

Appendix 1. Parameter estimates from the Cormack-Jolly-Seber model: $\Phi_{\text{age} \times \text{season} \times \text{year}}$ p_{site} . Φ = survival probability; p = capture probability.

Age	Year	Season	Parameter	Estimate	SE	Survival for entire season
Adult	2002	Summer	Φ	0.89	0.053	0.80
Adult	2002	Winter	Φ	0.80	0.042	0.64
Adult	2003	Summer	Φ	0.85	0.034	0.72
Adult	2003	Winter	Φ	0.75	0.042	0.57
Adult	2004	Summer	Φ	0.79	0.037	0.62
Adult	2004	Winter	Φ	0.79	0.043	0.62
Young	2002	Summer	Φ	0.59	0.079	0.35
Young	2002	Winter	Φ	0.71	0.048	0.51
Young	2003	Summer	Φ	0.90	0.043	0.80
Young	2003	Winter	Φ	0.64	0.058	0.41
Young	2004	Summer	Φ	0.81	0.060	0.66
Young	2004	Winter	Φ	0.70	0.056	0.49
			p-CED	0.81	0.053	
			p-OGA	0.89	0.036	
			p-VAL	0.84	0.037	
			p-RHE	0.79	0.043	
			p-COG	1.00	0.000	
			p-BOR	0.83	0.066	

Appendix 2. Parameter estimates from the POPAN model: Φ_{season} p_{site} $\text{pent}_{\text{site} \times \text{time}}$ $N_{\text{site} \times \text{sex}}$. See methods for symbols used in POPAN model.

Site	From	To	Parameter	Estimate	SE
			Phi-summer	0.816	0.0177
			Phi-winter	0.741	0.0176
			p-CED	0.842	0.0386
			p-OGA	0.904	0.0293
			p-VAL	0.870	0.0263
			p-RHE	0.810	0.0345
			p-COG	1.000	0.0000
			p-BOR	0.862	0.0423
CED	Jul-02	Oct-02	pent	0.118	0.0534
CED	Oct-02	Apr-03	pent	0.115	0.0500
CED	Apr-03	Jul-03	pent	0.111	0.0503
CED	Jul-03	Oct-03	pent	0.025	0.0302
CED	Oct-03	Apr-04	pent	0.167	0.0561
CED	Apr-04	Jul-04	pent	0.021	0.0313
CED	Jul-04	Oct-04	pent	0.057	0.0354
CED	Oct-04	Apr-05	pent	0.174	0.0538
OGA	Jul-02	Oct-02	pent	0.127	0.0460
OGA	Oct-02	Apr-03	pent	0.053	0.0301
OGA	Apr-03	Jul-03	pent	0.026	0.0216
OGA	Jul-03	Oct-03	pent	0.073	0.0327
OGA	Oct-03	Apr-04	pent	0.134	0.0432
OGA	Apr-04	Jul-04	pent	0.035	0.0266
OGA	Jul-04	Oct-04	pent	0.102	0.0382
OGA	Oct-04	Apr-05	pent	0.142	0.0433
VAL	Jul-02	Oct-02	pent	0.120	0.0359
VAL	Oct-02	Apr-03	pent	0.084	0.0291
VAL	Apr-03	Jul-03	pent	0.056	0.0248
VAL	Jul-03	Oct-03	pent	0.048	0.0223
VAL	Oct-03	Apr-04	pent	0.129	0.0336
VAL	Apr-04	Jul-04	pent	0.033	0.0214
VAL	Jul-04	Oct-04	pent	0.133	0.0336
VAL	Oct-04	Apr-05	pent	0.130	0.0329
RHE	Jul-02	Oct-02	pent	0.153	0.0581
RHE	Oct-02	Apr-03	pent	0.097	0.0439
RHE	Apr-03	Jul-03	pent	0.050	0.0342
RHE	Jul-03	Oct-03	pent	0.055	0.0326
RHE	Oct-03	Apr-04	pent	0.044	0.0291
RHE	Apr-04	Jul-04	pent	0.111	0.0432
RHE	Jul-04	Oct-04	pent	0.100	0.0407
RHE	Oct-04	Apr-05	pent	0.001	0.0001
COG	Jul-02	Oct-02	pent	0.125	0.0442
COG	Oct-02	Apr-03	pent	0.214	0.0548
COG	Apr-03	Jul-03	pent	0.107	0.0413
COG	Jul-03	Oct-03	pent	0.071	0.0344
COG	Oct-03	Apr-04	pent	0.054	0.0301
COG	Apr-04	Jul-04	pent	0.054	0.0301
COG	Jul-04	Oct-04	pent	0.143	0.0468
COG	Oct-04	Apr-05	pent	0.001	0.0001
BOR	Jul-02	Oct-02	pent	0.001	0.0002
BOR	Oct-02	Apr-03	pent	0.027	0.0203
BOR	Apr-03	Jul-03	pent	0.055	0.0284
BOR	Jul-03	Oct-03	pent	0.050	0.0279
BOR	Oct-03	Apr-04	pent	0.155	0.0450
BOR	Apr-04	Jul-04	pent	0.170	0.0488
BOR	Jul-04	Oct-04	pent	0.177	0.0493
BOR	Oct-04	Apr-05	pent	0.107	0.0390
CED			N-Male	30	0.0011
CED			N-Female	25	0.0064
OGA			N-Male	43	0.0057

OGA	N-Female	29	1.1721
VAL	N-Male	63	0.0000
VAL	N-Female	56	0.0000
RHE	N-Male	38	0.0004
RHE	N-Female	33	0.0005
COG	N-Male	32	0.0000
COG	N-Female	24	0.0000
BOR	N-Male	51	0.0000
BOR	N-Female	28	1.3787
