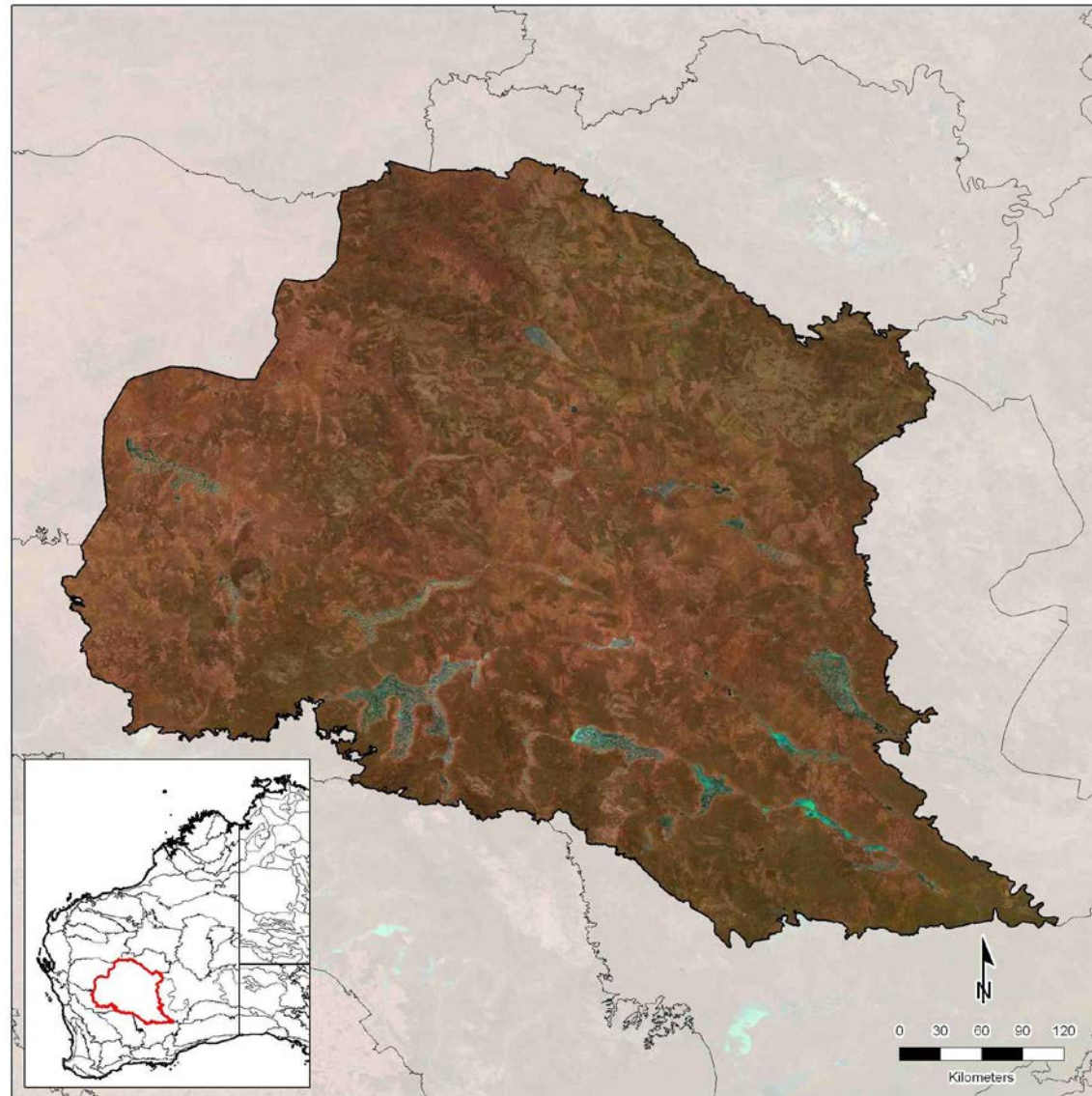


Murchison 1 Sub-region



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) (%)
21,135,046	8.36	100	99.67	1.37

*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)	290,319	1.37	0	0.00	290,319	1.37
	DEC-managed lands proposed for conservation	1,411,880	6.68	0	0.00	1,411,880	6.68
	Conservation reserves (IUCN V & VI)	13,238	0.06	0	0.00	13,238	0.06
	Other DEC-managed lands	0	0.00	0	0.00	0	0.00
Native vegetation on other public lands		3,168,862	14.99	3	0.00	3,168,865	14.99
Native vegetation on leasehold lands		16,150,201	76.41	19	0.00	16,150,220	76.41
Native vegetation on freehold lands		30,938	0.15	0	0.00	30,938	0.15
Native vegetation with no tenure category assigned		529	0.00	0	0.00	529	0.00
Cleared areas		-	-	-	-	69,095	0.33
Total		21,065,967	100	22	0	21,135,084	100

NB: some rounding errors may occur.

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)		291,814	290,319	-1,495	1.38	1.37	-0.01	6	7	1
	DEC-managed lands proposed for conservation		1,027,953	1,412,390	384,437	4.86	6.68	1.82	8	14	6
	Conservation reserves (IUCN V & VI)		0	13,238	13,238	0.00	0.06	0.06	0	1	1
	State forest / timber reserves		0	0	0	0.00	0.00	0.00	0	0	0
	Other DEC-managed lands		13,238	0	-13,238	0.06	0.00	-0.06	1	0	-1
Other lands	Unallocated crown lands		2,198,877	2,413,008	214,131	10.40	11.42	1.02	-	-	-
	Other crown reserves		452,594	474,878	22,284	2.14	2.25	0.11	-	-	-
		Crown reserves vested in Aboriginal Lands Trust*	-	28,729	-	-	0.14	-	-	-	-
	Pastoral leases^		15,827,474	16,087,378	259,904	74.89	76.12	1.23	-	-	-
		Pastoral leases held by Aboriginal Lands Trust*	-	0	-	-	0.00	-	-	-	-
	Other leasehold lands^		0	107,476	107,476	0.00	0.51	0.51	-	-	-
		General purpose leases held by Aboriginal Lands Trust*	-	92	-	-	0.00	-	-	-	-
	Freehold lands		1,008,370	32,032	-976,338	4.77	0.15	-4.62	-	-	-
		Freehold lands held by Aboriginal Lands Trust*	-	0	-	-	0.00	-	-	-	-
	Commonwealth lands (defence)		0	0	0	0.00	0.00	0.00	-	-	-
	Other public lands (roads and water bodies)		281,753	303,831	22,078	1.33	1.44	0.11	-	-	-
	No tenure category assigned†		33,010	532	-32,478	0.16	0.00	-0.16	-	-	-
Total			21,135,083	21,135,082	-	100	100	-	15	22	-

NB: some rounding errors may occur.

* 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	2,425	N/A	3,539	N/A	1,114	0	0	0	7	30	23	0	1	1	0	0	0
	Exploration	1,401	N/A	2,506	N/A	1,105	6	22	16	31	163	132	2	6	4	0	0	0
	Mining	2,062	N/A	2,437	N/A	375	3	5	2	20	34	14	0	0	0	0	0	0
	Other	4	N/A	4	N/A	0	0	0	0	1	1	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	3,398,401	16.08	10,013,422	47.38	31.30	27,716	113,866	86,150	63,355	771,421	708,066	326	1,333	1,007	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*	3,398,401	16.08	10,013,422	47.38	31.30	27,716	113,866	86,150	63,355	771,421	708,066	326	1,333	1,007	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
Pastoralism	18,034,265	17,863,567	-170,698	85.33	84.52	-0.81
Miscellaneous (non-intensive use)*	2,055,373	2,216,059	160,686	9.72	10.49	0.77
Conservation	654,582	659,005	4,423	3.10	3.12	0.02
Water (not classified)	336,398	329,564	-6,834	1.59	1.56	-0.03
Traditional indigenous use	25,688	35,539	9,851	0.12	0.17	0.05
Mining	13,142	14,320	1,178	0.06	0.07	0.01
Agriculture (intensive use)	0	13,900	13,900	0.00	0.07	0.07
Water (man-made/man modified)	0	1,700	1,700	0.00	0.01	0.01
Native forestry	14,190	1,400	-12,790	0.07	0.01	-0.06
Urban	1,414	0	-1,414	0.00	0.00	0.00
Plantation forestry	0	0	0	0.00	0.00	0.00
No data	0	0	0	0.00	0.00	0.00
Total	21,135,052	21,135,054	-	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)	39,820	21,135,046	0.0019
Roads (Strategic Survey Roads in national parks, conservation parks and nature reserves)	279	290,319	0.0010
Railways (sub-region)	240	21,135,046	<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	0	0	0.00	0.00	0.00
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	0	0	0.00	0.00	0.00

* 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)	15.41	17.28	19.47	1.73	3.60	5.79	1.48 - 1.88	3.07 - 3.91	4.92 - 6.29
Maximum Temperature (degrees C)	29.84	31.99	34.51	1.99	4.14	6.66	1.71 - 2.15	3.55 - 4.46	5.72 - 7.19
Precipitation (mm)	204.98	167.00	135.99	-52.63	-90.61	-121.63	-64.40 - -32.40	-109.30 - -55.10	-145.39 - -73.50
	Medium impact scenario								
Minimum Temperature (degrees C)	15.06	16.02	16.96	1.38	2.34	3.28	1.16 - 1.50	2.00 - 2.55	2.79 - 3.56
Maximum Temperature (degrees C)	29.43	30.54	31.62	1.59	2.70	3.77	1.36 - 1.71	2.31 - 2.91	3.24 - 4.07
Precipitation (mm)	213.96	190.93	172.60	-43.66	-66.68	-85.01	-53.60 - -27.00	-81.10 - -40.80	-102.70 - -51.80

* Base Climate is 1990

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

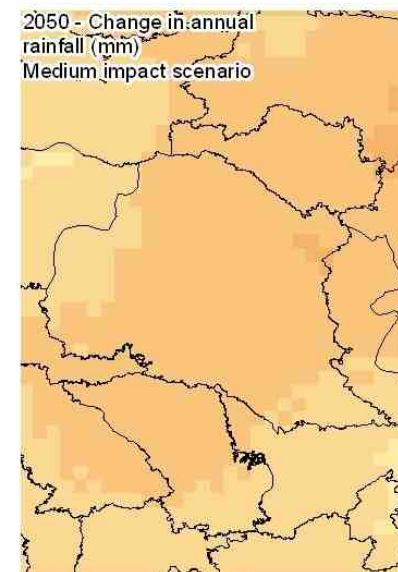
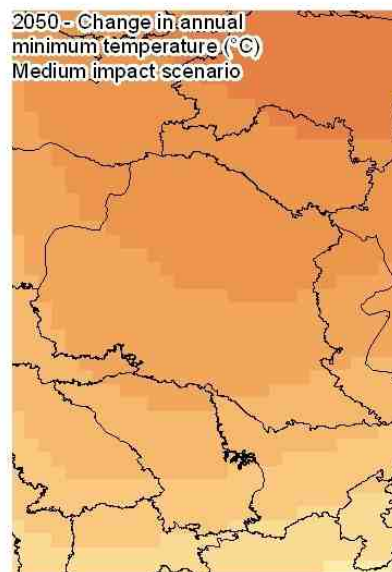
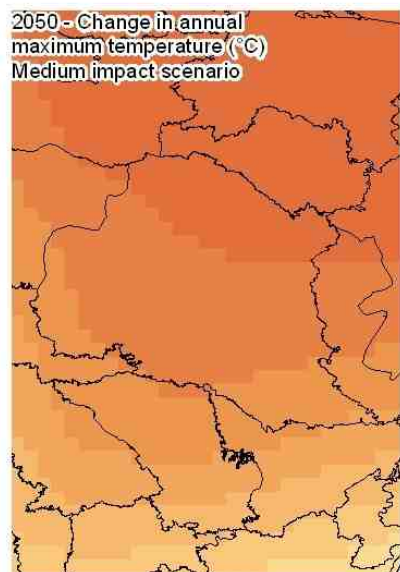
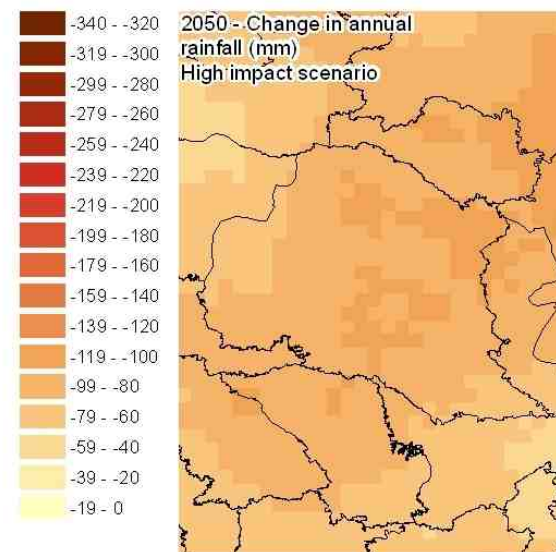
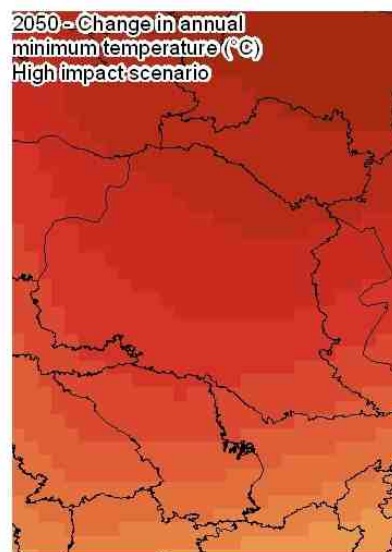
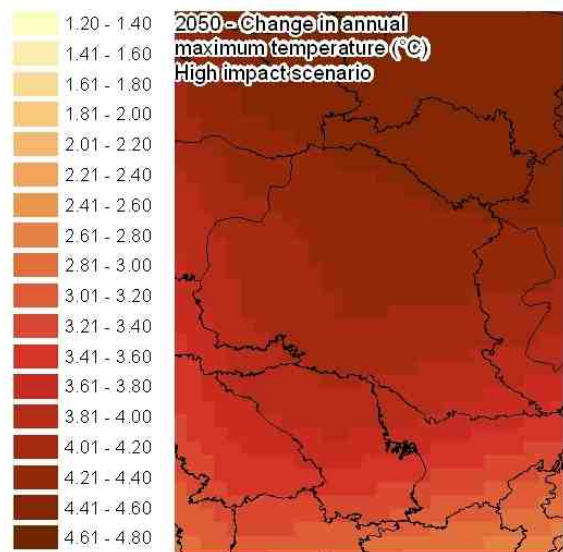
For more information see <https://wiki.csiro.au/confluence/display/ozclim/Science#Science-CSIRO35>

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.



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
18	51.63	10,269,900	10,234,842	99.66	45,582	479,881	0	0	741,744	8,960,722	6,398
107	98.93	2,785,302	2,783,910	99.95	46,522	275,884	0	0	864,027	1,597,013	464
20	90.67	1,174,259	1,171,631	99.78	104,409	58,445	13,077	0	271,318	719,934	4,447
29	10.07	796,235	796,026	99.97	0	84,001	0	0	62,509	649,354	163
39	10.76	711,330	701,935	98.68	232	27,358	0	0	56,292	617,238	815
125	20.11	701,137	699,920	99.83	3,894	46,099	0	0	347,243	302,424	261
389	76.90	493,978	492,089	99.62	2,059	20,923	0	0	48,616	420,326	166
676	17.90	369,325	369,212	99.97	0	3,111	0	0	33,907	329,684	2,509
109	32.69	310,284	309,323	99.69	75,849	0	0	0	75,793	153,436	4,234
202	62.12	278,616	278,526	99.97	0	66,601	0	0	66,219	145,669	37
483	54.28	238,599	238,567	99.99	274	26,733	0	0	81,162	130,353	45

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
862	100.00	210,381	210,360	99.99	0	55,859	0	0	915	153,586	0
400	100.00	190,824	189,665	99.39	0	0	0	0	16,756	172,898	12
2121	100.00	124,419	123,396	99.18	0	0	0	0	8,951	114,350	95
338	100.00	98,404	98,401	100.00	0	0	0	0	14,433	83,957	11
560	100.00	84,725	84,725	100.00	0	0	0	0	985	83,740	0
1127	100.00	69,078	69,078	100.00	0	12,323	0	0	25,790	30,929	36
313	100.00	68,844	65,261	94.80	0	0	0	0	10,936	53,782	542
865	100.00	64,234	64,234	100.00	0	29,219	0	0	0	35,015	0
312	100.00	41,502	39,528	95.24	0	0	0	0	3,695	35,566	266
863	100.00	38,139	38,139	100.00	0	0	0	0	28	38,111	0
339	100.00	27,110	27,109	100.00	0	0	0	0	76	27,032	0
532	100.00	21,473	21,473	100.00	0	0	0	0	0	21,473	0
561	100.00	5,093	4,579	89.91	0	0	0	0	2,322	2,035	223
418	100.00	4,374	4,374	100.00	0	4,374	0	0	0	0	0
223	100.00	2,597	2,597	100.00	0	0	0	0	51	2,546	0
2902	100.00	930	930	100.00	0	0	0	0	164	766	0
417	100.00	21,089	21,089	100.00	2,448	17,703	0	0	939	0	0
2903	99.95	28,295	27,317	96.54	0	0	0	0	6,118	20,741	458
107	98.93	2,785,302	2,783,910	99.95	46,522	275,884	0	0	864,027	1,597,013	464
484	98.21	69,401	69,401	100.00	373	4,092	0	0	5,384	59,552	0
485	97.28	210,081	210,066	99.99	0	25,644	0	0	131,259	53,163	0
533	95.77	165,106	165,065	99.98	0	25,734	0	0	34,067	105,166	98
20	90.67	1,174,259	1,171,631	99.78	104,409	58,445	13,077	0	271,318	719,934	4,447

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
2902	100.00	930	930	100.00	0	0	0	0	164	766	0
223	100.00	2,597	2,597	100.00	0	0	0	0	51	2,546	0
418	100.00	4,374	4,374	100.00	0	4,374	0	0	0	0	0
561	100.00	5,093	4,579	89.91	0	0	0	0	2,322	2,035	223
121	67.07	5,201	5,201	100.00	0	5,164	0	0	37	0	0
268	41.96	6,524	6,524	100.00	0	0	0	0	11	6,513	0
188	30.73	7,879	7,821	99.26	0	0	0	0	1,903	5,876	41
417	100.00	21,089	21,089	100.00	2,448	17,703	0	0	939	0	0
532	100.00	21,473	21,473	100.00	0	0	0	0	0	21,473	0
339	100.00	27,110	27,109	100.00	0	0	0	0	76	27,032	0