

2018 South West Vegetation Complex Statistics: Report Readme

Remote Sensing and Spatial Analysis Program
Biodiversity and Conservation Science
Department of Biodiversity, Conservation and Attractions (DBCA)
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Department of **Biodiversity,
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Government of **Western Australia**
Department of **Water and Environmental Regulation**

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1. Required files

The South West Vegetation Complex Statistics Report consists of two files:

1. An Excel spreadsheet **Vegetation_Statistics_SouthWest_2018_Report.xls** with six worksheets containing the statistics and two worksheets containing vegetation descriptions. *Note: the delivery to some WA State Government Agencies will include additional 'internal' report worksheets and the Excel filename will include an Agency suffix.*
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 REPORTS

2. Purpose of the Report

This report has been jointly developed by the Department of Biodiversity, Conservation and Attractions (DBCA) and the Department of Water and Environmental Regulation (DWER) to support decision making in regard to the retention and protection of native vegetation, and associated biodiversity values, in the South West of WA. It provides statistics on the pre-European and current extent of the vegetation complexes of the south-west of Western Australia (Figure 1). The mapping does not extend to IBRA sub-region boundaries, so it does not report by IBRA sub-region rather by the extent of the available mapping of the complex. The major reports are:

- A CAR reserve analysis. Only **reserves managed by the Department of Biodiversity, Conservation and Attractions under the CALM Act** are considered for inclusion in the "CAR Reserve Analysis". Please see section 4.1 for more details.
- Statistics for the Perth and Peel Regions Schemes. **This is a new report in 2018.** Areas **secure for conservation** in these reports are defined as National Parks, Nature Reserves, Conservation Parks and any other crown reserve that have "Conservation" as part of the reserve purpose. Please see section 4.2 for more details.

These statistics should be used to provide a general overview of the status of vegetation complexes noting the limitations below related to scale, remnant vegetation mapping and currency of the analysis. The statistics can be used to guide land use planning, assess clearing and development applications and assess progress towards retention and reservation targets defined in State Government Policies.

Care should 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 should be sought from people who are familiar with the vegetation complex and vegetation condition of the area.

Note: throughout this report and document the term "DBCA Managed Land" is used. This includes land that is managed jointly with Aboriginal Traditional Owners.

3. How to cite this report

Government of Western Australia. (2019). *2018 South West Vegetation Complex Statistics. Current as of March 2019.* WA Department of Biodiversity, Conservation and Attractions, Perth.
<https://catalogue.data.wa.gov.au/dataset/dbca>

4. Reports

4.1. CAR Report

Note: any queries relating to the use of these statistics to inform clearing applications should be directed to DWER Native Vegetation Regulation Branch (see Section 13)

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 a region.
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

For vegetation complexes, the assessment of the reserve system against CAR principles is done at the mapping area scale. The assessment cannot be undertaken at the IBRA bioregion or sub-region scale as the mapping does not extend to these boundaries. However, note that for the Swan Coastal Plain bioregion the vegetation complexes systems align to the IBRA sub-regions.

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 vegetation complex. The **CAR statistics** provided in the report are (please see Section 9 for definitions):

- Pre-European extent (ha)
- Current extent (ha)
- Percentage remaining (%)
- Pre-European extent protected (IUCN I – IV) for conservation (ha)
- Current extent protected (IUCN I – IV) for conservation (ha)
- Current percentage remaining within lands protected (IUCN I-IV) 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 DBCA-legislated lands and waters dataset as either Crown reserves or lands managed under Section 8A of the CALM Act that have an IUCN category of I – IV.**

Detailed background information on the CAR reserve system for ecological communities in Australia is available from http://www.agriculture.gov.au/SiteCollectionDocuments/rfa/publications/nat_nac.pdf and <https://www.environment.gov.au/land/nrs/science/scientific-framework>

4.2. Region Scheme Report

Note: any queries relating the use of these statistics should be directed to DWER Terrestrial Ecosystem Branch (see Section 13)

Bush Forever and the Environmental Protection Authority (EPA) have set targets for securing vegetation complexes in the Perth Region Scheme and Peel Region Scheme (Figure 1). The EPA has an objective to seek to retain at least 30% of the pre-clearing extent of each ecological community and has a modified objective to seek to retain at least 10% of the pre-clearing extent of each ecological community for defined constrained areas (intensely developed) in the Perth Metropolitan Region. Please refer to the following policy document for details <http://www.epa.wa.gov.au/sites/default/files/Publications/Perth-Peel-s16e-interim-advice-2015-web.pdf>

The reports provide statistics for the following regions:

- Full Extent of the Mapping
- Perth Metropolitan Region
- Peel Region Scheme

Details of the reporting statistics are provided in section 9.3.

Areas defined as **secure for conservation** in these reports are defined as DBCA-legislated lands and waters datasets as either National Parks, Nature Reserves, Conservation Parks. In addition, any other crown reserve, defined in the State Cadastral Database, that has “Conservation” as part of the reserve purpose is also included irrespective of the management body. For example, crown reserves managed by a Local Government Authority or the Aboriginal Lands Trust for conservation are considered secure for conservation under this definition.

4.3. LGA Report

A number of key vegetation complex extent and proportion statistics have been provided for each LGA. The LGA Pre-European and Current Extent and % Remaining statistics should be used to provide a snapshot of the vegetation complexes that occur within a LGA and should be reported along with the Mapping Area CAR statistics provided in the relevant CAR Report. Additional statistics can be calculated using the extent statistics provided in the report.

The Pre-European extent of some vegetation complexes is very localized (e.g. Pinjar) whereas for others their extent spans large portions of the Mapping Area (e.g. Quindalup and Yalanbee Y6). The statistic "Proportion of the Vegetation Complex Mapping extent within each LGA" can be interrogated to investigate if a vegetation complex is largely restricted to one LGA (proportion statistic is high) or occurs over several LGA's.

5. Vegetation Complex mapping

5.1. Current Vegetation Complex Mapping

The vegetation complex mapping datasets used are (Figure 1):

- 1:250,000 Swan Coastal Plain Vegetation Complexes (Heddlé *et al.* 1980) as updated by Webb *et al.* (2016) (hereafter referred to as the SCP dataset);
- 1:50,000 Mapping of Vegetation Complexes in the South West Forest Region of Western Australia (Mattiske & Havel 1998) as updated by Webb *et al.* (2016) (hereafter referred to as the SW Forest dataset).

The SCP dataset (1:250,000) extends from Lancelin in the north, east to the Darling Plateau and all areas of Perth and Dandaragan IBRA sub-region to the south. Please note the mapping only covers the south-east portion of Rottnest Island. The SW Forest dataset (1:50,000) defines vegetation complexes at a finer scale and has extensive, but not complete, coverage of the JAF01, JAF02 and WAR01 IBRA sub-regions including the Darling Scarp. The mapping covers the full extent of the Whicher Scarp.

5.2. Historical Context and 2016 Review

The vegetation complexes were first mapped at 1:250,000 scale by Heddlé *et al.* (1978 and 1980) across portions of the Swan Coastal Plain and Darling and Blackwood Plateaus. In the late 90's 1:50,000 scale mapping of vegetation complexes was undertaken for the Regional Forest Agreement (Mattiske and Havel 1998 and Havel and Mattiske 2000). In 2016 these datasets were reviewed (Webb *et al.* 2016) primarily to:

- Extend single scale mapping to landform boundaries with a particular focus on the Busselton Plain, Whicher Scarp and portions of the Darling Scarp;
- Remove mapping overlaps, consolidating different scales of mapping within landforms.

The review removed different interpretations of the original Heddlé *et al.* (1978) and Mattiske and Havel (1998) datasets thereby improving the robustness of extent statistics.

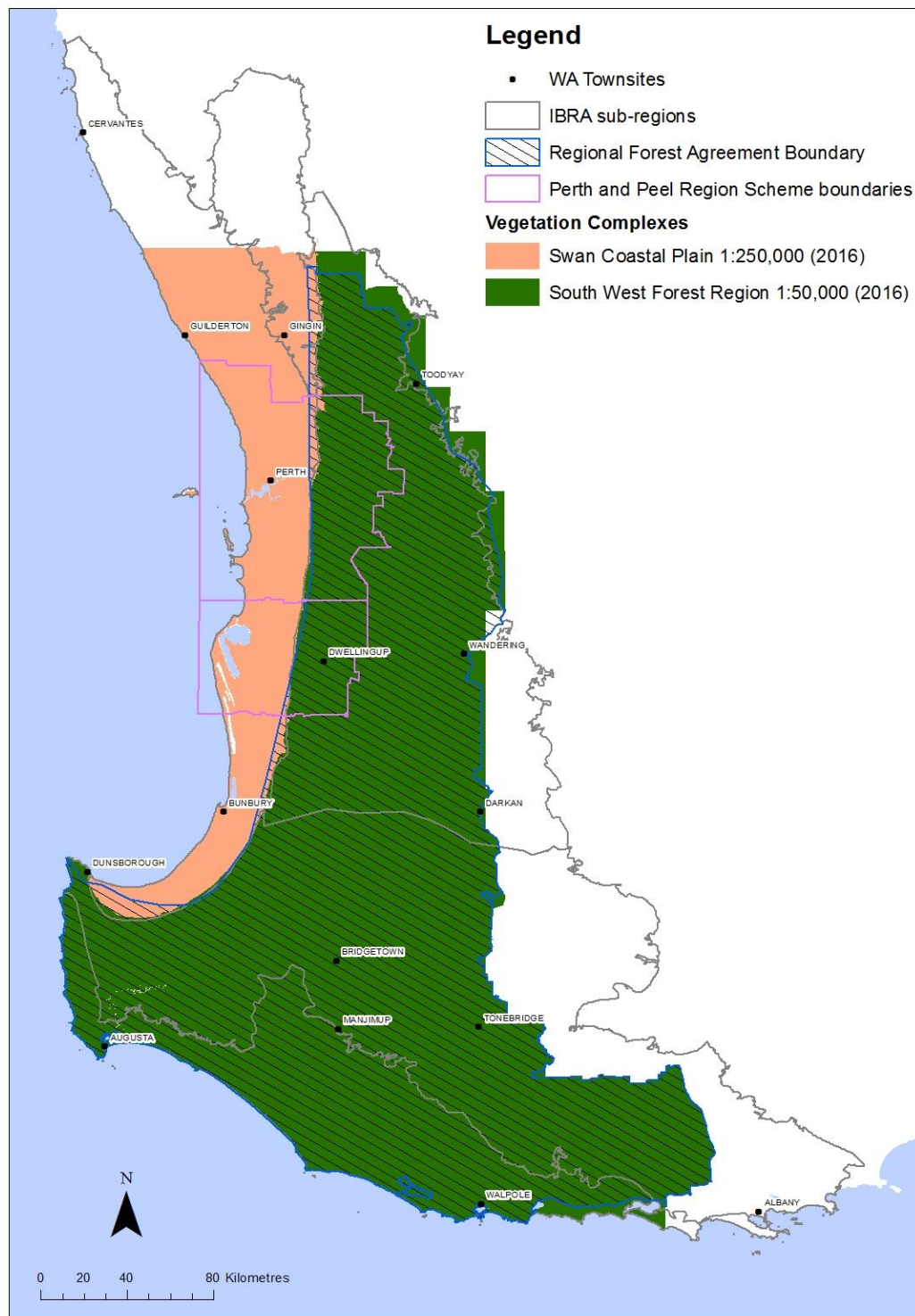


Figure 1: Extent of vegetation complex mapping datasets used in the production of these reporting statistics.

6. Limitations (READ ME)

6.1. Scale

The vegetation complexes were either mapped at scales of 1:250,000 (SCP) or 1:50,000 (SW Forests) and are not designed to inform at a finer scale. Care should be taken when using, as is the case of this analysis, vegetation complexes in combination with finer scale mapping such as remnant vegetation mapping (1:20,000 or finer). It cannot be assumed that in heavily cleared areas that the range of ecological communities described by one vegetation complex/class will be represented in the few remaining remnants. In these instances, advice from an experienced ecologist with knowledge of the ecological communities of the area should be sought. More detailed vegetation mapping may be required before an assessment of the levels of retention and protection of a vegetation complex/class can be undertaken.

It is recommended by the data custodians that the combined current extent and pre-European vegetation complex/class data should be used at scales no finer than:

- 1:250,000 for the SCP
- 1:50,000 for the SW Forests

6.2. Remnant Vegetation

The remnant vegetation mapping has the following limitations:

1. There are inconsistencies in the distinction between cleared areas and non-vegetated "natural areas". The non-vegetated "natural areas" could include open water, sand dunes, non-woody wetland vegetation or rock outcrops (this list is not exhaustive).
2. Not all islands are included in the remnant vegetation mapping.
3. The updates are based on interpretation of aerial photography and are captured at scales between 1:5,000 and 1:20,000. No field checking is undertaken.
4. The remnant vegetation data does not represent a snapshot in time rather the data is progressively updated when new aerial photography becomes available (Figure 2). Generally, updates are more frequent in areas where there are high levels of urban and mining development and to a lesser extent agricultural development. In the Perth metropolitan region, high resolution imagery is available on an annual basis.

If these limitations are not considered then, potentially, the extent of areas cleared could be overestimated or underestimated. To prevent this, a number of measures can be put in place:

1. Always read the descriptions of the vegetation complexes to ascertain if, in their undisturbed state, they are areas that could have no or low vegetation cover. Advice from an ecologist should be sought.
2. In a GIS package overlay and view the vegetation complex, remnant vegetation, DBCA-legislated lands and waters, DBCA-Lands of Interest, WA coastline and aerial photography spatial datasets. Also use other available habitat mapping which delineates non-vegetated "natural areas".

Checks can then be done in the GIS to see if:

- Non-vegetated areas, that have not been disturbed, are mapped as remnant vegetation mapping (check against aerial photography);
- If offshore islands, which are part of a vegetation complex, 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 statistic rather than the current extent. Put a qualifier statement in any reporting "*due to the limitations of the mapping these statistics are indicative only*".

Additionally, review the currency of the remnant vegetation mapping for the area of interest by checking the currency of the aerial photography used to capture the data (see "ORTHOPHOTO" field). If you feel that the currency of the mapping is not sufficient then put the aforementioned qualifier statement in any reporting.

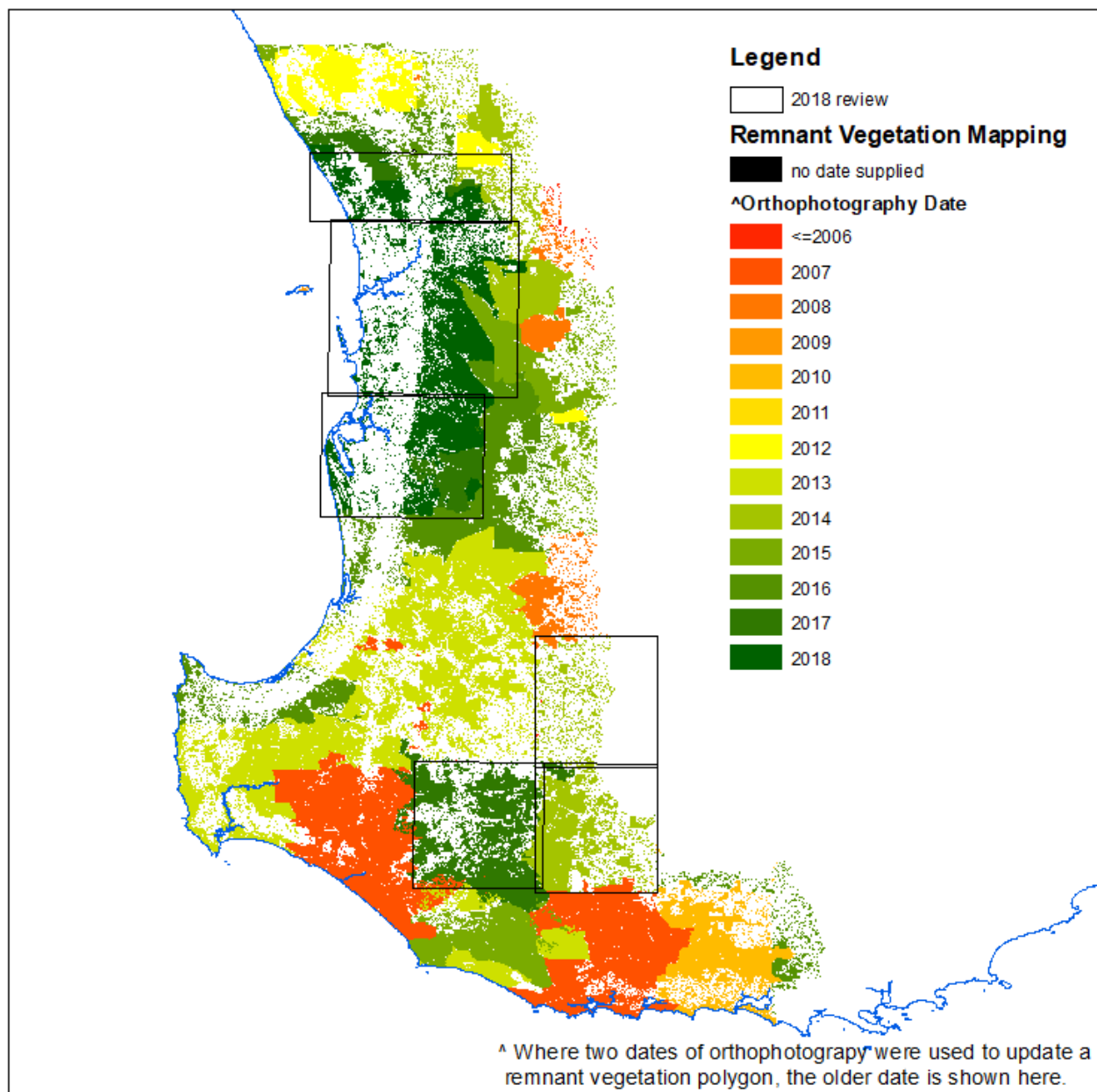


Figure 2: Currency of remnant vegetation used in this analysis. The areas identified as “2018 updates” have been updated in the last 12 months.

6.3. SW Forests (2016) vegetation complex mapping

One vegetation complex class is under review and is reported on separately (Class code is “Rev” and SWFor_ID is 242). This class needs to be reviewed by experts within the DBCA Forest Management Branch (FMB) before it can be either assigned to an existing code or described separately. For the most part it is within DBCA managed land.

6.4. Currency of analysis

The accuracy of this analysis depends on the currency of the input spatial datasets. See METADATA Section 7 for details of the currency of the datasets used in this analysis. DBCA reproduces these statistics on an annual basis to include the most up-to-date spatial datasets. Before using these statistics check that it is the current report (see section 12 for details on how to access the reports).

7. Metadata (spatial data information and currency)

Data	Custodian	Date
Native vegetation extent (referred to as remnant vegetation)	DPIRD	19th February 2019
Swan Coastal Plain Vegetation Complexes (1:250,000)	DBCA	December 2016
Mapping of Vegetation Complexes in the South West Forest Region of Western Australia (1:50,000)	DBCA	December 2016
DBCA - Legislated Lands and Waters	DBCA	30th June 2018
DBCA - Lands of Interest	DBCA	30th June 2018
State Cadastral Database	Landgate	30th June 2018
Local Government Authorities	Landgate	downloaded 8th October 2018
Region Scheme Boundaries	DPLH	21 st May 2018

8. Items of note for the 2018 report

8.1. Third Annual Statistics Report

This 2018 annual report is the third one completed since the 2016 review of the SCP and SW Forests datasets. Comparison of the statistics in this report to statistics that were based on the original vegetation complex mapping (Heddl *et al.* 1980 and Mattiske & Havel 1998) should be done carefully as the 2016 review did change the Pre-European extent of some vegetation complexes. See Webb *et al.* (2016) for more details including a comparison with the EPA Guidance Statement 10 (EPA 2006) statistics.

Comparison of the statistics in the 2017 to 2018 CAR and LGA reports is valid but please note the information in section 8.2.

8.2. Updates to the input spatial datasets

The DBCA-Legislated Lands and Waters, DBCA-Lands of Interest and remnant vegetation datasets are updated on a continuous basis whilst the Local Government Authority dataset is updated regularly, and the vegetation complex datasets are updated very occasionally and were last reviewed in 2016.

The following information is provided to give an indication of the nature of the significant updates to the 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 dataset.

8.2.1. DBCA-Legislated Lands and Waters and DBCA-Lands of Interest

These datasets identify:

- The lands and waters that are defined under the Acts which are applicable to DBCA (Legislated Lands and Waters dataset);
- The lands to which DBCA is recognised as the manager but which are not vested under any Act that is administered by DBCA (Lands of Interest dataset).

Each year additional land is acquired or re-assigned by the State Government to be managed by DBCA and therefore is included in this dataset. If comparisons are made to the 2016 report, for some complexes small increases in the IUCN I-IV, V-VI, No IUCN and DBCA Managed Land reporting statistics is to be expected due to these acquisitions or re-assignments.

Please note that Crown Freehold Department Managed lands that are being managed by DBCA under Section 8A of the CALM Act have not been included in the analysis as some of this land in the long-term will not be managed by DBCA.

8.2.2. Remnant vegetation

Since the 2016 analysis, remnant vegetation has been reviewed by DPIRD for the following areas:

- Perth Metropolitan Region
- Peel Region

- Dinninup map sheet using 2014 orthophotography
- Tonebridge map sheet using 2014 orthophotography
- Manjimup map sheet using 2018 orthophotography

See Figure 2 for an overview of the extents of the updates. In all instances the latest ortho-photography available was used which in some areas is five years old (see Figure 2 date information). As part of the ongoing review process, areas previously mapped as remnant vegetation that have been cleared or no longer meet the 20% cover threshold (including areas around rural properties and along tracks and fire breaks) were removed from the dataset. Conversely natural areas, which have previously been disturbed due to fire, timber harvesting or mining and now meet the 20% cover threshold, have been brought back into the dataset. For the most part plantations or agricultural plantings that have been previously erroneously mapped as remnant vegetation have been removed. An exception to this is the East Keralup area (see details below). Some general realignment of the remnant vegetation boundaries has also been undertaken. This list is not exhaustive but provides an indication of the nature of the updates to the dataset that are not related to the clearing of remnant vegetation.

If a **comparison of statistics between the 2017 and 2018 CAR Analyses** is being undertaken, then you can expect:

- **Reductions** in 'Current Extent' and '% Remaining' for complexes in:
 - The Perth Metropolitan and Peel areas to be due to clearing over the last 12 months or due to non-vegetated natural areas, agricultural plantings or plantations previously included in the remnant dataset being removed.
 - Other areas due to clearing over a number of years or due to non-vegetated natural areas, agricultural plantings or plantations previously included in the remnant dataset being removed.
- **Increases** in 'Current Extent' and '% Remaining', for vegetation complexes:
 - Where non- or low vegetated natural areas, previously not included in the remnant dataset, have now been included.
 - Where revegetated or regrowth areas have now reached the >20% cover threshold (e.g. Alcoa rehabilitation areas).

In 2017 DPIRD reviewed some areas that were previously captured in plantation datasets compiled by DBCA. A small number of areas have been brought back into the remnant vegetation dataset if they have been harvested and regeneration has occurred. To date there has been no field validation of these areas. An area which is a priority for field validation is in the East Keralup area (Figure 3) which is in Bassendean Complex-Central and South. In the mid 1990's some areas of Homewest freehold land were planted to Bluegum plantations and by about 2007 all had been harvested. Until these areas are field validated, the 2017 and 2018 statistics for 'Current Extent' and '% Remaining' are provisional for Bassendean Complex-Central and South. The statistics in Table 1 outline the impact on the statistics, in the SCP CAR and Region Scheme Reports, of the inclusion of the former East Keralup plantations and other surrounding additions.

Table 1: Impact of the inclusion of additional remnants on the statistics for Bassendean Complex – Centre and South. Note: these additions require field validation.

Vegetation Complex	Pre-European Extent (ha)	Current Extent (ha) based on DPIRD's October 2018 Native Vegetation Extent. (Provisional)	% Remaining based on DPIRD's October 2018 Native Vegetation Extent. (Provisional)	Current Extent (ha) excluding East Keralup additional Remnants (worst case scenario)	% Remaining excluding East Keralup additional Remnants (worst case scenario)
Bassendean Complex-Central and South (Full Extent of Mapping)	87,476.25	23,508.66	26.87	22,303.75	25.50
Bassendean Complex-Central and South (Perth Metropolitan Region)	46,278.62	10,175.30	21.99	9,533.24	20.60
Bassendean Complex-Central and South (Peel Region Scheme)	17,230.92	4,015.75	23.31	3,452.90	20.04

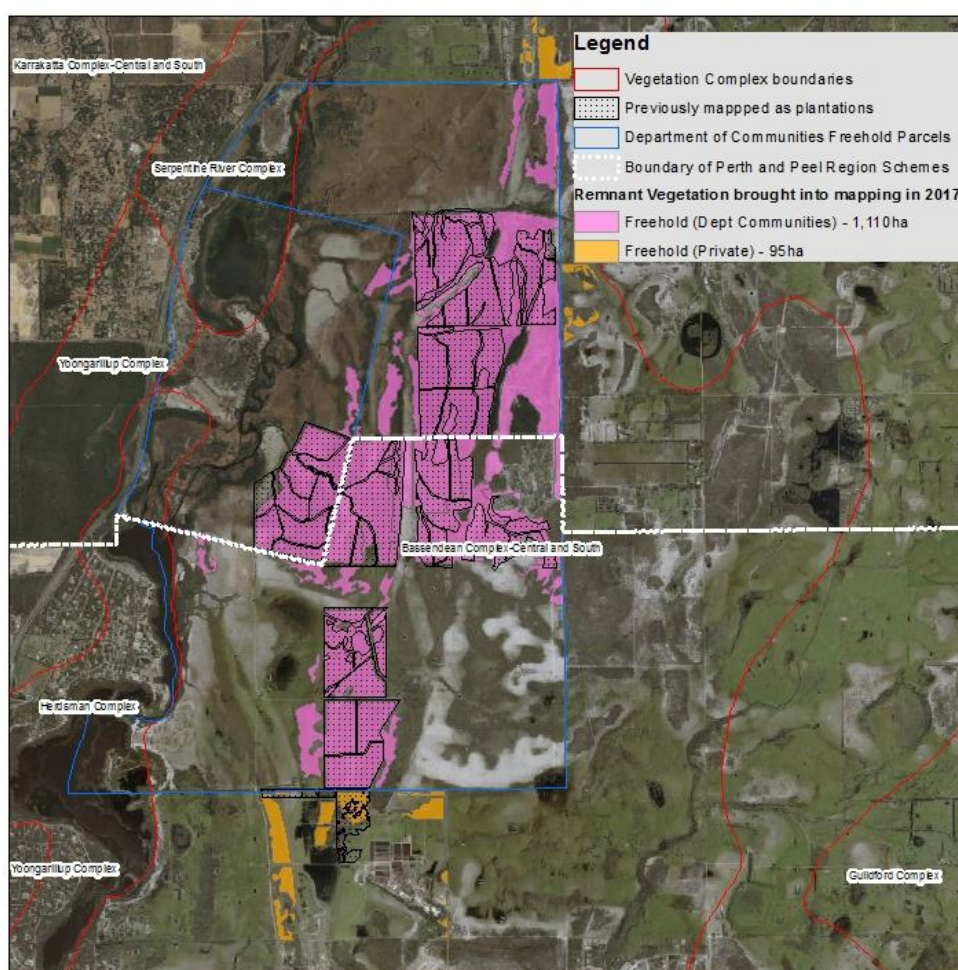


Figure 3: Location of areas in East Keralup that were included in the Remnant Vegetation mapping in 2017.

9. Definition of statistics presented in the report

9.1. Vegetation Complex Information

The statistics for the Swan Coastal Plain (SCP) and South West Forest (SWForest or SWFor) vegetation complexes are presented in separate reports in the Excel file. The following tables outlines the supporting information for each complex that is provided at the beginning of all reports.

Column title in Excel report	Definition	Report
Swan Coastal Plain Vegetation Complexes		
Geomorphological Province	Geomorphological province of the Swan Coastal Plain	All SCP reports
Landform for each Geomorphological Province	The landform and geomorphological province of each vegetation complex.	All SCP reports
Vegetation Complex	Vegetation Complex name.	All SCP reports
System6	Unique identifier for each vegetation complex (link to spatial data)	All SCP reports
South West Forest Vegetation Complexes		
Subregion of the South-West Forests	Subregions of the South-West Forests	All SWForests reports
Broad landform	The landform of each vegetation complex class.	All SWForests reports
Vegetation Complex Name	Vegetation Complex name	All SWForests reports
Vegetation Complex Class	Vegetation complex class code. The extent statistics are calculated at this mapping level. Note: these codes use both upper and lower case letters so use the SWFor_ID to sort rows in the excel worksheet.	All SWForests reports
Combined Vegetation Complex and Code	Combined vegetation complex name and code	All SWForests reports
SWFor_ID	Unique identifier for each vegetation complex class (link to spatial data).	All SWForests reports

9.2. CAR Reports

In the excel report the CAR statistics are highlighted in yellow (assessed only at the mapping area scale)

Statistic (column title in Excel report)	Definition	Report
Vegetation Complex Mapping Information		
See details in Section 9.1		
Total vegetation extent		
Pre-European Extent (ha)	Total pre-European extent (hectares)	CAR Report SCP – External
Current Extent (ha)	Total extent of areas mapped as remnant vegetation* (hectares)	
% Remaining	Proportion of remnant vegetation* remaining within the Full Extent of the Mapping (proportion of the pre-European extent) (%)	CAR Report SWForests - External
Vegetation extent broken down into reservation categories		
Pre-European Extent Protected (IUCN I-IV) for Conservation (ha)	Pre-European extent of areas that are protected (reserved) for conservation (categorised as IUCN I - IV and are within DBCA-managed land) (hectares) <i>Note: Use this pre-European extent statistic instead of the one directly below if the vegetation complex contains naturally non-vegetated vegetation ecological communities. See limitations section 6.2 for more information.</i>	CAR Report SCP – External CAR Report SWForests - External
Current Extent Protected (IUCN I-IV) for Conservation (ha)	Extent of areas mapped as remnant vegetation* that are protected (reserved) for conservation (categorised as IUCN I - IV and are within DBCA-managed land) (hectares)	
Current percentage remaining within lands Protected (IUCN I-IV) for Conservation (%)	Proportion, of the pre-European extent, of areas mapped as remnant vegetation* that are protected (reserved) for conservation (categorised as IUCN I - IV and are within DBCA-managed land) (%).	
IUCN V - VI Pre-European Extent (ha)	Pre-European extent of areas that are categorised as IUCN V - VI and are within DBCA-managed land (hectares)	
IUCN V - VI Current Extent (ha)	Extent of areas mapped as remnant vegetation* that are categorised as IUCN V - VI and are within DBCA-managed land (hectares)	
No IUCN Pre-European Extent within DBCA-Managed Land (ha)	Pre-European extent of areas that have not been categorised as IUCN and are within DBCA-managed land [#] (hectares)	
No IUCN Current Extent within DBCA-Managed Land (ha)	Extent of areas mapped as remnant vegetation* that have not been categorised as IUCN and are within DBCA-managed land [#] (hectares)	
Pre-European Extent in All DBCA-Managed Land (ha)	Pre-European extent of areas that are within DBCA-managed land [#] (hectares)	
Current Extent in All DBCA-Managed Land (ha)	Extent of areas mapped as remnant vegetation* that are within DBCA-managed land [#] (hectares)	
Current percentage remaining within all DBCA managed land* (%)	Proportion, of the pre-European extent, of areas mapped as remnant vegetation* that are within DBCA-managed land [#] (%)	

* The remnant vegetation mapping does not distinguish between cleared areas and some non-vegetated 'natural areas' within the intensive land use zone so it cannot be assumed that this represents the area not cleared. See Section 6.2 for more information.

[#] Those lands that are categorized as Crown Freehold Department Managed and are managed under section 8A of the CALM Act are not included in this total. See section 8.2.1 for more information.

9.3. Region Scheme Reports

In the excel report the CAR statistics are highlighted in yellow (assessed only at the mapping area scale). The other colours in the Report column relate to the excel report.

Statistic (column title in Excel report)	Definition	Report
Vegetation Complex Mapping Information		
See details in Section 9.1		
Full Extent Statistics (either the Swan Coastal Plain [prefix SCP] or South West Forest [prefix SWForest] vegetation complex mapping extent)		
[prefix] Pre-European Extent (ha)	Total pre-European extent (hectares)	RegionSchemesReport SCP – Ext RegionSchemesReport SWFor - Ext
[prefix] Current Extent (ha)	Total extent of areas mapped as remnant vegetation* (hectares)	
[prefix] % Remaining	Proportion of remnant vegetation* remaining within the Full Extent of the Mapping (proportion of the pre-European extent) (%)	
[prefix] Pre-European Extent secure for Conservation (EPA definition) (ha)	Pre-European extent of areas that are secure for conservation (categorised as National Park, Nature Reserve, Conservation Park or are other crown reserves with “conservation” in their purpose) (hectares)	
[prefix] Current Extent Secure for Conservation (EPA definition) (ha)	Current extent of areas mapped as remnant vegetation* that are secure for conservation (categorised as National Park, Nature Reserve, Conservation Park or are other crown reserves with “conservation” in their purpose) (hectares)	
[prefix] Current percentage remaining within lands secure for Conservation (EPA definition) (%)	Proportion, of the pre-European extent, of areas mapped as remnant vegetation* that are secure for conservation (categorised National Park, Nature Reserve, Conservation Park or are other crown reserves with “conservation” in their purpose) (%).	
Perth Metropolitan Region Scheme (MRS) Statistics		
MRS Pre-European Extent (ha)	Total pre-European extent within the MRS (hectares)	RegionSchemesReport SCP – Ext RegionSchemesReport SWFor - Ext
MRS Current Extent (ha)	Total extent of areas mapped as remnant vegetation* within the MRS (hectares)	
MRS % Remaining	Proportion of remnant vegetation* remaining within the MRS (proportion of the MRS pre-European extent) (%)	
MRS Pre-European Extent secure for Conservation (EPA definition) (ha)	Pre-European extent of areas that are secure for conservation within the MRS (categorised as National Park, Nature Reserve, Conservation Park or are other crown reserves with “conservation” in their purpose) (hectares)	
MRS Current Extent Secure for Conservation (EPA definition) (ha)	Current extent of areas mapped as remnant vegetation* that are secure for conservation within the MRS (categorised as National Park, Nature Reserve, Conservation Park or are other crown reserves with “conservation” in their purpose) (hectares)	
MRS Current percentage remaining within lands secure for Conservation (EPA definition) (%)	Proportion, of the MRS pre-European extent, of areas mapped as remnant vegetation* that are secure for conservation within the MRS (categorised National Park, Nature Reserve, Conservation Park or are other crown reserves with “conservation” in their purpose) (%).	

Statistic (column title in Excel report)	Definition	Report
Peel Region Scheme (PRS) Statistics		
PRS Pre-European Extent (ha)	Total pre-European extent within the PRS (hectares)	RegionSchemesReport SCP – Ext RegionSchemesReport SWFor - Ext
PRS Current Extent (ha)	Total extent of areas mapped as remnant vegetation* within the PRS (hectares)	
PRS % Remaining	Proportion of remnant vegetation* remaining within the PRS (proportion of the PRS pre-European extent) (%)	
PRS Pre-European Extent secure for Conservation (EPA definition) (ha)	Pre-European extent of areas mapped as remnant vegetation* that are secure for conservation within the PRS (categorised as National Park, Nature Reserve, Conservation Park or are other crown reserves with “conservation” in their purpose) (hectares)	
PRS Current Extent Secure for Conservation (EPA definition) (ha)	Current extent of areas that are secure for conservation within the PRS (categorised as National Park, Nature Reserve, Conservation Park or are other crown reserves with “conservation” in their purpose) (hectares)	
PRS Current percentage remaining within lands secure for Conservation (EPA definition) (%)	Proportion, of the PRS pre-European extent, of areas mapped as remnant vegetation* that are secure for conservation within the PRS (categorised National Park, Nature Reserve, Conservation Park or are other crown reserves with “conservation” in their purpose) (%).	

* The remnant vegetation mapping does not distinguish between cleared areas and some non-vegetated 'natural areas' within the intensive land use zone so it cannot be assumed that this represents the area not cleared. See Section 6.2 for more information.

9.4. LGA Reports

Statistic (column title in Excel report)	Definition	Report
LGA		
Local Govt. Authority Name	Local government authority name	LGA SCP Report – External LGA SWForest Report - External
Region extents		
Local Govt Authority Extent within mapping area (ha)	Total extent of the local government authority area that is covered by the pre-European extent of the Swan Coastal Plain vegetation complex mapping (areal extent over marine waters is not included). Note: cannot total this column as values are duplicated within a LGA.	LGA SCP Report – External LGA SWForest Report - External
Vegetation Complex Mapping Information		
See details in Section 9.1		LGA SCP Report – External LGA SWForest Report - External
Total vegetation extent		
Pre-European Extent (ha)	Total pre-European extent (hectares) within the LGA	LGA SCP Report – External LGA SWForest Report - External
Current Extent (ha)	Total extent of areas mapped as remnant vegetation* (hectares) within the LGA	
% Remaining	Proportion of remnant vegetation* remaining within the LGA (proportion of the LGA pre-European extent (%))	
Proportion of the Vegetation Complex Mapping extent within each LGA (%)	Proportion of the pre-European extent of the vegetation complex within the LGA. Note: for a given vegetation complex if you sum the reported proportions, across all LGA's, the total will be 100%. Refer to section 4.3 for information on how to use this statistic.	

* The remnant vegetation mapping does not distinguish between cleared areas and some non-vegetated 'natural areas' within the intensive land use zone so it cannot be assumed that this represents the area not cleared. See Section 6.2 for more information.

10. Other supporting information within the Excel spreadsheet

The following worksheets within the excel file provides additional supporting information

- **SCP Vege Cplx Descriptions** – vegetation complex descriptions for the SCP vegetation complexes.
- **SWForest Vege Cplx Descriptions** – vegetation complex descriptions for the SW Forest vegetation complex classes.

11. Definition of the DBCA 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 DBCA-Legislated Lands and Waters dataset as either Crown reserves or lands managed under Section 8A of the CALM Act that have an IUCN category of I – IV.**

Category	Definition
IUCN I - IV	DBCA-Legislated Land that has been categorised as IUCN protected areas I – IV. Note: currently no lands are categorised as IUCN Ib
IUCN V - VI	DBCA-Legislated Land that has been categorised as IUCN protected areas V – VI.
No IUCN	DBCA-Legislated Land or Lands of Interest that has not been categorised as IUCN protected areas
DBCA-Managed Land	This includes all land managed by DBCA. Please contact DBCA Land Unit Section for full definitions of DBCA tenure categories.

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 DBCA tenure categories or IUCN categories of reserves in your area of interest:

- Refer to the DBCA-Legislated Lands and Waters and Lands of Interest spatial data on the CDDP V drives (DBCA personnel only).
- Refer to the 'DBCA-Legislated Lands and Waters and Lands of Interest spatial data' spatial data which will be available in early 2018 on <https://data.wa.gov.au/> (External users).

View the information under CATEGORY, TENURE, ACT and IUCN in the attribute table.

12. How to access the reports

1. The reports can be downloaded from DataWA using <https://catalogue.data.wa.gov.au/dataset/dbca>.
2. By contacting Janine Kinloch (see contact details below) or the DBCA Spatial Database Administrator (ph 9219 9562).

For DBCA personnel only, the reports, including the additional internal reports, are also available at the following locations:

- <https://data.dpaw.wa.gov.au/group/annual-car-statistics>
- CDDP on V:\GIS1-Corporate\Data\Vegetation\Analysis

13. Who should I contact if I need more information?

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Land Services Unit,
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Bok.Ho@dbca.wa.gov.au
(08) 9219 8771

Address details:

17 Dick Perry Avenue, Kensington WA 6151
Locked Bag 104 Bentley Delivery Centre WA 6983

Where it has been noted in the README to direct enquiries to DWER, the contacts are:

Native Vegetation Regulation Branch

DWER
info@dwer.wa.gov.au
(08) 6364 7098

Terrestrial Ecosystems Branch

Science and Planning Division
DWER
info@dwer.wa.gov.au

14. Bibliography

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