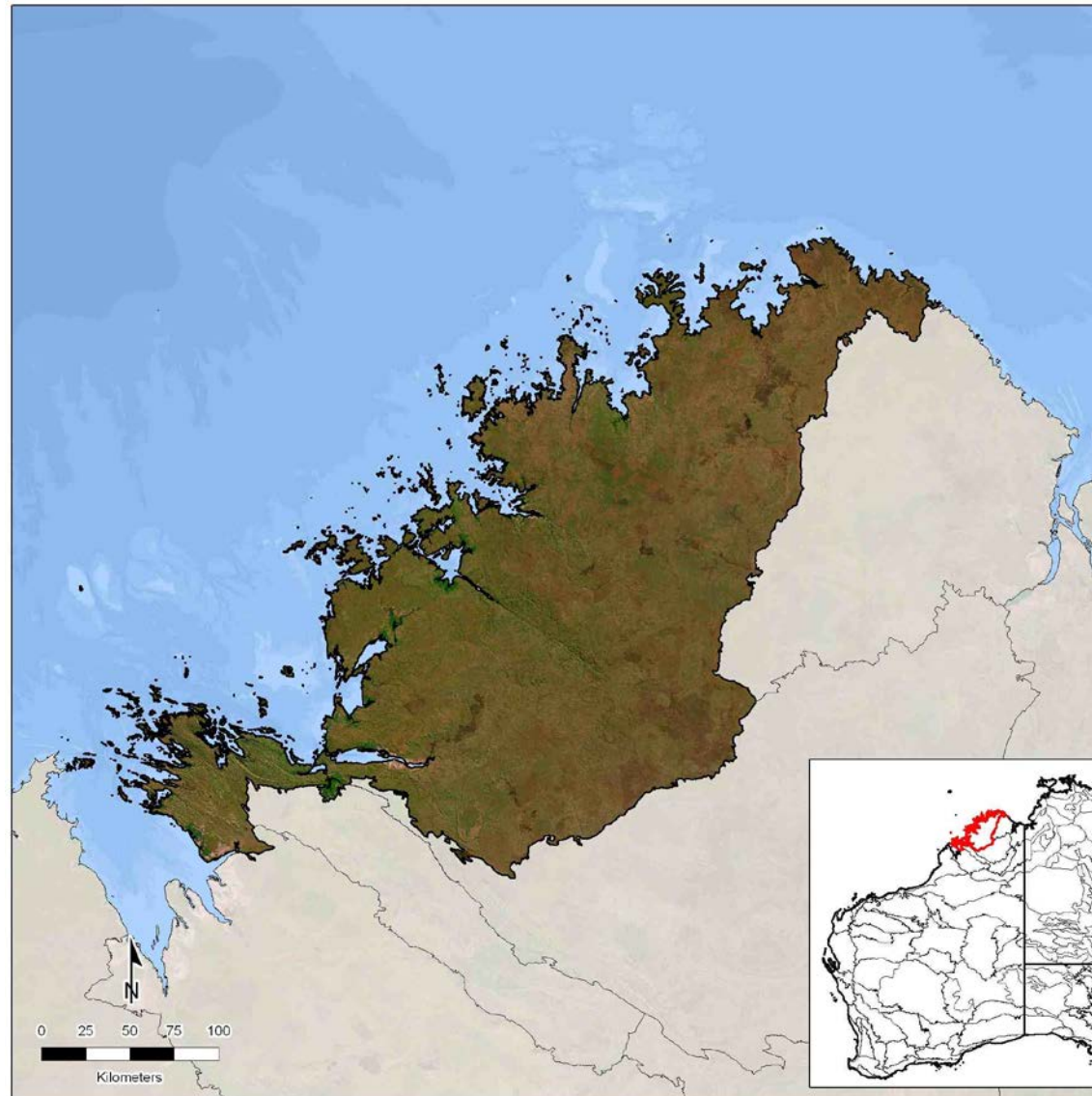


## Northern Kimberley 1 Sub-region



*Statistics and maps produced by GIS Branch, Department of Parks and Wildlife (2014)*

Information on the methods used to generate the statistics is available [here](#).

Note: the analysis was undertaken in 2012 under the auspices of the Department of Environment and Conservation. Therefore the acronym of “DEC” is used in this document.

## PROFILE OF SUB-REGION

### Total area of sub-region (ha)

Size of sub-region in WA (ha)	Percentage of WA covered by sub-region (%)	Percentage of sub-region within WA (%)	Percentage of sub-region covered by intact habitat* (%)	Percentage of sub-region within DEC-managed conservation reserves (IUCN Ia - IV) (%)
5,970,915	2.36	100	97.12	13.57

\*Intact habitat includes remnant vegetation and additional intact habitats (wetlands) not mapped in the remnant vegetation dataset.

Please see the GIS Branch intranet site for the latest annual statistics in the following report:

- [DPaW-Managed and Other IUCN Terrestrial Lands by IBRA Sub-Regions Report](#). Statistic: Percentage of sub-region within DEC-managed conservation reserves (IUCN Ia – IV).

## Remnant vegetation

		Extent of remnant vegetation		Extent of additional intact habitats (wetlands) not mapped in the remnant vegetation dataset		Total extent	
		(ha)	(%)	(ha)	(%)	(ha)	(%)
Native vegetation on DEC-managed lands	Conservation reserves (IUCN Ia - IV)	800,610	13.41	2,517	0.04	803,127	13.45
	DEC-managed lands proposed for conservation	35,323	0.59	0	0.00	35,323	0.59
	Conservation reserves (IUCN V & VI)	1,214	0.02	161	0.00	1,375	0.02
	Other DEC-managed lands	0	0.00	0	0.00	0	0.00
Native vegetation on other public lands		3,061,221	51.27	1,367	0.02	3,062,588	51.29
Native vegetation on leasehold lands		1,816,562	30.42	0	0.00	1,816,562	30.42
Native vegetation on freehold lands		64,924	1.09	0	0.00	64,924	1.09
Native vegetation with no tenure category assigned		12,620	0.21	2,415	0.04	15,035	0.25
Cleared areas		-	-	-	-	53,404	0.89
Unmapped islands*		-	-	-	-	118,576	1.99
<b>Total</b>		<b>5,792,474</b>	<b>97</b>	<b>6,460</b>	<b>0</b>	<b>5,970,914</b>	<b>100</b>

NB: some rounding errors may occur.

\* DEC regions may advise if these are to be included under additional intact habitat.

Please see the GIS Branch intranet site for the latest annual statistics in the following report:

- [Statewide Vegetation Statistics \(Full report\)](#). Statistic: Extent of Remnant Vegetation including on DEC-managed lands.

## Tenure

			Extent (ha)			Extent (%)			Number of reserves		
			2002	2012	Change	2002	2012	Change	2002	2012	Change
DEC-managed lands	Conservation reserves (IUCN Ia - IV)		810,409	810,189	-220	13.57	13.57	0.00	11	12	1
	DEC-managed lands proposed for conservation		35,269	35,446	177	0.59	0.59	0.00	1	1	0
	Conservation reserves (IUCN V & VI) <sup>1</sup>		0	3,059	3,059	0.00	0.05	0.05	0	3	3
	State forest / timber reserves		0	0	0	0.00	0.00	0.00	0	0	0
	Other DEC-managed lands		< 1	0	< 1	0.00	0.00	0.00	2	0	-2
Other lands	Unallocated crown lands		1,566,162	1,737,105	170,943	26.23	29.09	2.86	-	-	-
	Other crown reserves		1,242,784	1,243,147	363	20.81	20.82	0.01	-	-	-
		Crown reserves vested in Aboriginal Lands Trust*	-	1,203,931	-	-	20.16	-	-	-	-
	Pastoral leases^		1,685,604	1,814,290	128,686	28.23	30.39	2.16	-	-	-
		Pastoral leases held by Aboriginal Lands Trust*	-	0	-	-	0.00	-	-	-	-
	Other leasehold lands^		0	2,464	2,464	0.00	0.04	0.04	-	-	-
		General purpose leases held by Aboriginal Lands Trust*	-	0	-	-	0.00	-	-	-	-
	Freehold lands		302,727	64,924	-237,803	5.07	1.09	-3.98	-	-	-
		Freehold lands held by Aboriginal Lands Trust*	-	0	-	-	0.00	-	-	-	-
	Commonwealth lands (defence)		231,484	230,628	-856	3.88	3.86	-0.02	-	-	-
	Other public lands (roads and water bodies)		2,901	6,786	3,885	0.05	0.11	0.06	-	-	-
	No tenure category assigned <sup>†</sup>		93,575	22,878	-70,697	1.57	0.38	-1.19	-	-	-
<b>Total</b>			<b>5,970,915</b>	<b>5,970,916</b>	<b>-</b>	<b>100</b>	<b>100</b>	<b>-</b>	<b>14</b>	<b>16</b>	<b>-</b>

NB: some rounding errors may occur.

<sup>1</sup> The extents shown in this category include parts of marine reserves. This is due to misalignments of coastal boundaries between tenure and IBRA datasets.

\* Aboriginal Lands Trust data are only available for 2012. The extents shown are a subset of the category they sit below. These values should therefore not be summed since they are not mutually exclusive.

^ In 2002, there is not data to differentiate other leasehold lands. Therefore it is likely that the total extent shown for pastoral leases in 2002 includes both pastoral leases and other leasehold lands.

† The attributing of the state cadastral database has improved considerably over time. Therefore much of the land which had no tenure category assigned in 2002 will have been attributed and consequently distributed between other reporting categories in 2012. Much of this is expected to be distributed to the "Other public lands (roads and water bodies)" category, as road casings are progressively digitised and attributed, though increases in other categories is also possible as attributing improves.

Please see the GIS Branch intranet site for the latest annual statistics in the following report:

- [DPaW-Managed and Other IUCN Terrestrial Lands by IBRA Sub-Regions Report](#). Statistic: DEC-managed lands (extent only).

## Mining and petroleum

		IBRA sub-region					DEC-managed conservation reserves (IUCN Ia - IV)			DEC-managed lands proposed for conservation			DEC-managed conservation reserves (IUCN V & VI)			Other DEC-managed lands		
		2001/02	2001/02 % of IBRA sub-region	2012	2012 % of IBRA sub-region	Change^	2001/02	2012	Change	2001/02	2012	Change	2001/02	2012	Change	2001/02	2012	Change
Number of mining (live) tenements	Prospecting	1	N/A	0	N/A	-1	0	0	0	0	0	0	0	0	0	0	0	0
	Exploration	43	N/A	41	N/A	-2	0	2	2	0	0	0	0	1	1	0	0	0
	Mining	27	N/A	25	N/A	-2	0	0	0	0	0	0	0	0	0	0	0	0
	Other	3	N/A	3	N/A	0	1	1	0	0	0	0	0	0	0	0	0	0
Number of petroleum (active) titles	Exploration	0	N/A	0	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0
	Production	0	N/A	0	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0
Land area (ha)	Mining (live) tenements	611,231	10.24	843,789	14.13	3.89	12,334	18,641	6,307	0	0	0	0	88	88	0	0	0
	Petroleum (active) titles	0	0.00	0	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0
	Mining (live) tenements and petroleum (active) titles*	611,231	10.24	843,789	14.13	3.89	12,334	18,641	6,307	0	0	0	0	88	88	0	0	0

\*An area of land can have over it both a mining tenement and petroleum title. The combined total represents the land area which is covered by a mining tenement or petroleum title or both.

^For the Land Area "Change" is calculated as the difference in % coverage at the IBRA sub-region scale of the two year dates.

## Current dominant land uses

	Extent (ha)			Extent (%)		
	1996/97	2005/06	Change	1996/97	2005/06	Change
Miscellaneous (non-intensive use)*	1,849,516	1,945,877	96,361	30.98	32.59	1.61
Pastoralism	2,116,022	1,819,113	-296,909	35.44	30.47	-4.97
Traditional indigenous use	1,123,659	1,190,904	67,245	18.82	19.95	1.13
Conservation	705,291	847,181	141,890	11.81	14.19	2.38
Water (not classified)	9,616	3,088	-6,528	0.16	0.05	-0.11
Urban	237	856	619	0.00	0.01	0.01
Mining	287	251	-36	0.00	0.00	0.00
Native forestry	0	0	0	0.00	0.00	0.00
Plantation forestry	0	0	0	0.00	0.00	0.00
Agriculture (intensive use)	0	0	0	0.00	0.00	0.00
Water (man-made/man modified)	0	0	0	0.00	0.00	0.00
No data	166,286	163,647	-2,639	2.78	2.74	-0.04
<b>Total</b>	<b>5,970,914</b>	<b>5,970,917</b>	<b>-</b>	<b>100</b>	<b>100</b>	<b>-</b>

NB: some rounding errors may occur.

\* Largely unmodified natural systems under various land uses. See detailed descriptions.

See the methods document available [here](#) for definitions of the categories.

## Linear infrastructure

	Length (km)	Area of reporting region (ha)	Length per hectare (km/ha)
Roads (sub-region)	1,839	5,970,915	0.0003
Roads (Strategic Survey Roads in national parks, conservation parks and nature reserves)	23	810,189	< 0.0001
Railways (sub-region)	0	5,970,915	0.0000

## Complementary conservation initiatives to the formal conservation reserve system

	Extent (ha)			Extent (%)		
	2002	2012	Change	2002	2012	Change
Private conservation organisations' land	0	137,220	137,220	0.00	2.30	2.30
Nature Conservation covenants	0	0	0	0.00	0.00	0.00
Land for Wildlife properties	0	0	0	0.00	0.00	0.00
Combined total*	0	137,220	137,220	0.00	2.30	2.30

\* These conservation initiatives are not mutually exclusive. For example freehold land owned by a private conservation organisation may have a formal nature conservation covenant on its title. Therefore its area will be included in both category totals. The combined total represents the total extent of land which is covered by one or more initiative.

Please see the GIS Branch intranet site for the latest annual statistics in the following report:

- [\*DPaW-Managed and Other IUCN Terrestrial Lands by IBRA Sub-Regions Report\*](#). Statistic: Nature conservation covenants.

## Indigenous

		Extent (ha)			Extent (%)		
		2002	2012	Change	2002	2012	Change
Native Title determinations	On DEC-managed lands	0	268,193	268,193	0.00	4.49	4.49
	On all other lands	0	4,288,892	4,288,892	0.00	71.83	71.83
Commonwealth Indigenous Protected Areas		0	339,119	339,119	0.00	5.68	5.68

Please see the GIS Branch intranet site for the latest annual statistics in the following report:

- [\*DPaW-Managed and Other IUCN Terrestrial Lands by IBRA Sub-Regions Report\*](#). Statistic: Commonwealth Indigenous Protected Areas.

## Climate projection 2030, 2050 and 2070

### *Projected climate change scenarios (OzClim)*

ANNUAL	Projected (Average)			Change from Base Climate* (Average)			Change from Base Climate* (range)		
	2030	2050	2070	2030	2050	2070	2030	2050	2070
	High impact scenario								
Minimum Temperature (degrees C)	21.60	22.87	24.36	1.18	2.44	3.93	0.94 - 1.41	1.95 - 2.94	3.14 - 4.71
Maximum Temperature (degrees C)	34.46	35.90	37.60	1.34	2.79	4.48	0.99 - 1.68	2.07 - 3.49	3.32 - 5.62
Precipitation (mm)	946.21	823.30	703.47	-137.03	-259.94	-379.77	-181.70 - -86.80	-339.30 - -166.20	-488.60 - -245.20
	Medium impact scenario								
Minimum Temperature (degrees C)	21.36	22.01	22.65	0.94	1.59	2.23	0.75 - 1.12	1.27 - 1.91	1.78 - 2.67
Maximum Temperature (degrees C)	34.18	34.93	35.65	1.07	1.81	2.54	0.79 - 1.34	1.35 - 2.27	1.88 - 3.18
Precipitation (mm)	972.03	903.44	842.93	-111.20	-179.80	-240.31	-148.00 - -70.30	-237.10 - -114.30	-314.50 - -153.39

\* Base Climate is 1990

The Global Climate Change Model (GCM) used in both scenarios is CSIRO Mk3.5 (CSIRO: CSIRO Mk3.5 on OzClim).

For more information see <https://wiki.csiro.au/confluence/display/ozclim/Science#Science-CSIRO35>

#### Medium Impact Scenario:

- *Emission Scenario:* Medium CO<sub>2</sub> emissions, peaking around 2030 (SRES Marker Scenario A1B)
- *Climate Sensitivity (Rate of Global Warming):* Moderate rate of global warming corresponds to a global warming of 2.6°C for a doubling of CO<sub>2</sub> from 280 ppm to 560 ppm.

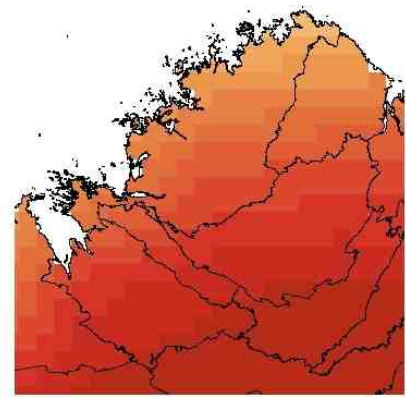
#### High Impact Scenario:

- *Emission Scenario:* High CO<sub>2</sub> emissions, increasing throughout the 21st century (SRES Marker Scenario A1FI)
- *Climate Sensitivity (Rate of Global Warming):* High rate of global warming corresponds to a global warming of 4.2°C for a doubling of CO<sub>2</sub> from 280 ppm to 560 ppm.

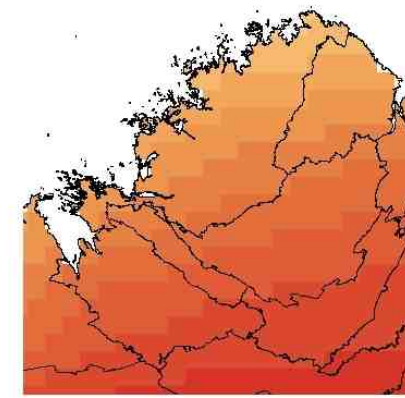




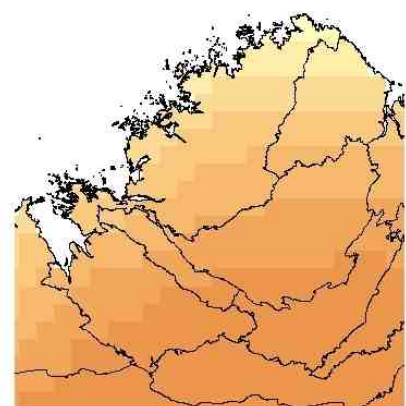
2050 - Change in annual maximum temperature (°C)  
High impact scenario



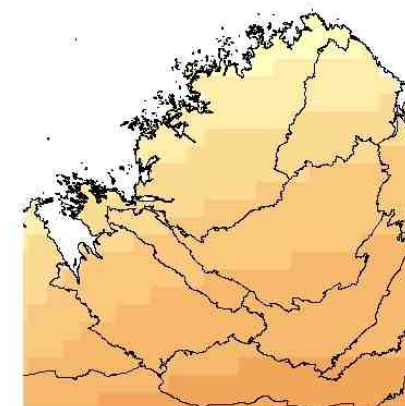
2050 - Change in annual minimum temperature (°C)  
High impact scenario



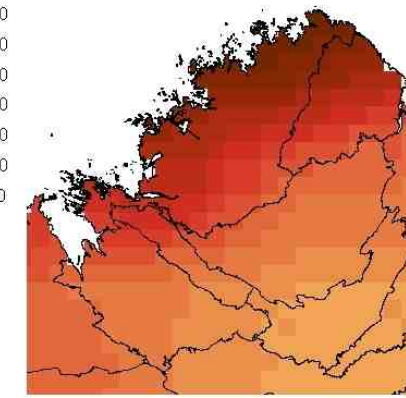
2050 - Change in annual maximum temperature (°C)  
Medium impact scenario



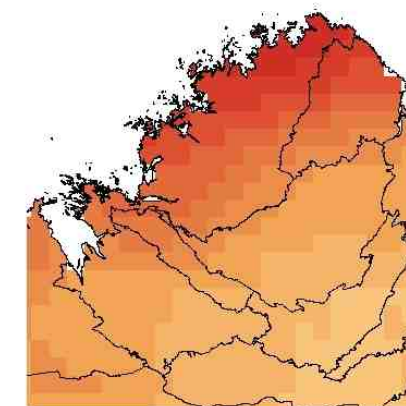
2050 - Change in annual minimum temperature (°C)  
Medium impact scenario



2050 - Change in annual rainfall (mm)  
High impact scenario



2050 - Change in annual rainfall (mm)  
Medium impact scenario



The change (anomaly) is from the base climate of 1990.

# BIODIVERSITY ASSETS

## Native vegetation

Please see the GIS Branch intranet site for the latest annual statistics in the following report:

- [Statewide Vegetation Statistics \(Full report\)](#). Statistic: All statistics except 'Currently remaining on other lands'.

Vegetation Association descriptions can be viewed [here](#) (worksheet "Veg Assoc Descriptions").

### *Dominant vegetation associations*

Dominant vegetation associations are those which together occupied 85% of the sub-region at the time of European settlement (when sorted from largest to smallest).

Beard's veg assoc no.	Percentage of veg assoc within sub- region (%)	Pre- European extent (ha)	Current extent (ha)	Percentage remaining (%)	Currently remaining on DEC-managed lands (ha)				Currently remaining on other lands (ha)		
					IUCN Ia-IV	Proposed for conservation	IUCN V-VI	Non-IUCN	Public lands	Leasehold lands	Freehold lands
<b>901</b>	62.73	2,999,343	2,924,937	97.52	564,139	28,359	414	0	1,630,072	681,572	18,250
<b>739</b>	71.71	1,510,379	1,491,518	98.75	121,974	6,519	82	0	675,844	654,989	31,769
<b>53</b>	49.83	481,285	479,212	99.57	50,288	0	0	0	206,757	215,651	6,431
<b>8001</b>	92.62	219,928	200,504	91.17	0	0	0	0	199,384	0	0

### *Unique vegetation associations*

Unique vegetation associations are those which were largely restricted to only one sub-region at the time of European settlement (i.e.  $\geq 85\%$  of the vegetation association falls within one sub-region).

Beard's veg assoc no.	Percentage of veg assoc within sub-region (%)	Pre-European extent (ha)	Current extent (ha)	Percentage remaining (%)	Currently remaining on DEC-managed lands (ha)				Currently remaining on other lands (ha)		
					IUCN Ia-IV	Proposed for conservation	IUCN V-VI	Non-IUCN	Public lands	Leasehold lands	Freehold lands
<b>773</b>	99.94	10,113	10,113	100.00	0	0	0	0	10,113	0	0
<b>717</b>	97.18	4,350	3,545	81.49	736	0	0	0	2,807	0	0
<b>902</b>	95.33	12,016	9,200	76.56	0	0	0	0	9,196	0	0
<b>8001</b>	92.62	219,928	200,504	91.17	0	0	0	0	199,384	0	0
<b>904</b>	85.12	122,764	121,320	98.82	7,138	0	9	0	72,269	37,550	4,307

### *Rare vegetation associations*

Rare vegetation associations are those which together occupied  $\leq 1\%$  of the state at the time of European settlement. The table below lists any rare vegetation associations which fall within this sub-region.

Beard's veg assoc no.	Percentage of veg assoc within sub- region (%)	Pre- European extent (ha)	Current extent (ha)	Percentage remaining (%)	Currently remaining on DEC-managed lands (ha)				Currently remaining on other lands (ha)		
					IUCN Ia-IV	Proposed for conservation	IUCN V-VI	Non-IUCN	Public lands	Leasehold lands	Freehold lands
<b>807</b>	69.45	1,462	1,462	100.00	0	0	0	0	506	955	0
<b>717</b>	97.18	4,350	3,545	81.49	736	0	0	0	2,807	0	0
<b>12</b>	81.20	6,963	6,963	100.00	0	0	0	0	0	6,963	0
<b>773</b>	99.94	10,113	10,113	100.00	0	0	0	0	10,113	0	0
<b>902</b>	95.33	12,016	9,200	76.56	0	0	0	0	9,196	0	0