AECOM

Design, development and implementation of NEDS

Redland City Council

1 June 2012

Stage 3 - NEDS Ground Truthing Report

Natural Environment Decision Support

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Natural Environment Decision Support

Prepared for

Redland City Council

Prepared by

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Quality Information

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Reviewed by Phillip Hawes

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
A	22/05/2012	Preliminary Draft Report		
B	1/06/2012	Final Report		

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Abbreviations

Australia's Virtual Herbarium	AVH
Biodiversity Assessment and Management Pty Ltd	BAAM
Biodiversity Planning Assessment	BPA
Conservation Management Area	CMA
Department of Environment and Heritage Protection, formerly DERM	DEHP
Department of Environment and Resource Management	DERM
Environmental Inventory	EI
Environmental Inventory Version 4	EIv4
Endangered, Vulnerable or Near Threatened	EVNT
Geographic Information Systems	GIS
High Value Regrowth	HVR
Light Detection and Ranging	LiDAR
Multiple-Criteria Analysis	MCA
Natural Environment Decision Support System	NEDS
Portable Digital Assistant	PDA
Redland City Council	RCC
Regional Ecosystems	RE
Regional Ecosystem Description Database	REDD
Wetlands Management Areas	WMA

Executive Summary

From the understanding gathered in Stage One and Stage Two of the Natural Environment Decision Support System (NEDS) project and the outcomes from extensive consultation with key stakeholders, Redland City Council (RCC), Biodiversity Assessment and Management (BAAM) and AECOM, NEDS has been designed and developed to provide an expression of Conservation Value within the Redlands Local Government Agency boundary, superseding the Environmental Inventory v4 (EIv4).

It is clear that the quality (i.e. accuracy, currency, completeness) of all primary datasets utilised by NEDS is crucial in ensuring the resulting expression of Conservation Value accurately reflects what is on the ground and therefore suitable for informing policy.

This report presents an overview of ground truthing undertaken to validate the output of NEDS and identify gaps or issues in the underlying datasets used by NEDS to produce the expression of Conservation Value.

As a result of ground truthing, the following conclusions are made:

- Stage Three has identified a number of gaps in the State-based datasets that need to be addressed before NEDS outputs can be effectively used to inform generation of policy.
- NEDS is informative in relation to what datasets it uses however other additional data is required from further ground truthing, e.g. improved species, habitat (threatened, near threatened) to supplement information covered poorly by other datasets.

  This will require the generation of a “local RCC dataset” to be captured and maintained. It is envisaged that this layer will resolve existing issues and fill any gaps in the State-based datasets. By incorporating this data into new or modified layers that can be scored in NEDS, the model will provide a more comprehensive representation of Conservation Value.
- Further development of the Species dataset should be undertaken in accordance with a habitat methodology based on scientific foundation, transparency and defensibility.

1.0 Purpose

The purpose of this report is to provide an assessment of the NEDS "Conservation Value" output from Stage 2 through ground truthing to identify inconsistencies and gaps in the underlying state based datasets and also provide a statement on comparison with the original RCC Environmental Inventory (EIv4).

The deliverables of Stage Three are:

1. This report.
2. A field observation dataset, provided as a single ESRI Shapefile joining flora and fauna data as applicable. Refer to Appendix A – Metadata of NEDS Field Survey Points.

2.0 Scope

Stage 3 scope consists of two components, the first being the ground truthing exercise to confirm if the NEDS results are reflected accurately on the ground, and secondly, to compare the NEDS results with the existing EIv4.

The ground truthing areas included publicly accessible land and properties that could be accessed through private agreement throughout the City including the mainland and North Stradbroke Island. This included:

- Conservation reserves
- Parks
- Roads and road reserves
- Easements.

3.0 Ground Truthing

3.1. Methodology

Priority areas for ground-truthing within the study area (i.e. the mainland and North Stradbroke) were selected in consultation with RCC. Prior to commencing the ground-truthing component of this stage, mobile GIS units were uploaded with information based on an agreed habitat assessment proforma.

Important ecological information was captured during ground-truthing to assist in defining the biodiversity characteristics of each site/polygon and to allow comparisons of the expression of Conservation Value output from NEDS. Specialist flora and fauna ecologists from BAAM who have extensive knowledge of the environments within the Redland local government area undertook the ground-truthing surveys.

The ground-truthing was undertaken in two stages, to allow a review of progress achieved by the first stage and refinement of further surveys if required. Field observation data was captured electronically, using a mobile mapping system and recorded in a GIS format and used to verify accuracy of the Conservation Value layer produced by NEDS. Discrepancies between state biodiversity mapping and field studies could be provided to DEHP for incorporation into future map updates.

3.1.1. Site Selection

Areas targeted for ground-truthing were selected in consultation with RCC, with particular focus given to areas of bushland that had not received a ranking during the Stage 2 geoprocessing, i.e. areas not covered by the current State-based datasets used in Stage 2. Additional areas that did receive a ranking, primarily located nearby those areas that were not mapped, were also assessed on an opportunistic basis. Sites were chosen to allow comparisons of the NEDS ranking with habitat/vegetation conditions on the ground. For the most part targeted sites were located on publicly accessible lands within Redland City, including Amity Point, North Stradbroke Island.

High resolution colour aerial photography and the NEDS model with the species layer set to zero were viewed to identify priority areas for site inspection. These areas were digitised as polygons and designated "A" to "Y". These locations were then ground-truthed where site access permitted, along with additional areas of interest. Refer to Figure 1.

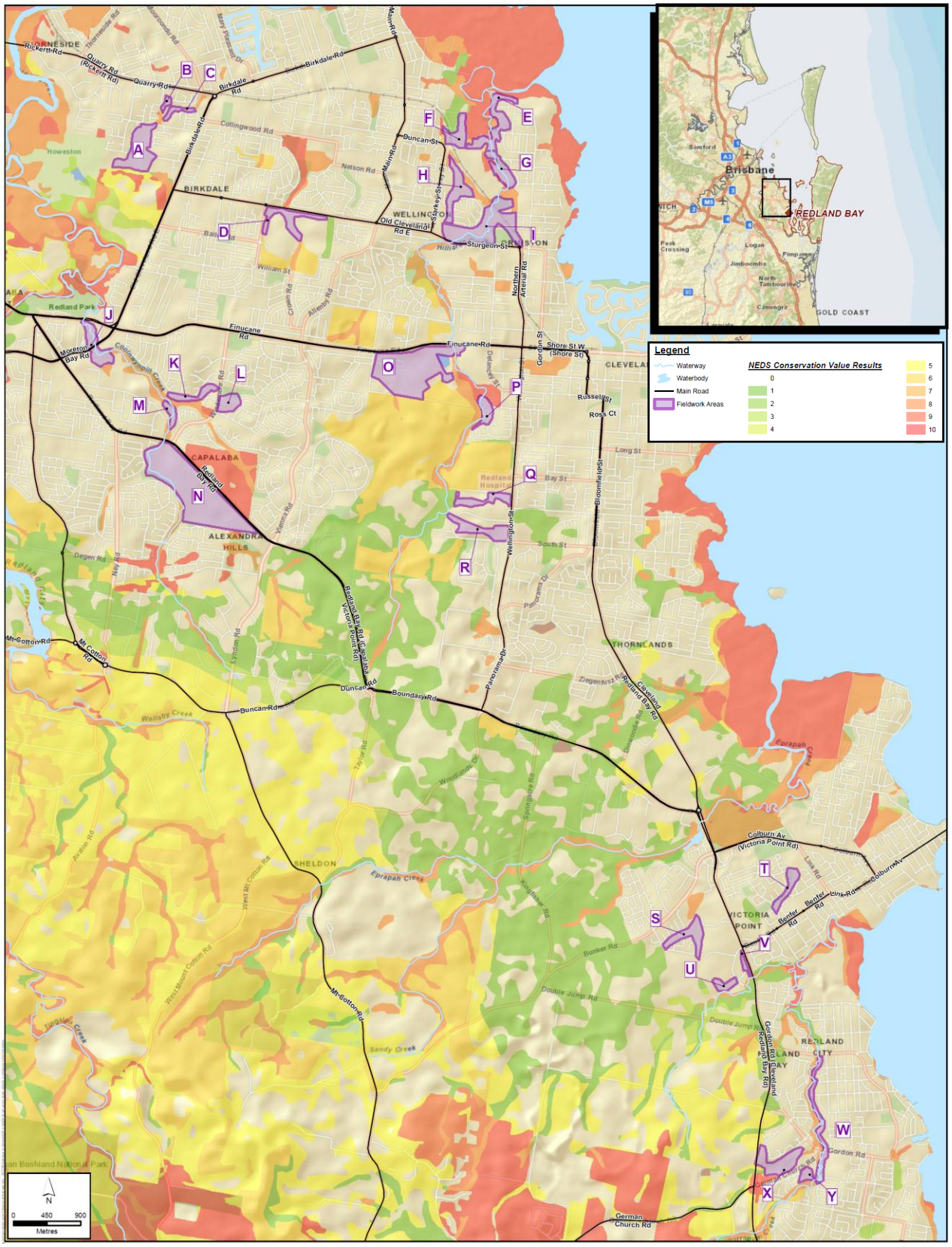

Figure 1 Sites Selected for Ground Truthing

3.1.2. Ground-truthing

Two field teams consisting of a Principal or Project Botanist and a Senior or Project Ecologist undertook the ground-truthing over a six day period.

Flora survey sites

The flora survey approach followed standard vegetation assessment techniques for Queensland (Neldner *et al.* 2005). One hundred and fourteen quaternary site surveys (refer Figure 2) were undertaken following methods specified in Neldner *et al.* (2005), with project-specific modifications where applicable including notes on NEDS model accuracy.

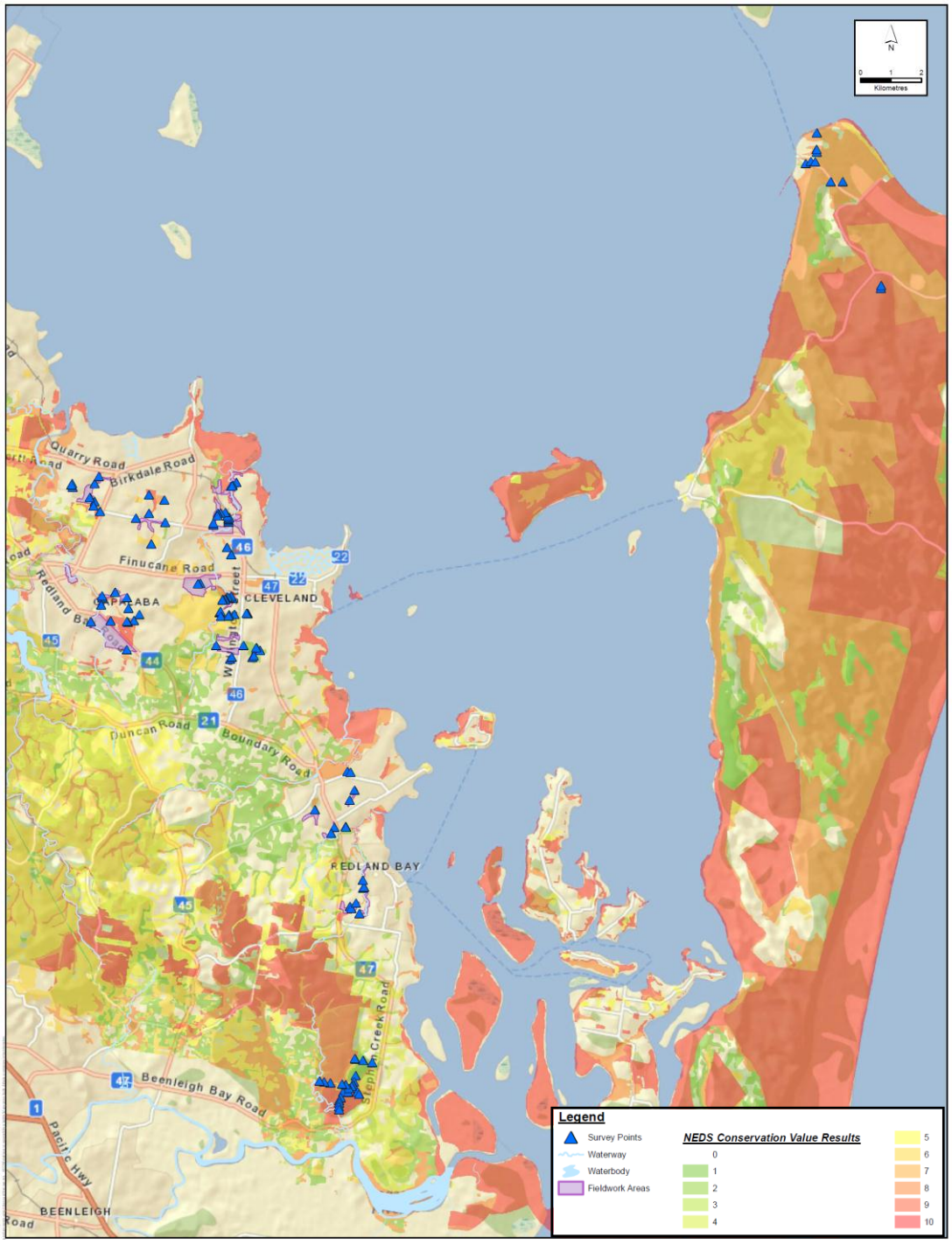

Figure 2 Locations Surveyed

These surveys aimed to maximise site coverage of priority areas identified in the desktop phase, to verify the accuracy of data layers that contributed to the NEDS model. Survey activities consisted of traverses through the study area on foot conducting rapid assessments using a Personal Digital Assistant (PDA), an electronic handheld information device with Global Positioning System (GPS) capability to fix site positions.

Data was recorded using ArcPad™ v. 10.0 (ESRI®) loaded with relevant Geographic Information System (GIS) layers. Loaded layers included the NEDS model itself, all contributing layers, and various additional layers including pre-cleared vegetation and high resolution aerial imagery. This ensured boundary identifications were accurate and aerial imagery interpretation was effective. Data collected at each quaternary site consisted of some or all of the following:

- land unit types present
- dominant flora in canopy
- a qualitative description of community structure
- notes on vegetation condition
- comments on the accuracy of the model in comparison to field observations.

Data gathered during the quaternary field surveys were used to produce maps showing examples of the influence field data could have on model results. Refer to case study 1 (Section 3.3.1) and case study 2 (Section 3.3.2).

Fauna Habitat Assessment

Within the 114 vegetation assessment sites, a total of 80 areas of fauna habitat were foot traversed as part of the ground-truthing exercise.

Habitats were assessed with respect to their relative significance for conservation significant fauna species. This included noting habitat variables such as presence of food resources (e.g. the presence of Koala food trees), vertical complexity (canopy, sub-canopy, shrub and ground-layer), horizontal complexity (ground substrate, fallen debris), hollow-bearing trees, water body size and condition, connectivity to bushland and other relevant characteristics deemed important for fauna species. In addition, the presence of any conservation significant fauna species was also recorded.

Fauna habitats were ranked high, medium or low based on the occurrence and quality of noteworthy habitat variables, such as food, breeding and refuge resources, as well as the presence of significant fauna species. For example, a site was ranked high if a Koala was observed, or if Koala scats were present and there were numerous Koala feed trees present and the site was either connected or in close proximity to other fauna habitats. Medium-ranked habitats were those that at the time of the survey did not support any conservation significant fauna, but had some food, breeding and/or refuge resources present that could potentially be utilised by conservation significant fauna. Low-ranked habitats were those that currently lacked any noteworthy fauna resources, such as Koala food trees, hollow-bearing trees, water bodies etc.

3.2. Results

3.2.1. Vegetation Assessment

Inconsistencies between the remnant status of the vegetation and Stage 2 geoprocessing occurred in approximately 40% of all sites investigated, with the majority of the differences occurring where the site was not mapped under the state government RE or Regrowth mapping, but the composition, structure and age of the vegetation indicated that the sites fulfil the requirements of remnant vegetation. Sixty-three precent of areas mapped by the state government as High Value Regrowth, appeared to meet the structural and floristic requirements for constituting remnant vegetation. These percentages for incorrect mapping of remnant and regrowth vegetation likely much higher than the overall proportion of mapping errors in the respective datasets, as a central aim of the fieldwork was to identify and characterise areas likely to be mapped incorrectly.

For additional areas assessed that did receive a ranking in NEDS, 12% were found to require a higher ranking, 25% required a lower ranking, while the remainder were scored correctly in the NEDS model. The discrepancy between the “maximum score” in the model and the score determined to be correct by field investigation was mostly on the basis of RE designation, i.e. change in Biodiversity Status, and occasionally on the presence or absence of wetlands.

3.2.2. Fauna Habitats

The assigned ranks for the investigated fauna habitats differed from the ranking assigned to the patches in Stage 2 in approximately 40% of sites visited. Major differences occurred where areas had not been ranked under NEDS, but ground-truthing revealed that these sites supported high or medium fauna habitats. In particular, some unranked habitat patches currently support high value Koala habitats and Koalas were sighted in five separate unranked patches. Other inconsistencies were evident where NEDS had sites ranked higher or lower than the on-ground habitat values of the site. Currently the NEDS model does not have a fauna habitat value layer, as no dataset specifically maps these features. The value of habitats important for conservation significant species could be raised in the model by assigning preferred REs to these species. Refer to Section 5.0 Recommendations.

3.3. Case Studies

3.3.1. Case Study 1 - Polygon "P"

Figure 3 depicts Polygon "P" at the western end of Coburg St W, Cleveland and includes areas of Clarke Street Bushland Refuge, Hilliards Creek Corridor - Coburg West and Sunshine Drive Park.

The area is not mapped as a remnant RE or HVR and therefore is not attributed a rating under NEDS (refer to Figure 3). However, apart from areas of more significant disturbance in the central north of the polygon, the ground truthing indicated the portions assessed are remnant RE 12.3.6. The area also includes a wetland corresponding to a WMA area; therefore the area should be attributed a score of six (6) for the 'No Concern at Present' RE 12.3.6 and a score of eight (8) for the wetland.
Resultantly the total score for the area assessed would be fourteen (14), the same score as the adjacent Hilliards Creek Corridor. In addition, a Koala was sighted 20 metres to the west of polygon "P" (Site 95). As Koalas have recently been listed as Vulnerable under the EPBC Act, inclusion of this record into the Species Record Layer dataset would also increase the NEDS rating of the Polygon "P" area. Refer section 5.3.

The ratings for the Species Record Layer are currently set to zero in the maps presented.

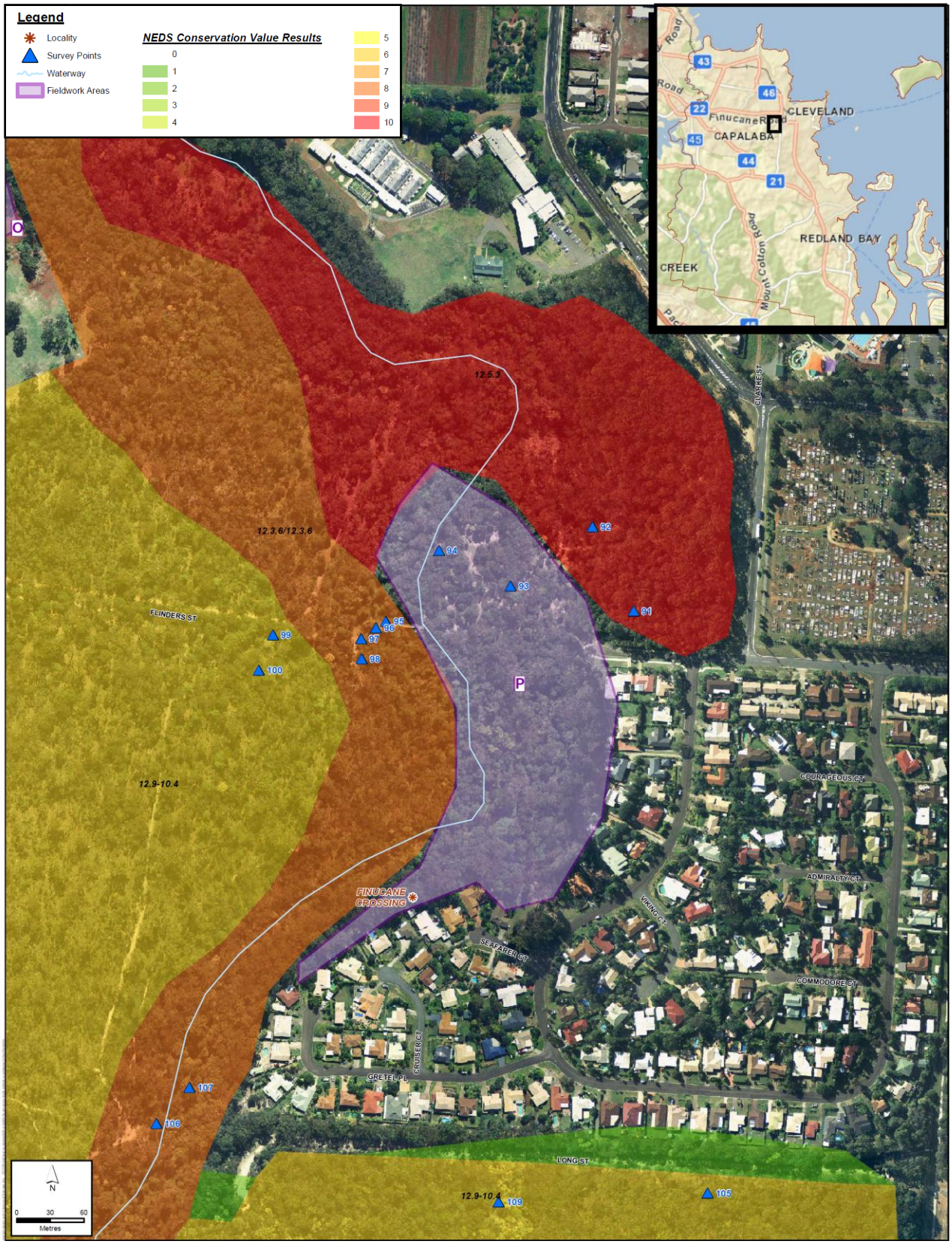

Figure 3 Case Study 1

3.3.2. Case Study 2 - East of RCC Depot

The second case study is an area of vegetation west of the RCC South Street Depot. Refer Figure 4.

The area is mapped as HVR, apart from eastern edge, which is mapped as non-remnant, non-HVR. In the model the mapped area scores a rating of one, one on account of the HVR source mapping used in the model inputs. However, the ground-truthing indicated the areas assessed are remnant RE 12.3.5. The area also includes a wetland corresponding to a WMA area. Therefore the area should be attributed a score of eight (8) for the Of Concern RE 12.3.6 and a score of eight (8) for the wetland. Resultantly the total score for the area assessed would be sixteen (16), not one (1) as attributed by the model.

These results only apply to the eastern portion of the polygon, as the western portion comprises both remnant and regrowth RE 12.9-10.4 and no wetland is present.

To reflect the fieldwork findings, the polygon would need to be split to reflect these changes. This case study therefore provides an example of where updating the model to reflect field findings would require not only attribute changes to the contributing datasets, but also line-work (boundary) changes.

Figure 4 Case Study 2

These two case studies highlight the importance of field verification in improving the input data in NEDS. Suggestions for improving NEDS using field data are provided in Section 5.0.

4.0 NEDS and EIv4 Comparison

From the understanding gathered in Stage One of NEDS and the outcomes from consultation with key stakeholders, Redland City Council (RCC), Biodiversity Assessment and Management (BAAM) and AECOM, NEDS has been designed and developed to provide an expression of Conservation Value within the Redlands Local Government Area boundary. NEDS will assist in making policy decisions, such as the Redlands Planning Scheme, and supersede the Environmental Inventory version 4 (EIv4).

The following two sections describe the main differences between the approaches used to develop these products.

4.1.1. Environmental Inventory

The current Environmental Inventory (EI) is a mapped database of habitats and their relative ecological functions and significance. The database and mapping is composed of a series of polygons known as Conservation Management Areas (CMAs).The CMAs are prioritised into four categories of conservation significance (Priority, Major, General and Enhancement) and are assigned functional roles (such as Habitat, Corridor, Tidal and Patch). The EI is contained in a single ESRI shape file and whilst it has undergone a number of updates over time, it has reached a point where RCC consider it no longer capable of update.

4.1.2. NEDS Expression of Conservation Values

The NEDS methodology can be described as a Multiple-Criteria Analysis (MCA). Information from several criteria (data layers) are combined (aggregated) to form a single data layer as shown in Figure 5 and in the case of NEDS an expression of conservation value.

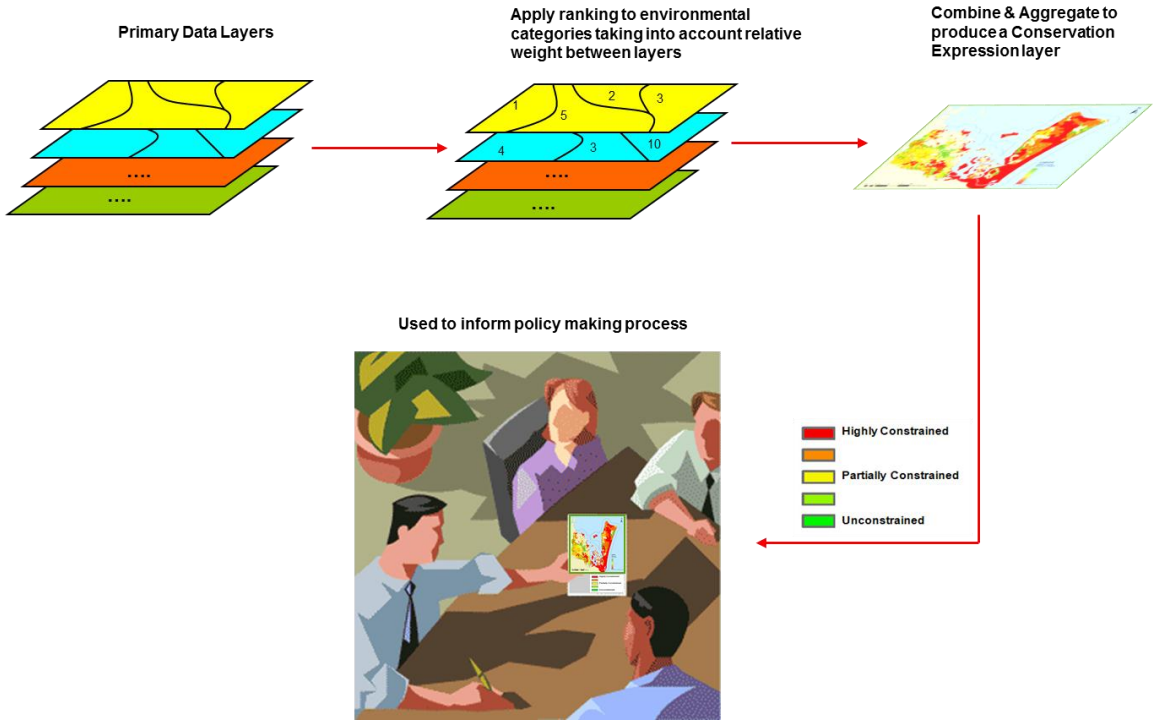

Figure 5 NEDS Methodology

Each contributing layer contains areas (polygons) categorised according to environmental importance. A numeric rating is applied to each category, the larger the number the more important from a conservation perspective. As there is no relative weighting of importance across layers, individual ratings must reflect the importance of one layer over another. For instance, if one layer is twice as important as the other, the highest rating for the first layer may be 10, however the highest rating for the other layer may be set at 5.

The resulting data layer produced will be derived by intersecting all the polygons in the input layers to create a synthesised set of polygons and then mathematically aggregate the ratings across all layers.

The resulting layer will include a “maximum weight” attribute which represents the maximum weight value of all the contributing data layers within each synthesised polygon. Also provided is a “total weight” attribute, representing the total sum of the “weight” values from each participating layer. This provides flexibility to symbolise the layer based on either “maximum weight” or “total weight”.

Attributes representing each participating layer’s score (weighting) is also provided for traceability.

4.1.3. Summary

The findings from the revision of the EI were that it is no longer capable of update, hence information is out-of-date and layers are incompatible and have different spatial resolutions. RCC indicated that the EI cannot be interrogated for detailed information and that categories are not easy to interpret. However the EI represents historical information that remains a valuable resource to inform the planning and management of ecologically significant areas in the Redland LGA.

Given that EIv4 is not maintainable, consultation with key stakeholders identified the need to develop an appropriate replacement for EIv4 and hence design a planning tool based on existing knowledge and incorporating the latest environmental data in its available formats. The output from NEDS is therefore no longer an update of EI; rather it is now an independent expression of Conservation Value. It is a tool that is easily maintained, extensible and future-proofed. This design goal has been enforced via a “keep it simple” philosophy. Furthermore, NEDS has the ability to cater for the application of “what-if” scenarios.

5.0 Recommendations

5.1. Revised Remnant and Regrowth Vegetation Layers

The outputs from a model are only as good as the input datasets. Arguably the most significant is the remnant vegetation layer as other datasets used in the model are partially derived from it. For example the WMA and BPA layers are based primarily on this dataset.

One of the major limitations of this data for the purposes of NEDS is the scale of mapping. For Redlands the scale of RE mapping is 1:50 000 (Neldner *et al.* 2005), whereas for NEDS, mapping at 1:25,000 or 1:10,000 would be more appropriate. This finer scale will capture smaller areas of remnant habitat that are currently missed in the RE mapping. Future refinements to NEDS should therefore look into the feasibility of replacing the RE layer with a revised remnant vegetation dataset. This could be created using the Vegetation Mask (LiDAR) for the Redlands Shire, and informed by the RE layer and field data. This would greatly increase the power of NEDS to identify the value of remnant vegetation (including Of Concern and Endangered REs).

The High Value Regrowth layer could similarly be updated using this approach.

5.2. Species Habitat Layer

One of the shortcomings of the NEDS model highlighted by the fieldwork phase is the lack of habitat data, particularly in relation to conservation significant species, such as those that are endangered, vulnerable or near threatened (EVNT). For example, the results of the ground-truthing indicate that relying on NEDS Stage 2 ranking is not sufficient to accurately gauge the value of fauna habitats of a site. In particular small unmapped habitat patches can hold high value for conservation significant fauna such as koalas.

The revised remnant vegetation and high value regrowth layers (refer Section 5.1) could be used to create a species habitat layer, by aligning REs with conservation significant species associated with them.

Information on the REs associated with specific conservation significant species could be obtained from a number of sources. Some EVNT plant and animal taxa information is attached to RE descriptions in the *Regional Ecosystem Description Database* (REDD) (Queensland Herbarium 2011). For plants, some HERBRECS records specify the RE in which the specimen was found, and both the HERBRECS and AVH databases contain habitat information with which the RE can sometimes be attributed. For animals, Queensland Museum habitat data is often less detailed or absent but REs may be assigned by a combination of habitat notes and the record location. A primary source for RE associations would be to form a panel of experts to assign significant species to RE’s. In some cases, additional research may be required to ascertain RE association for particular species.

The spatial dataset that should be used for the species habitat layer is the revised remnant and regrowth vegetation layers. This would essentially double the utility of this dataset for NEDS. The current RE and HVR

datasets used in NEDS ascribes the value of each RE according to Biodiversity Status. This would also be the case for the revised remnant and regrowth vegetation layers described in Section 5.1. The Biodiversity Status is based on an assessment of the condition of remnant vegetation in addition to the remnant extent of an RE in relation to its pre-clearing extent.

While this is appropriate for scoring the value of the RE itself in NEDS, it does not rate values associated with it, such as conservation significant species. NEDS could include this value by scoring REs by the number and status of conservation significant species associated with them.

An example of how this approach would add value to the vegetation mapping layers of the NEDS model is exemplified by the case of Koala. Currently areas supporting remnant vegetation that include preferred Koala food trees, e.g. RE 12.9-10.4, 12.9-10.17, 12.9-10.19, 12.11.3, 12.11.5, do not reflect the value of these areas for this species. This is because as all these RE's have a 'No Concern at Present' Biodiversity Status and resultantly do not currently rank high in the model. A second RE layer that ascribes scores based on value for species would ensure these REs receive a higher ranking because of their importance to Koala.

5.3. Species Record Layer

The species layer is an amalgamation and synthesis of data from the Herbarium, Museum and RCC observations of conservation significant species. Its creation during Stage 2 is described in the NEDS Stage 2 Development Report. It is suggested that this layer be referred to as the 'Species Record Layer' to differentiate it from the proposed Species Habitat Layer described above. It is anticipated that the two species layers would work in a complementary way, where all areas of potential habitat for conservation significant species are given a score through the Species Habitat Layer, and those areas of known or likely habitat are given an additional score on account of a species having been recorded in that locality.

Fieldwork, such as that undertaken for Stage 3, has the potential to improve the Species Record Layer, by increasing the number and accuracy of records in the dataset. For example, a number of Koala sightings were made during the field assessments and these could be added to the Species Record Layer. It is worth noting that since the completion of fieldwork, Koala has been listed as Vulnerable under the EPBC Act. Incorporation of Koala into the Species Record Layer would increase the ratings in NEDS as there are many records for this species across Redland City.

The NEDS Stage 2 Development Report makes recommendations regarding improving the spatial accuracy of the Species Record Layer. In the context of the proposed revised remnant and regrowth vegetation layers (refer Section 5.1); a refinement to this recommendation can be made. One of the issues with the current draft version of the Species Layer which incorporates a 1.8 km buffer around known records, is that it includes large areas of non-habitat that do not necessarily relate to where the species occurs. The area of non-habitat could be reduced by clipping to the remnant and HVR layers. This was not done for Stage 2, as doing so would clip out all the areas that are remnant or regrowth vegetation but not covered by the geoprocessing, such as those identified during fieldwork. However, with a revised vegetation layer - mapped at an appropriate scale and informed by field data and the vegetation mask (refer Section 5.1) - the Species Record Data could be clipped with greater confidence that it would not be excluding habitat where the target species may be present.

As an additional step, individual clipping could take place for each species, clipping out REs in the buffer where a species is known not to occur. For example the sedge *Eleocharis difformis* (Endangered under the NC Act) is known from RE 12.2.15, but will not be found in adjacent REs such as 12.2.5, 12.2.6 and 12.2.8. Therefore these REs could be clipped out from the buffers for *Eleocharis difformis*, increasing the accuracy of the record. This approach would greatly increase the value of the species layer for NEDS. Other layers could also be included in the geoprocessing procedures to improve clipping or buffered species records. For example Tusked Frog (*Adelotus brevis*—Vulnerable under the NC Act) may frequent drainage lines that are outside remnant or regrowth vegetation. For this species, appropriately buffered drainage line mapping could be included in the areas retained in the buffered output for the records for this species.

5.4. General Recommendations

NEDS is informative in relation to the current datasets it uses, however it is clear that supplementary data is required to fill gaps, i.e. existing State-based datasets are not complete and are imperfectly described. A localised data layer managed by RCC is required to resolve these issues and fill gaps.

The following recommendations are provided for consideration in future planning for Redland City with the aim of increasing protection of biodiversity values, particularly Koala habitats and to facilitate the high level and strategic biodiversity planning needs within Redland City.

- Assemble a group of 'experts' to determine priority flora and fauna species within Redland City and assign these significant species to preferred habitats (REs).
- Areas where Koalas and other priority species have been sighted should receive a higher ranking (by adding these sightings in the Species Records Layer).
- Unranked, small urban bushland patches and drainage or creek lines should be inspected and ranked according to their habitat values and their contribution to safe fauna movement. As part of this exercise, patches requiring rehabilitation or enhancement should be identified.
- Formulate a user-friendly and succinct proforma for use by Council officers, community groups, consultants and others involved with collecting vegetation and fauna data within Redland City to enable standardisation of data collection and input into NEDS.

6.0 References

NEDS Stage 2 Development Report – Report for Redlands City Council.

Queensland Herbarium (2011) Regional Ecosystem Description Database (REDD). Version 6.0b - January 2011, (January 2011) (Department of Environment and Resource Management: Brisbane).

Neldner, VJ, Wilson, BA, Thompson, EJ, Dillewaard, HA (2005). Methodology for survey and mapping of Regional Ecosystems and Vegetation Communities in Queensland, Version 3.0. Queensland Herbarium, Queensland Environmental Protection Agency, Brisbane.

Appendix A – Metadata of NEDS Field Survey Points

Custodian

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Abstract

NEDS Field Survey Points maps the location of flora and fauna assessment sites and species records within the Redlands City Council project areas for the NEDS project as at 23/05/2012.

Version History

Version 1.1 – Incorporates all post-fieldwork edits as at 23/05/2012.

ANZLIC Search Words

ECOLOGY Models
ECOLOGY Planning
ECOLOGY Landscape
ECOLOGY Ecosystem
ECOLOGY Habitat
ECOLOGY Community
ECOLOGY Biodiversity
ECOLOGY Classification
ECOLOGY Conservation
ECOLOGY Mapping
ECOLOGY Inventory
VEGETATION Mapping
VEGETATION Planning
VEGETATION Inventory
FLORA Native
FLORA Exotic
FAUNA Native
FAUNA Exotic
VEGETATION Floristic
VEGETATION Structural

Dataset Status

Progress: Finalised.
Release Date: 23/05/2012
Maintenance and Update Frequency: As required

Access

Datum: MGA94 Zone 56 -
Stored Data Format: Digital ArcInfo
Available Format Type: Digital ArcInfo

Positional Accuracy

<10m

Attribute Descriptions

Field Name	Data Type	Description	Values
FEATURE	Text	Geometry data type	Point
ID	Double	Generated by ArcPAD. Guarantees a unique ID for each row in the table being edited on the field device.	1–∞
DESCRIPTIO	Text	Identifies the type of intimation in the table.	
DATUM	Text	Coordinate system.	
LONGITUDE	Double	East-west position.	
LATITUDE	Double	North-south position.	
SOURCE	Text	Author/custodian.	
DATE_	Date	Generated by ArcPAD. Specifies the date and time as day, month, year, hours, minutes, seconds, AM/PM.	
STATE	Text	Australian State in which the project area occurs.	
PROJECT	Text	Project name.	
LOCALITY	Text	Project locality name.	
RECORD	Text	The type data the point is recording.	sr = 'species record', vas = 'vegetation assessment site'
SITE_TYPE	Text	For 'vas' points, the type of vegetation assessment site.	Primary, secondary, tertiary, quaternary
SITE_NAME	Text	For primary, secondary, tertiary, sites, the name of the site. Consists of first three letters of project, a number, the RE and the transect position.	
TRANS_POS	Text	Transect position (not currently used for NEDS but retained for future use).	
RE	Text	The actual regional ecosystem in which the point occurs (not necessarily as mapped).	
POLY_POS	Text	Position within a polygon in which a point occurs. The polygon can be currently mapped of refer to future mapping.	
HABITAT_D1	Text	A description the habitat. Dominant or conspicuous species in each strata are identified using a shorthand that employs parentheses "([{<>}])" and the hyphen character "-". Height of each stratum and additional geological and landscape features may also be recorded. Scientific name of each species is usually recorded in shorthand as described in "SP_SCI".	'-*-' = emergent E. '*' = tree canopy T2, '(*)' tree subcanopy T2, '[*]' = tall shrub S1, '{*}' = low shrub S2, '<*>' = ground G, where '*' represents a species or multiple species.

Field Name	Data Type	Description	Values
LABEL	Text	Used for a variety of purposes including recording the label on a plant specimen or picket, or to be used as an alternative label for a site in GIS.	
DEVICE	Text	The field device used to record the point.	
PHOTO_NUM	Text	The file name of the photo(s) associated with the point.	
PHOTO_DEV	Text	The device used to take the photo(s)	
SP_GROUP	Text	Any super-species taxonomic designation.	
SP_SCIENTI	Text	The scientific name of the species. Usually recorded in shorthand where the first four letters of the genus name and species epithet are entered, separated by a space. Species that cannot be identified to species level are recorded using the full generic name followed by the abbreviation “sp.” and optionally, a number. Uncertain identification are labelled with a“?”.	
SP_COMMON	Text	Species common name. Uncertain identification are labelled with a “?”.	
HABIT	Text	Description of the general appearance, growth form, or architecture of a plant	
HEIGHT	Text	Height of the plant in meters unless otherwise specified	
FLOWER	Text	Presence/absence or salient features of the flower.	
FRUIT	Text	Presence/absence or salient features of the fruit.	
BARK	Text	Salient features of the bark.	
ABUNDANCE	Text	Abundance designation using DAFOR score.	Abundant, frequent, occasional, rare.
COUNT	Integer	The number of individuals present at/in the vicinity of the point.	
SUB_CODE	Text	The submission code ascribed to a plant sample for the purposes of identification or verification.	
NOTES	Text	Notes on the accuracy of the NEDS model. Also for miscellaneous notes relating to the point, e.g. general habitat condition.	
INTRODUCED	Text	Designates when a plant is not native to the location.	“y” = yes.
STATUS_NCA	Text	Status of a plant under the *Nature Conservation Act 1992*.	
STATUS_VMA	Text	Status of a community under the *Vegetation Management Act 1999*.	
STATUS_EPB	Text	Status of a plant or community under the *Environment Protection and Biodiversity Act 1999*.	

Field Name	Data Type	Description	Values
STATUS_LPA	Text	Status of a plant *Land Protection (Pest and Stock Route Management) Act 2002*	
ARCHIVE1	Text	Field to which entries from another field can be migrated when it is determined that an entry to be changed during the post-fieldwork stage, e.g., when it is determined that an RE designation needs to be altered.	
ARCHIVE2	Text	Field to which entries from another field can be migrated when a second entry needs to be changed	
HAB_FEATUR	Text	Type of vegetation feature.	VP = vegetation path L = linkage WW = waterway
FAUNA_VAL	Text	Value of vegetation feature to fauna.	Low, Moderate, High.
HAB_COND	Text	Habitat condition for fauna.	
WATERBODY	Text	Description of waterbody (where applicable).	
KOALA_FEED	Text	Assessment of the presence/absence of koala food trees.	Absent, Present, Abundant, Primary food trees present, Secondary food trees present.
KOALA_LIKE	Text	Assessment of the likelihood of koalas being present.	Unlikely, Potential, Definite.
SIGN_FAUNA	Text	Significant fauna potentially utilising the area.	
NEDS_COM	Text	Assessment as to the validity of the NEDS model.	

Contact Information

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