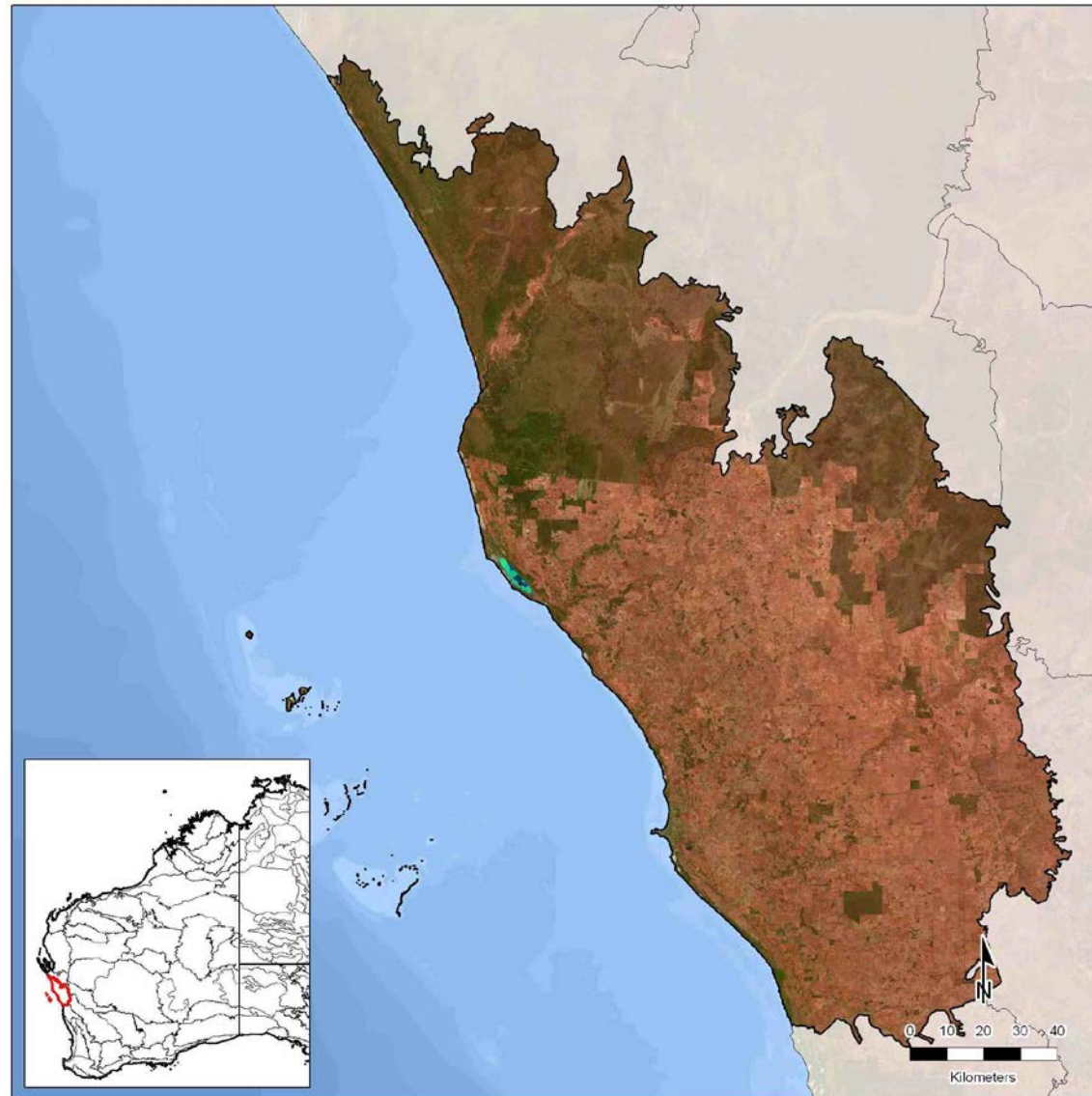


Geraldton Sandplains 1 Sub-region



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) (%)
1,969,997	0.78	100	46.22	13.89

*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)	272,773	13.85	2	0.00	272,775	13.85
	DEC-managed lands proposed for conservation	83,160	4.22	0	0.00	83,160	4.22
	Conservation reserves (IUCN V & VI)	0	0.00	0	0.00	0	0.00
	Other DEC-managed lands	51	0.00	0	0.00	51	0.00
Native vegetation on other public lands		175,794	8.92	1,343	0.07	177,137	8.99
Native vegetation on leasehold lands		192,152	9.75	1,448	0.07	193,600	9.83
Native vegetation on freehold lands		182,729	9.28	885	0.04	183,614	9.32
Native vegetation with no tenure category assigned		207	0.01	10	0.00	217	0.01
Cleared areas		-	-	-	-	1,057,824	53.70
Unmapped islands*		-	-	-	-	1,620	0.08
Total		906,866	46	3,688	0	1,969,998	100

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)	272,442	273,585	1,143	13.83	13.89	0.06	36	40	4
	DEC-managed lands proposed for conservation	837 ¹	83,632	82,795	0.04	4.25	4.21	0 ¹	7	7
	Conservation reserves (IUCN V & VI)	0	0	0	0.00	0.00	0.00	0	0	0
	State forest / timber reserves	0	0	0	0.00	0.00	0.00	0	0	0
	Other DEC-managed lands	< 1	156	156	0.00	0.01	0.01	1	3	2
Other lands	Unallocated crown lands	153,586	152,570	-1,016	7.80	7.74	-0.06	-	-	-
	Other crown reserves	23,041	24,309	1,268	1.17	1.23	0.06	-	-	-
		Crown reserves vested in Aboriginal Lands Trust*	-	2	-	-	0.00	-	-	-
	Pastoral leases [^]	259,511	179,319	-80,192	13.17	9.10	-4.07	-	-	-
		Pastoral leases held by Aboriginal Lands Trust*	-	0	-	-	0.00	-	-	-
	Other leasehold lands [^]	0	18,262	18,262	0.00	0.93	0.93	-	-	-
		General purpose leases held by Aboriginal Lands Trust*	-	0	-	-	0.00	-	-	-
	Freehold lands	1,236,350	1,215,688	-20,662	62.76	61.71	-1.05	-	-	-
		Freehold lands held by Aboriginal Lands Trust*	-	0	-	-	0.00	-	-	-
	Commonwealth lands (defence)	445	445	0	0.02	0.02	0.00	-	-	-
	Other public lands (roads and water bodies)	2,906	21,253	18,347	0.15	1.08	0.93	-	-	-
	No tenure category assigned [†]	20,881	778	-20,103	1.06	0.04	-1.02	-	-	-
Total		1,969,999	1,969,997	-	100	100	-	37	50	-

NB: some rounding errors may occur.

¹ While 837 ha of DEC-managed lands proposed for conservation are included in the 2002 extents, no count is included in the number of reserves. This is since the majority of the property falls in Yalgoo 1 and Carnarvon 2, with only a small proportion (< 1%) Geraldton Sandplains 1.

* 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	2	N/A	2	N/A	0	1	0	-1	0	0	0	0	0	0	0	0	0	0
	Exploration	7	N/A	27	N/A	20	0	1	1	1	1	0	0	0	0	0	0	0	0
	Mining	8	N/A	13	N/A	5	1	2	1	0	0	0	0	0	0	0	0	0	0
	Other	0	N/A	0	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of petroleum (active) titles	Exploration	4	N/A	12	N/A	8	2	5	3	0	0	0	0	0	0	0	0	1	1
	Production	3	N/A	3	N/A	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Land area (ha)	Mining (live) tenements	81,662	4.15	230,436	11.70	7.55	7	589	582	1	683	682	0	0	0	0	0	0	0
	Petroleum (active) titles	160,900	8.17	259,793	13.19	5.02	4,125	536	-3,589	0	0	0	0	0	0	0	< 1	< 1	
	Mining (live) tenements and petroleum (active) titles*	239,139	12.14	427,550	21.70	9.56	4,132	1,124	-3,008	1	683	682	0	0	0	0	< 1	< 1	

*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
Agriculture (intensive use)	898,846	1,090,738	191,892	45.63	55.37	9.74
Miscellaneous (non-intensive use)*	147,238	428,668	281,430	7.47	21.76	14.29
Conservation	283,163	309,608	26,445	14.37	15.72	1.35
Pastoralism	629,388	122,938	-506,450	31.95	6.24	-25.71
Urban	2,922	6,651	3,729	0.15	0.34	0.19
Plantation forestry	0	2,400	2,400	0.00	0.12	0.12
Water (not classified)	2,830	2,194	-636	0.14	0.11	-0.03
Traditional indigenous use	0	0	0	0.00	0.00	0.00
Native forestry	0	0	0	0.00	0.00	0.00
Mining	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	5,609	6,800	1,191	0.28	0.35	0.07
Total	1,969,996	1,969,997	-	100	100	-

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)	4,873	1,969,997	0.0025
Roads (Strategic Survey Roads in national parks, conservation parks and nature reserves)	796	273,585	0.0029
Railways (sub-region)	212	1,969,997	0.0001

Complementary conservation initiatives to the formal conservation reserve system

	Extent (ha)			Extent (%)		
	2002	2012	Change	2002	2012	Change
Private conservation organisations' land	0	29,586	29,586	0.00	1.50	1.50
Nature Conservation covenants	22	547	525	0.00	0.03	0.03
Land for Wildlife properties	2,020	2,741	721	0.10	0.14	0.04
Combined total*	2,043	32,350	30,307	0.10	1.64	1.54

* 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	0	0	0.00	0.00	0.00
	On all other lands	0	0	0	0.00	0.00	0.00
Commonwealth Indigenous Protected Areas		0	0	0	0.00	0.00	0.00

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)	14.66	16.03	17.64	1.27	2.65	4.26	1.17 - 1.39	2.45 - 2.88	3.93 - 4.63
Maximum Temperature (degrees C)	28.55	30.05	31.81	1.39	2.89	4.65	1.27 - 1.54	2.63 - 3.20	4.23 - 5.15
Precipitation (mm)	284.68	240.23	201.27	-54.00	-98.46	-137.42	-61.80 - -44.90	-114.60 - -80.90	-162.50 - -111.30
	Medium impact scenario								
Minimum Temperature (degrees C)	14.40	15.11	15.80	1.01	1.72	2.41	0.94 - 1.10	1.59 - 1.88	2.23 - 2.62
Maximum Temperature (degrees C)	28.27	29.04	29.80	1.11	1.88	2.64	1.01 - 1.23	1.71 - 2.08	2.40 - 2.92
Precipitation (mm)	294.55	268.75	247.04	-44.14	-69.95	-91.65	-50.40 - -36.80	-80.60 - -58.00	-106.40 - -75.40

* Base Climate is 1990

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

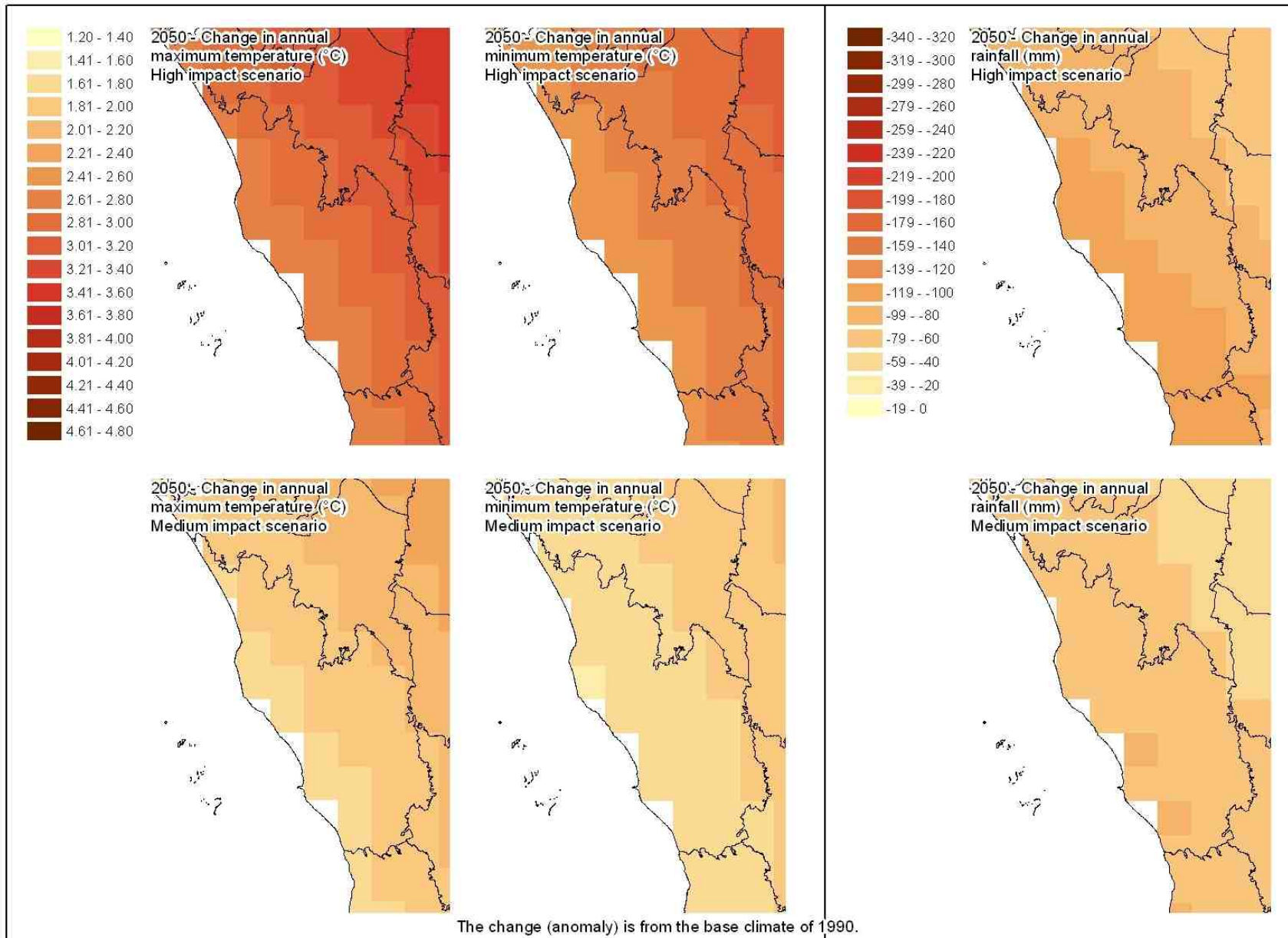
For more information see <https://wiki.csiro.au/confluence/display/ozclim/Science#Science-CSIRO35>

Medium Impact Scenario:

- *Emission Scenario:* Medium CO₂ 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 CO₂ from 280 ppm to 560 ppm.

High Impact Scenario:

- *Emission Scenario:* High CO₂ 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 CO₂ from 280 ppm to 560 ppm.



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
380	87.48	507,697	320,016	63.03	90,420	36,018	0	29	97,193	65,556	30,767
408	100.00	328,527	149,303	45.45	94,441	5,199	0	0	4,948	5,163	39,553
35	100.00	184,502	31,397	17.02	766	0	0	0	4,927	103	25,601
379	32.22	176,477	18,184	10.30	7,396	0	0	0	1,699	0	9,088
36	23.84	118,107	83,020	70.29	15,998	0	0	0	46,532	16,048	4,443
353	99.44	96,824	7,644	7.89	505	0	0	18	516	0	6,605
372	100.00	82,084	31,756	38.69	24,208	0	0	3	567	298	6,679
675	100.00	51,851	14,191	27.37	351	514	0	0	341	77	12,908
402	98.32	50,724	50,407	99.38	7,287	24,383	0	0	26	18,659	46
17	64.73	49,605	42,020	84.71	5,259	314	0	0	2,089	29,701	4,651
359	99.83	44,418	11,065	24.91	1	413	0	0	1,240	4	9,407

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
408	100.00	328,527	149,303	45.45	94,441	5,199	0	0	4,948	5,163	39,553
35	100.00	184,502	31,397	17.02	766	0	0	0	4,927	103	25,601
372	100.00	82,084	31,756	38.69	24,208	0	0	3	567	298	6,679
675	100.00	51,851	14,191	27.37	351	514	0	0	341	77	12,908
407	100.00	31,807	31,807	100.00	16,328	3,141	0	0	423	11,915	0
1141	100.00	10,956	5,458	49.82	0	0	0	0	266	0	5,192
351	100.00	8,403	408	4.86	3	0	0	0	1	0	404
1142	100.00	3,415	1,050	30.75	788	0	0	0	27	0	235
424	100.00	2,785	2,785	100.00	2,770	0	0	0	15	0	0
386	100.00	2,262	2,262	100.00	0	114	0	0	62	2,087	0
371	99.98	32,808	3,499	10.67	242	0	0	0	589	149	2,519
359	99.83	44,418	11,065	24.91	1	413	0	0	1,240	4	9,407
401	99.62	32,604	32,604	100.00	325	7,705	0	0	20	24,554	0
353	99.44	96,824	7,644	7.89	505	0	0	18	516	0	6,605
403	99.16	11,537	11,106	96.26	1,989	4,334	0	0	109	4,623	0
431	98.54	5,959	4,892	82.09	52	0	0	0	590	0	4,249
402	98.32	50,724	50,407	99.38	7,287	24,383	0	0	26	18,659	46
440	89.14	3,752	2,812	74.95	196	0	0	0	1,755	2	853
380	87.48	507,697	320,016	63.03	90,420	36,018	0	29	97,193	65,556	30,767

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
392	1.43	44	14	31.82	0	0	0	0	13	0	0
360	34.58	83	83	100.00	0	83	0	0	0	0	0
405	1.92	493	389	78.90	0	0	0	0	328	1	60
413	50.32	1,748	369	21.11	0	2	0	0	55	0	312
386	100.00	2,262	2,262	100.00	0	114	0	0	62	2,087	0
424	100.00	2,785	2,785	100.00	2,770	0	0	0	15	0	0
1142	100.00	3,415	1,050	30.75	788	0	0	0	27	0	235
440	89.14	3,752	2,812	74.95	196	0	0	0	1,755	2	853
412	41.84	3,939	712	18.08	0	0	0	0	42	0	670
383	39.96	5,312	4,839	91.10	2,347	0	0	0	1,508	0	973
431	98.54	5,959	4,892	82.09	52	0	0	0	590	0	4,249
387	55.07	8,204	6,926	84.42	0	491	0	0	292	5,085	1,058
351	100.00	8,403	408	4.86	3	0	0	0	1	0	404
1141	100.00	10,956	5,458	49.82	0	0	0	0	266	0	5,192
403	99.16	11,537	11,106	96.26	1,989	4,334	0	0	109	4,623	0