

## Appendix B: Tables

**Table 1: Summary of Plant communities' (PC) attributes and their comparison with EPA criteria for determination of conservation significance of native vegetation**

EPA criteria of significance/PC number	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13	PC14	PC15	PC16	PC17
<b>Representation</b>																	
PCs that show close floristic association with BVAs											387	387	359		413 & 675	35	35
PCs with characteristics included in broader BVA descriptions				129										359			
PC that are most likely to occur outside the study area	x	x	x			x	x	x		x	?	?	x		?	x	x
% of current extent in DEC managed lands							0.14							22.3	3.2	25.7	
% of current extent reserved as dune/landscape protection in the Local Planning Schemes	3.38	4.32	33.1	0.00	0.00	76.12	9.06	18.69	5.3	5.49	0.00	0.00	17.34	70.38	0.00	0.00	0.00
% vested for conservation but reserved for recreation in the Local Planning Schemes			0.4							0.28			12.1		?**	?**	
<b>Rarity</b>																	
PC with less than 400 ha	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	
Potentially restricted to the study area								x	x	x	x	x	x				
Associated with TEC or PEC														P1			
DRF*			x											x	x		
Priority flora*		x							x	x	x	x	x	x	x		
<b>Diversity</b>																	
Number of species recorded during the survey	7	3-11	5	4	7	13	15	5-14	11	2-18	15	11-23	4-30	19-31	21-48	22-34	21
More than 1 flora species of conservation significance														x	x		
<b>Riparian, wetlands and costal vegetation</b>																	
Riparian		x															
Estuarine	x																
Coastal vegetation			x	x	x	x	?	x	x								
<b>Conservation significance as recommended in the GRFVS report</b>																	
High or priority for further investigation				x	x	x	x	x	x	x			x		x		
Due to high level of disturbance across their range	x	x	x								x	x	x		x	x	
% of current extent within Local Planning Scheme land use categories with high constraints to native vegetation conservation	25.91	15.10	24.89	100	0.00	10.8	2.57	32.32	5.94	48.39	40.4	32.84	17.55	0.63	3.61	5.26	0.00

\* based on DEC database and information from the OPT PER document (OPR , 2010) OPR Rail Development Public Environmental Review, Oakajee Port and Rail Pty Ltd

\*\* In R16200 (17 ha) that is vested for Conservation/Recreation, reserved for Parks & Recreation in the Shire of Chapman Valley Local Planning Scheme. More detailed information is needed on the proportion of the Reserve that will be retained for conservation as well as which part as PC 13, 15 and 16 are represented within its boundaries.

**Table 2: Distribution of native vegetation by Beard vegetation associations across Local Planning Scheme land-use categories (in hectares)**

LPS ZONES & RESERVES*	BVA 35	BVA 129	BVA 359	BVA 371	BVA 387	BVA 413	BVA 431	BVA 440	BVA 675	TOTAL
Central Geraldton			11.95					3.85		
Local Centre		0.16	1.22							
West End								5.60		
Commercial							4.98	5.48		
Development			121.39	7.85			2.08			
District distributor road		0.19	16.13	0.01				1.78		
Important regional road	25.22		4.54			10.94			7.50	
Primary distributor road			14.37							
Road			36.74	10.87			6.45			
Railway			0.75	4.97						
Industrial investigation		82.58	397.57			4.75		321.91		
Industry - general			54.25	22.05						
Industry - light			4.81	1.06						
Industry - port								4.17		
Residential		16.02	328.48	1.59			5.69	140.34		
Residential development		15.51	35.49	5.81			29.28	0.03		
Civic and Cultural			0.11							
Resort development/Tourist				5.42			6.40	0.14		
<b>Total highly constrained</b>	<b>25.22</b>	<b>114.46</b>	<b>1027.80</b>	<b>59.63</b>	<b>0.00</b>	<b>15.69</b>	<b>54.88</b>	<b>483.3</b>	<b>7.5</b>	<b>1788.48</b>
<b>% of total remaining in the study area</b>	<b>4.60</b>	<b>27.86</b>	<b>35.10</b>	<b>17.48</b>	<b>0.00</b>	<b>5.2</b>	<b>14.5</b>	<b>63.6</b>	<b>3.20</b>	<b>30.30</b>
Rural	4.9	96.14	631.95	83.26	1.57		78.97	23.04	18.50	
Rural Smallholdings			64.08							
Special Rural			3.84			26.95			0.74	
Rural Residential			254.31	1.40					3.68	
Special & Public use		9.38	9.60	1.72				9.47		
Community & Public Purposes	0.09	5.27	64.68	1.30				11.2		
Parks & Recreation**	56.59	53.81	174.96	138.34		12.14	157.03	40.64	94.59	728.1
No zone	4.82		4.02			1.10		0.63	0.88	
<b>Total with varied opportunities</b>	<b>66.4</b>	<b>164.6</b>	<b>1207.44</b>	<b>226.02</b>	<b>1.57</b>	<b>40.19</b>	<b>236</b>	<b>84.98</b>	<b>118.39</b>	<b>2145.59</b>
<b>% of total remaining in the study area</b>	<b>12.2</b>	<b>40.10</b>	<b>41.3</b>	<b>66.30</b>	<b>100.00</b>	<b>13.32</b>	<b>62.0</b>	<b>11.2</b>	<b>50.40</b>	<b>36.35</b>
<b>% of total in Recreation</b>	<b>10.40</b>	<b>13.10</b>	<b>6.00</b>	<b>40.55</b>	<b>0.00</b>	<b>4.02</b>	<b>41.3</b>	<b>5.30</b>	<b>40.3</b>	<b>12.33</b>
Waterway/Ocean				4.83			10.44			
Landscape and coastal protection		15.15	209.69	4.86				30.36		260.06
Dune preservation		94.17	0.20	4.81			79.16			178.34
General farming	453.89	22.46	480.15	40.94		245.78		162.01	109.01	
<b>Total protected or with good opportunities</b>	<b>453.89</b>	<b>131.78</b>	<b>690.04</b>	<b>55.44</b>	<b>0.00</b>	<b>245.78</b>	<b>89.6</b>	<b>192.37</b>	<b>109.01</b>	<b>1967.91</b>
<b>% of total remaining in the study area</b>	<b>83.2</b>	<b>32.10</b>	<b>23.60</b>	<b>16.22</b>	<b>0.00</b>	<b>81.5</b>	<b>23.5</b>	<b>25.2</b>	<b>46.4</b>	<b>33.35</b>
<b>% of original within Landscape &amp; dune protection</b>	<b>0.00</b>	<b>26.6</b>	<b>7.17</b>	<b>2.83</b>	<b>0.00</b>	<b>0.00</b>	<b>20.8</b>	<b>21.3</b>	<b>0.00</b>	<b>7.42</b>
<b>% of original extant in DEC managed lands</b>	<b>1.16</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.85</b>	<b>0.38</b>	

LPS ZONES & RESERVES*	BVA 35	BVA 129	BVA 359	BVA 371	BVA 387	BVA 413	BVA 431	BVA 440	BVA 675	TOTAL
	BVA 35	BVA 129	BVA 359	BVA 371	BVA 387	BVA 413	BVA 431	BVA 440	BVA 675	TOTAL
Total in CGG & SCV portion*	545.51	410.84	2925.30	341.08	1.57	301.66	380.48	760.65	234.9	5901.99
Total in the study area	549.00	406.00	3077.00	348.00	1.57	316.00	367.00	807.00	240.00	6111.60
Original extent in the study area	2388.00	869.00	16469.00	8596.00	7.00	1454.00	507.00	1506.00	612.00	32410.00

\* Land use categories based on: City of Geraldton-Greenough Local Planning Schemes: TPS No 1A, TPS No 3 and LPS No 5 and Shire of Chapman Valley TPS No 1.

\*\* Includes areas within the current DEC managed lands (BVA 35 and BVA675)

\*\*\* Totals shown are less than totals in the study area because portion of the study area is within the shire of Northampton, not included in this analysis and parts sections of land use categories do not align in the spatial datasets, resulting in gaps.

Note: In all statistical analysis that use the Local Planning Scheme datasets, the total area of native vegetation is less than the total of 6041ha native vegetation mapped in the study area.

The reasons are:

- Local Planning Schemes boundaries used to assess the opportunities and constraints for native vegetation retention do not overlap with native vegetation data layers, in particular in the Greenough River estuary area
- Portion of remnant vegetation in the study area is within the Shire of Northampton, not covered by the Local Planning Scheme datasets used in this study.

As the difference is around 1 per cent of the total remnant vegetation remaining in the study area, this considered is statistically insignificant.



**Table 4: Distribution of native vegetation by conservation significance categories and land use categories of the Draft GGSP 2010 Update (in hectares)**

<b>Highly constrained land use categories:</b>	<b>1A</b>	<b>1B</b>	<b>1C</b>	<b>2A</b>	<b>2B</b>	<b>3</b>	<b>Total</b>
Central Geraldton	15.87						15.87
Industrial	25.79	63.14					88.93
Future Industrial	0.02	85.05					85.07
Port Industry and Installation	2.58	1.85					4.43
Strategic Industry	120	357.27	4.07	17.5	265.21	46.21	810.26
Future Urban	103.29	194.62	3.78	2.17	11.33	64.4	379.59
Urban	154.27	523.35			95.53	64.84	837.99
Primary Distributor Road	63.7	66.68	4.31				134.69
Regional Distributor Road	4.34	19.35					23.69
Railway Reserve	5.07	0.81					5.88
West End	6.59				0.62		7.21
Public Utility	12.73	34.15			3.17	8.51	58.56
<b>Subtotal</b>	<b>514.25</b>	<b>1346.27</b>	<b>12.16</b>	<b>19.67</b>	<b>375.86</b>	<b>183.96</b>	<b>2452.17</b>
<b>% of total vegetation remaining</b>	<b>8.5</b>	<b>22.4</b>	<b>0.2</b>	<b>0.3</b>	<b>6.2</b>	<b>3</b>	<b>40.7</b>
<b>Land uses with some opportunities for native vegetation retention</b>	<b>1A</b>	<b>1B</b>	<b>1C</b>	<b>2A</b>	<b>2B</b>	<b>3</b>	
Community Purpose		31.11					31.11
Rural Living	43.33	319.83					363.16
Rural	916.26	733.18	12.37	19.88	88.89	120.95	1891.53
<b>Subtotal</b>	<b>959.59</b>	<b>1084.12</b>	<b>12.37</b>	<b>19.88</b>	<b>88.89</b>	<b>120.95</b>	<b>2285.8</b>
<b>% of total vegetation remaining</b>	<b>15.9</b>	<b>17.9</b>	<b>0.2</b>	<b>0.3</b>	<b>1.5</b>	<b>2</b>	<b>38</b>
<b>Land uses with good opportunities for native vegetation retention</b>	<b>1A</b>	<b>1B</b>	<b>1C</b>	<b>2A</b>	<b>2B</b>	<b>3</b>	
Future Rural Living	80.45	4.45					84.9
Foreshore Protection	97.94	0.82	0.05		0.94	0.08	99.83
Regional Park, Recreation & Conservation	612.19	273.03	0.38	42.54	11.28	156.37	1095.79
<b>Subtotal</b>	<b>790.58</b>	<b>278.3</b>	<b>0.43</b>	<b>42.54</b>	<b>12.22</b>	<b>156.45</b>	<b>1280.52</b>
<b>% of total vegetation remaining</b>	<b>13.1</b>	<b>4.6</b>	<b>0</b>	<b>0.7</b>	<b>0.2</b>	<b>2.6</b>	<b>21.3</b>

Note: The above calculations are based on draft Greater Geraldton Structure Plan Update 2010 land use categories. There are negligible differences between the land use categories used and the final version of the Greater Geraldton Structure Plan 2011 released in June 2011.

**Table 5: Distribution of native vegetation by Beard vegetation associations and land use categories of the Draft GGSP 2010 Update (in hectares)**

<b>Highly constrained land use categories:</b>	<b>BVA35</b>	<b>BVA129</b>	<b>BVA359</b>	<b>BVA371</b>	<b>BVA387</b>	<b>BVA413</b>	<b>BVA431</b>	<b>BVA440</b>	<b>BVA675</b>	<b>Not allocated**</b>
Central Geraldton			11.96					3.91		
Industrial			63.14	25.75				0.04		
Future Industrial			85.07							
Port Industry and Installation								4.44		
Strategic Industry		82.46	383.23			4.93		321.72		17.91
Future Urban		93.12	208.46	46.51		20.08		11.42		
Urban		40.14	576.79	23.81			50.54	146.71		
Primary Distributor Road	26.49	1.14	67.08	9.32		21.92		1.06	7.67	
Regional Distributor Road			23.17	0.52						
Railway Reserve			0.81	5.07						
West End								7.21		
Public Utility		12.59	34.15	3.02				8.8		
<b>Subtotal</b>	<b>26.49</b>	<b>229.45</b>	<b>1453.86</b>	<b>114</b>		<b>46.93</b>	<b>50.54</b>	<b>505.31</b>	<b>7.67</b>	<b>17.91</b>
<b>% of total BVA remaining</b>	<b>4.8</b>	<b>56.5</b>	<b>47.2</b>	<b>32.8</b>	<b>0</b>	<b>14.9</b>	<b>13.8</b>	<b>62.6</b>	<b>3.2</b>	
<b>Land uses with some opportunities for native vegetation retention</b>	<b>BVA35</b>	<b>BVA129</b>	<b>BVA359</b>	<b>BVA371</b>	<b>BVA387</b>	<b>BVA413</b>	<b>BVA431</b>	<b>BVA440</b>	<b>BVA675</b>	
Community Purpose			31.11							
Rural Living	1.33		322.91	0.25		33.47			5.19	
Rural	389.41	89.82	801.12	54.8	1.57	203.33	83.59	142.55	121.81	3.53
<b>Subtotal</b>	<b>390.74</b>	<b>89.82</b>	<b>1155.14</b>	<b>55.05</b>	<b>1.57</b>	<b>236.8</b>	<b>83.59</b>	<b>142.55</b>	<b>127</b>	<b>3.53</b>
<b>% of total BVA remaining</b>	<b>71.4</b>	<b>20.9</b>	<b>40.7</b>	<b>17.3</b>	<b>100</b>	<b>74.9</b>	<b>22.8</b>	<b>23.2</b>	<b>52.9</b>	
<b>Land uses with good opportunities for native vegetation retention</b>	<b>BVA35</b>	<b>BVA129</b>	<b>BVA359</b>	<b>BVA371</b>	<b>BVA387</b>	<b>BVA413</b>	<b>BVA431</b>	<b>BVA440</b>	<b>BVA675</b>	
Future Rural Living	73.57		4.45			0.03			6.85	
Foreshore Protection		14.61	4.58	33.06		6.39	0.16	39.63	0.01	1.38
Regional Park	57.05	77.25	360.72	140.49		11.82	232.07	74.57	93.15	48.68
<b>Subtotal</b>	<b>130.62</b>	<b>91.86</b>	<b>369.75</b>	<b>173.55</b>		<b>18.24</b>	<b>232.23</b>	<b>114.2</b>	<b>100.01</b>	<b>50.06</b>
<b>% of total BVA remaining</b>	<b>23.8</b>	<b>22.6</b>	<b>12.1</b>	<b>49.9</b>	<b>0</b>	<b>5.8</b>	<b>63.3</b>	<b>14.2</b>	<b>41.7</b>	
% of original extent in Foreshore protection & Regional Park	1.95*	9.05	2.05	1.47	0	1.07	33.36	7.46	2.95*	
<b>Total BVA remaining in GRFVS area</b>	<b>549</b>	<b>406</b>	<b>3077</b>	<b>348</b>	<b>1.6</b>	<b>316</b>	<b>367</b>	<b>807</b>	<b>240</b>	

\* Includes current DEC managed lands

\*\* BVA extent mapping does not overlap with the GGSP zoning dataset in all areas. Major differences are observed along the Greenough River.

Note: The above calculations are based on draft Greater Geraldton Structure Plan Update 2010 land use categories. There are negligible differences between the land use categories used and the final version of the Greater Geraldton Structure Plan 2011 released in June 2011.

**Table 6: Hypothetical estimation of Beard vegetation association retention within constraints of the Draft GGSP 2010 Update Land-use categories (in hectares)**

	BVA35	BVA129	BVA359	BVA371	BVA387	BVA413	BVA431	BVA440	BVA675	Not allocated
Central Geraldton (2%)			0.2					0		
Industrial (0%)			0	0				0		
Future Industrial (0%)			0							
Port Industry and Installation (0%)								0		
Strategic Industry (0%)		0	0			0		0		0
Future Urban (5%)		4.7	10.4	2.3		1		0.6		
Urban 95%)		2	28.8	1.2			2.5	7.3		
Primary Distributor Road (1%)	0.26	0	1.6	0.1		0.2		0	0.1	
Regional Distributor Road (1%)			0.2	0						
Railway Reserve (0%)			0	0						
West End (0%)								0		
Public Utility (10%)		1.2	3.4	0.3				0.9		
<b>Subtotal for highly constrained land uses:</b>	0.26	7.9	44.6	3.9	0	1.2	2.5	8.8	0.1	0
	BVA35	BVA129	BVA359	BVA371	BVA387	BVA413	BVA431	BVA440	BVA675	
Community Purpose (10%)			3.1							
Rural Living (70%)	0.9		226	0.25		23.4			3.6	
Rural (90%)	350.5	80.8	721	49.3	1.57	182.9	75.2	128.3	109.6	2.4
<b>Subtotal for land uses with some opportunities for native vegetation retention</b>	351.4	80.8	950.1	49.55	1.57	206.3	75.2	128.3	113.2	2.4
	BVA35	BVA129	BVA359	BVA371	BVA387	BVA413	BVA431	BVA440	BVA675	
Future Rural Living (90%)	66.2		4					6.1		
Foreshore Protection (90%)		13.1	4.1	29.7		5.7	0.2	35.7		1.2
Regional Park (70%)	51.9	54.1	252.5	98.4		8.2	162.2	52.2	93.15*	34.1
<b>Subtotal for land uses with good opportunities for native vegetation retention</b>	118.1	67.2	260.6	128.1	0	13.9	162.4	87.9	99.3	35.3
% of original extent in Foreshore protection & Regional Park	1.7	6.6	1.4	1.1	0	0.8	23.3	5.7	3.1	
Total BVA potentially retained	469.8	155.9	1254.3	181.6	1.57	221.4	237.6	225	212.6	
% of original extent in GRFVS area	16.1	15.4	7	1.5	1.4	13	34.1	14.7	6.7	
Total BVA remaining	549	406	3077	348	1.6	316	367	807	240	
Original extent in the GRFVS area	2915	1015	17805	11812	117	1698	696	1531	3148	

Note: The above calculations are based on draft Greater Geraldton Structure Plan Update 2010 land use categories. There are negligible differences between the land use categories used and the final version of the Greater Geraldton Structure Plan 2011 released in June 2011.

**Table 7: Distribution of native vegetation by Plant communities across reserves and zones of the Draft GGSP 2010 Update (in hectares)**

<b>Highly constrained zones:</b>	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13	PC14	PC15	PC16	PC17	
Central Geraldton								15.87										
Industrial								0.04		74.93			13.95					
Future Industrial		0.02								71.35		7.84	5.86					
Port Industry and Installation			0.1					2.48		1.85								
Strategic Industry		21.46	17.47	0.58				67.24		419.73	5.5	240.58	33.36			4.34		
Future Urban		1.27	0.5		4.78			31.33	11.05	261.19	8.93	24.04	21.67		13.49	1.36		
Urban	2.56	35.88	4.14					93.9	0.62	576.41	2.92	43.62	77.7	0.24				
Primary Distributor Road	2.48	4.38						2.34	0.52	59.75		1.53	15.96		26.07	21.65		
Regional Distributor Road		2.27						1.55		14.61			5.26					
Railway Reserve								0.02		5.54			0.32					
West End			0.69					5.91		0.62								
Public Utility								9.72		42.31		6.54						
Subtotal	5.04	65.28	22.9	0.58	4.78	0	0	230.4	12.19	1528.29	17.35	324.15	174.08	0.24	39.56	27.35	0	
<b>% of total Plant Community remaining</b>	<b>33.9</b>	<b>16.8</b>	<b>23.7</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>42.2</b>	<b>97.8</b>	<b>67.7</b>	<b>87.1</b>	<b>37.4</b>	<b>23.1</b>	<b>0.5</b>	<b>8.4</b>	<b>6.08</b>	<b>0</b>	
<b>Zones with some opportunities</b>	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13	PC14	PC15	PC16	PC17	
Community Purpose											4.9			26.21				
Rural Living	0.01	2.17								63.65	2.59	30.17	226.29		34.03	4.24		
Rural	0.63	149.56						18.3	92.16		370.75		511.47	136.66		269.68	334.94	7.37
Subtotal	0.64	151.73						18.3	92.16		439.3	2.59	541.64	389.16		303.71	339.18	7.37
<b>% of total Plant Community remaining</b>	<b>4.3</b>	<b>39.1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29.2</b>	<b>16.9</b>		<b>19.5</b>	<b>12.9</b>	<b>62.6</b>	<b>51.6</b>	<b>0</b>	<b>64.7</b>	<b>75.02</b>	<b>43.2</b>	
<b>Zones with high opportunities</b>	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13	PC14	PC15	PC16	PC17	
Future Rural Living		13.36								2.5			1.96		6.57	55.22	5.31	
Foreshore Protection	0.05	28.05	2.74					56.44		9.32					3.13	0.09		
Regional Park, Recreation and Conservation	9.12	129.94	69.15			11.08	43.13	167.23	0.28	278.14			189.21	47.26	116.59	30.28	4.38	
Subtotal	9.17	171.35	71.89			11.08	43.13	223.67	0.28	289.96			191.17	47.26	126.29	85.59	9.69	
<b>% of total Plant Community remaining</b>	<b>61.8</b>	<b>44.1</b>	<b>74.5</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>68.77</b>	<b>40.9</b>	<b>2.2</b>	<b>12.8</b>	<b>0</b>	<b>0</b>	<b>25.3</b>	<b>99.5</b>	<b>26.9</b>	<b>18.9</b>	<b>56.8</b>	
PC Total	14.85	388.36	94.79	0.58	4.78	11.08	61.43	546.23	12.47	2257.55	19.94	865.79	754.41	47.5	469.56	452.12	17.06	
PC total in the report	33.22	388.36	96.52	0.58	4.78	11.08	62.71	546.26	12.47	2258.87	19.95	865.8	754.39	47.5	469.57	452.11	17.06	

Note: Differences between totals in this table and total extent of each vegetation complexes are due to the miss-alignment of the GGSP dataset with the native vegetation extent dataset.

This is most noticeable along the Greenough River and thus affecting PC 1: Estuarine plant community.

Note: The above calculations are based on draft Greater Geraldton Structure Plan Update 2010 land use categories. There are negligible differences between the land use categories used and the final version of the Greater Geraldton Structure Plan 2011 released in June 2011.

Note: In all statistical analysis that use the Local Planning Scheme datasets, the total area of native vegetation is less than the total of 6041ha native vegetation mapped in the study area.

The reasons are:

- Local Planning Schemes boundaries used to assess the opportunities and constraints for native vegetation retention do not overlap with native vegetation data layers, in particular in the Greenough River estuary area
- Portion of remnant vegetation in the study area is within the Shire of Northampton, not covered by the Local Planning Scheme datasets used in this study.

As the difference is around 1per cent of the total remnant vegetation remaining in the study area, this considered is statistically insignificant.

**Table 8: Hypothetical estimation of Plant community retention within constraints of the draft proposed GGSP 2010 Update land-use categories (in hectares)**

<b>Highly constrained land uses:</b>	<b>PC1</b>	<b>PC2</b>	<b>PC3</b>	<b>PC4</b>	<b>PC5</b>	<b>PC6</b>	<b>PC7</b>	<b>PC8</b>	<b>PC9</b>	<b>PC10</b>	<b>PC11</b>	<b>PC12</b>	<b>PC13</b>	<b>PC14</b>	<b>PC15</b>	<b>PC16</b>	<b>PC17</b>
Central Geraldton (2%)								0.3									
Industrial (0%)								0		0			0				
Future Industrial (0%)		0								0		0	0				
Port Industry and Installation (0%)			0						0		0						
Strategic Industry (0%)		0	0	0					0		0	0	0			0	
Future Urban (5%)		0.1	0		4.78				1.6	0.6	13.1	0.4	1.2	1.1		0.7	1.36
Urban (5%)	0.1	1.8	0.2					4.7	0	28.8	2.92	2.2	3.9	0.24			
Primary Distributor Road (1%)	0	0.4						0	0	0.6		0	0.2		0.3	0.2	
Regional Distributor Road (1%)		0							0		0.1		0.1				
Railway Reserve (0%)								0		0		0		0			
West End (0%)			0					0		0							
<b>Subtotal</b>	0.1	2.3	0.2	0	4.78	0	0	6.6	0.6	42.6	3.32	3.4	5.3	0.24	1	1.56	0
<b>Land uses with some opportunities for native vegetation retention</b>	<b>PC1</b>	<b>PC2</b>	<b>PC3</b>	<b>PC4</b>	<b>PC5</b>	<b>PC6</b>	<b>PC7</b>	<b>PC8</b>	<b>PC9</b>	<b>PC10</b>	<b>PC11</b>	<b>PC12</b>	<b>PC13</b>	<b>PC14</b>	<b>PC15</b>	<b>PC16</b>	<b>PC17</b>
Community Purpose (10%)										0.5			2.6				
Rural Living (70%)	0.01	2.17								44.5	2.59	21.1	158.4		23.8	4.24	
Rural (90%)	0.63	134.6					16.5	82.9		333.7		460.3	122.9		242.7	301.4	6.6
Public Utility (10%)								0.9		4.2		0.7					
<b>Subtotal</b>	0.64	136.77	0	0	0	0	16.5	83.8	0	382.9	2.59	482.1	283.9	0	266.5	305.64	6.6
<b>Land uses with good opportunities for native vegetation retention</b>	<b>PC1</b>	<b>PC2</b>	<b>PC3</b>	<b>PC4</b>	<b>PC5</b>	<b>PC6</b>	<b>PC7</b>	<b>PC8</b>	<b>PC9</b>	<b>PC10</b>	<b>PC11</b>	<b>PC12</b>	<b>PC13</b>	<b>PC14</b>	<b>PC15</b>	<b>PC16</b>	<b>PC17</b>
Future Rural Living (90%)		12								2.5			1.96		5.9	49.7	4.8
Foreshore Protection (90%)	6.3	25.2	2.74					50.8		8.4					3.13	0.09	
Regional Park (70%)	9.12	91	48.4			7.8	30.2	117.1	0.28	194.7			132.4	33.1	112.4	25.5	4.38
<b>Subtotal</b>	15.42	128.2	51.14	0	0	7.8	30.2	167.9	0.28	205.6	0	0	134.36	33.1	121.43	75.29	9.18
<b>Total potentially retained</b>	<b>16.16</b>	<b>267.5</b>	<b>51.34</b>	<b>0</b>	<b>4.78</b>	<b>7.8</b>	<b>46.7</b>	<b>258.3</b>	<b>0.9</b>	<b>631.1</b>	<b>5.91</b>	<b>485.5</b>	<b>423.6</b>	<b>33.3</b>	<b>388.9</b>	<b>382.5</b>	<b>15.8</b>
<b>% of total remaining</b>	<b>48.6</b>	<b>68.9</b>	<b>52.9</b>	<b>0</b>	<b>100</b>	<b>70.4</b>	<b>74.5</b>	<b>47.3</b>	<b>7.2</b>	<b>27.9</b>	<b>29.6</b>	<b>56.1</b>	<b>56.2</b>	<b>70.1</b>	<b>82.8</b>	<b>84.6</b>	<b>92.6</b>
% of total in Foreshore Protection & Recreation	46.4	29.9	52.9	0	0	70.4	48.2	30.7	7.2	8.9	0	0	17.6	70	24.6	5.7	25.7

It is reasonable to assume that the portion of PC1 retained and potentially protected through appropriate zoning is higher then what is shown in Table 7. Sections of PC1 do not overlay with GGSP 2010 zoning dataset along the Greenough River resulting in reduced PC1 shown in the analysis.

Note: The above calculations are based on draft Greater Geraldton Structure Plan Update 2010 land use categories. There are negligible differences between the land use categories used and the final version of the Greater Geraldton Structure Plan 2011 released in June 2011.

**Table 9: Summary of vegetation types within ‘Indicative High Conservation Value Areas’ with limited opportunities to protect or retain native vegetation**

ID	Conservation significance category				Beard vegetation associations							Plant communities											
	1A	1B	2B	3	BVA129	BVA359	BVA371	BVA413	BVA440	BVA675	PC2	PC3	PC4	PC8	PC9	PC10	PC11	PC12	PC13	PC15	PC16		
<b>Shire of Chapman Valley</b>																							
CV20	29.9	0.6	11.7	0.00	2.3	15.2	0.00	0.00	19.2	0.00	16.3	4.7	0.00	4.0	0.00	15.0	0.00	0.5	0.00	0.00	0.00	1.8	
CV21	12.43	0.00	6.58	0.10	4.47	0.00	0.00	0.00	14.64	0.00	0.00	0.00	0.58	8.52	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	
CV22	24.1	72.9	0.00	30.2	48.9	78.4	0.00	0.00	0.00	0.00	0.00	4.0	0.00	14.9	0.00	55.5	5.2	47.6	0.00	0.00	0.00	0.00	
CV24	0.00	16.18	0.00	0.00	0.00	16.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.13	0.00	13.05	0.00	0.00	0.00	0.00	
CV32	13.90	0.00	0.00	0.00	0.00	0.18	0.00	5.13	0.00	8.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.68	0.21	
<b>City of Greater Geraldton</b>																							
ID	P1A	P1B	P2B	P3	BVA129	BVA359	BVA371	BVA413	BVA440	BVA675	PC2	PC3	PC4	PC8	PC9	PC10	PC11	PC12	PC13	PC15	PC16		
GG9	38.23	0.47	0.00	0.00	38.70	0.00	0.00	0.00	0.00	38.23	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
GG10	0.00	3.4	0.00	0.00	0.00	3.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.4	0.00	0.00	0.00	
GG11	0.00	16.2	0.00	0.00	0.00	16.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.2	0.00	0.00	0.00	
GG12	0.00	5.5	0.00	0.00	0.00	5.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.5	0.00	0.00	0.00	
GG14	49.65	8.30	94.59	1.19	5.27	9.76	0.00	0.00	138.69	0.00	1.46	0.00	0.00	48.19	0.00	104.08	0.00	0.00	0.00	0.00	0.00	0.00	
GG16	0.00	10.66	0.00	0.00	0.00	10.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.66	0.00	0.00	0.00	0.00	0.00	
GG18	1.31	46.33	0.00	0.00	0.00	46.33	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	47.63	0.00	0.00	0.00	0.00	0.00	0.00	
GG25	3.80	30.10	0.00	0.00	0.00	30.10	3.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.62	0.00	0.00	13.28	0.00	0.00	0.00	
GG28	0.00	35.34	0.00	0.00	0.00	35.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.34	0.00	0.00	4.99	0.00	0.00	0.00	
GG29	0.00	9.97	0.00	0.00	0.00	0.00	9.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.97	0.00	0.00	0.00	0.00	0.00	
GG30	0.00	86.42	0.00	0.00	0.00	86.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	86.42	0.00	0.00	0.00	0.00	0.00	0.00	
GG31	2.74	106.94	0.00	0.00	0.00	109.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74	0.00	103.33	0.00	0.00	3.62	0.00	0.00	0.00	
GG32	2.02	17.39	0.00	0.00	0.00	19.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.85	2.02	14.53	0.00	0.00	0.00	0.00	

CV# = IHCVAs in the Shire of Chapman Valley

GG# = IHCVAs in the City of Greater Geraldton



**Table 11: Summary of vegetation types within ‘Indicative High Conservation Value Areas’ with good opportunities for native vegetation retention**

ID	Conservation Significance Category				Beard vegetation associations						Plant Communities								
	P1A	P1B	P1C	P3	BVA129	BVA35	BVA359	BVA371	BVA413	BVA675	PC2	PC8	PC10	PC11	PC12	PC13	PC15	PC16	PC17
<b>Shire of Chapman Valley</b>																			
CV3	16.55	0.00	0.00	0.00	0.00	16.55	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00	0.00	14.04	0.00	0.00	
CV5	4.91	0.00	0.00	0.00	0.00	4.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91	0.00	
CV6	11.13	0.00	0.00	0.00	0.00	10.40	0.00	0.00	0.00	0.73	3.19	0.00	0.00	0.00	0.00	0.00	0.00	7.94	0.00
CV8	16.50	0.00	0.00	0.00	0.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	15.87	0.19
CV9	6.57	0.00	0.00	0.00	0.00	6.57	0.00	0.00	0.00	0.00	1.76	0.00	0.00	0.00	0.00	0.00	0.00	4.82	0.00
CV11	15.17	0.00	0.00	0.00	0.00	15.17	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00	0.00	0.00	0.00	12.91	0.00
CV14	4.67	0.00	0.00	0.00	0.00	4.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.67	0.00
CV15	12.10	0.00	0.00	0.00	0.00	12.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.10	0.00
CV16	13.82	36.67	0.00	0.00	0.00	13.82	36.67	0.00	0.00	0.00	6.75	0.00	0.00	0.00	0.00	37.08	0.00	6.67	0.00
CV18	0.00	18.69	0.00	0.00	0.00	0.00	18.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.69	0.00	0.00	0.00
CV26	5.34	0.00	2.80	0.00	0.00	0.00	0.00	0.00	8.14	0.00	0.00	0.00	0.00	0.00	2.80	0.00	5.34	0.00	0.00
CV28	9.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.10	1.82	0.00	0.00	0.00	0.00	0.00	9.92	0.00	0.00	0.00
CV29	6.06	0.09	7.00	0.00	0.00	0.00	0.00	0.00	13.15	0.00	6.06	0.00	7.09	0.00	0.00	0.00	0.00	0.00	0.00
<b>City of Greater Geraldton</b>																			
ID	P1A	P1B	P1C	P3	BVA129	BVA35	BVA359	BVA371	BVA413	BVA675	PC2	PC8	PC10	PC11	PC12	PC13	PC15	PC16	PC17
GG6	0.00	8.40	0.00	0.00	0.00	0.00	8.40	0.00	0.00	0.00	0.00	2.92	0.00	0.00	5.49	0.00	0.00	0.00	
GG7	0.00	7.41	0.00	0.00	0.00	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.41	0.00	0.00	0.00	
GG8	0.00	15.78	0.00	0.00	0.00	0.00	15.78	0.00	0.00	0.00	0.00	0.00	15.78	0.00	0.00	0.00	0.00	0.00	
GG18	1.31	46.33	0.00	0.00	0.00	0.00	46.33	1.31	0.00	0.00	0.01	47.63	0.00	0.00	0.00	0.00	0.00	0.00	
GG19	0.00	15.52	0.00	0.00	0.00	0.00	15.52	0.00	0.00	0.00	0.00	15.52	0.00	0.00	0.00	0.00	0.00	0.00	
GG20	0.00	35.25	0.00	0.00	0.00	0.00	35.25	0.00	0.00	0.00	0.00	23.25	0.00	12.0	0.00	0.00	0.00	0.00	
GG26	4.15	5.09	0.00	0.00	0.00	0.00	5.09	4.15	0.00	0.00	0.00	9.24	0.00	0.00	0.00	0.00	0.00	0.00	
GG31	0.00	0.00	0.00	3.99	3.99	0.00	0.00	0.00	0.00	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	
GG33	8.93	8.95	0.00	0.00	0.00	0.00	17.88	0.00	0.00	0.00	0.00	8.95	8.93	0.00	0.00	0.00	0.00	0.00	
GG44	6.46	0.00	0.00	0.00	0.00	0.00	0.9	5.78	0.00	0.00	0.00	6.46	0.00	0.00	0.00	0.00	0.00	0.00	

CV# = IHCVAs in the Shire of Chapman Valley

GG# = IHCVAs in the City of Greater Geraldton

**Table 12: Estimation of retention levels for native vegetation by conservation significance categories and the current Local Planning Scheme provisions (in hectares)**

LPS ZONES& RESERVES*/BVAs	Assumptions (% of current extent retained)	1A	1B	1C	2A	2B	3
Central Geraldton	2	0.3					
Local Centre	0	0	0				
West End	0	0			0		
Commercial	0				0	0	
Development	3	0.1	3.5				2.1*
District distributor road	1	0	0.2				
Important regional road	1	0.4	0.1	0.05			
Primary distributor road	1	0.1	0.1				
Road	1	0.1	0.3		0		
Railway	1	0.5	0.8				
Industrial investigation	0	0	0	0	0	0	0
Industry - general	0	0	0				
Industry - light	0	0	0				
Industry - port	0	0			0		
Residential	5	5.7	14.8			3.9	0.5
Residential development	5	0.3	1.8			0.03*	2.2
Civic and Cultural	1		0.1				
Resort development/Tourist	20	1.2					1.2
<b>Total highly constrained</b>	<b>8.7</b>	<b>21.7</b>	<b>0.05</b>	<b>0</b>	<b>3.93</b>	<b>6.0</b>	
Rural Smallholdings	90	0.05	57.6				
Special Rural	90	25.0	3.76				
Rural Residential	70	3.57	178.0				
Special & Public use	0	0	0		0	0	
Community & Public Purposes	10	1.3	6.5			0.3	1.2*
Parks & Recreation (#excluding portions within DEC managed lands)	50	170.5	66.6		18.4	5.2	58.3
No zone	0	0	0			0	
<b>Total with varied opportunities</b>	<b>200.4</b>	<b>312.46</b>		<b>18.4</b>	<b>5.5</b>	<b>59.5</b>	
Waterway/Ocean	100	0.5					
Landscape and coastal protection	90	94.7	139.0				
Dune preservation	90	82.2	0.1		5.1		83.25
General Farming/Rural	90	1036.5	932.4	14.64	11.1	92.1	117.6
<b>Total protected or with good opportunities</b>	<b>1213.9</b>	<b>1071.5</b>	<b>14.64</b>	<b>16.2</b>	<b>92.1</b>	<b>200.85</b>	
<b>Assumed total remaining in CGG &amp; SCV portion**</b>	<b>1423</b>	<b>1405.6</b>	<b>14.7</b>	<b>34.6</b>	<b>101.5</b>	<b>266.35</b>	

\*In these instances, an assumption is made that because of the overall size of remnants they will be retained in their entirety

\*\* Includes areas in DEC managed lands

**Table 13: Summary of vegetation types in all Indicative High Conservation Value Areas (IHCVAs) selected in the study area**

	Total in IHCVAs with protection objective (ha)	Total in IHCVAs with retention objective (ha)	Total in IHCVAs (ha)	Area of a conservation feature representing proposed protection target (mostly 10% of the original extent threshold) (ha)	Assumed retention based on current LPS provisions (ha) (Table 14 in the Conservation Report, Table 12, Appendix B)	Assumed retention based on proposed Draft GGSP 2010 update (ha) (Tables 6 & 8, Appendix B, Table 15 in the Conservation Report)	Percentage of current extent in the study area in IHCVAs	Total vegetation remaining in the study area (ha)
Conservation Significance Prioritisation Category								
1A	1539.3	259.9	1799.2	N/A	1423.0	1284.5	79.4%	2264.4
1B	1248.4	484.7	1733.1	N/A	1405.6	1040.1	64%	2708.7
1C	4.2	9.8	14.0	N/A	14.7	8.9	56.2%	24.9
2A	62.6	0	62.6	N/A	34.6	43.7	76.2%	82.1
2B	135.8	101.2	237.0	N/A	101.5	76.6	49.7%	476.9
3	335.8	5.3	341.1	N/A	266.4	201.5	73.9%	461.4

	Total in IHCVAs with protection objective (ha)	Total in IHCVAs with retention objective (ha)	Total in IHCVAs (ha)	Area of a conservation feature representing proposed protection target (mostly 10% of the original extent threshold) (ha)	Assumed retention based on current LPS provisions (ha) (Table 14 in the Conservation Report, Table 12, Appendix B)	Assumed retention based on proposed Draft GGSP 2010 update (ha) (Tables 6 & 8, Appendix B, Table 15 in the Conservation Report)	Percentage of current extent in the study area in IHCVAs	Total vegetation remaining in the study area (ha)
Beard Vegetation Associations								
35	359.9	100.7	460.6	291.5	457.1	380.5	83.9%	549.0
129	295.9	13.7	309.6	101.5	234.1	138.0	76.2%	406.0
359	1409.8	538.2	1948.1	1500.0	1545.74	1178.7	63.3%	3077.0
371	268.6	9.3	277.8	120.0	206.1	170.4	79.8%	348.0
387	1.6	0	1.6	1.6	1.6	1.6	100%	1.6
413	201.0	34.5	235.5	169.8	251.6	187.5	74.5%	316.0
431	331.4	0	331.4	69.6	239.9	223.4	90.3	367.0
440	276.2	153.3	429.5	153.1	222.8	196.0	53.2%	807.0
675	121.6	11.1	132.7	85	210.3	161.3	55.3%	240.0
Plant Communities								
1	19.1	0.0	19.1	N/A		15.4	57.5%	33.2
2	241.3	62.2	303.5	N/A		128.2	78.2%	388.4
3	85.6	3.3	88.9	N/A		65.1	88.4%	96.5
4	0	0.6	0.6	N/A		0	100%	0.6
5	4.8	0	4.8	N/A		4.8	100%	4.8
6	11.8	0	11.1	N/A		7.8	100%	11.1
7	61.7	0	61.7	N/A		46.7	98.3%	62.7
8	358.5	59.5	418.0	N/A		258.3	69.3%	546.3
9	11.7	0	11.7	N/A		0.9	89.8%	12.5
10	7867.0	479.7	1266.7	N/A		631.1	56%	2258.9
11	5.2	10.9	16.1	N/A		5.9	80.7%	19.9
12	526.0	30.4	556.3	N/A		485.5	64.3%	865.8
13	530.4	100.5	630.9	N/A		423.6	83.1%	745.4
14	47.5	0	47.5	N/A		33.3	100%	47.5
15	292.2	43.4	335.6	N/A		388.9	71.4%	469.6
16	337.1	70.1	407.2	N/A		382.5	90.1%	452.1
17	7.9	0.2	8.1	N/A		15.8	45.3%	17.1