

2011 Statewide Vegetation Statistics (formerly the CAR Reserve Analysis) - Full Report README

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Note: Hyperlinks to the Simplified and the Full (Detailed) reports are to a DEC intranet site so are intended for use by DEC personnel only. Details of how external organizations can access the reports are provided in section 11.

1. Required Files

The Statewide Vegetation Statistics Report consists of two files:

1. An excel spreadsheet [Vegetation_Statistics_Statewide_2011_Full_report.xls](#) with 8 worksheets with a prefix of 'Report' containing the statistics.
2. [Readme document](#) (this file) which provides information on the purpose of the report, definition of the statistics, input spatial dataset metadata and information on the limitations of the report. **PLEASE READ THIS INFORMATION PRIOR TO EXTRACTING/USING STATISTICS FROM THE EXCEL REPORT**

2. Purpose of the README document

This README document provides supporting information and metadata for the Report Statistics provided in the MS Excel Spreadsheet stated above. It should be referred to when using and interpreting information contained in the excel report.

3. How to Cite this Report

Recommended Citation:

Government of Western Australia. (2011). *2011 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report)*. Accessed [month] [YYYY]. WA Department of Environment and Conservation, Perth, <https://www2.landgate.wa.gov.au/web/guest/downloader>

4. Purpose of this Analysis and Report

This report provides information on the pre-European and current extent of the Ecological Communities of Western Australia and reports on the status of the CAR Reserve System for WA. It reports only on the status of **reserves within the DEC managed estate**.

4.1. CAR Reserve System in brief

The CAR Reserve System is based on three principles:

1. **Comprehensive** – includes the full range of ecological/forest communities recognised at an appropriate scale within and across each bioregion.
2. **Adequate** – level (extent) of reservation that will ensure viability and integrity of populations, species and ecological communities. An extent protected threshold (target) is usually adopted
3. **Representative** – those areas reserved should reasonably reflect the biotic diversity of the communities

A combination of vegetation types and bioregions are used to define an ecological community as there can be a wide variation within an ecosystem at the continental scale. Therefore an assessment of the reserve system against CAR principles is done at a regional (bioregional) level. Bioregions are defined at two scales IBRA level and IBRA sub-region level.

In the statewide WA context there are a number of options for defining an ecological community when assessing the Reserve System against CAR principles:

- Broad level vegetation type mapping (Vegetation Associations) or the finer scale mapping (System Associations) can be used (see more information in section 4.2 below)
- IBRA regions or the finer scale regionalization of the IBRA sub-regions can be used.

Obviously you can choose one of all possible combinations of the above to do a CAR assessment.

The **CAR Statistics provided** in the excel reports **can** be used to **assess** how **comprehensive** and **adequate** the reserve system is. The report **cannot** provide information on **representativeness**

rather this requires on ground assessment by an experienced Ecologist who has knowledge of the ecological community.

The **CAR Statistics** provided in the report are (please see section 8 for definitions):

- Pre-European Extent (ha)
- Current Extent (ha)
- Current Extent Protected for Conservation (ha)
- % Current Extent Protected for Conservation

Based on input from a number of key Stakeholders in 2007 and 2011, **lands Protected for Conservation are defined in the CAR Reserve Analysis as being listed in the DEC Tenure dataset as Crown Reserves having an IUCN Category of I - IV**

Detailed background information on the CAR Reserve System for Ecological Communities in Australia is available from http://www.daff.gov.au/_data/assets/pdf_file/0011/49493/nat_nac.pdf

4.2. Vegetation Type Mapping

Ecological/forest communities are commonly used as surrogates for biodiversity when assessing a reserve system using CAR principles. In Western Australia ecological/forest communities are defined in a consistent way across the state by pre-European (Beards) vegetation-landscape mapping data. This dataset is hierarchical and enables reporting at the following scales:

- Vegetation Systems (combine elements of vegetation distribution and landscape types);
- Vegetation Associations (vegetation types - mosaics);
- Vegetation System - Associations (finest scale mapping of vegetation types - some are still mosaics).

For more information on the Pre-European mapping:

- See V:\GIS1-Corporate\Data\Vegetation\Pre_European\Using_PreEuroVeg.doc (DEC personnel only)
- Contact the Department of Agriculture and Food (GIS Data Administrator gis@agric.wa.gov.au)

5. What Report should I use?

5.1. Should I be using the Full or Simplified Report?

The [Simplified Report](#) should be used initially to determine the levels of retention of a Vegetation Association or System Association within an IBRA or IBRA sub – region and also the level of protection for conservation. If statistics on the extent of lands proposed for protection (DEC tenure category of 'Former Leasehold' or 'Crown Freehold Department Interest') or extent of other lands within the DEC Estate are required then these can then be extracted from the [Full Report](#). Please refer to the table below when determining which report you need to use. See section 10 for a definition of the Categories.

Statistics on the Category:	Conservation Status	Reported on in:
IUCN 1 - 4	Lands Protected (reserved) for Conservation	Simplified and Full (detailed) Reports
IUCN 5 - 6	Lands reserved with primary purpose not for Conservation (multiple use Crown lands)	Full Report only
No IUCN	Lands not reserved for Conservation (other lands)	Full Report only
Former Leasehold	Leasehold lands acquired and proposed for conservation (not yet reserved)	Full Report only
Crown Freehold – Department Interest	Freehold lands acquired and proposed for conservation (not yet reserved)	Full Report only
DEC Managed Land	All Lands managed by DEC. Not all are managed primarily for conservation and not all are reserved.	Full Report only

Use the Full report if you:

- Would like a report which just focuses on the reporting combination you require (see section 5.2 below for more information);
- Require information on the total areas of IBRA regions or IBRA sub-regions;
- Are undertaking an analysis based on LGA boundaries.

See sections 8 and 9 in the [Simplified Report readme](#) for more detailed information on the statistics included in the Simplified Report. See section 11.1 for details on how to access the Simplified Report.

5.2. I need the Full Report so what Sub – Report should I use?

The report provides analysis on the status of Vegetation Associations or System Associations for the whole of the State and within different bioregional and administrative boundaries. The information is presented in a series of sub-reports. The below table can be used to determine which sub-report contains the statistics you require.

Boundary	Vegetation Associations	System Associations	Can use to do assess the CAR reserve system?
Statewide	Report 1a	Report 1b	No
Bioregional (IBRA)	Report 2a	Report 2b	Yes
Bioregional (IBRA sub-region)	Report 3a	Report 3b	Yes
LGA	Report 4a	Report 4b	No

See section 8 for a list of the statistics available in each report and definitions.

Within each report the autofilter function can be used to filter the records. For example if you are only interested in vegetation associations in the Avon Wheatbelt IBRA region then within report 1a the autofilter on 'IBRA Region Code' can be used to limit the records to "AW". Only the vegetation associations in the Avon Wheatbelt are now shown in the report and the totals at the bottom are restricted to this subset.

See the Examples worksheet for more information on how to search using the autofilters and how to add the Vegetation Association description to each worksheet

6. Spatial Data Information (Metadata)

Data	Source	Custodian	Date
Remnant Vegetation	DAFWA/DEC	DAFWA	May 2011
Pre European Vegetation	DAFWA	DAFWA	May 2011
IBRA Regions	Australian Government Department of the Environment and Heritage	Australian Government Department of the Environment and Heritage	20/12/2004
Local Government Authority	Landgate	Landgate	21/12/2010
DEC Tenure	DEC/DAFWA	DEC	30/06/2011

7. Items of note for the 2011 Report

7.1. Change of Report Name

Input from stakeholders in 2011 recommended changes to the reporting (both full and simplified reports) including a name change to better reflect the current nature of the statistics. **CAR Analysis Statistics are still included in the report** and are highlighted in yellow (see section 8). The changes have been done in such a way that there are consistencies between years.

The old naming convention was "car_reserve_analysis_YYYY.xls". The following reports are available:

- car_reserve_analysis_2005.xls
- car_reserve_analysis_2006.xls

- [car_reserve_analysis_2007_update.xls](#)
- [car_reserve_analysis_2009.xls](#)

The current naming convention is “Vegetation_Statistics_Statewide_YYYY_Full_report.xls”. The following reports are available:

- [Vegetation_Statistics_Statewide_2011_Full_report.xls](#) (this document describes this report)

7.2. Changes to statistics provided in the reports

7.2.1. Additional CAR Statistic

The statistic **% Current Extent Protected (IUCN 1 - 4) for Conservation (proportion of Pre-European Extent)** was included in the 2011 report in order to provide all CAR statistics required. See section 8 for a full definition.

7.2.2. New DEC Tenure Category (Crown Freehold – Department Interest)

In 2011 a new DEC Tenure category of “Crown Freehold – Department Interest” was created. These areas are currently proposed for protection and are not reserved. Two new statistics were added and two others amended to incorporate this new tenure category. See section 8 for details of these statistics and section 10 for a full definition of this tenure category.

7.2.3. Changes to Report format, statistic titles and definitions

To provide greater clarity the following report formats were changed:

- Text on row 2 for all reports states which statistics report on lands:
 - Protected (reserved) for conservation
 - Proposed for conservation (not yet reserved)
- In reports 2a, 2b, 3a and 3b the CAR statistics are highlighted in yellow and the current extent of lands proposed for conservation are highlighted in blue.
- Some statistic titles were changed to make them consistent. Please refer to worksheet ‘Changes to statistic titles’ for more information.

7.3. Updates to the Input Spatial Datasets

Each year the Analysis incorporates the latest available spatial datasets. See section 6 for details of the currency of the spatial datasets.

The DEC Tenure and Remnant Vegetation Extent datasets are updated on a continuous basis whilst the Pre European Vegetation and IBRA datasets periodically.

The following information is provided to give an indication of the nature of the significant updates to the Remnant Vegetation Extent and Pre European Vegetation datasets undertaken by the Department of Agriculture and Food (DAFWA) in the past 12 months. Note: this list is not exclusive as updates in other targeted areas would have continued to be undertaken especially for the Remnant Vegetation Extent dataset.

7.3.1. Remnant Vegetation Extent

For the Extensive Land Use Zone (ELZ) cleared areas have been removed from the dataset within 100 km of the town sites of Onslow, Karratha, Port Hedland, Tom Price, Newman, Broome, Derby, Kununurra, Fitzroy Crossing, Halls Creek and for major irrigated regions at Kununurra and Carnarvon. Other cleared areas have also been removed across the ELZ including mine sites. These updates are based on interpretation of aerial photography and are captured at the scale of 1:20,000. See Figure 1.

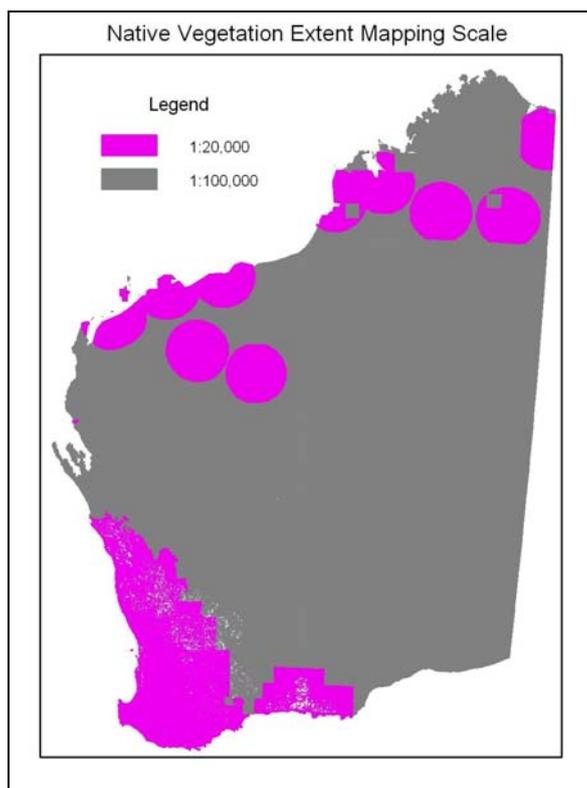


Figure 1: Minimum Capture Scale (m) of Remnant Vegetation Mapping. Note: areas in around Geraldton have been captured at 1:10,000 and on the Swan Coastal Plain between Dunsborough and Preston Beach at 1:5,000. Map supplied by DAFWA.

Therefore if a **comparison of statistics between the 2009 and 2011 CAR Reserve Analyses** is being undertaken **reductions** in 'Current Extent' and 'Proportion Remaining', for Vegetation Associations and System Associations in the ELZ, **are not necessarily due to clearing that has occurred over the last twelve months rather over many years**

Remnant Vegetation Extent mapping has been updated for the Perth Metropolitan Region (based on interpretation of 2009 aerial photography) since the 2009 CAR Reserve Analysis.

7.3.2. Pre European Vegetation Mapping

In the Shark Bay, Ord, Nullarbor, Pilbara and Murchison regions corrections have been made to some System, Vegetation Association and System Association boundaries. Also in some areas the attribution of Systems, Vegetation Associations and System Associations has been made to align with Vegetation Type allocations on the State-wide 1:3,000,000 map. Therefore if statistics have been extracted from any of these areas previously it is possible that names and codes relating to the above mentioned attributes would have changed. Any differences in Pre European or Current Extent should be checked in a GIS as they could be related to boundary changes rather than clearing.

8. Definition of Statistics presented in the Report

In the table below the CAR statistics are highlighted in yellow. Highlighted in blue is a CAR statistic plus proposed to be protected lands. These statistics are also coloured in this manner in sub-reports 2a, 2b, 3a and 3b.

Statistic (Column Title in Excel Report)	Definition	Report
Pre European Mapping Codes		
System	Vegetation System (from pre-European vegetation mapping)	1b, 2b, 3b, 4b
Vegetation Association	Vegetation Association number (from pre-European vegetation mapping).	All reports
SA_CODE	Vegetation System - Association code (from pre-European vegetation mapping)	1b, 2b, 3b, 4b
IBRA		
IBRA Region Code	The two or three letter abbreviation for the IBRA region	2a, 2b
IBRA Region Name	The full name of the IBRA region	2a, 2b
IBRA Sub Region Code	The two or three letter abbreviation for the IBRA sub-region	3a, 3b
IBRA Sub Region Name	The full name of the IBRA sub-region	3a, 3b
LGA		
Local Govt. Authority Name	Local Government Authority Name	4a, 4b
Region Extents		
IBRA Region Extent	Total extent of the IBRA region (hectares). Note: cannot total this column as values are duplicated within a IBRA region.	2a, 2b
IBRA Sub Region Extent	Total extent of the IBRA sub-region (hectares). Note: cannot total this column as values are duplicated within a IBRA sub-region.	3a
System Association Sub Regional Extent	Total extent of each System Association for each IBRA sub-region (hectares). Note: (1) this statistic is summarised at the System Association level not at the System level; (2) cannot total this column as values are duplicated within a System Association/IBRA sub-region combination.	3b
Local Govt Authority Extent	Total extent of the Local Government Authority area (hectares). Note: cannot total this column as values are duplicated within a LGA.	4a, 4b
Total Vegetation Extent		
Pre-European Extent	Total pre-European extent (hectares)	All reports
Current Extent	Total extent of areas mapped as remnant vegetation* (hectares)	All reports
% Remaining	Proportion, of pre-European extent, of areas mapped as remnant vegetation* (%)	All reports
Vegetation Extent broken down into Reservation Categories		
IUCN 1 - 4 in Pre-European Extent	Pre-European extent of areas that are protected (reserved) for conservation (categorised as IUCN 1 - 4 and are within the DEC estate) (hectares) <i>Note: Use this pre European extent statistic instead of the one directly below when dealing with non vegetated Vegetation Associations in protected lands. See limitations for more information.</i>	All reports

Statistic (Column Title in Excel Report)	Definition	Report
IUCN 1 - 4 in Current Extent	Extent of areas mapped as remnant vegetation* that are protected (reserved) for conservation (categorised as IUCN 1 - 4 and are within the DEC estate) (hectares)	All reports
% Current Extent Protected (IUCN 1 - 4) for Conservation (proportion of Pre-European Extent)	Proportion, of the pre-European extent, of areas mapped as remnant vegetation* that are protected (reserved) for conservation (categorised as IUCN 1 - 4 and are within the DEC estate) (%).	All reports
% Pre-European Extent in IUCN 1 - 4	Proportion, of the pre-European extent, of areas that are protected (reserved) for conservation (categorised as IUCN 1 - 4 and are within the DEC estate) (%)	All reports
% Current Extent in IUCN 1 – 4 (proportion of current extent)	Proportion, of the current extent, of areas mapped as remnant vegetation* that are protected (reserved) for conservation (categorised as IUCN 1 - 4 and are within the DEC estate) (%)	All reports
IUCN 5 - 6 in Pre-European Extent	Pre-European extent of areas that are categorised as IUCN 5 - 6 and are within the DEC estate (hectares)	All reports
IUCN 5 - 6 in Current Extent	Extent of areas mapped as remnant vegetation* that are categorised as IUCN 5 - 6 and are within the DEC estate (hectares)	All reports
No IUCN in Pre-European Extent within DEC Managed Land	Pre-European extent of areas that have not been categorised as IUCN and are within the DEC estate (hectares)	All reports
No IUCN in Current Extent within DEC Managed Land	Extent of areas mapped as remnant vegetation* that have not been categorised as IUCN and are within the DEC estate (hectares)	All reports
Former Leasehold Pre-European Extent	Pre-European extent of areas that are categorized as Former Leasehold and managed by DEC (hectares). See section 10 for more information.	All reports
Former Leasehold Current Extent	Extent of areas mapped as remnant vegetation* that are categorized as Former Leasehold and managed by DEC (hectares). See section 10 for more information.	All reports
Crown Freehold Dept Interest Pre-European Extent	Pre-European extent of areas that are categorized as Crown Freehold – Department Interest and managed by DEC (hectares). See section 10 for more information.	
Crown Freehold Dept Interest Current Extent	Extent of areas mapped as remnant vegetation* that are as categorized Crown Freehold – Department Interest and managed by DEC (hectares). See section 10 for more information.	
IUCN 1 - 4 + Former Leasehold + Crown Freehold Dept Interest Pre-European Extent	Pre-European extent of areas that are either protected (reserved) for conservation (categorised as IUCN 1 – 4 and are within the DEC estate) or proposed to be protected (not yet reserved & either Former Leasehold or Crown Freehold – Department Interest) (hectares).	All reports
IUCN 1 - 4 + Former Leasehold + Crown Freehold Dept Interest Current Extent	Extent of areas mapped as remnant vegetation* that are either protected (reserved) for conservation (categorised as IUCN 1 – 4 and are within the DEC estate) or proposed to be protected (not yet reserved & either Former Leasehold or Crown Freehold – Department Interest) (hectares).	All reports

Statistic (Column Title in Excel Report)	Definition	Report
% Pre-European Extent in IUCN 1 - 4 + Former Leasehold + Crown Freehold Dept Interest	Proportion, of the pre-European extent, of areas that are either protected (reserved) for conservation (categorised as IUCN 1 – 4 and are within the DEC estate) or proposed to be protected (not yet reserved & either Former Leasehold or Crown Freehold – Department Interest) (%).	All reports
% Current Extent in IUCN 1 - 4 + Former Leasehold + Crown Freehold Dept Interest (proportion of Current Extent)	Proportion, of the current extent, of areas that are mapped as remnant vegetation* and either protected (reserved) for conservation (categorised as IUCN 1 – 4 and are within the DEC estate) or proposed to be protected (not yet reserved & either Former Leasehold or Crown Freehold – Department Interest) (%).	All reports
Pre-European Extent in All DEC Managed Lands	Pre-European extent of areas that are within the DEC estate (hectares)	All reports
Current Extent in All DEC Managed Lands	Extent of areas mapped as remnant vegetation* that are within the DEC estate (hectares)	All reports
% Pre-European Extent in All DEC Managed Lands	Proportion, of the pre-European extent, of areas that are within the DEC estate (%)	All reports
% Current Extent in All DEC Managed Lands	Proportion, of the current extent, of areas mapped as remnant vegetation* that within the DEC estate (%)	All reports

* The remnant vegetation mapping does not distinguish between cleared areas and non-vegetated 'natural areas' within the intensive land use zone so it cannot be assumed that this represents the area not cleared. See section 9.5 for more information.

9. What do I need to keep in mind when using the information in the Reports (Limitations)?

9.1. In what instances should the Statewide Vegetation statistics be used?

These statistics should be used to provide a general overview of the status of vegetation communities within an IBRA Region or sub Region noting the limitations below on scale, availability of more detailed vegetation mapping, line work mis-alignment and remnant vegetation mapping

A full understanding of the limitations, noted below, is required prior to using the statistics to assess clearing applications.

Care should also be taken when using these analyses and reports to inform reserve acquisitions. Other information on biodiversity values of an area should also be considered and information from people who are familiar with the vegetation types and vegetation condition of the area should also be considered.

9.2. Scale

The original Beards Vegetation Associations, which the pre-European mapping dataset is based on, were mapped at the 1:250,000 scale and so are not designed to inform at a finer scale. The Vegetation Associations indicate what vegetation types may occur in the area (either common vegetation communities or mosaics). So care should be taken when using Vegetation Associations with finer scale mapping such as the 1:5,000, 1:10,000 or 1:20,000 Remnant Vegetation Extent mapping. It cannot be assumed that in heavily cleared areas that the range of vegetation communities described by one Vegetation Association will all be represented in the few remaining remnants. In these instances advice from an experienced Ecologist with knowledge of the vegetation types of the area should be sought. More detailed vegetation type mapping may be required before an assessment of the levels of retention and protection of a vegetation type can be undertaken.

It is recommended by the data custodians that the combined current extent and pre-European vegetation type data should be used at scales no finer than 1:250,000. With this in mind further rounding may be appropriate. The rounding in subtotal calculations can be altered:

Round to the nearest:	Excel Formula:
hectare	=round(first cell in range to last cell in range, 0)
ten hectares	=round(first cell in range to last cell in range, -1)
hundred hectares	=round(first cell in range to last cell in range, -2)

Hectares have been given to two decimal places which is the default processing precision.

9.3. Availability of more detailed Vegetation Type mapping in the South West

For some parts of the South West of the state, more detailed vegetation type mapping is available and should be used in preference to the pre-European (Beards) mapping. See table below and Figure 2 for information on these datasets. Currently an annual reporting process for the vegetation complex mapping (RFA and Heddle) is being developed. For more information contact Shane French in GIS Applications.

Dataset	Extent	Does the dataset map the pre – clearing extent of vegetation types or just the current extent?
Hedde Vegetation Complexes (System 6; 1980)	Parts of the SWA1 and SWA2 IBRA Sub Regions. The Jarrah Forest areas are superseded by the dataset below.	Yes
Mapping of Vegetation Complexes in the South West forest region of Western Australia (1998).	Parts of the JF1, JF2 and WAR IBRA Sub Regions. An additional part of the SWA2 IBRA Sub Region is also covered (area not part of the above dataset).	Yes
Forest Ecosystems	Parts of the JF1, JF2 and WAR IBRA Sub Regions.	No. Confined to the RFA boundary.
Albany Regional Vegetation Mapping (2010)	Parts of the WAR and JF2 IBRA Sub Regions	No

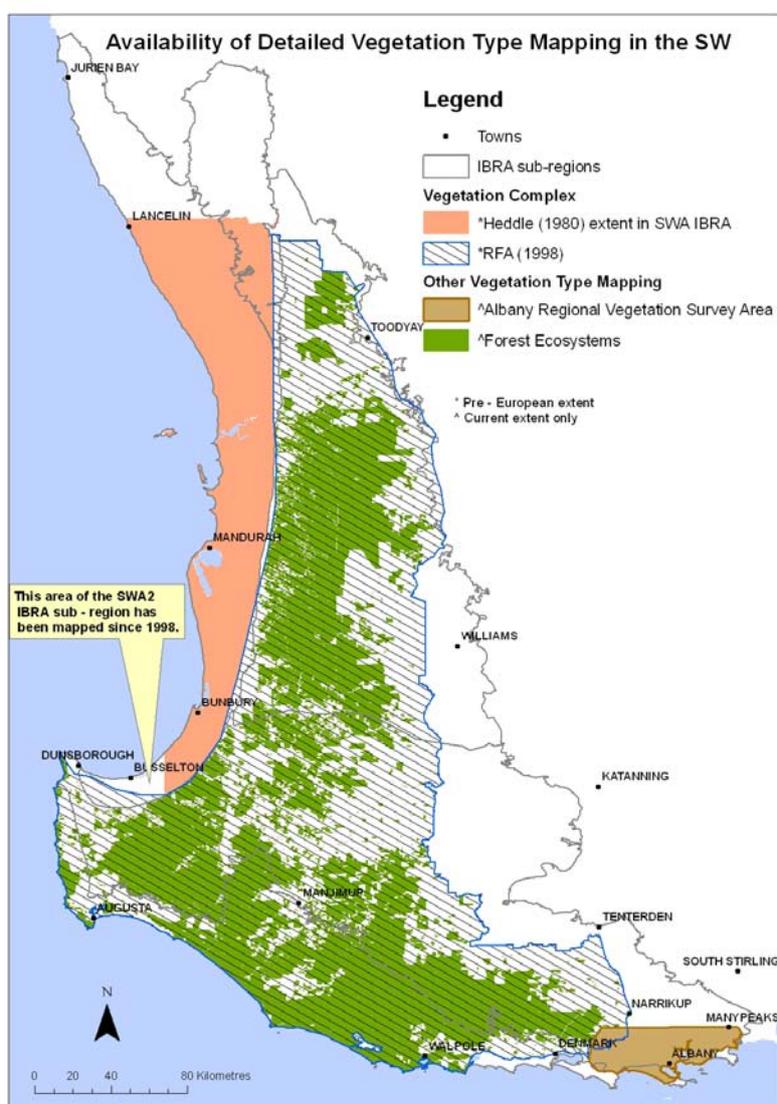


Figure 2: Availability and extent of detailed vegetation type mapping in the South West of Western Australia.

9.4. Line Work Mis-alignment

There is some mis-alignment of line work between datasets. This affects the following information in the CAR Reserve Analysis report:

- The IBRA regions and sub regions boundaries are largely based on information from the pre-European mapping. These datasets, from different custodians, are currently mis-aligned resulting in small areas of a Vegetation Association or System Association being assigned to the incorrect IBRA region or sub region.
- Mis-alignment of the DEC Tenure and pre-European dataset results in small areas of DEC Tenure being allocated to the incorrect Vegetation Association or System Association and thus IUCN category. On the coast it could result in marine DEC Tenure categories being included.

9.5. Remnant Vegetation Mapping

There are two limitations of the Remnant vegetation mapping:

1. Within the intensive land use zone there is no distinction between cleared areas and non vegetated "natural areas". These non vegetated "natural areas" include open water, drainage lines, extensive sand plains, with little vegetated cover, or rock outcrops.
2. Not all islands are included in the remnant vegetation mapping.

If these limitations are not taken into account then, potentially, the extent of areas cleared could be overestimated.

To prevent this, a number of measures can be put in place:

1. Always read the descriptions of the Vegetation Associations (see Veg Assoc Description worksheet in the report) to ascertain if in their undisturbed state they have no or low vegetation cover. Take particular note of those with 'bare areas', 'sparse', 'succulent steppe', or banksia-xylothem alliance in the descriptions (Note: this list is not exhaustive so advice from an Ecologist should be sought);
2. In a GIS package view the Pre European vegetation, Remnant Vegetation, DEC Tenure, WA Coastline, other available habitat mapping which delineates non vegetated "natural areas" (e.g. Wheatbelt Wetlands) and, if available, aerial photography spatial datasets. The Pre European dataset will provide the boundary of the non vegetated Vegetation Association. Checks can then be done to see if:
 - a. non vegetated areas that have not been disturbed are mapped as remnant vegetation mapping (check against aerial photography).
 - b. If offshore islands which are part of a Vegetation Association have been included in the remnant vegetation mapping (check against aerial photography and WA Coastline datasets)

If they are not, then consider utilising the pre European extent statistics or using the Simplified Report and utilising "Extent Not Mapped as Remnant Vegetation that is Protected for Conservation" and "Extent Not Mapped as Remnant Vegetation that is Not Protected for Conservation". Put a qualifier statement in any reporting "*these statistics are indicative only due to the limitations of the mapping*".

For example:

Vegetation Association 125 (Bare areas; salt lakes) in the Western Mallee IBRA subregion is generally not mapped as remnant vegetation (Figure 3). The IBRA subregion itself has been heavily cleared for agriculture but these lake areas are not necessarily under production although some are likely to be disturbed or not in good condition. Some areas of VA 125 are reserved for conservation within the DEC Estate (e.g. Lake Magenta Nature Reserve). Therefore it is likely that these reserved areas are not disturbed and can be included as "Current Extent".

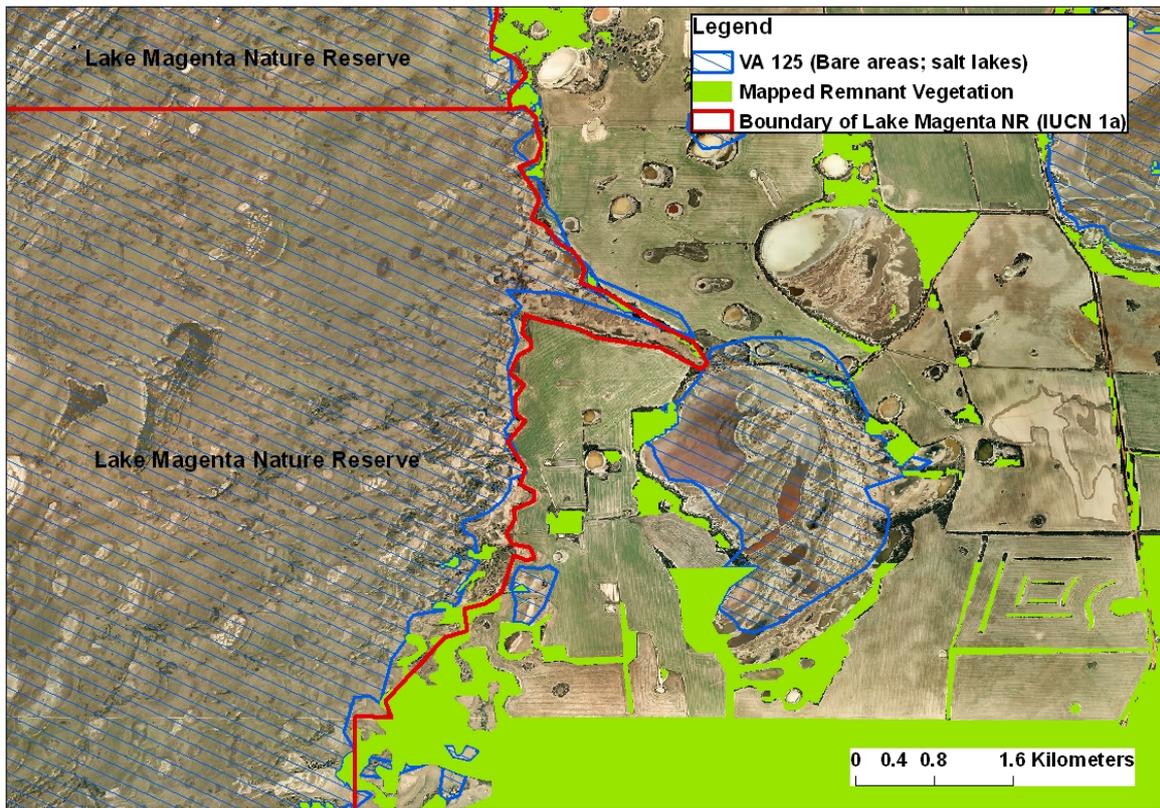


Figure 3: The extent of remnant vegetation and boundaries of Vegetation Association 125 in the Lake Magenta area of the Western Mallee IBRA sub – region.

For an example on how to deal with instances where there is limited remnant vegetation mapping for offshore islands see example 3 in the 'Example' worksheet in the excel report.

10. Definition of the DEC Tenure and IUCN Categories used in the Report

Based on input from a number of key stakeholders in 2007 and 2011, **lands Protected for Conservation are defined in the CAR Reserve Analysis as being listed in the DEC Tenure dataset as Crown Reserves having an IUCN Category of I - IV**

Category	Definition	Reported on in:
IUCN 1 - 4	Lands in the Department of Environment and Conservation (DEC) Estate that have been categorised as World Conservation Union protected areas 1 - 4 Note: currently no DEC conservation reserve is categorized as IUCN 1b	Simplified and Full (detailed) Reports
IUCN 5 - 6	Lands in the DEC Estate that have been categorised as World Conservation Union protected areas 5 - 6	Full Report only
No IUCN	Lands in the DEC Estate that have not been categorised as World Conservation Union protected areas	Full Report only
Former Leasehold	Former pastoral leases, or parts of, acquired for conservation by the Department of Environment and Conservation and being held under an interim management arrangement prior to formal reservation. This land is held by the state as Unallocated Crown Land until reservation to conservation reserve is complete.	Full Report only
Crown Freehold – Department Interest	This is defined as Freehold land (estate in fee simple) which has been acquired in the name of the State of Western Australia for the purpose of conservation but which has yet to be reserved under the Land Administration Act and for which the Department of Environment and Conservation is the agency responsible for its management.	Full Report only
DEC Managed Land	This includes all land managed by the DEC. Please contact DEC Land Unit Section for full definitions of DEC Tenure Categories.	Full Report only

Detailed definitions of the IUCN categories are available from the IUCN website http://www.iucn.org/about/work/programmes/pa/pa_products/wcpa_categories/

For more information on the DEC Tenure Categories or IUCN categories of Reserves in your area of interest:

- Refer to the DEC Estate spatial data on the CDDP (DEC personnel only).
 - For ArcMap and Map Window (DEC GIS) users select Tenure/DEC Tenure/DEC Estate on the Corporate Data Menu and look at the information under IUCN in the attribute table.
 - For GIS Viewer users select the theme Planning and Cadastre/DEC Tenure
- Refer to the 'DEC Managed Lands and Waters' spatial data on the SLIP WA Atlas online GIS Viewer <https://www2.landgate.wa.gov.au/bmvf/app/waatlas/>
 - Add a WMS Layer and go to 'Administrative and Political Boundaries'/'DEC Managed Lands and Waters'.

11. How to access the Reports

11.1. Statewide Vegetation Statistics Reports

The simplified and full (detailed) reports are available:

- Through the CDDP on V:\GIS1-Corporate\Data\Vegetation\Analysis (DEC personnel only)
- GIS Branch intranet site on the page [Reservation and Vegetation Statistics](#) (DEC personnel only)
 - [Vegetation Statistics Statewide 2011 Simplified report.xls](#)

- [Vegetation Statistics Statewide 2011 Full report.xls](#)
- SLIP Portal (<https://www2.landgate.wa.gov.au/web/guest/downloader>).

These can also be requested by contacting Shane French (see contact details below) or the DEC Spatial Database Administrator (ph 9334 0347).

11.2. **Other relevant Reports/Analyses**

The 2011 analyses of the status of conservation reserves are available on the GIS Branch intranet site or on the CDDP V drive (DEC Personnel only)

- [DEC Terrestrial Lands by IBRA Sub Regions 2011.xls](#)

CAR Analysis reports from previous years are also available:

- Through the CDDP on V:\GIS1-Corporate\Data\Vegetation\Analysis (2005, 2006, 2007 update, 2009 full and 2009 simplified) (DEC personnel only)
- GIS Branch intranet site on the page [Reservation and Vegetation Statistics](#) (DEC personnel only) (2007 update, 2009 full and 2009 simplified)
- SLIP Portal (<https://www2.landgate.wa.gov.au/web/guest/downloader>). (2007 update and 2009 full)

These can also be requested by contacting Shane French (see contact details below) or the DEC Spatial Database Administrator (ph 9334 0347)

12. **Other supporting information within the Excel Spreadsheet**

The following worksheets within [Vegetation Statistics Statewide 2011 Full report.xls](#) provide additional supporting information or examples of how to use the report

- **Examples** – includes examples of how information within the report can be extracted to answer common questions in regard to the proportion of vegetation types remaining or protected. It also has descriptions of how the MS Excel Auto filter and vlookup functions can be utilized within the excel report
- **Veg Assoc Description** – see the Examples worksheet for information on how to add these descriptions to the sub-report worksheets.
- **Changes to Statistic Titles** – changes made to titles in the 2009 and 2011 sub-reports (see section 7.2 for background information)

13. **Who should I contact if I am having trouble using this Analysis or need more information?**

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