Appendix 1

TABLE 1: Determination of the ecological factor score and adjustment percentage of *Brackenridgea zanguebarica*.

Positive criteria (indicator of resilience) (*F*+)	Score (*F*+)	Negative criteria (indicator of vulnerability) (*F*-)	Score (*F*-)
Many large populations	0	Few small isolated populations	-1
Widespread distribution	0	Restricted distribution	-1
Habitat generalist	0	Habitat specialist	-1
Not restricted to a temporal niche	0	Restricted to a temporal niche	-1
Not subject to extreme habitat fluctuations	0	Subject to extreme habitat fluctuations	0
No particular genetic vulnerability	0	Genetic vulnerability	0
Vigorous post disturbance regeneration	0	Weak post disturbance regeneration	-1
Rapid vigorous growth	1	Slow weak growth	0
Quickly achieves site dominance	1	Poor competitor	0
All life stages resilient	0	Particular life stages vulnerable	-1
Short time to set first seed or propagule	1	Long time to set first seed or propagule	0
Long reproductive lifespan	1	Short reproductive lifespan	0
Robust breeding system	0	Dysfunctional breeding system	-1
Readily pollinated	1	Not readily pollinated	0
Reliable seed production	1	Unreliable seed production	0
High seed production	1	Low seed production	0
Long seed or propagule viability	1	Short seed or propagule viability	0
Seed or propagule not exhausted by disturbance	1	Seed or propagule exhausted by disturbance	0
Good dispersal	0	Poor dispersal	-1
Generally survives fire and and other damage	1	Generally killed by fire and other damage	0
Not adversely affected by pre-1600 disturbance†	0	Adversely affected by pre-1600 disturbance†	0
Adapted to existing grazing, drought, fire-regime	1	Not adapted to existing grazing, drought, fire-regime	0
Able to coppice and resprout	1	Unable to coppice and resprout	0
Not vulnerable to pathogens, diseases, insects, etc.	1	Vulnerable to pathogens, diseases, insects, etc.	0
Not dependant on vulnerable mutualist	1	Dependant on vulnerable mutualist	0
Total	**14**	**Total**	**-8**

Source: Gaugris, J.Y. & Van Rooyen, M.W., 2010, 'Evaluating the adequacy of reserves in the Tembe–Tshanini Complex: A case study in Maputaland, South Africa', *Oryx* 44, 399–410. http://dx.doi.org/10.1017/S0030605310000438
Ecological factor score [Efs = (*F*+) + (*F*-)] = 6; *F*-value adjustment percentage based on the ecological factor score [Efs +25 = +0% of (*F*), Efs 0 = +50% of (*F*), Efs -25 = +100% of (*F*)] = +38%.
F, Factors affecting the minimum population size.
†, The pre-1600 disturbance represents any large scale, landscape shaping disturbance known to have occurred prior to the colonization of South Africa by European colonists.

TABLE 2a: *Brackenridgea zanguebarica* minimum conservation area size using Burgman *et al.*'s method (Step 1–7): Scenario 1 – Status quo conditions.

Cell	Area (ha)	Step 1: Adjusted *F* value	Step 2: Disturbance level	Step 3: Potential *Brackenridgea zanguebarica* (habitat in the block)		Step 4: Potential (habitat surveyed) (ha)	Step 5: Density of adult (trees per ha) (ha)	Step 6: A_0 = Adjusted F / D (ha)	Step 7: Proportion of land remaining in 50 years after yearly disturbance	
				%	ha				Proportion	$A_1 = A_0/S$ (ha)
A1	250	1478	Heavy	0	0	110	61	24.23	0.50	48.46
A2†	250	1478	Heavy	10	15	110	61	24.23	0.70	34.61
A3	250	1478	Heavy	0	0	110	61	24.23	0.70	34.61
A4	250	1478	Insignificant	0	0	110	61	24.23	0.90	26.92
B1	250	1478	Heavy	0	0	110	61	24.23	0.60	40.38
B2†	250	1478	Heavy	75	113	110	61	24.23	0.20	121.15
B3†	250	1478	Insignificant	20	30	110	61	24.23	0.90	26.92
B4	250	1478	Light	0	0	110	61	24.23	0.70	34.61
C1	250	1478	Heavy	0	0	110	61	24.23	0.60	40.38
C2†	250	1478	Light	80	120	110	61	24.23	0.80	30.29
C3†	250	1478	Light	50	75	110	61	24.23	0.70	34.61
C4	250	1478	Heavy	0	0	110	61	24.23	0.30	80.77
D1	250	1478	Light	0	0	110	61	24.23	0.90	26.92
D2†	250	1478	Light	80	120	110	61	24.23	0.80	30.29
D3†	250	1478	Heavy	50	75	110	61	24.23	0.60	40.38
D4	250	1478	Heavy	0	0	110	61	24.23	0.50	48.46
E1	250	1478	Light	0	0	110	61	24.23	0.90	26.92
E2†	250	1478	Light	75	113	110	61	24.23	0.90	26.92
E3†	250	1478	Heavy	20	30	110	61	24.23	0.40	60.57
E4	250	1478	Heavy	0	0	110	61	24.23	0.60	40.38
F1	250	1478	Light	0	0	110	61	24.23	0.80	30.29
F2†	250	1478	Insignificant	30	45	110	61	24.23	0.90	26.92
F3†	250	1478	Heavy	20	30	110	61	24.23	0.60	40.38
F4	250	1478	Light	0	0	110	61	24.23	0.80	30.29
Mean 1‡	-	-	-	-	-	-	-	-	0.68	40.94
Mean 2§	-	-	-	-	-	-	-	-	0.69	42.61

Source: Burgman, M.A., Possingham, H.P., Lynch, J.J., Keith, D.A., Mccarthy, M.A., Hopper, S.D. *et al.*, 2001, 'A method for setting the size of plant conservation target areas', *Conservation Biology* 15, 603–616. http://dx.doi.org/10.1046/j.1523-1739.2001.015003603.x
†, Cells with potential habitat.
‡, Mean of all cells.
§, Mean of cells with potential habitat.

Note: This is the Online Appendix of Tshisikhawe, M.P., Van Rooyen, M.W. & Gaugris, J.Y., 2013, 'Is the present Brackenridgea Nature Reserve large enough to ensure the survival of Brackenridgea zanguebarica Oliv.?', *Koedoe* 55(1), Art. #1072, 5 pages. http://dx.doi.org/10.4102/koedoe.v55i1.1072.

TABLE 2b: *Brackenridgea zanguebarica* minimum conservation area size using Burgman *et al.*'s method (Steps 8, 9 and 12): Scenario 1 – Status quo conditions.

Cell	Step 8: Area irreversibly damaged in the next 50 years through human activities		Step 9						Step 12: Ratio of available to required habitat	
			Compensation for density reducing activities (proportion of remaining habitat)				Product of all activities (r_i)	$A_3 = A_2/r_i$ (ha)		
	$1 - c_i$	$A_2 = A_1/(1 - c_i)$ (ha)	Cultivation	Grazing	Fencing	Harvesting			Available	Ratio
A1	0.40	121.15	**0.60**	**0.70**	**0.70**	**0.80**	**0.235**	**515.08**	0	0.000
A2†	0.50	69.23	0.60	0.90	0.70	0.90	0.340	203.49	15	0.074
A3	0.60	57.69	**0.90**	**0.90**	**0.80**	**0.80**	**0.518**	**111.28**	0	0.000
A4	0.60	44.87	**0.80**	**0.80**	**0.90**	**0.80**	**0.461**	**97.37**	0	0.000
B1	0.30	134.61	**0.70**	**0.70**	**0.70**	**0.80**	**0.274**	**490.56**	0	0.000
B2†	0.40	302.87	0.80	0.80	0.70	0.60	0.269	1126.74	113	0.100
B3†	0.60	44.87	0.80	0.80	0.90	0.60	0.346	129.83	30	0.231
B4	0.40	86.53	**0.60**	**0.90**	**0.70**	**0.80**	**0.302**	**286.16**	0	0.000
C1	0.30	134.61	**0.80**	**0.80**	**0.60**	**0.80**	**0.307**	**438.18**	0	0.000
C2†	0.60	50.48	0.90	0.90	0.90	0.80	0.583	86.55	120	1.386
C3†	0.50	69.23	0.90	0.90	0.90	0.80	0.583	118.70	75	0.632
C4	0.20	403.83	**0.70**	**0.80**	**0.50**	**0.80**	**0.224**	**1802.79**	0	0.000
D1	0.60	44.87	**0.90**	**0.90**	**0.90**	**0.90**	**0.656**	**68.39**	0	0.000
D2†	0.40	75.72	0.90	0.90	0.90	0.60	0.437	173.11	120	0.693
D3†	0.30	134.61	0.90	0.80	0.80	0.60	0.346	389.49	75	0.193
D4	0.20	242.30	**0.40**	**0.70**	**0.60**	**0.80**	**0.134**	**1802.79**	0	0.000
E1	0.70	38.46	**0.90**	**0.90**	**0.80**	**0.90**	**0.583**	**65.95**	0	0.000
E2†	0.50	53.84	0.90	0.90	0.80	0.60	0.389	138.49	113	0.816
E3†	0.20	302.87	0.60	0.80	0.70	0.60	0.202	1502.33	30	0.020
E4	0.20	201.91	**0.30**	**0.90**	**0.80**	**0.80**	**0.173**	**1168.48**	0	0.000
F1	0.80	37.86	**0.90**	**0.90**	**0.90**	**0.90**	**0.656**	**57.70**	0	0.000
F2†	0.70	38.46	0.70	0.80	0.90	0.60	0.302	127.18	45	0.354
F3†	0.40	100.96	0.50	0.80	0.80	0.60	0.192	525.81	30	0.057
F4	0.20	151.43	**0.60**	**0.9**	**0.90**	**0.90**	**0.437**	**346.21**	0	0.000
Mean 1‡	0.44	122.63	**0.73**	**0.84**	**0.78**	**0.75**	**0.370**	**490.53**	31.92	0.190
Mean 2§	0.46	112.22	**0.77**	**0.85**	**0.82**	**0.59**	**0.360**	**409.72**	69.64	0.390

Source: Burgman, M.A., Possingham, H.P., Lynch, J.J., Keith, D.A., Mccarthy, M.A., Hopper, S.D. *et al.*, 2001, 'A method for setting the size of plant conservation target areas', *Conservation Biology* 15, 603–616. http://dx.doi.org/10.1046/j.1523-1739.2001.015003603.x
Bold, sets out the values for the specific option.
†, Cells with suitable habitat.
‡, Mean of all cells.
§, Mean of cells with suitable habitat for *Brackenridgea zanguebarica*.

TABLE 2c: *Brackenridgea zanguebarica* minimum conservation area size using Burgman *et al.*'s method (Steps 8, 9 and 12): Scenario 2 – No grazing.

Cell	Step 8: Area irreversibly damaged in the next 50 years through human activities		Step 9						Step 12: Ratio of available to required habitat	
			Compensation for density reducing activities (proportion of remaining habitat)				Product of all activities (r_i)	$A_3 = A_2/r_i$ (ha)		
	$1 - c_i$	$A_2 = A_1/(1 - c_i)$ (ha)	Cultivation	Grazing	Fencing	Harvesting			Available	Ratio
A1	0.40	121.15	**0.60**	**1.00**	**0.70**	**0.70**	**0.294**	**412.07**	0	0.000
A2†	0.50	69.23	0.60	1.00	0.70	0.90	0.378	183.14	15	0.082
A3	0.60	57.69	**0.90**	**1.00**	**0.80**	**0.80**	**0.576**	**100.16**	0	0.000
A4	0.60	44.87	**0.80**	**1.00**	**0.90**	**0.80**	**0.576**	**77.90**	0	0.000
B1	0.30	134.61	**0.70**	**1.00**	**0.70**	**0.80**	**0.392**	**343.39**	0	0.000
B2†	0.40	302.87	0.80	1.00	0.70	0.50	0.280	1081.67	113	0.104
B3†	0.60	44.87	0.80	1.00	0.90	0.80	0.576	77.90	30	0.385
B4	0.40	86.53	**0.60**	**1.00**	**0.70**	**0.90**	**0.378**	**228.93**	0	0.000
C1	0.30	134.61	**0.80**	**1.00**	**0.60**	**0.80**	**0.384**	**350.54**	0	0.000
C2†	0.60	50.48	0.80	1.00	0.90	0.80	0.576	87.64	120	1.369
C3†	0.50	69.23	0.90	1.00	0.90	0.90	0.729	94.96	75	0.790
C4	0.20	403.83	**0.70**	**1.00**	**0.50**	**0.80**	**0.280**	**1442.23**	0	0.000
D1	0.60	44.87	**0.90**	**1.00**	**0.90**	**0.90**	**0.729**	**61.55**	0	0.000
D2†	0.40	75.72	0.90	1.00	0.90	0.90	0.729	103.86	120	1.155
D3†	0.30	134.61	0.90	1.00	0.80	0.80	0.576	233.70	75	0.321
D4	0.20	242.30	**0.40**	**1.00**	**0.60**	**0.60**	**0.144**	**1682.60**	0	0.000
E1	0.70	38.46	**0.90**	**1.00**	**0.80**	**0.90**	**0.648**	**59.35**	0	0.000

Source: Burgman, M.A., Possingham, H.P., Lynch, J.J., Keith, D.A., Mccarthy, M.A., Hopper, S.D. *et al.*, 2001, 'A method for setting the size of plant conservation target areas', *Conservation Biology* 15, 603–616. http://dx.doi.org/10.1046/j.1523-1739.2001.015003603.x
Bold, sets out the values for the specific option.
†, Cells with suitable habitat.
‡, Mean of all cells.
§, Mean of cells with suitable habitat for *Brackenridgea zanguebarica*.

Table 2c continues →

TABLE 2c (Continues...): *Brackenridgea zanguebarica* minimum conservation area size using Burgman *et al.*'s method (Steps 8, 9 and 12): Scenario 2 – No grazing.

Cell	Step 8: Area irreversibly damaged in the next 50 years through human activities		Step 9						Step 12: Ratio of available to required habitat	
			Compensation for density reducing activities (proportion of remaining habitat)				Product of all activities (r_i)	$A_3 = A_2/r_i$ (ha)		
	$1 - c_i$	$A_2 = A_1/(1 - c_i)$ (ha)	Cultivation	Grazing	Fencing	Harvesting			Available	Ratio
E2†	0.50	53.84	0.90	1.00	0.80	0.80	0.576	93.48	113	1.209
E3†	0.20	302.87	0.60	1.00	0.70	0.80	0.336	901.40	30	0.033
E4	0.20	201.91	0.30	1.00	0.80	0.80	0.192	**1051.63**	0	0.000
F1	0.80	37.86	**0.90**	**1.00**	**0.90**	**0.90**	**0.729**	**51.93**	0	0.000
F2†	0.70	38.46	0.70	1.00	0.90	0.80	0.504	76.31	45	0.590
F3†	0.40	100.96	0.50	1.00	0.80	0.70	0.280	360.56	30	0.083
F4	0.20	151.43	**0.60**	**1.00**	**0.90**	**0.90**	**0.486**	**311.59**	0	0.000
Mean 1†	0.44	122.63	**0.67**	**0.81**	**0.76**	**0.80**	**0.350**	**394.52**	31.92	0.260
Mean 2§	0.46	112.22	**0.76**	**1.00**	**0.82**	**0.79**	**0.500**	**298.43**	69.64	0.570

Source: Burgman, M.A., Possingham, H.P., Lynch, J.J., Keith, D.A., Mccarthy, M.A., Hopper, S.D. *et al.*, 2001, 'A method for setting the size of plant conservation target areas', *Conservation Biology* 15, 603–616. http://dx.doi.org/10.1046/j.1523-1739.2001.015003603.x
Bold, sets out the values for the specific option.
†, Cells with suitable habitat.
‡, Mean of all cells.
§, Mean of cells with suitable habitat for *Brackenridgea zanguebarica*.

TABLE 2d: *Brackenridge zanguebarica* minimum conservation area size using Burgman *et al.*'s method (Steps 8, 9 and 12): Scenario 3 – Reduction in human-related activities.

Cell	Step 8: Area irreversibly damaged in the next 50 years through human activities		Step 9						Step 12 Ratio of available to required habitat	
			Compensation for density reducing activities (proportion of remaining habitat)				Product of all activities (r_i)	A3 = A2/r_i (ha)		
	$1 - c_i$	$A_2 = A_1/(1 - c_i)$ (ha)	Cultivation	Grazing	Fencing	Harvesting			Available	Ratio
A1	0.40	121.15	**0.80**	**0.90**	**0.90**	**0.90**	**0.491**	**246.59**	0	0.000
A2†	0.50	69.23	0.80	1.00	0.90	1.00	0.614	112.80	15	0.133
A3	0.60	57.69	**1.00**	**1.00**	**0.90**	**0.90**	**0.731**	**78.92**	0	0.000
A4	0.60	44.87	**0.90**	**0.90**	**1.00**	**0.90**	**0.693**	**64.79**	0	0.000
B1	0.30	134.61	**0.90**	**0.90**	**0.90**	**0.90**	**0.553**	**243.54**	0	0.000
B2†	0.40	302.87	0.90	0.90	0.90	0.80	0.516	586.53	113	0.193
B3†	0.60	44.87	0.90	0.90	1.00	0.80	0.616	72.89	30	0.412
B4	0.40	86.53	**0.80**	**1.00**	**0.90**	**0.90**	**0.581**	**148.84**	0	0.000
C1	0.30	134.61	**0.90**	**0.90**	**0.80**	**0.90**	**0.583**	**230.81**	0	0.000
C2†	0.60	50.48	0.90	0.90	1.00	0.90	0.693	72.89	120	1.646
C3†	0.50	69.23	1.00	1.00	1.00	0.90	0.772	89.71	75	0.836
C4	0.20	403.83	**0.90**	**0.90**	**0.80**	**0.90**	**0.516**	**782.04**	0	0.000
D1	0.60	44.87	**1.00**	**1.00**	**1.00**	**1.00**	**0.815**	**55.09**	0	0.000
D2†	0.40	75.72	1.00	1.00	1.00	0.80	0.686	110.39	120	1.087
D3†	0.30	134.61	1.00	0.90	0.90	0.80	0.616	218.66	75	0.343
D4	0.20	242.30	**0.70**	**0.90**	**0.80**	**0.90**	**0.428**	**565.58**	0	0.000
E1	0.70	38.46	**1.00**	**1.00**	**0.90**	**1.00**	**0.772**	**49.84**	0	0.000
E2†	0.50	53.84	1.00	1.00	0.90	0.80	0.650	82.86	113	1.364
E3†	0.20	302.87	0.80	0.90	0.90	0.80	0.490	618.60	30	0.048
E4	0.20	201.91	**0.70**	**1.00**	**0.90**	**0.90**	**0.500**	**403.68**	0	0.000
F1	0.80	37.86	**1.00**	**1.00**	**1.00**	**1.00**	**0.815**	**46.48**	0	0.000
F2†	0.70	38.46	0.90	0.90	1.00	0.80	0.581	66.15	45	0.680
F3†	0.40	100.96	0.80	0.90	0.90	0.80	0.486	207.73	30	0.144
F4	0.20	151.43	**0.80**	**1.00**	**1.00**	**1.00**	**0.686**	**220.78**	0	0.000
Mean 1‡	0.44	122.63	**0.86**	**0.92**	**0.89**	**0.87**	**0.620**	**224.01**	31.92	0.290
Mean 2§	0.46	112.22	**0.88**	**0.92**	**0.91**	**0.83**	**0.610**	**202.55**	69.64	0.290

Source: Burgman, M.A., Possingham, H.P., Lynch, J.J., Keith, D.A., Mccarthy, M.A., Hopper, S.D. *et al.*, 2001, 'A method for setting the size of plant conservation target areas', *Conservation Biology* 15, 603–616. http://dx.doi.org/10.1046/j.1523-1739.2001.015003603.x
Bold, sets out the values for the specific option.
†, Cells with suitable habitat.
‡, Mean of all cells.
§, Mean of cells with suitable habitat for *Brackenridgea zanguebarica*.

TABLE 2e: *Brackenridge zanguebarica* minimum conservation area size using Burgman *et al.*'s method (Steps 8, 9 and 12): Scenario 4 – Only bark harvesting allowed.

Cell	Step 8: Area irreversibly damaged in the next 50 years through human activities		Step 9						Step 12: Ratio of available to required habitat	
			Compensation for density reducing activities (proportion of remaining habitat)				Product of all activities (r_i)	$A_3 = A_2/r_i$ (ha)		
	$1 - c_i$	$A_2 = A_1/(1 - c_i)$ (ha)	Cultivation	Grazing	Fencing	Harvesting			Available	Ratio
A1	0.40	121.15	**1.00**	**1.00**	**1.00**	**0.80**	**0.800**	**151.43**	0	0.000
A2†	0.50	69.23	1.00	1.00	1.00	0.90	0.900	76.92	15	0.195
A3	0.60	57.69	**1.00**	**1.00**	**1.00**	**0.80**	**0.800**	**72.11**	0	0.000
A4	0.60	44.87	**1.00**	**1.00**	**1.00**	**0.80**	**0.800**	**56.09**	0	0.000
B1	0.30	134.61	**1.00**	**1.00**	**1.00**	**0.80**	**0.800**	**168.26**	0	0.000
B2†	0.40	302.87	1.00	1.00	1.00	0.60	0.600	504.78	113	0.224
B3†	0.60	44.87	1.00	1.00	1.00	0.60	0.600	74.78	30	0.401
B4	0.40	86.53	**1.00**	**1.00**	**1.00**	**0.80**	**0.800**	**108.17**	0	0.000
C1	0.30	134.61	**1.00**	**1.00**	**1.00**	**0.80**	**0.800**	**168.26**	0	0.000
C2†	0.60	50.48	1.00	1.00	1.00	0.80	0.800	63.10	120	1.902
C3†	0.50	69.23	1.00	1.00	1.00	0.80	0.800	86.53	75	0.867
C4	0.20	403.83	**1.00**	**1.00**	**1.00**	**0.80**	**0.800**	**504.78**	0	0.000
D1	0.60	44.87	**1.00**	**1.00**	**1.00**	**0.90**	**0.900**	**49.85**	0	0.000
D2†	0.40	75.72	1.00	1.00	1.00	0.60	0.600	126.20	120	0.951
D3†	0.30	134.61	1.00	1.00	1.00	0.60	0.600	224.35	75	0.334
D4	0.20	242.30	**1.00**	**1.00**	**1.00**	**0.80**	**0.800**	**302.87**	0	0.000
E1	0.70	38.46	**1.00**	**1.00**	**1.00**	**0.90**	**0.900**	**42.73**	0	0.000
E2†	0.50	53.84	1.00	1.00	1.00	0.60	0.600	89.74	113	1.259
E3†	0.20	302.87	1.00	1.00	1.00	0.60	0.600	504.78	30	0.059
E4	0.20	201.91	**1.00**	**1.00**	**1.00**	**0.80**	**0.800**	**252.39**	0	0.000
F1	0.80	37.86	**1.00**	**1.00**	**1.00**	**0.90**	**0.900**	**42.07**	0	0.000
F2†	0.70	38.46	1.00	1.00	1.00	0.60	0.600	64.10	45	0.702
F3†	0.40	100.96	1.00	1.00	1.00	0.60	0.600	168.26	30	0.178
F4	0.20	151.43	**1.00**	**1.00**	**1.00**	**0.90**	**0.900**	**168.26**	0	0.000
Mean 1‡	0.44	122.63	**1.00**	**1.00**	**1.00**	**0.75**	**0.750**	**169.62**	31.92	0.290
Mean 2§	0.46	112.22	**1.00**	**1.00**	**1.00**	**0.66**	**0.660**	**179.34**	69.64	0.650

Source: Burgman, M.A., Possingham, H.P., Lynch, J.J., Keith, D.A., Mccarthy, M.A., Hopper, S.D. *et al.*, 2001, 'A method for setting the size of plant conservation target areas', *Conservation Biology* 15, 603–616. http://dx.doi.org/10.1046/j.1523-1739.2001.015003603.x
Bold, sets out the values for the specific option.
†, Cells with suitable habitat.
‡, Mean of all cells.
§, Mean of cells with suitable habitat for *Brackenridgea zanguebarica*.