SPECHT STRUCTURE CODE				OF									
GROUND (%)													
Litter	20	Rock	0	Bare ground	50	Cryptophyte	0	vegetation	30				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-				Road Works (Proportion/Age)	-							
Fire (Proportion/Age/Height)	-				Salinity	-							
Logging (#)	5				Ringbarking /Thinning (#)	-							
Grazing	-				Feral Digging	No							
Weeds (% Cover)	2				Remnant	Yes							
Erosion (Type/Severity)	0												

SITE NUMBER		MD23		continued
STRUCTURAL SUMMARY				
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species
Emergent				
Tree 1	15-18	16	38.5	<i>Eucalyptus coolabah</i> <i>Acacia harpophylla</i> <i>Casuarina cristata</i> <i>Lysiphyllo carolinii</i>
Tree 2	4-5	4.5	7.5	<i>Lysiphyllo carolinii</i>
Tree 3				
Shrub 1	2-3	2.5		<i>Geijera parviflora</i> <i>Eremophila mitchellii</i>
Shrub 2	1-2	1.5		<i>Ehretia membranifolia</i>
Ground				<i>Abutilon oxycarpum</i> <i>Alectryon diversifolius</i> <i>Atriplex muelleri</i> <i>Cenchrus ciliaris*</i> <i>Citrus glauca</i> <i>Cyperus gracilis</i> <i>Dichanthium sericeum</i> <i>Enchytraea tomentosa</i> <i>Eremophila debile</i> <i>Melinis repens*</i> <i>Nyssanthes erecta</i> <i>Parsonsia eucalyptophylla</i> <i>Paspalidium caespitosum</i> <i>Pseuderanthemum variable</i> <i>Salsola kali</i> <i>Sclerolaena muricata</i> <i>Sporobolus scabridus</i> <i>Tetragonia tetragonoides</i>

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
6.5	14	<i>Eucalyptus coolabah</i>	T1
6.5	11	<i>Acacia harpophylla</i>	T1
11.5	14.5	<i>Lysiphylgium caronii</i>	T2
15.5	26.5	<i>Acacia harpophylla</i>	T1
26.5	33.5	<i>Acacia harpophylla</i>	T1
26.5	31	<i>Eucalyptus coolabah</i>	T1
37.5	43	<i>Acacia harpophylla</i>	T1
44.5	49	<i>Lysiphylgium caronii</i>	T2
69.5	76	<i>Eucalyptus coolabah</i>	T1
74.5	77	<i>Acacia harpophylla</i>	T1
88	90	<i>Acacia harpophylla</i>	T1
92	100	<i>Acacia harpophylla</i>	T1

MD1 - Reference Site for RE 11.9.4a

SITE NUMBER	MD57												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.9.4a												
DATE	29/03/2008												
RECORDER	David Francis and John Dwyer												
LOCALITY	Dalwogon												
SITE DESCRIPTION	Brachychiton rupestris Low closed forest												
GENERAL NOTES													
COMMUNITY AREA (ha)	E		COMMUNITY WIDTH (m)		F								
MAPPED (Current RE)	11.9.5		REFERENCE SITE		Y								
LANDFORM													
Situation	A	Element	HSL	Eros pattern	UL	Pattern	HIL						
SLOPE													
Type	GE	Slope (%)		5	Aspect (°)	330							
SOILS													
Source	S	Reliability	Low	Code	H	Add data	No	ISB/MU		Colour	F	Texture	B
GEOLOGY													
Source	O	Reliability	Low	Code	G		Map Unit	Jle					
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	20	Rock	10	Bare ground	<1	Cryptophyte	0	Vegetation	70				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)	-								
Fire (Proportion/Age/Height)	-			Salinity	-								
Logging (#)	-			Ringbarking /Thinning (#)	-								
Grazing	2			Feral Digging	-								
Weeds (% Cover)	-			Remnant	Yes								
Erosion (Type/Severity)				-									

SITE NUMBER		MD57						continued										
STRUCTURAL SUMMARY																		
Stratum	Height Range in Strata (m)	Median Height (m)		Cover (%) (100m transect)	Species													
Emergent																		
Tree 1	6 - 10	7		13.5	<i>Geijera parviflora</i> <i>Brachychiton rupestris</i> <i>Lysiphyllo caronii</i> <i>Acacia fasciculifera</i> <i>Eremophila mitchellii</i>													
Tree 2	4 - 6	4		11	<i>Elaeodendron australe</i> <i>Erythroxylum sp Spit Yard Creek</i>													
Tree 3	3	3		15	<i>Alectryon connatus</i>													
Shrub 1	1 - 3	2			<i>Turraea pubescens</i> <i>Pittosporum spinescens</i>													
Shrub 2	0.5-1	1			<i>Jasminum simplicifolium</i> <i>Ehretia membranifolia</i>													
Ground	0-0.5	0.5			<i>Apophyllum anomalum</i> <i>Ancistrachne uncinulata</i> <i>Capparis lasiantha</i> <i>Carissa ovata</i> <i>Cenchrus ciliaris*</i> <i>Clematicissus opaca</i> <i>Croton insularis</i> <i>Einadia hastata</i> <i>Einadia trigonos subsp. stellulata</i> <i>Elaeodendron australe</i> <i>Jasminum didymum subsp. lineare</i> <i>Jasminum simplicifolium</i> <i>Lysiphyllo caronii</i> <i>Owenia venosa</i> <i>Paspalidium caespitosum</i> <i>Pittosporum spinescens</i> <i>Sarcostemma viminale subsp. australe</i> <i>Turraea pubescens</i>													
BASAL AREA & STEM COUNTS																		
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)									
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2				
<i>Elaeodendron australe</i>			1				2		1	1	1							
<i>Alectryon oleifolius</i>											3	1						
<i>Croton insularis</i>												5	3					
<i>Acacia fasciculiflora</i>									1	8	7	2						
<i>Pittosporum spinescens</i>												7	2					
<i>Atalaya salicifolia</i>									2			0						
<i>Brachychiton rupestris</i>	1	1									1							
<i>Eremophila mitchellii</i>								2										
<i>Geijera parviflora</i>	2					7			2		1	1						
<i>Apophyllum anomalum</i>			1				2											
<i>Lysiphyllo caronii</i>		1				3.5												

CANOPY COVER DATA (100m TRANSECT)				
Canopy Start (m)	Canopy finish (m)	Species	Strata	
0	1.5	<i>Erythroxylum sp Spit Yard Creek</i>	T2	
3	8.5	<i>Acacia fasciculiflora</i>	T1	
7.5	11	<i>Alectryon diversifolius</i>	T3	
8.5	10	<i>Croton insularis</i>	T3	
11.5	12	<i>Alectryon connatus</i>	T2	
12.5	15	<i>Acacia fasciculiflora</i>	T2	
14.5	16	<i>Erythroxylum sp Spit Yard Creek</i>	T2	
15.5	17	<i>Alectryon diversifolius</i>	T2	
16	18	<i>Acacia fasciculiflora</i>	T3	
18	21	<i>Geijera parviflora</i>	T1	
21	22	<i>Acacia fasciculiflora</i>	T2	
21.5	23	<i>Alectryon diversifolius</i>	T3	
22	31	<i>Lysiphyllo caronii</i>	T1	

22.5	26.5	<i>Geijera parviflora</i>	T1
37	41	<i>Geijera parviflora</i>	T1
52	55.5	<i>Alectryon diversifolius</i>	T2
55	57	<i>Geijera parviflora</i>	T3
61.5	64	<i>Geijera parviflora</i>	T2
63.5	65.5	<i>Acacia fasciculiflora</i>	T1
66	71.5	<i>Lysiphyllo caronii</i>	T1
71.5	76.5	<i>Geijera parviflora</i>	T1
72	78	<i>Acacia fasciculiflora</i>	T1
77.5	79	<i>Elaeodendron australe</i>	T2
81.5	84.5	<i>Geijera parviflora</i>	T1
84	88	<i>Elaeodendron australe</i>	T1
87	88	<i>Acacia fasciculiflora</i>	T3
91.5	93	<i>Croton insularis</i>	T3
96.5	100	<i>Acacia fasciculiflora</i>	T1
97	99	<i>Acacia fasciculiflora</i>	T2

MD67 - Reference Site for RE 11.9.10

SITE NUMBER	MD67														
LEVEL	2°														
DETAIL SP. LIST	Complete														
REGIONAL ECOSYSTEM	11.9.10														
DATE	29/03/2008														
RECORDER	David Francis and John Dwyer														
LOCALITY	Glebe														
SITE DESCRIPTION	Eucalyptus populnea and Acacia harpophylla Open forest														
GENERAL NOTES															
COMMUNITY AREA (ha)	D		COMMUNITY WIDTH (m)		E										
MAPPED (Current RE)	11.3.2/11.9.5		REFERENCE SITE		Y										
LANDFORM															
Situation	A	Element	HSL	Eros pattern	UL	Pattern	Low								
SLOPE															
Type	VG	Slope (%)		<3	Aspect (°)		40								
SOILS															
Source	S	Reliability	Low	Code	H	Add data	No	ISB/MU		Colour	K	Texture	B		
GEOLOGY															
Source	O	Reliability	Low	Code		G		Map Unit			Jle				
SPECHT STRUCTURE CODE					OF										
GROUND (%)															
Litter	5	Rock	0	Bare ground	10	Cryptophyte	5	Vegetation			80				
RAINFOREST															
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X						
DISTURBANCE															
Storm damage (Proportion/Age)	-				Road Works (Proportion/Age)			-							
Fire (Proportion/Age/Height)	-				Salinity			-							
Logging (#)	-				Ringbarking /Thinning (#)			-							
Grazing	2				Feral Digging			-							
Weeds (% Cover)	5				Remnant			Yes							
Erosion (Type/Severity)	0				-										

SITE NUMBER		MD67					continued							
STRUCTURAL SUMMARY														
Stratum	Height Range in Strata (m)	Median Height (m)		Cover (%) (100m transect)	Species									
Emergent														
Tree 1	14 - 17	16		33.5	<i>Eucalyptus populnea</i> <i>Acacia harpophylla</i>									
Tree 2	7 - 13	10		37.5	<i>Acacia harpophylla</i> <i>Eucalyptus populnea</i>									
Tree 3														
Shrub 1	2 - 4	4			<i>Geijera parviflora</i> <i>Eremophila mitchellii</i>									
Shrub 2	1 - 2	1			<i>Geijera parviflora</i>									
Ground					<i>Abutilon oxycarpum</i> <i>Alectryon oleifolius</i> <i>Ancistrachne uncinulata</i> <i>Arundinella nepalensis</i> <i>Atriplex muelleri</i> <i>Cenchrus ciliaris*</i> <i>Cheilanthes distans</i> <i>Chenopodium pumilio</i> <i>Einadia hastata</i> <i>Elaeodendron australe</i> <i>Enchytraea tomentosa</i> <i>Jasminum didymum subsp. <i>lineare</i></i> <i>Malvastrum americanum*</i> <i>Megathyrsus maximus*</i> <i>Opuntia tomentosa*</i> <i>Paspalidium caespitosum</i> <i>Paspalidium constrictum</i> <i>Pittosporum phylliraeoides</i> <i>Salsola kali</i> <i>Sclerolaena tetracuspis</i> <i>Tetragonia tetragonoides</i>									
BASAL AREA & STEM COUNTS														
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)					
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3		
<i>Eucalyptus populnea</i>		2				16				3				
<i>Acacia harpophylla</i>		3	5			24	25		3	25		12		
<i>Geijera parviflora</i>					1							11	8	
<i>Pittosporum phylliraeoides</i>													1	
<i>Elaeodendron australe</i>													1	
<i>Alectryon oleifolius</i>													1	

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	7	<i>Eucalyptus populnea</i>	T1
9	22	<i>Acacia harpophylla</i>	T2
14	20	<i>Eucalyptus populnea</i>	T1
26.5	39	<i>Acacia harpophylla</i>	T1
28.5	38	<i>Acacia harpophylla</i>	T2
34.5	38	<i>Eucalyptus populnea</i>	T1
40	43.5	<i>Acacia harpophylla</i>	T2
50	58	<i>Geijera parviflora</i>	T2
79	88	<i>Eucalyptus populnea</i>	T1
92	95.5	<i>Acacia harpophylla</i>	T2

MD85 - Reference Site for RE 11.9.5

SITE NUMBER	MD85												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.9.5												
DATE	30/03/2008												
RECORDER	David Francis and John Dwyer												
LOCALITY	Glebe												
													
SITE DESCRIPTION	Acacia harpophylla Open forest												
GENERAL NOTES													
COMMUNITY AREA (ha)	D			COMMUNITY WIDTH (m)			E						
MAPPED (Current RE)	Non-remnant			REFERENCE SITE			Y						
LANDFORM													
Situation	A	Element	HSL	Eros pattern	UL	Pattern	HIL						
SLOPE													
Type	VG	Slope (%)	<5	Aspect (°)									
SOILS													
Source	S	Reliability	low	Code	H	Add data	No	ISB/MU		Colour	F	Texture	B
GEOLOGY													
Source	O	Reliability	Low	Code	G		Map Unit	Jle					
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	5	Rock	0	Bare ground	5	Cryptophyte	0	vegetation					
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)	-								
Fire (Proportion/Age/Height)	-			Salinity	-								
Logging (#)	-			Ringbarking /Thinning (#)	-								
Grazing	2			Feral Digging	Yes								
Weeds (% Cover)	20			Remnant	-								
Erosion (Type/Severity)				-									

SITE NUMBER		MD85						continued								
STRUCTURAL SUMMARY																
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)	Species										
Emergent																
Tree 1	12 - 17	15			44.1	<i>Acacia harpophylla</i>										
Tree 2	5 - 10	8			51.5	<i>Eremophila mitchellii</i> <i>Geijera parviflora</i> <i>Psydrax johnsonii</i> <i>Acacia harpophylla</i> <i>Alectryon oleifolius</i>										
Tree 3																
Shrub 1	2-4.5	4				<i>Eremophila mitchellii</i> <i>Geijera parviflora</i>										
Shrub 2																
Ground						<i>Abutilon oxycarpum</i> <i>Achyranthes aspera</i> <i>Ancistrachne uncinulata</i> <i>Cenchrus ciliaris*</i> <i>Clematicissus opaca</i> <i>Citrus glauca</i> <i>Chenopodium pumilio</i> <i>Cymbopogon refractus</i> <i>Leptochloa decipiens</i> subsp. <i>asthenes</i> <i>Megathyrsus maximus*</i> <i>Nyssanthes erecta</i> <i>Opuntia tomentosa*</i> <i>Paspalidium caespitosum</i> <i>Pseuderanthemum variable</i> <i>Verbena tenuisecta*</i>										
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Acacia harpophylla</i>		9	1			67.5	4			13	5					
<i>Geijera parviflora</i>					2						7		9			
<i>Eremophila mitchellii</i>			1				4				3		2			
<i>Alectryon oleifolius</i>			1								5					
<i>Psydrax johnsonii</i>											1					
<i>Brachychiton rupestris</i>											1					
<i>Citrus glauca</i>											1					

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	3	<i>Acacia harpophylla</i>	T1
2	3	<i>Eremophila mitchellii</i>	T2
8.5	13	<i>Acacia harpophylla</i>	T2
12.5	13	<i>Geijera parviflora</i>	T2
13.5	17.5	<i>Alectryon oleifolius</i>	T2
17.5	29	<i>Acacia harpophylla</i>	T1
30	33.5	<i>Geijera parviflora</i>	T2
33	35	<i>Acacia harpophylla</i>	T1
35	51	<i>Geijera parviflora</i>	T2
42	51.5	<i>Acacia harpophylla</i>	T1
52	63.5	<i>Geijera parviflora</i>	T2
53	58.5	<i>Acacia harpophylla</i>	T1
65	69	<i>Geijera parviflora</i>	T2
70	81	<i>Geijera parviflora</i>	T2
74	79	<i>Acacia harpophylla</i>	T1
76.5	78	<i>Lysiphylgium carronii</i>	T1
80	84	<i>Acacia harpophylla</i>	T1
96.5	100	<i>Acacia harpophylla</i>	T1

MD96 - Reference Site for RE 11.3.2

SITE NUMBER	MD96										
LEVEL	2°										
DETAIL SP. LIST	Complete										
REGIONAL ECOSYSTEM	11.3.2										
DATE	30/03/2008										
RECORDER	David Francis and John Dwyer										
LOCALITY	Glebe										
SITE DESCRIPTION	<i>Eucalyptus populnea</i> woodland										
GENERAL NOTES											
COMMUNITY AREA (ha)	F			COMMUNITY WIDTH (m)			F				
MAPPED (Current RE)	11.3.2/11.9.5			REFERENCE SITE			Y				
LANDFORM											
Situation	B	Element	CBE	Eros pattern	GP	Pattern	ALP				
SLOPE											
Type	LE	Slope (%)			<1	Aspect (°)			200		
SOILS											
Source	S	Reliability	Low	Code	G	Add data	No	ISB/MU	Colour	B	Texture
GEOLOGY											
Source	O	Reliability	Low	Code	G			Map Unit	Jle		
SPECHT STRUCTURE CODE	W										
GROUND (%)											
Litter	5	Rock	0	Bare ground	10	Cryptophyte	5	Vegetation	80		
RAINFOREST											
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X		
DISTURBANCE											
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)			-				
Fire (Proportion/Age/Height)	-			Salinity			-				
Logging (#)	-			Ringbarking /Thinning (#)			-				
Grazing	-			Feral Digging			-				
Weeds (% Cover)	<1%			Remnant			-				
Erosion (Type/Severity)	-										



CANOPY COVER DATA (100m TRANSECT)				
Canopy Start (m)	Canopy finish (m)	Species	Strata	
0	2.5	<i>Eucalyptus populnea</i>	T1	
3.5	7	<i>Eucalyptus populnea</i>	T1	
14.5	23	<i>Eucalyptus populnea</i>	T1	
25	30.5	<i>Eucalyptus populnea</i>	T1	
33	34.5	<i>Eucalyptus populnea</i>	T1	
34.5	40	<i>Eucalyptus populnea</i>	T2	
61.5	65.5	<i>Eucalyptus populnea</i>	T1	
77	80	<i>Grevillea striata</i>	T2	
80	83.5	<i>Eucalyptus populnea</i>	T2	
86.5	90.5	<i>Eucalyptus populnea</i>	T2	
96	100	<i>Eucalyptus populnea</i>	T1	

MD100 - Reference Site for RE 11.9.7

SITE NUMBER	MD100														
LEVEL	2°														
DETAIL SP. LIST	Complete														
REGIONAL ECOSYSTEM	11.9.7														
DATE	30/03/2008														
RECORDER	David Francis and John Dwyer														
LOCALITY	Glebe														
SITE DESCRIPTION	Eucalyptus populnea woodland														
GENERAL NOTES															
COMMUNITY AREA (ha)			F		COMMUNITY WIDTH (m)			F							
MAPPED (Current RE)			11.3.2/11.9.5		REFERENCE SITE			Y							
LANDFORM															
Situation	A	Element	HSL		Eros pattern		UL		Pattern		HIL				
SLOPE															
Type	GE	Slope (%)		5		Aspect (°)		180							
SOILS															
Source	S	Reliability	Low	Code	K	Add data	No	ISB/MU		Colour	B	Texture	A		
GEOLOGY															
Source	E	Reliability	Low	Code		B		Map Unit		Qa					
SPECHT STRUCTURE CODE															
GROUND (%)															
Litter	5	Rock	0	Bare ground	10	Cryptophyte	0	Vegetation	85						
RAINFOREST															
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X						
DISTURBANCE															
Storm damage (Proportion/Age)	-				Road Works (Proportion/Age)		-								
Fire (Proportion/Age/Height)	-				Salinity		-								
Logging (#)	-				Ringbarking /Thinning (#)		?								
Grazing	2				Feral Digging		No								
Weeds (% Cover)	<1				Remnant		-								
Erosion (Type/Severity)	3/1														

SITE NUMBER		MD100 continued													
STRUCTURAL SUMMARY															
Stratum	Height Range in Strata (m)	Median Height (m)		Cover (%) (100m transect)	Species										
Emergent															
Tree 1	13 - 16	15		19	<i>Eucalyptus populnea</i>										
Tree 2	7 - 10	7		10.9	<i>Eucalyptus populnea</i>										
Tree 3															
Shrub 1	2 - 3	3		2.5	<i>Eremophila mitchellii</i>										
Shrub 2	0.5-1	1			<i>Eremophila mitchellii</i>										
Ground					<i>Boerhavia dominii</i> <i>Bothriochloa bladhii</i> <i>Bothriochloa decipiens</i> <i>Brachyscome ciliaris var. subintegritifolia</i> <i>Brunoniella australis</i> <i>Cenchrus ciliaris*</i> <i>Cymbopogon refractus</i> <i>Dichanthium sericeum</i> <i>Dodonaea viscosa</i> <i>Glossocardia bidens</i> <i>Haloragis aspera</i> <i>Heteropogon contortus</i> <i>Malvastrum americanum*</i> <i>Neptunia gracilis*</i> <i>Portulaca pilosa*</i> <i>Portulaca oleracea*</i> <i>Phyllanthus maderaspatensis</i> <i>Rhynchosia minima var. Australis</i> <i>Salsola kali</i> <i>Sporobolus elongatus*</i>										
BASAL AREA & STEM COUNTS															
Species	Basal area for plot (50X10m)					Volume/ha				Stem count for plot (50X10m)					
	E	T1	T2	T3	S1	T1	T2			E	T1	T2	T3	S1	S2
<i>Eucalyptus populnea</i>		1	4			7.5	14			3	7				
<i>Eremophila mitchellii</i>														7	11
<i>Dodonaea viscosa</i>															1
<i>Alectryon oleifolius</i>															1

CANOPY COVER DATA (100m TRANSECT)				
Canopy Start (m)	Canopy finish (m)	Species	Strata	
0	5	<i>Eucalyptus populnea</i>	T1	
24.5	29	<i>Eucalyptus populnea</i>	T1	
30	31.5	<i>Eucalyptus populnea</i>	T2	
42.5	44.5	<i>Eucalyptus populnea</i>	T1	
49.5	52	<i>Eremophila mitchellii</i>	S1	
52.5	57.5	<i>Eucalyptus populnea</i>	T1	
65.5	68.4	<i>Eucalyptus populnea</i>	T2	
69	71.5	<i>Eucalyptus populnea</i>	T2	
84	88	<i>Eremophila mitchellii</i>	T2	
84.5	86	<i>Eucalyptus populnea</i>	T1	
96	100	<i>Eucalyptus populnea</i>	T1	

MD145 - Reference Site for RE 11.10.9

SITE NUMBER	MD145												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.10.9												
DATE	31/03/2008												
RECORDER	David Francis and John Dwyer												
LOCALITY	Taroom												
													
SITE DESCRIPTION	<i>Callitris glaucophylla</i> woodland												
GENERAL NOTES													
COMMUNITY AREA (ha)	F												
MAPPED (Current RE)	11.10.7/11.10.7/11.10.9/ 11.3.2												
COMMUNITY WIDTH (m)	F												
REFERENCE SITE	Y												
LANDFORM													
Situation	A	Element	HSL	Eros pattern	UH	Pattern	Low						
SLOPE													
Type	VG	Slope (%)	<3	Aspect (°)	230								
SOILS													
Source	S	Reliability	LOW	Code	sandy soil	Add data	No	ISB/MU	I	Colour	B	Texture	
GEOLOGY													
Source	I	Reliability	Low	Code	F	Map Unit	Jlh						
SPECHT STRUCTURE CODE			W										
GROUND (%)													
Litter	2	Rock	0	Bare ground	2	Cryptophyte	0	Vegetation	96				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)			-						
Fire (Proportion/Age/Height)	-			Salinity			-						
Logging (#)	-			Ringbarking /Thinning (#)			-						
Grazing	2			Feral Digging			-						
Weeds (% Cover)	-			Remnant			-						
Erosion (Type/Severity)											-		

SITE NUMBER		MD145						continued										
STRUCTURAL SUMMARY																		
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)		Species											
Emergent																		
Tree 1	14 - 18	17			45		<i>Callitris glauophylla</i> <i>Corymbia tessellaris</i>											
Tree 2	8 - 10	9			10.5		<i>Callitris glauophylla</i> <i>Corymbia clarksoniana</i>											
Tree 3																		
Shrub 1																		
Shrub 2																		
Ground	0-0.5	0.5					<i>Achyranthes aspera</i> <i>Bulbostylis barbata</i> <i>Cenchrus ciliaris</i> * <i>Cheilanthes sieberi</i> subsp. <i>Sieberi</i> <i>Chenopodium pumilio</i> <i>Commelina diffusa</i> <i>Cymbopogon refractus</i> <i>Cyperus dietrichiae</i> var. <i>brevibracteatus</i> <i>Cyperus gracilis</i> <i>Megathyrsus maximus</i> * <i>Melinis repens</i> * <i>Murdannia graminea</i> <i>Opuntia stricta</i> * <i>Perotis rara</i> <i>Polycarpea corymbosa</i> <i>Portulaca pilosa</i> * <i>Psydrax odorata</i> <i>Sclerolaena birchii</i> <i>Sida rhombifolia</i> * <i>Sporobolus elongatus</i>											
BASAL AREA & STEM COUNTS																		
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)									
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2				
<i>Callitris glauophylla</i>		12				102				17	5							
<i>Corymbia tessellaris</i>										1								
<i>Corymbia clarksoniana</i>										2								
<i>Psydrax odorata</i>														1				
CANOPY COVER DATA (100m TRANSECT)																		
Canopy Start (m)		Canopy finish (m)			Species			Strata										
0		0.5			<i>Corymbia tessellaris</i>			T1										
1.5		7			<i>Callitris glauophylla</i>			T1										
10.5		13.5			<i>Callitris glauophylla</i>			T2										
15.5		22.5			<i>Callitris glauophylla</i>			T1										
26.5		30			<i>Callitris glauophylla</i>			T1										
32.5		34.5			<i>Corymbia clarksoniana</i>			T2										
36.5		40			<i>Corymbia tessellaris</i>			T1										
41.5		43			<i>Callitris glauophylla</i>			T1										
41		45			<i>Callitris glauophylla</i>			T2										
49.5		51.5			<i>Callitris glauophylla</i>			T1										
54.5		58			<i>Callitris glauophylla</i>			T1										
64.5		68			<i>Callitris glauophylla</i>			T1										
69.5		71.5			<i>Callitris glauophylla</i>			T2										
80.5		82.5			<i>Callitris glauophylla</i>			T1										
83		86			<i>Callitris glauophylla</i>			T1										
85.5		90			<i>Corymbia clarksoniana</i>			T1										
91		92			<i>Callitris glauophylla</i>			T1										
95		98			<i>Callitris glauophylla</i>			T1										
98.5		100			<i>Callitris glauophylla</i>			T1										

MD156 - Reference Site for RE 11.3.27b

SITE NUMBER	MD156											
LEVEL	2°											
DETAIL SP. LIST	Complete											
REGIONAL ECOSYSTEM	11.3.27b											
DATE	1/04/2008											
RECORDER	David Francis and John Dwyer											
LOCALITY	Spring Creek											
												
SITE DESCRIPTION	<i>Eucalyptus camaldulensis</i> woodland											
GENERAL NOTES												
COMMUNITY AREA (ha)	C				COMMUNITY WIDTH (m)				F			
MAPPED (Current RE)	11.3.27b				REFERENCE SITE				Y			
LANDFORM												
Situation	B	Element	BAN	Eros pattern	GP	Pattern	ALP					
SLOPE												
Type	VG	Slope (%)	1	Aspect (°)								
SOILS												
Source	I	Reliability	Low	Code	A	Add data	N	ISB/MU	Colour	K	Texture	F
GEOLOGY												
Source	I	Reliability	Low	Code	B		Map Unit	Qa				
SPECHT STRUCTURE CODE	W											
GROUND (%)												
Litter	-	Rock	-	Bare ground	-	Cryptophyte	-	Vegetation	~100			
RAINFOREST												
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X			
DISTURBANCE												
Storm damage (Proportion/Age)	-				Road Works (Proportion/Age)				-			
Fire (Proportion/Age/Height)	-				Salinity				-			
Logging (#)	-				Ringbarking /Thinning (#)				-			
Grazing	-				Feral Digging				-			
Weeds (% Cover)	-				Remnant				-			
Erosion (Type/Severity)	0				-							

SITE NUMBER		MD156 continued											
STRUCTURAL SUMMARY													
Stratum	Height Range in Strata (m)	Median Height (m)		Cover (%) (100m transect)	Species								
Emergent													
Tree 1	23-30	25		52	<i>Eucalyptus camaldulensis</i> <i>Eucalyptus coolabah</i>								
Tree 2	17-21	18		27	<i>Eucalyptus coolabah</i> <i>Eucalyptus camaldulensis</i>								
Tree 3													
Shrub 1					<i>Alectryon diversifolius</i>								
Shrub 2													
Ground	0-1	1			<i>Bothriochloa decipiens</i> <i>Centella asiatica</i> * <i>Cyclosorus interruptus</i> <i>Dianella brevipedunculata</i> <i>Gomphocarpus physocarpa</i> * <i>Imperata cylindrica</i> <i>Lomandra longifolia</i> <i>Ludwigia octovalvis</i> <i>Marsilea drummondii</i> <i>Megathyrsus maximus</i> * <i>Phragmites australis</i> <i>Schoenoplectus maritimus</i> <i>Sida rhombifolia</i> * <i>Sida subspicata</i> <i>Tetragonia tetragonoides</i> <i>Vigna lanceolata</i> *								
BASAL AREA & STEM COUNTS													
Species	Basal area for plot (50X10m)					Volume/ha		Stem count for plot (50X10m)					
	E	T1	T2	T3	S1	T1	T2	E	T1	T2	T3	S1	S2
<i>Eucalyptus camaldulensis</i>		17				212.5			8	2			
<i>Eucalyptus coolabah</i>		2	2						2	6			
<i>Alectryon diversifolius</i>													1

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	8	<i>Eucalyptus coolabah</i>	T2
0	13	<i>Eucalyptus camaldulensis</i>	T1
20.5	23.5	<i>Eucalyptus coolabah</i>	T2
14	21	<i>Eucalyptus camaldulensis</i>	T1
29	33	<i>Eucalyptus coolabah</i>	T2
17	38	<i>Eucalyptus coolabah</i>	T1
31	37	<i>Eucalyptus camaldulensis</i>	T2
38	41	<i>Eucalyptus camaldulensis</i>	T1
43	47	<i>Eucalyptus camaldulensis</i>	T2
66	70	<i>Eucalyptus camaldulensis</i>	T2
46	100	<i>Eucalyptus camaldulensis</i>	T1

MD163 - Reference Site for RE 11.9.1

SITE NUMBER	MD163											
LEVEL	2°											
DETAIL SP. LIST	Complete											
REGIONAL ECOSYSTEM	11.9.1											
DATE	1/04/2008											
RECORDER	David Francis and John Dwyer											
LOCALITY	Spring Creek											
SITE DESCRIPTION	<i>Eucalyptus camagiana</i> and <i>Acacia harpophylla</i> woodland											
GENERAL NOTES												
COMMUNITY AREA (ha)	D			COMMUNITY WIDTH (m)			E					
MAPPED (Current RE)	11.9.5/11.9.4a			REFERENCE SITE			Y					
LANDFORM												
Situation	F	Element	FOO	Eros pattern	UL	Pattern	HIL					
SLOPE												
Type	GE	Slope (%)			5	Aspect (°)	100					
SOILS												
Source	S	Reliability	Low	Code	K	Add data	N	ISB/MU	Colour	F	Texture	A
GEOLOGY												
Source	I	Reliability	Low		Code		F		Map Unit	Jle		
SPECHT STRUCTURE CODE	W											
GROUND (%)												
Litter	5	Rock	0	Bare ground	1	Cryptophyte	0		Vegetation	85		
RAINFOREST												
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X			
DISTURBANCE												
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)			-					
Fire (Proportion/Age/Height)	-			Salinity			-					
Logging (#)	-			Ringbarking /Thinning (#)			-					
Grazing	Yes			Feral Digging			No					
Weeds (% Cover)	-			Remnant			Yes					
Erosion (Type/Severity)	0											



SITE NUMBER		MD163						continued												
STRUCTURAL SUMMARY																				
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)		Species													
Emergent																				
Tree 1	16-20	17			42		<i>Eucalyptus cambageana</i> <i>Acacia harpophylla</i>													
Tree 2	7-14	10			12		<i>Acacia harpophylla</i>													
Tree 3																				
Shrub 1							<i>Geijera parviflora</i> <i>Alectryon diversifolius</i> <i>Psydrax johnsonii</i> <i>Alstonia constricta</i>													
Shrub 2							<i>Capparis mitchellii</i> <i>Notelaea microcarpa</i>													
Ground							<i>Abutilon oxycarpum</i> <i>Ancistrachne uncinulata</i> <i>Atriplex muelleri</i> <i>Capparis lasiantha</i> <i>Carissa ovata</i> <i>Cenchrus ciliaris*</i> <i>Cheilanthes sieberi subsp. sieberi</i> <i>Chloris divaricata</i> <i>Clematicissus opaca</i> <i>Enteropogon unispiceus</i> <i>Hibiscus sturtii</i> <i>Lomandra leucocephala</i> <i>Panicum laevinode</i> <i>Pseuderanthemum variable</i> <i>Sonchus oleraceus</i>													
BASAL AREA & STEM COUNTS																				
Species	Basal area for plot (50X10m)						Volume/ha				Stem count for plot (50X10m)									
	E	T1	T2	T3	S1	T1	T2				E	T1	T2	T3	S1	S2				
<i>Acacia harpophylla</i>		2	2					17		10		2	18							
<i>Eucalyptus cambageana</i>		6						51				2								
<i>Geijera parviflora</i>														2	10					
<i>Alectryon diversifolius</i>														1	2					
<i>Psydrax johnsonii</i>													1	1						
<i>Alstonia constricta</i>														1						
<i>Capparis mitchellii</i>															2					
<i>Notelaea microcarpa</i>																1				
CANOPY COVER DATA (100m TRANSECT)																				
Canopy Start (m)	Canopy finish (m)			Species			Strata													
15				17.5			T2													
23.5				28			T1													
35				48			T1													
47				49			T2													
51.5				53			T1													
56				60			T2													
58				70			T1													
70.5				72.5			T1													
76				84			T1													
76				78			T2													
87.5				93			T1													
89				90.5			T2													
98				100			T1													

Nathan Dam Secondary Sites
Winter
12 June – 18 June 2008

W1 - Reference Site for RE 11.3.21

SITE NUMBER	W1													
LEVEL	2°													
DETAIL SP. LIST	Complete													
REGIONAL ECOSYSTEM	11.3.21													
DATE	12/06/2008													
RECORDER	David Francis and Shelley Trevaskis													
LOCALITY	Macalister													
SITE DESCRIPTION	Closed tussock grassland													
GENERAL NOTES	+-'15km west of Dalby													
COMMUNITY AREA (ha)	D		COMMUNITY WIDTH (m)		B									
MAPPED (Current RE)	11.3.21		REFERENCE SITE		Y									
LANDFORM														
Situation	B	Element	PLA	Eros pattern	GP	Pattern	ALP							
SLOPE														
Type	LE	Slope (%)		<1	Aspect (°)		180							
SOILS														
Source	I	Reliability	Low	Code	G	Add data	No	ISB/MU		Colour	F	Texture	A	
GEOLOGY														
Source	I	Reliability	Low	Code		B	Map Unit		Qa					
SPECHT STRUCTURE CODE					CTG									
GROUND (%)														
Litter	40	Rock	0	Bare ground	<1	Cryptophyte	0	Vegetation	60					
RAINFOREST														
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X					
DISTURBANCE														
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)			0							
Fire (Proportion/Age/Height)	0			Salinity			0							
Logging (#)	0			Grazing			1							
Ringbarking /Thinning (#)	0			Extensive Clearing			N							
Weeds (% Cover)	0			Feral Digging			N							
Remnant				Erosion (Type/Severity)			0							

SITE NUMBER		W1			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent					
Tree 1					
Tree 2					
Tree 3					
Shrub 1					
Shrub 2					
Ground				<i>Atriplex muelleri</i> <i>Atriplex semibaccata</i> <i>Bidens bipinnata</i> * <i>Bothriochloa bladhii</i> <i>Brassica tournefortii</i> * <i>Chenopodium pumilio</i> <i>Chloris gayana</i> * <i>Cirsium vulgare</i> * <i>Convolvulus erubescens</i> <i>Cullen tenax</i> <i>Dichanthium sericeum</i> <i>Digitaria divaricatissima</i> <i>Glycine tabacina</i> <i>Hibiscus sturtii</i> <i>Ixiolena tomentosa</i> <i>Lactuca serriola</i> * <i>Malvastrum americanum</i> * <i>Marsilea drummondii</i> <i>Melinis repens</i> * <i>Mentha satureioides</i> <i>Panicum decompositum</i> <i>Phyla nodiflora</i> <i>Rhynchosia minima</i> <i>Salsola kali</i> <i>Sclerolaena muricata var. muricata</i> <i>Sesbania cannabina</i> <i>Sida subspicata</i> <i>Sporobolus creber</i> <i>Themeda avenacea</i> <i>Themeda triandra</i> <i>Verbena tenuisecta</i> *	

Condition Assessment for Best Quality Grasslands (based on DEWHA, 2008)

At least 4 indicator species present	Y
Is there an average of 20 native perennial grass tussocks per 100m ²	Y (>20/100m ²)
Is the Patch size >0.5ha	Y/N (estimate of size)
Non-woody introduced species occupy <5% of the total projected plant cover	Y (refer to table below)
Is the total projected canopy cover of shrubs (i.e. woody plants more than 0.5m tall) <30%	Yes (0% cover)

Species	% cover for each Plot (1m ² plot every 10m along the 50m transect)				
	1	2	3	4	5
<i>Phyla nodiflora</i>	50				
<i>Cullen tenax</i>	<1			<1	
<i>Verbena tenuisecta</i> *	<1	50		<1	<1
<i>Dichanthium sericeum</i>	30	5		50	20
<i>Atriplex semibaccata</i>		10			
<i>Chenopodium pumilio</i>		5	40		10

<i>Chloris gayana</i> *		5		15	10
<i>Paspalum/Brachiaria</i>		25			
<i>Oxalis corniculata</i>		<1	<1		
<i>Sclerolaena muricata</i> var. <i>muricata</i>			40	15	
<i>Convolvulus viminalis</i>			<1		
<i>Panicum decompositum</i>				20	50
Seedling (species indeterminate)					10

W18 - Reference Site for RE 11.3.25

SITE NUMBER	W18													
LEVEL	2°													
DETAIL SP. LIST	Complete													
REGIONAL ECOSYSTEM	11.3.25													
DATE	13/06/2008													
RECORDER	David Francis and Shelley Trevaskis													
LOCALITY	Taroom													
SITE DESCRIPTION	Eucalypt open forest													
GENERAL NOTES	Dawson River, The Bend Road													
COMMUNITY AREA (ha)	C		COMMUNITY WIDTH (m)		A									
MAPPED (Current RE)	11.3.25		REFERENCE SITE		Y									
LANDFORM														
Situation	B	Element	CBE	Eros pattern	UL	Pattern	ALP							
SLOPE														
Type	VG	Slope (%)		1-3		Aspect (°)		180						
SOILS														
Source	I	Reliability	Low	Code	G	Add data	No	ISB/MU		Colour	F	Texture	B	
GEOLOGY														
Source	I	Reliability	Low	Code		B		Map Unit		Qa				
SPECHT STRUCTURE CODE					OF									
GROUND (%)														
Litter	15	Rock	0	Bare ground	15	Cryptophyte	5	Vegetation	65					
RAINFOREST														
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X					
DISTURBANCE														
Storm damage (Proportion/Age)	0				Road Works (Proportion/Age)				0					
Fire (Proportion/Age/Height)	0				Salinity				0					
Logging (#)	0				Grazing				1					
Ringbarking /Thinning (#)	0				Extensive Clearing				N					
Weeds (% Cover)	0				Feral Digging				N					
Remnant					Erosion (Type/Severity)				0					

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	3.5	<i>Eucalyptus coolabah</i>	T2
3.6	7.3	<i>Eucalyptus coolabah</i>	T2
4.3	9.6	<i>Eucalyptus coolabah</i>	T1
17.6	21.6	<i>Eucalyptus camaldulensis</i>	T1
21.6	28.2	<i>Eucalyptus camaldulensis</i>	T1
37.3	46.7	<i>Eucalyptus tereticornis</i>	T1
55.1	62	<i>Eucalyptus coolabah</i>	T2
60	62.9	<i>Eucalyptus coolabah</i>	T2
62.8	70.3	<i>Eucalyptus coolabah</i>	T2
70.4	79.8	<i>Eucalyptus coolabah</i>	T1
80.8	91	<i>Eucalyptus coolabah</i>	T1
93.5	100	<i>Eucalyptus camaldulensis</i>	T1

W19 - Reference Site for Variation in RE 11.9.7

SITE NUMBER	W19												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.9.7												
DATE	13/06/2008												
RECORDER	David Francis and Shelley Trevaskis												
LOCALITY	Glebe												
													
SITE DESCRIPTION	Eucalyptus melanophloia Open forest												
GENERAL NOTES	Baxter's Property												
COMMUNITY AREA (ha)	C												
MAPPED (Current RE?)	11.3.2/11.9.5												
REFERENCE SITE	Y												
LANDFORM													
Situation	A	Element	HSL	Eros pattern	UH	Pattern	HIL						
SLOPE													
Type	GE	Slope (%)	3-10		Aspect (°)	SW							
SOILS													
Source	I	Reliability	Low	Code	H	Add data	No	ISB/MU		Colour	F	Texture	B
GEOLOGY													
Source	I	Reliability	Low	Code	H			Map Unit	Jle				
SPECHT STRUCTURE CODE					OF								
GROUND (%)													
Litter	10	Rock	10	Bare ground	30	Cryptophyte	0	Vegetation	50				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	0		Road Works (Proportion/Age)			0							
Fire (Proportion/Age/Height)	0		Salinity			0							
Logging (#)	0		Grazing			1							
Ringbarking /Thinning (#)	0		Extensive Clearing			N							
Weeds (% Cover)	0		Feral Digging			N							
Remnant			Erosion (Type/Severity)			0							

SITE NUMBER		W19 continued											
STRUCTURAL SUMMARY													
Stratum	Height Range in Strata (m)	Median Height (m)		Cover (%) (100m transect)	Species								
Emergent													
Tree 1	12-16	14		43.7	<i>Eucalyptus melanophloia</i> <i>Lysiphyllo caronii</i>								
Tree 2	6-10	8		22.5	<i>Eucalyptus mitchellii</i> <i>Geijera parviflora</i> <i>Alectryon diversifolia</i> <i>Alectryon oleifolia</i>								
Tree 3													
Shrub 1	2-6	4			<i>Acacia decora</i> <i>Acacia excelsa</i> <i>Alectryon diversifolia</i> <i>Geijera parviflora</i> <i>Psydrax odorata</i> <i>Citrus glauca</i> <i>Psydrax odorata forma buxifolia</i> <i>Pittosporum spinescens</i>								
Shrub 2	0-2	1			<i>Carissa ovata</i>								
Ground	0-0.5	0.5			<i>Abutilon oxycarpum</i> <i>Brunoniella australis</i> <i>Calotis cuneata</i> <i>Cenchrus ciliaris*</i> <i>Cymbopogon refractus</i> <i>Cyperus gracilis</i> <i>Dichanthium sericeum</i> <i>Dodonaea viscosa</i> <i>Enneapogon lindleyanus</i> <i>Eremophila debile</i> <i>Jasminum didymum subsp. lineare</i> <i>Lomandra leucocephala</i> <i>Nyssanthes erecta</i> <i>Opuntia stricta*</i> <i>Paspalidium caespitosum</i> <i>Pittosporum spinescens</i> <i>Rostellularia adscendens</i> <i>Vernonia cinerea</i>								
BASAL AREA & STEM COUNTS													
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)				
	E	T1	T2	T3	S1	T1	T2		E	T1	T2		
<i>Eucalyptus moluccana</i>		4				28				4			
<i>Lysiphyllo carolinii</i>										2	1		
<i>Acacia decora</i>										1		3	
<i>Eremophila mitchellii</i>												2	
<i>Geijera parviflora</i>										1		2	
<i>Lysiphyllo carolinii</i>													
<i>Carissa ovata</i>												4	
<i>Citrus glaucophylla</i>												1	
<i>Psydrax subsp. buxifolium</i>												3	
<i>Psydrax odoratum</i>												1	
<i>Alectryon oleifolia</i>		2				14				4			
<i>Alectryon diversifolia</i>										1		2	
<i>Pittosporum spinescens</i>												7	

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	1.6	<i>Lysiphyllo caronii</i>	T1
0	7.5	<i>Eucalyptus melanophloia</i>	T1
5	8	<i>Lysiphyllo caronii</i>	T2
9.7	18	<i>Eucalyptus melanophloia</i>	T1
14.4	16.7	<i>Geijera parviflora</i>	T2
27.3	30	<i>Geijera parviflora</i>	T2
32.2	37.8	<i>Eucalyptus melanophloia</i>	T1
51.2	57	<i>Eucalyptus melanophloia</i>	T1
55	57.8	<i>Eucalyptus melanophloia</i>	T2

57.6	60.5	<i>Acacia harpophylla</i>	T1
61.6	64.3	<i>Alectryon oleifolia</i>	T2
64.9	70.8	<i>Lysiphyllo caronii</i>	T1
68.4	78.5	<i>Eucalyptus melanophloia</i>	T1
90	95	<i>Eucalyptus melanophloia</i>	T2
96	100	<i>Alectryon oleifolia</i>	T2

W88 - Reference Site for RE 11.3.19

SITE NUMBER	W88												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.19												
DATE	16/06/2008												
RECORDER	David Francis and Shelley Trevaskis												
LOCALITY	Glebe												
													
SITE DESCRIPTION	Callitris glauophylla closed forest												
GENERAL NOTES	Mrs. Gall's property												
COMMUNITY AREA (ha)	C		COMMUNITY WIDTH (m)	A									
MAPPED (Current RE)	11.3.2/11.3.3		REFERENCE SITE	Y									
LANDFORM													
Situation	B	Element	VLF	Eros pattern	GR	Pattern	ALP						
SLOPE													
Type	VG	Slope (%)	1-3	Aspect (°)	130								
SOILS													
Source	I	Reliability	Low	Code	G	Add data	No	ISB/MU		Colour	F(Pale)	Texture	E
GEOLOGY													
Source	I	Reliability	Low	Code	B	Map Unit	Jle						
SPECHT STRUCTURE CODE	CF												
GROUND (%)													
Litter	25	Rock	0	Bare ground	25	Cryptophyte	0	Vegetation	50				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)	0								
Fire (Proportion/Age/Height)	0			Salinity	0								
Logging (#)	0			Grazing	2								
Ringbarking /Thinning (#)	0			Extensive Clearing	N								
Weeds (% Cover)	0			Feral Digging	N								
Remnant				Erosion (Type/Severity)	0								

SITE NUMBER		W88		continued								
STRUCTURAL SUMMARY												
Stratum	Height Range in Strata (m)	Median Height (m)		Cover (%) (100m transect)	Species							
Emergent												
Tree 1	11-19	15		78.5	<i>Callitris glauophylla</i> <i>Eucalyptus populnea</i>							
Tree 2	2-4	3		2.3	<i>Callitris glauophylla</i>							
Tree 3												
Shrub 1												
Shrub 2												
Ground					<i>Carissa ovata</i> <i>Cenchrus ciliaris*</i> <i>Commelinia benghalensis*</i> <i>Cymbopogon refractus</i> <i>Cyperus gracilis</i> <i>Digitaria diffusa</i> <i>Malvastrum americanum*</i> <i>Opuntia aurantiaca*</i> <i>Opuntia tomentosa*</i> <i>Oxalis corniculata*</i> <i>Perotis rara</i> <i>Petalostigma pubescens</i> <i>Portulaca pilosa*</i> <i>Rostellularia adscendens</i> <i>Sclerolaena birchii</i> <i>Sporobolus caroli</i> <i>Urochloa foliosa</i>							
BASAL AREA & STEM COUNTS												
Species	Basal area for plot (50X10m)					Volume/ha		Stem count for plot (50X10m)				
	E	T1	T2	T3	S1	T1	T2	E	T1	T2	T3	S1
<i>Carissa ovata</i>		21				157.5			70	4		2
<i>Eucalyptus populnea</i>		1				7.5						
<i>Callitris glauophylla</i>												1
CANOPY COVER DATA (100m TRANSECT)												
Canopy Start (m)	Canopy finish (m)			Species			Strata					
0	2.5			<i>Callitris glauophylla</i>			T1					
3.3	6.2			<i>Callitris glauophylla</i>			T1					
8.6	15.5			<i>Callitris glauophylla</i>			T1					
16.3	17.6			<i>Callitris glauophylla</i>			T1					
19	24.8			<i>Callitris glauophylla</i>			T1					
25.7	34.6			<i>Callitris glauophylla</i>			T1					
36.3	42.7			<i>Callitris glauophylla</i>			T1					
43.3	48			<i>Callitris glauophylla</i>			T1					
52.8	72.6			<i>Callitris glauophylla</i>			T1					
73.5	85.6			<i>Callitris glauophylla</i>			T1					
88.4	92.8			<i>Callitris glauophylla</i>			T1					
92.7	95.6			<i>Callitris glauophylla</i>			T1					
94	95.7			<i>Callitris glauophylla</i>			T2					
98.1	98.7			<i>Callitris glauophylla</i>			T2					

W89 - Reference Site for RE 11.3.27

SITE NUMBER	W89													
LEVEL	3°													
DETAIL SP. LIST	Complete													
REGIONAL ECOSYSTEM	11.3.27													
DATE	17/06/2008													
RECORDER	David Francis and Shelley Trevaskis													
LOCALITY	Taroom													
SITE DESCRIPTION	Dam with fringing eucalyptus/palms													
GENERAL NOTES	Rosevale													
COMMUNITY AREA (ha)	B		COMMUNITY WIDTH (m)		A									
MAPPED (Current RE?)	11.3.27		REFERENCE SITE		Y									
LANDFORM														
Situation	B	Element	CBE	Eros pattern	GR	Pattern	ALP							
SLOPE														
Type	VG	Slope (%)		1-3		Aspect (°)	180							
SOILS														
Source	I	Reliability	Low	Code	G	Add data	No	ISB/MU		Colour	B	Texture	A	
GEOLOGY														
Source	I	Reliability	Low	Code		B	Map Unit	Jlh						
SPECHT STRUCTURE CODE														
GROUND (%)														
Litter	10	Rock	0	Bare ground	80	Cryptophyte	0	Vegetation	10					
RAINFOREST														
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X					
DISTURBANCE														
Storm damage (Proportion/Age)	0				Road Works (Proportion/Age)			0						
Fire (Proportion/Age/Height)	0				Salinity			0						
Logging (#)	0				Grazing			2						
Ringbarking /Thinning (#)	0				Extensive Clearing			surrounding						
Weeds (% Cover)	0				Feral Digging			N						
Remnant					Erosion (Type/Severity)			0						

SITE NUMBER		W89			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent					
Tree 1	14-25	20		<i>Eucalyptus tereticornis</i> <i>Eucalyptus coolabah</i>	
Tree 2	2-12	6		<i>Livistona nitida</i> <i>Lophostemon suaveolens</i>	
Tree 3					
Shrub 1	0--1	1		<i>Acacia farnesiana</i> <i>Geijera parviflora</i>	
Shrub 2					
Ground				<i>Amyema congener subsp congener</i> <i>Arundinella nepalensis</i> <i>Malva parviflora</i> <i>Mariana microphylla</i> <i>Rumex tenax</i> <i>Salsola kali</i> <i>Sclerolaena muricata</i> <i>Sida rhombifolia</i>	

Site W105 – Reference Site for RE 11.7.6

SITE NUMBER	W105												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.7.6												
DATE	17/06/2008												
RECORDER	David Francis and Shelley Trevaskis												
LOCALITY	Kowguran												
SITE DESCRIPTION	Corymbia citriodora var. citriodora subsp. variegata and Eucalyptus crebra open forest												
GENERAL NOTES	Roadside												
COMMUNITY AREA (ha)	B			COMMUNITY WIDTH (m)			A						
MAPPED (Current RE?)	11.7.6/11.7.5/11.7.6			REFERENCE SITE			Y						
LANDFORM													
Situation	A	Element	HSL	Eros pattern	VH	Pattern	HIL						
SLOPE													
Type	GE	Slope (%)			3-10	Aspect (°)	70						
SOILS													
Source	I	Reliability	Low	Code	G	Add data	No	ISB/MU		Colour	B	Texture	E
GEOLOGY													
Source	I	Reliability	Low	Code	F	Map Unit	JKk						
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	80	Rock	0	Bare ground	20	Cryptophyte	0	Vegetation					
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	1%				Road Works (Proportion/Age)	0%							
Fire (Proportion/Age/Height)	0				Salinity	0							
Logging (#)	0				Grazing	1							
Ringbarking /Thinning (#)	0				Extensive Clearing	N							
Weeds (% Cover)	0				Feral Digging	N							
Remnant					Erosion (Type/Severity)	0							

SITE NUMBER		W105							continued								
STRUCTURAL SUMMARY																	
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)		Species										
Emergent																	
Tree 1	16-30	23			45		<i>Corymbia citriodora</i> var. <i>citriodora</i> <i>Eucalyptus crebra</i>										
Tree 2	5-15	10			33.2		<i>Callitris glaucophylla</i> <i>Acacia crassa</i> <i>Alphitonia excelsa</i> <i>Acacia excelsa</i>										
Tree 3																	
Shrub 1	1-3	2					<i>Leucopogon biflorus</i>										
Shrub 2																	
Ground							<i>Aristida caput-medusae</i> <i>Brunoniella australis</i> <i>Corymbia citriodora</i> var. <i>citriodora</i> <i>Cymbopogon refractus</i> <i>Gahnia aspera</i> <i>Panicum effusum</i> <i>Psydrax odorata</i>										
BASAL AREA & STEM COUNTS																	
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)								
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2			
<i>Corymbia citriodora</i> var. <i>citriodora</i>		7					80.5			4	3		1				
<i>Eucalyptus crebra</i>		4					46			3	1						
<i>Acacia crassa</i>			2					10			12		4	2			
<i>Callitris glaucophylla</i>			3					15			9		2	5			
<i>Ozothamnus bidwillii</i>														1			
<i>Leucopogon biflorus</i>													1	4			
<i>Alphitonia excelsa</i>												1	2	5			
<i>Psydrax odorata</i>													1				
CANOPY COVER DATA (100m TRANSECT)																	
Canopy Start (m)			Canopy finish (m)			Species			Strata								
0			3.9			<i>Corymbia citriodora</i> var. <i>citriodora</i>			T1								
0			1.7			<i>Callitris glaucophylla</i>			T2								
6.3			10.2			<i>Corymbia citriodora</i> var. <i>citriodora</i>			T1								
7.7			10.2			<i>Acacia crassa</i>			T2								
18			22.1			<i>Eucalyptus crebra</i>			T1								
23.5			27.6			<i>Acacia crassa</i>			T2								
28.4			32.8			<i>Eucalyptus crebra</i>			T1								
35.7			37.5			<i>Acacia crassa</i>			T2								
35.4			40.1			<i>Corymbia citriodora</i> var. <i>citriodora</i>			T1								
38			40.1			<i>Callitris glaucophylla</i>			T2								
41.3			44			<i>Acacia leiocalyx</i>			T2								
45			52.6			<i>Corymbia citriodora</i> var. <i>citriodora</i>			T1								
47.8			49.7			<i>Callitris glaucophylla</i>			T2								
55.2			60.7			<i>Corymbia citriodora</i> var. <i>citriodora</i>			T1								
62.5			65.6			<i>Acacia excelsa</i>			T2								
64			68			<i>Acacia crassa</i>			T2								
70.9			77.9			<i>Corymbia citriodora</i> var. <i>citriodora</i>			T1								
84.6			87.5			<i>Acacia excelsa</i>			T2								
91.8			94.6			<i>Acacia excelsa</i>			T2								
95			98.6			<i>Callitris glaucophylla</i>			T2								
96.1			100			<i>Corymbia citriodora</i> var. <i>citriodora</i>			T1								

**Nathan Dam Secondary Sites
Autumn Pipeline**

29 April 2008 and 6 May – 8 May 2008

SITE NUMBER	G1												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.21												
DATE	29/04/2008												
RECORDER	David Francis and David Allworth												
LOCALITY	Macalister												
													
SITE DESCRIPTION	Open tussock grassland												
GENERAL NOTES													
COMMUNITY AREA (ha)	C	COMMUNITY WIDTH (m)	B										
MAPPED (Current RE)	11.3.2	REFERENCE SITE	N										
LANDFORM													
Situation	A	Element	PLA	Eros pattern	LP	Pattern	PLA						
SLOPE													
Type	LE	Slope	<1	Aspect	180								
SOILS													
Source	I	Reliability	Low	Code	H	Add data	No	ISB/MU		Colour	F	Texture	A
GEOLOGY													
Source	I	Reliability	Low	Code	H			Map Unit		Qa			
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	0	Rock	0	Bare ground	50	Cryptophyte	0	Vegetation	50				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)	0								
Fire (Proportion/Age/Height)	0			Salinity	0								
Logging (#)	0			Grazing	1								
Ringbarking /Thinning (#)	0			Extensive Clearing	N								
Weeds (% Cover)	0			Feral Digging	N								
Remnant				Erosion (Type/Severity)	0								

SITE NUMBER		G1	continued	
STRUCTURAL SUMMARY				
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species
Emergent				
Tree 1				
Tree 2				
Tree 3				
Shrub 1				
Shrub 2				
Ground			See table below	<i>Aristida leptopoda</i> <i>Atriplex muelleri</i> <i>Bothriochloa bladhii</i> <i>Brachyscome dentata</i> <i>Camptacra barbata</i> <i>Chloris ventricosa</i> <i>Convolvulus erubescens</i> <i>Dichanthium sericeum</i> <i>Digitaria divaricatissima</i> <i>Eriochloa procera</i> <i>Eriochloa pseudoacrotricha</i> <i>Glycine tabacina</i> <i>Goodenia viscidula</i> <i>Haloragis aspera</i> <i>Iseilema membranaceum</i> <i>Ixiolena brevicompta</i> <i>Leiocarpa panaetoides</i> <i>Maireana microphylla</i> <i>Mentha satureioides</i> <i>Neptunia gracilis</i> <i>Panicum decompositum</i> <i>Paspalidium globoideum</i> <i>Phyllanthus virgatus</i> <i>Polymeria pusilla</i> <i>Psoralea tenax</i> <i>Rhynchosia minima</i> <i>Sida trichopoda</i> <i>Thellungiad advena</i> <i>Verbena africana</i> <i>Verbena aristigera</i> <i>Verbena tenuisecta*</i>

Condition Assessment for Best Quality Grasslands (based on DEWHA, 2008)

At least 4 indicator species present	Y
Is there an average of 20 native perennial grass tussocks per 100m ²	Y approximately 20/m ²
Is the Patch size >0.5ha	Y/N (>1ha)
Non-woody introduced species occupy <5% of the total projected plant cover	Y (refer to table below)
Is the total projected canopy cover of shrubs (i.e. woody plants more than 0.5m tall) <30%	Yes (0% cover)

% cover for each Plot (1m² plot every 10m along the 50m transect)

Species	1	2	3	4	5
Bare ground	50	50	50	40	40
<i>Ixiolena brevicompta</i>	50	20	40	60	
<i>Aristida leptopoda</i>	0.01		0.01		
<i>Panicum decompositum</i>	0.01	0.01			
<i>Glycine tabacina</i>	0.01	0.01		0.01	0.01
<i>Phyllanthus virgatus</i>	0.01				
<i>Brachyscome dentata</i>	0.01	0.01	0.01	0.01	
<i>Dichanthium sericeum</i>		25	5	0.01	50

<i>Side trichopoda</i>		0.01			
<i>Neptune gracilis</i>		0.01			
<i>Calotis spp</i>		0.01			5
<i>Mentha satureioides</i>		0.01			
<i>Chloris ventricosa</i>			5		
<i>Rhynchosia minima</i>					0.01
<i>Boerhavia dominii</i>					0.01
<i>Psoralea tenax</i>					0.01
<i>Eragrostis spp</i>				0.01	
<i>Verbena tenuisecta*</i>					0.01

SITE NUMBER	G2													
LEVEL	2°													
DETAIL SP. LIST	Complete													
REGIONAL ECOSYSTEM	11.3.21													
DATE	29/04/2008													
RECORDER	David Francis and David Allworth													
LOCALITY	Macalister													
SITE DESCRIPTION	Open tussock grassland													
GENERAL NOTES	11.3.2													
COMMUNITY AREA (ha)	D			COMMUNITY WIDTH (m)			B							
MAPPED (Current RE)	Y			REFERENCE SITE			N							
LANDFORM														
Situation	A	Element	PLA	Eros pattern	LP	Pattern	PLA							
SLOPE														
Type	LE	Slope (%)	<1	Aspect (°)	180									
SOILS														
Source	I	Reliability	Low	Code	H	Add data	No	ISB/MU	Colour	F	Texture	H		
GEOLOGY														
Source	I	Reliability	Low	Code	G		Map Unit	Qa						
SPECHT STRUCTURE CODE	OTG													
GROUND (%)														
Litter	40	Rock	0	Bare ground	<1	Cryptophyte	0	Vegetation	60					
RAINFOREST														
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X					
DISTURBANCE														
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)	0									
Fire (Proportion/Age/Height)	0			Salinity	0									
Logging (#)	0			Grazing	1									
Ringbarking /Thinning (#)	0			Extensive Clearing	N									
Weeds (% Cover)	0			Feral Digging	N									
Remnant				Erosion (Type/Severity)	0									

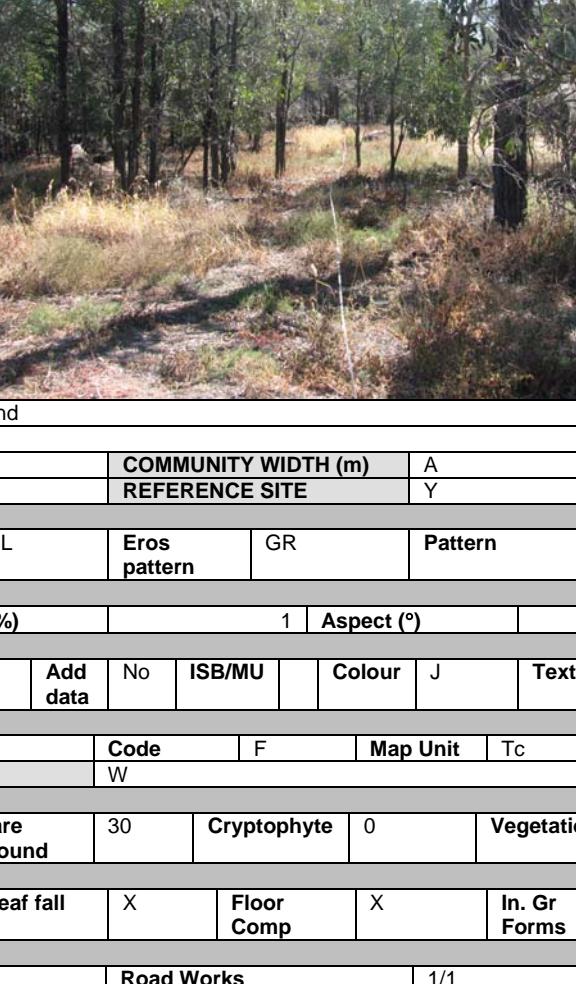
SITE NUMBER		G2	continued	
STRUCTURAL SUMMARY				
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species
Emergent				
Tree 1				
Tree 2				
Tree 3				
Shrub 1				
Shrub 2				
Ground			See table below	<i>Alternanthera sessilis</i> <i>Aristida latifolia</i> <i>Dichanthium sericeum</i> <i>Digitaria divaricatissima</i> <i>Ipomea lonchophylla</i> <i>Iseilema membranaceum</i> <i>Ixiolena tomentosa</i> <i>Panicum decompositum</i> <i>Phyllanthus virgata</i> <i>Polymeria pusilla</i> <i>Rhynchosia minima</i> <i>Sida trichopoda</i> <i>Verbena tenuisecta*</i> <i>Haloragis aspera</i> <i>Neptunia gracilis</i> <i>Sporobolus creber</i> <i>Psoralea tenax</i> <i>Cyperus spp.</i> <i>Themeda triandra</i>

Condition Assessment for Best Quality Grasslands (based on DEWHA, 2008)

At least 4 indicator species present	Y
Is there an average of 20 native perennial grass tussocks per 100m ²	Y >100/m ²
Is the Patch size >0.5ha	Y/N (>1ha)
Non-woody introduced species occupy <5% of the total projected plant cover	Y (refer to table below)
Is the total projected canopy cover of shrubs (i.e. woody plants more than 0.5m tall) <30%	Yes (0.01% cover)

Species	% cover for each Plot (1m ² plot every 10m along the 50m transect)				
	1	2	3	4	5
Bare ground	70	50	75	90	
<i>Panicum decompositum</i>	20		5	10	
<i>Dichanthium sericeum</i>	10	0.01	10	0.01	
<i>Ixiolena brevicompta</i>	0.01	5	0.01	0.01	
<i>Phyllanthus virgatus</i>	0.01				
<i>Rhynchosia minima</i>	0.01				
<i>Cyperus spp.</i>	0.01				
<i>Haloragis aspera</i>		40	0.01	0.01	
<i>Sporobolus creber</i>		5	5		
<i>Themeda triandra</i>		5			
<i>Neptunia gracilis</i>			0.01		
<i>Psoralea tenax</i>			0.01	0.01	
<i>Digitaria divaricatissima</i>				0.01	
<i>Verbena tenuisecta*</i>				0.01	

SP8 - Reference Site for Variation in RE 11.3.1

SITE NUMBER	SP8												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.1												
DATE	6/05/2008												
RECORDER	David Francis and Amy Prowd												
LOCALITY	Chinchilla												
													
SITE DESCRIPTION	Acacia harpophylla woodland												
GENERAL NOTES													
COMMUNITY AREA (ha)	C		COMMUNITY WIDTH (m)		A								
MAPPED (Current RE)	Non-remnant		REFERENCE SITE		Y								
LANDFORM													
Situation	A	Element	HSL	Eros pattern	GR								
SLOPE													
Type	VG	Slope (%)		1	Aspect (°)	0							
SOILS													
Source	S	Reliability	Low	Code	K	Add data	No	ISB/MU		Colour	J	Texture	A
GEOLOGY													
Source	I	Reliability	Low	Code		F	Map Unit	Tc					
SPECHT STRUCTURE CODE						W							
GROUND (%)													
Litter	60	Rock	0	Bare ground	30	Cryptophyte	0	Vegetation					
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)	1/1								
Fire (Proportion/Age/Height)	0			Salinity	0								
Logging (#)	0			Grazing	1								
Ringbarking /Thinning (#)	0			Extensive Clearing	N								
Weeds (% Cover)	0			Feral Digging	N								
Remnant				Erosion (Type/Severity)	0								

SITE NUMBER		SP8						continued								
STRUCTURAL SUMMARY																
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)		Species									
Emergent																
Tree 1	16.5-17	17			16		<i>Acacia harpophylla</i> <i>Casuarina cristata</i>									
Tree 2	4.5-8	7			38		<i>Acacia harpophylla</i> <i>Opuntia tomentosa*</i>									
Tree 3																
Shrub 1																
Shrub 2																
Ground							<i>Abutilon oxycarpum</i> <i>Bulbine alata</i> <i>Capparis lasiantha</i> <i>Carissa ovata</i> <i>Cenchrus ciliaris*</i> <i>Diplocyclos palmatus</i> <i>Enchytraea tomentosa</i> <i>Malvastrum americanum*</i> <i>Megathyrsus maximus*</i> <i>Paspalidium caespitosum</i> <i>Salsola kali</i> <i>Sclerolaena tetracuspis</i> <i>Tetragonia tetragonoides</i> <i>Verbena tenuisecta*</i>									
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Acacia harpophylla</i>		4				34				2	46					
<i>Opuntia tomentosa*</i>		1								1						
CANOPY COVER DATA (100m TRANSECT)																
Canopy Start (m)	Canopy finish (m)			Species			Strata									
16.5				19.5			<i>Acacia harpophylla</i>						T2			
38				42			<i>Acacia harpophylla</i>						T2			
38				45.5			<i>Acacia harpophylla</i>						T1			
42				43.5			<i>Acacia harpophylla</i>						T2			
43.5				48.5			<i>Acacia harpophylla</i>						T2			
46				50.5			<i>Acacia harpophylla</i>						T1			
51				54.5			<i>Acacia harpophylla</i>						T2			
52.5				56.5			<i>Acacia harpophylla</i>						T1			
72				74.5			<i>Acacia harpophylla</i>						S1			
80.5				83			<i>Acacia harpophylla</i>						T2			
81				83			<i>Acacia harpophylla</i>						T2			
83				85.5			<i>Opuntia tomentosa*</i>						T2			
84				86.5			<i>Casuarina cristata</i>						T2			
85.5				93.5			<i>Acacia harpophylla</i>						T2			
93				94			<i>Acacia harpophylla</i>						T2			
95				100			<i>Acacia harpophylla</i>						T2			

SP14 - Reference Site for RE 11.4.3

SITE NUMBER	SP14																	
LEVEL	2°																	
DETAIL SP. LIST	Complete																	
REGIONAL ECOSYSTEM	11.4.3																	
DATE	6/05/2008																	
RECORDER	David Francis and Amy Prowd																	
LOCALITY	Goombi																	
SITE DESCRIPTION	Acacia harpophylla woodland																	
GENERAL NOTES																		
COMMUNITY AREA (ha)	C				COMMUNITY WIDTH (m)			A										
MAPPED (Current RE)	11.4.3				REFERENCE SITE			Y										
LANDFORM																		
Situation	A	Element	HSL	Eros pattern	Gr	Pattern	Low											
SLOPE																		
Type	LE	Slope (%)	<1	Aspect (°)	180													
SOILS																		
Source	S	Reliability	Low	Code	K	Add data	No	ISB/MU	Colour	J	Texture							
GEOLOGY																		
Source	I	Reliability	Low	Code	B	Map Unit	Qa											
SPECHT STRUCTURE CODE	W																	
GROUND (%)																		
Litter	15	Rock	0	Bare ground	15	Cryptophyte	5	Vegetation	65									
RAINFOREST																		
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X									
DISTURBANCE																		
Storm damage (Proportion/Age)	0				Road Works (Proportion/Age)			1/1										
Fire (Proportion/Age/Height)	0				Salinity			0										
Logging (#)	0				Grazing			1										
Ringbarking /Thinning (#)	0				Extensive Clearing			N										
Weeds (% Cover)	0				Feral Digging			N										
Remnant																		



SP29 - Reference Site for RE 11.5.4

SITE NUMBER	SP29										
LEVEL	2°										
DETAIL SP. LIST	Complete										
REGIONAL ECOSYSTEM	11.5.4										
DATE	7/05/2008										
RECORDER	David Francis and Amy Prowd										
LOCALITY	Gurulmundi										
SITE DESCRIPTION	<i>Callitris glaucocephala</i> open forest										
GENERAL NOTES											
COMMUNITY AREA (ha)	C		COMMUNITY WIDTH (m)		B						
MAPPED (Current RE)	11.5.21/11.7.4/11.5.4		REFERENCE SITE		Y						
LANDFORM											
Situation	A	Element	HSL	Eros pattern	UL	Pattern	HIL				
SLOPE											
Type	GE	Slope (%)		4	Aspect (°)	110					
SOILS											
Source	S	Reliability	Low	Code	Add data	No	ISB/MU	Colour	J	Texture	E
GEOLOGY											
Source	I	Reliability	Low	Code	F	Map Unit	JKk				
SPECHT STRUCTURE CODE											
GROUND (%)											
Litter	45	Rock	-	Bare ground	5	Cryptophyte	-	Vegetation	50		
RAINFOREST											
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X		
DISTURBANCE											
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)	0						
Fire (Proportion/Age/Height)	0			Salinity	0						
Logging (#)	3			Grazing	1						
Ringbarking /Thinning (#)	0			Extensive Clearing	N						
Weeds (% Cover)	0			Feral Digging	N						
Remnant				Erosion (Type/Severity)	0						

SITE NUMBER		SP29						continued								
STRUCTURAL SUMMARY																
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)		Species									
Emergent																
Tree 1	15-20	17			55.5		<i>Callitris glauophylla</i> <i>Eucalyptus fibrosa subsp. nubila</i> <i>Corymbia clarksoniana</i> <i>Eucalyptus chloroclada</i>									
Tree 2	9-14	12			13.5		<i>Acacia leiocalyx</i> <i>Allocasuarina luehmannii</i> <i>Callitris glauophylla</i> <i>Eucalyptus chloroclada</i>									
Tree 3																
Shrub 1	1-3	2					<i>Acacia excelsa</i>									
Shrub 2																
Ground							<i>Abutilon oxycarpum</i> <i>Allocasuarina luehmannii</i> <i>Angophora leiocarpa</i> <i>Aristida caput-medusae</i> <i>Calotis lappulacea</i> <i>Cheilanthes tenuifolia</i> <i>Chrysocephalum apiculatum</i> <i>Dianella brevipedunculata</i> <i>Glossocardia bidens</i> <i>Lomandra leucocephala</i> <i>Lomandra longifolia</i> <i>Maireana microphylla</i> <i>Perotis rara</i> <i>Sida subspicata</i> <i>Sporobolus creber</i> <i>Verbena tenuisecta*</i> <i>Vernonia cinerea</i> <i>Vittadinia dissecta var. hirta</i>									
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Eucalyptus fibrosa subsp. nubila</i>		1					8.5			2	1					
<i>Corymbia clarksoniana</i>		2					17			3						
<i>Eucalyptus chloroclada</i>	1	1					8.5	6		3		2	1			
<i>Callitris glauophylla</i>	19	2					161.5	12		16	19		7			
<i>Angophora leiocarpa</i>													3			
<i>Acacia excelsa</i>													2	1		
<i>Allocasuarina luehmannii</i>													1			
CANOPY COVER DATA (100m TRANSECT)																
Canopy Start (m)	Canopy finish (m)			Species			Strata									
0	2.5			<i>Callitris glauophylla</i>			T2									
0	6			<i>Eucalyptus fibrosa subsp. nubila</i>			T2									
0	11			<i>Corymbia clarksoniana</i>			T1									
6	8			<i>Eucalyptus fibrosa subsp. nubila</i>			T2									
9.5	13			<i>Corymbia clarksoniana</i>			T1									
11.5	17.5			<i>Callitris glauophylla</i>			T1									
16.5	21.5			<i>Callitris glauophylla</i>			T1									
22	25			<i>Callitris glauophylla</i>			T1									
26.5	29			<i>Callitris glauophylla</i>			T1									
28.5	30.5			<i>Callitris glauophylla</i>			T1									
29	32			<i>Callitris glauophylla</i>			T2									
37	39			<i>Callitris glauophylla</i>			T1									
45.5	49.5			<i>Callitris glauophylla</i>			T1									
56	65.5			<i>Eucalyptus fibrosa subsp. nubila</i>			T1									
61.5	64.5			<i>Callitris glauophylla</i>			T1									
68	69.5			<i>Callitris glauophylla</i>			T1									
70	77.5			<i>Eucalyptus fibrosa subsp. nubila</i>			T1									
71.5	75			<i>Callitris glauophylla</i>			T2									

77	79	<i>Callitris glaucophylla</i>	T2
90	94.5	<i>Callitris glaucophylla</i>	T1
95	100	<i>Callitris glaucophylla</i>	T1

SP30 - Reference Site for RE 11.5.1a

SITE NUMBER	SP30												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.5.1a												
DATE	7/05/2008												
RECORDER	David Francis and Amy Prowd												
LOCALITY	Gurulmundi												
													
SITE DESCRIPTION	Eucalyptus populnea woodland												
GENERAL NOTES													
COMMUNITY AREA (ha)	B	COMMUNITY WIDTH (m)	B										
MAPPED (Current RE)	11.5.1a	REFERENCE SITE	Y										
LANDFORM													
Situation	A	Element	HSL										
		Eros pattern	UI										
			Pattern										
			Low										
SLOPE													
Type	LE	Slope (%)	<1										
SOILS													
Source	S	Reliability	Low	Code		Add data	No	ISB/MU		Colour	K	Texture	E
GEOLOGY													
Source	I	Reliability	Low	Code	F		Map Unit	JKk					
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	50	Rock	0	Bare ground	25	Cryptophyte	5	Vegetation	20				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)	0								
Fire (Proportion/Age/Height)	0			Salinity	0								
Logging (#)	0			Grazing	1								
Ringbarking /Thinning (#)	0			Extensive Clearing	N								
Weeds (% Cover)	0			Feral Digging	N								
Remnant				Erosion (Type/Severity)	3/1								

SITE NUMBER		SP30							continued					
STRUCTURAL SUMMARY														
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)		Species							
Emergent														
Tree 1	12-23.5	16			43		<i>Eucalyptus populnea</i> <i>Eucalyptus populnea x crebra</i> <i>Eucalyptus fibrosa subsp. nubila</i>							
Tree 2	5-11	10			23		<i>Allocasuarina luehmannii</i> <i>Eremophila mitchellii</i> <i>Atalaya hemiglaucha</i> <i>Acacia longispicata</i>							
Tree 3														
Shrub 1	1-4	3					<i>Eremophila mitchellii</i> <i>Allocasuarina luehmannii</i> <i>Geijera parviflora</i>							
Shrub 2	0-1	0.5					<i>Geijera parviflora</i>							
Ground							<i>Abutilon oxycarpum</i> <i>Alectryon oleifolius</i> <i>Brunoniella australis</i> <i>Cymbopogon refractus</i> <i>Dichanthium sericeum</i> <i>Eragrostis alveiformis</i> <i>Gahnia aspera</i> <i>Hibiscus sturtii</i> <i>Lomandra longifolia</i> <i>Opuntia stricta*</i> <i>Pittosporum viscidum</i> <i>Psydrax oleifolia</i> <i>Verbena tenuisecta*</i> <i>Marsdenia microlepis</i>							
BASAL AREA & STEM COUNTS														
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)					
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2
<i>Eucalyptus populnea</i>		6	1			48	5		2	5				
<i>Eucalyptus populnea X crebra</i>			1			8								
<i>Eucalyptus fibrosa subsp. nubila</i>		2	1			16	5							
<i>Atalaya hemiglaucha</i>										3			1	
<i>Acacia longispicata</i>			1							5				
<i>Psydrax oleifolia</i>										1				
<i>Eremophila mitchellii</i>									3	9	12			
<i>Casuarina luehmannii</i>										5	35			
<i>Geijera parviflora</i>										2	1			
CANOPY COVER DATA (100m TRANSECT)														
Canopy Start (m)	Canopy finish (m)			Species			Strata							
0				<i>Eucalyptus fibrosa subsp. nubila</i>			T1							
0.5				<i>Eremophila mitchellii</i>			S1							
2.5				<i>Eremophila mitchellii</i>			S1							
6.5				<i>Eremophila mitchellii</i>			T2							
13				<i>Eucalyptus populnea</i>			T2							
14				<i>Eremophila mitchellii</i>			S1							
15.5				<i>Eucalyptus populnea</i>			T1							
23.5				<i>Acacia longispicata</i>			T2							
31				<i>Eucalyptus populnea</i>			T2							
35				<i>Acacia longispicata</i>			S1							
34				<i>Eucalyptus populnea X crebra</i>			T1							
40.5				<i>Acacia longispicata</i>			T2							
44				<i>Eucalyptus populnea</i>			T2							
48.5				<i>Eucalyptus populnea</i>			T2							
57				<i>Eucalyptus populnea</i>			T1							
62				<i>Allocasuarina luehmannii</i>			T2							
73				<i>Eucalyptus populnea</i>			T1							
74				<i>Geijera parviflora</i>			S1							

70	81	<i>Eucalyptus fibrosa</i> subsp. <i>nubila</i>	T1
78.5	86	<i>Eucalyptus populnea</i>	T1
85.5	86.5	<i>Acacia longispicata</i>	T2
88.5	89	<i>Eucalyptus populnea</i>	T2
90	93	<i>Eucalyptus populnea</i>	T2
95	97	<i>Acacia longispicata</i>	T2

SP33 - Reference Site for RE 11.7.5

SITE NUMBER	SP33												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.7.5												
DATE	7/05/2008												
RECORDER	David Francis and Amy Prowd												
LOCALITY	Kowguran												
													
SITE DESCRIPTION	<i>Calytrix tetragona</i> shrubland												
GENERAL NOTES	Duricrust/natural scald												
COMMUNITY AREA (ha)	C		COMMUNITY WIDTH (m)			B							
MAPPED (Current RE)	11.7.5/11.7.5		REFERENCE SITE			Y							
LANDFORM													
Situation	K	Element	HCR	Eros pattern	LP	Pattern	PLT						
SLOPE													
Type	LE	Slope (%)		<1	Aspect (°)		100						
SOILS													
Source	S	Reliability	Low	Code	I	Add data		ISB/MU		Colour	B	Texture	G
GEOLOGY													
Source	I	Reliability	Low	Code		F	Map Unit	JKk					
SPECHT STRUCTURE CODE					S								
GROUND (%)													
Litter	60	Rock	0	Bare ground	10	Cryptophyte	10	Vegetation	20				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)			0						
Fire (Proportion/Age/Height)	0			Salinity			0						
Logging (#)	0			Grazing			1						
Ringbarking /Thinning (#)	0			Extensive Clearing			N						
Weeds (% Cover)	0			Feral Digging			N						
Remnant				Erosion (Type/Severity)			0						

SITE NUMBER		SP33						continued								
STRUCTURAL SUMMARY																
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)		Species									
Emergent																
Tree 1	8-11	10			11.5		<i>Eucalyptus exserta</i> <i>Acacia tenuinervis</i> <i>Corymbia trachyphloia</i>									
Tree 2	3.5-5	4			2		<i>Eucalyptus exserta</i> <i>Acacia tenuinervis</i>									
Tree 3																
Shrub 1	0.3-1	1					<i>Calytrix tetragona</i>									
Shrub 2																
Ground							<i>Acacia juncifolia</i> <i>Boronia bipinnata</i> <i>Calytrix tetragona</i> <i>Cheilanthes tenuifolia</i> <i>Cryptandra longistaminea</i> (outside plot) <i>Goodenia delicata</i> (outside plot) <i>Keraudrenia corollata</i> <i>Monachather paradoxa</i> (outside plot) <i>Pultenaea bracteamejor</i> (outside plot) <i>Triodia scariosa</i>									
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Eucalyptus exserta</i>		3				15										
<i>Calytrix tetragona</i>													~500	~85		
<i>Acacia tenuinervis</i>																

CANOPY COVER DATA (100m TRANSECT)							
Canopy Start (m)		Canopy finish (m)		Species			Strata
	0		0.5	<i>Eucalyptus exserta</i>			T2
	0		2	<i>Acacia tenuinervis</i>			T1
	63.5		74.5	<i>Corymbia trachyphloia</i>			T1
	72		74	<i>Eucalyptus exserta</i>			T1

NOTE: *Acacia tenuinervis* species identification to be confirmed by the Queensland Herbarium.

Site SP35 Reference site for RE 11.7.7

SITE NUMBER	SP35												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.7.7												
DATE	7/05/2008												
RECORDER	David Francis and Amy Prowd												
LOCALITY	Kowguran												
													
SITE DESCRIPTION	<i>Eucalyptus crebra</i> woodland												
GENERAL NOTES													
COMMUNITY AREA (ha)	B	COMMUNITY WIDTH (m)	B										
MAPPED (Current RE)	11.5.1/11.7.7	REFERENCE SITE	N										
LANDFORM													
Situation	A	Element	PLA										
			Eros pattern										
			UG										
			Pattern										
			Low										
SLOPE													
Type	LE	Slope (%)	<1										
			Aspect (°)										
SOILS													
Source	S	Reliability	Low	Code	K	Add data	No	ISB/MU		Colour		Texture	
GEOLOGY													
Source	I	Reliability	Low	Code		F	Map Unit	JKk					
SPECHT STRUCTURE CODE				W									
GROUND (%)													
Litter	25	Rock	0	Bare ground	25	Cryptophyte	0	Vegetation	50				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)			0						
Fire (Proportion/Age/Height)	0			Salinity			0						
Logging (#)	5			Grazing			1						
Ringbarking /Thinning (#)	0			Extensive Clearing			N						
Weeds (% Cover)	0			Feral Digging			N						
Remnant				Erosion (Type/Severity)			0						

SITE NUMBER		SP35 continued											
STRUCTURAL SUMMARY													
Stratum	Height Range in Strata (m)	Median Height (m)		Cover (%) (100m transect)	Species								
Emergent													
Tree 1	14-23	15		41.5	<i>Eucalyptus fibrosa subsp. nubila</i>								
Tree 2	5.5-13	5.5		23.5	<i>Callitris glauophylla</i> <i>Acacia shirleyi</i>								
Tree 3													
Shrub 1	1-1.5	1			<i>Acacia shirleyi</i>								
Shrub 2													
Ground					<i>Ancistrachne uncinulata</i> <i>Aristida caput-medusae</i> <i>Brunoniella australis</i> <i>Cymbopogon refractus</i> <i>Gahnia aspera</i> <i>Hibiscus sturtii</i> <i>Lomandra longifolia</i> <i>Opuntia tomentosa*</i> <i>Panicum effusum</i> <i>Paspalidium caespitosum</i>								
BASAL AREA & STEM COUNTS													
Species	Basal area for plot (50X10m)					Volume/ha		Stem count for plot (50X10m)					
	E	T1	T2	T3	S1	T1	T2	E	T1	T2	T3		
<i>Eucalyptus fibrosa subsp. nubila</i>		13				97.5			4				
<i>Callitris glauophylla</i>		7				52.5			7	27	1		
<i>Acacia shirleyi</i>									2				
<i>Opuntia tomentosa*</i>											1		
CANOPY COVER DATA (100m TRANSECT)													
Canopy Start (m)	Canopy finish (m)			Species			Strata						
0				<i>Callitris glauophylla</i>			T2						
0				<i>Eucalyptus fibrosa subsp. nubila</i>			T1						
8.5				<i>Callitris glauophylla</i>			T2						
11.5				<i>Callitris glauophylla</i>			T2						
20.5				<i>Callitris glauophylla</i>			T1						
27.5				<i>Acacia shirleyi</i>			T2						
35				<i>Callitris glauophylla</i>			T2						
41				<i>Callitris glauophylla</i>			T2						
43				<i>Callitris glauophylla</i>			T1						
45				<i>Eucalyptus fibrosa subsp. nubila</i>			T1						
47.5				<i>Callitris glauophylla</i>			S1						
49.5				<i>Eucalyptus crebra</i>			T1						
59				<i>Callitris glauophylla</i>			S1						
61				<i>Eucalyptus fibrosa subsp. nubila</i>			T1						
64				<i>Eucalyptus fibrosa subsp. nubila</i>			T1						
66				<i>Callitris glauophylla</i>			S1						
71.5				<i>Callitris glauophylla</i>			S1						
77.5				<i>Callitris glauophylla</i>			T1						
84.5				<i>Callitris glauophylla</i>			S1						
90.5				<i>Eucalyptus fibrosa subsp. nubila</i>			T1						
98				<i>Callitris glauophylla</i>			T2						

SP46 - Reference Site for RE 11.9.5a

SITE NUMBER	SP46				
LEVEL	2°				
DETAIL SP. LIST	Complete				
REGIONAL ECOSYSTEM	11.9.5a				
DATE	8/05/2008				
RECORDER	David Francis and Amy Prowd				
LOCALITY	Kowguran				
					
SITE DESCRIPTION	Acacia harpophylla woodland				
GENERAL NOTES	Highway immediately west and power line easement immediately east				
COMMUNITY AREA (ha)	C		COMMUNITY WIDTH (m)	B	
MAPPED (Current RE)	Non-remnant		REFERENCE SITE	Y	
LANDFORM					
Situation	A	Element	HSL	Eros pattern	GR
SLOPE					
Type	LE	Slope (%)	<1	Aspect (°)	
SOILS					
Source	S	Reliability	Low	Code	H
				Add data	No
					ISB/MU
					Colour
					B
					Texture
					B
GEOLOGY					
Source	I	Reliability	Low	Code	F
SPECHT STRUCTURE CODE					
GROUND (%)					
Litter	60	Rock		Bare ground	10
				Cryptophyte	
					Vegetation
					30
RAINFOREST					
Struct. Complexity	X	Leaf Size	X	Leaf fall	X
				Floor Comp	X
					In. Gr Forms
					X
DISTURBANCE					
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)	0
Fire (Proportion/Age/Height)	0			Salinity	0
Logging (#)	1			Grazing	1
Ringbarking /Thinning (#)	0			Extensive Clearing	N
Weeds (% Cover)	0			Feral Digging	N
Remnant				Erosion (Type/Severity)	1/1

SITE NUMBER		SP46						continued								
STRUCTURAL SUMMARY																
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)		Species									
Emergent																
Tree 1	7-15	15			25.5		<i>Acacia harpophylla</i> <i>Eucalyptus populnea</i>									
Tree 2	4.5-6	5			20.5		<i>Acacia harpophylla</i> <i>Opuntia tomentosa</i> <i>Alectryon oleifolius</i>									
Tree 3																
Shrub 1							<i>Eremophila mitchellii</i> <i>Geijera parviflora</i> <i>Myoporum deserti</i>									
Shrub 2																
Ground							<i>Ancistrachne uncinulata</i> <i>Brunoniella australis</i> <i>Calandrinia eremaea</i> <i>Cenchrus ciliaris*</i> <i>Chenopodium trigonon</i> <i>Einadia trigonis subsp. stellulata</i> <i>Enchytraea tomentosa var. glabra</i> <i>Enteropogon acicularis</i> <i>Lomandra multiflora</i> <i>Megathyrsus maximus*</i> <i>Myoporum deserti</i> <i>Opuntia tomentosa*</i> <i>Paspalidium caespitosum</i> <i>Portulaca pilosa*</i> <i>Sclerolaena birchii</i> <i>Tetragonia tetragonoides</i> <i>Urochloa mosambicensis</i>									
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Acacia harpophylla</i>		6				45				13	5		2	16		
<i>Eucalyptus populnea</i>		1				7.5				1						
<i>Geijera parviflora</i>														2		
<i>Eremophila mitchellii</i>														3		
<i>Alectryon oleifolius</i>			1				2.5				2					
CANOPY COVER DATA (100m TRANSECT)																
Canopy Start (m)	Canopy finish (m)			Species			Strata									
0				0.5			T2									
3				8			T1									
7.5				10			T2									
16				18			T2									
24.5				27.5			T2									
29				31			T1									
31.5				34			T1									
36.5				40.5			T1									
44.5				49			T1									
48				49.5			S1									
51.5				54.5			T1									
54				56.5			S1									
56				70			T1									
64				70.5			T1									
68				71			T2									
69.5				72.5			T2									
76.5				79.5			T2									
91				92.5			S1									
93				97.5			T2									
98.5				99.5			S1									
99.5				100			T2									

SP56 - Reference Site for Variation in RE 11.9.5a

SITE NUMBER	SP56															
LEVEL	2°															
DETAIL SP. LIST	Complete															
REGIONAL ECOSYSTEM	11.9.5a															
DATE	8/05/2008															
RECORDER	David Francis and Amy Prowd															
LOCALITY	Kowguran															
SITE DESCRIPTION	<i>Casuarina cristata</i> woodland															
GENERAL NOTES	Highway immediately to west and power line easement immediately east															
COMMUNITY AREA (ha)	C			COMMUNITY WIDTH (m)			A									
MAPPED (Current RE)	Non-remnant			REFERENCE SITE			Y									
LANDFORM																
Situation	A	Element	HSL	Eros pattern	GR	Pattern	Low									
SLOPE																
Type	LE	Slope (%)	<1	Aspect (°)												
SOILS																
Source	S	Reliability	Low	Code	K	Add data	No	ISB/MU	Colour	B	Texture					
GEOLOGY																
Source	I	Reliability	Low	Code	F	Map Unit	JKk									
SPECHT STRUCTURE CODE	W															
GROUND (%)																
Litter	65	Rock	5	Bare ground	5	Cryptophyte	5	Vegetation	20							
RAINFOREST																
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X							
DISTURBANCE																
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)	0											
Fire (Proportion/Age/Height)	0			Salinity	0											
Logging (#)	0			Grazing	1											
Ringbarking /Thinning (#)	0			Extensive Clearing	N											
Weeds (% Cover)	0			Feral Digging	N											
Remnant				Erosion (Type/Severity)	1/1											



SITE NUMBER		SP56						continued								
STRUCTURAL SUMMARY																
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)		Species									
Emergent																
Tree 1	11-17	13			40.5		<i>Casuarina cristata</i> <i>Acacia harpophylla</i> <i>Alectryon oleifolius</i>									
Tree 2	5.5-8	7			19		<i>Eremophila mitchellii</i> <i>Casuarina cristata</i>									
Tree 3																
Shrub 1	1.5-4	3					<i>Geijera parviflora</i> <i>Eremophila mitchellii</i> <i>Acacia excelsa</i> <i>Pittosporum phylliraeoides</i>									
Shrub 2	0.5-1.5	1.5					<i>Casuarina cristata</i> <i>Eremophila mitchellii</i> <i>Acacia excelsa</i>									
Ground							<i>Abutilon oxycarpum</i> <i>Amyema cambagei</i> <i>Brunoniella australis</i> <i>Calandrinia eremaea</i> <i>Cenchrus ciliaris*</i> <i>Einadia hastata</i> <i>Enchytraea tomentosa var. glabra</i> <i>Enteropogon acicularis</i> <i>Myoporum deserti</i> <i>Opuntia tomentosa*</i> <i>Paspalidium caespitosum</i> <i>Pittosporum phylliraeoides</i> <i>Portulaca oleracea*</i> <i>Sclerolaena bicornis var. horrida</i> <i>Sclerolaena birchii</i>									
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Casuarina cristata</i>		14	2			91	7			11	3		2	13		
<i>Eucalyptus populnea</i>											1					
<i>Alectryon oleifolius</i>										1	2		1			
<i>Geijera parviflora</i>													2			
<i>Myoporum mitchellii</i>													6	1		
<i>Acacia excelsa</i>													2			
CANOPY COVER DATA (100m TRANSECT)																
Canopy Start (m)	Canopy finish (m)			Species			Strata									
0				3.5			T2									
8				12			T1									
13				16.5			T2									
18				26			T1									
26.5				29			T2									
30.5				31.5			S1									
31				35.5			T1									
37				44			T1									
51				54.5			T1									
56.5				63			T1									
68.5				69.5			S1									
69.5				71.5			S1									
77.5				83			T2									
82				89			T1									
88				92			T2									
97				98.5			S1									

Nathan Dam Secondary Sites
Spring
4 Sept 2008 – 5 Sept 2008

SITE NUMBER	DF T12						
LEVEL	2°						
DETAIL SP. LIST	Complete						
REGIONAL ECOSYSTEM	11.9.10						
DATE	4/09/2008						
RECORDER	DAVID FRANCIS						
LOCALITY	Wandoan						
SITE DESCRIPTION	<i>Eucalyptus populnea</i> and <i>Acacia harpophylla</i> woodland						
GENERAL NOTES	near Red Ridge Road on Nathan Road						
COMMUNITY AREA (ha)	E		COMMUNITY WIDTH (m)		E		
MAPPED (Current RE)	11.3.2/11.9.5		REFERENCE SITE		N		
LANDFORM							
Situation	F	Element	HSL	Eros pattern	UP	Pattern	Low
SLOPE							
Type	LE	Slope		2	Aspect		320
SOILS							
Source	I	Reliability	LOW	Code	K	Add	N
GEOLOGY							
Source	I	Reliability	LOW	Code	G	Map Unit	Jle
SPECHT STRUCTURE CODE							
GROUND (%)							
Litter	20	Rock	0	Bare	10	Cryptophyte	<1
RAINFOREST							
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X
DISTURBANCE							
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)		0	
Fire (Proportion/Age/Height)	0			Salinity		0	
Logging (#)	0			Ringbarking /Thinning (#)		0	
Grazing	1			Feral Digging		0	
Weeds (% Cover)	25			Remnant		Yes	
Erosion (Type/Severity)	0						

SITE NUMBER		D T12							continued										
STRUCTURAL SUMMARY																			
Stratum	Median Height (m)	Height Range in Strata (m)			Cover (%) (100m transect)	Species													
Emergent																			
Tree 1	16	14-18			35	<i>Eucalyptus populnea</i> <i>Acacia harpophylla</i>													
Tree 2	10	8-12			17	<i>Acacia harpophylla</i> <i>Alectryon oleifolium</i>													
Tree 3																			
Shrub 1	3	2-4				<i>Alectryon diversifolius</i> <i>Eremophila mitchellii</i>													
Shrub 2	1	1-2				<i>Apophyllum anomalum</i> <i>Geijera salicifolia</i>													
Ground	0.5	0-0.5				<i>Abutilon oxycarpum</i> <i>Apophyllum anomalum</i> <i>Atalaya hemiglaucha</i> <i>Bothriochloa decipiens</i> <i>Brunoniella australis</i> <i>Cenchrus ciliaris*</i> <i>Citrus glauca</i> <i>Cymbopogon refractus</i> <i>Cyperus gracilis</i> <i>Hibiscus sturtii</i> <i>Jasminum didymum subsp. <i>lineare</i></i> <i>Marsdenia fraseri</i> <i>Megathyrsus maximus*</i> <i>Nyssanthes erecta</i> <i>Opuntia hirtella</i> <i>Paspalidium caespitosum</i> <i>Enchyalaena tomentosa</i> <i>Salsola kali</i> <i>Calotis scabiosifolia</i> <i>Evolvulus alsinoides</i>													
BASAL AREA & STEM COUNTS																			
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)										
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2					
<i>Eucalyptus populnea</i>		6	2				48	10		4	1								
<i>Acacia harpophylla</i>		2	6				16	30		3	10			6	3				
<i>Eremophila mitchellii</i>					1								2	9	3				
<i>Geijera salicifolia</i>														1	1				
<i>Apophyllum anomalum</i>															2				

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
10.5	17.5	<i>Acacia harpophylla</i>	T1
18	23	<i>Acacia harpophylla</i>	T1
30	37	<i>Acacia harpophylla</i>	T2
35	37.5	<i>Eucalyptus populnea</i>	T1
36	40.5	<i>Acacia harpophylla</i>	T1
41	45.5	<i>Acacia harpophylla</i>	T2
49.5	55	<i>Eucalyptus populnea</i>	T1
61.5	63.5	<i>Acacia harpophylla</i>	T2
67	70.5	<i>Eucalyptus populnea</i>	T1
71	73	<i>Eremophila mitchellii</i>	T2
73	81.5	<i>Eucalyptus populnea</i>	T1
96.5	98	<i>Atalaya hemiglaucha</i>	T2

DF T17 - Reference Site for RE 11.10.7

SITE NUMBER	DF T17																
LEVEL	2°																
DETAIL SP. LIST	Complete																
REGIONAL ECOSYSTEM	11.10.7																
DATE	4/09/2008																
RECORDER	DAVID FRANCIS																
LOCALITY	Wandoan																
SITE DESCRIPTION	Eucalyptus crebra woodland																
GENERAL NOTES																	
COMMUNITY AREA (ha)	E		COMMUNITY WIDTH (m)		D												
MAPPED (Current RE)	11.10.7/11.9.2		REFERENCE SITE		Y												
LANDFORM																	
Situation	A	Element	HSL	Eros pattern	UP		Pattern	HIL									
SLOPE																	
Type	MO		Slope	5-10		Aspect		20									
SOILS																	
Source	I	Reliability	LOW	Code	K	Add	N	ISB/MU		Colour	F	Texture	A				
GEOLOGY																	
Source	I	Reliability	Low	Code	G		Map Unit	Jlh									
SPECHT STRUCTURE CODE																	
GROUND (%)																	
Litter	10	Rock	<1	Bare	10	Cryptophyte	0	Vegetation	80								
RAINFOREST																	
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X								
DISTURBANCE																	
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)				0									
Fire (Proportion/Age/Height)	0			Salinity				0									
Logging (#)	0			Ringbarking /Thinning (#)				0									
Grazing				Feral Digging				0									
Weeds (% Cover)	0			Remnant				Yes									
Erosion (Type/Severity):	0																

SITE NUMBER		D T17					continued									
STRUCTURAL SUMMARY																
Stratum	Median Height (m)	Height Range in Strata (m)			Cover (%) (100m transect)	Species										
Emergent																
Tree 1	15	14-16			48	<i>Eucalyptus crebra</i>										
Tree 2					17.5	<i>Psydrax oleifolia</i> <i>Eucalyptus crebra</i> <i>Alphitonia excelsa</i>										
	7	6-8														
Tree 3																
Shrub 1	2	1-2				<i>Geijera parviflora</i> <i>Alstonia constricta</i>										
Shrub 2	1	0.5-1				<i>Carissa ovata</i>										
Ground	0.5	0-0.5				<i>Abutilon oxycarpum</i> <i>Acacia leiocalyx</i> <i>Cheilanthes tenuifolia</i> <i>Cheilanthes lasiophylla</i> <i>Aristida caput-medusae</i> <i>Iseilema membranaceum</i> <i>Maireana microphylla</i> <i>Notelaea microcarpa</i> <i>Petalostigma pubescens</i> <i>Podolepis longipedata</i> <i>Senecio pinnatifolia</i>										
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Eucalyptus crebra</i>		11				82.5				14	3					
<i>Alphitonia excelsa</i>			1			3.5				2				1		
<i>Carissa ovata</i>														1		
<i>Petalostigma pubescens</i>														1		
<i>Alstonia constricta</i>													2	4 3		
<i>Acacia Leiocalyx</i>													2	1		
<i>Psydrax odorata</i>														1		

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	11	<i>Eucalyptus crebra</i>	T1
22.5	25	<i>Alphitonia excelsa</i>	T2
25	36	<i>Eucalyptus crebra</i>	T1
39	54	<i>Eucalyptus crebra</i>	T1
40.5	43	<i>Petalostigma pubescens</i>	T2
43	45.5	<i>Alphitonia excelsa</i>	T2
64.5	71	<i>Eucalyptus crebra</i>	T1
85	88.5	<i>Alphitonia excelsa</i>	T2
92.5	98	<i>Alphitonia excelsa</i>	T2
95.5	100	<i>Eucalyptus crebra</i>	T1

SITE NUMBER	T1													
LEVEL	2°													
DETAIL SP. LIST	Complete													
REGIONAL ECOSYSTEM	11.9.10													
DATE	4/09/2008													
RECORDER	SHELLEY TREVASKIS and AMY PROWD													
LOCALITY	Taroom													
SITE DESCRIPTION	Acacia harpophylla													
GENERAL NOTES	Junction Cracow and Nathan Roads													
COMMUNITY AREA (ha)	C	COMMUNITY WIDTH (m)		B										
MAPPED (Current RE)	Non-remnant	REFERENCE SITE		N										
LANDFORM														
Situation	A	Element	VLF	Eros pattern	GP	Pattern	PLA							
SLOPE														
Type	VG	Slope		1	Aspect		45							
SOILS														
Source	S	Reliability	Low	Code	K	data	N	ISB/MU		Colour	F	Texture	A	
GEOLOGY														
Source	I	Reliability	Low	Code	G		Map Unit	Jle						
SPECHT STRUCTURE CODE					W									
GROUND (%)														
Litter	20	Rock	0	Bare	40	Cryptophyte	5	Vegetation	35					
RAINFOREST														
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X					
DISTURBANCE														
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)			0							
Fire (Proportion/Age/Height)	0			Salinity			0							
Logging (#)	3			Ringbarking /Thinning (#)			0							
Grazing	1			Feral Digging			0							
Weeds (% Cover)	0			Remnant			Yes							
Erosion (Type/Severity):	0													

SITE NUMBER		T1						continued										
STRUCTURAL SUMMARY																		
Stratum	Median Height (m)	Height Range in Strata (m)			Cover (%) (100m transect)		Species											
Emergent																		
Tree 1	15	10-16			22.5		<i>Eucalyptus populnea</i> <i>Acacia harpophylla</i>											
Tree 2	4	4-7			28.8		<i>Eremophila mitchellii</i> <i>Acacia harpophylla</i>											
Tree 3																		
Shrub 1	2	1-3			13.2		<i>Geijera parviflora</i> <i>Notelaea microcarpa</i>											
Shrub 2	0.5	0.5-1					<i>Geijera parviflora</i> <i>Citrus glauca</i> <i>Alectryon diversifolius</i>											
Ground	0.5	0-0.5					<i>Abutilon oxycarpum</i> <i>Boerhavia dominii</i> <i>Brunoniella australis</i> <i>Carissa ovata</i> <i>Cenchrus ciliaris*</i> <i>Cheilanthes distans</i> <i>Dodonaea viscosa</i> <i>Einadia hastata</i> <i>Senecio pinnatifolia</i> <i>Sporobolus creber</i>											
BASAL AREA & STEM COUNTS																		
Species	Basal area for plot (50X10m)						Volume/ha			Stem count for plot (50X10m)								
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1					
<i>Eucalyptus populnea</i>		6				45			3									
<i>Eremophila mitchellii</i>			2				4		28		31	2						
<i>Geijera parviflora</i>									1		3	16						
<i>Alectryon diversifolius</i>													1					
<i>Citrus glauca</i>												2	3					
<i>Dodonaea viscosa</i>													4					
<i>Carissa ovata</i>													1					
CANOPY COVER DATA (100m TRANSECT)																		
Canopy Start (m)	Canopy finish (m)			Species			Strata											
0				3			T1											
7.5	14			<i>Eucalyptus populnea</i>			T1											
7.5	12			<i>Geijera parviflora</i>			S1											
12	19.5			<i>Eremophila mitchellii</i>			T2											
18	20.3			<i>Eremophila mitchellii</i>			T2											
22.5	26.5			<i>Eremophila mitchellii</i>			T2											
32	45.5			<i>Eremophila mitchellii</i>			T2											
44.5	45			<i>Dodonaea viscosa</i>			S1											
47	49.6			<i>Eremophila mitchellii</i>			T2											
55.6	57			<i>Eremophila mitchellii</i>			T2											
57.7	58.8			<i>Dodonaea viscosa</i>			S1											
61.5	65.5			<i>Acacia harpophylla</i>			T2											
62.9	65			<i>Alectryon diversifolius</i>			T2											
66	70			<i>Acacia harpophylla</i>			T1											
67.5	70			<i>Acacia harpophylla</i>			T1											
72	76			<i>Geijera parviflora</i>			S1											
74	76			<i>Notelaea microcarpa</i>			S1											
86.4	88			<i>Geijera parviflora</i>			S1											
89	95			<i>Eucalyptus populnea</i>			T1											
90	91.5			<i>Acacia harpophylla</i>			S1											
92	95			<i>Acacia harpophylla</i>			T1											

SITE NUMBER	T3												
LEVEL	2°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.10.7												
DATE	4/09/2008												
RECORDER	SHELLEY TREVASKIS and AMY PROWD												
LOCALITY	Wandoan												
SITE DESCRIPTION													
GENERAL NOTES	Nathan Road												
COMMUNITY AREA (ha)	A		COMMUNITY WIDTH (m)		A								
MAPPED (Current RE)	11.10.7/11.9.2		REFERENCE SITE		N								
LANDFORM													
Situation	F	Element	HSL	Eros pattern	GP	Pattern	Low						
SLOPE													
Type	VG		Slope	2		Aspect	0						
SOILS													
Source	S	Reliability	Low	Code	D	data	N	ISB/MU		Colour	K	Texture	F
GEOLOGY													
Source	I	Reliability	Low	Code	G		Map Unit	Jlh					
SPECCHT STRUCTURE CODE						W							
GROUND (%)													
Litter	10	Rock	10	Bare	20	Cryptophyte	10	Vegetation	50				
RAINFOREST													
Struct.	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)			1/2						
Fire (Proportion/Age/Height)	0			Salinity			0						
Logging (#)	0			Ringbarking /Thinning (#)			0						
Grazing	1			Feral Digging			0						
Weeds (% Cover)	0			Remnant			Yes						
Erosion (Type/Severity):	0												

SITE NUMBER		T3					continued									
STRUCTURAL SUMMARY																
Stratum	Median Height (m)	Height Range in Strata (m)			Cover (%) (100m transect)	Species										
Emergent																
Tree 1	16	14-16			2.5	<i>Eucalyptus crebra</i>										
Tree 2	10	8-10				<i>Callitris glaucophylla</i> <i>Eremophila mitchellii</i>										
Tree 3																
Shrub 1	3	1.5-4			19.4	<i>Acacia leiocalyx</i> <i>Acacia excelsa</i>										
Shrub 2	1	0-1				<i>Grevillea striata</i> <i>Carissa ovata</i>										
Ground	0.5	0-0.5				<i>Calotis lappulacea</i> <i>Capparis lasiantha</i> <i>Cenchrus ciliaris*</i> <i>Einadia hastata</i> <i>Hibiscus sturtii</i> <i>Melinis repens*</i> <i>Opuntia stricta*</i> <i>Oxalis corniculata*</i> <i>Portulaca pilosa</i> <i>Verbena tenuisecta*</i>										
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Grevillea striata</i>														2	6	
<i>Acacia leiocalyx</i>														9		
<i>Opuntia tomentosa</i>														1		
<i>Acacia excelsa</i>														1		
<i>Callitris glaucophylla</i>														1	6	
<i>Eucalyptus crebra</i>		3				24								1	2	
<i>Eremophila mitchellii</i>														1		

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
3	5	<i>Acacia leiocalyx</i>	S1
6	7.4	<i>Acacia excelsa</i>	S1
8.4	11	<i>Acacia leiocalyx</i>	S1
28	28.7	<i>Acacia excelsa</i>	S1
28.7	30.5	<i>Acacia leiocalyx</i>	S1
36	39	<i>Acacia leiocalyx</i>	S1
41.6	44.2	<i>Acacia leiocalyx</i>	S1
44.2	45	<i>Eremophila mitchellii</i>	S1
56.5	59	<i>Eucalyptus crebra</i>	T1
76.5	79	<i>Acacia leiocalyx</i>	S1
98	100	<i>Acacia leiocalyx</i>	S1

SITE NUMBER	T6						
LEVEL	2°						
DETAIL SP. LIST	Complete						
REGIONAL ECOSYSTEM	11.9.5						
DATE	5/09/2008						
RECORDER	SHELLEY TREVASKIS and AMY PROWD						
							
LOCALITY	Wandoan						
SITE DESCRIPTION	<i>Acacia harpophylla</i> , <i>Brachychiton rupestris</i> and <i>Lysiphyllo carolinii</i> woodland.						
GENERAL NOTES	Nathan Road						
COMMUNITY AREA (ha)	A		COMMUNITY WIDTH (m)		B		
MAPPED (Current RE)	Non-remnant		REFERENCE SITE		N		
LANDFORM							
Situation	A	Element	VLF	Eros pattern	GP	Pattern	Low
SLOPE							
Type	VG	Slope		1	Aspect		90
SOILS							
Source	S	Reliability	Low	Code	D	data	N
GEOLOGY							
Source	I	Reliability	Low	Code	G	Map Unit	Ji
SPECHT STRUCTURE CODE							
W							
GROUND (%)							
Litter	5	Rock	0	Bare	0	Cryptophyte	0
Vegetation 95							
RAINFOREST							
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X
In. Gr Forms X							
DISTURBANCE							
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)			0
Fire (Proportion/Age/Height)	0			Salinity			0
Logging (#)	2			Ringbarking /Thinning (#)			0
Grazing	1			Feral Digging			0
Weeds (% Cover)	0			Remnant			Yes
Erosion (Type/Severity):	0						

SITE NUMBER		T6						continued										
STRUCTURAL SUMMARY																		
Stratum	Median Height (m)	Height Range in Strata (m)			Cover (%) (100m transect)		Species											
Emergent																		
Tree 1	8	8-14			17		<i>Acacia harpophylla</i> <i>Brachychiton rupestris</i> <i>Lysiphyllo carolinii</i>											
Tree 2	7	4 -7			51		<i>Geijera parviflora</i> <i>Opuntia tomentosa</i> <i>Eremophila mitchellii</i> <i>Acacia harpophylla</i>											
Tree 3																		
Shrub 1	2	2 -3			15.7		<i>Alectryon diversifolius</i> <i>Geijera parviflora</i> <i>Acacia harpophylla</i>											
Shrub 2																		
Ground	0.5	0-0.5					<i>Capparis lasiantha</i> <i>Cenchrus ciliaris*</i> <i>Cheilanthes distans</i> <i>Cissus opaca</i> <i>Einadia hastata</i> <i>Enchyalaena tomentosa</i> <i>Marsdenia fraseri</i> <i>Marsdenia microlepis</i> <i>Megathyrsus maximus*</i> <i>Oxalis corniculata*</i> <i>Parsonsia eucalyptophylla</i> <i>Plectranthus parviflorus</i> <i>Roepera apiculata</i> <i>Salsola kali</i> <i>Tetragonia tetragonoides</i>											
BASAL AREA & STEM COUNTS																		
Species	Basal area for plot (50X10m)					Volume/ha				Stem count for plot (50X10m)								
	E	T1	T2	T3	S1	T1		T2		E	T1	T2	T3	S1	S2			
<i>Acacia harpophylla</i>		4							14		18	7			1			
<i>Lysiphyllo carolinii</i>												1						
<i>Opuntia tomentosa</i>		1										2						
<i>Geijera parviflora</i>		1										11			7			
<i>Brachychiton rupestris</i>											1							
<i>Alectryon diversifolius</i>															1			

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	3	<i>Lysiphyllo carolinii</i>	T1
2	6	<i>Acacia harpophylla</i>	T1
13.5	18.5	<i>Geijera parviflora</i>	T2
15	19.5	<i>Opuntia tomentosa</i>	T2
20.5	24.5	<i>Geijera parviflora</i>	T2
33	34.5	<i>Alectryon diversifolius</i>	S1
35	37.5	<i>Acacia harpophylla</i>	T2
41	45.3	<i>Geijera parviflora</i>	T2
43.5	47.8	<i>Opuntia tomentosa</i>	T2
46.8	52	<i>Acacia harpophylla</i>	T2
47.5	49.5	<i>Geijera parviflora</i>	S1
52	58.6	<i>Acacia harpophylla</i>	T2
52.4	58	<i>Geijera parviflora</i>	S1
57.6	62.6	<i>Geijera parviflora</i>	T2
59	60.2	<i>Acacia harpophylla</i>	S1
59.8	60.3	<i>Acacia harpophylla</i>	T1
62.3	63.6	<i>Eremophila mitchellii</i>	T2
72	80	<i>Acacia harpophylla</i>	T1
75.5	81	<i>Geijera parviflora</i>	T2
81	83	<i>Opuntia tomentosa</i>	T2
85.4	89.8	<i>Acacia harpophylla</i>	T2
85.5	89.8	<i>Geijera parviflora</i>	T2
88.6	90	<i>Alectryon diversifolius</i>	S1
91.5	94	<i>Alectryon diversifolius</i>	S1

94	98	<i>Opuntia tomentosa</i>	T2
95	97.5	<i>Acacia harpophylla</i>	T1
98	99.5	<i>Geijera parviflora</i>	S1

Nathan Dam Secondary Sites
Summer
1 Dec 2008

D7 - Reference Site for RE 11.5.1

SITE NUMBER	D7			
LEVEL	2°			
DETAIL SP. LIST	Complete			
REGIONAL ECOSYSTEM	11.5.1			
DATE	1/12/2008			
RECORDER	David Francis			
LOCALITY	Columboola			
				
SITE DESCRIPTION	<i>Eucalyptus crebra</i> and <i>Eucalyptus populnea</i> woodland			
GENERAL NOTES				
COMMUNITY AREA (ha)	D	COMMUNITY WIDTH (m)	A	
MAPPED (Current RE)	Non-remnant	REFERENCE SITE	Y	
LANDFORM				
Situation	F	Element	FOO	
			Eros pattern	
			VL	
			Pattern	
			Low	
SLOPE				
Type	VG	Slope (%)	1-2	
Aspect (°)				
270				
SOILS				
Source	S	Reliability	Low	
	Code	D	Add data	
	No	ISB/MU		
		Colour	K	
		Texture	D	
GEOLOGY				
Source	I	Reliability	Low	
SPECHT STRUCTURE CODE		Code	G	
		Map Unit	Qa	
GROUND (%)				
Litter	20	Rock	<1	
			Bare ground	
			20	
			Cryptophyte	
			20	
			Vegetation	
			40	
RAINFOREST				
Struct. Complexity	X	Leaf Size	X	
			Leaf fall	
			X	
			Floor Comp	
			X	
			In. Gr Forms	
DISTURBANCE				
Storm damage (Proportion/Age)	0		Road Works (Proportion/Age)	1
Fire (Proportion/Age/Height)	0		Salinity	0
Logging (#)	0		Grazing	1
Ringbarking /Thinning (#)	0		Extensive Clearing	N
Weeds (% Cover)	<1		Feral Digging	N
Remnant	N		Erosion (Type/Severity)	0

SITE NUMBER		D7		continued											
STRUCTURAL SUMMARY															
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species											
Emergent															
Tree 1	10-18		14	39.5	<i>Eucalyptus crebra</i> <i>Eucalyptus populnea</i>										
Tree 2	4-9		6	25	<i>Allocasuarina luehmannii</i> <i>Geijera parviflora</i> <i>Opuntia tomentosa*</i>										
Tree 3															
Shrub 1	0.5-1		0.5	<i>Dodonaea viscosa</i>											
Shrub 2															
Ground					<i>Hibiscus sturtii</i> <i>Cenchrus ciliaris*</i> <i>Jasminum didymum subsp. lineare</i> <i>Dianella caerulea</i> <i>Paspalidium caespitosum</i> <i>Enteropogon acicularis</i> <i>Rostellularia adscendens</i> <i>Abutilon oxycarpum</i> <i>Eremophila debile</i> <i>Aristida caput-medusae</i> <i>Stackhousia muricata</i> <i>Enchyalaena tomentosa</i>										
BASAL AREA & STEM COUNTS															
Species	Basal area for plot (50X10m)				Volume/ha				Stem count for plot (50X10m)						
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2	
<i>Eucalyptus crebra</i>		3				21				3	1				
<i>Eucalyptus populnea</i>		3				21				6	1				
<i>Allocasuarina luehmannii</i>			3				9			1	20		23		
<i>Geijera parviflora</i>										2					1
<i>Grevillea striata</i>															1
<i>Callitris glaucophylla</i>															1
<i>Opuntia tomentosa*</i>										2			1		
<i>Dodonaea viscosa</i>										1			1		

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	3.5	<i>Eucalyptus populnea</i>	T1
9	13.5	<i>Geijera parviflora</i>	T2
18	20	<i>Allocasuarina luehmannii</i>	T2
20	28.5	<i>Eucalyptus populnea</i>	T1
26	31.5	<i>Allocasuarina luehmannii</i>	T2
37.5	47	<i>Eucalyptus populnea</i>	T1
44	47	<i>Allocasuarina luehmannii</i>	T2
51	54.5	<i>Allocasuarina luehmannii</i>	T2
55.5	59	<i>Eucalyptus populnea</i>	T1
69	82	<i>Eucalyptus crebra</i>	T1
70	71.5	<i>Allocasuarina luehmannii</i>	T2
71.5	73.5	<i>Eucalyptus populnea</i>	T2
85	86.5	<i>Eucalyptus populnea</i>	T2
86	88	<i>Allocasuarina luehmannii</i>	T2
98.5	100	<i>Eucalyptus crebra</i>	T1

Nathan Dam Secondary Sites
Winter
June 15 – June 22 2010

Pw24

SITE NUMBER	Pw24												
LEVEL	2°												
DETAIL SP. LIST	A												
REGIONAL ECOSYSTEM	11.5.1												
DATE	16/06/2010												
RECORDER	DF AP												
LOCALITY	5km north of Rywong												
													
SITE DESCRIPTION	Open Poplar box, narrow leaf iron bark and Bellah forest												
GENERAL NOTES													
COMMUNITY AREA (ha)	D			COMMUNITY WIDTH (m)			D						
MAPPED (Current RE)	11.3.4			REFERENCE SITE			Yes						
LANDFORM													
Situation	B	Element	VLF	Eros pattern	GP	Pattern	ALP						
SLOPE													
Type	VG	Slope (%)			1-2			Aspect (°)			200		
SOILS													
Source	I	Reliability	Low	Code	H	Add data	-	ISB/MU	-	Colour	B	Texture	H
GEOLOGY													
Source	I	Reliability	Low	Code	B	Map Unit			Qa				
SPECCHT STRUCTURE CODE					Open forest								
GROUND (%)													
Litter	10	Rock	0	Bare ground	65	Cryptophyte	25	Vegetation					
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	0				Road Works (Proportion/Age)				0				
Fire (Proportion/Age/Height)	0				Salinity				0				
Logging (#)	7				Ringbarking /Thinning (#)				7 (thinning)				
Grazing	2				Feral Digging				1				
Weeds (% Cover)	0				Remnant								
Erosion (Type/Severity)					1/1								

SITE NUMBER		Pw24						continued							
STRUCTURAL SUMMARY															
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)	Species									
Emergent															
Tree 1	13-20	17			49.9	<i>Casuarina cristata</i> <i>Eucalyptus crebra</i> <i>Eucalyptus populnea</i>									
Tree 2	6-10	8			28.9	<i>Allocasuarina luehmannii</i> <i>Casuarina cristata</i>									
Tree 3															
Shrub 1															
Shrub 2															
Ground						<i>Abutilon oxycarpum</i> <i>Alternanthera denticulata</i> <i>Aristida caput-medusae</i> <i>Bothriochloa decipiens</i> <i>Bryophyllum delagoense</i> <i>Eleocharis dulcis</i> <i>Enneapogon robustissimus</i> <i>Epaltes australis</i> <i>Eremophila debilis</i> <i>Jasminum didymum subsp. <i>lineare</i></i> <i>Lomandra multiflora</i> <i>Ludwigia octovalvis</i> <i>Maireana pentagona</i> <i>Nyssanthes erecta</i> <i>Opuntia stricta</i> <i>Paspalidium caespitosum</i> <i>Vernonia cinerea</i>									
BASAL AREA & STEM COUNTS															
Species	Basal area for plot (50X10m)						Volume/ha			Stem count for plot (50X10m)					
	E	T1	T2	T3	S1	T1	T2			E	T1	T2	T3	S1	S2
<i>Eucalyptus crebra</i>		5				42.5					5				
<i>Eucalyptus populnea</i>		1				8.5					1				
<i>Casuarina cristata</i>		1				8.5					1				
<i>Allocasuarina luehmannii</i>			1					4			21		1		

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	5.5	<i>Casuarina cristata</i>	T1
9	10.5	<i>Allocasuarina luehmannii</i>	T2
10.5	13	<i>Eucalyptus crebra</i>	T1
11.5	12	<i>Allocasuarina luehmannii</i>	T2
14.9	17	<i>Allocasuarina luehmannii</i>	T2
29.5	30.8	<i>Allocasuarina luehmannii</i>	T2
30.5	39.3	<i>Eucalyptus crebra</i>	T1
33.5	37	<i>Allocasuarina luehmannii</i>	T2
36.3	48.5	<i>Eucalyptus populnea</i>	T1
40.3	43	<i>Allocasuarina luehmannii</i>	T2
44.5	51	<i>Casuarina cristata</i>	T2
58	59.5	<i>Allocasuarina luehmannii</i>	T2
61	64	<i>Allocasuarina luehmannii</i>	T2
63	73.5	<i>Eucalyptus populnea</i>	T1
66.2	70	<i>Allocasuarina luehmannii</i>	T2
77.6	86	<i>Eucalyptus populnea</i>	T1
75.5	82	<i>Allocasuarina luehmannii</i>	T2
86.5	91.5	<i>Eucalyptus populnea</i>	T1

Pw54 –REFERENCE SITE FOR RE 11.3.14

SITE NUMBER	Pw54										
LEVEL	2°										
DETAIL SP. LIST	A										
REGIONAL ECOSYSTEM	11.3.14										
DATE	18/06/2010										
RECORDER	DF AP										
LOCALITY	10km North of Glenrowan										
SITE DESCRIPTION	Tall eucalypt on creek bank										
GENERAL NOTES											
COMMUNITY AREA (ha)	B				COMMUNITY WIDTH (m)			B			
MAPPED (Current RE)	11.5.21/11.7.4/11.5.4				REFERENCE SITE						
LANDFORM											
Situation	C	Element	BAN	Eros pattern	GP	Pattern	ALP				
SLOPE											
Type	GE	Slope (%)	3	Aspect (°)	150						
SOILS											
Source	I	Reliability	Low	Code	A	Add data	ISB/MU	-	Colour	k	Texture
GEOLOGY											
Source	I	Reliability	Low	Code	F + G	Map Unit	T				
SPECHT STRUCTURE CODE	Open forest										
GROUND (%)											
Litter	50	Rock	-	Bare ground	0	Cryptophyte	-	Vegetation			
RAINFOREST											
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X		
DISTURBANCE											
Storm damage (Proportion/Age)	0				Road Works (Proportion/Age)			0			
Fire (Proportion/Age/Height)	0				Salinity			0			
Logging (#)	-				Ringbarking /Thinning (#)			-			
Grazing	1				Feral Digging			1			
Weeds (% Cover)	0				Remnant						
Erosion (Type/Severity)	-										



SITE NUMBER		Pw54						continued								
STRUCTURAL SUMMARY																
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)	Species										
Emergent																
Tree 1	15-36	30			58.6	<i>Angophora floribunda</i> <i>Callitris glauophylla</i> <i>Corymbia bloxsomei</i> <i>Eucalyptus camaldulensis</i>										
Tree 2	5-12	8			11.4	<i>Eucalyptus chloroclada</i>										
Tree 3																
Shrub 1	1-2	2			2.5	<i>Acacia semilunata</i> <i>Callitris glauophylla</i> <i>Acacia conferta</i> <i>Hakea purpurea</i>										
Shrub 2																
Ground						<i>Arundinella nepalensis</i> <i>Chrysocephalum apiculatum</i> <i>Corymbia bloxsomei</i> <i>Dianella longifolia</i> <i>Heteropogon contortus</i>										
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Eucalyptus chloroclada</i>		3					12				6					
<i>Eucalyptus camaldulensis</i>	9					135				3						
<i>Corymbia bloxsomei</i>																
<i>Angophora floribunda</i>	3					45				3						
<i>Acacia conferta</i>												2	1			
<i>Callitris glauophylla</i>													3			
<i>Acacia (awaiting ID)</i>														1		
<i>Acacia (awaiting ID)</i>																
<i>Acacia semilunata</i>													3			
<i>Xylomelum cunninghamiana</i>														1		

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	6	<i>Angophora floribunda</i>	
0	14	<i>Eucalyptus camaldulensis</i>	
22.5	29.7	<i>Eucalyptus chloroclada</i>	
27.7	31	<i>Eucalyptus camaldulensis</i>	
32	46	<i>Eucalyptus camaldulensis</i>	
39.5	40.4	<i>Acacia semilunata</i>	
42	52	<i>Angophora floribunda</i>	
46	46.6	<i>Acacia semilunata</i>	
66.5	74.5	<i>Angophora floribunda</i>	
69	71.4	<i>Corymbia bloxsomei</i>	
77	78	<i>Leptospermum polygalifolium</i>	
78	85.3	<i>Angophora floribunda</i>	
98.2	100	<i>Corymbia bloxsomei</i>	
98	100	<i>Eucalyptus cambageana</i>	

Pw98

SITE NUMBER	Pw98													
LEVEL	2°													
DETAIL SP. LIST	A													
REGIONAL ECOSYSTEM	11.5.4													
DATE	19/06/2010													
RECORDER	DF AP													
LOCALITY	11km East of Giligulgul													
SITE DESCRIPTION	Eucalyptus forest over Bull oak													
GENERAL NOTES														
COMMUNITY AREA (ha)	D		COMMUNITY WIDTH (m)		E									
MAPPED (Current RE)	11.5.21/11.7.4/11.5.4		REFERENCE SITE											
LANDFORM														
Situation	A	Element	PLA	Eros pattern	VL	Pattern	LOW							
SLOPE														
Type	VG	Slope (%)		2	Aspect (°)		160							
SOILS														
Source	1	Reliability	Low	Code	K	Add data		ISB/MU	-	Colour	F	Texture	A	
GEOLOGY														
Source	I	Reliability	Low	Code	F+G		Map Unit		T					
SPECHT STRUCTURE CODE														
woodland														
GROUND (%)														
Litter	60	Rock	-	Bare ground	20	Cryptophyte	20	Vegetation						
RAINFOREST														
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X					
DISTURBANCE														
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)			1/2							
Fire (Proportion/Age/Height)	0			Salinity			0							
Logging (#)	1			Ringbarking /Thinning (#)			-							
Grazing	2			Feral Digging			1							
Weeds (% Cover)	0			Remnant										
Erosion (Type/Severity)	0													

SITE NUMBER		Pw98						continued								
STRUCTURAL SUMMARY																
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)	Species										
Emergent																
Tree 1	13-20	18			37.4	<i>Eucalyptus crebra</i>										
Tree 2	4-12	10			25.6	<i>Eucalyptus crebra</i> <i>Allocasuarina luehmannii</i> <i>Callitris glauophylla</i>										
Tree 3																
Shrub 1	1-2	2			2	<i>Allocasuarina luehmannii</i> <i>Acacia leiocalyx</i>										
Shrub 2																
Ground						<i>Aristida leptopoda</i> <i>Brunoniella australis</i> <i>Chrysopogon fallax</i> <i>Dianella longifolia</i> <i>Eulalia aurea</i> <i>Hybanthus monopetalus</i> <i>Laxmannia gracilis</i> <i>Lomandra leucocephala</i> <i>Lomandra longifolia</i> <i>Rostellularia adscendens</i> <i>Verbena tenuisecta</i>										
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Eucalyptus crebra</i>		9				81				7			1			
<i>Allocasuarina luehmannii</i>			5				25				11			64		
<i>Acacia leiocalyx</i>					1							3	1			
<i>Callitris endlicheri</i>		1				9				4						

CANOPY COVER DATA (100m TRANSECT)			
Canopy Start (m)	Canopy finish (m)	Species	Strata
0	10	<i>Eucalyptus crebra</i>	T1
13	14	<i>Allocasuarina luehmannii</i>	T2
14.8	16.3	<i>Allocasuarina luehmannii</i>	T2
16.6	25.1	<i>Eucalyptus crebra</i>	T1
17.8	20	<i>Allocasuarina luehmannii</i>	T2
32	37.5	<i>Callitris endlicheri</i>	T1
37.5	38.5	<i>Allocasuarina luehmannii</i>	T2
38.5	45.4	<i>Eucalyptus crebra</i>	T1
41.4	42.8	<i>Allocasuarina luehmannii</i>	T2
46	46.8	<i>Eucalyptus crebra</i>	T2
48	52	<i>Eucalyptus crebra</i>	T1
62	64.5	<i>Eucalyptus crebra</i>	T1
65.1	67	<i>Allocasuarina luehmannii</i>	T2
65.8	74	<i>Eucalyptus crebra</i>	T2
75.6	76.8	<i>Eucalyptus crebra</i>	S1
77.6	79	<i>Eucalyptus crebra</i>	T2
79	82	<i>Eucalyptus crebra</i>	T2
86	88	<i>Eucalyptus crebra</i>	T2
95.4	96.7	<i>Allocasuarina luehmannii</i>	T2
96.4	97.2	<i>Allocasuarina luehmannii</i>	S1
97.4	98.5	<i>Eucalyptus crebra</i>	T2

NJ1

SITE NUMBER	NJ1															
LEVEL	2°															
DETAIL SP. LIST																
REGIONAL ECOSYSTEM	11.9.6															
DATE	20/06/2010															
RECORDER	DF AP															
LOCALITY	4km North of Wandoan															
SITE DESCRIPTION	<i>Eucalyptus populnea</i> woodland															
GENERAL NOTES	Along stock route															
COMMUNITY AREA (ha)	C			COMMUNITY WIDTH (m)	D											
MAPPED (Current RE)	11.9.5			REFERENCE SITE												
LANDFORM																
Situation	A	Element	VLF	Eros pattern	GP	Pattern			PLA							
SLOPE																
Type	VG	Slope (%)			1	Aspect (°)			60							
SOILS																
Source	I	Reliability	Low	Code	K	Add data	ISB/MU	-	Colour	F	Texture	A				
GEOLOGY																
Source	I	Reliability	Low	Code	H	Map Unit			Ji							
SPECHT STRUCTURE CODE					Woodland											
GROUND (%)																
Litter	5	Rock	-	Bare ground	5	Cryptophyte	0	Vegetation								
RAINFOREST																
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X							
DISTURBANCE																
Storm damage (Proportion/Age)	1/2				Road Works (Proportion/Age)			0								
Fire (Proportion/Age/Height)	0				Salinity			0								
Logging (#)	1				Ringbarking /Thinning (#)			-								
Grazing	2				Feral Digging			1								
Weeds (% Cover)	5				Remnant											
Erosion (Type/Severity)	0															



SITE NUMBER		NJ1						continued								
STRUCTURAL SUMMARY																
Stratum	Height Range in Strata (m)	Median Height (m)			Cover (%) (100m transect)		Species									
Emergent																
Tree 1	12-26	17			28.5		<i>Eucalyptus populnea</i> <i>Acacia harpophylla</i>									
Tree 2	4-10	8			15.5		<i>Acacia harpophylla</i> <i>Eremophila debilis</i> <i>Eucalyptus populnea</i> <i>Alectryon oleifolius</i>									
Tree 3																
Shrub 1	1-3	2			1		<i>Geijera parviflora</i>									
Shrub 2							<i>Acacia farnesiana</i> <i>Acacia oswaldii</i> <i>Pittosporum phylliraeoides</i>									
Ground							<i>Abutilon oxycarpum</i> <i>Brunoniella australis</i> <i>Bryophyllum delagoense*</i> <i>Cenchrus ciliaris</i> <i>Einadia hastata</i> <i>Opuntia stricta</i> <i>Paspalidium caespitosum</i> <i>Nyssanthes erecta</i>									
BASAL AREA & STEM COUNTS																
Species	Basal area for plot (50X10m)					Volume/ha			Stem count for plot (50X10m)							
	E	T1	T2	T3	S1	T1	T2		E	T1	T2	T3	S1	S2		
<i>Eucalyptus populnea</i>		9	2			76.5	8			6	1					
<i>Acacia harpophylla</i>										2						
<i>Eremophila mitchellii</i>											4					
<i>Alectryon oleifolius</i>											2					
<i>Acacia farnesiana</i>												1				
<i>Pittosporum phylliraeoides</i>												1				
<i>Acacia oswaldii</i>												3	1			
<i>Geijera salicifolia</i>												1				

CANOPY COVER DATA (100m TRANSECT)				
Canopy Start (m)	Canopy finish (m)	Species	Strata	
0	7.2	<i>Eucalyptus populnea</i>	T1	
0	2.4	<i>Eremophila debilis</i>	T2	
6.3	7.2	<i>Alectryon oleifolius</i>	T2	
10.3	15	<i>Eucalyptus populnea</i>	T1	
26.5	32	<i>Eucalyptus populnea</i>	T1	
30	32	<i>Eucalyptus populnea</i>	T1	
43.4	49	<i>Eucalyptus populnea</i>	T1	
45.7	53.5	<i>Acacia harpophylla</i>	T1	
46.5	51.8	<i>Eucalyptus populnea</i>	T2	
60.5	66.4	<i>Eremophila debilis</i>	T2	
92.4	93.4	<i>Eucalyptus populnea</i>	S1	
99	100	<i>Eucalyptus populnea</i>	T1	
99	100	<i>Acacia harpophylla</i>	T2	

APPENDIX B
Site Data – Tertiary Sites

**Nathan Dam Tertiary Sites
Summer
26 March – 1 April 2008**

Site MD87 - Reference Site for 11.9.12

SITE NUMBER	MD87										
LEVEL	3°										
DETAIL SP. LIST	Complete										
REGIONAL ECOSYSTEM	11.9.12										
DATE	28/03/2008										
RECORDER	David Francis and John Dwyer										
LOCALITY	Taroom										
											
SITE DESCRIPTION	Open tussock grassland										
GENERAL NOTES											
COMMUNITY AREA (ha)	A			COMMUNITY WIDTH (m)			A				
MAPPED (Current RE)	Non-remnant			REFERENCE SITE			N				
LANDFORM											
Situation	F	Element	HSL	Eros pattern	UL	Pattern	LOW				
SLOPE											
Type	GE	Slope (%)	1-2	Aspect (°)							
SOILS											
Source	I	Reliability	Low	Code	G	Add data	No	ISB/MU	Colour	Texture	
GEOLOGY											
Source	I	Reliability	Low	Code	H		Map Unit	Jle			
SPECHT STRUCTURE CODE	OTG										
GROUND (%)											
Litter	-	Rock	-	Bare ground	-	Cryptophyte	-	Vegetation	-		
RAINFOREST											
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X		
DISTURBANCE											
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)			-				
Fire (Proportion/Age/Height)	-			Salinity			-				
Logging (#)	-			Grazing			-				
Ringbarking /Thinning (#)	-			Extensive Clearing			-				
Weeds (% Cover)	-			Feral Digging			-				
Remnant				Erosion (Type/Severity)			-				

SITE NUMBER		MD87			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent					
Tree 1				<i>Grevillea striata</i> <i>Lysiphylloum carronii</i> <i>Acacia harpophylla</i>	
Tree 2					
Tree 3					
Shrub 1					
Shrub 2					
Ground				<i>Bothriochloa bladhii</i> <i>Bracteantha bracteata</i> <i>Cirsium vulgare*</i> <i>Cymbopogon refractus</i> <i>Heteropogon contortus</i> <i>Indigofera linnaei</i> <i>Neptunia gracilis*</i> <i>Rhynchosia minima</i> var. <i>australis</i> <i>Themeda triandra</i>	

SITE NUMBER	B1					
LEVEL	3°					
DETAIL SP. LIST	Complete					
REGIONAL ECOSYSTEM	Non-remnant					
DATE	March 08					
RECORDER	David Francis and John Dwyer					
LOCALITY	Dam					
SITE DESCRIPTION	Boggomoss					
GENERAL NOTES	Evidence of fire, previously cleared					
COMMUNITY AREA (ha)				COMMUNITY WIDTH (m)		
MAPPED (Current RE)	Non-remnant			REFERENCE SITE	N	
LANDFORM						
Situation	X	Element	SWP	Eros pattern	LP	Pattern
SLOPE						
Type	LE	Slope		0	Aspect	-
SOILS						
Source	I	Reliability	Low	Code	-	data
GEOLOGY				No	ISB/MU	
Source	I	Reliability	Low	Code	B	Map Unit
SPECHT STRUCTURE CODE				-		Qa
GROUND (%)						
Litter	-	Rock	-	Bare	-	Cryptophyte
RAINFOREST					-	Vegetation
Struct.	-	Leaf Size	-	Leaf fall	-	Floor Comp
Complexity					-	In. Gr Forms
DISTURBANCE						
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)	-	
Fire (Proportion/Age/Height)	-			Salinity	-	
Logging (#)	-			Ringbarking /Thinning (#)	-	
Grazing	Y			Feral Digging	-	
Weeds (% Cover)	-			Remnant	-	
Erosion (Type/Severity):	-					

SITE NUMBER		B1			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Ludwigia octovalvis</i> <i>Phragmites australis</i> <i>Chloris gayana</i> * <i>Marsilea drummondii</i>	

SITE NUMBER	B2					
LEVEL	3°					
DETAIL SP. LIST	Complete					
REGIONAL ECOSYSTEM	Non-remnant					
DATE	March 08					
RECORDER	David Francis and John Dwyer					
LOCALITY	Dam					
SITE DESCRIPTION	Boggomoss					
GENERAL NOTES	Previously unmapped					
COMMUNITY AREA (ha)			COMMUNITY WIDTH (m)			
MAPPED (Current RE)	Non-remnant		REFERENCE SITE		N	
LANDFORM						
Situation	X	Element	SWP	Eros pattern	LP	Pattern
SLOPE						
Type	LE	Slope		0	Aspect	-
SOILS						
Source	-	Reliability	-	Code	-	data
GEOLOGY						
Source	I	Reliability	Low	Code	B	Map Unit
SPECHT STRUCTURE CODE						
GROUND (%)						
Litter	-	Rock	-	Bare	-	Cryptophyte
RAINFOREST						
Struct. Complexity	-	Leaf Size	-	Leaf fall	-	Floor Comp
DISTURBANCE						
Storm damage (Proportion/Age)	-		Road Works (Proportion/Age)		-	
Fire (Proportion/Age/Height)	-		Salinity		-	
Logging (#)	-		Ringbarking /Thinning (#)		-	
Grazing	Y		Feral Digging		-	
Weeds (% Cover)	-		Remnant		-	
Erosion (Type/Severity):	-					

SITE NUMBER		B2			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Cyperus bifax</i> <i>Echinochloa colona</i> <i>Echinochloa crus-galli</i> * <i>Eleocharis pallens</i> <i>Eucalyptus camaldulensis</i> (very young) <i>Ludwigia octovalvis</i> <i>Marsilea drummondii</i> <i>Paspalum distichum</i> <i>Phragmites australis</i> <i>Sesbania cannabina</i> <i>Triglochin dubium</i>	

SITE NUMBER	B3																	
LEVEL	3°																	
DETAIL SP. LIST	Complete																	
REGIONAL ECOSYSTEM	Non-remnant																	
DATE	March 08																	
RECORDER	David Francis and John Dwyer																	
LOCALITY	Dam																	
SITE DESCRIPTION	Boggomoss																	
GENERAL NOTES																		
COMMUNITY AREA (ha)					COMMUNITY WIDTH (m)													
MAPPED (Current RE)	Non-remnant		REFERENCE SITE		N													
LANDFORM																		
Situation	X	Element	SWP	Eros pattern	UP	Pattern	PLA											
SLOPE																		
Type	VG		Slope		0-1	Aspect												
SOILS																		
Source	-	Reliability	-	Code	-	data	-	ISB/MU	-	Colour	-	Texture	-					
GEOLOGY																		
Source	I	Reliability	Low	Code	B	Map Unit	Qa											
SPECHT STRUCTURE CODE	LOW																	
GROUND (%)																		
Litter	-	Rock	-	Bare	-	Cryptophyte	-	Vegetation	-									
RAINFOREST																		
Struct. Complexity	-	Leaf Size	-	Leaf fall	-	Floor Comp	-	In. Gr Forms	-									
DISTURBANCE																		
Storm damage (Proportion/Age)	-				Road Works (Proportion/Age)		-											
Fire (Proportion/Age/Height)	-				Salinity		-											
Logging (#)	-				Ringbarking /Thinning (#)		-											
Grazing	-				Feral Digging		-											
Weeds (% Cover)	-				Remnant		-											
Erosion (Type/Severity):	-																	



SITE NUMBER		B3			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1		8		<i>Eucalyptus camaldulensis</i>	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Echinochloa crus-galli</i> * <i>Hypericum gramineum</i> <i>Isachne globosa</i> <i>Leersia hexandra</i> <i>Ludwigia octovalvis</i> <i>Paspalum urvillei</i> * <i>Sacciolepis indica</i> <i>Schoenoplectus mucronatus</i> <i>Typha domingensis</i> <i>Vigna vexillata</i>	

SITE NUMBER	B4												
LEVEL	3°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	Non-remnant												
DATE	March 08												
RECORDER	David Francis and John Dwyer												
LOCALITY	Dam												
SITE DESCRIPTION	Boggomoss												
GENERAL NOTES	Was dry for 10 yrs after tractor got stuck. Recently has water again.												
COMMUNITY AREA (ha)			COMMUNITY WIDTH (m)										
MAPPED (Current RE)	Non-remnant		REFERENCE SITE		N								
LANDFORM													
Situation	X	Element	SWP	Eros pattern	LP	Pattern	PLA						
SLOPE													
Type	LE	Slope		0	Aspect	-							
SOILS													
Source	x	Reliability	x	Code	x	data	x	ISB/MU		Colour	x	Texture	x
GEOLOGY													
Source	I	Reliability		Low	Code	B		Map Unit		Qa			
SPECCHT STRUCTURE CODE													
OW													
GROUND (%)													
Litter	x	Rock	x	Bare	x	Cryptophyte	x	Vegetation	x				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)			-						
Fire (Proportion/Age/Height)	-			Salinity			-						
Logging (#)	-			Ringbarking /Thinning (#)			-						
Grazing	Y			Feral Digging			-						
Weeds (% Cover)	-			Remnant			-						
Erosion (Type/Severity):	-												

SITE NUMBER		B4			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				<i>Eucalyptus camaldulensis</i>	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Sesbania cannabina</i> <i>Ludwigia octovalvis</i> <i>Marsilea drummondii</i> <i>Damasonium minus</i> <i>Echinochloa crus-galli</i>	

SITE NUMBER	B5						
LEVEL	3°						
DETAIL SP. LIST	Complete						
REGIONAL ECOSYSTEM	Non-remnant						
DATE	March 08						
RECORDER	David Francis and John Dwyer						
							
LOCALITY	Dam						
SITE DESCRIPTION	Boggomoss						
GENERAL NOTES	Previously unmapped						
COMMUNITY AREA (ha)				COMMUNITY WIDTH (m)			
MAPPED (Current RE)	11.3.3/11.3.2			REFERENCE SITE		N	
LANDFORM							
Situation	X	Element	SWP	Eros pattern	LP	Pattern	PLA
SLOPE							
Type	LE	Slope		0	Aspect		-
SOILS							
Source	-	Reliability	-	Code	-	data	-
GEOLOGY							
Source	I	Reliability	Low	Code	B	Map Unit	Qa
SPECHT STRUCTURE CODE							
SH							
GROUND (%)							
Litter	-	Rock	-	Bare	-	Cryptophyte	-
Vegetation							
RAINFOREST							
Struct. Complexity	-	Leaf Size	-	Leaf fall	-	Floor Comp	-
In. Gr Forms							
DISTURBANCE							
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)		-	
Fire (Proportion/Age/Height)	-			Salinity		-	
Logging (#)	-			Ringbarking /Thinning (#)		-	
Grazing	Y			Feral Digging		-	
Weeds (% Cover)	-			Remnant		-	
Erosion (Type/Severity):	-						

SITE NUMBER		B5			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				<i>Eucalyptus coolabah</i>	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Ammannia multiflora</i> <i>Chloris gayana</i> * <i>Cyclosorus interruptus</i> <i>Cynodon dactylon</i> <i>Cyperus bifax</i> <i>Cyperus difformis</i> <i>Cyperus exaltatus</i> <i>Ludwigia peploides</i> subsp. <i>Montevidensis</i> <i>Lythrum salicaria</i> <i>Marsilea drummondii</i> <i>Muehlenbeckia florulenta</i> <i>Phragmites australis</i> <i>Schoenoplectus mucronatus</i>	

SITE NUMBER	B9												
LEVEL	3°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.4												
DATE	March 08												
RECORDER	David Francis and John Dwyer												
LOCALITY	Spring Creek												
SITE DESCRIPTION	Boggomoss												
GENERAL NOTES	Maybe Fensham 51												
COMMUNITY AREA (ha)	A		COMMUNITY WIDTH (m)		A								
MAPPED (Current RE)	11.3.4		REFERENCE SITE		N								
LANDFORM													
Situation	X	Element	SWP	Eros pattern	LP	Pattern	LOW						
SLOPE													
Type	VG	Slope (%)		1-2		Aspect	-						
SOILS													
Source	-	Reliability	-	Code	-	data	-	ISB/MU	-				
GEOLOGY													
Source	I	Reliability		Low	Code	B	Map Unit	Jlp					
SPECCHT STRUCTURE CODE	W												
GROUND (%)													
Litter	x	Rock	x	Bare	x	Cryptophyte	x	Vegetation	x				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)			-						
Fire (Proportion/Age/Height)	-			Salinity			-						
Logging (#)	-			Ringbarking /Thinning (#)			-						
Grazing	-			Feral Digging			-						
Weeds (% Cover)	-			Remnant			-						
Erosion (Type/Severity):	-												

SITE NUMBER		B9			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Centella asiatica</i> <i>Cyclosorus interruptus</i> <i>Cyperus bifax</i> <i>Cyperus difformis</i> <i>Eleocharis dulcis</i> * <i>Lomandra longifolia</i> <i>Ludwigia octovalvis</i> <i>Marsilea drummondii</i> <i>Persicaria strigosa</i> <i>Schoenoplectus mucronatus</i> (NB list not exhaustive)	

SITE NUMBER	B10						
LEVEL	3°						
DETAIL SP. LIST	Complete						
REGIONAL ECOSYSTEM	11.3.4						
DATE	March 08						
RECORDER	David Francis and John Dwyer						
							
LOCALITY	Spring Creek						
SITE DESCRIPTION	Boggomoss						
GENERAL NOTES	Maybe Fensham 51. Approximately 30x100m in size						
COMMUNITY AREA (ha)	B		COMMUNITY WIDTH (m)		D		
MAPPED (Current RE)	11.3.4		REFERENCE SITE		N		
LANDFORM							
Situation	X	Element	SWP	Eros pattern	LP	Pattern	PLA
SLOPE							
Type	VG	Slope (%)		0-1	Aspect	x	
SOILS							
Source	x	Reliability	x	Code	x	data	x
ISB/MU		Colour	x	Texture	x		
GEOLOGY							
Source	I	Reliability	Low	Code	B	Map Unit	Jlp
SPECHT STRUCTURE CODE							
GROUND (%)							
Litter	x	Rock	x	Bare	x	Cryptophyte	x
Vegetation x							
RAINFOREST							
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X
In. Gr Forms	X						
DISTURBANCE							
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)		-	
Fire (Proportion/Age/Height)	-			Salinity		-	
Logging (#)	-			Ringbarking /Thinning (#)		-	
Grazing	-			Feral Digging		-	
Weeds (% Cover)	-			Remnant		-	
Erosion (Type/Severity):	-						

SITE NUMBER		B10			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Ammannia multiflora</i> <i>Cyclosorus interruptus</i> <i>Eleocharis dulcis*</i> <i>Ludwigia octovalvis</i> <i>Persicaria strigosa</i> (NB list not exhaustive)	

SITE NUMBER	B11				
LEVEL	3°				
DETAIL SP. LIST	Complete				
REGIONAL ECOSYSTEM	11.3.4				
DATE	March 08				
RECORDER	David Francis and John Dwyer				
LOCALITY	Dam				
SITE DESCRIPTION	Boggomoss				
GENERAL NOTES	Approximately 5m in diameter				
COMMUNITY AREA (ha)	A		COMMUNITY WIDTH (m)	A	
MAPPED (Current RE)	11.3.4		REFERENCE SITE	N	
LANDFORM					
Situation	X	Element	SWP	Eros pattern	LP
SLOPE					
Type	x	Slope		x	Aspect
SOILS					
Source	x	Reliability	x	Code	x
GEOLOGY					
Source	I	Reliability	Low	Code	B
SPECHT STRUCTURE CODE					
GROUND (%)					
Litter	x	Rock	x	Bare	x
RAINFOREST					
Struct. Complexity	X	Leaf Size	X	Leaf fall	X
DISTURBANCE					
Storm damage (Proportion/Age)	-		Road Works (Proportion/Age)	-	
Fire (Proportion/Age/Height)	-		Salinity	-	
Logging (#)	-		Ringbarking /Thinning (#)	-	
Grazing	-		Feral Digging	-	
Weeds (% Cover)	-		Remnant	-	
Erosion (Type/Severity):	-				

SITE NUMBER		B11			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Cyclosorus interruptus</i> <i>Hydrocotyle verticillata</i> <i>Persicaria strigosa</i> <i>Schoenoplectus mucronatus</i> <i>Schoenoplectus validus</i>	

SITE NUMBER	B12				
LEVEL	3°				
DETAIL SP. LIST	Complete				
REGIONAL ECOSYSTEM	11.3.4				
DATE	March 08				
RECORDER	David Francis and John Dwyer				
LOCALITY	Spring Creek				
SITE DESCRIPTION	Boggomoss				
GENERAL NOTES	Approximately 15m x 5m in size				
COMMUNITY AREA (ha)			COMMUNITY WIDTH (m)		
MAPPED (Current RE)	11.3.4		REFERENCE SITE		N
LANDFORM					
Situation	X	Element	SWP	Eros pattern	UP
SLOPE					
Type	VG		Slope (%)	1-2	Aspect
SOILS					
Source	x	Reliability	x	Code	x
GEOLOGY					
Source	I	Reliability	Low	Code	B
SPECHT STRUCTURE CODE					
GROUND (%)					
Litter	x	Rock	x	Bare	x
RAINFOREST					
Struct. Complexity	X	Leaf Size	X	Leaf fall	X
DISTURBANCE					
Storm damage (Proportion/Age)	-		Road Works (Proportion/Age)		-
Fire (Proportion/Age/Height)	-		Salinity		-
Logging (#)	-		Ringbarking /Thinning (#)		-
Grazing	-		Feral Digging		-
Weeds (% Cover)	-		Remnant		-
Erosion (Type/Severity):	-				

SITE NUMBER		B12			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Centella asiatica</i> <i>Cyclosorus interruptus</i> <i>Cyperus exaltatus</i> <i>Ficus opposita</i> <i>Lomandra longifolia</i> <i>Ludwigia octovalvis</i> <i>Marsilea drummondii</i> <i>Schoenoplectus mucronatus</i> (NB list not exhaustive)	

SITE NUMBER	B13												
LEVEL	3°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.4												
DATE	March 08												
RECORDER	David Francis and John Dwyer												
LOCALITY	Spring Creek												
SITE DESCRIPTION	Boggomoss												
GENERAL NOTES	Boggomoss severed by creek												
COMMUNITY AREA (ha)			COMMUNITY WIDTH (m)										
MAPPED (Current RE)	11.3.4		REFERENCE SITE		N								
LANDFORM													
Situation	X	Element	BAN	Eros pattern	GP	Pattern							
SLOPE													
Type	x	Slope		x	Aspect	x							
SOILS													
Source	x	Reliability	x	Code	x	data	x	ISB/MU		Colour	x	Texture	x
GEOLOGY													
Source	I	Reliability	Low	Code	B		Map Unit	Jlp					
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	x	Rock	x	Bare	x	Cryptophyte	x	Vegetation	x				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)	-								
Fire (Proportion/Age/Height)	-			Salinity	-								
Logging (#)	-			Ringbarking /Thinning (#)	-								
Grazing	-			Feral Digging	-								
Weeds (% Cover)	-			Remnant	-								
Erosion (Type/Severity):	-												

SITE NUMBER		B13			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Cyclosorus interruptus</i> <i>Eleocharis dulcis</i> * <i>Juncus usitatus</i> <i>Ludwigia octovalvis</i> <i>Marsilea drummondii</i> <i>Persicaria strigosa</i> <i>Schoenoplectus mucronatus</i> <i>Xanthium pungens</i> * (NB list not exhaustive)	

SITE NUMBER	B14												
LEVEL	3°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.4												
DATE	March 08												
RECORDER	David Francis and John Dwyer												
LOCALITY	Dam												
SITE DESCRIPTION	Boggomoss												
GENERAL NOTES													
COMMUNITY AREA (ha)	A		COMMUNITY WIDTH (m)		B								
MAPPED (Current RE)	11.3.4		REFERENCE SITE		N								
LANDFORM													
Situation	X	Element	SWP	Eros pattern	LP	Pattern	PLA						
SLOPE													
Type	x	Slope		x	Aspect		x						
SOILS													
Source	x	Reliability	x	Code	x	data	x	ISB/MU		Colour	x	Texture	x
GEOLOGY													
Source	I	Reliability	Low	Code	B		Map Unit	Jlp					
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	x	Rock	x	Bare	x	Cryptophyte	x	Vegetation	x				
RAINFOREST													
Struct.	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
Complexity													
DISTURBANCE													
Storm damage (Proportion/Age)	-		Road Works (Proportion/Age)		-								
Fire (Proportion/Age/Height)	-		Salinity		-								
Logging (#)	-		Ringbarking /Thinning (#)		-								
Grazing	-		Feral Digging		-								
Weeds (% Cover)	-		Remnant		-								
Erosion (Type/Severity):	-												

SITE NUMBER		B14			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent					
Tree 1					
Tree 2					
Tree 3					
Shrub 1					
Shrub 2					
Ground				<i>Cyclosorus interruptus</i> <i>Eriocaulon scariosum</i> <i>Lobelia membranacea</i> <i>Paspalum scrobiculatum</i> <i>Persicaria strigosa</i> <i>Ranunculus sessiliflorus</i> <i>Schoenoplectus mucronatus</i> <i>Viola betonicifolia</i> (NB list not exhaustive)	

SITE NUMBER	B15				
LEVEL	3°				
DETAIL SP. LIST	Complete				
REGIONAL ECOSYSTEM	11.3.4				
DATE	March 08				
RECORDER	David Francis and John Dwyer				
LOCALITY	Spring Creek				
SITE DESCRIPTION	Boggomoss				
GENERAL NOTES					
COMMUNITY AREA (ha)			COMMUNITY WIDTH (m)		
MAPPED (Current RE)	11.3.4		REFERENCE SITE		N
LANDFORM					
Situation	X	Element	SWP	Eros pattern	LP
SLOPE					
Type	x	Slope		x	Aspect
SOILS					
Source	x	Reliability	x	Code	x
data	x		x	ISB/MU	
Colour	x		x	Texture	x
GEOLOGY					
Source	I	Reliability	Low	Code	B
SPECHT STRUCTURE CODE					
GROUND (%)					
Litter	x	Rock	x	Bare	x
Cryptophyte			x	Vegetation	x
RAINFOREST					
Struct. Complexity	X	Leaf Size	X	Leaf fall	X
Floor Comp			x	In. Gr Forms	X
DISTURBANCE					
Storm damage (Proportion/Age)	-		Road Works (Proportion/Age)		-
Fire (Proportion/Age/Height)	-		Salinity		-
Logging (#)	-		Ringbarking /Thinning (#)		-
Grazing	-		Feral Digging		-
Weeds (% Cover)	-		Remnant		-
Erosion (Type/Severity):	-				

SITE NUMBER		B15			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent					
Tree 1				<i>Eucalyptus camaldulensis</i> <i>Livistona nitida</i>	
Tree 2					
Tree 3					
Shrub 1					
Shrub 2					
Ground				<i>Cyclosorus interruptus</i> <i>Hydrocotyle verticillata</i> <i>Lythrum salicaria</i> (NB list not exhaustive)	

Nathan Dam Tertiary Sites

Winter

12 June – 18 June 2008

W89 - Reference Site for RE 11.3.27

SITE NUMBER	W89												
LEVEL	3°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.27												
DATE	17/06/2008												
RECORDER	David Francis and Shelley Trevaskis												
LOCALITY	Tiaroom												
													
SITE DESCRIPTION	Dam with fringing eucalyptus/palms												
GENERAL NOTES	Rosevale												
COMMUNITY AREA (ha)	B	COMMUNITY WIDTH (m)	A										
MAPPED (Current RE?)	11.3.27	REFERENCE SITE	Y										
LANDFORM													
Situation	B	Element	CBE										
Eros pattern	GR	Pattern	ALP										
SLOPE													
Type	VG	Slope (%)	1-3										
Aspect (°)				180									
SOILS													
Source	I	Reliability	Low	Code	G	Add data	No	ISB/MU		Colour	B	Texture	A
GEOLOGY													
Source	I	Reliability	Low	Code	B	Map Unit	Jlh						
SPECHT STRUCTURE CODE				OF									
GROUND (%)													
Litter	10	Rock	0	Bare ground	80	Cryptophyte	0	Vegetation	10				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage(Proportion/Age)	0				Road Works (Proportion/Age)	0							
Fire (Proportion/Age/Height)	0				Salinity	0							
Logging (#)	0				Grazing	2							
Ringbarking /Thinning (#)	0				Extensive Clearing	surrounding							
Weeds (% Cover)	0				Feral Digging	N							
Remnant					Erosion (Type/Severity)	0							

SITE NUMBER		W89			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent					
Tree 1	14-25	20		<i>Eucalyptus tereticornis</i> <i>Eucalyptus coolabah</i>	
Tree 2	2-12	6		<i>Livistona nitida</i> <i>Lophostemon suaveolens</i>	
Tree 3					
Shrub 1	0--1	1		<i>Acacia farnesiana</i> <i>Geijera parviflora</i>	
Shrub 2					
Ground				<i>Amyema congener subsp congener</i> <i>Arundinella nepalensis</i> <i>Malva parviflora</i> <i>Mariana microphylla</i> <i>Rumex tenax</i> <i>Salsola kali</i> <i>Sclerolaena muricata</i> <i>Sida rhombifolia</i>	

SITE NUMBER	W90		<i>No Image</i>										
LEVEL	3°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.27												
DATE	17/06/2008												
RECORDER	David Francis and Shelley Trevaskis												
LOCALITY	Taroom												
SITE DESCRIPTION	Livistona nitida wetland												
GENERAL NOTES	Wetland unmapped												
COMMUNITY AREA (ha)	B		COMMUNITY WIDTH (m)		A								
MAPPED (Current RE?)	Non-remnant		REFERENCE SITE		N								
LANDFORM													
Situation	B	Element	CBE	Eros pattern	GR	Pattern		ALP					
SLOPE													
Type	VG		Slope (%)		1-3		Aspect (°)		-				
SOILS													
Source	I	Reliability	Low	Code	G	Add data	No	ISB/MU		Colour	B	Texture	A
GEOLOGY													
Source	I	Reliability	Low	Code	G		Map Unit	Jlh					
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	-	Rock	-	Bare ground	-	Cryptophyte	-	Vegetation	-				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	0			Road Works (Proportion/Age)			0						
Fire (Proportion/Age/Height)	0			Salinity			0						
Logging (#)	0			Grazing			-						
Ringbarking /Thinning (#)	0			Extensive Clearing			0						
Weeds (% Cover)	0			Feral Digging			N						
Remnant				Erosion (Type/Severity)			0						

SITE NUMBER		W90			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent					
Tree 1				<i>Livistona nitida</i>	
Tree 2					
Tree 3					
Shrub 1					
Shrub 2					
Ground				<i>Marsilea drummondii</i> <i>Eleocharis equisetina</i>	

SITE NUMBER	B6												
LEVEL	3°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	Non-remnant												
DATE	12/6/08												
RECORDER	David Francis and Shelley Trevaskis												
LOCALITY	Taroom												
SITE DESCRIPTION	Boggomoss sunken in landscape.												
GENERAL NOTES	Previously unmapped. Dry at the time of survey but evidence of recent water.												
COMMUNITY AREA (ha)				COMMUNITY WIDTH (m)									
MAPPED (Current RE)	Non-remnant			REFERENCE SITE				N					
LANDFORM													
Situation	X	Element	SWP	Eros pattern	LP	Pattern	PLA						
SLOPE													
Type	VG	Slope		0-1	Aspect		x						
SOILS													
Source	-	Reliability	-	Code	-	data	-	ISB/MU		Colour	-	Texture	-
GEOLOGY													
Source	I	Reliability	Low	Code	B		Map Unit	Qa					
SPECHT STRUCTURE CODE													
Litter	x	Rock	x	Bare	x	Cryptophyte	x	Vegetation	x				
RAINFOREST													
Struct.	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
Complexity													
DISTURBANCE													
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)				-					
Fire (Proportion/Age/Height)	-			Salinity				-					
Logging (#)	-			Ringbarking /Thinning (#)				-					
Grazing	Y			Feral Digging				-					
Weeds (% Cover)	-			Remnant				-					
Erosion (Type/Severity):	-												

SITE NUMBER		B6			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Ammannia multiflora</i> <i>Cynodon dactylon</i> <i>Cyperus difformis</i> <i>Cyperus haspan subsp. haspan</i> <i>Echinochloa crus-galli*</i> <i>Malva parviflora*</i> <i>Paspalum distichum</i> <i>Sesbania cannabina</i> <i>Sida rhombifolia*</i>	

SITE NUMBER	B7	No image											
LEVEL	3°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM													
DATE	June 08												
RECORDER	David Francis and Shelley Trevaskis												
LOCALITY	Dam												
SITE DESCRIPTION	Boggomoss												
GENERAL NOTES	Maybe Fensham 51												
COMMUNITY AREA (ha)	A	COMMUNITY WIDTH (m)		A									
MAPPED (Current RE)	11.3.4	REFERENCE SITE		N									
LANDFORM													
Situation	X	Element	SWP	Eros pattern	LP	Pattern	PLA						
SLOPE													
Type	LE	Slope		0	Aspect		x						
SOILS													
Source	x	Reliability	x	Code	x	data	x	ISB/MU		Colour	x	Texture	x
GEOLOGY													
Source	I	Reliability	Low	Code	B		Map Unit	Jle					
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	x	Rock	x	Bare	x	Cryptophyte	x	Vegetation	x				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)			-						
Fire (Proportion/Age/Height)	-			Salinity			-						
Logging (#)	-			Ringbarking /Thinning (#)			-						
Grazing	-			Feral Digging			-						
Weeds (% Cover)	-			Remnant			-						
Erosion (Type/Severity):	-												

SITE NUMBER		B7			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Chloris gayana</i> * <i>Cynodon dactylon</i> <i>Eriocaulon scariosum</i> <i>Lindernia</i> sp. (Bribie Island S.T. Blake 7089).	

SITE NUMBER	B8			
LEVEL	3°			
DETAIL SP. LIST	Complete			
REGIONAL ECOSYSTEM				
DATE	June 08			
RECORDER	David Francis and Shelley Trevaskis			
				
LOCALITY	Dam			
SITE DESCRIPTION	Boggomoss			
GENERAL NOTES				
COMMUNITY AREA (ha)	A	COMMUNITY WIDTH (m)	A	
MAPPED (Current RE)	11.3.4	REFERENCE SITE	N	
LANDFORM				
Situation	X	Element	SWP	
Eros pattern		LP	Pattern	
PLA				
SLOPE				
Type	LE	Slope	0	
Aspect			x	
SOILS				
Source	x	Reliability	x	
Code	x	data	x	
ISB/MU		Colour	x	
Texture	x			
GEOLOGY				
Source	I	Reliability	Low	
Code		B	Map Unit	
Jlp				
SPECHT STRUCTURE CODE				
SH				
GROUND (%)				
Litter	x	Rock	x	
Bare		x	Cryptophyte	
			x	
Vegetation	x			
RAINFOREST				
Struct.	X	Leaf Size	X	
Complexity		Leaf fall	X	
		Floor Comp	X	
		In. Gr Forms	X	
DISTURBANCE				
Storm damage (Proportion/Age)	-		Road Works (Proportion/Age)	-
Fire (Proportion/Age/Height)	-		Salinity	-
Logging (#)	-		Ringbarking /Thinning (#)	-
Grazing	-		Feral Digging	-
Weeds (% Cover)	-		Remnant	-
Erosion (Type/Severity):	-			

SITE NUMBER		B8			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Ampelopteris prolifera</i> <i>Cynodon dactylon</i> <i>Hydrocharis dubia</i> <i>Livistona nitida</i> <i>Ludwigia octovalvis</i> <i>Marsilea drummondii</i> <i>Schoenoplectus validus</i> <i>Viola betonicifolia</i>	

SITE NUMBER	B16		No Image										
LEVEL	3°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.4												
DATE	June 08												
RECORDER	David Francis and Shelley Trevaskis												
LOCALITY	Glebe												
SITE DESCRIPTION	Boggomoss												
GENERAL NOTES													
COMMUNITY AREA (ha)	A		COMMUNITY WIDTH (m)	A									
MAPPED (Current RE)	11.3.4		REFERENCE SITE	N									
LANDFORM													
Situation	X	Element	SWP	Eros pattern	LP	Pattern	PLA						
SLOPE													
Type	x	Slope		x	Aspect		x						
SOILS													
Source	x	Reliability	x	Code	x	data	x	ISB/MU		Colour	x	Texture	x
GEOLOGY													
Source	I	Reliability	Low	Code	B	Map Unit	Jlp						
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	x	Rock	x	Bare	x	Cryptophyte	x	Vegetation	x				
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)	-								
Fire (Proportion/Age/Height)	-			Salinity	-								
Logging (#)	-			Ringbarking /Thinning (#)	-								
Grazing	-			Feral Digging	-								
Weeds (% Cover)	-			Remnant	-								
Erosion (Type/Severity):	-												

SITE NUMBER		B16	continued	
STRUCTURAL SUMMARY				
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species
Emergent				
Tree 1				
Tree 2				
Tree 3				
Shrub 1				
Shrub 2				
Ground				<i>Centella asiatica</i> <i>Cyclosorus interruptus</i> <i>Marsilea drummondii</i> <i>Schoenoplectus mucronatus</i> <i>Viola betonicifolia</i>

SITE NUMBER	B17												
LEVEL	3°												
DETAIL SP. LIST	Complete												
REGIONAL ECOSYSTEM	11.3.4												
DATE	June 08												
RECORDER	David Francis and Shelley Trevaskis												
LOCALITY	Glebe												
SITE DESCRIPTION	Boggomoss												
GENERAL NOTES													
COMMUNITY AREA (ha)	A		COMMUNITY WIDTH (m)	A									
MAPPED (Current RE)	11.3.4		REFERENCE SITE	N									
LANDFORM													
Situation	X	Element	SWP	Eros pattern	LP								
SLOPE													
Type	x	Slope		x	Aspect								
SOILS													
Source	x	Reliability	x	Code	x	data	x	ISB/MU		Colour	x	Texture	x
GEOLOGY													
Source	I	Reliability	Low	Code	B		Map Unit	Jlp					
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	x	Rock	x	Bare	x	Cryptophyte	x	Vegetation	x				
RAINFOREST													
Struct.	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)	-								
Fire (Proportion/Age/Height)	-			Salinity	-								
Logging (#)	-			Ringbarking /Thinning (#)	-								
Grazing	-			Feral Digging	-								
Weeds (% Cover)	-			Remnant	-								
Erosion (Type/Severity):	-												

SITE NUMBER		B17			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent				N/A	
Tree 1				N/A	
Tree 2				N/A	
Tree 3				N/A	
Shrub 1				N/A	
Shrub 2				N/A	
Ground				<i>Centella asiatica</i> <i>Cyclosorus interruptus</i> <i>Eleocharis dulcis*</i> <i>Marsilea drummondii</i> <i>Phragmites australis</i> <i>Viola betonicifolia</i>	

Nathan Dam Tertiary Sites
Spring
4 Sept 2008 – 5 Sept 2008

SITE NUMBER	1													
LEVEL	3°													
DETAIL SP. LIST	Complete													
REGIONAL ECOSYSTEM	Non-remnant													
DATE	4/09/2008													
RECORDER	DAVID FRANCIS, SHELLEY TREVASKIS and AMY PROWD													
LOCALITY	Wandoan													
SITE DESCRIPTION	Acacia harpophylla with an understorey dominated by <i>Cenchrus ciliaris</i> *													
GENERAL NOTES	Nathan Road mapped as Pre-clearing RE 11.9.12. Search for <i>Dichanthium queenslandicum</i> .													
COMMUNITY AREA (ha)	A		COMMUNITY WIDTH (m)		A									
MAPPED (Current RE)	Non-remnant		REFERENCE SITE		N									
LANDFORM														
Situation	F	Element	HSL	Eros pattern	UL	Pattern	Low							
SLOPE														
Type	VG		Slope	1-2		Aspect	270							
SOILS														
Source	S	Reliability	Low	Code	K	data	N	ISB/MU		Colour	F	Texture	A	
GEOLOGY														
Source	I	Reliability	Low	Code	G		Map Unit	Jle						
SPECHT STRUCTURE CODE														
GROUND (%)														
Litter	x	Rock	x	Bare	x	Cryptophyte	x	Vegetation	x					
RAINFOREST														
Struct.	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X					
DISTURBANCE														
Storm damage (Proportion/Age)					Road Works (Proportion/Age)									
Fire (Proportion/Age/Height)					Salinity									
Logging (#)					Ringbarking /Thinning (#)									
Grazing					Feral Digging									
Weeds (% Cover)					Remnant									
Erosion (Type/Severity):														

SITE NUMBER		1			continued
STRUCTURAL SUMMARY					
Stratum	Median Height (m)	Height Range in Strata (m)	Cover (%) (100m transect)	Species	
Emergent					
Tree 1	3	2-4	(Sparse)	<i>Acacia harpophylla</i> <i>Acacia excelsa</i> <i>Eremophila mitchellii</i> <i>Notelaea microcarpa</i>	
Tree 2					
Tree 3					
Shrub 1					
Shrub 2					
Ground	0.5	0-0.5	(dense)	<i>Cenchrus ciliaris*</i> (dominant) <i>Salsola kali</i> <i>Enchytraea tomentosa</i> <i>Senecio pinnatifolia</i> <i>Maireana microphylla</i> <i>Atriplex muelleri</i> <i>Jasminum didymum subsp. <i>lineare</i></i> <i>Sclerolaena muricata</i> var. <i>muricata</i> <i>Sporobolus creber</i> <i>Citrus glauca</i>	

Nathan Dam Tertiary Sites
Summer
1 Dec 2008

SITE NUMBER	D1																				
LEVEL	3°																				
DETAIL SP. LIST	Complete																				
REGIONAL ECOSYSTEM	11.4.12																				
DATE	1/12/2008																				
RECORDER	David Francis																				
LOCALITY	Warra																				
SITE DESCRIPTION	<i>Eucalyptus populnea</i> and <i>Acacia pendula</i> Open Woodland																				
GENERAL NOTES																					
COMMUNITY AREA (ha)	B			COMMUNITY WIDTH (m)				A													
MAPPED (Current RE)	11.4.12			REFERENCE SITE				N													
LANDFORM																					
Situation	A	Element	PLA	Eros pattern	UP	Pattern	PLA														
SLOPE																					
Type	VG	Slope (%)	<3	Aspect (°)	-																
SOILS																					
Source	S	Reliability	Low	Code	G	Add data	No	ISB/MU	Colour	K	Texture	H									
GEOLOGY																					
Source	I	Reliability	Low	Code	B	Map Unit	Qa														
SPECHT STRUCTURE CODE	OW																				
GROUND (%)																					
Litter	-	Rock	-	Bare ground	-	Cryptophyte	-	Vegetation	-												
RAINFOREST																					
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X												
DISTURBANCE																					
Storm damage (Proportion/Age)	-			Road Works (Proportion/Age)				-													
Fire (Proportion/Age/Height)	-			Salinity				-													
Logging (#)	-			Grazing				-													
Ringbarking /Thinning (#)	-			Extensive Clearing				-													
Weeds (% Cover)	-			Feral Digging				-													
Remnant	-			Erosion (Type/Severity)				-													

Nathan Dam Tertiary Sites
Winter
June 15 – June 22 2010

Pw29

SITE NUMBER	Pw29												
LEVEL	3°												
DETAIL SP. LIST	Y												
REGIONAL ECOSYSTEM	11.4.3												
DATE	16/6/2010												
RECORDER	DF & AP												
LOCALITY													
SITE DESCRIPTION													
GENERAL NOTES In road reserve													
COMMUNITY AREA (ha)			C		COMMUNITY WIDTH (m)			A					
MAPPED (Current RE)			Non-remnant		REFERENCE SITE			N					
LANDFORM													
Situation	A	Element	FOO	Eros pattern	GP	Pattern	PLA						
SLOPE													
Type	GE	Slope (%)		1	Aspect (°)								
SOILS													
Source	I	Reliability	LOW	Code	K	Add data	N	ISB/MU	-	Colour	B	Texture	A
GEOLOGY													
Source	I	Reliability	LOW	Code	B	Map Unit		Qa					
SPECHT STRUCTURE CODE													
GROUND (%)													
Litter	30	Rock	-	Bare ground	45	Cryptophyte	-	Vegetation		25			
RAINFOREST													
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X				
DISTURBANCE													
Storm damage (Proportion/Age)	N			Road Works (Proportion/Age)	N								
Fire (Proportion/Age/Height)	N			Salinity	N								
Logging (#)	N			Ringbarking /Thinning (#)	N								
Grazing	Y			Feral Digging	N								
Weeds (% Cover)	N			Remnant									
Erosion (Type/Severity)				-									

SITE NUMBER		Pw29			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent					
Tree 1	8-15	15		<i>Casuarina cristata</i>	
Tree 2				<i>Geijera parviflora</i> <i>Notelaea microcarpa</i> <i>Cassine australis</i> var. <i>angustifolia</i>	
Tree 3					
Shrub 1				<i>Acacia excelsa</i> <i>Acacia semilunata</i> <i>Alstonia constricta</i> <i>Callitris glaucophylla</i> <i>Opuntia stricta</i> <i>Psydrax odorata</i>	
Shrub 2				<i>Alectryon diversifolius</i> <i>Carissa ovata</i> <i>Opuntia stricta</i> <i>Salsola kali</i> <i>Spartothamnella juncea</i>	
Ground				<i>Ancistrachne uncinulata</i> <i>Chenopodium cristatum</i> <i>Ehretia membranifolia</i> <i>Einadia hastata</i> <i>Elaeodendron australe</i> var. <i>angustifolia</i> <i>Jasminum didymum</i> <i>Lomandra longifolia</i> <i>Maireana microphylla</i> <i>Maireana pentagona</i> <i>Megathyrsus maximus</i> <i>Pimelea neoanglica</i> <i>Plectranthus parviflorus</i> <i>Solanum semiarmatum</i> <i>Tetragonia tetragonoides</i>	

Pw88

SITE NUMBER	Pw88													
LEVEL	3°													
DETAIL SP. LIST	Y													
REGIONAL ECOSYSTEM	11.5.21													
DATE	18-6-2010													
RECORDER	DF & AP													
LOCALITY	Glenrowan													
SITE DESCRIPTION	Corymbia blaxsomei with Cypress and Bulloke													
GENERAL NOTES	8 km SW of Glenrowan													
COMMUNITY AREA (ha)	C		COMMUNITY WIDTH (m)											
MAPPED (Current RE)	11.3.14		REFERENCE SITE											
LANDFORM														
Situation	A	Element		Eros pattern	LP	Pattern	PLA							
SLOPE														
Type	VG	Slope (%)	1	Aspect (°)										
SOILS														
Source	I	Reliability	Low	Code	H	Add data	-	ISB/MU	-	Colour	F	Texture	A	
GEOLOGY														
Source	I	Reliability	Low	Code	G	Map Unit		T						
SPECHT STRUCTURE CODE														
GROUND (%)														
Litter	5	Rock	5	Bare ground	20	Cryptophyte	-	Vegetation		70				
RAINFOREST														
Struct. Complexity	X	Leaf Size	X	Leaf fall	X	Floor Comp	X	In. Gr Forms	X					
DISTURBANCE														
Storm damage (Proportion/Age)	-		Road Works (Proportion/Age)			-								
Fire (Proportion/Age/Height)	-		Salinity			-								
Logging (#)	-		Ringbarking /Thinning (#)			-								
Grazing	-		Feral Digging			-								
Weeds (% Cover)	-		Remnant			-								
Erosion (Type/Severity)	-													

SITE NUMBER		Pw88			continued
STRUCTURAL SUMMARY					
Stratum	Height Range in Strata (m)	Median Height (m)	Cover (%) (100m transect)	Species	
Emergent					
Tree 1	-	-	-	<i>Corymbia bloxsomei</i>	
Tree 2	-	-	-	<i>Allocasuarina luehmannii</i> <i>Callitris glauophylla</i> <i>Callitris endlicheri</i>	
Tree 3	-				
Shrub 1	-	-	-	<i>Hakea purpurea</i> <i>Leucopogon pleiospermus</i> <i>Persoonia sericea</i>	
Shrub 2	-	-	-	<i>Daviesia villifera</i>	
Ground	-	-	-	<i>Boronia bipinnata</i> <i>Dodonaea peduncularis</i> <i>Homoranthus decumbens</i> <i>Laxmannia gracilis</i> <i>Leucopogon biflorus</i> <i>Trachymene ochracea</i>	

APPENDIX C

Species recorded by Dowling & Halford (1997) and associated vegetation communities

The table below compares Vegetation Communities described by Dowling & Halford (1997) with the current regional ecosystem framework. Regional ecosystems were ascribed as best as possible to the vegetation communities based on the descriptions provided by Dowling & Halford (1997), comparison between the 1:10,000 regional ecosystem prepared for this project and the 1:25,000 Dowling & Halford (1997) map and field observations.

Hyder	Vegetation Community Description	Equivalent Regional Ecosystems
1	Tall Open Forest of <i>Eucalyptus camaldulensis</i> (river red gum), <i>Eucalyptus tereticornis</i> (forest red gum) and <i>Eucalyptus coolabah</i> (coolabah).	11.3.25
2	Very Tall Open Forest-Tall Woodland of <i>Eucalyptus camaldulensis</i> (river red gum) and <i>Eucalyptus tereticornis</i> (forest red gum)	11.3.4
3	Tall Woodland – Mid High Open Forest of <i>Eucalyptus coolabah</i>	11.3.3
4	Tall Open Forest of <i>Callitris glaucophylla</i> (white cypress pine)	11.10.9 & 11.3.19
5	Tall Open Forest – Mid High Open Forest – Mid High Woodland of <i>Eucalyptus crebra</i> (narrow leaved ironbark) and <i>Callitris glaucophylla</i>	11.10.7, 11.10.7a & 11.10.9
6	Tall Woodland – Mid High Open Forest of <i>Acacia harpophylla</i> (brigalow), vine thicket and <i>Eucalyptus spp.</i>	11.9.1 and 11.9.5
7	Tall Open Forest – Mid High Woodland of <i>Eucalyptus populnea</i> (poplar box)	11.3.2
8	Tall Woodland – Mid High Open Forest – Mid High Woodland of mixed <i>Eucalyptus spp.</i>	11.9.7, 11.9.10, 11.10.7, 11.10.7a & 11.10.9
9a	Tall Open Forest of vine thicket	11.9.4a
9b	Tall Woodland of <i>Brachychiton rupestris</i> (narrow leaved bottle tree)	11.9.4a (although only 11.9.1 has been mapped in the vicinity of where this community was previously recorded)
10	Tall Woodland of <i>Casuarina cristata</i> (belah)	11.9.5
11	Mid High Open Forest – Mid High Woodland of <i>Acacia rhodoxylon</i> (rosewood)	11.10.3 & 11.7.5
12	Mid High Open Forest – Mid High Woodland of <i>Acacia rhodoxylon</i> (rosewood), <i>Acacia shirleyi</i> (lancewood) and <i>Acacia harpophylla</i> (brigalow)	Mainly cleared and therefore can't really attribute equivalent RE
13	Cleared. Lands used for agriculture, grazing, urban purposes	Clear
14	Water	Water

APPENDIX D

Species recorded by Fensham & Wilson (1997) and associated GAB Spring Communities

COMMUNITY DATA

SAMPLE 1 (Boggol)	SAMPLE 2 (MtRose1)	SAMPLE 3 (MtRose2)	SAMPLE 4 (MtRose3)	SAMPLE 5 (MtRose4)	SAMPLE 6 (Boggol2)
SPECIES	SPECIES	SPECIES	SPECIES	SPECIES	SPECIES
54 Dros indi	5 Aden lave	26 Care appr	55 Echi colo	36 Cycl inte	26 Care appr
72 Erio scar		36 Cycl inte	72 Erio scar	36 Cycl inte	72 Erio scar
87 Isac glob		87 Isac glob	87 Isac glob	87 Isac glob	87 Isac glob
113 Penn alop		94 Leer hexa	92 Junc pris	94 Leer hexa	94 Leer hexa
119 Phra aust		101 Ludw octo	101 Ludw octo	101 Ludw octo	101 Ludw octo
128 Sacc indi		105 Mars hirs	105 Mars hirs	113 Penn alop	113 Penn alop
18 Baum rubi		119 Phra aust	113 Penn alop	119 Phra aust	119 Phra aust
97 Lept poly		116 Pers hydr	119 Phra aust	128 Sacc indi	130 Scho mucr
76 Fimb nuta		130 Scho mucr	128 Sacc indi	130 Scho mucr	18 Baum rubi
75 Fimb dich		165 Achy aspe	176 Cotu aust	29 Cent coch	112 Pasp urvi
145 Styl rotu		19 Bide pilo	155 Wahl stri	118 Phil lanu	97 Lept poly
53 Dros burm		158 Gomp phys	177 Hype gram	25 Capi parv	86 Impe cyli
4 Acme gran		144 Aust vert	28 Cent asia	155 Wahl stri	4 Acme gran
29 Cent coch		172 Ficu oppo	76 Fimb nuta	97 Lept poly	107 Mitr palu
84 Hydr pedu		159 Euca cama	118 Phil lanu	107 Mitr palu	154 Viol beta
151 Utri dich		163 Phys mini	97 Lept poly	14 Arun nepa	76 Fimb nuta
124 Ranu lapp		49 Dian stup	25 Capi parv	154 Viol beta	81 Halo hete
155 Wahl stri		168 Pani maxi	131 Scho vali	135 Lind sp.	158 Gomp phys
25 Capi parv		161 Xant pung	5 Aden lave	75 Fimb dich	118 Phil lanu
154 Viol beta		181 Opun tome	66 Erag elon	145 Styl rotu	79 Gono chin
156 Xyri comp		34 Cony suma	156 Xyri comp	53 Dros burm	127 Rhyn brow
112 Pasp urvi		112 Pasp urvi	111 Pasp scro	156 Xyri comp	5 Aden lave
13 Arth hisp		140 Sorg hale	124 Ranu lapp	18 Baum rubi	13 Arth hisp
135 Lind sp.		86 Impe cyli	18 Baum rubi	5 Aden lave	159 Euca cama
158 Gomp phys		28 Cent asia	65 Epil cine	159 Euca cama	28 Cent asia
118 Phil lanu		139 Sola amer	154 Viol beta	84 Hydr pedu	75 Fimb dich
49 Dian stup		157 Verb bona	145 Styl rotu	180 Verb offi	60 Eleo cyli
157 Verb bona		59 Ecli pros	29 Cent coch	158 Gomp phys	66 Erag elon
15 Aste subu		5 Aden lave	53 Dros burm	65 Epil cine	177 Hype gram
140 Sorg hale		153 Vign vexi	14 Arun nepa	49 Dian stup	16 Azol pinn
107 Mitr palu		32 Care gaud	13 Arth hisp	81 Halo hete	25 Capi parv
129 Salo cili		131 Scho vali	98 Lobe memb	15 Aste subu	93 Junc usit
152 Utri gibb		162 Acac sali	91 Junc poly	37 Cyno dact	
		175 Rume brow	67 Erag parv	7 Ajug aust	
		39 Cype exal	107 Mitr palu		
			58 Eflat grat		
			180 Verb offi		
			24 Call sond		

SAMPLE	7 (Boggo3)	SAMPLE	8 (Boggo4)	SAMPLE	9 (Boggo5)	SAMPLE	10 (Boggo6)	SAMPLE	11 (Boggo7)	SAMPLE	12 (Boggo8)
SPECIES	SPECIES	SPECIES	SPECIES	SPECIES	SPECIES	SPECIES	SPECIES	SPECIES	SPECIES	SPECIES	SPECIES
38 Cype diff	26 Care appr	26 Care appr	26 Care appr	26 Care appr	26 Care appr	26 Care appr	26 Care appr	26 Care appr	26 Care appr	26 Care appr	26 Care appr
72 Erio scar	94 Leer hexa	38 Cype diff	55 Echi colo	36 Cycl inte	38 Cype diff	36 Cycl inte	37 Cyno dact	37 Cyno dact	38 Cype diff	38 Cype diff	38 Cype diff
94 Leer hexa	100 Loph suav	87 Isac glob	100 Loph suav	37 Cyno dact	100 Loph suav	37 Cyno dact	94 Leer hexa	94 Leer hexa	55 Echi colo	55 Echi colo	94 Leer hexa
101 Ludw octo	101 Ludw octo	141 Spir punc	101 Ludw octo	38 Cype diff	101 Ludw octo	38 Cype diff	101 Ludw octo	101 Ludw octo	55 Echi colo	101 Ludw octo	101 Ludw octo
102 Ludw pepl	103 Lygo micr	100 Loph suav	102 Ludw pepl	55 Echi colo	102 Ludw pepl	55 Echi colo	94 Leer hexa	94 Leer hexa	102 Ludw pepl	102 Ludw pepl	102 Ludw pepl
113 Penn alop	116 Pers hydr	101 Ludw octo	103 Lygo micr	94 Leer hexa	103 Lygo micr	94 Leer hexa	141 Spir punc	141 Spir punc	116 Pers hydr	116 Pers hydr	116 Pers hydr
118 Phil lanu	118 Phil lanu	102 Ludw pepl	118 Phil lanu	101 Ludw octo	118 Phil lanu	101 Ludw octo	118 Phil lanu	118 Phil lanu	118 Phil lanu	118 Phil lanu	118 Phil lanu
128 Sacc indi	182 Euca tere	103 Lygo micr	130 Scho mucr	102 Ludw pepl	130 Scho mucr	101 Ludw octo	102 Ludw pepl	102 Ludw pepl	130 Scho mucr	130 Scho mucr	130 Scho mucr
130 Scho mucr	63 Eleo tetr	119 Phra aust	35 Cras crep	103 Lygo micr	182 Euca tere	105 Mars hirs	102 Ludw pepl	102 Ludw pepl	28 Cent asia	28 Cent asia	28 Cent asia
182 Euca tere	28 Cent asia	116 Pers hydr	182 Euca tere	116 Pers hydr	188 Hypo muel	116 Pers hydr	105 Mars hirs	105 Mars hirs	199 Euca cool	199 Euca cool	199 Euca cool
96 Lept juni	112 Pasp urvi	118 Phil lanu	28 Cent asia	118 Phil lanu	188 Hypo muel	116 Pers hydr	116 Pers hydr	116 Pers hydr	118 Phil cama	118 Phil cama	118 Phil cama
28 Cent asia	45 Cype poly	130 Scho mucr	28 Cent asia	130 Scho mucr	188 Hypo muel	118 Phil lanu	118 Phil lanu	118 Phil lanu	59 Eccli pros	59 Eccli pros	59 Eccli pros
112 Pasp urvi	161 Xant pung	147 Typh orie	112 Pasp urvi	147 Typh orie	186 Dian revo	128 Sacc indi	128 Sacc indi	128 Sacc indi	176 Cotu aust	176 Cotu aust	176 Cotu aust
18 Baum rubi	154 Viol beta	63 Eleo tetr	63 Eleo tetr	63 Eleo tetr	186 Dian revo	147 Typh orie	147 Typh orie	147 Typh orie	93 Junc usit	93 Junc usit	93 Junc usit
5 Aden lave	40 Cype flav	154 Viol beta	111 Pasp scro	84 Hydr pedu	10 Ampe prol	28 Cent asia	28 Cent asia	28 Cent asia	60 Eleo cyli	60 Eleo cyli	60 Eleo cyli
75 Fimb dich	124 Ranu lapp	112 Pasp urvi	123 Pasp dich	123 Pasp dich	10 Ampe prol	60 Eleo cyli	60 Eleo cyli	60 Eleo cyli	24 Call sond	24 Call sond	24 Call sond
40 Cype flav	186 Dian revo	28 Cent asia	45 Cype poly	45 Cype poly	159 Euca cama	40 Cype flav	40 Cype flav	40 Cype flav			
63 Eleo tetr	91 Junc poly	5 Aden lave	58 Elat grat	58 Elat grat	159 Euca cama	59 Eccli pros	59 Eccli pros	59 Eccli pros			
15 Aste subu	184 Brac rupe	18 Baum rubi	186 Dian revo	186 Dian revo	159 Euca cama	50 Digi cili	50 Digi cili	50 Digi cili			
93 Junc usit	86 Impe cyli	187 Chlo gaya	10 Ampe prol	10 Ampe prol	194 Card sp.	194 Card sp.	194 Card sp.	194 Card sp.			
176 Cotu aust	111 Pasp scro	104 Lyth sali	158 Gomp phys	158 Gomp phys	15 Aste subu	15 Aste subu	15 Aste subu	15 Aste subu			
58 Elat grat	168 Pani maxi	182 Euca tere	16 Azol pinn	16 Azol pinn	193 Lapo inte	193 Lapo inte	193 Lapo inte	193 Lapo inte			
24 Call sond	48 Dian long	40 Cype flav	15 Aste subu	15 Aste subu	184 Brac rupe	99 Loma long	99 Loma long	99 Loma long			
86 Impe cyli	183 Dios humi	96 Lept juni	127 Rhyn brow	127 Rhyn brow	168 Pani maxi	168 Pani maxi	168 Pani maxi	168 Pani maxi			
127 Rhyn brow	20 Blec indi	158 Gomp phys	186 Dian revo	58 Elat grat	165 Achy aspe	165 Achy aspe	165 Achy aspe	165 Achy aspe			
27 Care poly		16 Azol pinn	58 Elat grat	56 Echi crus	56 Echi crus	56 Echi crus	56 Echi crus	56 Echi crus			
20 Blec indi		15 Aste subu	56 Echi crus	93 Junc usit	158 Gomp phys	158 Gomp phys	158 Gomp phys	158 Gomp phys			
92 Junc pris		127 Rhyn brow	93 Junc usit	79 Gono chin	93 Junc usit	93 Junc usit	93 Junc usit	93 Junc usit			
154 Viol beta		186 Dian revo	79 Gono chin	10 Ampe prol	10 Ampe prol	10 Ampe prol	10 Ampe prol	10 Ampe prol			
		58 Elat grat	10 Ampe prol	144 Aust vert	144 Aust vert	144 Aust vert	144 Aust vert	144 Aust vert			
		56 Echi crus	144 Aust vert	153 Vign vexi	153 Vign vexi	153 Vign vexi	153 Vign vexi	153 Vign vexi			
		93 Junc usit	153 Vign vexi	139 Sola amer	139 Sola amer	139 Sola amer	139 Sola amer	139 Sola amer			
		79 Gono chin	139 Sola amer	34 Cony suma	34 Cony suma	34 Cony suma	34 Cony suma	34 Cony suma			
		10 Ampe prol	34 Cony suma	32 Care gaud	32 Care gaud	32 Care gaud	32 Care gaud	32 Care gaud			

SAMPLE	13 (Bogg09)	SAMPLE	14 (Bogg010)	SAMPLE	15 (Bogg011)	SAMPLE	16 (Dawl)	SAMPLE	17 (Daw2)	SAMPLE	18 (Daw3)
	SPECIES		SPECIES		SPECIES		SPECIES		SPECIES		SPECIES
26	Care appr	38	Cype diff	55	Echi colo	36	Cycl inte	36	Cycl inte	36	Cycl inte
37	Cyno dact	55	Echi colo	94	Leer hexa	87	Isac glob	87	Isac glob	87	Isac glob
92	Junc pris	56	Echi crus	101	Ludw octo	141	Spir punc	102	Ludw pepl	94	Leer hexa
94	Leer hexa	72	Erio scar	102	Ludw pepl	101	Ludw octo	105	Mars hirs	101	Ludw octo
101	Ludw octo	94	Leer hexa	118	Phil lanu	105	Mars hirs	106	Mela brac	111	Pasp scro
102	Ludw pepl	101	Ludw octo	130	Scho mucr	131	Scho vali	111	Pasp scro	116	Pers hydr
119	Phra aust	102	Ludw pepl	187	Chlo gaya	18	Baum rubi	116	Pers hydr	130	Scho mucr
116	Pers hydr	116	Pers hydr	5	Aden lave	28	Cent asia	130	Scho mucr	131	Scho vali
118	Phil lanu	118	Phil lanu	176	Cotu aust	133	Bolb fluv	131	Scho vali	10	Ampe prol
130	Scho mucr	130	Scho mucr	158	Gomp phys	27	Care poly	27	Care poly	27	Care poly
93	Junc usit	75	Fimb dich	28	Cent asia	93	Junc usit	10	Ampe prol	154	Viol beta
176	Cotu aust	15	Aste subu	40	Cype flav	23	Call vimi	117	Pers stri	47	Cype unio
24	Call sond	93	Junc usit	32	Care gaud	62	Eleo pall	85	Hydr vert	75	Fimb dich
28	Cent asia	111	Pasp scro	111	Pasp scro	154	Viol beta	99	Loma long	23	Call vimi
40	Cype flav	154	Viol beta	15	Aste subu	116	Pers hydr	40	Cype flav	83	Hema unci
112	Pasp urvi	28	Cent asia	168	Pani maxi	85	Hydr vert	33	Comm diff	124	Ranu lapp
34	Cony suma	177	Hype gram	99	Loma long	43	Cype java	75	Fimb dich		
159	Euca cama	84	Hydr pedu	17	Baco monn	99	Loma long	154	Viol beta		
199	Euca cool	45	Cype poly			10	Ampe prol	83	Hema unci		
		40	Cype flav					47	Cype unio		
								84	Hydr pedu		
								17	Baco monn		

SAMPLE	19	SAMPLE	20	SAMPLE	21	SAMPLE	22	SAMPLE	23	SAMPLE	24
(Daw4)		(Daw5)		(Daw6)		(Boggol3)		(Boggol5)		(Boggol6)	
SPECIES		SPECIES		SPECIES		SPECIES		SPECIES		SPECIES	
36 Cycl inte		87 Isac glob		36 Cycl inte		91 Junc poly		72 Erio scar		14 Arun nepa	
87 Isac glob		101 Ludw octo		87 Isac glob		40 Cype flav		25 Capi parv		96 Lept juni	
94 Leer hexa		105 Mars hirs		105 Mars hirs		112 Pasp urvi		119 Phra aust		118 Phil lanu	
116 Pers hydr		111 Pasp scro		116 Pers hydr		119 Phra aust		96 Lept juni		119 Phra aust	
27 Care poly		119 Phra aust		131 Scho vali		113 Penn alop		118 Phil lanu		113 Penn alop	
85 Hydr vert		116 Pers hydr		27 Care poly		101 Ludw octo		14 Arun nepa		76 Fimb nuta	
93 Junc usit		131 Scho vali		62 Eleo pall		5 Aden lave		18 Baum rubi		5 Aden lave	
99 Loma long		84 Hydr pedu		93 Junc usit		75 Fimb dich		111 Pasp scro		128 Sacc indi	
105 Mars hirs		85 Hydr vert		23 Call vimi		158 Gomp phys		124 Ranu lapp		53 Dros burm	
154 Viol beta		154 Viol beta		99 Loma long		18 Baum rubi		53 Dros burm		145 Styl rotu	

62 Eleo pall	83 Hema unci	10 Ampe prol	86 Impe cyli	151 Utri dich	72 Erio scar
175 Rume brow	124 Ranu lapp		154 Viol beta	101 Ludw octo	87 Isac glob
	104 Lyth sali		28 Cent asia	145 Styl rotu	49 Dian stup
	75 Fimb dich		118 Phil lanu	112 Pasp urvi	156 Xyri comp
	62 Eleo pall		47 Cype unio	113 Penn alop	77 Fimb tetr
	10 Ampe prol		168 Pani maxi	5 Aden lave	135 Lind sp.
	27 Care poly		79 Gono chin	87 Isac glob	196 Utri caer
	114 Pers deci		128 Sacc indi	128 Sacc indi	7 Ajug aust
	47 Cype unio		13 Arth hisp	135 Lind sp.	29 Cent coch
	17 Baco monn		83 Hema unci	146 Thel conf	155 Wahl stri
			32 Care gaud	177 Hype gram	54 Dros indi
			99 Loma long	84 Hydr pedu	75 Fimb dich
				127 Rhyn brow	18 Baum rubi
				35 Cras crep	107 Mitr palu
				75 Fimb dich	13 Arth hisp
				155 Wahl stri	25 Capi parv
				156 Xyri comp	154 Viol beta
				13 Arth hisp	151 Utri dich
				65 Epil cine	17 Baco monn
				79 Gono chin	84 Hydr pedu
				76 Fimb nuta	152 Utri gibb
				154 Viol beta	
				158 Gomp phys	
				107 Mitr palu	
				47 Cype unio	
				10 Ampe prol	
				182 Euca tere	
				28 Cent asia	
				34 Cony suma	
				152 Utri gibb	

SAMPLE 25 (Boggo17)	SAMPLE 26 (Palm1)	SAMPLE 27 (Boggo14)	SAMPLE 28 (palm2)	SAMPLE 29 (MtRose8)	SAMPLE 30 (MtRose9)
SPECIES	SPECIES	SPECIES	SPECIES	SPECIES	SPECIES
119 Phra aust	26 Care appr	113 Penn alop	119 Phra aust	162 Acac sali	13 Arth hisp
96 Lept juni	37 Cyno dact	76 Fimb nuta	15 Aste subu	165 Achy aspe	15 Aste subu
26 Care appr	94 Leer hexa	107 Mitr palu	38 Cype diff	200 Aesc indi	25 Capi parv
72 Erio scar	131 Scho vali	25 Capi parv	37 Cyno dact	16 Azol pinn	40 Cype flav
145 Styl rotu	52 Lept fusc	75 Fimb dich	198 Sesb cann	19 Bide pilo	62 Eleo pall
156 Xyri comp	15 Aste subu	119 Phra aust	45 Cype poly	22 Brac muti	65 Epil cine
17 Baco monn	38 Cype diff	18 Baum rubi	141 Spir punc	26 Care appr	66 Erag elon
118 Phil lanu	198 Sesb cann	128 Sacc indi		28 Cent asia	72 Erio scar
196 Utri caer	253 Cype sang	124 Ranu lapp		32 Care gaud	159 Euca cama

53 Dros burm	155 Wahl stri	34 Cony suma	75 Fimb dich
54 Dros indi	5 Aden lave	35 Cras crep	158 Gomp phys
25 Capi parv	40 Cype flav	37 Cyno dact	84 Hydr pedu
87 Isac glob	47 Cype unio	39 Cype exal	177 Hype gram
151 Utri dich	72 Erio scar	38 Cype diff	87 Isac glob
29 Cent coch	53 Dros burm	48 Dian long	93 Junc usit
128 Sacc indi	84 Hydr pedu	50 Digi cili	94 Leer hexa
155 Wahl stri	135 Lind sp.	52 Lept fusc	101 Ludw octo
77 Fimb tetr	156 Xyri comp	56 Echi crus	102 Ludw pepl
18 Baum rubi	29 Cent coch	59 Ecli pros	105 Mars hirs
14 Arun nepa	176 Cotu aust	159 Euca cama	112 Pasp urvi
113 Penn alop	154 Viol beta	158 Gomp phys	113 Penn alop
154 Viol beta	145 Styl rotu	92 Junc pris	116 Pers hydr
7 Ajug aust	151 Utri dich	94 Leer hexa	118 Phil lanu
5 Aden lave	13 Arth hisp	95 Lemn aequ	124 Ranu lapp
75 Fimb dich	49 Dian stup	101 Ludw octo	128 Sacc indi
19 Bide pilo	152 Utri gibb	102 Ludw pepl	130 Scho mucr
36 Cycl inte		105 Mars hirs	147 Typh orie
35 Cras crep		112 Pasp urvi	154 Viol beta
13 Arth hisp		116 Pers hydr	120 Pasp dila
86 Impe cyli		119 Phra aust	121 Rume cris
107 Mitr palu		139 Sola amer	185 Cycl lept
84 Hydr pedu		140 Sorg hale	149 Cype brev
129 Salo cili		157 Verb bona	70 Cype hasp
45 Cype poly		153 Vign vexi	73 Eleo diet
130 Scho mucr		161 Xant pung	
16 Azol pinn		73 Eleo diet	
102 Ludw pepl		123 Pasp dich	
182 Euca tere			

SAMPLE	31	SAMPLE	32	SAMPLE	33	SAMPLE	34	SAMPLE	35	SAMPLE	36
(MtRose10)		(Boggo18)		(MtRose11)		(SprCk1)		(SprCk2)		(SprCk3)	
SPECIES		SPECIES		SPECIES		SPECIES		SPECIES		SPECIES	
200 Aesc indi	4 Acme gran	200 Aesc indi	27 Care poly	27 Care poly	27 Care poly	27 Care poly		27 Care poly		27 Care poly	
14 Arun nepa	13 Arth hisp	15 Aste subu	36 Cycl inte	36 Cycl inte	36 Cycl inte	36 Cycl inte		36 Cycl inte		36 Cycl inte	
25 Capi parv	14 Arun nepa	19 Bide pilo	75 Fimb dich	39 Cype exal	39 Cype exal	39 Cype exal		75 Fimb dich		75 Fimb dich	
26 Care appr	17 Baco monn	22 Brac muti	85 Hydr vert	75 Fimb dich	75 Fimb dich	75 Fimb dich		83 Hema unci		83 Hema unci	
28 Cent asia	18 Baum rubi	26 Care appr	93 Junc usit	85 Hydr vert	85 Hydr vert	85 Hydr vert		85 Hydr vert		85 Hydr vert	
187 Chlo gaya	25 Capi parv	32 Care gaud	99 Loma long	93 Junc usit	93 Junc usit	93 Junc usit		87 Isac glob		87 Isac glob	
39 Cype exal	26 Care appr	34 Cony suma	114 Pers deci	99 Loma long	99 Loma long	99 Loma long		99 Loma long		99 Loma long	
40 Cype flav	29 Cent coch	35 Cras crep	131 Scho vali	105 Mars hirs	105 Mars hirs	105 Mars hirs		101 Ludw octo		101 Ludw octo	
56 Echi crus	47 Cype unio	36 Cycl inte		114 Pers deci	114 Pers deci	114 Pers deci		114 Pers deci		114 Pers deci	
65 Epil cine	49 Dian stup	39 Cype exal						175 Rume brow		154 Viol beta	

72 Erio scar	53 Dros burm	38 Cype diff	131 Scho vali
75 Fimb dich	54 Dros indi	45 Cype poly	154 Viol beta
158 Gomp phys	72 Erio scar	48 Dian long	
84 Hydr pedu	75 Fimb dich	56 Echi crus	
87 Isac glob	76 Fimb nuta	59 Eccli pros	
93 Junc usit	85 Hydr vert	182 Euca tere	
92 Junc pris	87 Isac glob	92 Junc pris	
94 Leer hexa	91 Junc poly	91 Junc poly	
101 Ludw octo	97 Lept poly	94 Leer hexa	
102 Ludw pepl	107 Mitr palu	95 Lemn aequ	
104 Lyth sali	112 Pasp urvi	101 Ludw octo	
105 Mars hirs	113 Penn alop	102 Ludw pepl	
170 Pasp dist	118 Phil lanu	105 Mars hirs	
112 Pasp urvi	119 Phra aust	168 Pani maxi	
113 Penn alop	128 Sacc indi	112 Pasp urvi	
118 Phil lanu	129 Salo cili	116 Pers hydr	
119 Phra aust	157 Verb bona	175 Rume brow	
124 Ranu lapp	154 Viol beta	157 Verb bona	
128 Sacc indi	155 Wahl stri	161 Xant pung	
130 Scho mucr	156 Xyri comp	123 Pasp dich	
154 Viol beta	150 Thys tube	148 Pers orie	
161 Xant pung	64 Dich rara	115 Mono cyan	
70 Cype hasp		28 Cent asia	
121 Rume cris		50 Digi cili	
149 Cype brev		52 Lept fusc	
185 Cycl lept		58 Elat grat	
73 Eleo diet		60 Eleo cyl	
123 Pasp dich		159 Euca cama	
		85 Hydr vert	
		87 Isac glob	
		130 Scho mucr	
		131 Scho vali	
		139 Sola amer	
		70 Cype hasp	
		120 Pasp dila	
		69 Ranu sess	
		206 Rume tena	
		207 Cype bif	

SAMPLE 37 (SprCk4)	SAMPLE 38 (MrsWhite)	SAMPLE 39 (Prices1)	SAMPLE 40 (Prices2)	SAMPLE 41 (Prices3)	SAMPLE 42 (BALKL1)
SPECIES 38 Cype diff	SPECIES 40 Cype flav	SPECIES 25 Capi parv	SPECIES 4 Acme gran	SPECIES 25 Capi parv	SPECIES 18 Baum rubi

102 Ludw pepl	23 Call vimi	29 Cent coch	25 Capi parv	29 Cent coch	25 Capi parv
123 Pasp dich	75 Fimb dich	187 Chlo gaya	47 Cype unio	187 Chlo gaya	28 Cent asia
	105 Mars hirs	34 Cony suma	40 Cype flav	40 Cype flav	35 Cras crep
	119 Phra aust	38 Cype diff	49 Dian stup	47 Cype unio	36 Cycl inte
	82 Fimb sieb	47 Cype unio	53 Dros burm	52 Lept fusc	47 Cype unio
	123 Pasp dich	62 Eleo pall	62 Eleo pall	49 Dian stup	53 Dros burm
	125 Mueh flor	72 Erio scar	72 Erio scar	53 Dros burm	72 Erio scar
		159 Euca cama	75 Fimb dich	62 Eleo pall	75 Fimb dich
		75 Fimb dich	76 Fimb nuta	72 Erio scar	76 Fimb nuta
		76 Fimb nuta	92 Junc pris	75 Fimb dich	84 Hydr pedu
		79 Gono chin	101 Ludw octo	76 Fimb nuta	87 Isac glob
		92 Junc pris	107 Mitr palu	92 Junc pris	92 Junc pris
		101 Ludw octo	111 Pasp scro	107 Mitr palu	94 Leer hexa
		105 Mars hirs	113 Penn alop	111 Pasp scro	101 Ludw octo
		111 Pasp scro	119 Phra aust	113 Penn alop	104 Lyth sali
		113 Penn alop	124 Ranu lapp	119 Phra aust	113 Penn alop
		119 Phra aust	128 Sacc indi	123 Pasp dich	119 Phra aust
		124 Ranu lapp	130 Scho mucr	128 Sacc indi	124 Ranu lapp
		128 Sacc indi	135 Lind sp.	130 Scho mucr	128 Sacc indi
		145 Styl rotu	145 Styl rotu	135 Lind sp.	130 Scho mucr
		151 Utri dich	151 Utri dich	145 Styl rotu	145 Styl rotu
		154 Viol beta	154 Viol beta	151 Utri dich	151 Utri dich
		152 Utri gibb	445 Cype spha	154 Viol beta	154 Viol beta
		40 Cype flav	123 Pasp dich	152 Utri gibb	136 Sonc aspe
		445 Cype spha		64 Dich rara	
		185 Cycl lept			
		123 Pasp dich			

SAMPLE	43	SAMPLE	44	SAMPLE	45	SAMPLE	46	SAMPLE	47	SAMPLE	48
(BALKL2)		(BALKL3)		(PRICES4)		(PRICESP6)		(PRICESP7)		(PRICESP8)	
SPECIES		SPECIES		SPECIES		SPECIES		SPECIES		SPECIES	
26 Care appr	5 Aden lave	40 Cype flav	40 Cype flav	37 Cyno dact	40 Cype flav						
176 Cotu aust	8 Basi poly	47 Cype unio	38 Cype diff	39 Cype exal	62 Eleo pall						
40 Cype flav	10 Ampe prol	62 Eleo pall	101 Ludw octo	40 Cype flav	75 Fimb dich						
72 Erio scar	26 Care appr	75 Fimb dich	105 Mars hirs	38 Cype diff	101 Ludw octo						
75 Fimb dich	28 Cent asia	83 Hema unci	195 Lept digi	62 Eleo pall	128 Sacc indi						
93 Junc usit	33 Comm diff	85 Hydr vert	192 Capi spic	72 Erio scar	57 Chlo virg						
94 Leer hexa	39 Cype exal	87 Isac glob	30 Cent mini	75 Fimb dich	143 Sper rubr						
101 Ludw octo	40 Cype flav	101 Ludw octo	68 Ente pauc	83 Hema unci							
102 Ludw pepl	38 Cype diff	128 Sacc indi		84 Hydr pedu							
105 Mars hirs	60 Eleo cyli	130 Scho mucr		87 Isac glob							
111 Pasp scro	159 Euca cama	131 Scho vali		101 Ludw octo							
124 Ranu lapp	84 Hydr pedu	154 Viol beta		105 Mars hirs							

130 Scho mucr	93 Junc usit			111 Pasp scro	
139 Sola amer	94 Leer hexa			118 Phil lanu	
145 Styl rotu	99 Loma long			124 Ranu lapp	
152 Utri gibb	102 Ludw pepl			130 Scho mucr	
136 Sonc aspe	105 Mars hirs			151 Utri dich	
123 Pasp dich	116 Pers hydr			154 Viol beta	
	119 Phra aust			69 Ranu sess	
	124 Ranu lapp				
	130 Scho mucr				
	41 Cype trin				
	44 Stel angu				
	148 Pers orie				
	30 Cent mini				
	195 Lept digi				
	90 Mela tric				
	133 Bolb fluv				
	205 Cype luci				

SAMPLE	49 (PRICESP9)	SAMPLE	50 (PRICSP10)	SAMPLE	51 (PRICSP11)	SAMPLE	52 (PRICES5)	SAMPLE	53 (MTROSE12)	SAMPLE	54 (BOGGO18)
SPECIES											
37 Cyno dact		24 Call sond		37 Cyno dact		18 Baum rubi		200 Aesc indi		10 Ampe prol	
58 Elat grat		176 Cotu aust		40 Cype flav		25 Capi parv		15 Aste subu		15 Aste subu	
60 Eleo cyli		37 Cyno dact		38 Cype diff		29 Cent coch		28 Cent asia		194 Card sp.	
72 Erio scar		38 Cype diff		58 Elat grat		187 Chlo gaya		32 Care gaud		26 Care appr	
75 Fimb dich		58 Elat grat		72 Erio scar		38 Cype diff		34 Cony suma		28 Cent asia	
87 Isac glob		62 Eleo pall		75 Fimb dich		47 Cype unio		40 Cype flav		176 Cotu aust	
101 Ludw octo		66 Erag elon		94 Leer hexa		40 Cype flav		38 Cype diff		36 Cycl inte	
111 Pasp scro		89 Grat pedu		128 Sacc indi		53 Dros burm		45 Cype poly		39 Cype exal	
124 Ranu lapp		143 Sper rubr				58 Elat grat		56 Echi crus		38 Cype diff	
130 Scho mucr						62 Eleo pall		60 Eleo cyli		58 Elat grat	
151 Utri dich						75 Fimb dich		159 Euca cama		62 Eleo pall	
154 Viol beta						92 Junc pris		84 Hydr pedu		159 Euca cama	
						93 Junc usit		177 Hype gram		93 Junc usit	
						101 Ludw octo		87 Isac glob		94 Leer hexa	
						113 Penn alop		93 Junc usit		101 Ludw octo	
						116 Pers hydr		94 Leer hexa		102 Ludw pepl	
						119 Phra aust		101 Ludw octo		105 Mars hirs	
						128 Sacc indi		102 Ludw pepl		116 Pers hydr	
						130 Scho mucr		105 Mars hirs		118 Phil lanu	
						145 Styl rotu		118 Phil lanu		119 Phra aust	
						154 Viol beta		128 Sacc indi		128 Sacc indi	
						152 Utri gibb		130 Scho mucr			

135 Lind sp.
61 Eleo equi

131 Scho vali
154 Viol beta
123 Pasp dich

153 Vign vexi
123 Pasp dich

SAMPLE	55	SAMPLE	56	SAMPLE	57	SAMPLE	58	SAMPLE	59	SAMPLE	60
(BOGGO19)		(BOGGO20)		(BOGGO21)		(BOGGO22)		(MTROSE13)		(BOGRES22)	
SPECIES		SPECIES		SPECIES		SPECIES		SPECIES		SPECIES	
18 Baum rubi		15 Aste subu		15 Aste subu		15 Aste subu		4 Acme gran		4 Acme gran	
28 Cent asia		16 Azol pinn		16 Azol pinn		18 Baum rubi		13 Arth hisp		10 Ampe prol	
176 Cotu aust		176 Cotu aust		18 Baum rubi		22 Brac muti		18 Baum rubi		13 Arth hisp	
36 Cycl inte		37 Cyno dact		20 Blec indi		26 Care appr		19 Bide pilo		18 Baum rubi	
38 Cype diff		38 Cype diff		26 Care appr		28 Cent asia		25 Capi parv		19 Bide pilo	
40 Cype flav		40 Cype flav		28 Cent asia		36 Cycl inte		26 Care appr		25 Capi parv	
56 Echi crus		56 Echi crus		40 Cype flav		56 Echi crus		40 Cype flav		26 Care appr	
58 Elat grat		62 Eleo pall		72 Erio scar		62 Eleo pall		45 Cype poly		34 Cony suma	
159 Euca cama		86 Impe cyli		159 Euca cama		159 Euca cama		47 Cype unio		36 Cycl inte	
94 Leer hexa		94 Leer hexa		177 Hype gram		158 Gomp phys		54 Dros indi		65 Epil cine	
101 Ludw octo		101 Ludw octo		95 Lemn aequ		84 Hydr pedu		53 Dros burm		75 Fimb dich	
102 Ludw pepl		112 Pasp urvi		97 Lept poly		101 Ludw octo		72 Erio scar		76 Fimb nuta	
103 Lygo micr		147 Typh orie		101 Ludw octo		102 Ludw pepl		159 Euca cama		158 Gomp phys	
112 Pasp urvi		42 Cype rotu		103 Lygo micr		112 Pasp urvi		75 Fimb dich		84 Hydr pedu	
116 Pers hydr		122 Mars exar		104 Lyth sali		118 Phil lanu		76 Fimb nuta		177 Hype gram	
118 Phil lanu		136 Sonc aspe		112 Pasp urvi		130 Scho mucr		158 Gomp phys		86 Impe cyli	
130 Scho mucr		123 Pasp dich		118 Phil lanu		131 Scho vali		84 Hydr pedu		87 Isac glob	
131 Scho vali		198 Sesb cann		119 Phra aust		139 Sola amer		86 Impe cyli		94 Leer hexa	
154 Viol beta		120 Pasp dila		131 Scho vali		147 Typh orie		87 Isac glob		101 Ludw octo	
120 Pasp dila				147 Typh orie		157 Verb bona		97 Lept poly		112 Pasp urvi	
123 Pasp dich				157 Verb bona				101 Ludw octo		113 Penn alop	
				154 Viol beta				120 Pasp dila		116 Pers hydr	
				120 Pasp dila				113 Penn alop		118 Phil lanu	
				133 Bolb fluv				116 Pers hydr		119 Phra aust	
								118 Phil lanu		157 Verb bona	
								119 Phra aust		154 Viol beta	
								128 Sacc indi		161 Xant pung	
								145 Styl rotu			
								151 Uttri dich			
								154 Viol beta			
								155 Wahl stri			
								161 Xant pung			
								124 Ranu lapp			

SAMPLE	61	SAMPLE	62	SAMPLE	63	SAMPLE	64	SAMPLE	65	SAMPLE	66
	(MTROSE14)		(BOGRES23)		(BOGGSTAT)		(SANDCK1)		(SANDCK2)		(SANDCK3)
SPECIES		SPECIES		SPECIES		SPECIES		SPECIES		SPECIES	
15 Aste subu		18 Baum rubi		26 Care appr		15 Aste subu		187 Chlo gaya		187 Chlo gaya	
22 Brac muti		26 Care appr		28 Cent asia		187 Chlo gaya		37 Cyno dact		34 Cony suma	
26 Care appr		187 Chlo gaya		176 Cotu aust		37 Cyno dact		40 Cype flav		40 Cype flav	
28 Cent asia		32 Care gaud		38 Cype diff		40 Cype flav		46 Erio cars		62 Eleo pall	
32 Care gaud		38 Cype diff		55 Echi colo		47 Cype unio		75 Fimb dich		91 Junc poly	
176 Cotu aust		45 Cype poly		58 Elat grat		61 Eleo equi		94 Leer hexa		94 Leer hexa	
39 Cype exal		40 Cype flav		60 Eleo cyli		46 Erio cars		120 Pasp dila		101 Ludw octo	
186 Dian revo		58 Elat grat		84 Hydr pedu		75 Fimb dich		113 Penn alop		102 Ludw pepl	
59 Eccli pros		63 Eleo tetr		85 Hydr vert		94 Leer hexa		130 Scho mucr		120 Pasp dila	
58 Elat grat		159 Euca cama		87 Isac glob		102 Ludw pepl		152 Uttri gibb		130 Scho mucr	
60 Eleo cyli		158 Gomp phys		91 Junc poly		120 Pasp dila		151 Uttri dich		161 Xant pung	
199 Euca cool		86 Impe cyli		94 Leer hexa		113 Penn alop		202 Myri arte			
159 Euca cama		94 Leer hexa		102 Ludw pepl		130 Scho mucr		203 Cype laev			
158 Gomp phys		101 Ludw octo		105 Mars hirs		152 Uttri gibb		61 Eleo equi			
86 Impe cyli		102 Ludw pepl		120 Pasp dila		151 Uttri dich		132 Scho falc			
94 Leer hexa		112 Pasp urvi		116 Pers hydr		154 Viol beta		204 Plan gaud			
101 Ludw octo		113 Penn alop		119 Phra aust		202 Myri arte		119 Phra aust			
102 Ludw pepl		118 Phil lanu		69 Ranu sess		203 Cype laev					
105 Mars hirs		124 Ranu lapp									
181 Opun tome		130 Scho mucr									
112 Pasp urvi		154 Viol beta									
116 Pers hydr		69 Ranu sess									
118 Phil lanu											
124 Ranu lapp											
175 Rume brow											
130 Scho mucr											
131 Scho vali											
136 Sonc aspe											
44 Stel angu											
144 Aust vert											
157 Verb bona											
154 Viol beta											
69 Ranu sess											

SAMPLE	67	SAMPLE	68	SAMPLE	69
	(PRICES12)		(BOGRES24)		(DAWSON7)
SPECIES		SPECIES		SPECIES	
25 Capi parv		18 Baum rubi		27 Care poly	

29 Cent coch	25 Capi parv	36 Cycl inte
187 Chlo gaya	26 Care appr	39 Cype exal
40 Cype flav	28 Cent asia	38 Cype diff
47 Cype unio	32 Care gaud	61 Eleo equi
62 Eleo pall	36 Cycl inte	62 Eleo pall
72 Erio scar	40 Cype flav	85 Hydr vert
159 Euca cama	47 Cype unio	87 Isac glob
75 Fimb dich	64 Dich rara	104 Lyth sali
82 Fimb sieb	65 Epil cine	105 Mars hirs
86 Impe cyli	72 Erio scar	116 Pers hydr
87 Isac glob	75 Fimb dich	119 Phra aust
92 Junc pris	76 Fimb nuta	175 Rume brow
93 Junc usit	158 Gomp phys	154 Viol beta
94 Leer hexa	84 Hydr pedu	
101 Ludw octo	86 Impe cyli	
111 Pasp scro	93 Junc usit	
120 Pasp dila	101 Ludw octo	
113 Penn alop	112 Pasp urvi	
118 Phil lanu	113 Penn alop	
119 Phra aust	119 Phra aust	
124 Ranu lapp	124 Ranu lapp	
128 Sacc indi	145 Styl rotu	
152 Utri gibb	196 Utri caer	
151 Utri dich	157 Verb bona	
154 Viol beta	154 Viol beta	
105 Mars hirs		
69 Ranu sess		

Key to Species listed in above in Boggomosses 1-69

Species Name	Number
<i>Acemella grandiflora</i> var. <i>brachyglossa</i>	4
<i>Adenostemma lavenia</i>	5
<i>Ajuga australis</i>	7
<i>Ampelopteris prolifera</i>	10
<i>Arthraxon hispidus</i>	13
<i>Arundinella nepalensis</i>	14
<i>Aster subulatus</i>	15
<i>Azolla pinnata</i>	16
<i>Bacopa monnieri</i>	17
<i>Baumea rubiginosa</i>	18
<i>Bidens pilosa</i>	19
<i>Blechnum indicum</i>	20
<i>Brachiaria mutica</i>	22
<i>Callistemon viminalis</i>	23
<i>Callitricha sonderi</i>	24
<i>Capillipedium parviflorum</i>	25
<i>Carex appressa</i>	26
<i>Carex polyantha</i>	27
<i>Centella asiatica</i>	28
<i>Centranthera cochinchinensis</i>	29
<i>Carex gaudichaudiana</i>	32
<i>Commelina diffusa</i>	33
<i>Conyza sumatrensis</i>	34
<i>Crassocephalum crepidioides</i>	35
<i>Cyclosorus interruptus</i>	36
<i>Cynodon dactylon</i>	37
<i>Cyperus difformis</i>	38
<i>Cyperus exaltatus</i>	39
<i>Cyperus flavidus</i>	40
<i>Cyperus javanicus</i>	43
<i>Stellaria angustifolia</i>	44
<i>Cyperus polystachyos</i>	45
<i>Eriocaulon carsonii</i>	46
<i>Cyperus unioloides</i>	47
<i>Dianella longifolia</i> var. <i>longifolia</i>	48
<i>Dianella longifolia</i> var. <i>stupata</i>	49
<i>Digitaria ciliaris</i>	50
<i>Leptochloa fusca</i>	52
<i>Drosera burmanni</i>	53
<i>Drosera indica</i>	54
<i>Echinochloa colona</i>	55
<i>Echinochloa crus-galli</i>	56
<i>Chloris virgata</i>	57
<i>Elatine gratioloides</i>	58
<i>Eclipta prostrata</i>	59
<i>Eleocharis cylindrostachys</i>	60
<i>Eleocharis equisetina</i>	61
<i>Eleocharis pallens</i>	62
<i>Eleocharis tetraquetra</i>	63

<i>Dichelachne rara</i>	64
<i>Epilobium billardierianum subsp. cinereum</i>	65
<i>Eragrostis elongata</i>	66
<i>Eragrostis parviflora</i>	67
<i>Ranunculus sessiliflorus</i>	69
<i>Cyperus haspan</i>	70
<i>Eriocaulon scariosum</i>	72
<i>Eleocharis dietrichiana</i>	73
<i>Fimbristylis dichotoma</i>	75
<i>Fimbristylis nutans</i>	76
<i>Fimbristylis tetragona</i>	77
<i>Gonocarpus chinensis subsp. verrucosus</i>	79
<i>Haloragis heterophylla</i>	81
<i>Fimbristylis sieberiana</i>	82
<i>Hemarthria uncinata var. spathacea</i>	83
<i>Hydrocotyle peduncularis</i>	84
<i>Hydrocotyle verticillata</i>	85
<i>Imperata cylindrica</i>	86
<i>Isachne globosa</i>	87
<i>Juncus polyanthemus</i>	91
<i>Juncus prismatocarpus</i>	92
<i>Juncus usitatus</i>	93
<i>Leersia hexandra</i>	94
<i>Lemna aequinoctialis</i>	95
<i>Leptospermum juniperinum</i>	96
<i>Leptospermum polygalifolium</i>	97
<i>Lobelia membranacea</i>	98
<i>Lomandra longifolia</i>	99
<i>Lophostemon suaveolens</i>	100
<i>Ludwigia octovalvis</i>	101
<i>Ludwigia peploides</i>	102
<i>Lygodium microphyllum</i>	103
<i>Lythrum salicaria</i>	104
<i>Marsilea hirsuta</i>	105
<i>Melaleuca bracteata</i>	106
<i>Mitrasacme paludosa</i>	107
<i>Paspalum scrobiculatum</i>	111
<i>Paspalum urvillei</i>	112
<i>Pennisetum alopecuroides</i>	113
<i>Persicaria decipiens</i>	114
<i>Monochoria cyanea</i>	115
<i>Persicaria hydropiper</i>	116
<i>Persicaria strigosa</i>	117
<i>Philydrum lanuginosum</i>	118
<i>Phragmites australis</i>	119
<i>Paspalum dilatatum</i>	120
<i>Rumex crispus</i>	121
<i>Paspalum distichum</i>	123
<i>Ranunculus lappaceus</i>	124
<i>Rhynchospora brownii</i>	127
<i>Sacciolepis indica</i>	128
<i>Salomonia ciliata</i>	129

<i>Schoenoplectus mucronatus</i>	130
<i>Schoenoplectus validus</i>	131
<i>Schoenus falcatus</i>	132
<i>Bolboschoenus fluviatilis</i>	133
<i>Lindernia</i> sp. (<i>Bribie Island S.T.Blake 7089</i>)	135
<i>Sonchus asper</i>	136
<i>Solanum americanum</i>	139
<i>Sorghum halepense</i>	140
<i>Spirodela punctata</i>	141
<i>Spergularia rubra</i>	143
<i>Austrostipa verticillata</i>	144
<i>Stylium rotundifolium</i>	145
<i>Thelypteris confluens</i>	146
<i>Typha orientalis</i>	147
<i>Persicaria orientalis</i>	148
<i>Cyperus brevifolius</i>	149
<i>Utricularia dichotoma</i>	151
<i>Utricularia gibba</i>	152
<i>Vigna vexillata</i> var. <i>angustifolia</i>	153
<i>Viola betonicifolia</i>	154
<i>Wahlenbergia stricta</i> subsp. <i>alterna</i>	155
<i>Xyris complanata</i>	156
<i>Verbena bonariensis</i>	157
<i>Gomphocarpus physocarpus</i>	158
<i>Eucalyptus camaldulensis</i>	159
<i>Xanthium pungens</i>	161
<i>Acacia salicina</i>	162
<i>Physalis minima</i>	163
<i>Achyranthes aspera</i>	165
<i>Panicum maximum</i>	168
<i>Paspalidium distans</i>	170
<i>Ficus opposita</i>	172
<i>Rumex brownii</i>	175
<i>Cotula australis</i>	176
<i>Hypericum gramineum</i>	177
<i>Verbena officinalis</i>	180
<i>Opuntia tomentosa</i>	181
<i>Eucalyptus tereticornis</i>	182
<i>Brachychiton rupestris</i>	184
<i>Cyclospermum leptophyllum</i>	185
<i>Dianella revoluta</i>	186
<i>Chloris gayana</i>	187
<i>Hypolepis muelleri</i>	188
<i>Laportea interrupta</i>	193
<i>Cardamine</i> sp. (<i>R.J.Fensham 3774</i>)	194
<i>Utricularia caerulea</i>	196
<i>Sesbania cannabina</i>	198
<i>Eucalyptus coolabah</i>	199
<i>Aeschynomene indica</i>	200
<i>Myriophyllum artesium</i>	202
<i>Cyperus laevigatus</i>	203
<i>Plantago gaudichaudii</i>	204

<i>Rumex tenax</i>	206
<i>Cyperus bifax</i>	207
<i>Cyperus sphaeroideus</i>	445

APPENDIX E
Species according to Regional Ecosystem

Appendix E- Consolidated Species List by Regional Ecosystem (Note: List is compiled using data from secondary and tertiary sites only)

Species List Continued

<i>Oxalis corniculata</i> *		OXALIDACEAE	*			x			x			x		x			
<i>Oxalis perennans</i>		OXALIDACEAE															
<i>Oxalis radiosa</i>		OXALIDACEAE										x					
<i>Ozothamnus bidwillii</i>		ASTERACEAE															
<i>Ozothamnus diosmifolius</i>	Sago flower	ASTERACEAE															
<i>Ozothamnus diosporus</i>		ASTERACEAE															
<i>Pandorea pandorana</i>	Wonga vine	BIGNONIACEAE											x				
<i>Panicum decompositum</i>		POACEAE												x			
<i>Panicum effusum</i>	Hairy panic	POACEAE															
<i>Panicum laevinode</i>	Pepper grass	POACEAE		x										x			
<i>Panicum larcomianum</i>		POACEAE															
<i>Parsonsia eucalyptophylla</i>	Gargaloo	APOCYNACEAE				x											
<i>Parsonsia lanceolata</i>	Northern silkpod	APOCYNACEAE			x												
<i>Paspalidium caespitosum</i>	Brigalow grass	POACEAE			x	x	x	x	x	x	x						
<i>Paspalidium constrictum</i>	Knottybutt grass	POACEAE									x						
<i>Paspalidium criniforme</i>		POACEAE															
<i>Paspalidium disjunctum</i>		POACEAE															
<i>Paspalidium distans</i>	Shotgrass	POACEAE															
<i>Paspalidium gracile</i>	Slender panic	POACEAE												x			
<i>Paspalidium jubiflorum</i>	Warrego grass	POACEAE															
<i>Paspalum dilatatum</i>	Paspalum	POACEAE													x		
<i>Paspalum distichum</i>		POACEAE															
<i>Paspalum scrobiculatum</i>		POACEAE													x		
<i>Paspalum urvillei</i>		POACEAE													x		
<i>Passiflora aurantia</i>		PASSIFLORACEAE															
<i>Pennisetum alopecuroides</i>		POACEAE															
<i>Peripleura hispidula</i> var. <i>setosa</i>		ASTERACEAE															
<i>Perotis rara</i>	Comet grass	POACEAE	*										x				
<i>Persicaria attenuata</i> subsp. <i>Attenuata</i>		POLYGONACEAE															
<i>Persicaria decipiens</i>		POLYGONACEAE															
<i>Persicaria hydropiper</i>	Water pepper	POLYGONACEAE															
<i>Persicaria lapathifolia</i>		POLYGONACEAE															
<i>Persicaria orientalis</i>		POLYGONACEAE															
<i>Persicaria strigosa</i>		POLYGONACEAE													x		
<i>Petalostigma pubescens</i>	Quinine tree	PICRODENDRACEAE									x						

APPENDIX F
Site Data – Quaternary sites

Nathan Dam Quaternary Site Data

W 48	<i>Acacia</i> <i>harpophylla</i>	<i>Eucalyptus</i> <i>populnea</i>	<i>Eucalyptus</i> <i>coolabah</i>	<i>Eucalyptus</i> <i>camaldulensis</i>										
W 71	<i>Eucalyptus</i> <i>coolabah</i>	<i>Eucalyptus</i> <i>populnea</i>												
W 73	<i>Eucalyptus</i> <i>populnea</i>	<i>Eucalyptus</i> <i>populnea</i>												
W 74	<i>Eucalyptus</i> <i>populnea</i>	<i>Corymbia</i> <i>clarksoniana</i>	<i>Eucalyptus</i> <i>tereticornis</i>	<i>Callitris</i> <i>glaucocephala</i>										
W 75	<i>Callitris</i> <i>glaucocephala</i>	<i>Eucalyptus</i> <i>populnea</i>												
W 80	<i>Eucalyptus</i> <i>coolabah</i>													
W 81	<i>Eucalyptus</i> <i>coolabah</i>													
W 82	<i>Eucalyptus</i> <i>coolabah</i>	<i>Acacia</i> <i>harpophylla</i>												
W 83	<i>Eucalyptus</i> <i>populnea</i>													
ap1932	<i>Eucalyptus</i> <i>coolabah</i>	<i>Eucalyptus</i> <i>camaldulensis</i>												<i>grassy</i> <i>understorey</i>
ap1933	<i>Eucalyptus</i> <i>coolabah</i>	<i>Eucalyptus</i> <i>camaldulensis</i>		<i>Acacia</i> <i>harpophylla</i>										
ap1934	<i>Eucalyptus</i> <i>coolabah</i>	<i>Eucalyptus</i> <i>camaldulensis</i>		<i>Melaleuca</i> <i>linariifolia</i> var. <i>trichostachya</i>										<i>grassy</i> <i>understorey</i>
ap1935	<i>Eucalyptus</i> <i>camaldulensis</i>	<i>Eucalyptus</i> <i>coolabah</i>		<i>Lysiphyllo</i> <i>carronii</i>										<i>river flats</i> <i>flood plain</i>

Glebe Pipeline Quaternaries

Site No.	Tree1				Tree 2				Shrub 1			Shrub 2		Ground	
	i	ii	iii	iv	i	ii	iii	iv	i	ii	iii	i	ii		
ST1					<i>Eremophila mitchellii</i>	<i>Acacia excelsa</i>	<i>Notelaea microcarpa</i>		<i>Citrus glauca</i>						<i>Verbena tenuisecta*</i> <i>Senecio pinnatifolius</i> <i>Maireana microphylla</i> <i>Salsola kali</i> <i>Sclerolaena muricata</i> var. <i>muricata</i> <i>Sporobolus creber</i>
ST2	<i>Eucalyptus populnea</i>				<i>Eucalyptus populnea</i>	<i>Eucalyptus melanophloia</i>			<i>Geijera parviflora</i>	<i>Citrus glauca</i>					
ST3	<i>Acacia harpophylla</i>	<i>Eucalyptus populnea</i>			<i>Acacia harpophylla</i>	<i>Eucalyptus populnea</i>			<i>Acacia excelsa</i>	<i>Geijera parviflora</i>					<i>Cenchrus ciliaris*</i>
ST4	<i>Acacia harpophylla</i>	<i>Eucalyptus crebra</i>													
ST5	<i>Callitris glaucophylla</i>	<i>Eucalyptus melanophloia</i>	<i>Eucalyptus populnea</i>	<i>Acacia harpophylla</i>	<i>Callitris glaucophylla</i>	<i>Eucalyptus populnea</i>	<i>Eremophila mitchellii</i>	<i>Eucalyptus melanophloia</i>	<i>Callitris glaucophylla</i>	<i>Geijera parviflora</i>	<i>Eucalyptus melanophloia</i>	<i>Acacia decora</i>	<i>Callitris glaucophylla</i>		
ST6	<i>Angophora floribunda</i>	<i>Eucalyptus tereticornis</i>				<i>Brachychiton populnea</i>	<i>Eucalyptus tereticornis</i>	<i>Angophora floribunda</i>							
ST7	<i>Acacia harpophylla</i>					<i>Brachychiton rupestris</i>	<i>Acacia harpophylla</i>			<i>Geijera parviflora</i>	<i>Acacia harpophylla</i>	<i>Opuntia stricta</i>			
ST8	<i>Acacia harpophylla</i>					<i>Brachychiton rupestris</i>	<i>Acacia harpophylla</i>			<i>Geijera parviflora</i>	<i>Acacia harpophylla</i>	<i>Opuntia stricta</i>			
ST9	<i>Eucalyptus populnea</i>	<i>Eucalyptus melanophloia</i>													
ST10	<i>Acacia harpophylla</i>					<i>Acacia harpophylla</i>	<i>Lysiphylgium carolinii</i>	<i>Brachychiton rupestris</i>		<i>Acacia excelsa</i>	<i>Geijera parviflora</i>	<i>Eremophila mitchellii</i>	<i>Opuntia stricta</i>	<i>Santalum lanceolatum</i>	
ST11	<i>Acacia harpophylla</i>														
ST12	<i>Acacia harpophylla</i>	<i>Acacia melvillei</i>				<i>Acacia harpophylla</i>	<i>Eremophila mitchellii</i>			<i>Geijera parviflora</i>	<i>Citrus glauca</i>				<i>Cenchrus ciliaris*</i>
ST13	<i>Acacia harpophylla</i>														
ST14	<i>Eucalyptus populnea</i>														
ST15	<i>Eucalyptus tereticornis</i>	<i>Eucalyptus populnea</i>				<i>Eucalyptus populnea</i>	<i>Casuarina cristata</i>	<i>Acacia harpophylla</i>		<i>Geijera parviflora</i>					
ST16	<i>Eucalyptus populnea</i>					<i>Eucalyptus populnea</i>	<i>Eremophila mitchellii</i>								
ST17	<i>Eucalyptus tereticornis</i>														
ST18	<i>Acacia</i>					<i>Acacia</i>	<i>Acacia</i>	<i>Santalum</i>	<i>Lysiphylgium</i>						

Numbers prefixed with ST (collected by Shelley Trevaskis and Amy Prowd) and DF (Collected by David Francis) were collected in September 2008.

Numbers prefixed with MAR were collected by David Francis and John Dwyer in March 2008.

Numbers prefixed with MD were collected by David Francis and John Dwyer during the Dam survey in March 2008.

Numbers prefixed with W were collected by David Francis and Shelley Trevaskis in June 2008.

Numbers prefixed with DA were collected by David Francis and Amy Prowd in May 2008

Numbers with no prefix or prefixed with ap are Corveg sites recorded by Sandy Pollock and dated 1 February 2000.

Numbers prefixed with Pw were collected by David Francis and Amy Prowd in June 2010.

**Pipeline Quaternary Site Data
2008 – 2010
Within 30m Pipeline Easement**

APPENDIX G
Consolidated Species list for Dam and Surrounds

APPENDIX H – Consolidated Species List for Broader Study Area

Species Name	Common Name	Family	Status	Species recorded in current Study	Species recorded by Dowling & Halford, 1997	Species recorded in CORVEG	Species recorded by Fensham & Wilson 1997
<i>Abutilon fraseri</i>	Dwarf lantern flower	MALVACEAE			x		
<i>Abutilon micropetalum</i>		MALVACEAE					
<i>Abutilon oxycarpum</i>	Flannel weed	MALVACEAE		x	x	x	
<i>Abutilon oxycarpum forma oxycarpum</i>		MALVACEAE			x		
<i>Acacia amblygona</i>	Prickly wattle	MIMOSACEAE			x		
<i>Acacia caroleae</i>		MIMOSACEAE			x		
<i>Acacia conferta</i>	Crowded leaf wattle	MIMOSACEAE			x		
<i>Acacia deanei</i>		MIMOSACEAE		x	x		
<i>Acacia decora</i>	Pretty wattle	MIMOSACEAE		x	x	x	
<i>Acacia excelsa</i>	Ironwood	MIMOSACEAE		x	x	x	
<i>Acacia farnesiana</i>	Mimosa bush	MIMOSACEAE	* (invasive plant of Taroom Shire)	x	x	x	
<i>Acacia fasciculifera</i>	Scrub ironbark	MIMOSACEAE		x	x		
<i>Acacia harpophylla</i>	Brigalow	MIMOSACEAE		x	x	x	
<i>Acacia juncifolia</i>		MIMOSACEAE			x		
<i>Acacia leiocalyx</i>	Early black wattle	MIMOSACEAE		x	x		
<i>Acacia leiocalyx subsp. <i>leiocalyx</i></i>	Brisbane black wattle	MIMOSACEAE			x		
<i>Acacia longispicata</i>		MIMOSACEAE			x		
<i>Acacia macradenia</i>	Zig zag wattle	MIMOSACEAE			x		
<i>Acacia pendula</i>	Weeping myall	MIMOSACEAE		x			
<i>Acacia rhodoxyylon</i>	Rosewood	MIMOSACEAE		x	x		
<i>Acacia salicina</i>	Sally wattle	MIMOSACEAE		x	x		
<i>Acacia shirleyi</i>	Lancewood	MIMOSACEAE			x		
<i>Acacia sparsiflora</i>	Currawong	MIMOSACEAE			x		
<i>Acacia stenophylla</i>		MIMOSACEAE		x	x	x	
<i>Acalypha eremorum</i>		EUPHORBIACEAE		x	x		
<i>Achyranthes aspera</i>		AMARANTHACEAE		x	x		x
<i>Acmella grandiflora var. <i>brachyglossa</i></i>		ASTERACEAE					x
<i>Adenostemma lavenia</i>		ASTERACEAE					x
<i>Adriana glabrata var. <i>subglabra</i></i>		EUPHORBIACEAE			x		
<i>Aeschynomene indica</i>		FABACEAE		x	x		x

<i>Ajuga australis</i>	Australian bugle	LAMINACEAE		x	x		x
<i>Alectryon connatus</i>		SAPINDACEAE		x	x		
<i>Alectryon diversifolius</i>	Scrub boonaree	SAPINDACEAE		x	x	x	
<i>Alectryon oleifolius</i>		SAPINDACEAE		x	x		
<i>Alectryon oleifolius</i> subsp. <i>elongatus</i>	Boonaree	SAPINDACEAE			x		
<i>Allocasuarina luehmannii</i>	Bullocke	CASUARINACEAE		x	x		
<i>Alphitonia excelsa</i>	Soap tree	RHAMNACEAE			x	x	
<i>Alstonia constricta</i>	Quinine bush	APOCYNACEAE		x	x		
<i>Alternanthera denticulata</i>	Lesser joyweed	AMARANTHACEAE		x			
<i>Alternanthera micrantha</i>		AMARANTHACEAE		x			
<i>Alternanthera nodiflora</i>	Joyweed	AMARANTHACEAE			x		
<i>Alternanthera pungens</i> *	Gomphrena weed	AMARANTHACEAE	*	x			
<i>Alternanthera sessilis</i>		AMARANTHACEAE	*			x	
<i>Amaranthus graecizans</i> subsp. <i>Sylvestris</i>		AMARANTHACEAE	*		x		
<i>Amaranthus viridis</i>	Green amaranth	AMARANTHACEAE	*		x		
<i>Ammannia multiflora</i>		LYTHRACEAE					
<i>Ampelopteris prolifera</i>		THELYPTERIDACEAE		x		x	
<i>Amyema congener</i>	Erect mistletoe	LORANTHACEAE			x		
<i>Amyema congener</i> subsp <i>congener</i>	Variable mistletoe	LORANTHACEAE		x	x		
<i>Amyema quandong</i> var. <i>bancroftii</i>		LORANTHACEAE			x		
<i>Ancistrachne uncinulata</i>	Hoaky grass	POACEAE			x	x	
<i>Angophora floribunda</i>		MYRTACEAE		x	x		
<i>Angophora leiocarpa</i>		MYRTACEAE		x	x		
<i>Apophyllum anomalum</i>	Warrior bush	CAPPARACEAE		x	x	x	
<i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	Mexican poppy	PAPARVERACEAE	* (invasive plant of Taroom Shire)	x			
<i>Aristida benthamii</i> var. <i>spinulifera</i>		POACEAE			x		
<i>Aristida benthamii</i>		POACEAE			x		

<i>var. spinulifera</i>							
<i>Aristida calycina</i>		POACEAE			x	x	
<i>Aristida calycina</i> var. <i>calycina</i>		POACEAE			x		
<i>Aristida calycina</i> var. <i>praetexta</i>		POACEAE			x		
<i>Aristida caput-medusae</i>	Many headed wire grass	POACEAE		x	x	x	
<i>Aristida gracilipes</i>		POACEAE			x		
<i>Aristida latifolia</i>		POACEAE			x		
<i>Aristida leichhardtiana</i>		POACEAE			x		
<i>Aristida leptopoda</i>	White speargrass	POACEAE			x		
<i>Aristida lignosa</i>		POACEAE			x		
<i>Aristida personata</i>		POACEAE			x		
<i>Aristida queenslandica</i> var. <i>dissimilis</i>		POACEAE			x		
<i>Aristida queenslandica</i> var. <i>queenslandica</i>		POACEAE			x		
<i>Aristida ramosa</i>	Purple wiregrass	POACEAE			x		
<i>Arthraxon hispidulus</i>		POACEAE	V (NCA)				x
<i>Arundinella nepalensis</i>	Reedgrass	POACEAE		x	x		x
<i>Asperula conferta</i>	Common woodruff	RUBIACEAE			x		
<i>Asperula geminifolia</i>		RUBIACEAE			x		
<i>Aster subulatus</i>	Wild aster	ASTERACEAE	*		x		x
<i>Atalaya hemiglaaca</i>	Whitewood	SAPINDACEAE			x		
<i>Atalaya salicifolia</i>	Whitewood	SAPINDACEAE		x	x	x	
<i>Atriplex muelleri</i>		CHENOPODIACEAE		x	x		
<i>Austumyrtus bidwillii</i>	Smooth barked ironwood	MYRTACEAE			x		
<i>Austrostipa verticillata</i>	Slender bamboo grass	POACEAE			x		x
<i>Azolla pinnata</i>	Ferny azolla	AZOLLACEAE			x		x
<i>Baccharis halimifolia</i>	Groundsel bush	ASTERACEAE	* (CLASS 2)	x			
<i>Bacopa monnieri</i>		SCROPHULARIACEAE		x		x	
<i>Basilicum polystachyon</i>		LAMIACEAE			x		
<i>Baumea rubiginosa</i>		CYPERACEAE					x
<i>Bertia oleifolia</i>		EUPHORBIACEAE		x	x		
<i>Bertia pedicellata</i>		EUPHORBIACEAE	R		x		

<i>Bidens bipinnata</i>	Bipinnate beggar's ticks	ASTERACEAE	*		x		
<i>Bidens pilosa</i>	Cobblers peg	ASTERACEAE	*				x
<i>Blechnum indicum</i>		BLECHNACEAE					x
<i>Boerhavia dominii</i>		NYCTAGINACEAE	x	x	x		
<i>Boerhavia pubescens</i>		NYCTAGINACEAE		x			
<i>Bolboschoenus fluvialis</i>		CYPERACEAE					x
<i>Bothriochloa bladhii</i>	Forest blue grass	POACEAE		x			
<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>	Forest bluegrass	POACEAE			x	x	
<i>Bothriochloa decipiens</i>	Pitted blue grass	POACEAE		x	x		
<i>Brachiaria eruciformis</i>		POACEAE	*		x		
<i>Brachiaria foliosa</i>	Leafy panic	POACEAE			x	x	
<i>Brachiaria mutica</i>		POACEAE			x		x
<i>Brachiaria subquadripila</i>		POACEAE			x		
<i>Brachychiton australis</i>	Broad-leaved bottle tree	STERCULIACEAE			x		
<i>Brachychiton populneus</i>	Kurrajong	STERCULIACEAE		x			
<i>Brachychiton populneus</i> subsp. <i>populneus</i>	Kurrajong	STERCULIACEAE			x		
<i>Brachychiton rupestris</i>	Narrow-leaved bottle tree	STERCULIACEAE		x	x	x	x
<i>Brachyscome ciliaris</i> var. <i>subintegifolia</i>		ASTERACEAE		x			
<i>Brachyscome trachycarpa</i>		ASTERACEAE			x		
<i>Bracteantha bracteata</i>	Golden everlasting	ASTERACEAE		x			
<i>Brassica tournefortii</i> *	Wild turnip	BRASSICACEAE	*				
<i>Brenynia oblongifolia</i>	Coffee bush	EUPHORBIACEACE		x			
<i>Bridelia leichhardtii</i>	Small scrub ironbark	PHYLLANTHACEAE		x			
<i>Brunfelsia australis</i>						x	
<i>Brunoniella australis</i>	Blue trumpet	ACANTHACEAE		x	x		
<i>Bulbostylis barbata</i>		CYPERACEAE		x			
<i>Bursaria incana</i>	Mock orange	PITTOSPORACEAE		x			
<i>Bursaria incana</i> var. <i>incana</i>		PITTOSPORACEAE	*		x		
<i>Callistemon viminalis</i>		MYRTACEAE					x

<i>Callitrichie sonderi</i>	Starwort	CALLITRICHACEAE		x		x	
<i>Callitris glaucophylla</i>	White cypress pine	CUPRESSACEAE		x	x		
<i>Calotis cuneata</i>	Running callotis	ASTERACEAE		x	x		
<i>Calotis cuneifolia</i>		ASTERACEAE			x		
<i>Calotis dentex</i>	White burr daisy	ASTERACEAE			x		
<i>Calotis hispidula</i>	Bogan flea	ASTERACEAE			x		
<i>Calotis lappulacea</i>	Yellow burr daisy	ASTERACEAE			x		
<i>Calotis scabiosifolia</i>	Abundant white daisy	ASTERACEAE	x				
<i>Calyptochloa gracillima</i>		POACEAE			x	x	
<i>Canthium coprosmoides</i>	Coastal coffee bush	RUBIACEAE			x		
<i>Canthium sp.</i>		RUBIACEAE			x		
<i>Canthium vacciniifolium</i>	Small-leaved canthium	RUBIACEAE			x		
<i>Capillipedium parviflorum</i>		POACEAE		x			x
<i>Capillipedium spicigerum</i>	Scented top	POACEAE		x		x	
<i>Capparis canescens</i>		CAPPARACEAE	x	x			
<i>Capparis lasiantha</i>		CAPPARACEAE	x	x			
<i>Capparis loranthifolia</i> var. <i>bancroftii</i>	Narrow leaf bumble tree	CAPPARACEAE		x		x	
<i>Capparis mitchellii</i>		CAPPARACEAE	x	x			
<i>Cardamine sp.</i> (R.J.Fensham 3774)							x
<i>Carex appressa</i>	Tall sedge	CYPERACEAE		x			x
<i>Carex gaudichaudiana</i>		CYPERACEAE					x
<i>Carex polyantha</i>		CYPERACEAE		x			x
<i>Carissa ovata</i>	Currant bush	APOCYNACEAE	x	x		x	
<i>Cassia tomentella</i>	Velvet cassia	CAESALPINIACEAE	x				
<i>Cassine australis</i> var. <i>angustifolia</i>	Red oliveplum	CELASTRACEAE		x			
<i>Cassinia laevis</i>	Coughbush	ASTERACEAE		x			
<i>Casuarina cristata</i>	Belah	CASUARINACEAE	x	x			
<i>Cenchrus ciliaris</i>	Buffel grass	POACEAE	*	x	x	x	
<i>Centaurea melitensis</i>	Maltese cockspur	ASTERACEAE	*		x		
<i>Centaurium erythraea</i>	Common centaury	GENTIANACEAE	*		x		
<i>Centella asiatica</i>	Pennywort	APIACEAE	*	x	x		x
<i>Centipeda minima</i>	Spreading	ASTERACEAE		x			

	sneezeweed						
<i>Centranthera cochinchinensis</i>		SCROPHULARIACEAE				x	
<i>Chamaesyce dallachiana</i>	Caustic weed	EUPHORBIACEAE			x		
<i>Chamaesyce drummondii</i>						x	
<i>Cheilanthes distans</i>	Bristly cloak fern	ADIANTACEAE		x	x	x	
<i>Cheilanthes lasiophylla</i>	Wooly cloak fern	ADIANTACEAE					
<i>Cheilanthes sieberi subsp. sieberi</i>	Mulga fern	ADIANTACEAE		x	x		
<i>Chenopodium ambrosioides</i>	Mexican tea	CHENOPODIACEAE	*		x		
<i>Chenopodium carinatum</i>	Green crumbweed	CHENOPODIACEAE		x			
<i>Chenopodium desertorum</i>		CHENOPODIACEAE					
<i>Chenopodium desertorum subsp. Anidiophyllum</i>		CHENOPODIACEAE		x			
<i>Chenopodium pseudomicropodium</i>		CHENOPODIACEAE					
<i>Chenopodium pumilio</i>		CHENOPODIACEAE		x	x		
<i>Chenopodium trigonon</i>		CHENOPODIACEAE					
<i>Chionachne cyathopoda</i>	River grass	POACEAE		x	x	x	
<i>Chionachne hubbardiana</i>		POACEAE		x			
<i>Chloris divaricata</i>	Slender chloris	POACEAE			x	x	
<i>Chloris gayana</i>	Rhodes grass	POACEAE	*		x		x
<i>Chloris truncata</i>		POACEAE				x	
<i>Chloris ventricosa</i>	Tall chloris	POACEAE			x		
<i>Chloris virgata</i>		POACEAE		x			x
<i>Chrysoccephalum apiculatum</i>	Yellow buttons	ASTERACEAE			x		
<i>Chrysopogon fallax</i>		POACEAE		x			
<i>Cirsium vulgare</i>	Spear thistle	ASTERACEAE	*	x	x		
<i>Citriobatus spinescens</i>		PITTOSPORACEAE		x			
<i>Citrus glauca</i>	Limebush	RUTACEAE			x		
<i>Claoxylon</i>	Queensland	EUPHORBIACEAE			x		

<i>tenerifolium</i>	brittlewood							
<i>Cleistochloa subjuncea</i>		POACEAE		x	x			
<i>Clematicissus opaca</i>	Slender grape	VITACEAE			x	x	x	
<i>Clerodendrum floribundum</i>	Lollybush	VERBENACEAE		x	x			
<i>Commelina benghalensis*</i>	Hairy wandering jew	COMMELINACEAE	*	x				
<i>Commelina diffusa</i>	Wandering jew	COMMELINACEAE		x	x?	x		
<i>Convolvulus arvensis</i>		CONVOLVULACEAE			x			
<i>Conyza bonariensis</i>	Flaxleaf fleabane	ASTERACEAE	*		x			
<i>Conyza sumatrensis</i>		ASTERACEAE	*				x	
<i>Corymbia citriodora</i> subsp. <i>variegata</i>	Lemon scented gum	MYRTACEAE		x				
<i>Corymbia clarksoniana</i>	Long fruited bloodwood	MYRTACEAE		x	x			
<i>Corymbia tessellaris</i>	Moreton bay ash	MYRTACEAE			x			
<i>Cotula australis</i>		ASTERACEAE					x	
<i>Crassocephalum crepidioides</i>							x	
<i>Crassula tetragona</i>		CRASSULACEAE		x				
<i>Crotalaria incana</i> subsp. <i>Incana</i>	Wooly rattlepod	FABACEAE	*		x			
<i>Crotalaria montana</i>		FABACEAE		x	x			
<i>Croton insularis</i>	Native cascarilla bark	EUPHORBIACEAE			x		x	
<i>Croton phebaloides</i>	Narrow leaved croton	EUPHORBIACEAE		x	x			
<i>Cryptandra ciliata</i>		RHAMNACEAE	R (NCA)					
<i>Cryptandra triplex</i>		RHAMNACEAE		x	x			
<i>Cuscuta campestris</i>	Dodder	CONVOLVULACEAE	*	x	x			
<i>Cyclosorus interruptus</i>		THELYPTERIDACEAE			x			x
<i>Cyclospermum leptophyllum</i>	Slender celery	APIACEAE	*		x		x	x
<i>Cymbidium canaliculatum</i>		ORCHIDACEAE		x	x			
<i>Cymbopogon bombycinus</i>	Silky oilgrass	POACEAE		x	x			
<i>Cymbopogon refractus</i>	Barb wire grass	POACEAE		x	x	x		
<i>Cynodon dactylon</i>	Green couch	POACEAE			x			x
<i>Cynoglossum</i>	Australian forget-me-	BORAGINACEAE			x			

<i>australe</i> var. <i>australe</i>	not						
<i>Cyperus bifax</i>		CYPERACEAE					x
<i>Cyperus brevifolius</i>		CYPERACEAE					x
<i>Cyperus bulbosus</i>		CYPERACEAE		x		x	
<i>Cyperus concinnus</i>		CYPERACEAE		x			
<i>Cyperus difformis</i>	Rice sedge	CYPERACEAE			x		x
<i>Cyperus exaltatus</i>		CYPERACEAE					x
<i>Cyperus flaccidus</i>		CYPERACEAE			x		
<i>Cyperus flavidus</i>		CYPERACEAE		x			x
<i>Cyperus gracilis</i>	Slender sedge	CYPERACEAE			x	x	
<i>Cyperus haspan</i>		CYPERACEAE					x
<i>Cyperus iria</i>		CYPERACEAE			x		
<i>Cyperus javanicus</i>		CYPERACEAE					x
<i>Cyperus laevigatus</i>		CYPERACEAE					x
<i>Cyperus lucidus</i>		CYPERACEAE			x		
<i>Cyperus polystachyos</i>	Bunchy sedge	CYPERACEAE			x		x
<i>Cyperus pygmaeus</i>	Dwarf sedge	CYPERACEAE			x		
<i>Cyperus rigidellus</i>		CYPERACEAE			x		
<i>Cyperus rotundus</i>	Nutgrass	CYPERACEAE	*		x		
<i>Cyperus sanguinolentus</i>		CYPERACEAE			x		
<i>Cyperus sphaeroideus</i>	Kyllinga weed	CYPERACEAE			x		x
<i>Cyperus unioloides</i>		CYPERACEAE		x			x
<i>Datura ferox</i>	Fierce thornapple	SOLANACEAE	* (invasive plant of Taroom Shire)	x			
<i>Daucus glochidiatus</i>	Australian carrot	APIACEAE		x	x		
<i>Denhamia oleaster</i>		CELASTRACEAE			x		
<i>Denhamia pittosporoides</i>	Orange boxwood	CELASTRACEAE			x		
<i>Desmodium brachypodium</i>		FABACEAE			x	x	
<i>Desmodium rhytidophyllum</i>		FABACEAE			x		
<i>Desmodium varians</i>	Slender tick trefoil	FABACEAE		x	x	x	
<i>Dianella brevipedunculata</i>		HERMEROCALLIDACEAE		x	x	x	
<i>Dianella caerulea</i> var. <i>vannata</i>		HERMEROCALLIDACEAE		x			
<i>Dianella longifolia</i> var. <i>longifolia</i>		HERMEROCALLIDACEAE				x	
<i>Dianella longifolia</i>		HERMEROCALLIDACEAE				x	

<i>var. stupata</i>							
<i>Dianella revoluta</i>		HERMEROCALLIDACEAE	x			x	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>		POACEAE			x	x	
<i>Dichelachne rara</i>		CONVOLVULACEAE				x	
<i>Dichondra repens</i>	Kidney weed	CONVOLVULACEAE	x	x			
<i>Digitaria breviglumis</i>		POACEAE			x		
<i>Digitaria brownii</i>	Cotton panic	POACEAE			x		
<i>Digitaria ciliaris</i>		POACEAE		x			x
<i>Digitaria divaricatissima</i>	Umbrella grass	POACEAE			x		
<i>Digitaria hystriochoides</i>		POACEAE				x	
<i>Digitaria longiflora</i>		POACEAE			x		
<i>Digitaria porrecta</i>		POACEAE		x			
<i>Diospyros humilis</i>	Small-leaved ebony	EBENACEAE			x		
<i>Dodonaea heteromorpha</i>		SAPINDACEAE		x	x		
<i>Dodonaea viscosa</i>	Hop bush	SAPINDACEAE					
<i>Dodonaea viscosa</i> subsp. <i>spatulata</i>	Sticky hop bush	SAPINDACEAE			x	x	
<i>Drosera burmanni</i>		DROSERACEAE					x
<i>Drosera indica</i>		DROSERACEAE					x
<i>Dysphania glomulifera</i> subsp. <i>glomulifolia</i>		CHENOPODIACEAE					
<i>Echinochloa colona</i>		POACEAE					x
<i>Echinochloa crusgalli</i>	Barnyard grass	POACEAE	*	x	x		x
<i>Eclipta prostrata</i>	White eclipta	ASTERACEAE		x	x		x
<i>Ehretia membranifolia</i>	Weeping koda	BORAGINACEAE		x	x	x	
<i>Einadia hastata</i>	Ruby saltbush	CHENOPODIACEAE		x	x		
<i>Einadia nutans</i>		CHENOPODIACEAE		x			
<i>Einadia nutans</i> subsp. <i>linifolia</i>	Climbing saltbush	CHENOPODIACEAE		x	x		
<i>Einadia nutans</i> subsp. <i>nutans</i>	Nodding saltbush	CHENOPODIACEAE	x	x			
<i>Einadia trigonos</i> subsp. <i>stellulata</i>		CHENOPODIACEAE	x	x			
<i>Elatine gratioloides</i>	Waterwort	ELATINACEAE			x		x
<i>Eleocharis cylindrostachys</i>		CYPERACEAE			x		x

<i>Eleocharis dieterichiana</i>		CYPERACEAE					x
<i>Eleocharis equisetina</i>	Spikerush	CYPERACEAE			x		x
<i>Eleocharis pallens</i>		CYPERACEAE		x			x
<i>Eleocharis plana</i>	Ribbed spikerush	CYPERACEAE			x		
<i>Eleocharis pusilla</i>	Small spikerush	CYPERACEAE			x		
<i>Eleocharis tetraquetra</i>		CYPERACEAE		x			x
<i>Enchylaena tomentosa</i>	Ruby saltbush	CHENOPODIACEAE		x			
<i>Enneapogon unispiceus</i>		POACEAE				x	
<i>Enneapogon gracilis</i>	Slender nineawn	POACEAE			x		
<i>Enneapogon intermedius</i>		POACEAE				x	
<i>Enneapogon lindleyanus</i>	Prickly couch	POACEAE		x	x		
<i>Enneapogon robustissimus</i>		POACEAE		x			
<i>Enteropogon acicularis</i>	Curly windmill grass	POACEAE			x		
<i>Enteropogon ramosus</i>	Windmill grass	POACEAE			x	x	
<i>Enteropogon unispiceus</i>		POACEAE		x	x	x	
<i>Epalates australis</i>	Epalates	ASTERACEAE			x		
<i>Epilobium billardierianum</i> <i>subsp. cinereum</i>		ONGRACEAE					x
<i>Epilobium hirtigerum</i>		ONAGRACEAE			x		
<i>Eragrostis elongata</i>	Clustered love grass	POACEAE			x		x
<i>Eragrostis lacunaria</i>	Purple lovegrass	POACEAE			x		
<i>Eragrostis leptocarpa</i>		POACEAE		x		x	
<i>Eragrostis leptostachya</i>	Paddock lovegrass	POACEAE			x		
<i>Eragrostis longipedicellata</i>		POACEAE			x		
<i>Eragrostis parviflora</i>		POACEAE		x			x
<i>Eragrostis sororia</i>		POACEAE		x			
<i>Eremophila debilis</i>	Winter apple	MYOPORACEAE			x		
<i>Eremophila longifolia</i>	Berrigan	MYOPORACEAE		x	x		
<i>Eremophila mitchellii</i>	Bastard sandalwood	MYOPORACEAE			x	x	
<i>Eriocaulon carsonii</i>		ERIOCAULACEAE	E (NCA), E (EPBC)			x	

<i>Eriocaulon scariosum</i>	Pipewort	ERIOCAULACEAE		x		x	
<i>Eriochloa decumbens</i> F.M.Bailey		POACEAE			x		
<i>Eriochloa procera</i>		POACEAE				x	
<i>Eriochloa pseudoacrotricha</i>	Early spring grass	POACEAE			x		
<i>Erodium crinitum</i>	Blue crowfoot	GERANIACEAE			x		
<i>Erythrina vespertilio</i>	Bats-wing coral bush	FABACEAE			x		
<i>Erythroxyllum sp.</i>		ERYTHROXYLACEAE	x	x	x		
<i>Eucalyptus camaldulensis</i>	River red gum	MYRTACEAE		x	x	x	x
<i>Eucalyptus cambageana</i>	Dawson gum	MYRTACEAE					
<i>Eucalyptus chloroclada</i>		MYRTACEAE		x			
<i>Eucalyptus coolabah</i>	Coolibah	MYRTACEAE		x	x	x	x
<i>Eucalyptus crebra</i>	Narrow leaved ironbark	MYRTACEAE			x		
<i>Eucalyptus exserta</i>	Queensland peppermint	MYRTACEAE		x	x		
<i>Eucalyptus fibrosa</i> subsp. <i>nubila</i>	Ironbark	MYRTACEAE		x			
<i>Eucalyptus melanophloia</i>	Silver leaved ironbark	MYRTACEAE			x		
<i>Eucalyptus microcarpa</i>		MYRTACEAE		x			
<i>Eucalyptus mitchelli</i>		MYRTACEAE					
<i>Eucalyptus pilligaenensis</i>	Narrow leaf grey box	MYRTACEAE		x			
<i>Eucalyptus populnea</i>	Poplar box	MYRTACEAE			x	x	
<i>Eucalyptus tenuipes</i>	Mahogany	MYRTACEAE		x	x		
<i>Eucalyptus tereticornis</i>	Forest red gum	MYRTACEAE			x		x
<i>Euchiton sphaericus</i>	Cudweed	ASTERACEAE		x	x		
<i>Eulalia aurea</i>	Silky browntop	POACEAE			x	x	
<i>Euphorbia tannensis</i>		EUPHORBIACEAE					
<i>Euphorbia tannensis</i> var. <i>eremophila</i>	Desert spurge	EUPHORBIACEAE			x		
<i>Evolvulus alsinoides</i>	Tropical speedwell	CONVOLVULACEAE		x	x		
<i>Excoecaria dallachiana</i>	Scrub poison	EUPHORBIACEAE			x		
<i>Exocarpos latifolius</i>	Native cherry	SANTALACEAE			x		
<i>Fallopia convolvulus</i>		POLYGONACEAE	*	x	x		

<i>Ficus opposita</i>	Sandpaper fig	MORACEAE			x		x
<i>Fimbristylis dichotoma</i>	Common fringe rush	CYPERACEAE			x		x
<i>Fimbristylis nutans</i>		CYPERACEAE					x
<i>Fimbristylis sieberiana</i>		CYPERACEAE					x
<i>Fimbristylis tetragona</i>		CYPERACEAE					x
<i>Flindersia australis</i>	Broad leaved leopard tree	RUTACEAE			x		
<i>Flindersia australis R.Br.</i>	Crows ash	RUTACEAE			x		
<i>Flindersia collina</i>		RUTACEAE		x			
<i>Gahnia aspera</i>		CYPERACEAE			x		
<i>Gaura parviflora</i>	Clockweed	ONAGRACEAE	*	x	x		
<i>Geijera parviflora</i>	Wilga	RUTACEAE			x	x	
<i>Glinus lotoides</i>	Hairy carpet weed	MOLLUNGINACEAE	x	x			
<i>Glossochardia bidens</i>	Native cobblers peg	ASTERACEAE			x		
<i>Glycine tabacina</i>	Glycine pea	FABACEAE		x	x		
<i>Glycine tomentella</i>	Wooly glycine	FABACEAE			x		
<i>Gnaphalium polycaulon</i>		ASTERACEAE		x	x		
<i>Gomphocarpus physocarpus</i>	Balloon cotton bush	ASCLEPIADACEAE	*		x		x
<i>Gomphrena celosioides</i>	Soft khakiweed	AMARANTHACEAE	*		x		
<i>Gonocarpus chinensis</i> subsp. <i>verrucosus</i>		HALORAGACEAE				x	
<i>Goodenia gasicularis</i>	Fan flower	GOODENIACEAE			x		
<i>Goodenia glabra</i>		GOODENIACEAE			x		
<i>Goodenia grandiflora</i>		GOODENIACEAE			x		
<i>Gratiola pedunculata</i>		SCROPHULARIACEAE		x			
<i>Grevillea robusta</i>	Silky oak	PROTEACEAE		x	x		
<i>Grevillea striata</i>	Beefwood	PROTEACEAE			x		
<i>Grewia latifolia</i>	Dog's nuts	TILIACEAE			x		
<i>Hakea fraseri</i>	Corkwood oak	PROTEACEAE			x		
<i>Halgania brachyrhyncha</i>		BORAGINACEAE			x		
<i>Haloragis aspera</i>	Raspweed	HALORAGACEAE	x	x	x		
<i>Haloragis aspera</i>		HALORAGACEAE					
<i>Haloragis heterophylla</i>		HALORAGACEAE	x			x	
<i>Helichrysum collinum</i>		ASTERACEAE			x		

<i>Heliotropium amplexicaule</i>	Blue heliotrope	BORAGINACEAE	*		x		
<i>Heliotropium indicum</i>		BORAGINACEAE	*		x		
<i>Hemarthria uncinata</i> var. <i>spathacea</i>		POACEAE		x			x
<i>Heteropogon contortus</i>	Black speargrass	POACEAE			x		
<i>Hibertia sp.</i>		DILLENIACEAE		x	x		
<i>Hibiscus sturtii</i>		MALVACEAE			x		
<i>Hibiscus trionum</i>	Bladder ketmia	MALVACEAE			x		
<i>Hovea lanceolata</i>		FABACEAE			x		
<i>Hovea longifolia</i>		FABACEAE		x		x	
<i>Hovea longipes</i>	Brush hovea	FABACEAE			x		
<i>Hybanthus monopetalus</i>	Ladys slipper	VIOLACEAE		x	x		
<i>Hybanthus monopetalus</i>	Spade flower	VIOLACEAE		x			
<i>Hydrocotyle peduncularis</i>							x
<i>Hydrocotyle verticillata</i>							x
<i>Hypericum gramineum</i>		CLUSIACEAE					x
<i>Hypochaeris glabra</i>	Smooth catsear	ASTERACEAE	*		x		
<i>Hypolepis muelleri</i>		DENNSTAEDTIACEAE	x			x	
<i>Imperata cylindrica</i>	Blady grass	POACEAE		x	x		x
<i>Indigofera linifolia</i>		FABACEAE		x			
<i>Indigofera linnaei</i>	Nine-leaved indigo	FABACEAE			x		
<i>Indigofera sp.</i>		FABACEAE			x		
<i>Isachne globosa</i>	Swamp millet	POACEAE			x		x
<i>Iseilema membranaceum</i>	Flinders grass	POACEAE					
<i>Isotoma axillaris</i>	Australian harebell	CAMPANULACEAE		x			
<i>Jacksonia scoparia</i>	Dogwood	FABACEAE			x		
<i>Jacquemontia paniculata</i>					x		
<i>Jasminum didymum</i> subsp <i>didymum</i>		OLEACEAE		x			
<i>Jasminum didymum</i> subsp. <i>lineare</i>	Native jasmine	OLEACEAE		x	x		
<i>Jasminum simplicifolium</i> subsp. <i>australiense</i>	Stiff jasmine	OLEACEAE			x	x	

<i>Juncus polyanthemus</i>		JUNCACEAE					x
<i>Juncus prismatocarpus</i>		JUNCACEAE					x
<i>Juncus sp.</i>		JUNCACEAE		x	x		
<i>Juncus usitatus</i>	Rush	JUNCACEAE			x		x
<i>Kedaudrenia corollata</i>		STERCULIACEAE			x		
<i>Lachnagrostis filiformis</i>	Blowngrass	POACEAE			x		
<i>Laportea interrupta</i>		URTICACEAE					x
<i>Laxmannia compacta</i>		ANTHERICACEAE		x	x		
<i>Leersia hexandra</i>	Swamp rice grass	POACEAE			x		x
<i>LeioCARPA leptolepis</i>	Stalked ixiolaena	ASTERACEAE			x		
<i>Lemna aequinoctialis</i>		ARACEAE					x
<i>Lemna trisulca</i>		LEMNACEAE			x		
<i>Lepidium africanum</i>	Common peppercress	BRASSICACEAE	*		x		
<i>Lepidium bonariense</i>	Argentine peppercress	BRASSICACEAE	*		x		
<i>Lepidium didymum</i>	Lesser swine-cress	BRASSICACEAE	*		x		
<i>Leptochloa ciliolata</i>		POACEAE		x	x		
<i>Leptochloa digitata</i>	Umbrella canegrass	POACEAE			x	x	
<i>Leptochloa fusca</i>		POACEAE					x
<i>Leptochloa peacockii</i>		POACEAE		x	x		
<i>Leptopus decaisnei</i>						x	
<i>Leptospermum juniperinum</i>		MYRTACEAE					x
<i>Leptospermum neglectum</i>		MYRTACEAE			x		
<i>Leptospermum polygalifolium</i>		MYRTACEAE					x
<i>Lindernia sp. (Bribie Island S.T.Blake 7089)</i>		SCROPHULARIACEAE	x			x	
<i>Livistona sp.</i>		ARECACEAE			x		
<i>Lobelia membranacea</i>		CAMPANULACEAE		x		x	
<i>Lomandra confertifolia subsp. pallida</i>		LOMANDRACEAE			x		
<i>Lomandra filiformis subsp. filiformis</i>		LOMANDRACEAE	x	x			
<i>Lomandra hystrix</i>	Slender mat rush	LAXMANNIACEAE		x			

<i>Lomandra leucocephala</i>		LAXMANNIACEAE		x			
<i>Lomandra leucocephala</i>	Wooly matrush	LOMANDRACEAE	x	x			
<i>Lomandra longifolia</i>	Spinyhead matrush	LOMANDRACEAE	x	x	x	x	
<i>Lomandra multiflora</i>		LAXMANNIACEAE					
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>		LAXMANNIACEAE	x	x			
<i>Lophostemon suaveolens</i>		MYRTACEAE					x
<i>Lotus australis</i>	Australian trefoil	FABACEAE		x	x		
<i>Ludwigia octovalvis</i>	Willow primrose	ONAGRACEAE	*		x		x
<i>Ludwigia peploides</i> subsp. <i>montevidensis</i>		ONAGRACEAE	*		x		x
<i>Lygodium microphyllum</i>		SCHIZEACEAE					x
<i>Lysicarpus angustifolius</i>	Budgeroo	MYRTACEAE		x	x		
<i>Lysiphylloum caronii</i>	Ebony tree	CAESALPINIACEAE		x			
<i>Lythrum salicaria</i>		LYTHRACEAE					x
<i>Macfadyena unguis-cati</i>	Cats claw	BIGNONIACEAE	* (Class 3)	x			
<i>Macroptilium lathyroides</i>	Phasey bean	FABACEAE	*		x		
<i>Maireana microcarpa</i>		CHENOPODIACEAE	x		x		
<i>Maireana microphylla</i>	Saltbush	CHENOPODIACEAE		x			
<i>Malva parviflora</i>	Marshmallow	MALVACEAE	*	x	x		
<i>Malvastrum americanum</i>	Spiked malvastrum	MALVACEAE	*	x	x		
<i>Malvastrum coronandelianum</i>	Prickly malvastrum	MALVACEAE	*		x		
<i>Malvastrum coronandelianus*</i>		MALVACEAE	*		x		
<i>Marsdenia microlepis</i>		APOCYNACEAE		x	x		
<i>Marsilea hirsuta</i>	Hairy nardoo	MARSILEACEAE			x	x	
<i>Marsilea hirsuta</i>		MARSILEACEAE					x
<i>Maytenus cunninghamii</i>		CELASTRACEAE			x		
<i>Maytenus silvestris</i>		CELASTRACEAE				x	
<i>Medicago polymorpha</i>		FABACEAE	*	x	x		
<i>Megathyrsus maximus</i>	Green panic	POACEAE	*		x		x

<i>Melaleuca bracteata</i>		MYRTACEAE					x
<i>Melaleuca linariifolia</i> var. <i>trichostachya</i>	Flaxleaf paperbark	MYRTACEAE		x	x		
<i>Melaleuca trichophylla</i>		MYRTACEAE				x	
<i>Melhania oblongifolia</i>		PENTAPETACEAE		x			
<i>Melichrus urceolatus</i>	Honey gorse	ERICACEAE			x		
<i>Melicope erythrococca</i>	Tingletongue	RUBIACEAE			x		
<i>Melilotus indicus</i>	Hexam scent	FABACEAE	*	x	x		
<i>Melinus repens</i>	Red natal grass	POACEAE	*		x	x	
<i>Mentha satureioides</i>	Mentha	LAMINACEAE		x			
<i>Mimulus gracilis</i>		SCROPHULARIACEAE	x	x			
<i>Minuria integriflora</i>	Smooth minuria	ASTERACEAE			x		
<i>Mitrasacme paludosa</i>		LOGANIACEAE					x
<i>Monochoria cyanea</i>		PONTEDERIACEAE	x			x	
<i>Muehlenbeckia florulenta</i>	Lignum	POLYGONACEAE		x	x		
<i>Murdannia graminea</i>	Grass lily	COMMELINACEAE		x			
<i>Myoporum deserti</i>	Turkey bush	MYOPORACEAE		x			
<i>Myriophyllum artesii</i>			E (NCA)				x
<i>Neptunia gracilis</i>	Sensitive plant	MIMOSACEAE	*	x	x	x	
<i>Nicotiana megalosiphon</i> subsp. <i>megalosiphon</i>		SOLANACEAE			x	x	
<i>Notelaea microcarpa</i>	Small fruited mock olive	OLEACEAE				x	
<i>Nymphaia gigantica</i>		NYMPHAEACEAE					
<i>Nyssanthes diffusa</i>	Barbed-wire weed	AMARANTHACEAE	x	x	x		
<i>Oenothera indecora</i> subsp. <i>bonariensis</i>	Small flower evening	ONAGRACEAE	*		x		
<i>Oldenlandia mitrasacmoides</i> subsp. <i>Trachymenoides</i>		RUBIACEAE				x	
<i>Olearia canescens</i>		ASTERACEAE			x		
<i>Onopordum acanthium*</i>	Scotch thistle	ASTERACEAE	*				
<i>Opismenus aemulus</i>	Creeping shade grass	POACEAE			x		
<i>Opuntia aurantiaca</i>	Tiger pear	CACTACEAE	* (Class 2)	x	x		
<i>Opuntia stricta</i> var. <i>stricta</i>	Prickly pear	CACTACEAE	* (Class 2)	x	x	x	

<i>Opuntia tomentosa</i>	Velvety tree pear	CACTACEAE	* (Class 2)	x	x		x
<i>Ottelia ovalifolia</i>	Swamp lily	HYDROCHARITACEAE	x	x			
<i>Owenia acidula</i>		MELIACEAE		x			
<i>Owenia venosa</i>	Emu apple	MELIACEAE		x	x		
<i>Oxalis perennans</i>		OXALIDACEAE			x	x	
<i>Ozothamnus diosmifolius</i>	Sago flower	ASTERACEAE			x		
<i>Pandorea pandora</i>	Wonga vine	BIGNONIACEAE			x		
<i>Panicum effusum</i>	Hairy panic	POACEAE		x	x	x	
<i>Panicum laevinode</i>	Pepper grass	POACEAE		x	x		
<i>Panicum larcomianum</i>		POACEAE		x			
<i>Parsonsia eucalyptophylla</i>	Gargaloo	APOCYNACEAE		x	x	x	
<i>Parsonia lanceolata</i>	Northern silkpod	APOCYNACEAE		x	x		
<i>Paspalidium caespitosum</i>	Brigalow grass	POACEAE		x	x	x	
<i>Paspalidium constrictum</i>	Knottybutt grass	POACEAE			x	x	
<i>Paspalidium criniforme</i>		POACEAE			x		
<i>Paspalidium disjunctum</i>		POACEAE		x	x		
<i>Paspalidium distans</i>	Shotgrass	POACEAE			x	x	x
<i>Paspalidium gracile</i>	Slender panic	POACEAE		x	x	x	
<i>Paspalidium jubiflorum</i>	Warrego grass	POACEAE			x	x	
<i>Paspalum dilatatum</i>	Paspalum	POACEAE			x		x
<i>Paspalum distichum</i>		POACEAE					x
<i>Paspalum scrobiculatum</i>		POACEAE					x
<i>Paspalum urvillei</i>		POACEAE		x			x
<i>Pennisetum alopecuroides</i>		POACEAE					x
<i>Peripleura hispidula</i> var. <i>setosa</i>		ASTERACEAE		x	x		
<i>Perotis rara</i>	Comet grass	POACEAE	*		x		
<i>Persicaria attenuata</i> subsp. <i>Attenuata</i>		POLYGONACEAE		x			
<i>Persicaria decipiens</i>		POLYGONACEAE		x		x	
<i>Persicaria hydropiper</i>	Water pepper	POLYGONACEAE		x		x	
<i>Persicaria lapathifolia</i>		POLYGONACEAE		x			
<i>Persicaria orientalis</i>		POLYGONACEAE		x		x	

<i>Persicaria strigosa</i>		POLYGONACEAE	x			x	
<i>Petalostigma pubescens</i>	Quinine tree	PICRODENDRACEAE		x			
<i>Philydrum lanuginosum</i>		PHILYDRACEAE		x			x
<i>Phragmites australis</i>	Common reed	POACEAE			x		x
<i>Phyla canescens</i>	Condamine couch	VERBENACEAE			x		
<i>Phyla nodiflora</i>	Carpet weed	VERBENACEAE					
<i>Phyllanthus gassstroemii</i>		EUPHORBIACEAE		x	x		
<i>Phyllanthus maderaspatensis</i> var. <i>maderaspatensis</i>		PHYLLANTHACEAE		x			
<i>Phyllanthus</i> sp.		PHYLLANTHACEAE		x			
<i>Phyllanthus virgatus</i>		PHYLLANTHACEAE		x			
<i>Physalis lanceifolia</i>		SOLANACEAE	*		x		
<i>Physalis minima</i>		SOLANACEAE					x
<i>Pimelia latifolia</i>		THYMELAEACEAE		x			
<i>Pimelia trichostachya</i>	Spiked riceflower	THYMELAEACEAE	x	x			
<i>Pittosporum rhombifolium</i>		PITTOSPORACEAE	x	x			
<i>Pittosporum spinescens</i>	Large-fruited orange thorn	PITTOSPORACEAE	x	x			
<i>Planchonella cotinifolia</i> var. <i>pubsecens</i>		SAPINDACEAE			x		
<i>Plantago cunninghamii</i>		PLANTAGINACEAE		x			
<i>Plantago gaudichaudii</i>		PLANTAGINACEAE				x	
<i>Plantago turrifera</i>		PLANTAGINACEAE		x			
<i>Plectranthus parviflorus</i>		LAMIACEAE			x		
<i>Poa fordeana</i>	Sweet swampgrass	POACEAE			x		
<i>Podolepis longipedata</i>		ASTERACEAE		x	x		
<i>Polycarpaea corymbosa</i>		CARYOPHYLLACEAE					
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>		CARYOPHYLLACEAE		x			
<i>Polygonum plebeium</i>	Small knotweed	POLYGONACEAE		x			
<i>Polymeria calycina</i>	Pink birdweed	CONVOLVULACEAE		x			

<i>Polymeria pusilla</i>		CONVOLVULACEAE		x	x		
<i>Portulaca bicolor</i>		PORTULACACEAE		x			
<i>Portulaca oleracea</i>	Pigweed	PORTULACACEAE	x	x	x		
<i>Portulaca pilosa</i> <i>subsp. pilosa</i>		PORTULACACEAE	x	x			
<i>Potamogeton crispatus</i>	Curly pondweed	POTAMOGETONACEAE		x			
<i>Potamogeton tricarinatus</i>	Floating pondweed	POTAMOGETONACEAE		x			
<i>Pouteria cotinifolia</i>		SAPOTACEAE		x			
<i>Pouteria cotinifolia</i> var. <i>pubescens</i>		SAPOTACEAE					
<i>Pouteria pohlmiana</i>	Yellow boxwood	SAPOTACEAE					
<i>Pratia concolor</i>		CAMPANULACEAE		x			
<i>Prostanthera euphrasiooides</i>		LAMIACEAE		x	x		
<i>Pseuderanthemum variable</i>	Loveflower	ACANTHACEAE			x	x	
<i>Psoralea tenax</i>	Emu-foot	FABACEAE		x	x		
<i>Psydrax johnsonii</i>		RUBIACEAE		x			
<i>Psydrax odorata</i>		RUBIACEAE		x	x	x	
<i>Psydrax oleifolia</i>	Myrtle tree	RUBIACEAE		x	x		
<i>Pterocaulon redolens</i>		ASTERACEAE			x		
<i>Ptilotus exaltatus</i> var. <i>semilanatus</i>	Prince-of-wales feather	AMARANTHACEAE		x			
<i>Ptilotus macrocephalus</i>	Green pussytails	AMARANTHACEAE		x			
<i>Pultenaea bracteamajor</i>		FABACEAE					
<i>Ranunculus lappaceus</i>	Common buttercup	RANUNCULACEAE		x		x	
<i>Ranunculus sessiliflorus</i>		RANUNCULACEAE				x	
<i>Rhodanthe polyphylla</i>		ASTERACEAE			x		
<i>Rhynchosia minima</i>		FABACEAE		x			
<i>Rhynchospora brownii</i>		CYPERACEAE					x
<i>Richardia brasiliensis</i>	Mexican clover	RUBIACEAE	*		x		
<i>Ricinocarpus ledifolius</i>		EUPHORBIACEAE				x	
<i>Rorippa eustylis</i>		BRASSICACEAE		x	x		
<i>Rostellularia</i>		ACANTHACEAE			x		

<i>adscendens</i> var. <i>adscendens</i>							
<i>Rubus parvifolius</i>	Native raspberry	ROSACEAE			x		
<i>Rumex brownii</i>	Swamp dock	POLYGONACEAE		x	x	x	
<i>Rumex crispus</i>		POLYGONACEAE	x			x	
<i>Rumex tenax</i>		POLYGONACEAE		x		x	
<i>Rutidosis crispata</i>			R (NCA)		x		
<i>Rutidosis lanata</i>		ASTERACEAE	E (NCA)				
<i>Rutidosis lanata</i>		ASTERACEAE	E (NCA)				
<i>Rynchosia minima</i> car. <i>Australis</i>	Rynchosia	FABACEAE			x		
<i>Sacciolepis indica</i>	Indian cupscale grass	POACEAE	*		x		x
<i>Salix babylonica</i>	Weeping willow	SALICACEAE	*		x		
<i>Salomonia ciliata</i>		POLYGONACEAE	x			x	
<i>Salsola kali</i>	Soft roly-poly	CHENOPODIACEAE	*		x		
<i>Salvia pebeia</i>	Common sage	LAMIACEAE			x		
<i>Salvia reflexa</i>	Mintweed	LAMIACEAE	*		x		
<i>Sansevieria trifasciata</i> *			*	x			
<i>Santalum lanceolatum</i>	Sandalwood	SANTALACEAE			x		
<i>Sarcostemma ciminale</i> subsp. <i>brunonianum</i>	Caustic-vine	ASCLEPIDACEAE		x	x		
<i>Sarcostemma viminale</i> subsp. <i>australe</i>	Caustic vine			x			
<i>Schoenoplectus mucronatus</i>		CYPERACEAE			x		x
<i>Schoenoplectus validus</i>	Umbrella sedge	CYPERACEAE			x		x
<i>Schoenus falcatus</i>		CYPERACEAE					x
<i>Schoenus kennyi</i>		CYPERACEAE			x		
<i>Scleria mackaviensis</i>		CYPERACEAE			x		
<i>Scleria sphacelata</i>		CYPERACEAE			x		
<i>Sclerolaena bicornis</i> var <i>horrida</i>		CHENOPODIACEAE		x			
<i>Sclerolaena birchii</i>	Galvanised burr	CHENOPODIACEAE	x	x	x		
<i>Sclerolaena muricata</i>	Black Roly-poly, Dog Burr	CHENOPODIACEAE		x			
<i>Sclerolaena muricata</i> var. <i>muricata</i>	Prickly roly-poly	CHENOPODIACEAE		x			

<i>Sclerolaena muricata</i>	Prickly poly-poly	CHENOPODIACEAE	x	x			
<i>Sclerolaena tetracuspis</i>	Brigalow burr	CHENOPODIACEAE	x	x			
<i>Secamone elliptica</i>	Milkyvine	ASCLEPIDACEAE		x		x	
<i>Senecio pinnatifolius</i>	Fireweed	ASTERACEAE			x		
<i>Senecio quadridentatus</i>	Cotton fireweed	ASTERACEAE			x		
<i>Senna artemisioides</i> subsp. <i>zygophylla</i>	Silver cassia	CAESALPINIACEAE		x			
<i>Senna barclayana</i>	Pepper leaf senna	CAESALPINIACEAE			x		
<i>Senna sophera</i> var.		CAESALPINIACEAE		x			
<i>Senna sophera</i> var. <i>sophera</i>		CAESALPINIACEAE	x	x			
<i>Sesbania cannabinus</i>		FABACEAE			x		x
<i>Setaria dielsii</i>		POACEAE			x	x	
<i>Setaria surgens</i>		POACEAE		x	x		
<i>Sida corrugata</i>	Corrugated sida	MALVACEAE			x		
<i>Sida filiformis</i>		MALVACEAE			x		
<i>Sida pleiantha</i>		MALVACEAE		x	x	x	
<i>Sida rhombifolia</i>	Sida retusa	MALVACEAE	*		x		
<i>Sida richopoda</i>	High sida	MALVACEAE			x		
<i>Sida rohlenae</i>		MALVACEAE			x		
<i>Sida spinosa</i>	Spiny sida	MALVACEAE		x	x	x	
<i>Sida subspicata</i>	Spiked sida	MALVACEAE			x		
<i>Silybum marianum</i>	Varigated thistle	ASTERACEAE	* (invasive plant of Taroom Shire)	x			
<i>Sisymbrium thellungii</i>	African turnip-weed	BRASSICACEAE	*		x		
<i>Solanum americanum</i>	Glossy nightshade	SOLANACEAE	*		x		x
<i>Solanum ellipticum</i>	Potato bush	SOLANACEAE			x		
<i>Solanum esuriale</i>	Potato weed	SOLANACEAE			x		
<i>Solanum parvifolium</i>		SOLANACEAE			x		
<i>Solanum semiarmatum</i>	Prickly nightshade	SOLANACEAE	*	x	x		
<i>Soliva anthemifolia</i>	Dwarf jo jo weed	ASTERACEAE	*		x		
<i>Sonchus asper</i>		ASTERACEAE		x			x
<i>Sonchus oleraceus</i>	Common sowthistle	ASTERACEAE	*		x		
<i>Sorghum halepense</i>		POACEAE					x
<i>Sorghum leiocladum</i>	Wild sorghum	POACEAE		x	x		
<i>Spartothamnella junccea</i>	Native broom	LAMIACEAE			x		
<i>Spartothamnella</i>		LAMIACEAE			x		

<i>puberula</i>							
<i>Spergularia rubra</i>		CARYOPHYLLACEAE		x		x	
<i>Spermacoce multicaulis</i>		RUBIACEAE			x		
<i>Spirodela punctata</i>		ARACEAE		x			x
<i>Sporobolus caroli</i>	Yakka grass	POACEAE			x	x	
<i>Sporobolus coromandelianus</i>		POACEAE	*		x		
<i>Sporobolus creber</i>		POACEAE		x		x	
<i>Sporobolus elongatus</i>	Slender rat's tail grass	POACEAE	*		x		
<i>Sporobolus mitchellii</i>	Rat's tail couch	POACEAE	*	x	x	x	
<i>Stackhousia muricata</i>		STACKHOUSIACEAE		x	x		
<i>Stellaria angustifolia</i>	Swamp starwort	CARYOPHYLLACEAE		x		x	
<i>Stylium rotundifolium</i>		STYLIDIACEAE		x			x
<i>Swainsona galegifolia</i>	Smooth darling pea	FABACEAE			x		
<i>Swainsona oroboides</i>	Variable swainsona	FABACEAE			x		
<i>Tetragonia tetragonoides</i>	New Zealand spinach	AIZOACEAE		x	x		
<i>Thellungia advena</i>	Coolibah grass	POACEAE			x		
<i>Thelypteris confluens</i>			V (NCA)				x
<i>Themeda avenacea</i>	Native oatgrass	POACEAE		x	x		
<i>Themeda triandra</i>	Kangaroo grass	POACEAE			x		
<i>Thyridolepis xerophila</i>		POACEAE			x		
<i>Tragus australianus</i>	Small burr grass	POACEAE			x	x	
<i>Trianthema triquetra</i>	Red spinach	AIZOACEAE			x		
<i>Tribulus micrococcus</i>		ZYGOPHYLLACEAE		x			
<i>Tribulus terrestris</i>		ZYGOPHYLLACEAE			x		
<i>Tricoryne elatior</i>	Rush lily	LILIACEAE			x		
<i>Triodia michellii</i> var. <i>mitchellii</i>	Buck spinifex	POACEAE			x		
<i>Triodia pungens</i> var. <i>pungens</i>		POACEAE			x		
<i>Triodia scariosa</i>	Porcupine grass	POACEAE					
<i>Tripogon loliiformis</i>		POACEAE		x			
<i>Turraea pubscens</i>	Native honeysuckle	MELIACEAE		x	x		
<i>Typha orientalis</i>		TYPHACEAE		x			x
<i>Urochloa mosambicensis</i>	Sabi grass	POACEAE	*		x		
<i>Utricularia caerulea</i>		LENTIBULARIACEAE				x	
<i>Utricularia dichotoma</i>		LENTIBULARIACEAE		x		x	

<i>Utricularia gibba</i>		LENTIBULARIACEAE				x	
<i>Verbena aristigera</i>	Maynes pest	VERBENACEAE	*	x	x		
<i>Verbena bonariensis</i>		VERBENACEAE	*	x			x
<i>Verbena littoralis</i>	Verbena	VERBENACEAE	*		x		
<i>Verbena officinalis</i>	Common verbena	VERBENACEAE		x	x		x
<i>Verbesina encelioides</i>	Wild sunflower	ASTERACEAE	*	x	x		
<i>Vernonia cinerea</i>	Vernonia	ASTERACEAE			x	x	
<i>Vetiveria filipes</i>	Australian vetiveria	POACEAE		x	x	x	
<i>Vigna vexillata</i> var. <i>angustifolia</i>		FABACEAE					x
<i>Viola betonicifolia</i>		VIOLACEAE					x
<i>Vittadinia cuneata</i> var. <i>hirsuta</i>		ASTERACEAE			x		
<i>Vittadinia dissecta</i> var. <i>hirta</i>		ASTERACEAE			x		
<i>Vittadinia pterochaeta</i>		ASTERACEAE		x	x		
<i>Vittadinia pustulata</i>		ASTERACEAE			x		
<i>Wahlenbergia communis</i>	An Australian harebell	CAMPANULACEAE		x	x		
<i>Wahlenbergia gracilis</i>	An Australian harebell	CAMPANULACEAE	x	x			
<i>Wahlenbergia stricta</i> subsp. <i>alterna</i>		CAMPANULACEAE				x	
<i>Wahlenbergia tumidifructa</i>	An Australian harebell	CAMPANULACEAE		x			
<i>Xanthium pungens</i>		ASTERACEAE		x			x
<i>Xanthium spinosum</i>	Bathurst burrr	ASTERACEAE	*		x		
<i>Xerochrysum bracteatum</i>	Golden everlasting	ASTERACEAE			x		
<i>Xyris complanata</i>		XYRIDACEAE					x
<i>Zaleya galericulata</i> subsp. <i>Galericulata</i>	Hogweed	ACANTHACEAE			x		
<i>Zinnia peruviana</i>	Wild zinnia	ASTERACEAE	*		x		
<i>Zornia muriculata</i> subsp. <i>Angustata</i>	Zornia	FABACEAE		x	x		
<i>Zygophyllum apiculatum</i>	Gall weed	ZYGOPHYLLACEAE		x			

APPENDIX H

Relationship between Vegetation Communities described by Dowling and Halford (1997) and the current regional ecosystem framework

SPECIES AND OCCURRENCE IN VEGETATION COMMUNITIES AND MAPPING UNITS

Listed below are the species recorded and the map units in which they were observed. Species not recorded in a site but observed in the field are recorded under others. Species listed as others are recorded under the habitat in which they were observed.

The codes for the vegetation types are those used elsewhere within this report, viz:

1. Mixed *Eucalyptus camaldulensis* (river red gum), *Eucalyptus tereticornis* (forest red gum), *Eucalyptus coolabah* (coolibah) communities of the Dawson River and its tributaries
2. Mixed *Eucalyptus camaldulensis* (river red gum), *Eucalyptus tereticornis* (forest red gum) of the tributaries of the Dawson River
3. *Eucalyptus coolabah* (coolibah) communities of the Dawson River floodplain and associated creek systems
4. *Callitris glaucophylla* (cypress pine) communities on sands
5. Mixed *Eucalyptus crebra* (ironbark) and *Callitris glaucophylla* (cypress pine) communities on sandstone
6. Mixed *Acacia harpophylla* (brigalow), vine thicket and *Eucalyptus* spp communities
7. *Eucalyptus populnea* (poplar box) communities on alluvium
8. Mixed *Eucalyptus* spp communities
- 9a. Vine thicket communities
- 9b. *Brachychiton rupestris* (bottle tree) communities
10. *Casuarina cristata* (belah) communities
11. *Acacia rhodoxylon* (rosewood) communities
12. Mixed *Acacia rhodoxylon* (rosewood), *Acacia shirleyi* (lancewood) and *Acacia harpophylla* (brigalow) communities

Species	Map Unit												others	
	1	2	3	4	5	6	7	8	9a	9b	10	11	12	
<i>Abutilon fraseri</i>						6		8						
<i>Abutilon oxycarpum</i> forma acutatum						6		8	9a	9b				
<i>Abutilon oxycarpum</i> forma oxycarpum	1	2	3		5		7	8	9a			11	12	
<i>Acacia amblygona</i>						5								
<i>Acacia caroleae</i>						5			8					
<i>Acacia conferta</i>									8					
<i>Acacia deanei</i> subsp. <i>deanei</i>		2				5								
<i>Acacia decora</i>		2		4					8					
<i>Acacia excelsa</i>	1			4		6		8			10			
<i>Acacia farnesiana</i>	1	2	3											
<i>Acacia fasciculifera</i>						6			9a	9b				
<i>Acacia harpophylla</i>				3		5	6		8		9b		12	
<i>Acacia juncifolia</i> subsp. <i>juncifolia</i>						5								
<i>Acacia leiocalyx</i> subsp. <i>leiocalyx</i>					4	5								
<i>Acacia longispicata</i>								6						

Species	Map Unit												
	1	2	3	4	5	6	7	8	9a	9b	10	11	12
Acacia macradenia								8					
Acacia rhodoxylon								8			11	12	
Acacia salicina	2												
Acacia shirleyi												12	
Acacia sparsiflora					5								
Acacia stenophylla	1		3										
Acalypha eremorum						6			9a	9b			
Achyranthes aspera						6		8	9a				
Adriana glabrata var. subglabra	2												
Agrostis avenacea var. avenacea	2												
Ajuga australis	2												
Alectryon connatus						6			9a				
Alectryon diversifolius	1				5	6	7		9a	9b	10		
Alectryon oleifolius subsp. elongatus	1												
Allocasuarina luehmannii						5							
Alphitonia excelsa		2				5			8			11	
Alstonia constricta				4		6		8		9b		11	12
Alternanthera denticulata	1	2	3										
Alternanthera nodiflora	1												
Amaranthus graecizans subsp. sylvestris									9a				
Amaranthus viridis			3										
Ampelopteris prolifera	2												
Amyema congener subsp. congener							7						
Amyema quandang var. bancroftii												11	
Ancistrachne uncinulata						5	6		8	9a	9b	10	12
Angophora floribunda						5							
Angophora leiocarpa	2					5							
Apophyllum anomalum						5	6		8	9a	9b		
Argemone ochroleuca subsp. ochroleuca	2												
Aristida benthamii var. spinulifera				4									
Aristida calycina var. calycina							7						
Aristida calycina var. praealta	2					5	6	7	8			11	
Aristida caput-medusae					4	5	6			8		11	12
Aristida gracilipes							6			8			
Aristida latifolia		3											
Aristida leichhardtiana						5							
Aristida lignosa						5	6						
Aristida personata	1	2				5		7				10	
Aristida queenslandica var. dissimilis									8				
Aristida queenslandica var. queenslandica							5						
Aristida ramosa							5						
Arundinella neplanensis	2					5			8				
Asperula conferta	1		3										
Asperula geminifolia	2												
Aster subulatus	2												
Atalaya hemiglaucia						5	6		8				

Species	Map Unit												
	1	2	3	4	5	6	7	8	9a	9b	10	11	12
<i>Atalaya salicifolia</i>						6		8	9a		10	11	
<i>Atriplex muelleri</i>			3										
<i>Austromyrtus bidwillii</i>										9b			
<i>Austrostipa verticillata</i>				4				8	9a	9b			
<i>Azolla pinnata</i>													aquatic
<i>Baccharis halimifolia</i>		2											
<i>Bacopa monnieri</i>		2											
<i>Basilicum polystachyon</i>	1												
<i>Bertya oleifolia</i>		2			5								
<i>Bertya pedicellata</i>												11	
<i>Bidens bipinnata</i>		2											
<i>Boerhavia dominii</i>	1		3	4				8					
<i>Boerhavia pubescens</i>					4								
<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>	1	2											
<i>Bothriochloa decipiens</i> var. <i>decipiens</i>	1	2	3			6	7	8					
<i>Brachiaria eruciformis</i>							7						
<i>Brachiaria foliosa</i>								8	9a				
<i>Brachiaria subquadripala</i>		2					7						
<i>Brachychiton australis</i>						6							
<i>Brachychiton populneus</i> subsp. <i>populneus</i>		2											
<i>Brachychiton rupestris</i>						6		8	9a	9b			
<i>Brachyscome trachycarpa</i>			3										
<i>Bracteantha bracteata</i>					5	6							
<i>Breynia oblongifolia</i>				4		6				9b		12	
<i>Brunoniella australis</i>			3		5	6		8				12	
<i>Bursaria incana</i> var. <i>incana</i>						6				9b			
<i>Callitricha sonderi</i>		2											
<i>Callitris glaucophylla</i>				4	5	6		8					
<i>Calotis cuneata</i>	1	2	3				7						
<i>Calotis cuneifolia</i>					5								
<i>Calotis dentex</i>		2				5							
<i>Calotis hispidula</i>			3										
<i>Calotis lappulacea</i>	1			4									
<i>Calyptochloa gracillima</i>					5	6	7	8	9a	9b	10		12
<i>Canthium coprosmoides</i>					5	6							
<i>Canthium odoratum</i>				4	5	6							12
<i>Canthium oleifolium</i>								8					
<i>Canthium</i> sp. (Berrigurra Station E.R.Anderson 2829)						6		8		9b	10		
<i>Canthium vacciniifolium</i>					5	6			9a	9b	10		12
<i>Capillipedium spicigerum</i>		2											
<i>Capparis canescens</i>						6							
<i>Capparis lasiantha</i>					5			8	9a	9b	10	11	
<i>Capparis loranthifolia</i> var. <i>bancroftii</i>						6							12
<i>Capparis mitchellii</i>					5			8	9a			11	
<i>Carex appressa</i>	1	2											

Species	Map Unit												
	1	2	3	4	5	6	7	8	9a	9b	10	11	12
Carex polyantha		2											
Carissa ovata					5	6		8	9a	9b	10	11	12
Cassia tomentella								8	9a				
Cassine australis var. angustifolia						6		8	9a		10		
Cassinia laevis						5							
Casuarina cristata									9a		10		
Cenchrus ciliaris	1	2	3	4			7	8	9a	9b	10	11	12
Centaurea melitensis		2											
Centaurium erythraea		2											
Centella asiatica		2											
Centipeda minima	1	2											
Chamaesyce dallachiana	1		3				7	8					
Chara sp.													aquatic
Cheilanthes distans					4	5	6		8	9a			
Cheilanthes sieberi subsp. sieberi					4	5			8				12
Chenopodium ambrosioides		2											
Chenopodium carinatum		2		4		6	7		9a				11
Chenopodium desertorum subsp. anidiophyllum								7					
Chenopodium pumilio			3										
Chionachne cyathopoda		2											
Chloris divaricata			3										
Chloris gayana													roadside
Chloris ventricosa			3		5	6	7	8	9a	9b			
Chrysocephalum apiculatum					4	5							
Ciclospermum leptophyllum	1	2	3										
Cirsium vulgare		2											
Cissus opaca						6		8	9a	9b	10	11	12
Citriobatus spinescens						6			9a	9b			
Claoxylon tenerifolium													11
Cleistochloa subjuncea						5		8					11 12
Clerodendrum floribundum						5							11
Commelina diffusa	1			4									11
Conyza bonariensis	1	2	3			6							
Coronopus didymus	1	2											
Corymbia clarksoniana						5		8					
Crassula sieberiana								8					
Crotalaria incana subsp. incana		2											
Crotalaria montana		2											
Croton insularis						6			9a	9b			
Croton phebaliodes						6			9a				11
Cryptandra sp. (Isla Gorge P.Sharpe 627)					5								
Cuscuta campestris	1												
Cyclosorus interruptus		2											
Cymbidium canaliculatum											10		
Cymbopogon bombycinus					4	5							

Species	Map Unit												others	
	1	2	3	4	5	6	7	8	9a	9b	10	11	12	
<i>Cymbopogon refractus</i>					5	6	7	8						
<i>Cynodon dactylon</i> var. <i>dactylon</i>	1	2	3											
<i>Cynoglossum australe</i> var. <i>australe</i> ,								7						
<i>Cyperus difformis</i>		2												
<i>Cyperus flaccidus</i>	1													
<i>Cyperus gracilis</i>	1	2	3	4			7	8	9a	9b				
<i>Cyperus iria</i>	1		3											
<i>Cyperus lucidus</i>		2												
<i>Cyperus polystachyos</i> var. <i>polystachyos</i>		2												
<i>Cyperus pygmaeus</i>	1													
<i>Cyperus rigidellus</i>												11		
<i>Cyperus rotundus</i>		2	3											
<i>Cyperus sanguinolentus</i>		2												
<i>Cyperus sphaeroideus</i>		2												
<i>Datura ferox</i>														paddock
<i>Daucus glochidiatus</i>														paddock
<i>Denhamia oleaster</i>							7	8	9a		10			
<i>Denhamia pittosporoides</i>								8						
<i>Desmodium brachypodium</i>												11		
<i>Desmodium rhytidophyllum</i>					5									
<i>Desmodium varians</i>								7						
<i>Dianella brevipedunculata</i>						5								
<i>Dianella caerulea</i> var. <i>vannata</i>												12		
<i>Dianella longifolia</i> var. <i>longifolia</i>		2												
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	1		3				7							
<i>Dichondra repens</i>	1		3											
<i>Digitaria breviglumis</i>					5			8				11		
<i>Digitaria brownii</i>					5		7	8		9b				
<i>Digitaria divaricatissima</i>				4										
<i>Digitaria longiflora</i>				4										
<i>Diospyros humilis</i>						6			9a	9b			12	
<i>Dodonaea heteromorpha</i>						5								
<i>Dodonaea viscosa</i> subsp. <i>spatulata</i>						5		7					12	
<i>Dysphania glomulifera</i> subsp. <i>glomulifera</i>													11	
<i>Echinochloa crusgalli</i>		2												
<i>Eclipta prostrata</i>														bore
<i>Ehretia membranifolia</i>					5	6				9b				
<i>Einadia hastata</i>					5									
<i>Einadia nutans</i> subsp. <i>linifolia</i>	2						7			9b				
<i>Einadia nutans</i> subsp. <i>nutans</i>		3	4					8	9a	9b				
<i>Einadia trigonos</i> subsp. <i>stellulata</i>													12	
<i>Elatine gratioloides</i>		2												
<i>Eleocharis cylindrostachys</i>		2												
<i>Eleocharis equisetina</i>		2												
<i>Eleocharis plana</i>	1													
<i>Eleocharis pusilla</i>	1		3											

Species	Map Unit												others	
	1	2	3	4	5	6	7	8	9a	9b	10	11	12	
Enchytraea tomentosa											10			
Enneapogon gracilis	1		3		5	6	7			9b				
Enneapogon lindleyanus				4	5	6		8			10		12	
Enteropogon acicularis			3		5		7	8			10			
Enteropogon ramosus					5		7							
Enteropogon unispiceus						6		8					12	
Epaltes australis				4										
Epilobium hirtigerum				4			7						bore	
Eragrostis elongata				4	5		7							
Eragrostis lacunaria	1		3	4	5	6	7	8					12	
Eragrostis leptostachya				4			7							
Eragrostis longipedicellata								8					12	
Eremocitrus glauca				3							10			
Eremophila debilis	1	2			5									
Eremophila longifolia			3											
Eremophila mitchellii					5	6	7	8		9b	10		12	
Eriocaulon scariosum		2												
Eriochloa decumbens	1	2	3				7				10			
Eriochloa pseudoacrotricha					5	6								
Erodium crinitum							7							
Erythrina vespertilio								8						
Erythroxylum sp. (Splityard Creek L.Pedley 5360)					5	6				9b		11	12	
Eucalyptus camaldulensis	1	2	3											
Eucalyptus camagana					5	6		8					12	
Eucalyptus coolabah	1		3											
Eucalyptus crebra					5	6		8					11	
Eucalyptus exserta													11	
Eucalyptus melanophloia				4	5									
Eucalyptus populnea	1						7	8			10			
Eucalyptus tenuipes								8						
Eucalyptus tereticornis		2												
Eucalyptus tessellaris				4	5									
Euchiton sphaericus	1	2	3	4			7		9a					
Eulalia aurea							7							
Euphorbia tannensis var. eremophila					5								11	
Evolvulus alsinoides	1			4	5	6		8					12	
Excoecaria dallachiana										9b				
Exocarpos latifolius										9a				
Fallopia convolvulus													paddock	
Ficus opposita	2													
Fimbristylis dichotoma	2		4											
Flindersia australis						6					11	12		
Flindersia collina													12	
Gahnia aspera					5							11		
Gaura parviflora			3											

Species	Map Unit												
	1	2	3	4	5	6	7	8	9a	9b	10	11	12
<i>Geijera parviflora</i>	1		3	4	5	6	7	8	9a	9b	10		12
<i>Glinus lotoides</i>	1												
<i>Glossocardia bidens</i>							7						
<i>Glycine tabacina</i>	1		3										
<i>Glycine tomentella</i>			2		4								
<i>Gnaphalium polycaulon</i>	1	2	3	4									
<i>Gomphocarpus physocarpus</i>			2										
<i>Gomphrena celosioides</i>	1						7						
<i>Goodenia fascicularis</i>	1	2	3										
<i>Goodenia glabra</i>						5		8					
<i>Goodenia grandiflora</i>						5							
<i>Gratiola pedunculata</i>	1	2											
<i>Grevillea robusta</i>						6							
<i>Grevillea striata</i>						5	6						
<i>Grewia latifolia</i>			3					8					
<i>Hakea fraseri</i>						5	6	8				12	
<i>Halgania brachyrhyncha</i>						5							
<i>Haloragis aspera</i>	1	2											
<i>Helichrysum collinum</i>						5	6						
<i>Heliotropium amplexicaule</i>			2										
<i>Heliotropium indicum</i>	1	2											
<i>Heteropogon contortus</i>		2		4			7						
<i>Hibbertia sp.</i>						5							
<i>Hibiscus sturtii</i>						5	6	8	9a			11	12
<i>Hibiscus trionum</i>							7						
<i>Hovea lanceolata</i>						5							
<i>Hovea longipes</i>						5	6	8				12	
<i>Hybanthus monopetalus</i>						5	6						
<i>Hypochaeris glabra</i>							7						
<i>Imperata cylindrica</i>			2										
<i>Indigofera linnaei</i>							7						
<i>Indigofera sp.</i>								8				12	
<i>Isachne globosa</i>			2										
<i>Isotoma axillaris</i>												11	
<i>Ixiolaena leptolepis</i>			3										
<i>Jacksonia scoparia</i>						5							
<i>Jacquemontia paniculata</i>							6						
<i>Jasminum didymum</i> subsp. <i>lineare</i>	1		3		5			8		9b	10		12
<i>Jasminum simplicifolium</i> subsp. <i>australiense</i>								8					
<i>Juncus prismatocarpus</i>			2										
<i>Juncus sp.</i>			2										
<i>Juncus usitatus</i>			2										
<i>Keraudrenia corollata</i>						5		8					
<i>Laxmannia compacta</i>				4		6							
<i>Leersia hexandra</i>			2										
<i>Lemna trisulca</i>													aquatic

Species	Map Unit												
	1	2	3	4	5	6	7	8	9a	9b	10	11	12
<i>Lepidium africanum</i>							7						
<i>Lepidium bonariense</i>	1	2					7			9b		11	
<i>Leptochloa ciliolata</i>										9b			
<i>Leptochloa digitata</i>	1	2	3										
<i>Leptochloa peacockii</i>		2			5	6						12	
<i>Leptospermum neglectum</i>								8					
<i>Livistona</i> sp. (Taroom R.W.Johnson 2764)	1	2											
<i>Lomandra confertifolia</i> subsp. <i>pallida</i>						6						11	
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>		2						8					
<i>Lomandra leucocephala</i>					4								
<i>Lomandra longifolia</i>	1	2											
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	1		3		5						11	12	
<i>Lophostemon suaveolens</i>		2			5								
<i>Lotus australis</i>		2	3										
<i>Ludwigia octovalvis</i>													aquatic
<i>Ludwigia peploides</i> subsp. <i>montevidensis</i>													bore
<i>Lysicarpus angustifolius</i>					5			8					
<i>Lysiphllum caronii</i>	2	3			6		8	9a	9b	10			
<i>Macfadyena unguis-cati</i>						7							
<i>Macroptilium lathyroides</i>	1												
<i>Maireana microphylla</i>		2					8	9a	9b	10	11		
<i>Malva parviflora</i>													paddock
<i>Malvastrum americanum</i>		2			5	6	7	8		9b			
<i>Malvastrum coromandelianum</i>							7						
<i>Marsdenia microlepis</i>												11	12
<i>Marsilea hirsuta</i>	1	2											
<i>Maytenus cunninghamii</i>					5	6						12	
<i>Medicago polymorpha</i>	1												
<i>Melaleuca linariifolia</i> var. <i>trichostachya</i>	1	2											
<i>Melhania oblongifolia</i>						6		8					
<i>Melichrus urceolatus</i>								8					
<i>Melicope erythrococca</i>						6							
<i>Melilotus indicus</i>	1												
<i>Melinis repens</i>	1	2		4			7	8					
<i>Mimulus gracilis</i>	1												
<i>Minuria integriflora</i>			3										
<i>Muehlenbeckia florulenta</i>	1	2	3										
<i>Murdannia graminea</i>				4									
<i>Neptunia gracilis</i>	1		3										
<i>Nicotiana megalosiphon</i> subsp. <i>megalosiphon</i>													paddock
<i>Notelaea microcarpa</i>					5				9a			12	
<i>Nyssanthes diffusa</i>			3	4	5	6	7	8		9b	10		
<i>Oenothera indecora</i> subsp. <i>bonariensis</i>				4									
<i>Oldenlandia mitrasacmoides</i> subsp. <i>trachymenoides</i>				4									

Species	Map Unit													
	1	2	3	4	5	6	7	8	9a	9b	10	11	12	others
<i>Olearia canescens</i>									9a				12	
<i>Oplismenus aemulus</i>		2												
<i>Opuntia aurantiaca</i>				4		6				9b			12	
<i>Opuntia stricta</i> var. <i>stricta</i>		2				6	7		9a				12	
<i>Opuntia tomentosa</i>					5	6	7	8		9b				
<i>Ottelia ovalifolia</i>		2												
<i>Owenia venosa</i>						6		8	9a			11	12	
<i>Oxalis perennans</i>	1	2	3	4		6			9a			11	12	
<i>Ozothamnus diosmifolius</i>					5									
<i>Pandorea pandorana</i>								8				11		
<i>Panicum effusum</i> var. <i>effusum</i>					5		7	8						
<i>Panicum laevinode</i>	1	2												
<i>Panicum maximum</i> var. <i>trichoglume</i>		2						8				11		
<i>Parsonsia eucalyptophylla</i>								8				10		
<i>Parsonsia lanceolata</i>								8	9a	9b				
<i>Paspalidium caespitosum</i>			3											
<i>Paspalidium constrictum</i>		2												
<i>Paspalidium criniforme</i>	1	2					7			9b		11		
<i>Paspalidium disjunctum</i>			3											
<i>Paspalidium distans</i>	1	2	3			6	7	8				10		
<i>Paspalidium gracile</i>	1		3		5	6	7	8	9a			10	11	12
<i>Paspalidium jubiflorum</i>	1													
<i>Paspalum dilatatum</i>		2												
<i>Peripleura hispida</i> var. <i>setosa</i>					5									
<i>Perotis rara</i>					4									
<i>Persicaria attenuata</i> subsp. <i>attenuata</i>	1													
<i>Persicaria decipiens</i>		2												
<i>Persicaria hydropiper</i>	1	2												
<i>Persicaria lapathifolia</i>		2												
<i>Persicaria orientalis</i>	1													
<i>Petalostigma pubescens</i>				4	5			8						
<i>Phragmites australis</i>		2												
<i>Phyla canescens</i>	1		3											
<i>Phyllanthus gasstroemii</i>						6								
<i>Phyllanthus maderaspatensis</i> var. <i>maderaspatensis</i>	1		3											
<i>Phyllanthus</i> sp.					5									
<i>Phyllanthus virgatus</i>			3											
<i>Physalis lanceifolia</i>	1													
<i>Pimelea latifolia</i>											11			
<i>Pimelea trichostachya</i>							7							
<i>Pittosporum rhombifolium</i>									9a					
<i>Planchonella cotinifolia</i> var. <i>pubescens</i>					6				9a	9b	10			
<i>Plantago cunninghamii</i>	1		3											
<i>Plantago turrifera</i>			3											
<i>Plectranthus parviflorus</i>				4					9b					

Species	Map Unit												
	1	2	3	4	5	6	7	8	9a	9b	10	11	12
<i>Poa fordeana</i>	1												
<i>Podolepis longipedata</i>				4					8				
<i>Polycarpea corymbosa</i> var. <i>corymbosa</i>					4								
<i>Polygonum plebeium</i>	1	2											
<i>Polymeria calycina</i>									8				
<i>Polymeria pusilla</i>	1		3										
<i>Portulaca bicolor</i>									8				
<i>Portulaca oleracea</i>										9a	9b		
<i>Portulaca pilosa</i> subsp. <i>pilosa</i>				4							9b		
<i>Potamogeton crispus</i>													
<i>Potamogeton tricarinatus</i>		2											
<i>Prostanthera euphrasioides</i>						5							
<i>Pseuderanthemum variable</i>	1		3	4	5			8					12
<i>Psoralea tenax</i>	1												
<i>Pterocaulon redolens</i>						6							
<i>Ptilotus exaltatus</i> var. <i>semilanatus</i>							7						
<i>Ptilotus macrocephalus</i>							7						
<i>Ranunculus lappaceus</i>		2											
<i>Rhodanthe polyphylla</i>			3										
<i>Rhynchosia minima</i> var. <i>australis</i>			3				7						
<i>Richardia brasiliensis</i>		2		4									
<i>Rorippa eustylis</i>		2											
<i>Rostellularia adscendens</i> var. <i>adscendens</i>			3	4	5		7			9b			
<i>Rubus parvifolius</i>		2											
<i>Rumex brownii</i>		2											
<i>Rumex tenax</i>	1		3										
<i>Rutidosis crispata</i>												12	
<i>Sacciolepis indica</i>		2											
<i>Salix babylonica</i>	1												
<i>Salsola kali</i>			3							9b			
<i>Salvia plebeia</i>		2											
<i>Salvia reflexa</i>													paddock
<i>Santalum lanceolatum</i>					5			8					12
<i>Sarcostemma viminale</i> subsp. <i>brunonianum</i>						6						11	
<i>Schoenoplectus mucronatus</i>		2											
<i>Schoenoplectus validus</i>		2											
<i>Schoenus kennyi</i>								8					
<i>Scleria mackaviensis</i>					5								
<i>Scleria sphacelata</i>					5			8					11
<i>Sclerolaena birchii</i>								8					
<i>Sclerolaena muricata</i> var. <i>muricata</i>		3											
<i>Sclerolaena muricata</i> var. <i>villosa</i>		3											
<i>Sclerolaena tetracuspis</i>		3											
<i>Secamone elliptica</i>						6							
<i>Senecio lautus</i> subsp. <i>dissectifolius</i>							7						
<i>Senecio quadridentatus</i>					5								

Species	Map Unit												others	
	1	2	3	4	5	6	7	8	9a	9b	10	11	12	
<i>Senna artemisioides</i> subsp. <i>zygophylla</i>					5	6								12
<i>Senna barclayana</i>							7							
<i>Senna sophera</i> var. (40Mile Scrub J.R.Clarkson+ 6908)												11		
<i>Senna sophera</i> var. <i>sophera</i>	1													
<i>Sesbania cannabina</i> var <i>cannabina</i>		2												
<i>Setaria dielsii</i>									9a			11	12	
<i>Setaria surgens</i>							8							
<i>Sida corrugata</i>		3			5		7							
<i>Sida filiformis</i>						5	6	8				11	12	
<i>Sida pleiantha</i>		3					7							
<i>Sida rhombifolia</i>		2												
<i>Sida rohlenae</i>		3	4									11		
<i>Sida spinosa</i>	1		3											
<i>Sida subspicata</i>							7	8				11		
<i>Sida trichopoda</i>	1		3											
<i>Silybum marianum</i>		2												
<i>Sisymbrium thellungii</i>			3				7							
<i>Solanum americanum</i>									9a	9b				
<i>Solanum ellipticum</i>					5	6	8					11		
<i>Solanum esuriale</i>														paddock
<i>Solanum parvifolium</i>							8		9b	10				
<i>Solanum semiarmatum</i>						6								
<i>Soliva anthemifolia</i>		2					7							
<i>Sonchus oleraceus</i>	1	2												
<i>Sorghum leiocladum</i>		2												
<i>Spartothamnella juncea</i>							8	9a				12		
<i>Spartothamnella puberula</i>						5								
<i>Spermacoce multicaulis</i>								8						
<i>Sporobolus caroli</i>	1		3				7	8		9b	10			
<i>Sporobolus coromandelianus</i>											10			
<i>Sporobolus elongatus</i>	1													
<i>Sporobolus mitchellii</i>	1		3					8						
<i>Stackhousia muricata</i>			3			5		7						
<i>Stellaria angustifolia</i>		2	3											
<i>Swainsona galegifolia</i>		2												
<i>Swainsona oroboides</i>							7							
<i>Tetragonia tetragonoides</i>	1	2	3	4						9b				
<i>Thellungiad advena</i>		2	3	4	5	6	7	8		9b				
<i>Themeda avenacea</i>		2					7							
<i>Themeda triandra</i>		2				5						12		
<i>Thyridolepis xerophila</i>					5			8				12		
<i>Tragus australianus</i>						6		8	9a					
<i>Trianthema triquetra</i>							7							
<i>Tribulus micrococca</i>									9a					
<i>Tricoryne elatior</i>		2												

Species	Map Unit												
	1	2	3	4	5	6	7	8	9a	9b	10	11	12
<i>Triodia mitchellii</i> var. <i>mitchellii</i>					5			8					
<i>Triodia pungens</i> var. <i>pungens</i>												11	
<i>Turraea pubescens</i>												11	
<i>Urochloa mosambicensis</i>	1												
<i>Utricularia dichotoma</i>		2											
<i>Utricularia gibba</i>		2											
<i>Verbena aristigera</i>	1	2					7						
<i>Verbena litoralis</i>		2											
<i>Verbena officinalis</i>	1	2					7						
<i>Verbesina encelioides</i>							7						
<i>Vernonia cinerea</i> var. <i>cinerea</i>	1			4				8					
<i>Vetiveria filipes</i>	1	2	3					8					
<i>Vittadinia cuneata</i> var. <i>hirsuta</i>					4	5							
<i>Vittadinia dissecta</i> var. <i>hirta</i>					4								
<i>Vittadinia pterochaeta</i>					4								
<i>Vittadinia pustulata</i>		2					6						
<i>Wahlenbergia communis</i>		2											
<i>Wahlenbergia gracilis</i>	1	2	3										
<i>Wahlenbergia tumidifructa</i>		2			5			8					
<i>Xanthium spinosum</i>		2											
<i>Zaleya galericulata</i> subsp. <i>galericulata</i>								8					
<i>Zinnia peruviana</i>							7						
<i>Zornia muriculata</i> subsp. <i>angustata</i>							7						
<i>Zygophyllum apiculatum</i>									9b				

APPENDIX I
Consolidated Species List for Pipeline Route

Appendix I – Consolidated List for Pipeline easement

Species Name	Common name	Family	Status	Species recorded by CEPLA 2008	Species recorded in CORVEG	Species recorded by CEPLA 2010
<i>Abutilon oxyacarpum</i>	Dwarf lantern flower	MALVACEAE		x	x	
<i>Acacia blakei</i>		MIMOSACEAE		x		x
<i>Acacia conferta</i>		MIMOSACEAE		x		x
<i>Acacia deanei</i>		MIMOSACEAE				x
<i>Acacia decora</i>	Pretty wattle	MIMOSACEAE		x		x
<i>Acacia excelsa</i>	Ironwood	MIMOSACEAE		x		x
<i>Acacia farnesiana</i>	Mimosa bush	MIMOSACEAE	* (invasive plant of Taroom Shire)			x
<i>Acacia harpophylla</i>	Brigalow	MIMOSACEAE		x	x	x
<i>Acacia ixiophylla</i>		MIMOSACEAE		x		x
<i>Acacia leiocalyx</i>	Early black wattle	MIMOSACEAE		x		x
<i>Acacia melvillei</i>		MIMOSACEAE		x		x
<i>Acacia oswaldii</i>		MIMOSACEAE	Regional significance (EPA, 2008)			x
<i>Acacia salicina</i>	Sally wattle	MIMOSACEAE				x
<i>Acacia semilunata</i>		MIMOSACEAE				x
<i>Alectryon diversifolius</i>	Scrub boonaree	SAPINDACEAE		x		x
<i>Alectryon oleifolius</i>		SAPINDACEAE		x		x
<i>Allocasuarina inophloia</i>		CASUARINACEAE				x
<i>Allocasuarina luehmannii</i>	Bullocke	CASUARINACEAE		x		x
<i>Alphitonia excelsa</i>	Red ash	CASUARINACEAE		x	x	x
<i>Alstonia constricta</i>	Quinine bush	APOCYNACEAE		x		x
<i>Alternanthera denticulata</i>		AMARANTHACEAE				x
<i>Ancistrachne uncinulata</i>	Hoaky grass	POACEAE		x	x	x
<i>Angophora floribunda</i>		MYRTACEAE		x		x
<i>Angophora leiocarpa</i>		MYRTACEAE				x
<i>Apophyllum anomalum</i>	Warrior bush	CAPPARACEAE		x	x	x
<i>Aristida caput-medusae</i>	Many headed wire grass	POACEAE		x	x	x
<i>Aristida leptopoda</i>	White speargrass	POACEAE		x		x
<i>Aristida personata</i>		POACEAE				x
<i>Atalaya hemiglaucha</i>	Whitewood	SAPINDACEAE		x		x
<i>Boerhavia dominii</i>	Tarvine	NYCTAGINACEAE		x		
<i>Boronia bipinnata</i>		RUTACEAE				x

<i>Bothriochloa decipiens</i>	Pitted blue grass	POACEAE		x		x
<i>Brachychiton populneus</i>	Kurrajong	STERCULIACEAE		x		x
<i>Brachychiton rupestris</i>	Bottle tree	STERCULIACEAE		x		x
<i>Brachyloma daphnoides</i> subsp. <i>daphnoides</i>		ERICACEAE				x
<i>Brunoniella australis</i>	Blue trumpet	ACANTHACEAE		x		x
<i>Bryophyllum delagoense</i> *	Mother of millions	CRASSULACEAE	* (Class 2)	x		x
<i>Callistemon viminalis</i>		MYRTACEAE				x
<i>Callitris endlicheri</i>		CUPRESSACEAE				x
<i>Callitris glaucophylla</i>	White cypress pine	CUPRESSACEAE		x	x	x
<i>Calotis lappulacea</i>		ASTERACEAE		x		
<i>Calotis scabiosifolia</i>	Abundant white daisy	ASTERACEAE		x		
<i>Capparis lasiantha</i>		CAPPARACEAE		x		
<i>Carissa ovata</i>	Currant bush	APOCYNACEAE		x	x	x
<i>Cassine australis</i> var. <i>angustifolia</i>	Red Olive Plum	CELASTRACEAE				x
<i>Casuarina cristata</i>	Belah	CASUARINACEAE		x	x	x
<i>Cenchrus ciliaris</i> *	Buffel grass	POACEAE	*	x		x
<i>Cheilanthes distans</i>	Bristly cloak fern	ADIANTACEAE		x	x	x
<i>Cheilanthes lasiophylla</i>	Wooly cloak fern	ADIANTACEAE		x		
<i>Cheilanthes tenuifolia</i>	Mulga fern	ADIANTACEAE		x		
<i>Chenopodium cristatum</i>		CHENOPODIACEAE				x
<i>Chrysopogon fallax</i>		POACEAE		x		x
<i>Citrus glauca</i>	Limebush	RUTACEAE		x		
<i>Clematicissus opaca</i>	Slender grape	VITACEAE		x		
<i>Corymbia blossomei</i>		MYRTACEAE				x
<i>Corymbia clarksoniana</i>	Long fruited bloodwood	MYRTACEAE				x
<i>Corymbia tessellaris</i>	Moreton bay ash	MYRTACEAE		x		x
<i>Croton insularis</i>	Native cascarilla bark	EUPHORBIACEAE			x	x
<i>Cryptandra ciliata</i>		RHAMNACEAE	NT (NCA)			x
<i>Cymbopogon refractus</i>	Barb wire grass	POACEAE		x	x	x
<i>Cyperus betchei</i> subsp. <i>betchei</i>		CYPERACEAE				x
<i>Cyperus gracilis</i>	Slender sedge	CYPERACEAE		x		
<i>Cyperus rigidellus</i>		CYPERACEAE				x
<i>Daviesia villifera</i>		FABACEAE				
<i>Dianella longifolia</i>	Smooth flax lily	HEMEROCALLIDACEAE		x		x

	(blue dianella)					
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>		POACEAE				x
<i>Dodonaea biloba</i>		SAPINDACEAE				x
<i>Dodonaea peduncularis</i>		SAPINDACEAE				x
<i>Dodonaea viscosa</i>	Hop bush	SAPINDACEAE	x		x	
<i>Ehretia membranifolia</i>	Weeping koda	BORAGINACEAE	x		x	
<i>Einadia hastata</i>	Ruby saltbush	CHENOPODIACEAE	x	x	x	
<i>Elaeodendron australe</i> var. <i>angustifolia</i>		CELASTRACEAE				x
<i>Eleocharis dulcis</i>		CYPERACEAE				x
<i>Enchylaena tomentosa</i>	Ruby saltbush	CHENOPODIACEAE	x			
<i>Enneapogon robustissimus</i>		POACEAE	x			x
<i>Enteropogon acicularis</i>	Curly windmill grass	POACEAE				x
<i>Epalates australis</i>	Epalates	ASTERACEAE				x
<i>Eremophila debilis</i>	Winter apple	MYOPORACEAE	x			x
<i>Eremophila mitchellii</i>	False sandalwood	MYOPORACEAE	x			x
<i>Eucalyptus camaldulensis</i>	River red gum	MYRTACEAE	x		x	
<i>Eucalyptus cambageana</i>	Dawson gum	MYRTACEAE	x		x	
<i>Eucalyptus chloroclada</i>		MYRTACEAE	x		x	
<i>Eucalyptus coolabah</i>	Coolibah	MYRTACEAE				x
<i>Eucalyptus crebra</i>	Narrow leaved ironbark	MYRTACEAE	x	x	x	
<i>Eucalyptus exserta</i>	Queensland peppermint	MYRTACEAE	x			x
<i>Eucalyptus fibrosa</i>	Ironbark	MYRTACEAE	x			x
<i>Eucalyptus melanophloia</i>	Silver leaved ironbark	MYRTACEAE	x	x	x	
<i>Eucalyptus populnea</i>	Poplar box	MYRTACEAE	x	x	x	
<i>Eucalyptus tereticornis</i>	Forest red gum	MYRTACEAE	x		x	
<i>Eucalyptus woolsiana</i>		MYRTACEAE			x	
<i>Eulalia aurea</i>	Silky browntop	POACEAE				x
<i>Evolvulus alsinoides</i>	Tropical speedwell	CONVOLVULACEAE	x	x		
<i>Fimbristylis dichotoma</i>	Common fringe rush	CYPERACEAE				x
<i>Flindersia collina</i>		RUTACEAE	x			
<i>Geijera parviflora</i>	Wilga	RUTACEAE	x	x	x	
<i>Geijera salicifolia</i>		RUTACEAE			x	
<i>Goodenia delicata</i>		GOODENACEAE	x			x
<i>Grevillea striata</i>	Beefwood	PROTEACEAE	x		x	
<i>Hakea purpurea</i>		PROTEACEAE			x	
<i>Hibiscus sturtii</i>	Hill hibiscus	MALVACEAE	x			

<i>Homoranthus decumbens</i>		MYRTACEAE				x
<i>Hybanthus monopetalus</i>	Ladys slipper	VIOLACEAE				x
<i>Iseilema membranaceum</i>	Flinders grass	POACEAE		x		
<i>Jacksonia scoparia</i>	Dogwood	FABACEAE		x		x
<i>Jasminum didymum</i> subsp.. <i>lineare</i>	A native jasmine	OLEACEAE		x		x
<i>Juncus usitatus</i>	Common rush	JUNCACEAE				x
<i>Laxmannia gracilis</i>		LAXMANNIACEAE				x
<i>Leiocarpa panaetoides</i>		ASTERACEAE	x			
<i>Leptochloa decipiens</i> subsp. <i>decipiens</i>		POACEAE	x			x
<i>Leptospermum polygalifolium</i>		MYRTACEAE				x
<i>Leucopogon biflorus</i>		ERICACEAE	x			x
<i>Leucopogon pleiospermus</i>		ERICACEAE				x
<i>Lissanthe pluriloculata</i>		ERICACEAE				x
<i>Lomandra leucocephala</i>	Wooly matrush	LOMANDRACEAE	x			x
<i>Livistona nitida</i>		ARECACEAE	NT (NCA)			
<i>Lomandra longifolia</i>	Spinyhead matriush	LOMANDRACEAE		x	x	x
<i>Lomandra multiflora</i>		LAXMANNIACEAE	x			x
<i>Ludwigia octovalvis</i>	Willow primrose	ONAGRACEAE	*			x
<i>Lycium ferocissimum</i> *	African Boxthorn	SOLANACEAE	* (class 2)			x
<i>Lysiphllum carronii</i>	Ebony tree	CAESALPINIACEAE		x		x
<i>Maireana microphylla</i>	Saltbush	CHENOPODIACEAE		x		x
<i>Maireana pentagona</i>		CHENOPODIACEAE	x			x
<i>Marsdenia fraseri</i>		ASCLEPIADACEAE	x			
<i>Marsdenia microlepis</i>	Narrow leaved milk vine	ASCLEPIADACEAE		x		
<i>Marsilea drummondii</i>	Nardoo	MARSILEACEAE		x		x
<i>Maytenus cunninghamii</i>		CELASTRACEAE	x			x
<i>Megathyrsus maximus</i> *	Guinea grass	POACEAE	*	x		x
<i>Melinis repens</i> *	Red natal grass	POACEAE	*	x		
<i>Mirbelia pungens</i>		FABACEAE				x
<i>Notelaea microcarpa</i>	Native olive	OLEACEAE		x		x
<i>Nyssantes erecta</i>		AMARANTHACEAE	x			x
<i>Oldenlandia galiooides</i>		RUBIACEAE				x
<i>Opuntia stricta</i> var. <i>stricta</i>	Prickly pear	CACTACEAE	* (Class 2)		x	
<i>Opuntia tomentosa</i>	Velvety tree pear	CACTACEAE	* (Class 2)	x		
<i>Ottelia ovalifolia</i>	Swamp lily	HYDROCHARITACEAE		x		
<i>Oxalis corniculata</i> *		OXALIDACEAE	*	x		
<i>Ozothamnus diosmifolius</i>	Sago flower	ASTERACEAE				x
<i>Panicum simile</i>		POACEAE				x

<i>Parsonia eucalyptophylla</i>	Gargaloo	APOCYNACEAE		x	x	
<i>Paspalidium caespitosum</i>	Brigalow grass	POACEAE		x	x	x
<i>Perotis rara</i>	Comet grass	POACEAE		x		x
<i>Personaria sericea</i>						x
<i>Petalostigma pubescens</i>	Quinine tree	PICRODENDRACEAE		x		
<i>Pimelea neo-anglica</i>		THYMELAEACEAE		x		x
<i>Pittosporum phylliraeoides</i>	Weeping pittosporum	PITTOSPORACEAE				x
<i>Plectranthus parviflorus</i>		LAMIACEAE		x		x
<i>Podolepis longipedata</i>		ASTERACEAE		x		
<i>Portulaca pilosa*</i>	Pigweed	PORTULACACEAE	*	x		
<i>Psydrax odorata</i>		RUBIACEAE		x	x	
<i>Psydrax oleifolia</i>		RUBIACEAE		x		x
<i>Ptilotus macrocephalus</i>	Green pussytails	AMARANTHACEAE				x
<i>Rhynchosia minima</i>		FABACEAE		x		x
<i>Roepera apiculata</i>	Twin leaf	ZYGOPHYLLACEAE		x		
<i>Salsola kali</i>	Soft Roly poly	CHENOPODIACEAE		x		x
<i>Santalum lanceolatum</i>	Sandelwood	SANTALACEAE		x		x
<i>Sclerolaena muricata var. muricata</i>	Prickly roly-poly	CHENOPODIACEAE		x		
<i>Senecio letuca</i>		ASTERACEAE		x		
<i>Senecio pinnatifolia</i>	Fireweed	ASTERACEAE		x		
<i>Senna artemisioides subsp. zygophylla</i>	Senna	FABACEAE				x
<i>Solanum semiarmatum</i>		SOLANACEAE				x
<i>Spartothamnella juncea</i>		LAMIACEAE				x
<i>Sporobolus creber</i>		POACEAE		x	x	
<i>Tetragonia tetragonoides</i>	New Zealand spinach	AIZOACEAE		x		x
<i>Themeda avenacea</i>	Native oatgrass	POACEAE		x		x
<i>Trachymene ochracea</i>	Wild Parsnip	APIACEAE				x
<i>Verbena tenuisecta*</i>	Maynes pest	VERBENACEAE	*	x		x
<i>Vernonia cinerea</i>	Vernonia	ASTERACEAE		x	x	x