2012 Statewide Vegetation Statistics (formerly the CAR Reserve Analysis) - Simplified Report README

Current as of October 2012 (based on most recent date of input datasets)

GIS Applications Section

Geographic Information Services Branch

Department of Environment and Conservation

March 2013

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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 12.

1. Required files

The Statewide Vegetation Statistics Report consists of two files:

1. An Excel spreadsheet Vegetation_Statistics_Statewide_2012_Simplified_report.xls with the worksheet „Simplified_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 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. (2013). *2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Simplified)*. *Current as of October 2012*. 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 (WA) and reports on the status of the CAR reserve system for WA. It reports only on the status of **reserves within the DEC-managed land.**

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 9 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, **land protected for conservation are defined in the CAR Reserve Analysis as being listed in the DEC-managed lands and waters 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 WA ecological/forest communities are defined in a consistent way across the state by pre-European (Beard"s) 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. How to extract the statistics

In the „Simplified_Report" worksheet the AutoFilter function can be used to filter the records allowing you to extract statistics for either vegetation associations or system associations across either an IBRA region or IBRA sub-region. For example if you are only interested in vegetation associations in the Avon Wheatbelt IBRA region, then the AutoFilter on 'IBRA Region Code' can be used to limit the records to "AVW". 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
Native vegetation extent (referred to in this document as remnant vegetation)	DAFWA/DEC	DAFWA	April 2012
Pre-European vegetation	DAFWA	DAFWA	October 2012
IBRA regions and sub-regions (version 7.0)	Australian Government Department of Sustainability, Environment, Water, Population and Communities	Australian Government Department of Sustainability, Environment, Water, Population and Communities	18 April 2012
Local government authority	Landgate	Landgate	June 2012
DEC-managed lands and waters	DEC/DAFWA	DEC	30 June 2012

7. Items of note for the 2012 report

7.1. 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 –managed lands and waters and remnant vegetation datasets are updated on a continuous basis, whilst the pre-European vegetation and IBRA datasets are updated periodically. In 2012 the version 7 IBRA region and sub-region dataset was released by the Department of Sustainability, Environment, Water, Population and Communities.

The following information is provided to give an indication of the nature of the significant updates to the input spatial datasets over the past 12 months. Note: this list is not exhaustive as updates in other targeted areas would have continued to be undertaken, especially for the remnant vegetation and pre-European vegetation datasets.

7.1.1. IBRA regions and sub-regions

In the IBRA 7 classification, 27 bioregions and 55 IBRA sub-regions are identified in WA. Some of these regions are not totally within WA and cross into the Northern Territory and South Australia.

As part of IBRA 7, new oceanic bioregions were identified. In WA, Browse Island is within the Timor Sea Coral Islands (ITI03) IBRA sub-region, which is part of the Indian Tropical Islands bioregion (ITI). This island is protected in Browse Island Nature Reserve (IUCN Ia). No pre-European mapping is available for any areas of this IBRA region and sub-region so are not included in this report.

For more details on IBRA7 see http://www.environment.gov.au/parks/nrs/science/bioregion-framework/ibra/index.html#ibra.

IBRA region and sub-region codes and names have been changed in IBRA7. See Section 13 for details on how to access a comparison list.

Minor changes to the boundaries of the IBRA bioregions and sub-regions have been made and will impact on any comparison between statistics from the 2012 report and previous years' reports. The IBRA sub-regions which have had a greater than 10 ha change in area are listed in the table below. Changes to the boundaries fall into one of two categories:

1. The coast and near shore boundaries for IBRA 7 are based on Geoscience Australia 1:100,000 coast and island data. Therefore there may be a difference in the boundaries of any coastal IBRA bioregion or sub-region due to:
    - The inclusion of additional islands, and/or
    - Differences in the coast alignments (loss or gain).

2. A small number of islands in the Kimberley have been reassigned to an adjacent IBRA bioregion or sub-region in v 7 (see IBRA sub-regions and notes highlighted in red in the table below).

IBRA 7 sub-region code	IBRA 6.1 sub-region code	Area difference between IBRA 7 and IBRA 6.1 (ha) *(NB: +ve = gain in IBRA 7; -ve = loss in IBRA 7)*	Notes (IBRA 6.1 codes have been used)
NOK01	NK1	12,658.7	New islands and areas from NK2 and DL2 have been brought over to this IBRA sub-region
ESP02	ESP2	3,645.0	A lot of new islands
CAR01	CAR1	2,007.0	A lot of new islands
DAL01	DL1	1,773.4	New islands – not many but large
PIL04	PIL4	1,723.2	A lot of new islands
GES01	GS1	1,664.7	A lot of new islands
NOK02	NK2	675.5	A change in boundary in one area (loss), some islands gone over to NK1 (loss), areas from VB1 (gain) additional islands – not many but are large (gain).
CAR02	CAR2	601.2	A lot of new islands
YAL01	YAL1	423.8	A lot of new islands
WAR01	WAR	297.6	A lot of new islands
SWA02	SWA2	161.1	A lot of new islands
PIL01	PIL1	92.6	A small number of new islands
ESP01	ESP1	72.4	Some new islands
JAF02	JF2	28.4	A small number of new islands
MAL01	MAL1	-13.7	No islands at all. It appears that the different coastline dataset accounts for this loss in hectares
HAM01	HAM	-40.1	No islands at all. It appears that the different coastline dataset accounts for this loss in hectares
VIB01	VB1	-350.1	Some islands gone over to NK2 (loss) and new islands (gain).
DAL02	DL2	-2,641.0	New islands (gain) and some areas have gone over to NK1 (loss). This IBRA sub-region has a long coastline so some of the loss will be due to the different coastline dataset.

7.1.2. Remnant vegetation

Since the previous analysis, remnant vegetation has been reviewed for parts of the Warren (WAR01) and Southern Jarrah Forest (JAF02) IBRA sub-regions and in areas adjacent to the agricultural clearing line (parts of the following IBRA sub-regions: GES01, YAL01, YAL02, AVW01, COO02, MAL01, MAL02, ESP01; Figure 1). These updates are based on interpretation of aerial photography and are captured at the scale of 1:20,000 (Figure 2).

As part of the review areas that had been cleared were removed. Also removed were non-vegetated salt lakes in areas adjacent and spanning the agricultural clearing line (Figure 3A). Undisturbed non-vegetated areas, such as sand dunes, have been added into the dataset (Figure 3B) as have areas of regrowth (Figure 3C). This list is not exhaustive but provides an indication of nature of the updates to the dataset which are not related to the clearing of remnant vegetation.

If a **comparison of statistics between the 2011 and 2012 CAR Reserve Analyses** is being undertaken:

- **Reductions** in „Current Extent" and „Proportion Remaining", for vegetation associations and system associations in the WAR01, JAF02, GES01, YAL01, YAL02, AVW01, COO02, MAL01, MAL02, and ESP01 IBRA sub-regions and their respective bioregions **will not necessarily be due to clearing that has occurred over the last twelve months rather over many years.**
- **Increases** in „Current Extent" and „Proportion Remaining", for vegetation associations and system associations in the aforementioned IBRA sub-regions will also occur where non-vegetated natural areas previously not included in the remnant dataset have now been included.
- **Reductions** in „Current Extent" and „Proportion Remaining", for vegetation associations and system associations in the GES01, YAL01, YAL02, AVW01, COO02, MAL01, MAL02, ESP01 IBRA sub-regions will not necessarily be due to clearing rather due to non-vegetated natural areas previously included in the remnant dataset being removed.

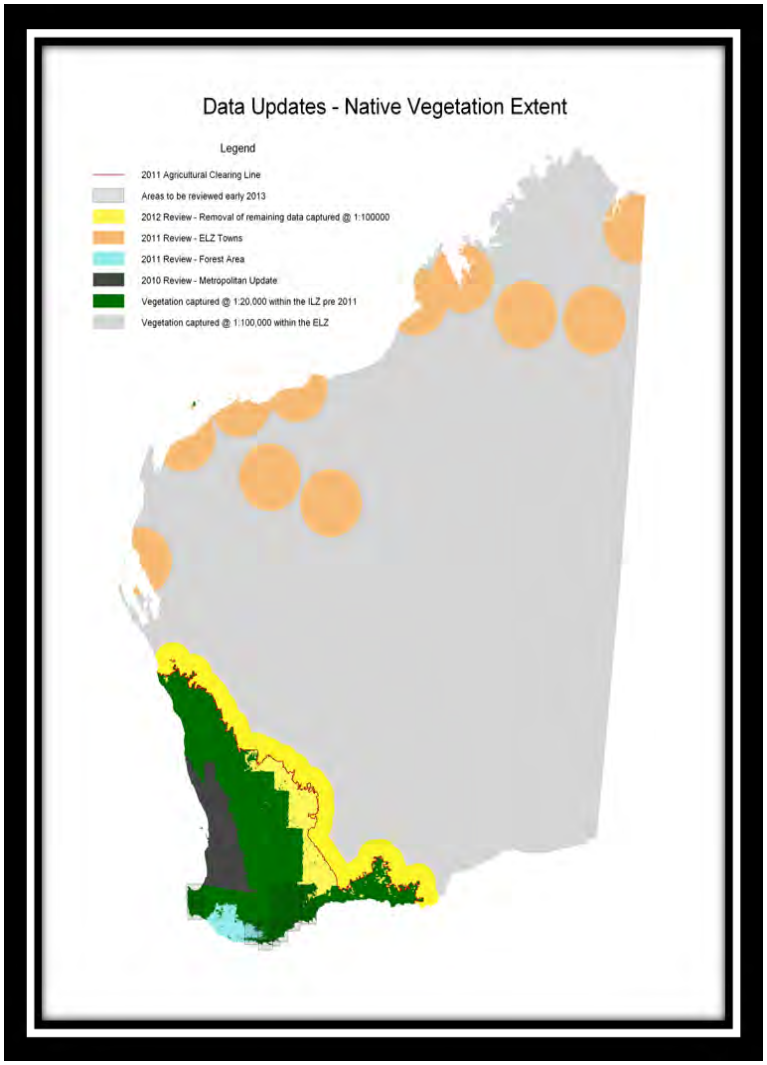

Figure 1: Currency of remnant vegetation mapping across the state. Since the 2011 CAR Reserve Analyses, areas in yellow and aqua have been reviewed. Map supplied by DAFWA.

Figure 2: 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.

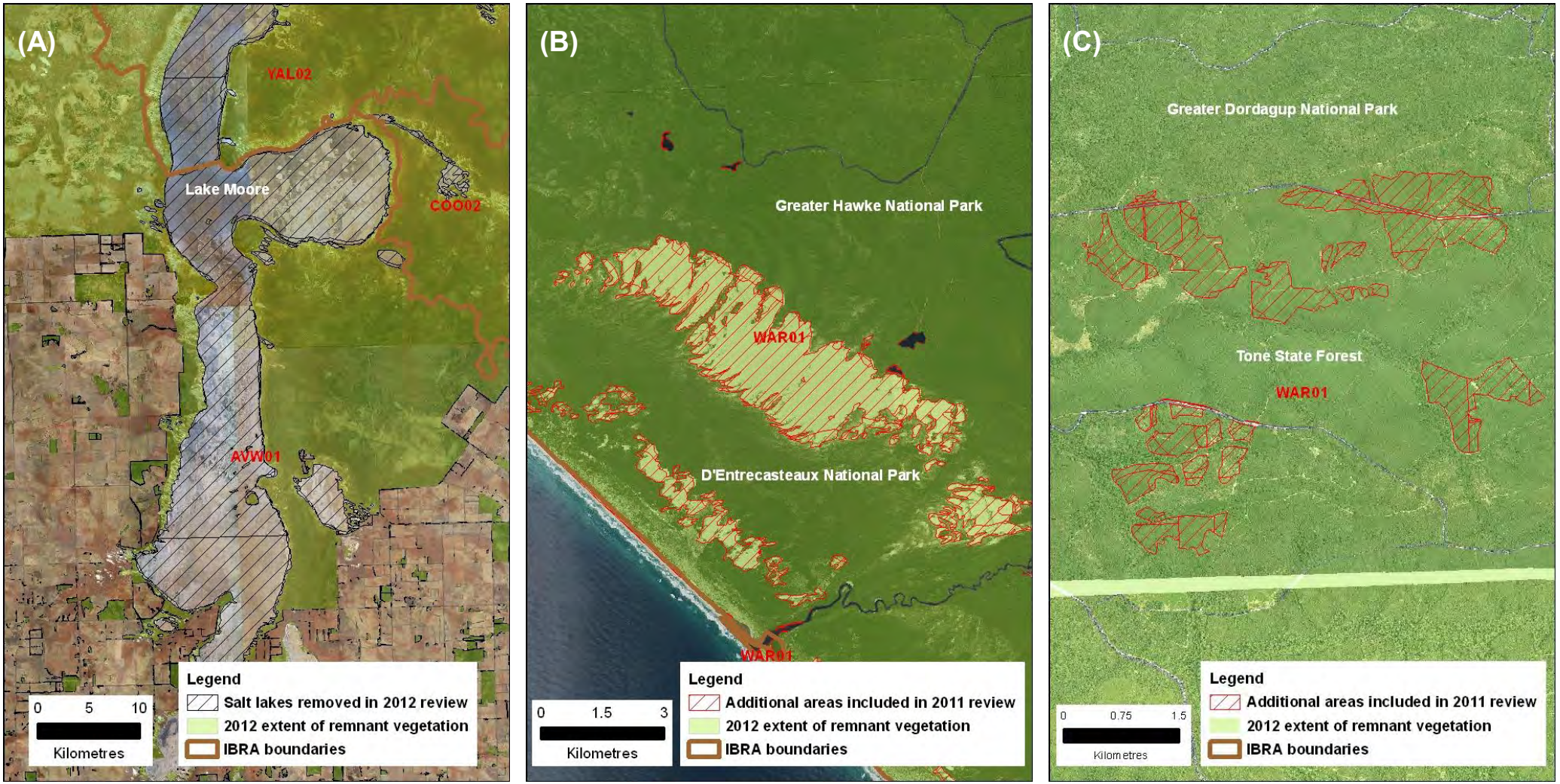

Figure 3: Examples of updates to the remnant vegetation datasets which are not related to clearing. (A) Salt lakes excluded in areas close to or spanning the agricultural clearing line; (B) Non-vegetated undisturbed sand dunes included; (C) Regrowth areas included.

7.1.3. Pre-European vegetation mapping

The following corrections or changes to vegetation associations have been made:

- VA 1058 south of Merredin changed to VA 1055
- VA 881 in the East Kimberley changed to VA 707
- VA 800 near Esperance changed to VA 931
- Lake Argyle area was reviewed with areas of VA 4000 south of the lake reassigned to VA"s 815, 827, and 830.

If statistics have been extracted for these areas using earlier reports then the system, system association and vegetation association codes and names in the 2012 report would have changed. Any changes in the pre-European and current extent for the „incorrect", „changed to" and „reassigned to" vegetation associations should be checked in a GIS as they could be related to the reassignments rather than clearing.

Coastal boundaries and inland areas within 60km of the Burrup Peninsula have been rectified to aerial photography. This will possibly result in small changes in the pre-European and current extent for the following vegetation associations in the PIL01 and PIL04 IBRA sub-regions: 11, 43, 93, 117, 127, 152, 157, 175, 587, 589, 619, 629 and 641. In this area the pre-European and remnant vegetation spatial datasets should be viewed in a GIS when interpreting differences in the statistics between the 2012 and 2011 report. Small areas of clearing are located in this area.

8. What is the difference between the Simplified and the Full (detailed) Reports?

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 land proposed for protection (DEC tenure category of „Former Leasehold" or „Crown Freehold Department Interest") or of other land within the DEC–managed lands 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 11 for a definition of the categories.

Statistics on the category:	Conservation status	Reported on in:
IUCN I - IV	Land protected (reserved) for conservation	Simplified and Full Reports
IUCN V - VI	Land reserved with primary purpose not for conservation (multiple use Crown land)	Full Report only
No IUCN	Land not reserved for conservation (other land)	Full Report only
Former Leasehold	Leasehold land acquired and proposed for conservation (not yet reserved)	Full Report only
Crown Freehold – Department Interest	Freehold land acquired and proposed for conservation (not yet reserved)	Full Report only
DEC-Managed Land	All land managed by DEC. Not all are managed primarily for conservation and not all are reserved.	Full Report only

The following statistics are also included in the Simplified Report:

- The extent of areas not protected have been included to initially gauge what scope there is for reserving additional areas for conservation (estate planning);
- The extent of areas not mapped as remnant vegetation but are protected for conservation (likely to be non-vegetated habitat types);
- The extents of areas not mapped as remnant vegetation and are not protected. This largely represents the area cleared, though care should be taken when interpreting statistics for non-vegetated natural areas;
- Proportions are based on pre-European extent for not just total current extent but for all other statistics. This will make it easier to assess if the level of protection of a vegetation type is above or below a specified target threshold.

The total areas of IBRA regions or IBRA sub-regions are provided in the Full Report.

9. Definition of statistics presented in the report

CAR statistics are highlighted in yellow as they are in the Excel report

Statistic (column title in Excel report)	Definition	Comment/usage
Pre-European mapping codes		
System	Vegetation system (from pre-European vegetation mapping)	A single System can be selected using the AutoFilter function
Vegetation Association	Vegetation association number (from pre-European vegetation mapping)	A single Vegetation Association can be selected using the AutoFilter function
SA_CODE	Vegetation system - association code (from pre-European vegetation mapping)	A single SA_CODE can be selected using the AutoFilter function
IBRA codes		
IBRA Region Code	The three letter abbreviation for the IBRA region	A single IBRA region can be selected using the AutoFilter function
IBRA Sub-Region Code	The five letter abbreviation for the IBRA sub-region	A single IBRA sub-region can be selected using the AutoFilter function
IBRA Sub-Region Name	The full name of the IBRA sub-region	A single IBRA sub-region can be selected using the AutoFilter function
Vegetation extent statistics		
Pre-European Extent	Total pre-European extent (hectares)	
Current Extent	Total extent of areas mapped as remnant vegetation (hectares)	
% Remaining	Proportion, of pre-European extent, of areas mapped as remnant vegetation (%)	Proportion retained.
Current Extent Protected for Conservation	Extent of areas mapped as remnant vegetation that are protected for conservation (categorised as IUCN I - IV and are within DEC-managed land) (hectares).	
% Current Extent Protected for Conservation	Proportion, of the pre-European extent, of areas that are mapped as remnant vegetation and are protected for conservation (categorised as IUCN I - IV and are within DEC-managed land) (%).	Proportion protected (reserved for conservation). Can be used to determine if the area protected meets a designated target (e.g., 15 %)
Current Extent Not Protected for Conservation	Extent of areas mapped as remnant vegetation that are **not** protected for conservation (either categorised as IUCN V - VI or no IUCN and are within DEC-managed land, or are not within DEC-managed land) (hectares).	These give an indication of the extent not cleared and not protected (reserved for conservation). Or in other words, the extent of potential areas that could be considered when identifying suitable areas for additional protection.

Statistic (column title in Excel report)	Definition	Comment/usage
% Current Extent Not Protected for Conservation	Proportion, of the pre-European extent, of areas mapped as remnant vegetation that are **not** protected for conservation (either categorised as IUCN V - VI or no IUCN and are within DEC-managed land, or are not within DEC-managed land). (%).	Proportion that is retained but not protected (reserved for conservation).
Extent Not Mapped as Remnant Vegetation that is Protected for Conservation	Extent of areas **not** mapped as remnant vegetation that are protected for conservation (categorised as IUCN I - IV and are within DEC-managed land) (hectares).	The remnant vegetation mapping does not include habitats which have no or low vegetation cover (e.g. open water, rock outcrops, drainage lines, extensive sand plains). These non-vegetated habitats occur within areas protected (reserved) for conservation so this statistics gives an indication of their extent. Potentially some cleared areas could be included in this statistic so interpretation by someone with local knowledge of the reserve is required.
% Extent Not Mapped as Remnant Vegetation that is Protected for Conservation	Proportion, of the pre-European extent, of areas **not** mapped as remnant vegetation that are protected for conservation (categorised as IUCN I - IV and are within DEC-managed land) (%).	Proportion that is not mapped as remnant vegetation but is protected (reserved for conservation).
Extent Not Mapped as Remnant Vegetation that is Not Protected for Conservation	Extent of areas **not** mapped as remnant vegetation and are **not** protected for conservation (either categorised as IUCN V - VI or no IUCN and are within DEC-managed land, or are not within DEC-managed land) (hectares).	This statistic indicates the extent that has been cleared that is outside areas protected for conservation. Potentially it may include areas that are not cleared rather are habitats of low or no vegetation cover (see comments above).
% Extent Not Mapped as Remnant Vegetation that is Not Protected for Conservation	Proportion, of the pre-European extent, of areas **not** mapped as remnant vegetation and are **not** protected for conservation (either categorised as IUCN V - VI or no IUCN and are within DEC-managed land, or are not within DEC-managed land). (%).	Proportion that is not mapped as remnant vegetation and is not protected (reserved for conservation).

10. What do I need to keep in mind when using the information in the reports (limitations)?

10.1. 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 misalignment 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.

10.2. Scale

The original Beard"s 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). 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 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.

10.3. 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 (Beard"s) mapping. See table below and Figure 4 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?**
Heddle vegetation complexes (System 6; 1980)	Parts of the SWA01 and SWA02 IBRA sub-regions. The Jarrah Forest areas are superceded by the dataset below.	Yes
Mapping of vegetation complexes in the south west forest region of Western Australia (1998).	Parts of the JAF01, JAF02 and WAR01 IBRA sub-regions. An additional part of the SWA02 IBRA sub-region is also covered (area not part of the above dataset).	Yes
Forest ecosystems	Parts of the JAF01, JAF02 and WAR01 IBRA sub-regions.	No. Confined to the RFA boundary.
Albany regional vegetation mapping (2010)	Parts of the WAR01 and JAF02 IBRA sub-regions	No

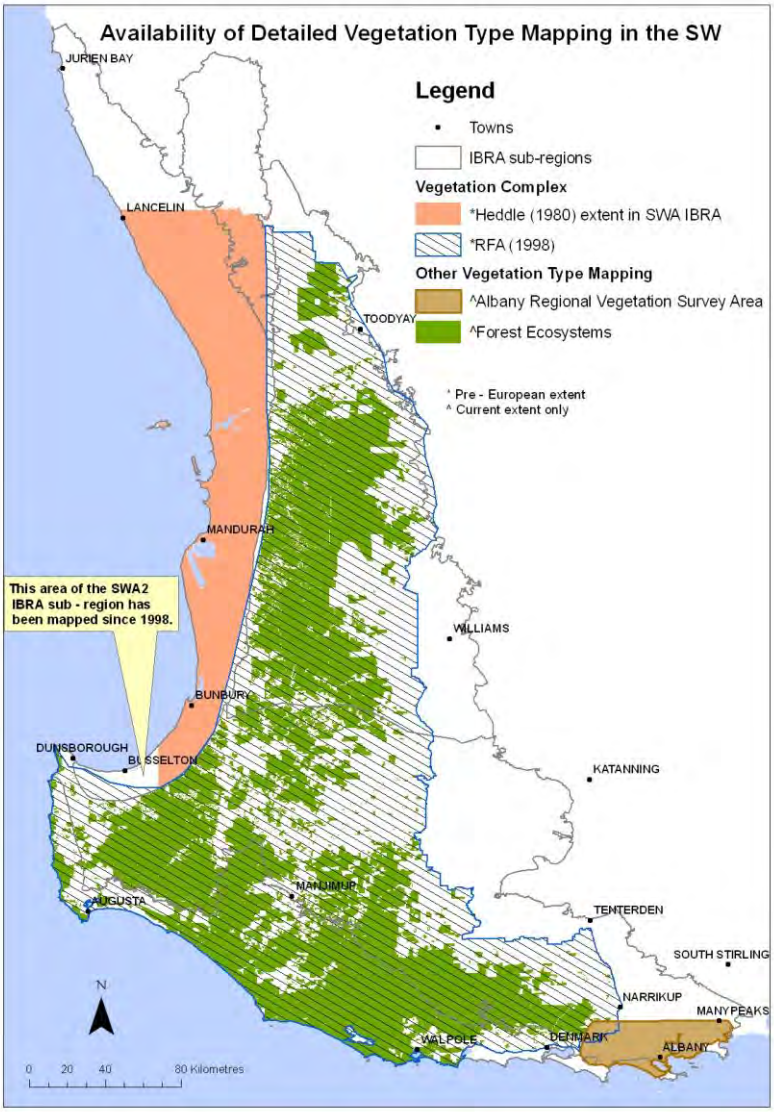

Figure 4: Availability and extent of detailed vegetation type mapping in the south-west of WA.

10.4. Line work misalignment

There is some misalignment 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 misaligned resulting in small areas of a vegetation association or system association being assigned to the incorrect IBRA region or sub-region.
- Misalignment of the DEC =managed lands and waters and pre-European datasets result in small areas of DEC –managed land 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.

10.5. Remnant vegetation mapping

There are two limitations of the remnant vegetation mapping:

1. Within the intensive land use zone there are inconsistencies in the distinction between cleared areas and non-vegetated "natural areas". The non-vegetated “natural areas” include open water, salt lakes, drainage lines, extensive sand plains with little vegetated cover, or rock outcrops. In addition to this, non-vegetated salt lakes that span the agricultural clearing line are often removed but if they are completely east of the clearing line remain in the dataset as remnant.

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 Descriptions" 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-xylomelum 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-managed lands and waters, 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 statistics "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*".

<u>For example:</u>

Vegetation association 125 (bare areas; salt lakes) in the Western Mallee IBRA sub-region is generally not mapped as remnant vegetation (Figure 5). The IBRA sub-region 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. Pallarup Nature Reserve). Therefore it is likely that these reserved areas are not disturbed and can be included as "Current Extent".

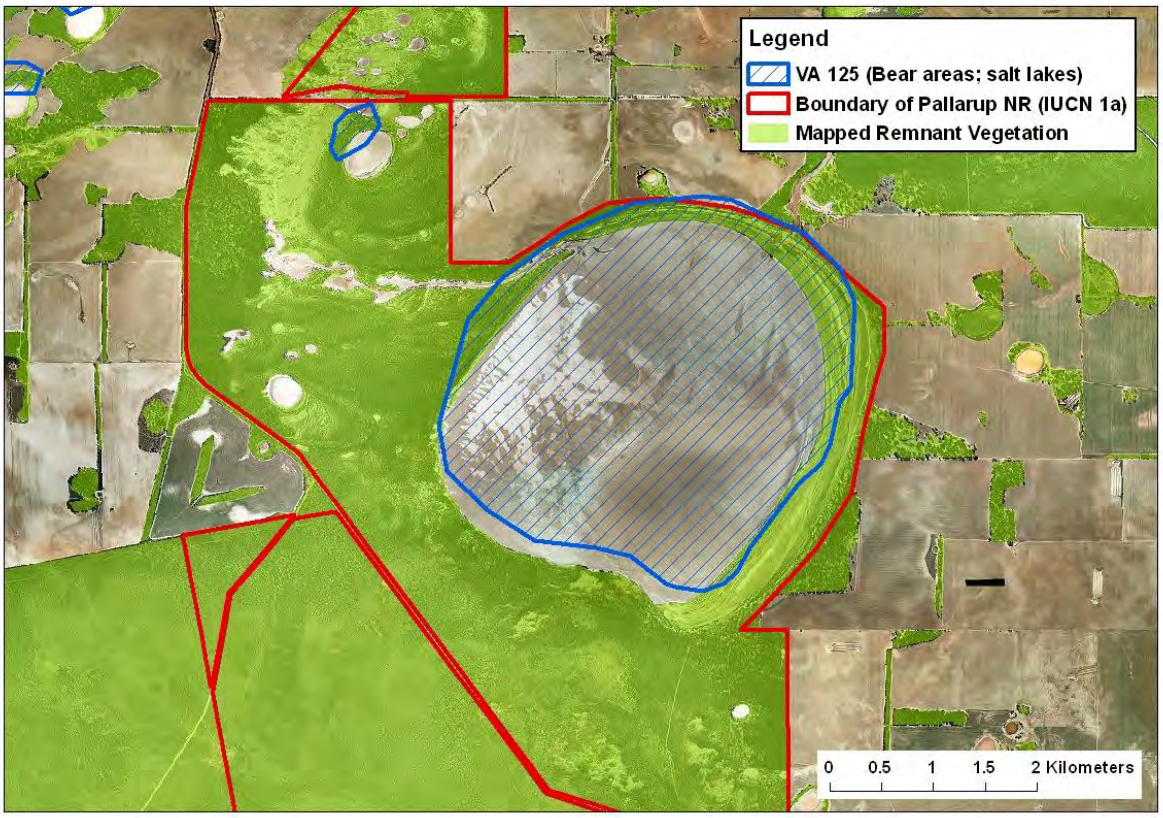

Figure 5: The extent of remnant vegetation and boundaries of vegetation association 125 in the Pallarup NR area of the Western Mallee IBRA sub-region.

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

11. 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, **land protected for conservation are defined in the CAR Reserve Analysis as being listed in the DEC-managed lands and waters dataset as Crown reserves having an IUCN category of I - IV**

Category	Definition	Reported on in:
IUCN I - IV	Land in the DEC estate that have been categorised as IUCN protected areas I - IV Note: currently no DEC conservation reserve is categorised as IUCN Ib	Simplified and Full Reports
IUCN V - VI	Land in the DEC estate that have been categorised as IUCN protected areas V - VI	Full Report only
No IUCN	Land in the DEC estate that have not been categorised as IUCN protected areas	Full Report only
Former Leasehold	Former pastoral leases, or parts of, acquired for conservation by DEC 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 WA for the purpose of conservation but which has yet to be reserved under the Land Administration Act and for which DEC is the agency responsible for its management.	Full Report only
DEC-Managed Land	This includes all land managed by 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/gpap_home/gpap_quality/gpap_pacategories/.

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 QGIS 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".

12. How to access the reports

12.1. Statewide Vegetation Statistics reports

The Simplified and Full 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_2012_Simplified_report.xls
    - Vegetation_Statistics_Statewide_2012_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).

12.2. Other relevant reports/analyses

The 2012 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-Managed and Other IUCN Terrestrial Lands by IBRA Sub-Regions 2012

Statewide Vegetation Statistics reports from previous years are also available:

- Through the CDDP on V:\GIS1-Corporate\Data\Vegetation\Analysis (2005, 2006, 2007 update, 2009 Full and Simplified and 2011 Full and Simplified) (DEC personnel only)
- GIS Branch intranet site on the page **Reservation and Vegetation Statistics** (DEC personnel only) (2007 update, 2009 Full and Simplified and 2011 Full and Simplified)
- SLIP Portal (https://www2.landgate.wa.gov.au/web/guest/downloader). (2007 update, 2009 Full and 2011 Full and Simplified)

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

Note: in 2011 the name of the report changed as did the naming convention of the files.

- Naming convention prior to 2011 was “simplified_CAR_reserve_analysis_YYYY.xls”.
- The naming convention from 2011 onwards is “Vegetation_Statistics_Statewide_YYYY_Simplified_report.xls”.

13. Other supporting information within the Excel spreadsheet

The following worksheets within Vegetation_Statistics_Statewide_2012_Simplified_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 Excel AutoFilter and VLOOKUP functions can be utilized within the Excel report
- **‘Veg Assoc Descriptions’ –** see the „Examples‟ worksheet for information on how to add these descriptions to the „Simplified_Report‟ worksheet.
- **‘Changes to IBRA names and codes’ –** this relates the IBRA 7 regions and sub-regions to their respective code and name in IBRA6.1.

14. Who should I contact if I am having trouble using this analysis or need more information?

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