

Ecography

E4728

Pasinelli, G. and Schiegg, K. 2006. Fragmentation within and between wetland reserves: the importance of spatial scales for nest predation in reed buntings. – *Ecography* 29: 721–732.

Appendix 1. Set of candidate models examined at each of the four spatial scales. Shown are results from generalized linear mixed models. LL = Log-likelihood, K = number of parameters in model including the intercept, AICc = AIC value corrected for small sample size, $\Delta AICc$ = difference in AICc to the best model, Weight = Akaike model weight. For definition of variable names mentioned under superscripts, see Table 2. "None" refers to the unconditional model (intercept only, K = 1).

Candidate models per scale	Egg stage, n = 177				Nestling stage n = 120							
	LL	K	AICc	$\Delta AICc$	Weight	Candidate models per scale	LL	K	AICc	$\Delta AICc$	Weight	
Nest scale												
Vegetation ¹ , water ²	-168.75	3	343.64	0.00	0.36	None	-69.39	1	140.82	0.00	0.24	
Reed ³ , vegetation ¹ , water ²	-168.50	4	345.24	1.60	0.16	Water ²	-69.05	2	142.20	1.38	0.12	
Vegetation ¹ , water ² , tussocks ⁴	-168.70	4	345.64	2.00	0.13	Vegetation ¹	-69.14	2	142.39	1.56	0.11	
Vegetation ¹	-170.99	2	346.04	2.40	0.11	Tussocks ⁴	-69.16	2	142.42	1.60	0.11	
Reed ³ , vegetation ¹ , tussocks ⁴ , water ²	-168.46	5	347.27	3.63	0.06	Reed ³	-69.38	2	142.86	2.04	0.08	
Reed ³ , vegetation ¹	-170.79	3	347.72	4.08	0.05	Vegetation ¹ , water ²	-68.82	3	143.85	3.02	0.05	
Vegetation ¹ , tussocks ⁴	-170.92	3	347.98	4.33	0.04	Water ² , tussocks ⁴	-68.84	3	143.88	3.06	0.05	
Water ²	-172.52	2	349.11	5.47	0.02	Vegetation ¹ , tussocks ⁴	-68.93	3	144.07	3.25	0.05	
Reed ³ , vegetation ¹ , tussocks ⁴	-170.72	4	349.68	6.03	0.02	Reed ³ , water ²	-69.04	3	144.29	3.47	0.04	
None	-174.36	1	350.74	7.10	0.01	Reed ³ , vegetation ¹	-69.13	3	144.46	3.64	0.04	
Reed ³ , water ²	-172.38	3	350.91	7.26	0.01	Reed ³ , tussocks ⁴	-69.15	3	144.51	3.68	0.04	
Water ² , tussocks ⁴	-172.51	3	351.16	7.51	0.01	Vegetation ¹ , water ² , tussocks ⁴	-68.64	4	145.62	4.80	0.02	
Reed ³	-174.25	2	352.58	8.94	0.00	Reed ³ , vegetation ¹ , water ²	-68.81	4	145.97	5.14	0.02	
Tussocks ⁴	-174.35	2	352.76	9.12	0.00	Reed ³ , water ² , tussocks ⁴	-68.83	4	146.01	5.19	0.02	
Reed ³ , water ² , tussocks ⁴	-172.37	4	352.98	9.34	0.00	Reed ³ , vegetation ¹ , tussocks ⁴	-68.92	4	146.18	5.36	0.02	
Reed ³ , tussocks ⁴	-174.24	3	354.62	10.98	0.00	Reed ³ , vegetation ¹ , tussocks ⁴ , water ²	-68.63	5	147.78	6.96	0.01	
Edge scale												
Land edge ⁵ , nest location ⁶	-169.52	3	345.18	0.00	0.66	None	-69.39	1	140.82	0.00	0.34	
Nest location ⁶	-171.87	2	347.81	2.62	0.18	Nest location ⁶	-68.53	2	141.17	0.35	0.29	
Land edge ⁵	-172.20	2	348.48	3.30	0.13	Land edge ⁵	-68.90	2	141.91	1.09	0.20	
None	-174.36	1	350.74	5.56	0.04	Land edge ⁵ , nest location ⁶	-68.01	3	142.28	1.46	0.17	
Site scale												
Site fragmentation ⁷	-172.48	2	349.02	0.00	0.47	Site fragmentation ⁷	-67.74	2	139.58	0.00	0.43	
Site size, site fragmentation ⁷	-172.24	3	350.61	1.59	0.21	None	-69.39	1	140.82	1.24	0.23	
None	-174.36	1	350.74	1.72	0.20	Site size	-68.65	2	141.40	1.82	0.17	
Site size	-173.88	2	351.82	2.80	0.12	Site size, site fragmentation ⁷	-67.69	3	141.58	2.00	0.16	
Landscape scale												
Distance sites ⁸ , distance forest ⁹	-167.52	3	341.17	0.00	0.59	Landscape scale	-66.89	2	137.87	0.00	0.52	
Distance sites ⁸	-168.90	2	341.86	0.69	0.41	Distance sites ⁸ , distance forest ⁹	-66.88	3	139.97	2.10	0.18	
None	-174.36	1	350.74	9.57	0.00	Distance sites ⁸	-67.97	2	140.04	2.17	0.18	
Distance forest ⁹	-173.61	2	351.29	10.11	0.00	Distance forest ⁹	-69.39	1	140.82	2.95	0.12	

¹ PCA-factor related to “vegetation cover”, “vegetation height” and “nest height” (see Methods).

² PCA-factor related to “water cover” and “water depth”.

³ PCA-factor related to “reed stems at 0.5, 1.5 and 2.5 m”, respectively.

⁴ PCA-factor related to “number of tussocks”.

⁵ PCA-factor related to “distance to reed edge”.

⁶ PCA-factor related to “distance to water”, “reed patch size” and “reed patch shape”.

⁷ PCA-factor related to “total reed area” and “reed shape”.

⁸ “Distance between sites”.

⁹ “Distance to forest”.

Appendix 2. Set of candidate models examined across spatial scales in the egg stage (n = 177 nests). For details on variables names, see Appendix 1. No across-scale models have been calculated for the nestling stage.

Models	LL	K	AICc	Δ AICc	Weight
Vegetation, land edge, nest location, distance sites	-163.85	5	338.05	0.00	0.16
Vegetation, land edge, nest location	-165.13	4	338.49	0.44	0.13
Vegetation, land edge, distance sites,	-165.53	4	339.30	1.25	0.08
Vegetation, water, land edge, nest location	-164.56	5	339.48	1.43	0.08
Vegetation, water, land edge, nest location, distance sites	-163.69	6	339.88	1.83	0.06
Land edge, distance sites	-166.95	3	340.05	2.00	0.06
Land edge, nest location, distance sites	-166.00	4	340.23	2.18	0.05
Vegetation, water, land edge, distance sites	-164.96	5	340.26	2.22	0.05
Vegetation, land edge, nest location	-166.13	4	340.49	2.44	0.05
Vegetation, water, land edge	-166.41	4	341.05	3.00	0.03
Vegetation, nest location	-167.60	3	341.33	3.29	0.03
Vegetation, distance sites	-167.66	3	341.46	3.41	0.03
Water, land edge, distance sites	-166.81	4	341.84	3.79	0.02
Distance sites	-168.90	2	341.86	3.81	0.02
Distance sites, nest location	-168.05	3	342.24	4.19	0.02
Vegetation, water, nest location	-167.02	4	342.28	4.23	0.02
Vegetation, water, nest location, distance sites	-166.00	5	342.30	4.26	0.02
Water, land edge, nest location, distance sites	-165.99	5	342.33	4.28	0.02
Vegetation, water, distance sites	-167.11	4	342.45	4.40	0.02
Vegetation, land edge	-168.65	3	343.43	5.38	0.01
Water, distance sites	-168.73	3	343.60	5.55	0.01
Vegetation, water	-168.75	3	343.64	5.59	0.01
Water, nest location, distance sites	-168.04	4	344.30	6.25	0.01
Land edge, nest location	-169.52	3	345.18	7.13	0.00
Water, land edge, nest location	-169.01	4	346.25	8.20	0.00
Nest location	-170.43	3	347.01	8.96	0.00
Vegetation	-171.00	2	346.04	7.99	0.00
Land edge	-171.87	2	347.81	9.76	0.00
Water, land edge	-172.20	2	348.48	10.43	0.00
Water, nest location	-171.28	3	348.70	10.65	0.00
Water	-172.52	2	349.11	11.06	0.00
None	-174.36	1	350.74	12.69	0.00