Appendix 4. Summary tables

Spatio-temporal population change of arctic-breeding waterbirds

We provide summary tables supplemental to figures provided in the main text including: distribution and fixed effect summaries (A4.1), estimates of relative density and trend estimates (95% CI) (A4.3), correlations in density among species through space (A4.3), and species-specific model coefficients (A4.4– A4.24). Original data are available from the U.S. Fish and Wildlife Service, Region 7, Migratory Bird Management (https://www.fws.gov/alaska/mbsp/mbm/waterfowl/waterfowl.htm). Additional model output can be obtained from the corresponding author (C. Amundson, camundson[at]usgs.gov).

Chesser, R. T., K. J. Burns, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, D. F. Stotz, and K. Winker. 2018. Fifty-ninth supplement to the American Ornithological Society's check-list of North American birds. *The Auk: Ornithological Advances* 135:798–813.

Table A4.1. Results for models of abundance and population trend for 20 waterbird species observed during aerial surveys on the Arctic Coastal Plain, Alaska, 1992–2016. We present the observed proportion of zeros per cell (Ozero; across survey replicates and years) and distribution (negative binomial, NB or zero-inflated NB, ZINB) used for the analysis. We evaluated log-linear and log-quadratic survey date relative to the onset of spring on counts (A.DOY and A.DOY^2) and presence (ZINB binomial component) where applicable (Z.DOY and Z.DOY^2), and an offset for the later survey replicate (1992–2006; Later Survey) for counts and zero inflation model component (Z Later Survey). We denote positive (+) or negative (—) coefficients that had 95% CIs that did not overlap zero for each variable except Later Survey, where we list the percentage of years where the effect of the later survey was positive or negative with 95% CIs that did not overlap zero (e.g., + 50%, – 10% would indicate abundance was substantially higher during the later survey in 50% of years and lower during the later survey in 10% of years). Scaup and Yellow-billed Loon estimates were pooled between survey replicates and White-winged Scoter were not observed during the later survey (shaded).

Species	Ozero	Distribution	A.DOY	A.DOY^2	Z.DOY	Z.DOY^2	Later Survey		Z Later Survey	
Lesser Snow Goose (*Anser caerulescens caerulescens*)	0.905	NB	–				+ (0%)	– (0%)		
Greater White-fronted Goose (*Anser alibfrons*)	0.467	ZINB	–		+	+	+ (13.3%)	– (53.3%)	+ (13.3%)	– (0%)
Black Brant (*Branta bernicla nigricans*)	0.833	NB					+ (13.3%)	– (26.7%)		
Cackling Boose (*Branta hutchinsii*)	0.869	NB	–				+ (33.3%)	– (0%)		
Tundra Swan (*Cygnus columbianus*)	0.737	NB	+				+ (20%)	– (0%)		
Northern Pintail (*Anser acuta*)	0.586	ZINB			+	+	+ (33.3%)	– (26.7%)	+ (40%)	– (13.3%)
Scaup (Lesser and Greater combined) (*Aythya* sp.)	0.834	NB	+	–						
Steller's Eider (*Polysticta stelleri*)	0.948	NB					+ (40%)	– (0%)		
Spectacled Eider (*Somateria fischeri*)	0.841	NB	–	–			+ (0%)	– (100%)		

King Eider (*Somateria spectabilis*)	0.761	NB	–	–			+ (0%)	– (100%)		
White-winged Scoter (*Melanitta perspicillata*)	0.889	NB	–	–						
Long-tailed Duck (*Clangula hyemalis*)	0.505	ZINB			+	+	+ (46.7%)	– (6.7%)	+ (26.7%)	– (6.7%)
Red-breasted Merganser (*Mergus serrator*)	0.928	NB					+ (26.7%)	– (6.7%)		
Jaeger (Pomarine, Parasitic and Long-tailed combined) (*Stercorarius* sp.)	0.795	NB	+				+ (0%)	– (66.7%)		
Sabine's Gull (*Xema sabini*)	0.775	NB	–				+ (0%)	– (33.3%)		
Glaucous Gull (*Larus hyperboreus*)	0.665	NB	–				+ (0%)	– (0%)		
Arctic Tern (*Sterna paradisaea*)	0.669	NB	–				+ (13.3%)	– (26.7%)		
Red-throated Loon (*Gavia stellata*)	0.872	NB	–				+ (53.3%)	– (26.7%)		
Pacific Loon (*Gavia pacifica*)	0.517	NB	+				+ (6.7%)	– (73.3%)		
Yellow-billed Loon (*Gavia adamsii*)	0.892	NB	–	–						

Table A4.2. Mean density (km^2) and population trend (± 95% CIs; λ = 1.0 denotes a stable population; percent change = (λ - 1.0)*100), and the number of approximately 36 km^2 cells occupied (*n*) for 20 waterbird species surveyed 1992-2016 on the Arctic Coastal Plain, Alaska (ACP). Estimates are also specified for the National Petroleum Reserve – Alaska (NPR-A), and the Arctic National Wildlife Refuge (ANWR). See also Figures 6 and 8 in the main text for visualizations of these results. Species are presented in taxonomic order (Chesser et al. 2018).

				NPR-A			ANWR		
Species	*n*	Density	Trend	*n*	Density	Trend	*n*	Density	Trend
Lesser Snow Goose (*Anser caerulescens caerulescens*)	185	0.261 (0.191, 0.365)	1.138 (1.09, 1.184)	133	0.182 (0.135, 0.258)	1.146 (1.104, 1.191)	3	0.292 (0.048, 1.171)	1.031 (0.882, 1.155)
Greater White-fronted Goose (*Anser alibfrons*)	1,584	1.399 (1.347, 1.458)	1.062 (1.05, 1.076)	1,128	1.394 (1.343, 1.451)	1.063 (1.051, 1.076)	37	0.612 (0.49, 0.757)	1.05 (1.022, 1.081)
Black Brant (*Branta bernicla*)	415	0.342 (0.295, 0.404)	1.076 (1.038, 1.111)	313	0.293 (0.254, 0.346)	1.076 (1.039, 1.11)	3	0.305 (0.066, 1.037)	1.04 (0.953, 1.122)
Cackling Goose (*Branta hutchinsii*)	665	0.198 (0.172, 0.236)	1.071 (1.039, 1.107)	394	0.111 (0.097, 0.132)	1.061 (1.029, 1.098)	23	0.391 (0.251, 0.633)	1.072 (1.006, 1.146)

Tundra Swan (*Cygnus columbianus*)	1,363	0.219 (0.21, 0.229)	1.021 (1.008, 1.033)	995	0.211 (0.201, 0.223)	1.033 (1.015, 1.05)	40	0.298 (0.244, 0.366)	1.005 (0.981, 1.031)
Northern Pintail (*Anser acuta*)	1,628	0.947 (0.91, 0.989)	1.001 (0.986, 1.02)	1,156	0.972 (0.934, 1.014)	1.003 (0.987, 1.022)	56	0.92 (0.771, 1.078)	0.988 (0.955, 1.016)
Scaup (Lesser and Greater combined) (*Aythya* sp.)	1,199	0.29 (0.264, 0.319)	1.033 (1.009, 1.062)	904	0.268 (0.245, 0.295)	1.033 (1.008, 1.061)	18	0.174 (0.072, 0.302)	1.05 (1.005, 1.101)
Steller's Eider (*Polysticta stelleri*)	119	0.021 (0.013, 0.034)	0.99 (0.914, 1.048)	110	0.022 (0.013, 0.034)	0.993 (0.917, 1.051)	0		
Spectacled Eider (*Somateria fischeri*)	760	0.24 (0.221, 0.263)	1.013 (0.989, 1.037)	612	0.253 (0.233, 0.278)	1.015 (0.991, 1.039)	3	0.129 (0.051, 0.388)	0.98 (0.933, 1.022)

King Eider (*Somateria spectabilis*)	1,000	0.497 (0.46, 0.545)	1.046 (1.009, 1.081)	760	0.45 (0.417, 0.494)	1.048 (1.012, 1.083)	14	0.704 (0.438, 1.074)	1.03 (0.982, 1.077)
White-winged Scoter (*Melanitta perspicillata*)	240	0.334 (0.226, 0.49)	1.116 (1.051, 1.191)	189	0.325 (0.213, 0.493)	1.122 (1.054, 1.2)	0		
Long-tailed Duck (*Clangula hyemalis*)	1,665	0.814 (0.792, 0.835)	0.993 (0.986, 1)	1,177	0.833 (0.81, 0.855)	0.994 (0.987, 1.001)	61	0.803 (0.702, 0.914)	0.992 (0.979, 1.006)
Red-breasted Merganser (*Mergus serrator*)	385	0.085 (0.069, 0.103)	1.038 (1.009, 1.072)	308	0.082 (0.068, 0.098)	1.039 (1.009, 1.075)	1	0.157 (0.044, 0.366)	1.051 (0.991, 1.11)

Jaeger (Pomarine, Parasitic and Long-tailed combined) (*Stercorarius* sp.)	1,531	0.163 (0.153, 0.177)	0.999 (0.975, 1.023)	1,111	0.154 (0.144, 0.168)	0.993 (0.969, 1.017)	49	0.257 (0.200, 0.33)	1.03 (0.988, 1.064)
Sabine's Gull (*Xema sabini*)	942	0.189 (0.179, 0.201)	1.026 (1.01, 1.047)	793	0.205 (0.194, 0.218)	1.027 (1.01, 1.047)	6	0.102 (0.058, 0.168)	1.004 (0.963, 1.064)
Glaucous Gull (*Larus hyperboreus*)	1,461	0.26 (0.252, 0.269)	1.018 (1.007, 1.031)	1,071	0.261 (0.253, 0.271)	1.019 (1.008, 1.031)	47	0.327 (0.267, 0.406)	1.016 (0.992, 1.04)
Arctic Tern (*Sterna paradisaea*)	1,302	0.333 (0.319, 0.348)	1.014 (1.002, 1.026)	1,007	0.379 (0.363, 0.396)	1.014 (1.003, 1.026)	28	0.247 (0.162, 0.482)	1.02 (0.976, 1.053)
Red-throated Loon (*Gavia stellata*)	923	0.093 (0.085, 0.104)	0.966 (0.944, 0.987)	702	0.086 (0.079, 0.096)	0.965 (0.942, 0.987)	27	0.185 (0.12, 0.264)	0.98 (0.915, 1.027)

Pacific Loon (*Gavia pacifica*)	1,600	0.561 (0.542, 0.582)	1.001 (0.99, 1.013)	1,146	0.627 (0.606, 0.65)	1.002 (0.991, 1.015)	51	0.338 (0.277, 0.425)	0.997 (0.974, 1.02)
Yellow-billed Loon (*Gavia adamsii*)	500	0.09 (0.079, 0.103)	1.044 (1.021, 1.069)	452	0.091 (0.079, 0.105)	1.046 (1.022, 1.071)	0		

Table A4.3. Correlations among cell-specific (i.e., averaged across years) predicted density for 20 waterbird species observed during aerial surveys on the Arctic Coastal Plain, Alaska, 1992-2016. We assumed species without observations in a surveyed cell had density = 0. Correlations > 0.4 are in bold text. Species are listed in taxonomic order using standardized 4-letter codes (Chesser et al. 2018) and include Lesser Snow Goose (LSGO), Greater White-fronted Goose (GWFG), Black Brant (BLBR), Cackling goose (CACG), Tundra Swan (TUSW), Northern Pintail (NOPI), Scaup (Lesser and Greater combined) (SCAU), Steller's Eider (STEI), Spectacled Eider (SPEI), King Eider (KIEI), White-winged Scoter (WWSC), Long-tailed Duck (LTDU), Red-breasted Merganser (RBME), Jaeger (Pomarine, Parasitic, and Long-tailed combined) (JAEG), Sabine's Gull (SAGU), Glaucous Gull (GLGU), Arctic Tern (ARTE), Red-throated Loon (RTLO), Pacific Loon (PALO), and Yellow-billed Loon (YBLO).

	LSGO	GWFG	BLBR	CACG	TUSW	NOPI	SCAU	STEI	SPEI	KIEI	WWSC	LTDU	RBME	JAEG	SAGU	GLGU	ARTE	RTLO	PALO	YBLO
LSGO	1.000	0.155	0.246	0.048	0.169	0.150	-0.056	0.011	0.082	0.036	-0.026	0.007	-0.002	-0.034	0.058	0.155	-0.032	0.091	-0.018	0.002
GWFG		1.000	**0.451**	0.155	**0.577**	**0.496**	-0.189	0.109	**0.483**	**0.415**	-0.162	0.293	0.038	0.019	0.362	**0.525**	0.073	0.340	0.337	0.108
BLBR			1.000	0.150	0.351	**0.430**	-0.145	0.069	0.255	0.196	-0.077	0.036	-0.024	-0.041	0.210	0.315	-0.064	0.241	0.022	-0.022
CACG				1.000	0.168	0.092	0.053	-0.032	-0.056	0.253	0.078	-0.013	0.000	-0.007	-0.126	0.085	-0.158	0.048	-0.007	-0.093
TUSW					1.000	**0.433**	-0.100	0.127	0.395	0.323	-0.124	0.262	0.025	0.052	0.342	**0.541**	0.114	0.385	0.348	0.138
NOPI						1.000	-0.139	0.218	**0.508**	0.185	-0.083	0.329	0.016	0.177	0.294	**0.487**	-0.017	0.317	0.203	-0.029
SCAU							1.000	-0.070	-0.309	-0.212	**0.406**	-0.042	0.170	0.088	-0.081	-0.187	0.191	-0.165	0.006	0.159
STEI								1.000	0.226	0.074	-0.048	0.092	-0.019	0.051	0.100	0.206	0.009	0.112	0.090	-0.029
SPEI									1.000	0.263	-0.171	**0.426**	-0.089	0.065	0.351	**0.467**	-0.053	0.271	**0.432**	-0.043
KIEI										1.000	-0.123	0.229	0.006	-0.038	0.285	0.250	0.086	0.132	0.382	-0.011
WWSC											1.000	-0.024	0.047	0.075	-0.114	-0.139	0.011	-0.123	-0.012	0.052
LTDU												1.000	0.067	0.266	0.197	0.306	0.129	0.231	**0.469**	0.018
RBME													1.000	0.033	0.147	0.070	0.322	0.050	0.138	0.149
JAEG														1.000	0.021	0.100	0.054	0.065	0.067	0.010
SAGU															1.000	**0.400**	**0.567**	0.137	**0.565**	0.231
GLGU																1.000	0.204	**0.447**	0.367	0.150
ARTE																	1.000	0.079	**0.472**	**0.461**
RTLO																		1.000	0.117	0.096
PALO																			1.000	0.198
YBLO																				1.000

Tables A4.4 – A4.24. Bayesian generalized linear mixed model (Negative Binomial or zero-inflated Negative Binomial, ZINB) output for 20 species of waterbirds observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska and a key to derived and model parameters summarized (Table A4.4). We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. We present model results for Lesser Snow Goose, Greater White-fronted Goose, Black Brant, Cackling Goose, Tundra Swan, Northern Pintail, Scaup (Lesser and Greater combined), Steller's Eider, Spectacled Eider, King Eider, White-winged Scoter, Long-tailed Duck, Red-breasted Merganser, Jaeger (Pomarine, Parasitic, and Long-tailed combined), Sabine's Gull, Glaucous Gull, Arctic Tern, Red-throated Loon, Pacific Loon, and Yellow-billed Loon.

Table A4.4. Key to derived and model parameters estimated from Bayesian generalized linear mixed models for 20 waterbird species across the Arctic Coastal Plain, Alaska, 1992-2016. Tables for specific species follow.

Parameter	Definition
MSE	Mean squared error in counts per cell-year-survey where MSE = sum of squared residuals divided by the total number of counts (across cells, years, and surveys)
MSE.CV	Coefficient of Variation of mean squared error in counts per cell-year-survey where mseCV = MSE divided by the mean observed count (across cells, years, and surveys)
SSE	Sum of squared error across cell-year-surveys
Trend	Population trend where 1.0 = stable population (i.e., lambda)
R.trend	Mean Ricker intrinsic population growth rate across years (R.growth = $\log(\widehat{N}_{t+1}/\widehat{N}_t)$)
M.dens	Mean density (km^2)
M.y0	Mean of annual random effect
M.yz	Mean of annual random effect on binomial portion of ZINB model (4 species only)
M.blyr	Mean of spatio-temporal smooth terms
M.cell	Mean of spatial random effect
M.psi	Mean probability a count per cell-year-survey is zero
b.ADOY	DOY coefficient (linear)
b.ADOY.2	DOY coefficient (quadratic)
z.ADOY	DOY coefficient (linear) on binomial portion of ZINB model (4 species only)
z.ADOY.2	DOY coefficient (quadratic) on binomial portion of ZINB model (4 species only)
SD.surv	Standard deviation of survey offset
SD.surv.z	Standard deviation of survey offset on binomial portion of ZINB model (4 species only)
SD.y0	Standard deviation of annual random effect
SD.yz	Standard deviation of annual random effect on binomial portion of ZINB model (4 species only)
R.mid	The log overdispersion term (r) for the average area surveyed (Negative Binomial)
SD.cell	Standard deviation of spatial random effect
SD.cell.z	Standard deviation of spatial random effect on binomial portion of ZINB model (4 species only)
SD.lam[x]	SD of variance terms for multinomial spatio-temporal smooth for term x (see Appendix 2: Jags code)
S.eff[x]	Survey offset coefficient for year x where x = 1 = 1992
S.eff.z[x]	Survey offset coefficient for year x where x = 1 = 1992 on binomial portion of ZINB model (4 species only)
y0[x]	Annual random effect coefficient for year x where x = 1 = 1992
yz[x]	Annual random effect coefficient for year x where x = 1 = 1992 on binomial portion of ZINB model (4 species only)

N.sum[x]	Total population size in year x where x = 1 = 1992
N.sum2[x]	Total population size averaged over annual random effect (y0) in year x where x = 1 = 1992, useful for trends
R.growth[x]	Ricker's intrinsic rate of population growth for year x where x = 1 = 1992. (R.growth = $\log(\widehat{N}_{t+1}/\widehat{N}_t)$)
Deviance	Model deviance

Tables A4.5. Bayesian generalized linear mixed model output for **Lesser Snow Goose** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	22.604	4.474	17.561	20.709	21.832	23.228	32.618
MSE.CV	45.868	9.080	35.634	42.022	44.301	47.134	66.189
SSE	92,699.05	18,349.84	72,016.64	84,927.16	89,532.26	95,257.41	133,767.29
Trend	1.138	0.024	1.090	1.122	1.138	1.153	1.184
R.trend	0.129	0.021	0.086	0.115	0.129	0.142	0.169
M.dens	0.261	0.045	0.191	0.230	0.255	0.285	0.365
M.y0	-0.001	0.068	-0.141	-0.038	-0.001	0.036	0.137
M.blyr	-2.830	0.150	-3.136	-2.929	-2.827	-2.728	-2.543
M.cell	-0.002	0.075	-0.145	-0.052	-0.002	0.048	0.151
R.mid	-1.939	0.096	-2.127	-2.004	-1.938	-1.874	-1.754
b.ADOY	-0.245	0.104	-0.456	-0.314	-0.245	-0.174	-0.040
b.ADOY.2	-0.034	0.067	-0.167	-0.078	-0.034	0.010	0.095
SD.surv	0.485	0.305	0.025	0.250	0.463	0.680	1.141
SD.y0	0.318	0.132	0.063	0.229	0.314	0.404	0.598
SD.cell	1.022	0.095	0.845	0.955	1.019	1.084	1.214
SD.lam[1]	0.335	0.134	0.129	0.247	0.311	0.405	0.666
SD.lam[2]	3.737	3.183	0.133	1.030	3.103	5.396	12.057
SD.lam[3]	1.764	2.544	0.012	0.450	0.882	1.808	11.000
SD.lam[4]	1.338	1.583	0.046	0.355	0.819	1.683	5.877
SD.lam[5]	8.188	3.644	1.840	5.251	8.052	11.182	14.621
SD.lam[6]	4.837	1.393	2.656	3.742	4.718	5.752	7.889
SD.lam[7]	4.212	1.840	2.073	2.814	3.653	5.220	8.748
SD.lam[8]	1.323	2.826	0.014	0.136	0.362	0.975	13.287
S.eff[1]	-0.017	0.463	-0.990	-0.252	-0.007	0.205	0.947
S.eff[2]	0.236	0.451	-0.545	-0.033	0.141	0.479	1.317
S.eff[3]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S.eff[4]	-0.149	0.439	-1.181	-0.357	-0.071	0.086	0.656
S.eff[5]	0.060	0.426	-0.806	-0.160	0.026	0.273	1.007
S.eff[6]	-0.019	0.438	-0.950	-0.237	-0.006	0.200	0.886
S.eff[7]	-0.204	0.494	-1.407	-0.434	-0.107	0.062	0.646
S.eff[8]	-0.075	0.460	-1.097	-0.292	-0.032	0.154	0.832
S.eff[9]	-0.031	0.399	-0.890	-0.240	-0.015	0.166	0.809
S.eff[10]	0.561	0.484	-0.104	0.145	0.498	0.886	1.612
S.eff[11]	0.154	0.401	-0.575	-0.068	0.084	0.371	1.085
S.eff[12]	0.495	0.518	-0.192	0.069	0.383	0.817	1.697
S.eff[13]	0.214	0.367	-0.402	-0.021	0.145	0.425	1.052
S.eff[14]	0.246	0.378	-0.365	-0.005	0.171	0.464	1.113
S.eff[15]	0.301	0.442	-0.392	-0.001	0.206	0.549	1.360
y0[1]	-0.056	0.301	-0.698	-0.222	-0.040	0.117	0.539

y0[2]	0.077	0.280	-0.449	-0.096	0.056	0.244	0.680
y0[3]	-0.363	0.342	-1.147	-0.565	-0.316	-0.109	0.155
y0[4]	0.387	0.308	-0.102	0.156	0.354	0.589	1.057
y0[5]	-0.017	0.268	-0.575	-0.176	-0.012	0.146	0.523
y0[6]	0.071	0.271	-0.461	-0.093	0.053	0.230	0.648
y0[7]	-0.070	0.266	-0.634	-0.230	-0.056	0.086	0.454
y0[8]	-0.195	0.285	-0.828	-0.367	-0.166	-0.004	0.313
y0[9]	0.159	0.252	-0.300	-0.009	0.136	0.307	0.706
y0[10]	0.113	0.258	-0.388	-0.045	0.097	0.268	0.660
y0[11]	-0.168	0.268	-0.749	-0.326	-0.140	0.003	0.313
y0[12]	0.058	0.245	-0.435	-0.090	0.045	0.211	0.564
y0[13]	0.139	0.237	-0.303	-0.016	0.117	0.285	0.652
y0[14]	-0.211	0.260	-0.778	-0.368	-0.185	-0.029	0.236
y0[15]	-0.353	0.301	-1.018	-0.542	-0.319	-0.131	0.126
y0[16]	0.130	0.251	-0.336	-0.031	0.109	0.286	0.661
y0[17]	0.101	0.244	-0.364	-0.055	0.083	0.252	0.615
y0[18]	0.367	0.277	-0.083	0.159	0.347	0.549	0.948
y0[19]	-0.093	0.236	-0.594	-0.237	-0.078	0.058	0.357
y0[20]	-0.008	0.243	-0.501	-0.152	-0.008	0.140	0.475
y0[21]	-0.062	0.230	-0.543	-0.202	-0.051	0.080	0.394
y0[22]	-0.152	0.252	-0.693	-0.304	-0.132	0.010	0.321
y0[23]	-0.049	0.241	-0.550	-0.197	-0.041	0.099	0.421
y0[24]	0.241	0.260	-0.203	0.058	0.214	0.401	0.820
y0[25]	-0.073	0.253	-0.603	-0.222	-0.057	0.078	0.433
N.sum[1]	208.972	111.098	75.386	137.961	185.895	252.791	473.301
N.sum[2]	233.246	99.564	104.520	167.617	212.812	275.394	479.625
N.sum[3]	160.396	70.744	57.667	110.695	149.744	196.950	327.577
N.sum[4]	355.639	125.718	184.366	265.874	331.469	419.002	666.218
N.sum[5]	263.358	87.784	130.422	203.780	250.993	307.990	472.491
N.sum[6]	324.219	103.523	167.644	252.990	308.878	378.067	565.085
N.sum[7]	322.933	104.710	154.849	250.136	310.814	381.369	567.267
N.sum[8]	327.271	107.825	152.824	251.195	317.131	389.655	565.744
N.sum[9]	527.395	150.975	301.995	423.060	503.153	604.419	886.814
N.sum[10]	584.155	174.399	314.650	464.505	559.542	669.525	1,005.052
N.sum[11]	512.814	152.909	253.412	406.540	500.466	602.781	850.817
N.sum[12]	746.333	209.915	410.590	603.686	717.222	860.435	1,239.404
N.sum[13]	943.249	239.192	570.725	778.085	909.985	1,071.860	1,502.823
N.sum[14]	791.813	221.865	410.428	633.556	775.322	932.441	1,260.674
N.sum[15]	826.014	271.162	371.159	626.518	800.220	1,002.615	1,401.030
N.sum[16]	1,539.473	371.400	961.305	1,280.456	1,489.047	1,741.279	2,418.309
N.sum[17]	1,767.188	456.225	1,071.940	1,448.488	1,704.815	2,000.571	2,844.608
N.sum[18]	2,710.759	798.175	1,573.341	2,141.525	2,569.622	3,113.541	4,684.410
N.sum[19]	1,952.500	501.198	1,123.121	1,600.436	1,902.330	2,250.010	3,077.620
N.sum[20]	2,410.123	662.726	1,352.348	1,943.974	2,334.742	2,778.937	3,955.874

N.sum[21]	2,542.630	661.714	1,468.554	2,085.219	2,471.117	2,929.791	4,041.300
N.sum[22]	2,603.758	737.510	1,428.028	2,072.305	2,523.094	3,043.980	4,287.417
N.sum[23]	3,228.773	928.588	1,788.921	2,583.622	3,113.951	3,722.803	5,427.221
N.sum[24]	4,916.596	1,471.401	2,818.322	3,878.505	4,659.174	5,663.156	8,387.687
N.sum[25]	4,237.147	1,606.882	2,324.629	3,300.992	3,976.527	4,805.850	7,720.085
N.sum2[1]	229.215	111.143	98.128	159.460	206.193	269.796	501.888
N.sum2[2]	225.041	85.168	114.034	169.748	208.492	260.836	429.096
N.sum2[3]	232.570	73.022	131.586	184.104	219.992	266.035	402.806
N.sum2[4]	250.238	68.511	151.411	204.129	240.375	283.185	409.105
N.sum2[5]	277.112	68.237	174.234	230.942	267.316	311.681	436.368
N.sum2[6]	312.628	70.793	201.995	264.670	303.591	351.154	476.826
N.sum2[7]	356.293	76.344	234.907	304.538	346.623	397.329	529.060
N.sum2[8]	407.795	84.533	273.421	350.544	397.504	452.179	596.384
N.sum2[9]	468.032	93.237	319.483	405.346	457.737	516.638	684.134
N.sum2[10]	539.251	101.456	373.892	471.425	529.138	594.182	772.760
N.sum2[11]	624.956	111.543	436.461	549.194	614.444	687.504	873.601
N.sum2[12]	729.224	126.024	511.215	643.536	718.618	801.415	1,006.430
N.sum2[13]	855.921	144.720	605.836	758.438	844.389	938.799	1,175.729
N.sum2[14]	1,008.949	166.180	724.596	898.038	993.976	1,102.579	1,378.614
N.sum2[15]	1,193.012	191.669	869.459	1,063.459	1,173.730	1,301.751	1,616.959
N.sum2[16]	1,411.525	226.079	1,040.252	1,256.477	1,386.996	1,534.937	1,917.186
N.sum2[17]	1,663.355	273.392	1,218.242	1,476.655	1,630.950	1,813.999	2,284.468
N.sum2[18]	1,940.816	330.833	1,408.426	1,715.769	1,901.874	2,124.318	2,692.870
N.sum2[19]	2,231.149	393.282	1,598.685	1,965.521	2,185.321	2,454.370	3,126.684
N.sum2[20]	2,523.684	461.467	1,780.213	2,207.855	2,467.117	2,778.455	3,584.631
N.sum2[21]	2,823.607	540.987	1,962.624	2,452.198	2,757.768	3,115.709	4,058.917
N.sum2[22]	3,150.725	642.060	2,130.775	2,709.463	3,063.669	3,500.931	4,648.086
N.sum2[23]	3,540.944	794.458	2,306.198	2,991.857	3,431.415	3,962.398	5,432.216
N.sum2[24]	4,056.858	1,058.947	2,447.911	3,329.127	3,905.421	4,588.657	6,591.331
N.sum2[25]	4,838.564	1,798.831	2,559.406	3,748.488	4,525.469	5,498.897	8,949.755
R.growth[1]	0.012	0.112	-0.221	-0.054	0.021	0.083	0.218
R.growth[2]	0.050	0.091	-0.140	-0.004	0.054	0.106	0.223
R.growth[3]	0.083	0.071	-0.068	0.041	0.085	0.126	0.222
R.growth[4]	0.108	0.058	-0.014	0.073	0.109	0.144	0.223
R.growth[5]	0.124	0.054	0.015	0.093	0.125	0.155	0.234
R.growth[6]	0.133	0.051	0.030	0.104	0.134	0.161	0.234
R.growth[7]	0.136	0.046	0.039	0.112	0.138	0.162	0.228
R.growth[8]	0.139	0.041	0.048	0.117	0.141	0.164	0.220
R.growth[9]	0.143	0.042	0.053	0.121	0.146	0.169	0.222
R.growth[10]	0.149	0.044	0.050	0.128	0.151	0.174	0.231
R.growth[11]	0.155	0.043	0.058	0.134	0.156	0.179	0.240
R.growth[12]	0.161	0.039	0.080	0.139	0.160	0.182	0.243
R.growth[13]	0.165	0.037	0.096	0.143	0.163	0.184	0.249
R.growth[14]	0.168	0.041	0.099	0.144	0.164	0.188	0.262

R.growth[15]	0.168	0.043	0.095	0.142	0.164	0.189	0.268
R.growth[16]	0.164	0.042	0.090	0.138	0.160	0.185	0.259
R.growth[17]	0.153	0.039	0.081	0.129	0.151	0.175	0.240
R.growth[18]	0.138	0.040	0.058	0.115	0.138	0.161	0.225
R.growth[19]	0.122	0.043	0.031	0.099	0.123	0.147	0.206
R.growth[20]	0.111	0.045	0.013	0.086	0.113	0.139	0.197
R.growth[21]	0.107	0.049	0.001	0.079	0.110	0.139	0.202
R.growth[22]	0.113	0.058	-0.013	0.082	0.116	0.149	0.221
R.growth[23]	0.128	0.072	-0.023	0.092	0.130	0.167	0.264
R.growth[24]	0.156	0.110	-0.016	0.108	0.148	0.193	0.362
Deviance	4,006.236	21.424	3,965.660	3,991.568	4,005.504	4,020.136	4,050.861

Tables A4.6. Bayesian generalized linear mixed model output for **Greater White-fronted Goose** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	18.645	0.163	18.335	18.531	18.641	18.755	18.971
MSE.CV	5.660	0.050	5.565	5.625	5.658	5.693	5.759
SSE	477,076.3	4,179.0	469,126.9	474,153.2	476,954.8	479,896.5	485,413.3
Trend	1.062	0.006	1.050	1.057	1.062	1.066	1.076
R.trend	0.060	0.006	0.049	0.056	0.060	0.064	0.073
M.dens	1.399	0.028	1.347	1.380	1.398	1.418	1.458
M.y0	0.000	0.034	-0.071	-0.021	0.001	0.022	0.065
M.yz	-0.653	0.034	-0.720	-0.677	-0.654	-0.630	-0.586
M.blyr	0.490	0.038	0.420	0.465	0.489	0.514	0.570
M.cell	0.000	0.007	-0.013	-0.005	0.000	0.005	0.013
M.psi	0.399	0.003	0.393	0.397	0.399	0.402	0.406
R.mid	1.656	0.027	1.604	1.638	1.656	1.674	1.709
b.ADOY	-0.064	0.017	-0.097	-0.075	-0.064	-0.052	-0.030
b.ADOY.2	-0.005	0.009	-0.022	-0.011	-0.005	0.001	0.013
z.ADOY	0.430	0.030	0.370	0.410	0.430	0.450	0.489
z.ADOY.2	0.078	0.017	0.045	0.066	0.077	0.089	0.111
SD.surv	0.318	0.073	0.210	0.267	0.307	0.357	0.491
SD.surv.z	0.235	0.079	0.104	0.182	0.228	0.280	0.416
SD.y0	0.169	0.032	0.119	0.147	0.166	0.187	0.242
SD.yz	0.973	0.149	0.727	0.866	0.957	1.063	1.307
SD.cell	0.265	0.010	0.246	0.258	0.265	0.272	0.285
SD.cell.z	0.780	0.028	0.724	0.761	0.780	0.799	0.835
SD.lam[1]	0.480	0.086	0.350	0.421	0.468	0.525	0.684
SD.lam[2]	0.851	0.316	0.481	0.645	0.770	0.958	1.733
SD.lam[3]	0.588	0.833	0.009	0.129	0.341	0.727	2.695
SD.lam[4]	2.135	1.432	0.574	1.247	1.792	2.567	6.264
SD.lam[5]	5.607	5.309	0.125	1.339	3.687	8.605	18.557
SD.lam[6]	1.228	0.238	0.876	1.063	1.191	1.353	1.791
SD.lam[7]	0.917	0.343	0.384	0.624	0.907	1.158	1.617
SD.lam[8]	0.723	1.793	0.007	0.076	0.189	0.496	6.369
S.eff[1]	-0.129	0.114	-0.357	-0.205	-0.127	-0.052	0.091
S.eff[2]	-0.084	0.089	-0.254	-0.144	-0.085	-0.025	0.090
S.eff[3]	-0.340	0.087	-0.513	-0.399	-0.338	-0.280	-0.169
S.eff[4]	-0.170	0.079	-0.328	-0.223	-0.169	-0.116	-0.016
S.eff[5]	-0.624	0.094	-0.812	-0.688	-0.625	-0.559	-0.443
S.eff[6]	-0.219	0.088	-0.394	-0.278	-0.218	-0.159	-0.046
S.eff[7]	-0.049	0.083	-0.213	-0.105	-0.050	0.006	0.114
S.eff[8]	-0.089	0.099	-0.283	-0.156	-0.089	-0.022	0.105
S.eff[9]	-0.382	0.084	-0.547	-0.439	-0.381	-0.325	-0.219

S.eff[10]	-0.194	0.067	-0.330	-0.239	-0.193	-0.148	-0.061
S.eff[11]	-0.124	0.067	-0.253	-0.168	-0.125	-0.079	0.010
S.eff[12]	0.215	0.069	0.081	0.169	0.216	0.261	0.348
S.eff[13]	-0.234	0.069	-0.369	-0.281	-0.234	-0.188	-0.098
S.eff[14]	0.297	0.059	0.181	0.258	0.298	0.337	0.412
S.eff[15]	-0.421	0.066	-0.551	-0.465	-0.420	-0.376	-0.293
S.eff.z[1]	0.041	0.146	-0.240	-0.055	0.035	0.135	0.337
S.eff.z[2]	-0.016	0.139	-0.287	-0.107	-0.018	0.071	0.264
S.eff.z[3]	0.222	0.145	-0.040	0.119	0.215	0.317	0.525
S.eff.z[4]	-0.196	0.140	-0.480	-0.287	-0.194	-0.101	0.066
S.eff.z[5]	0.133	0.146	-0.139	0.033	0.129	0.229	0.432
S.eff.z[6]	-0.044	0.137	-0.314	-0.134	-0.043	0.045	0.222
S.eff.z[7]	-0.034	0.134	-0.294	-0.122	-0.036	0.056	0.236
S.eff.z[8]	0.203	0.157	-0.080	0.092	0.195	0.305	0.527
S.eff.z[9]	0.083	0.139	-0.190	-0.010	0.080	0.172	0.364
S.eff.z[10]	0.155	0.141	-0.107	0.058	0.151	0.247	0.440
S.eff.z[11]	0.345	0.157	0.059	0.234	0.339	0.448	0.675
S.eff.z[12]	-0.085	0.136	-0.358	-0.171	-0.082	0.004	0.180
S.eff.z[13]	0.289	0.149	0.014	0.184	0.282	0.388	0.595
S.eff.z[14]	-0.124	0.130	-0.385	-0.210	-0.122	-0.035	0.121
S.eff.z[15]	0.137	0.142	-0.131	0.040	0.129	0.229	0.427
y0[1]	-0.053	0.113	-0.280	-0.124	-0.053	0.018	0.173
y0[2]	-0.115	0.091	-0.301	-0.174	-0.113	-0.055	0.062
y0[3]	0.143	0.085	-0.025	0.086	0.145	0.199	0.313
y0[4]	-0.026	0.090	-0.201	-0.088	-0.026	0.036	0.150
y0[5]	0.220	0.090	0.049	0.157	0.220	0.283	0.391
y0[6]	0.015	0.084	-0.149	-0.044	0.016	0.076	0.174
y0[7]	-0.129	0.077	-0.281	-0.181	-0.128	-0.078	0.019
y0[8]	-0.177	0.075	-0.326	-0.228	-0.175	-0.126	-0.038
y0[9]	0.116	0.076	-0.033	0.065	0.116	0.167	0.264
y0[10]	0.104	0.084	-0.065	0.047	0.104	0.162	0.265
y0[11]	0.079	0.090	-0.100	0.019	0.079	0.142	0.251
y0[12]	-0.199	0.094	-0.395	-0.259	-0.196	-0.134	-0.026
y0[13]	0.000	0.089	-0.182	-0.057	0.004	0.063	0.163
y0[14]	-0.260	0.081	-0.417	-0.314	-0.258	-0.206	-0.104
y0[15]	-0.057	0.073	-0.199	-0.106	-0.057	-0.009	0.090
y0[16]	0.119	0.073	-0.019	0.069	0.118	0.165	0.270
y0[17]	0.212	0.077	0.074	0.157	0.207	0.265	0.371
y0[18]	0.059	0.079	-0.080	0.003	0.054	0.109	0.225
y0[19]	-0.042	0.077	-0.171	-0.097	-0.048	0.006	0.123
y0[20]	-0.147	0.075	-0.281	-0.200	-0.151	-0.099	0.014
y0[21]	0.250	0.077	0.105	0.197	0.248	0.299	0.412
y0[22]	0.100	0.079	-0.053	0.047	0.101	0.151	0.252
y0[23]	-0.110	0.079	-0.262	-0.162	-0.108	-0.056	0.041

y0[24]	-0.160	0.088	-0.335	-0.217	-0.159	-0.103	0.014
y0[25]	0.064	0.111	-0.156	-0.011	0.066	0.139	0.274
yz[1]	0.534	0.111	0.311	0.459	0.535	0.609	0.752
yz[2]	0.444	0.106	0.237	0.371	0.446	0.518	0.646
yz[3]	0.243	0.096	0.053	0.177	0.244	0.309	0.428
yz[4]	0.126	0.092	-0.052	0.064	0.125	0.187	0.308
yz[5]	-0.127	0.091	-0.308	-0.190	-0.126	-0.066	0.051
yz[6]	-0.202	0.093	-0.385	-0.266	-0.202	-0.139	-0.018
yz[7]	0.068	0.105	-0.137	-0.003	0.070	0.142	0.268
yz[8]	-0.282	0.107	-0.496	-0.354	-0.281	-0.207	-0.078
yz[9]	-0.339	0.100	-0.536	-0.406	-0.337	-0.272	-0.143
yz[10]	-0.611	0.105	-0.824	-0.683	-0.610	-0.538	-0.414
yz[11]	-0.566	0.114	-0.796	-0.642	-0.564	-0.488	-0.349
yz[12]	-0.495	0.109	-0.706	-0.569	-0.496	-0.421	-0.288
yz[13]	-0.612	0.102	-0.814	-0.680	-0.611	-0.543	-0.416
yz[14]	-0.567	0.100	-0.768	-0.635	-0.567	-0.501	-0.374
yz[15]	-0.976	0.109	-1.193	-1.051	-0.975	-0.900	-0.773
yz[16]	-0.938	0.097	-1.132	-1.001	-0.936	-0.874	-0.754
yz[17]	-1.176	0.101	-1.379	-1.243	-1.175	-1.109	-0.979
yz[18]	-1.225	0.106	-1.438	-1.296	-1.225	-1.154	-1.019
yz[19]	-1.622	0.115	-1.856	-1.698	-1.620	-1.545	-1.404
yz[20]	-1.833	0.132	-2.101	-1.919	-1.830	-1.741	-1.585
yz[21]	-1.544	0.107	-1.756	-1.613	-1.541	-1.471	-1.339
yz[22]	-1.263	0.108	-1.480	-1.335	-1.261	-1.190	-1.057
yz[23]	-1.140	0.108	-1.355	-1.212	-1.137	-1.067	-0.934
yz[24]	-1.208	0.114	-1.438	-1.284	-1.206	-1.130	-0.995
yz[25]	-1.022	0.107	-1.235	-1.093	-1.019	-0.950	-0.813
N.sum[1]	22,619.89	1,665.47	19,431.96	21,494.66	22,596.40	23,693.32	26,037.44
N.sum[2]	23,317.91	1,544.49	20,387.31	22,264.87	23,271.25	24,340.73	26,424.92
N.sum[3]	34,836.27	1,983.92	31,123.69	33,472.41	34,799.96	36,156.78	38,867.06
N.sum[4]	32,289.24	1,649.12	29,144.62	31,170.17	32,263.19	33,393.22	35,666.35
N.sum[5]	47,463.28	2,183.45	43,231.30	45,995.82	47,430.76	48,932.88	51,762.38
N.sum[6]	40,700.03	1,894.12	37,097.35	39,408.11	40,642.83	41,973.52	44,511.60
N.sum[7]	31,925.62	1,862.37	28,398.61	30,641.48	31,872.76	33,163.60	35,719.98
N.sum[8]	35,181.56	1,783.44	31,839.29	33,945.36	35,147.36	36,337.56	38,830.53
N.sum[9]	48,421.23	2,286.01	44,076.17	46,834.67	48,394.25	49,966.80	53,003.08
N.sum[10]	53,239.89	2,307.20	48,891.58	51,631.50	53,207.21	54,786.87	57,882.88
N.sum[11]	53,106.02	2,546.29	48,260.58	51,368.09	53,025.83	54,781.87	58,343.84
N.sum[12]	41,831.50	2,004.39	38,030.19	40,460.85	41,806.19	43,150.30	45,890.32
N.sum[13]	57,816.75	2,524.00	52,954.12	56,079.32	57,792.64	59,491.17	62,952.01
N.sum[14]	49,013.71	2,160.13	44,859.48	47,541.91	49,001.69	50,455.77	53,404.22
N.sum[15]	75,591.65	3,044.42	69,792.41	73,517.56	75,533.02	77,614.80	81,696.41
N.sum[16]	100,076.88	3,448.45	93,498.10	97,703.83	100,030.47	102,367.47	107,035.29
N.sum[17]	127,940.51	4,038.96	120,321.10	125,152.05	127,935.97	130,676.93	135,939.04

N.sum[18]	119,290.48	3,983.56	111,677.00	116,580.09	119,229.57	121,978.01	127,150.16
N.sum[19]	120,661.03	3,645.59	113,781.15	118,160.68	120,601.38	123,155.35	127,897.88
N.sum[20]	113,355.57	3,383.87	106,785.97	111,058.59	113,346.09	115,591.23	119,980.75
N.sum[21]	160,080.75	4,627.53	151,051.52	156,936.01	160,077.50	163,171.07	169,184.35
N.sum[22]	128,006.76	4,227.73	119,902.82	125,147.98	127,932.43	130,831.73	136,383.55
N.sum[23]	98,307.28	3,479.65	91,700.51	95,979.19	98,217.93	100,603.38	105,335.20
N.sum[24]	91,980.11	3,183.96	85,858.97	89,840.46	91,975.16	94,100.70	98,231.72
N.sum[25]	107,324.00	3,604.12	100,347.99	104,886.78	107,274.48	109,751.63	114,462.20
N.sum2[1]	24,317.36	2,876.15	19,075.30	22,312.90	24,172.16	26,168.11	30,297.71
N.sum2[2]	26,616.19	2,522.73	21,987.91	24,864.69	26,531.45	28,223.94	31,933.22
N.sum2[3]	30,705.37	2,563.40	25,876.06	28,934.59	30,589.41	32,393.78	35,967.73
N.sum2[4]	33,737.13	2,891.19	28,607.81	31,632.46	33,608.95	35,641.06	39,688.74
N.sum2[5]	38,763.29	3,195.83	32,905.59	36,435.55	38,712.64	40,841.98	45,352.38
N.sum2[6]	40,762.89	3,037.48	35,262.83	38,638.53	40,673.51	42,724.93	47,101.86
N.sum2[7]	36,913.60	2,616.43	32,142.36	35,116.62	36,797.44	38,554.83	42,484.07
N.sum2[8]	42,691.77	2,997.57	37,368.76	40,630.82	42,519.24	44,596.43	48,833.79
N.sum2[9]	43,861.82	3,217.85	38,141.41	41,597.43	43,669.68	45,942.49	50,368.05
N.sum2[10]	48,832.60	3,987.68	41,661.12	45,929.89	48,770.03	51,467.37	56,969.34
N.sum2[11]	49,952.15	4,466.97	42,020.72	46,839.76	49,670.45	52,800.96	59,424.16
N.sum2[12]	51,966.83	4,732.86	43,768.66	48,754.34	51,615.64	54,857.70	62,385.51
N.sum2[13]	58,823.35	5,008.70	50,214.89	55,381.59	58,357.70	61,785.49	69,949.60
N.sum2[14]	64,623.05	4,793.13	55,848.24	61,266.41	64,373.34	67,726.06	74,832.98
N.sum2[15]	81,324.46	5,504.55	70,593.46	77,649.58	81,185.68	85,020.75	92,343.61
N.sum2[16]	90,400.85	6,203.65	78,366.13	86,158.55	90,377.00	94,532.79	102,909.24
N.sum2[17]	105,341.81	7,736.75	90,706.44	99,837.86	105,417.94	110,655.36	120,759.65
N.sum2[18]	114,397.83	8,566.36	98,083.92	108,346.39	114,613.16	120,094.69	131,312.08
N.sum2[19]	127,969.73	8,914.58	110,594.79	121,862.23	128,532.10	134,174.13	144,265.91
N.sum2[20]	133,521.07	8,676.74	116,164.71	127,472.51	133,878.99	139,768.01	149,466.82
N.sum2[21]	126,811.70	8,405.23	111,086.94	120,876.60	126,752.73	132,348.61	143,832.51
N.sum2[22]	117,813.70	8,051.67	103,070.10	112,201.50	117,532.99	122,945.07	134,691.78
N.sum2[23]	111,570.85	7,782.59	97,090.83	106,200.89	111,260.24	116,573.86	127,962.19
N.sum2[24]	109,883.73	8,817.43	93,616.24	103,885.30	109,366.16	115,629.96	127,742.00
N.sum2[25]	102,746.25	10,884.76	83,462.18	95,223.96	101,980.38	109,762.87	125,504.22
R.growth[1]	0.093	0.089	-0.076	0.031	0.091	0.152	0.272
R.growth[2]	0.144	0.075	0.000	0.093	0.143	0.194	0.292
R.growth[3]	0.094	0.064	-0.030	0.050	0.095	0.137	0.221
R.growth[4]	0.139	0.056	0.030	0.101	0.139	0.177	0.249
R.growth[5]	0.051	0.054	-0.054	0.014	0.050	0.087	0.157
R.growth[6]	-0.099	0.062	-0.220	-0.141	-0.098	-0.057	0.022
R.growth[7]	0.145	0.063	0.023	0.103	0.145	0.189	0.269
R.growth[8]	0.027	0.058	-0.087	-0.013	0.027	0.067	0.141
R.growth[9]	0.107	0.053	0.004	0.070	0.107	0.142	0.213
R.growth[10]	0.022	0.051	-0.079	-0.012	0.022	0.056	0.124
R.growth[11]	0.039	0.055	-0.069	0.004	0.040	0.076	0.146

R.growth[12]	0.124	0.051	0.025	0.090	0.125	0.159	0.223
R.growth[13]	0.095	0.052	-0.007	0.060	0.095	0.130	0.196
R.growth[14]	0.230	0.052	0.127	0.195	0.231	0.266	0.332
R.growth[15]	0.106	0.047	0.010	0.074	0.107	0.139	0.195
R.growth[16]	0.153	0.042	0.069	0.125	0.153	0.181	0.232
R.growth[17]	0.082	0.038	0.009	0.056	0.082	0.108	0.155
R.growth[18]	0.112	0.037	0.039	0.087	0.112	0.137	0.189
R.growth[19]	0.043	0.037	-0.030	0.017	0.042	0.069	0.114
R.growth[20]	-0.052	0.037	-0.124	-0.077	-0.052	-0.026	0.020
R.growth[21]	-0.074	0.037	-0.145	-0.099	-0.074	-0.049	0.000
R.growth[22]	-0.055	0.041	-0.133	-0.083	-0.055	-0.027	0.028
R.growth[23]	-0.016	0.048	-0.109	-0.049	-0.016	0.015	0.083
R.growth[24]	-0.070	0.054	-0.172	-0.106	-0.070	-0.034	0.041
Deviance	76,451.111	216.173	76,038.905	76,303.493	76,447.001	76,595.265	76,876.707

Tables A4.7. Bayesian generalized linear mixed model output for **Black Brant** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	5.109	0.334	4.715	4.896	5.037	5.231	5.940
MSE.CV	7.286	0.477	6.724	6.982	7.182	7.460	8.471
SSE	45,288.433	2,964.508	41,797.094	43,398.073	44,645.135	46,368.405	52,656.516
Trend	1.076	0.018	1.038	1.065	1.076	1.088	1.111
R.trend	0.073	0.017	0.037	0.063	0.073	0.084	0.105
M.dens	0.342	0.028	0.295	0.323	0.339	0.357	0.404
M.y0	-0.001	0.085	-0.174	-0.055	0.000	0.057	0.164
M.blyr	-1.936	0.102	-2.134	-2.006	-1.936	-1.869	-1.733
M.cell	0.001	0.039	-0.075	-0.025	0.002	0.027	0.077
R.mid	-1.394	0.050	-1.493	-1.427	-1.395	-1.361	-1.298
b.ADOY	-0.083	0.058	-0.196	-0.123	-0.084	-0.044	0.033
b.ADOY.2	0.047	0.028	-0.007	0.028	0.047	0.067	0.102
SD.surv	0.874	0.219	0.540	0.721	0.847	0.990	1.400
SD.y0	0.419	0.088	0.271	0.358	0.409	0.470	0.614
SD.cell	0.783	0.047	0.696	0.751	0.782	0.814	0.879
SD.lam[1]	0.422	0.105	0.264	0.348	0.405	0.477	0.669
SD.lam[2]	5.261	3.335	1.448	2.696	4.150	7.106	13.507
SD.lam[3]	2.704	2.353	0.520	1.208	2.000	3.309	10.394
SD.lam[4]	2.800	2.817	0.089	0.863	1.840	3.697	10.929
SD.lam[5]	6.105	4.080	0.288	2.712	5.353	9.137	14.366
SD.lam[6]	4.474	1.360	2.648	3.454	4.166	5.263	7.718
SD.lam[7]	3.944	2.066	0.750	2.381	3.845	5.317	8.396
SD.lam[8]	0.842	1.375	0.006	0.097	0.297	0.841	4.797
S.eff[1]	-0.685	0.412	-1.502	-0.964	-0.683	-0.404	0.101
S.eff[2]	1.137	0.333	0.501	0.911	1.133	1.356	1.811
S.eff[3]	-0.111	0.347	-0.799	-0.342	-0.111	0.118	0.573
S.eff[4]	-0.389	0.312	-1.004	-0.597	-0.388	-0.179	0.209
S.eff[5]	0.250	0.322	-0.397	0.038	0.254	0.462	0.873
S.eff[6]	-0.384	0.317	-1.032	-0.595	-0.380	-0.167	0.218
S.eff[7]	-0.544	0.363	-1.267	-0.786	-0.538	-0.294	0.160
S.eff[8]	-0.393	0.367	-1.113	-0.633	-0.397	-0.138	0.314
S.eff[9]	-0.987	0.404	-1.799	-1.255	-0.978	-0.710	-0.225
S.eff[10]	1.052	0.290	0.494	0.854	1.052	1.244	1.626
S.eff[11]	-1.057	0.339	-1.733	-1.282	-1.051	-0.825	-0.412
S.eff[12]	-0.508	0.309	-1.117	-0.712	-0.502	-0.302	0.097
S.eff[13]	-0.728	0.292	-1.297	-0.926	-0.728	-0.535	-0.153
S.eff[14]	-1.069	0.282	-1.627	-1.258	-1.066	-0.880	-0.510
S.eff[15]	-0.577	0.302	-1.172	-0.778	-0.573	-0.375	0.020
y0[1]	0.012	0.316	-0.633	-0.189	0.019	0.219	0.620

y0[2]	-0.603	0.284	-1.186	-0.788	-0.594	-0.403	-0.068
y0[3]	0.090	0.243	-0.386	-0.073	0.089	0.252	0.567
y0[4]	0.477	0.243	0.001	0.317	0.478	0.640	0.960
y0[5]	-0.093	0.233	-0.541	-0.252	-0.096	0.060	0.371
y0[6]	0.452	0.222	0.026	0.303	0.449	0.595	0.902
y0[7]	-0.063	0.221	-0.496	-0.212	-0.065	0.086	0.375
y0[8]	-0.279	0.233	-0.726	-0.438	-0.280	-0.121	0.177
y0[9]	-0.329	0.236	-0.782	-0.488	-0.331	-0.175	0.154
y0[10]	-0.335	0.228	-0.772	-0.490	-0.338	-0.182	0.114
y0[11]	0.173	0.202	-0.224	0.038	0.170	0.305	0.576
y0[12]	-0.007	0.208	-0.419	-0.149	-0.007	0.130	0.394
y0[13]	0.232	0.214	-0.194	0.090	0.236	0.379	0.635
y0[14]	0.593	0.215	0.158	0.450	0.599	0.735	1.009
y0[15]	0.228	0.209	-0.193	0.089	0.232	0.371	0.622
y0[16]	-0.629	0.224	-1.094	-0.774	-0.621	-0.477	-0.212
y0[17]	0.209	0.205	-0.198	0.078	0.212	0.347	0.602
y0[18]	-0.215	0.211	-0.644	-0.353	-0.211	-0.073	0.184
y0[19]	-0.155	0.197	-0.554	-0.285	-0.151	-0.020	0.225
y0[20]	-0.267	0.209	-0.688	-0.402	-0.262	-0.126	0.142
y0[21]	0.664	0.212	0.246	0.524	0.665	0.802	1.084
y0[22]	-0.089	0.216	-0.522	-0.232	-0.086	0.058	0.326
y0[23]	-0.042	0.219	-0.476	-0.187	-0.042	0.103	0.389
y0[24]	0.136	0.244	-0.324	-0.033	0.130	0.296	0.631
y0[25]	-0.178	0.306	-0.766	-0.387	-0.182	0.025	0.427
N.sum[1]	1,161.571	246.365	746.727	983.481	1,136.566	1,310.178	1,714.362
N.sum[2]	707.435	169.303	429.858	585.852	689.462	810.072	1,088.080
N.sum[3]	1,557.136	305.761	1,049.305	1,338.963	1,525.775	1,742.049	2,229.511
N.sum[4]	2,497.151	458.861	1,718.823	2,172.248	2,454.419	2,776.807	3,535.241
N.sum[5]	1,512.431	302.109	1,015.254	1,299.599	1,478.951	1,688.796	2,201.896
N.sum[6]	2,740.343	468.902	1,949.992	2,402.628	2,696.665	3,024.752	3,763.044
N.sum[7]	1,737.852	338.513	1,164.424	1,498.683	1,702.920	1,942.460	2,510.773
N.sum[8]	1,504.295	281.407	1,028.444	1,302.928	1,483.209	1,683.424	2,108.064
N.sum[9]	1,580.074	289.271	1,084.501	1,377.512	1,552.855	1,759.409	2,216.252
N.sum[10]	1,780.491	332.340	1,217.962	1,546.690	1,751.005	1,980.020	2,528.945
N.sum[11]	3,391.266	570.034	2,426.401	2,988.406	3,336.215	3,733.003	4,659.878
N.sum[12]	3,247.886	527.023	2,360.704	2,876.206	3,197.873	3,563.402	4,423.730
N.sum[13]	4,639.958	695.782	3,417.455	4,152.900	4,581.761	5,078.172	6,149.400
N.sum[14]	7,307.714	1,090.482	5,446.175	6,532.302	7,224.264	7,958.880	9,725.800
N.sum[15]	5,465.135	861.225	4,010.664	4,855.968	5,387.600	5,999.193	7,351.849
N.sum[16]	2,477.678	447.943	1,719.376	2,151.916	2,437.563	2,757.122	3,463.495
N.sum[17]	6,089.127	903.344	4,516.744	5,463.057	6,011.980	6,645.669	8,049.763
N.sum[18]	4,310.889	693.655	3,113.197	3,821.115	4,248.434	4,740.903	5,872.498
N.sum[19]	4,981.419	758.955	3,673.898	4,453.295	4,924.511	5,455.683	6,643.984
N.sum[20]	4,852.610	811.537	3,441.541	4,276.053	4,785.096	5,348.143	6,635.961

N.sum[21]	13,120.009	2,020.998	9,679.822	11,712.914	12,953.973	14,316.703	17,568.495
N.sum[22]	6,413.754	1,026.690	4,662.382	5,680.232	6,331.414	7,045.242	8,702.649
N.sum[23]	6,735.924	1,089.455	4,868.601	5,976.518	6,634.911	7,400.330	9,162.250
N.sum[24]	7,843.351	1,249.242	5,722.430	6,954.970	7,740.243	8,597.290	10,569.641
N.sum[25]	5,517.404	865.745	4,076.881	4,892.081	5,449.759	6,053.841	7,417.515
N.sum2[1]	1,291.788	424.131	660.509	1,002.353	1,234.545	1,507.160	2,296.292
N.sum2[2]	1,413.559	334.085	883.738	1,180.767	1,368.410	1,601.214	2,192.043
N.sum2[3]	1,559.443	313.731	1,059.660	1,337.320	1,521.348	1,740.779	2,260.487
N.sum2[4]	1,700.154	340.500	1,186.793	1,459.341	1,646.145	1,881.044	2,499.481
N.sum2[5]	1,812.363	332.885	1,286.253	1,583.563	1,771.683	1,991.391	2,612.905
N.sum2[6]	1,906.673	308.679	1,357.046	1,695.225	1,883.167	2,098.142	2,574.492
N.sum2[7]	2,017.133	331.685	1,389.966	1,792.243	2,008.119	2,230.186	2,703.365
N.sum2[8]	2,175.197	385.023	1,416.303	1,919.181	2,185.020	2,427.357	2,940.814
N.sum2[9]	2,403.168	425.656	1,536.376	2,142.280	2,416.714	2,668.277	3,245.436
N.sum2[10]	2,715.672	440.978	1,864.736	2,444.152	2,699.633	2,971.122	3,660.444
N.sum2[11]	3,115.041	464.233	2,311.500	2,807.886	3,064.500	3,365.200	4,184.758
N.sum2[12]	3,576.069	559.072	2,716.601	3,185.262	3,494.660	3,885.540	4,898.631
N.sum2[13]	4,037.613	692.389	3,038.162	3,543.192	3,908.798	4,395.608	5,739.584
N.sum2[14]	4,435.907	758.243	3,350.599	3,879.876	4,298.030	4,849.564	6,275.350
N.sum2[15]	4,762.476	764.028	3,643.865	4,209.299	4,633.556	5,179.198	6,522.541
N.sum2[16]	5,068.757	803.052	3,837.290	4,512.625	4,946.706	5,491.939	6,963.717
N.sum2[17]	5,417.893	881.192	3,973.332	4,825.080	5,303.719	5,898.738	7,532.642
N.sum2[18]	5,848.546	938.813	4,310.466	5,224.607	5,730.753	6,360.790	8,020.989
N.sum2[19]	6,362.558	959.118	4,852.668	5,709.846	6,219.322	6,860.403	8,607.619
N.sum2[20]	6,913.555	1,010.496	5,298.951	6,211.315	6,767.201	7,482.563	9,233.291
N.sum2[21]	7,399.106	1,155.107	5,531.618	6,586.194	7,245.937	8,081.545	10,060.460
N.sum2[22]	7,684.671	1,279.384	5,657.284	6,790.656	7,515.729	8,415.302	10,650.417
N.sum2[23]	7,712.988	1,355.874	5,456.383	6,770.772	7,579.912	8,526.529	10,751.468
N.sum2[24]	7,584.398	1,668.271	4,780.796	6,396.677	7,416.339	8,586.258	11,269.754
N.sum2[25]	7,470.188	2,278.475	3,735.034	5,808.424	7,210.873	8,873.527	12,498.883
R.growth[1]	0.113	0.132	-0.119	0.042	0.090	0.163	0.458
R.growth[2]	0.105	0.109	-0.097	0.047	0.089	0.151	0.373
R.growth[3]	0.087	0.072	-0.062	0.049	0.082	0.125	0.241
R.growth[4]	0.067	0.056	-0.054	0.035	0.069	0.102	0.175
R.growth[5]	0.054	0.073	-0.141	0.025	0.068	0.099	0.164
R.growth[6]	0.056	0.080	-0.176	0.032	0.072	0.102	0.174
R.growth[7]	0.073	0.066	-0.107	0.051	0.081	0.109	0.183
R.growth[8]	0.100	0.049	0.004	0.070	0.096	0.127	0.201
R.growth[9]	0.125	0.059	0.039	0.082	0.114	0.157	0.269
R.growth[10]	0.140	0.076	0.041	0.085	0.120	0.173	0.339
R.growth[11]	0.137	0.075	0.037	0.085	0.117	0.171	0.331
R.growth[12]	0.119	0.058	0.020	0.082	0.107	0.150	0.258
R.growth[13]	0.094	0.048	-0.009	0.069	0.092	0.120	0.196
R.growth[14]	0.073	0.058	-0.069	0.048	0.082	0.107	0.170

R.growth[15]	0.063	0.064	-0.106	0.038	0.076	0.101	0.160
R.growth[16]	0.066	0.054	-0.070	0.040	0.074	0.098	0.158
R.growth[17]	0.077	0.042	-0.012	0.053	0.078	0.102	0.169
R.growth[18]	0.086	0.052	-0.014	0.055	0.083	0.113	0.202
R.growth[19]	0.084	0.065	-0.025	0.044	0.076	0.109	0.252
R.growth[20]	0.066	0.062	-0.044	0.028	0.063	0.096	0.216
R.growth[21]	0.036	0.055	-0.084	0.002	0.041	0.075	0.130
R.growth[22]	0.002	0.074	-0.158	-0.048	0.008	0.060	0.121
R.growth[23]	-0.026	0.107	-0.268	-0.092	-0.008	0.058	0.133
R.growth[24]	-0.038	0.127	-0.338	-0.112	-0.012	0.060	0.143
Deviance	14,698.145	31.598	14,638.032	14,676.298	14,697.791	14,719.310	14,760.839

Tables A4.8. Bayesian generalized linear mixed model output for **Cackling Goose** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	1.205	0.021	1.173	1.190	1.201	1.215	1.258
MSE.CV	3.291	0.059	3.206	3.251	3.281	3.320	3.437
SSE	14,244.512	253.735	13,876.920	14,069.817	14,199.475	14,368.720	14,876.995
Trend	1.071	0.017	1.039	1.058	1.070	1.082	1.107
R.trend	0.068	0.016	0.038	0.057	0.067	0.079	0.101
M.dens	0.198	0.016	0.172	0.186	0.196	0.207	0.236
M.y0	0.003	0.082	-0.153	-0.051	0.003	0.058	0.168
M.blyr	-2.265	0.097	-2.456	-2.331	-2.265	-2.200	-2.076
M.cell	0.000	0.006	-0.012	-0.003	0.000	0.003	0.012
R.mid	-1.622	0.049	-1.718	-1.655	-1.623	-1.589	-1.526
b.ADOY	-0.131	0.059	-0.247	-0.170	-0.133	-0.092	-0.013
b.ADOY.2	0.015	0.029	-0.043	-0.005	0.015	0.034	0.070
SD.surv	0.756	0.185	0.465	0.626	0.731	0.861	1.184
SD.y0	0.411	0.083	0.276	0.353	0.402	0.458	0.600
SD.cell	0.136	0.067	0.013	0.096	0.143	0.184	0.259
SD.lam[1]	0.675	0.195	0.352	0.525	0.664	0.804	1.089
SD.lam[2]	1.706	0.718	0.721	1.241	1.575	2.016	3.492
SD.lam[3]	4.716	2.907	1.308	2.547	3.892	6.091	12.470
SD.lam[4]	2.365	1.939	0.241	1.114	1.822	3.024	7.695
SD.lam[5]	5.700	4.087	0.248	2.249	4.893	8.673	14.206
SD.lam[6]	5.699	1.424	3.400	4.597	5.601	6.616	8.740
SD.lam[7]	3.089	0.874	1.791	2.422	2.981	3.610	5.091
SD.lam[8]	0.876	1.369	0.013	0.160	0.448	0.978	5.051
S.eff[1]	0.471	0.333	-0.165	0.246	0.468	0.686	1.141
S.eff[2]	0.570	0.306	-0.026	0.360	0.566	0.773	1.168
S.eff[3]	-0.339	0.307	-0.929	-0.550	-0.340	-0.128	0.257
S.eff[4]	-0.199	0.305	-0.813	-0.402	-0.194	0.008	0.397
S.eff[5]	0.379	0.280	-0.160	0.190	0.384	0.563	0.936
S.eff[6]	-0.406	0.298	-0.999	-0.604	-0.404	-0.205	0.172
S.eff[7]	0.638	0.290	0.074	0.441	0.636	0.837	1.213
S.eff[8]	0.490	0.286	-0.064	0.300	0.487	0.686	1.056
S.eff[9]	1.058	0.261	0.556	0.881	1.057	1.236	1.571
S.eff[10]	1.551	0.266	1.034	1.370	1.549	1.732	2.070
S.eff[11]	-0.021	0.265	-0.539	-0.196	-0.023	0.156	0.507
S.eff[12]	0.191	0.250	-0.305	0.025	0.194	0.354	0.693
S.eff[13]	0.566	0.257	0.069	0.393	0.562	0.736	1.083
S.eff[14]	0.707	0.262	0.204	0.528	0.706	0.884	1.218
S.eff[15]	0.115	0.277	-0.422	-0.076	0.114	0.308	0.664
y0[1]	-0.145	0.299	-0.740	-0.345	-0.142	0.051	0.443

y0[2]	-0.201	0.262	-0.719	-0.372	-0.199	-0.030	0.307
y0[3]	0.137	0.230	-0.325	-0.013	0.137	0.286	0.583
y0[4]	-0.031	0.216	-0.460	-0.173	-0.031	0.114	0.390
y0[5]	0.106	0.210	-0.307	-0.033	0.107	0.243	0.519
y0[6]	0.380	0.214	-0.034	0.233	0.376	0.518	0.815
y0[7]	-0.322	0.221	-0.756	-0.469	-0.316	-0.173	0.099
y0[8]	0.066	0.210	-0.352	-0.071	0.065	0.204	0.484
y0[9]	0.073	0.204	-0.333	-0.059	0.074	0.209	0.467
y0[10]	-0.323	0.223	-0.775	-0.466	-0.319	-0.175	0.110
y0[11]	-0.007	0.213	-0.420	-0.148	-0.008	0.136	0.414
y0[12]	0.409	0.207	0.006	0.271	0.404	0.551	0.819
y0[13]	-0.261	0.212	-0.688	-0.399	-0.260	-0.118	0.144
y0[14]	-0.322	0.216	-0.761	-0.467	-0.319	-0.178	0.098
y0[15]	-0.242	0.218	-0.681	-0.387	-0.236	-0.094	0.176
y0[16]	0.552	0.218	0.127	0.407	0.546	0.698	0.986
y0[17]	-0.268	0.222	-0.699	-0.416	-0.268	-0.117	0.161
y0[18]	0.950	0.219	0.521	0.801	0.952	1.096	1.374
y0[19]	0.285	0.213	-0.131	0.141	0.285	0.427	0.705
y0[20]	-0.118	0.204	-0.522	-0.254	-0.117	0.019	0.280
y0[21]	-0.132	0.201	-0.522	-0.267	-0.132	0.001	0.265
y0[22]	-0.457	0.230	-0.917	-0.610	-0.453	-0.308	-0.006
y0[23]	-0.144	0.241	-0.628	-0.302	-0.141	0.018	0.321
y0[24]	-0.163	0.262	-0.696	-0.330	-0.156	0.009	0.348
y0[25]	0.265	0.289	-0.299	0.077	0.263	0.447	0.829
N.sum[1]	1,197.009	274.911	741.132	1,003.481	1,170.959	1,363.952	1,804.871
N.sum[2]	1,231.886	269.595	780.213	1,042.951	1,205.798	1,395.593	1,827.096
N.sum[3]	1,891.633	356.401	1,297.918	1,644.677	1,852.710	2,105.407	2,686.190
N.sum[4]	1,771.472	307.560	1,245.217	1,550.631	1,744.265	1,962.412	2,448.511
N.sum[5]	2,254.721	374.526	1,614.057	1,989.156	2,221.550	2,485.878	3,083.420
N.sum[6]	3,273.636	562.366	2,344.390	2,875.904	3,216.969	3,619.749	4,544.996
N.sum[7]	1,772.275	364.164	1,144.665	1,511.823	1,738.056	2,003.598	2,565.307
N.sum[8]	2,758.971	495.378	1,929.914	2,410.591	2,714.165	3,052.992	3,850.440
N.sum[9]	2,898.658	461.934	2,082.819	2,575.923	2,864.750	3,190.485	3,892.000
N.sum[10]	2,042.592	389.441	1,390.790	1,762.454	2,004.581	2,286.787	2,896.083
N.sum[11]	2,931.180	507.818	2,065.443	2,576.800	2,890.204	3,235.619	4,027.338
N.sum[12]	4,720.159	713.192	3,503.862	4,221.009	4,667.547	5,165.336	6,263.824
N.sum[13]	2,635.118	459.664	1,848.919	2,313.704	2,598.178	2,917.507	3,625.556
N.sum[14]	2,740.033	498.945	1,892.840	2,383.953	2,690.043	3,038.000	3,842.514
N.sum[15]	3,304.982	580.893	2,331.080	2,890.856	3,258.611	3,642.664	4,603.270
N.sum[16]	8,097.405	1,244.868	5,955.347	7,223.840	7,989.376	8,857.332	10,908.051
N.sum[17]	3,929.011	674.406	2,789.670	3,446.921	3,863.187	4,347.527	5,434.097
N.sum[18]	14,250.479	2,307.297	10,386.909	12,638.479	14,043.733	15,600.550	19,432.121
N.sum[19]	7,688.024	1,366.306	5,447.021	6,715.941	7,543.831	8,490.750	10,822.097
N.sum[20]	5,257.705	925.118	3,678.716	4,612.471	5,161.850	5,819.140	7,287.879

N.sum[21]	5,238.584	849.769	3,781.475	4,642.823	5,168.831	5,764.664	7,083.582
N.sum[22]	3,862.034	736.273	2,627.132	3,347.605	3,794.498	4,296.146	5,514.797
N.sum[23]	5,444.255	1,063.009	3,683.757	4,694.112	5,339.878	6,081.933	7,834.042
N.sum[24]	5,597.682	1,073.219	3,844.972	4,829.256	5,487.802	6,229.470	7,986.722
N.sum[25]	9,125.532	1,603.690	6,443.447	7,979.203	8,977.600	10,088.507	12,724.318
N.sum2[1]	1,536.896	437.815	849.026	1,224.035	1,480.104	1,791.730	2,536.424
N.sum2[2]	1,653.529	378.752	1,041.094	1,387.512	1,605.662	1,874.674	2,507.067
N.sum2[3]	1,809.340	349.309	1,228.028	1,562.146	1,773.589	2,014.792	2,585.770
N.sum2[4]	2,002.678	349.863	1,411.379	1,757.122	1,967.850	2,207.555	2,773.985
N.sum2[5]	2,222.277	364.857	1,602.569	1,969.988	2,189.910	2,437.160	3,053.268
N.sum2[6]	2,447.873	381.435	1,800.808	2,184.525	2,414.488	2,672.372	3,304.500
N.sum2[7]	2,653.317	401.253	1,961.117	2,377.396	2,613.235	2,888.687	3,548.803
N.sum2[8]	2,817.869	426.703	2,076.551	2,525.065	2,779.382	3,068.369	3,775.047
N.sum2[9]	2,948.828	452.877	2,164.492	2,640.334	2,903.194	3,224.426	3,957.167
N.sum2[10]	3,073.258	478.800	2,235.944	2,742.708	3,028.389	3,364.752	4,123.671
N.sum2[11]	3,226.487	511.071	2,313.748	2,879.666	3,183.620	3,537.775	4,345.841
N.sum2[12]	3,440.734	551.696	2,467.575	3,061.152	3,394.848	3,775.119	4,664.272
N.sum2[13]	3,737.857	598.555	2,724.995	3,312.959	3,676.507	4,101.625	5,053.504
N.sum2[14]	4,127.745	660.447	3,041.800	3,660.384	4,058.873	4,515.068	5,608.913
N.sum2[15]	4,602.401	762.040	3,378.375	4,063.486	4,528.402	5,035.900	6,376.874
N.sum2[16]	5,128.247	909.942	3,682.030	4,489.267	5,009.820	5,626.116	7,305.010
N.sum2[17]	5,639.115	1,049.534	4,007.424	4,907.280	5,489.094	6,209.403	8,193.987
N.sum2[18]	6,054.952	1,099.488	4,337.287	5,280.857	5,910.966	6,662.090	8,679.132
N.sum2[19]	6,324.257	1,044.365	4,636.470	5,602.052	6,190.788	6,923.208	8,792.588
N.sum2[20]	6,458.213	974.062	4,850.582	5,768.688	6,342.265	7,033.458	8,663.293
N.sum2[21]	6,538.938	1,003.521	4,878.268	5,832.828	6,437.031	7,121.674	8,771.662
N.sum2[22]	6,660.996	1,159.890	4,769.209	5,867.763	6,532.382	7,308.253	9,215.499
N.sum2[23]	6,899.975	1,437.266	4,677.139	5,923.687	6,705.085	7,673.332	10,155.917
N.sum2[24]	7,308.553	1,870.751	4,521.141	6,034.876	7,019.499	8,259.267	11,587.113
N.sum2[25]	7,916.612	2,512.635	4,265.219	6,201.705	7,487.916	9,181.813	13,827.668
R.growth[1]	0.087	0.086	-0.084	0.033	0.085	0.139	0.273
R.growth[2]	0.097	0.077	-0.050	0.047	0.094	0.146	0.264
R.growth[3]	0.105	0.063	-0.013	0.060	0.103	0.146	0.236
R.growth[4]	0.106	0.052	0.009	0.069	0.105	0.140	0.210
R.growth[5]	0.098	0.050	0.009	0.063	0.095	0.131	0.200
R.growth[6]	0.081	0.051	-0.012	0.047	0.078	0.112	0.192
R.growth[7]	0.060	0.050	-0.041	0.029	0.059	0.090	0.163
R.growth[8]	0.045	0.048	-0.059	0.017	0.046	0.077	0.137
R.growth[9]	0.041	0.049	-0.068	0.013	0.044	0.073	0.132
R.growth[10]	0.048	0.050	-0.061	0.019	0.049	0.079	0.150
R.growth[11]	0.064	0.049	-0.033	0.035	0.062	0.093	0.171
R.growth[12]	0.083	0.049	-0.007	0.050	0.079	0.110	0.198
R.growth[13]	0.099	0.055	0.008	0.062	0.091	0.130	0.227
R.growth[14]	0.108	0.060	0.012	0.067	0.099	0.141	0.248

R.growth[15]	0.106	0.057	0.010	0.068	0.098	0.138	0.242
R.growth[16]	0.094	0.048	0.005	0.063	0.091	0.121	0.204
R.growth[17]	0.072	0.044	-0.023	0.046	0.073	0.099	0.160
R.growth[18]	0.046	0.052	-0.069	0.014	0.049	0.082	0.140
R.growth[19]	0.023	0.062	-0.117	-0.015	0.029	0.067	0.129
R.growth[20]	0.012	0.066	-0.128	-0.029	0.018	0.058	0.126
R.growth[21]	0.015	0.065	-0.118	-0.027	0.018	0.060	0.134
R.growth[22]	0.029	0.068	-0.115	-0.014	0.031	0.077	0.153
R.growth[23]	0.048	0.076	-0.111	-0.003	0.049	0.103	0.184
R.growth[24]	0.064	0.083	-0.107	0.008	0.066	0.123	0.217
Deviance	14,949.248	28.521	14,891.212	14,929.886	14,950.263	14,970.318	14,999.424

Tables A4.9. Bayesian generalized linear mixed model output for **Tundra Swan** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	1.233	0.025	1.187	1.216	1.233	1.250	1.282
MSE.CV	2.568	0.051	2.471	2.532	2.568	2.603	2.670
SSE	29,075.0	582.0	27,977.9	28,666.7	29,070.5	29,464.3	30,226.2
Trend	1.028	0.009	1.010	1.023	1.029	1.034	1.045
R.trend	0.028	0.009	0.010	0.023	0.028	0.034	0.044
M.dens	0.215	0.005	0.205	0.211	0.214	0.218	0.227
M.y0	-0.005	0.045	-0.094	-0.038	-0.005	0.026	0.081
M.yz	0.126	0.049	0.028	0.093	0.126	0.158	0.221
M.blyr	-0.888	0.051	-0.989	-0.923	-0.889	-0.854	-0.784
M.cell	0.000	0.007	-0.013	-0.005	0.000	0.004	0.013
M.psi	0.546	0.006	0.533	0.541	0.546	0.550	0.558
R.mid	7.501	1.166	5.818	6.662	7.297	8.127	10.373
b.ADOY	0.070	0.021	0.028	0.057	0.070	0.085	0.110
b.ADOY.2	0.003	0.013	-0.023	-0.006	0.003	0.012	0.029
z.ADOY	0.143	0.047	0.052	0.111	0.142	0.175	0.238
z.ADOY.2	0.026	0.022	-0.017	0.011	0.027	0.040	0.066
SD.surv	0.112	0.054	0.015	0.075	0.109	0.145	0.233
SD.surv.z	0.485	0.139	0.260	0.388	0.471	0.565	0.805
SD.y0	0.241	0.043	0.171	0.210	0.236	0.265	0.337
SD.yz	0.771	0.139	0.546	0.673	0.756	0.851	1.086
SD.cell	0.252	0.019	0.216	0.240	0.252	0.265	0.289
SD.cell.z	0.615	0.034	0.551	0.592	0.614	0.638	0.681
SD.lam[1]	0.252	0.057	0.158	0.210	0.246	0.288	0.380
SD.lam[2]	1.220	0.468	0.638	0.906	1.119	1.412	2.390
SD.lam[3]	0.517	0.660	0.018	0.111	0.292	0.678	2.249
SD.lam[4]	0.422	0.439	0.009	0.123	0.278	0.572	1.634
SD.lam[5]	4.947	5.187	0.070	0.924	2.857	7.549	18.359
SD.lam[6]	1.712	0.638	0.879	1.215	1.546	2.095	3.185
SD.lam[7]	0.683	0.273	0.348	0.491	0.611	0.816	1.389
SD.lam[8]	0.183	0.281	0.006	0.042	0.089	0.199	0.981
S.eff[1]	-0.054	0.085	-0.237	-0.106	-0.046	0.003	0.100
S.eff[2]	0.047	0.092	-0.118	-0.012	0.036	0.104	0.249
S.eff[3]	0.077	0.097	-0.083	0.007	0.063	0.137	0.293
S.eff[4]	-0.038	0.084	-0.221	-0.089	-0.030	0.015	0.121
S.eff[5]	-0.001	0.086	-0.177	-0.052	-0.001	0.050	0.183
S.eff[6]	-0.030	0.087	-0.210	-0.081	-0.024	0.023	0.135
S.eff[7]	0.166	0.117	-0.012	0.074	0.157	0.245	0.410
S.eff[8]	0.077	0.099	-0.088	0.007	0.063	0.136	0.299
S.eff[9]	0.063	0.087	-0.085	0.002	0.052	0.116	0.256

S.eff[10]	0.013	0.082	-0.146	-0.036	0.010	0.061	0.186
S.eff[11]	-0.029	0.085	-0.211	-0.080	-0.022	0.023	0.130
S.eff[12]	0.013	0.085	-0.159	-0.037	0.009	0.062	0.190
S.eff[13]	-0.070	0.094	-0.280	-0.127	-0.058	-0.004	0.092
S.eff[14]	0.003	0.085	-0.167	-0.047	0.002	0.052	0.182
S.eff[15]	-0.079	0.090	-0.285	-0.133	-0.068	-0.014	0.074
S.eff.z[1]	0.076	0.188	-0.286	-0.053	0.077	0.205	0.454
S.eff.z[2]	0.020	0.200	-0.375	-0.112	0.022	0.154	0.408
S.eff.z[3]	-0.140	0.201	-0.535	-0.274	-0.137	-0.005	0.245
S.eff.z[4]	-0.515	0.227	-0.982	-0.664	-0.511	-0.360	-0.083
S.eff.z[5]	-0.423	0.211	-0.850	-0.565	-0.418	-0.279	-0.018
S.eff.z[6]	-0.872	0.232	-1.315	-1.032	-0.873	-0.714	-0.423
S.eff.z[7]	-0.312	0.216	-0.738	-0.458	-0.306	-0.161	0.094
S.eff.z[8]	-0.932	0.269	-1.463	-1.105	-0.928	-0.750	-0.413
S.eff.z[9]	-0.250	0.197	-0.644	-0.382	-0.245	-0.114	0.121
S.eff.z[10]	-0.328	0.200	-0.730	-0.461	-0.325	-0.195	0.056
S.eff.z[11]	0.065	0.194	-0.313	-0.064	0.067	0.198	0.443
S.eff.z[12]	-0.118	0.203	-0.522	-0.255	-0.115	0.019	0.275
S.eff.z[13]	-0.059	0.218	-0.494	-0.203	-0.054	0.092	0.354
S.eff.z[14]	-0.078	0.201	-0.482	-0.213	-0.075	0.058	0.311
S.eff.z[15]	-0.101	0.200	-0.506	-0.231	-0.096	0.038	0.271
y0[1]	0.149	0.137	-0.122	0.059	0.149	0.239	0.416
y0[2]	0.029	0.128	-0.215	-0.055	0.024	0.112	0.294
y0[3]	-0.071	0.116	-0.294	-0.151	-0.070	0.006	0.160
y0[4]	-0.026	0.107	-0.233	-0.097	-0.028	0.046	0.185
y0[5]	-0.031	0.097	-0.220	-0.097	-0.032	0.036	0.159
y0[6]	-0.097	0.102	-0.294	-0.168	-0.097	-0.027	0.106
y0[7]	-0.110	0.101	-0.313	-0.179	-0.108	-0.040	0.085
y0[8]	-0.069	0.101	-0.269	-0.137	-0.067	-0.003	0.127
y0[9]	0.196	0.095	0.008	0.135	0.197	0.258	0.381
y0[10]	0.044	0.095	-0.140	-0.019	0.044	0.108	0.230
y0[11]	0.004	0.095	-0.179	-0.058	0.004	0.066	0.188
y0[12]	-0.017	0.098	-0.209	-0.083	-0.018	0.051	0.170
y0[13]	-0.122	0.097	-0.316	-0.187	-0.120	-0.057	0.067
y0[14]	-0.053	0.094	-0.238	-0.115	-0.053	0.010	0.127
y0[15]	0.048	0.095	-0.146	-0.014	0.048	0.110	0.236
y0[16]	0.092	0.093	-0.094	0.030	0.094	0.155	0.274
y0[17]	0.035	0.092	-0.147	-0.025	0.036	0.095	0.212
y0[18]	0.135	0.094	-0.052	0.072	0.137	0.198	0.317
y0[19]	0.275	0.091	0.101	0.213	0.273	0.333	0.462
y0[20]	-0.716	0.109	-0.933	-0.790	-0.714	-0.642	-0.508
y0[21]	0.101	0.097	-0.090	0.036	0.101	0.163	0.299
y0[22]	0.282	0.098	0.096	0.217	0.281	0.346	0.481
y0[23]	0.062	0.109	-0.151	-0.012	0.061	0.134	0.278

y0[24]	0.157	0.117	-0.063	0.079	0.152	0.233	0.401
y0[25]	-0.434	0.139	-0.700	-0.529	-0.437	-0.342	-0.153
yz[1]	0.719	0.137	0.448	0.629	0.720	0.812	0.987
yz[2]	1.000	0.155	0.700	0.897	0.996	1.105	1.305
yz[3]	0.973	0.160	0.658	0.867	0.973	1.081	1.283
yz[4]	0.694	0.150	0.389	0.599	0.697	0.796	0.980
yz[5]	0.720	0.150	0.418	0.622	0.721	0.820	1.008
yz[6]	1.000	0.141	0.716	0.904	1.005	1.095	1.269
yz[7]	0.462	0.159	0.149	0.353	0.465	0.570	0.775
yz[8]	0.782	0.160	0.459	0.677	0.788	0.892	1.088
yz[9]	0.530	0.139	0.257	0.436	0.532	0.625	0.801
yz[10]	0.487	0.143	0.202	0.391	0.488	0.583	0.767
yz[11]	0.376	0.150	0.081	0.277	0.378	0.480	0.663
yz[12]	0.455	0.150	0.152	0.356	0.457	0.561	0.745
yz[13]	0.141	0.157	-0.173	0.037	0.145	0.249	0.439
yz[14]	0.223	0.147	-0.075	0.124	0.228	0.326	0.492
yz[15]	0.223	0.146	-0.070	0.129	0.223	0.322	0.499
yz[16]	-0.392	0.149	-0.696	-0.491	-0.388	-0.290	-0.108
yz[17]	-0.415	0.154	-0.735	-0.515	-0.410	-0.310	-0.127
yz[18]	-0.148	0.143	-0.446	-0.242	-0.143	-0.051	0.121
yz[19]	0.012	0.124	-0.241	-0.069	0.015	0.095	0.252
yz[20]	-1.591	0.384	-2.456	-1.813	-1.554	-1.321	-0.964
yz[21]	-0.193	0.145	-0.486	-0.290	-0.192	-0.092	0.081
yz[22]	-0.303	0.137	-0.580	-0.393	-0.298	-0.213	-0.046
yz[23]	-0.175	0.151	-0.486	-0.273	-0.169	-0.073	0.109
yz[24]	-0.732	0.166	-1.076	-0.841	-0.727	-0.617	-0.422
yz[25]	-1.707	0.392	-2.572	-1.943	-1.675	-1.430	-1.029
N.sum[1]	9,062.702	802.689	7,594.652	8,498.810	9,035.348	9,599.416	10,693.938
N.sum[2]	6,619.313	672.635	5,417.359	6,152.321	6,581.970	7,048.910	8,071.699
N.sum[3]	5,993.213	581.757	4,896.278	5,590.561	5,987.802	6,372.754	7,177.347
N.sum[4]	7,344.975	600.027	6,233.188	6,924.638	7,331.941	7,745.211	8,561.062
N.sum[5]	7,100.264	578.593	6,012.004	6,702.328	7,085.432	7,480.047	8,296.474
N.sum[6]	5,514.306	477.631	4,596.908	5,187.596	5,503.634	5,826.762	6,490.367
N.sum[7]	7,451.536	662.138	6,234.664	6,990.713	7,417.958	7,881.533	8,818.825
N.sum[8]	6,393.619	571.429	5,332.103	6,002.104	6,373.154	6,759.984	7,571.904
N.sum[9]	9,615.439	756.035	8,184.736	9,089.789	9,603.355	10,119.718	11,120.239
N.sum[10]	8,422.652	647.582	7,202.416	7,978.637	8,406.846	8,850.694	9,735.005
N.sum[11]	8,562.961	655.400	7,331.332	8,102.101	8,540.264	8,998.288	9,911.866
N.sum[12]	8,005.924	635.957	6,808.144	7,580.967	7,984.272	8,409.293	9,344.120
N.sum[13]	8,439.724	596.967	7,319.112	8,025.480	8,426.925	8,845.923	9,629.686
N.sum[14]	8,652.319	602.535	7,521.641	8,243.010	8,634.988	9,042.935	9,915.882
N.sum[15]	9,522.701	677.751	8,234.200	9,059.988	9,499.364	9,977.150	10,873.309
N.sum[16]	12,928.169	738.555	11,548.648	12,408.368	12,904.317	13,420.114	14,440.748
N.sum[17]	12,231.403	679.116	10,940.503	11,767.789	12,225.151	12,674.640	13,591.044

N.sum[18]	12,076.309	711.798	10,742.928	11,589.680	12,062.096	12,541.902	13,508.523
N.sum[19]	12,849.562	765.637	11,377.403	12,330.351	12,833.016	13,349.869	14,413.190
N.sum[20]	7,646.627	474.269	6,720.970	7,329.369	7,633.697	7,967.750	8,594.022
N.sum[21]	11,594.939	674.213	10,287.035	11,135.708	11,579.005	12,045.925	12,942.677
N.sum[22]	14,390.029	796.353	12,842.745	13,860.079	14,377.573	14,918.289	15,974.611
N.sum[23]	10,853.432	650.290	9,588.322	10,417.711	10,841.753	11,292.418	12,142.897
N.sum[24]	14,460.125	773.942	12,971.681	13,934.475	14,447.170	14,962.781	16,030.909
N.sum[25]	9,848.960	592.451	8,742.283	9,449.698	9,839.051	10,233.325	11,066.174
N.sum2[1]	8,052.840	1,184.225	6,054.463	7,240.225	7,945.616	8,750.770	10,718.029
N.sum2[2]	6,616.219	903.028	5,033.983	5,978.470	6,570.629	7,168.767	8,579.679
N.sum2[3]	6,614.334	833.169	5,157.279	6,022.585	6,564.946	7,137.587	8,367.118
N.sum2[4]	7,747.361	880.947	6,174.100	7,124.434	7,700.532	8,303.011	9,623.462
N.sum2[5]	7,522.012	782.523	6,083.278	6,991.089	7,494.917	8,022.549	9,165.009
N.sum2[6]	6,236.477	656.942	5,056.088	5,766.614	6,209.883	6,650.460	7,621.955
N.sum2[7]	8,533.615	834.004	7,006.962	7,944.179	8,495.851	9,076.800	10,250.841
N.sum2[8]	7,033.834	748.908	5,639.090	6,525.130	6,999.076	7,500.029	8,622.069
N.sum2[9]	8,104.482	730.181	6,742.244	7,605.504	8,099.542	8,579.843	9,580.586
N.sum2[10]	8,266.569	766.943	6,837.261	7,741.545	8,244.414	8,773.096	9,812.630
N.sum2[11]	8,747.616	805.456	7,243.454	8,187.462	8,717.238	9,260.197	10,418.652
N.sum2[12]	8,356.008	778.982	6,927.086	7,829.945	8,324.107	8,850.204	9,980.049
N.sum2[13]	9,785.861	870.486	8,173.093	9,180.931	9,750.410	10,341.078	11,604.454
N.sum2[14]	9,361.813	818.455	7,883.853	8,793.832	9,318.119	9,880.964	11,077.898
N.sum2[15]	9,314.560	824.040	7,830.489	8,752.031	9,262.955	9,814.540	11,105.709
N.sum2[16]	12,095.581	933.366	10,463.474	11,452.337	12,015.958	12,669.378	14,103.910
N.sum2[17]	12,116.275	921.407	10,465.534	11,471.230	12,049.926	12,697.827	14,093.767
N.sum2[18]	10,827.537	880.553	9,259.495	10,208.536	10,770.567	11,385.586	12,722.934
N.sum2[19]	10,015.446	800.744	8,569.848	9,474.450	9,969.905	10,512.199	11,750.915
N.sum2[20]	16,060.895	1,416.504	13,497.639	15,071.280	15,982.369	16,959.684	19,019.682
N.sum2[21]	10,756.208	906.835	9,100.400	10,123.257	10,718.215	11,332.511	12,619.997
N.sum2[22]	11,143.161	951.905	9,380.877	10,493.776	11,092.491	11,751.749	13,127.686
N.sum2[23]	10,486.650	1,032.031	8,643.551	9,756.890	10,427.419	11,152.225	12,646.466
N.sum2[24]	12,712.918	1,329.236	10,175.855	11,844.841	12,674.053	13,539.768	15,452.994
N.sum2[25]	15,670.239	1,942.444	12,077.055	14,336.264	15,611.182	16,861.274	19,754.398
R.growth[1]	-0.195	0.133	-0.457	-0.286	-0.193	-0.105	0.059
R.growth[2]	0.001	0.127	-0.246	-0.085	0.002	0.089	0.244
R.growth[3]	0.160	0.121	-0.079	0.078	0.158	0.244	0.396
R.growth[4]	-0.029	0.116	-0.260	-0.104	-0.029	0.047	0.200
R.growth[5]	-0.188	0.122	-0.424	-0.270	-0.188	-0.107	0.062
R.growth[6]	0.314	0.117	0.082	0.238	0.316	0.395	0.539
R.growth[7]	-0.194	0.116	-0.431	-0.271	-0.193	-0.113	0.027
R.growth[8]	0.143	0.117	-0.085	0.065	0.142	0.220	0.376
R.growth[9]	0.020	0.107	-0.192	-0.052	0.020	0.091	0.233
R.growth[10]	0.057	0.109	-0.157	-0.017	0.057	0.130	0.278
R.growth[11]	-0.046	0.113	-0.268	-0.122	-0.044	0.031	0.170

R.growth[12]	0.158	0.113	-0.066	0.083	0.160	0.235	0.380
R.growth[13]	-0.044	0.105	-0.250	-0.114	-0.044	0.025	0.161
R.growth[14]	-0.005	0.101	-0.206	-0.072	-0.005	0.063	0.190
R.growth[15]	0.262	0.090	0.087	0.201	0.261	0.323	0.440
R.growth[16]	0.002	0.079	-0.151	-0.053	0.001	0.056	0.158
R.growth[17]	-0.113	0.083	-0.272	-0.170	-0.114	-0.055	0.052
R.growth[18]	-0.078	0.083	-0.239	-0.135	-0.078	-0.023	0.090
R.growth[19]	0.472	0.086	0.302	0.413	0.472	0.530	0.638
R.growth[20]	-0.401	0.087	-0.569	-0.459	-0.400	-0.342	-0.230
R.growth[21]	0.035	0.083	-0.129	-0.020	0.035	0.091	0.199
R.growth[22]	-0.062	0.082	-0.222	-0.117	-0.063	-0.008	0.101
R.growth[23]	0.192	0.085	0.024	0.137	0.193	0.249	0.356
R.growth[24]	0.207	0.080	0.050	0.153	0.208	0.262	0.362
Deviance	27,380.102	218.923	26,963.061	27,232.155	27,374.916	27,523.178	27,818.065

Tables A4.10. Bayesian generalized linear mixed model output for **Northern Pintail** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	20.785	0.303	20.214	20.576	20.772	20.985	21.411
MSE.CV	9.790	0.143	9.521	9.692	9.784	9.885	10.085
SSE	537,606.2	7,827.4	522,839.5	532,186.6	537,266.7	542,784.5	553,807.0
Trend	1.001	0.008	0.986	0.996	1.001	1.006	1.020
R.trend	0.001	0.008	-0.014	-0.004	0.001	0.006	0.020
M.dens	0.947	0.020	0.910	0.933	0.946	0.959	0.989
M.y0	-0.005	0.043	-0.093	-0.033	-0.006	0.023	0.078
M.yz	-0.014	0.026	-0.066	-0.031	-0.014	0.004	0.038
M.blyr	0.482	0.047	0.389	0.451	0.483	0.513	0.578
M.cell	0.000	0.007	-0.015	-0.005	0.000	0.005	0.014
M.psi	0.526	0.004	0.519	0.524	0.526	0.529	0.533
R.mid	1.253	0.030	1.195	1.232	1.253	1.273	1.310
b.ADOY	0.003	0.018	-0.032	-0.009	0.003	0.016	0.039
b.ADOY.2	-0.015	0.008	-0.032	-0.021	-0.015	-0.010	0.001
z.ADOY	0.172	0.028	0.119	0.153	0.172	0.191	0.227
z.ADOY.2	0.057	0.014	0.029	0.048	0.057	0.067	0.084
SD.surv	0.247	0.057	0.160	0.207	0.240	0.278	0.381
SD.surv.z	0.621	0.139	0.412	0.522	0.599	0.696	0.946
SD.y0	0.228	0.040	0.164	0.199	0.223	0.251	0.319
SD.yz	0.432	0.068	0.322	0.385	0.424	0.471	0.591
SD.cell	0.301	0.012	0.278	0.293	0.301	0.309	0.324
SD.cell.z	0.445	0.022	0.401	0.429	0.444	0.460	0.489
SD.lam[1]	0.144	0.032	0.090	0.120	0.142	0.165	0.211
SD.lam[2]	1.301	0.550	0.662	0.939	1.172	1.506	2.740
SD.lam[3]	0.999	1.050	0.126	0.387	0.663	1.210	4.152
SD.lam[4]	0.593	0.506	0.024	0.230	0.474	0.806	1.939
SD.lam[5]	5.559	5.320	0.156	1.243	3.549	8.605	18.419
SD.lam[6]	1.393	0.475	0.811	1.043	1.244	1.657	2.546
SD.lam[7]	1.827	0.457	1.166	1.512	1.751	2.061	2.962
SD.lam[8]	0.536	1.112	0.022	0.101	0.193	0.442	4.259
S.eff[1]	-0.007	0.086	-0.174	-0.065	-0.007	0.050	0.163
S.eff[2]	0.145	0.079	-0.011	0.091	0.145	0.197	0.297
S.eff[3]	-0.035	0.092	-0.216	-0.097	-0.036	0.028	0.146
S.eff[4]	-0.168	0.075	-0.317	-0.218	-0.167	-0.117	-0.023
S.eff[5]	0.001	0.073	-0.140	-0.048	0.001	0.049	0.143
S.eff[6]	0.143	0.104	-0.062	0.072	0.144	0.213	0.346
S.eff[7]	0.051	0.074	-0.096	0.002	0.051	0.101	0.193
S.eff[8]	-0.228	0.092	-0.413	-0.291	-0.228	-0.165	-0.050
S.eff[9]	-0.577	0.086	-0.748	-0.634	-0.576	-0.519	-0.412

S.eff[10]	0.140	0.067	0.009	0.095	0.140	0.184	0.272
S.eff[11]	-0.160	0.069	-0.299	-0.206	-0.161	-0.114	-0.024
S.eff[12]	0.261	0.072	0.119	0.213	0.262	0.310	0.402
S.eff[13]	0.173	0.071	0.033	0.125	0.174	0.221	0.312
S.eff[14]	0.176	0.083	0.015	0.121	0.176	0.231	0.339
S.eff[15]	0.178	0.088	0.007	0.117	0.178	0.237	0.355
S.eff.z[1]	-0.229	0.146	-0.514	-0.327	-0.230	-0.132	0.058
S.eff.z[2]	0.197	0.140	-0.070	0.100	0.195	0.290	0.473
S.eff.z[3]	0.175	0.146	-0.109	0.077	0.173	0.273	0.462
S.eff.z[4]	0.153	0.136	-0.110	0.060	0.153	0.245	0.425
S.eff.z[5]	0.115	0.136	-0.147	0.021	0.114	0.208	0.383
S.eff.z[6]	0.727	0.162	0.407	0.620	0.725	0.836	1.045
S.eff.z[7]	1.044	0.148	0.762	0.945	1.041	1.143	1.342
S.eff.z[8]	1.079	0.164	0.756	0.968	1.080	1.189	1.405
S.eff.z[9]	0.966	0.161	0.648	0.853	0.966	1.075	1.280
S.eff.z[10]	-0.130	0.140	-0.402	-0.222	-0.131	-0.039	0.146
S.eff.z[11]	-0.063	0.145	-0.343	-0.162	-0.065	0.035	0.221
S.eff.z[12]	-0.404	0.139	-0.672	-0.498	-0.402	-0.307	-0.138
S.eff.z[13]	0.310	0.135	0.044	0.218	0.306	0.400	0.585
S.eff.z[14]	-0.555	0.144	-0.840	-0.652	-0.555	-0.455	-0.277
S.eff.z[15]	0.288	0.145	0.004	0.187	0.287	0.386	0.577
y0[1]	-0.055	0.137	-0.327	-0.146	-0.055	0.036	0.220
y0[2]	-0.114	0.117	-0.340	-0.192	-0.115	-0.036	0.116
y0[3]	-0.095	0.106	-0.295	-0.167	-0.097	-0.025	0.116
y0[4]	0.259	0.094	0.080	0.195	0.255	0.320	0.456
y0[5]	0.060	0.091	-0.112	-0.003	0.057	0.118	0.249
y0[6]	-0.273	0.094	-0.460	-0.335	-0.275	-0.211	-0.089
y0[7]	0.047	0.089	-0.133	-0.012	0.047	0.107	0.220
y0[8]	0.128	0.086	-0.049	0.073	0.128	0.185	0.297
y0[9]	0.218	0.085	0.038	0.166	0.220	0.275	0.379
y0[10]	-0.049	0.084	-0.220	-0.102	-0.046	0.006	0.111
y0[11]	-0.013	0.081	-0.174	-0.065	-0.010	0.040	0.142
y0[12]	-0.104	0.079	-0.263	-0.155	-0.102	-0.050	0.046
y0[13]	0.115	0.074	-0.035	0.068	0.119	0.167	0.253
y0[14]	-0.243	0.083	-0.416	-0.295	-0.242	-0.187	-0.085
y0[15]	-0.160	0.081	-0.330	-0.214	-0.157	-0.105	-0.009
y0[16]	-0.011	0.077	-0.165	-0.062	-0.010	0.040	0.139
y0[17]	0.294	0.074	0.141	0.248	0.295	0.343	0.439
y0[18]	0.205	0.079	0.048	0.153	0.206	0.256	0.359
y0[19]	0.070	0.080	-0.087	0.017	0.069	0.121	0.228
y0[20]	-0.629	0.095	-0.822	-0.691	-0.628	-0.565	-0.449
y0[21]	0.128	0.087	-0.045	0.071	0.128	0.185	0.297
y0[22]	0.111	0.095	-0.085	0.051	0.112	0.174	0.299
y0[23]	0.131	0.103	-0.076	0.066	0.133	0.200	0.324

y0[24]	-0.162	0.116	-0.405	-0.233	-0.158	-0.085	0.059
y0[25]	0.009	0.137	-0.278	-0.076	0.012	0.095	0.275
yz[1]	0.385	0.099	0.186	0.318	0.385	0.452	0.579
yz[2]	0.330	0.097	0.137	0.266	0.330	0.395	0.519
yz[3]	0.836	0.092	0.655	0.774	0.836	0.901	1.018
yz[4]	0.137	0.081	-0.019	0.083	0.136	0.192	0.295
yz[5]	0.087	0.081	-0.072	0.032	0.087	0.141	0.247
yz[6]	0.441	0.086	0.275	0.380	0.440	0.499	0.609
yz[7]	-0.861	0.105	-1.069	-0.931	-0.860	-0.789	-0.658
yz[8]	-0.604	0.093	-0.788	-0.666	-0.604	-0.541	-0.420
yz[9]	-0.820	0.101	-1.021	-0.889	-0.818	-0.751	-0.625
yz[10]	-0.147	0.094	-0.331	-0.210	-0.148	-0.082	0.035
yz[11]	-0.152	0.098	-0.346	-0.217	-0.151	-0.088	0.038
yz[12]	0.128	0.091	-0.050	0.065	0.128	0.189	0.305
yz[13]	-0.183	0.088	-0.358	-0.243	-0.184	-0.123	-0.014
yz[14]	0.560	0.094	0.380	0.496	0.560	0.622	0.749
yz[15]	0.308	0.096	0.118	0.243	0.309	0.373	0.497
yz[16]	-0.117	0.086	-0.286	-0.175	-0.118	-0.058	0.050
yz[17]	-0.274	0.079	-0.432	-0.327	-0.275	-0.219	-0.121
yz[18]	0.248	0.083	0.085	0.192	0.249	0.304	0.413
yz[19]	-0.151	0.085	-0.319	-0.208	-0.152	-0.095	0.020
yz[20]	0.169	0.108	-0.044	0.098	0.170	0.242	0.378
yz[21]	0.038	0.084	-0.127	-0.018	0.038	0.095	0.201
yz[22]	0.151	0.088	-0.019	0.090	0.151	0.210	0.326
yz[23]	-0.093	0.088	-0.270	-0.152	-0.092	-0.034	0.076
yz[24]	-0.516	0.105	-0.728	-0.586	-0.514	-0.445	-0.317
yz[25]	-0.239	0.097	-0.431	-0.302	-0.241	-0.173	-0.052
N.sum[1]	40,309.578	2,934.233	34,769.930	38,290.338	40,244.833	42,241.941	46,163.868
N.sum[2]	39,211.263	2,743.532	34,061.484	37,343.948	39,159.183	41,009.514	44,777.926
N.sum[3]	29,639.349	2,254.819	25,428.058	28,083.777	29,539.578	31,123.075	34,253.008
N.sum[4]	63,723.862	3,525.095	57,131.924	61,313.672	63,638.870	66,085.308	70,820.333
N.sum[5]	53,864.986	2,850.370	48,596.325	51,905.894	53,823.058	55,698.447	59,787.047
N.sum[6]	32,166.409	2,117.144	28,274.816	30,694.332	32,086.176	33,541.214	36,582.380
N.sum[7]	77,042.972	3,884.563	69,774.312	74,367.685	76,969.843	79,624.974	84,785.169
N.sum[8]	76,900.515	3,734.443	69,735.347	74,392.518	76,791.639	79,431.336	84,365.319
N.sum[9]	89,535.344	3,963.113	81,960.849	86,837.682	89,485.222	92,183.261	97,344.526
N.sum[10]	53,260.477	2,941.709	47,680.782	51,238.385	53,224.723	55,142.012	59,250.430
N.sum[11]	54,769.515	3,166.888	48,795.181	52,641.291	54,706.339	56,838.915	61,230.991
N.sum[12]	43,402.886	2,665.193	38,453.175	41,603.958	43,282.518	45,159.986	48,869.930
N.sum[13]	61,469.623	3,314.709	55,248.995	59,202.391	61,373.045	63,635.296	68,111.350
N.sum[14]	28,962.226	2,124.813	24,966.492	27,508.499	28,876.139	30,367.571	33,325.402
N.sum[15]	35,568.565	2,475.718	31,005.864	33,816.608	35,499.334	37,172.837	40,644.135
N.sum[16]	49,767.103	2,626.690	44,812.516	47,958.333	49,701.872	51,530.417	55,027.921
N.sum[17]	70,708.535	3,307.781	64,485.112	68,389.926	70,625.897	72,891.845	77,446.522

N.sum[18]	49,675.989	2,947.349	44,145.478	47,644.426	49,608.828	51,604.352	55,615.693
N.sum[19]	51,350.558	2,725.684	46,269.040	49,489.612	51,263.100	53,155.827	56,886.989
N.sum[20]	21,482.052	1,447.272	18,763.845	20,490.246	21,426.694	22,446.512	24,427.615
N.sum[21]	47,676.462	2,592.937	42,746.134	45,915.072	47,628.745	49,346.043	53,046.170
N.sum[22]	43,416.385	2,637.332	38,464.615	41,579.342	43,379.841	45,137.189	48,786.774
N.sum[23]	48,713.523	2,707.916	43,593.603	46,906.429	48,636.771	50,496.318	54,178.198
N.sum[24]	42,295.302	2,122.689	38,209.662	40,842.713	42,234.354	43,718.378	46,606.668
N.sum[25]	44,370.366	2,315.458	40,010.621	42,780.474	44,286.075	45,913.536	49,079.309
N.sum2[1]	43,760.245	5,671.777	32,826.193	39,943.286	43,655.747	47,408.378	55,596.635
N.sum2[2]	45,071.903	4,985.432	35,742.255	41,644.240	44,894.639	48,376.134	55,235.976
N.sum2[3]	33,373.347	3,402.567	27,135.709	31,053.785	33,241.614	35,564.415	40,466.909
N.sum2[4]	50,322.550	4,130.842	42,406.057	47,541.249	50,214.213	53,009.800	58,638.178
N.sum2[5]	51,920.826	4,003.743	44,523.231	49,290.320	51,836.899	54,446.750	60,269.033
N.sum2[6]	43,225.484	3,404.935	36,863.451	40,843.951	43,072.693	45,471.459	50,202.441
N.sum2[7]	75,201.722	5,268.443	65,800.250	71,554.029	74,889.570	78,536.884	86,549.815
N.sum2[8]	69,207.054	4,937.648	60,412.756	65,802.603	68,884.815	72,336.967	79,742.305
N.sum2[9]	73,658.592	5,282.886	64,386.487	70,053.424	73,230.424	76,744.984	85,440.959
N.sum2[10]	57,208.349	4,168.291	49,826.116	54,371.049	56,912.863	59,738.988	66,271.876
N.sum2[11]	56,753.284	4,114.800	49,457.671	53,967.946	56,419.873	59,221.453	65,807.901
N.sum2[12]	49,228.061	3,479.342	43,209.988	46,829.821	48,961.725	51,332.583	56,842.008
N.sum2[13]	56,003.663	3,603.090	49,682.195	53,593.531	55,764.652	58,094.056	64,042.670
N.sum2[14]	37,736.730	2,925.823	32,285.568	35,758.141	37,616.146	39,545.255	43,933.999
N.sum2[15]	42,667.734	3,184.378	36,985.563	40,495.718	42,443.832	44,645.165	49,534.034
N.sum2[16]	51,472.317	3,549.190	44,944.035	49,077.083	51,244.559	53,616.798	59,236.533
N.sum2[17]	53,878.770	3,614.645	47,389.743	51,497.204	53,634.160	56,032.687	61,883.753
N.sum2[18]	41,381.977	3,042.848	35,652.587	39,367.791	41,264.639	43,237.203	47,769.224
N.sum2[19]	48,984.990	3,468.077	42,522.405	46,678.060	48,859.266	51,089.565	56,277.027
N.sum2[20]	41,212.680	3,435.424	34,857.176	38,861.591	41,077.049	43,400.336	48,311.558
N.sum2[21]	42,936.881	3,347.385	36,855.693	40,677.556	42,764.886	44,967.436	49,991.277
N.sum2[22]	39,769.409	3,478.468	33,504.710	37,385.079	39,575.868	41,886.878	47,107.455
N.sum2[23]	43,784.871	4,180.198	36,427.648	40,996.651	43,460.150	46,233.817	53,304.569
N.sum2[24]	51,020.365	5,576.709	41,332.147	47,248.243	50,656.665	54,165.142	63,920.181
N.sum2[25]	45,243.053	5,969.529	35,023.974	41,206.244	44,847.755	48,634.430	58,838.464
R.growth[1]	0.032	0.081	-0.124	-0.023	0.031	0.085	0.194
R.growth[2]	-0.300	0.078	-0.451	-0.352	-0.300	-0.248	-0.145
R.growth[3]	0.413	0.072	0.273	0.364	0.413	0.460	0.554
R.growth[4]	0.032	0.057	-0.078	-0.007	0.032	0.070	0.144
R.growth[5]	-0.183	0.065	-0.309	-0.228	-0.183	-0.140	-0.056
R.growth[6]	0.554	0.059	0.441	0.513	0.554	0.593	0.673
R.growth[7]	-0.083	0.043	-0.168	-0.112	-0.084	-0.054	0.003
R.growth[8]	0.062	0.044	-0.023	0.033	0.062	0.091	0.150
R.growth[9]	-0.253	0.051	-0.356	-0.287	-0.253	-0.219	-0.154
R.growth[10]	-0.008	0.059	-0.125	-0.048	-0.008	0.032	0.107
R.growth[11]	-0.142	0.065	-0.269	-0.186	-0.142	-0.098	-0.017

R.growth[12]	0.129	0.062	0.010	0.088	0.129	0.170	0.253
R.growth[13]	-0.396	0.069	-0.533	-0.442	-0.396	-0.347	-0.265
R.growth[14]	0.123	0.077	-0.028	0.072	0.123	0.175	0.274
R.growth[15]	0.188	0.065	0.061	0.144	0.187	0.231	0.318
R.growth[16]	0.046	0.051	-0.055	0.011	0.046	0.081	0.145
R.growth[17]	-0.264	0.055	-0.375	-0.301	-0.264	-0.227	-0.157
R.growth[18]	0.169	0.059	0.054	0.128	0.170	0.208	0.285
R.growth[19]	-0.174	0.069	-0.309	-0.220	-0.173	-0.127	-0.041
R.growth[20]	0.041	0.070	-0.095	-0.007	0.042	0.089	0.178
R.growth[21]	-0.077	0.063	-0.200	-0.120	-0.077	-0.035	0.046
R.growth[22]	0.096	0.064	-0.027	0.052	0.095	0.138	0.221
R.growth[23]	0.152	0.060	0.036	0.112	0.151	0.191	0.272
R.growth[24]	-0.123	0.062	-0.245	-0.165	-0.124	-0.081	-0.002
Deviance	60,463.066	216.207	60,039.635	60,316.825	60,462.408	60,608.505	60,892.418

Tables A4.11. Bayesian generalized linear mixed model output for **Scaup (Lesser and Greater combined)** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.5%	25.0%	50.0%	75.0%	97.5%
MSE	1.407	0.018	1.379	1.395	1.405	1.417	1.448
MSE.CV	3.325	0.042	3.258	3.295	3.319	3.347	3.422
SSE	26,916.555	340.643	26,380.023	26,678.647	26,871.243	27,094.859	27,704.235
Trend	1.033	0.013	1.009	1.024	1.033	1.042	1.062
R.trend	0.033	0.013	0.009	0.024	0.032	0.041	0.060
M.dens	0.290	0.014	0.264	0.280	0.288	0.299	0.319
M.y0	-0.004	0.057	-0.126	-0.040	-0.002	0.035	0.103
M.blyr	-1.736	0.065	-1.858	-1.780	-1.739	-1.693	-1.599
M.cell	0.000	0.012	-0.023	-0.008	0.000	0.008	0.023
R.mid	-1.364	0.035	-1.431	-1.388	-1.364	-1.341	-1.297
b.ADOY	0.186	0.034	0.120	0.163	0.186	0.209	0.251
b.ADOY.2	-0.091	0.022	-0.135	-0.106	-0.091	-0.076	-0.046
SD.y0	0.278	0.056	0.187	0.238	0.272	0.312	0.403
SD.cell	0.406	0.032	0.344	0.385	0.407	0.427	0.467
SD.lam[1]	0.654	0.134	0.435	0.561	0.640	0.731	0.964
SD.lam[2]	0.761	0.368	0.170	0.492	0.755	0.977	1.573
SD.lam[3]	4.091	2.340	0.570	2.372	3.770	5.575	9.231
SD.lam[4]	2.203	1.420	0.651	1.234	1.800	2.726	6.078
SD.lam[5]	4.509	2.741	0.258	2.203	4.231	6.666	9.599
SD.lam[6]	0.931	0.253	0.453	0.796	0.966	1.103	1.382
SD.lam[7]	3.653	1.424	1.618	2.694	3.368	4.316	7.391
SD.lam[8]	0.823	1.202	0.018	0.191	0.415	0.887	4.875
y0[1]	-0.022	0.212	-0.448	-0.161	-0.019	0.114	0.395
y0[2]	0.071	0.177	-0.282	-0.044	0.068	0.187	0.418
y0[3]	-0.233	0.164	-0.565	-0.340	-0.231	-0.121	0.082
y0[4]	0.176	0.145	-0.109	0.081	0.176	0.273	0.462
y0[5]	-0.401	0.146	-0.706	-0.491	-0.398	-0.304	-0.121
y0[6]	0.225	0.139	-0.047	0.133	0.226	0.317	0.499
y0[7]	0.257	0.140	-0.013	0.164	0.256	0.349	0.536
y0[8]	-0.202	0.143	-0.489	-0.299	-0.202	-0.104	0.074
y0[9]	0.064	0.141	-0.217	-0.028	0.064	0.158	0.342
y0[10]	0.073	0.136	-0.195	-0.016	0.071	0.163	0.342
y0[11]	0.251	0.140	-0.019	0.157	0.250	0.342	0.533
y0[12]	-0.111	0.142	-0.396	-0.204	-0.111	-0.017	0.170
y0[13]	-0.078	0.141	-0.361	-0.169	-0.075	0.016	0.196
y0[14]	-0.277	0.142	-0.565	-0.373	-0.274	-0.180	0.002
y0[15]	-0.238	0.143	-0.534	-0.330	-0.234	-0.141	0.024
y0[16]	0.247	0.144	-0.040	0.155	0.248	0.342	0.527
y0[17]	0.252	0.141	-0.036	0.160	0.252	0.347	0.524

y0[18]	0.281	0.142	0.002	0.185	0.279	0.373	0.560
y0[19]	0.029	0.142	-0.257	-0.064	0.032	0.125	0.302
y0[20]	-0.311	0.150	-0.612	-0.406	-0.308	-0.211	-0.023
y0[21]	-0.300	0.150	-0.606	-0.397	-0.296	-0.196	-0.019
y0[22]	0.058	0.157	-0.256	-0.049	0.061	0.164	0.362
y0[23]	0.283	0.158	-0.023	0.178	0.282	0.385	0.591
y0[24]	0.049	0.175	-0.307	-0.064	0.050	0.164	0.389
y0[25]	-0.243	0.211	-0.671	-0.379	-0.239	-0.100	0.167
N.sum[1]	5,733.259	1,084.284	3,902.876	4,942.205	5,660.059	6,418.158	8,033.230
N.sum[2]	6,283.336	942.429	4,638.500	5,612.289	6,216.526	6,879.710	8,273.559
N.sum[3]	4,771.086	695.348	3,540.073	4,283.919	4,727.463	5,198.117	6,279.478
N.sum[4]	7,561.278	867.460	6,005.329	6,944.564	7,518.896	8,125.403	9,352.710
N.sum[5]	4,599.588	560.950	3,607.380	4,205.001	4,555.490	4,945.401	5,803.541
N.sum[6]	9,437.905	1,029.069	7,645.223	8,706.791	9,365.966	10,081.136	11,660.248
N.sum[7]	10,747.302	1,221.726	8,592.668	9,867.537	10,675.322	11,518.786	13,346.396
N.sum[8]	7,431.290	896.425	5,817.617	6,799.371	7,380.724	7,992.777	9,349.424
N.sum[9]	10,452.199	1,193.743	8,280.612	9,621.940	10,382.098	11,211.191	12,999.502
N.sum[10]	11,176.595	1,110.882	9,131.846	10,401.640	11,107.007	11,904.957	13,523.081
N.sum[11]	14,050.040	1,370.484	11,525.989	13,080.246	14,003.628	14,933.588	16,888.582
N.sum[12]	10,286.939	1,077.689	8,356.675	9,532.862	10,231.616	10,974.828	12,511.794
N.sum[13]	11,211.690	1,182.973	9,064.367	10,393.899	11,146.510	11,978.214	13,700.621
N.sum[14]	9,740.166	1,024.912	7,870.548	9,025.319	9,692.718	10,408.466	11,919.338
N.sum[15]	10,762.230	1,132.885	8,695.843	9,979.060	10,701.620	11,490.951	13,096.176
N.sum[16]	18,495.580	1,910.164	14,985.721	17,191.273	18,384.709	19,695.781	22,560.789
N.sum[17]	19,379.656	1,815.616	16,132.834	18,111.531	19,257.605	20,542.856	23,192.412
N.sum[18]	20,425.972	2,251.762	16,460.973	18,844.270	20,241.942	21,833.201	25,272.504
N.sum[19]	15,841.544	1,778.943	12,690.581	14,582.727	15,739.645	16,967.603	19,673.812
N.sum[20]	11,011.774	1,373.959	8,582.707	10,037.118	10,935.997	11,860.280	13,994.350
N.sum[21]	10,699.127	1,155.611	8,630.493	9,899.046	10,636.263	11,419.810	13,120.604
N.sum[22]	14,705.559	1,853.188	11,440.868	13,440.320	14,570.657	15,841.136	18,681.442
N.sum[23]	17,740.812	2,132.476	14,026.897	16,228.481	17,589.052	19,123.113	22,348.671
N.sum[24]	13,674.144	1,752.790	10,589.440	12,407.067	13,560.722	14,777.808	17,399.755
N.sum[25]	9,993.187	1,136.971	7,965.502	9,195.227	9,928.365	10,704.129	12,427.456
N.sum2[1]	6,138.315	1,463.764	3,694.563	5,107.104	6,004.825	7,000.460	9,417.534
N.sum2[2]	6,107.734	1,140.233	4,145.620	5,310.260	6,021.528	6,791.954	8,578.748
N.sum2[3]	6,251.571	965.260	4,569.568	5,575.972	6,176.619	6,845.626	8,356.509
N.sum2[4]	6,591.891	918.113	5,021.247	5,961.160	6,515.082	7,125.244	8,665.033
N.sum2[5]	7,126.695	933.863	5,574.650	6,483.162	7,037.449	7,661.184	9,223.113
N.sum2[6]	7,824.986	969.226	6,246.886	7,149.368	7,717.762	8,378.358	9,938.729
N.sum2[7]	8,622.594	1,024.841	6,928.281	7,885.833	8,508.782	9,245.590	10,888.517
N.sum2[8]	9,430.202	1,099.723	7,497.008	8,647.490	9,318.411	10,107.037	11,845.243
N.sum2[9]	10,163.659	1,166.745	8,056.196	9,371.651	10,077.800	10,887.402	12,712.813
N.sum2[10]	10,794.503	1,221.308	8,507.182	9,985.110	10,742.239	11,544.850	13,396.359
N.sum2[11]	11,360.427	1,293.248	8,865.663	10,509.638	11,322.872	12,183.806	14,026.329

N.sum2[12]	11,933.862	1,381.495	9,365.716	10,999.905	11,880.392	12,832.752	14,747.973
N.sum2[13]	12,579.724	1,442.164	10,004.307	11,581.030	12,506.532	13,491.826	15,513.457
N.sum2[14]	13,328.973	1,470.650	10,767.845	12,308.923	13,218.311	14,232.893	16,501.125
N.sum2[15]	14,166.038	1,551.928	11,505.944	13,091.725	14,026.034	15,091.233	17,613.818
N.sum2[16]	14,999.556	1,737.104	12,146.391	13,816.603	14,806.784	16,000.112	19,017.231
N.sum2[17]	15,668.924	1,910.842	12,613.531	14,344.223	15,413.194	16,716.621	20,204.358
N.sum2[18]	16,013.284	1,944.916	12,956.282	14,651.489	15,767.002	17,092.438	20,551.945
N.sum2[19]	15,961.650	1,876.266	12,983.340	14,651.027	15,735.447	16,995.583	20,228.317
N.sum2[20]	15,569.633	1,823.031	12,630.012	14,317.892	15,350.170	16,569.874	19,673.733
N.sum2[21]	14,990.255	1,803.336	11,995.916	13,756.038	14,793.759	16,037.961	19,029.298
N.sum2[22]	14,386.997	1,778.917	11,387.552	13,173.196	14,203.825	15,427.983	18,320.705
N.sum2[23]	13,886.257	1,838.628	10,866.502	12,627.427	13,673.491	14,934.748	18,107.277
N.sum2[24]	13,561.310	2,186.130	9,990.111	12,027.746	13,298.175	14,831.080	18,602.016
N.sum2[25]	13,425.403	2,895.506	8,792.191	11,350.162	13,051.759	15,167.428	20,273.778
R.growth[1]	0.006	0.075	-0.131	-0.046	0.003	0.055	0.163
R.growth[2]	0.029	0.065	-0.091	-0.017	0.026	0.071	0.169
R.growth[3]	0.055	0.052	-0.040	0.020	0.053	0.089	0.168
R.growth[4]	0.079	0.042	-0.001	0.051	0.078	0.106	0.168
R.growth[5]	0.094	0.040	0.022	0.067	0.092	0.120	0.177
R.growth[6]	0.098	0.040	0.024	0.070	0.095	0.123	0.182
R.growth[7]	0.090	0.038	0.012	0.064	0.089	0.115	0.166
R.growth[8]	0.075	0.038	-0.010	0.053	0.077	0.100	0.145
R.growth[9]	0.060	0.040	-0.026	0.037	0.063	0.087	0.133
R.growth[10]	0.051	0.041	-0.036	0.026	0.054	0.078	0.127
R.growth[11]	0.049	0.039	-0.036	0.025	0.052	0.074	0.121
R.growth[12]	0.053	0.037	-0.023	0.030	0.053	0.076	0.126
R.growth[13]	0.058	0.041	-0.014	0.032	0.054	0.080	0.154
R.growth[14]	0.061	0.045	-0.016	0.032	0.055	0.086	0.170
R.growth[15]	0.057	0.044	-0.022	0.027	0.052	0.082	0.157
R.growth[16]	0.043	0.038	-0.027	0.017	0.041	0.067	0.126
R.growth[17]	0.022	0.036	-0.049	-0.002	0.022	0.044	0.096
R.growth[18]	-0.003	0.041	-0.095	-0.027	0.000	0.024	0.073
R.growth[19]	-0.025	0.045	-0.129	-0.050	-0.020	0.004	0.057
R.growth[20]	-0.038	0.043	-0.129	-0.066	-0.036	-0.009	0.044
R.growth[21]	-0.042	0.042	-0.123	-0.070	-0.042	-0.012	0.040
R.growth[22]	-0.036	0.053	-0.140	-0.072	-0.035	0.001	0.065
R.growth[23]	-0.028	0.069	-0.157	-0.074	-0.027	0.017	0.111
R.growth[24]	-0.020	0.079	-0.166	-0.073	-0.020	0.029	0.143
Deviance	27,378.215	46.038	27,290.988	27,347.274	27,376.845	27,409.028	27,472.053

Tables A4.12. Bayesian generalized linear mixed model output for **Steller's Eider** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.5%	25%	50%	75%	97.5%
MSE	0.797	4.214	0.465	0.502	0.561	0.698	2.006
MSE.CV	5.853	30.958	3.414	3.687	4.119	5.130	14.735
SSE	2,025.019	10,711.573	1,181.088	1,275.764	1,425.054	1,774.969	5,098.459
Trend	0.990	0.033	0.914	0.973	0.994	1.009	1.048
R.trend	-0.011	0.034	-0.090	-0.027	-0.006	0.009	0.047
M.dens	0.021	0.005	0.013	0.018	0.021	0.024	0.034
M.y0	-0.020	0.268	-0.562	-0.190	-0.019	0.146	0.517
M.blyr	-4.145	0.370	-4.953	-4.376	-4.120	-3.891	-3.487
M.cell	0.000	0.027	-0.059	-0.013	0.000	0.012	0.058
b.ADOY	-2.675	0.150	-2.971	-2.778	-2.676	-2.575	-2.378
b.ADOY.2	-0.068	0.215	-0.488	-0.212	-0.068	0.077	0.358
SD.surv	0.017	0.099	-0.176	-0.048	0.017	0.084	0.211
Sd.y0	2.844	0.962	1.429	2.185	2.694	3.340	5.129
SD.e	1.333	0.336	0.782	1.093	1.293	1.530	2.097
SD.cell	0.258	0.151	0.028	0.140	0.238	0.360	0.586
S.eff[1]	2.963	1.326	0.553	2.062	2.896	3.788	5.753
S.eff[2]	2.298	0.905	0.586	1.669	2.273	2.899	4.135
S.eff[3]	2.826	0.985	0.961	2.152	2.794	3.470	4.823
S.eff[4]	1.213	0.885	-0.483	0.607	1.190	1.793	3.005
S.eff[5]	3.337	1.210	1.128	2.522	3.277	4.105	5.864
S.eff[6]	1.548	1.028	-0.374	0.841	1.526	2.226	3.637
S.eff[7]	3.492	1.217	1.272	2.663	3.435	4.260	6.041
S.eff[8]	1.598	0.954	-0.207	0.934	1.581	2.235	3.522
S.eff[9]	2.633	1.277	0.358	1.750	2.553	3.433	5.357
S.eff[10]	0.279	0.999	-1.632	-0.392	0.253	0.928	2.334
S.eff[11]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S.eff[12]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S.eff[13]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S.eff[14]	0.632	1.240	-1.772	-0.183	0.617	1.434	3.127
S.eff[15]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
y0[1]	-0.828	0.991	-2.972	-1.439	-0.764	-0.156	0.931
y0[2]	0.524	0.758	-0.926	0.006	0.515	1.026	2.046
y0[3]	0.336	0.739	-1.113	-0.150	0.327	0.822	1.798
y0[4]	1.179	0.672	-0.079	0.723	1.156	1.615	2.542
y0[5]	-0.964	0.913	-2.911	-1.530	-0.912	-0.359	0.679
y0[6]	0.685	0.662	-0.572	0.230	0.671	1.115	2.035
y0[7]	-1.085	0.927	-3.089	-1.643	-1.039	-0.468	0.590
y0[8]	1.736	0.635	0.566	1.295	1.714	2.153	3.048
y0[9]	-0.872	0.936	-2.899	-1.429	-0.805	-0.236	0.809
y0[10]	1.272	0.621	0.109	0.854	1.245	1.665	2.569
y0[11]	-1.696	0.983	-3.853	-2.283	-1.605	-1.019	-0.020

y0[12]	-0.179	0.672	-1.517	-0.620	-0.180	0.270	1.132
y0[13]	-0.232	0.673	-1.567	-0.679	-0.236	0.217	1.087
y0[14]	-0.031	0.688	-1.360	-0.493	-0.040	0.419	1.328
y0[15]	0.717	0.577	-0.380	0.328	0.704	1.087	1.907
y0[16]	1.406	0.627	0.267	0.975	1.373	1.809	2.731
y0[17]	-0.822	0.799	-2.445	-1.332	-0.802	-0.282	0.695
y0[18]	-0.540	0.791	-2.150	-1.052	-0.523	-0.009	0.970
y0[19]	-1.458	1.028	-3.728	-2.058	-1.380	-0.747	0.296
y0[20]	-0.246	0.806	-1.875	-0.772	-0.235	0.296	1.293
y0[21]	1.426	0.631	0.249	0.992	1.402	1.836	2.746
y0[22]	1.487	0.654	0.274	1.043	1.454	1.906	2.854
y0[23]	-0.497	0.802	-2.112	-1.021	-0.488	0.032	1.066
y0[24]	-1.327	1.068	-3.700	-1.952	-1.242	-0.608	0.533
y0[25]	-0.500	0.846	-2.209	-1.040	-0.494	0.052	1.155
SD.lam[1]	0.180	0.084	0.063	0.121	0.165	0.223	0.392
SD.lam[2]	5.329	3.684	0.417	2.445	4.587	7.615	13.789
SD.lam[3]	2.209	2.796	0.087	0.643	1.292	2.389	12.445
SD.lam[4]	2.943	3.038	0.084	0.805	1.867	3.945	11.732
SD.lam[5]	6.226	4.253	0.268	2.502	5.592	9.603	14.390
SD.lam[6]	2.592	0.697	1.468	2.116	2.534	2.978	4.164
SD.lam[7]	5.975	3.439	1.105	3.163	5.173	8.472	13.403
SD.lam[8]	1.263	1.646	0.073	0.392	0.730	1.416	5.844
N.sum[1]	74.483	88.005	4.783	23.949	48.843	92.881	296.063
N.sum[2]	208.323	171.755	39.367	97.358	160.443	261.958	666.054
N.sum[3]	156.930	118.081	32.492	79.321	124.501	198.305	482.167
N.sum[4]	325.585	209.719	96.964	189.903	272.575	400.274	856.967
N.sum[5]	49.016	52.039	3.808	17.438	33.918	62.283	184.709
N.sum[6]	188.522	115.949	55.459	112.186	160.016	231.536	484.586
N.sum[7]	42.047	44.833	3.193	14.765	29.076	53.725	161.470
N.sum[8]	521.011	317.343	160.036	311.113	441.565	636.264	1,348.181
N.sum[9]	49.597	48.968	3.809	18.456	35.428	63.788	181.175
N.sum[10]	317.718	178.590	108.030	198.822	276.263	386.563	780.880
N.sum[11]	22.462	21.909	1.486	7.904	16.000	29.703	80.074
N.sum[12]	79.353	50.824	19.636	45.111	67.948	99.819	204.238
N.sum[13]	76.508	49.210	18.445	42.323	64.537	96.709	204.190
N.sum[14]	94.801	65.880	22.847	51.490	78.390	118.199	267.169
N.sum[15]	182.403	90.623	67.660	120.997	162.709	221.625	408.738
N.sum[16]	371.788	218.101	127.074	228.680	318.121	453.470	943.826
N.sum[17]	46.652	40.009	6.658	21.013	35.699	59.617	150.072
N.sum[18]	60.305	50.735	9.285	27.945	47.288	76.456	188.668
N.sum[19]	28.768	29.827	1.638	9.648	19.735	37.830	108.032
N.sum[20]	78.904	68.187	11.970	35.794	60.512	99.458	258.186
N.sum[21]	350.883	202.372	118.326	218.347	305.137	428.564	861.537
N.sum[22]	370.849	225.345	123.952	225.533	315.660	448.755	942.342
N.sum[23]	58.535	50.807	9.328	27.487	45.409	73.450	183.890
N.sum[24]	33.947	39.326	1.777	10.267	22.058	42.678	136.710

N.sum[25]	68.352	68.921	8.943	28.933	49.811	83.805	243.545
N.sum2[1]	121.211	93.739	37.508	72.555	97.095	138.902	347.420
N.sum2[2]	106.551	67.791	36.544	68.010	89.333	123.176	282.468
N.sum2[3]	97.786	54.867	36.225	65.131	84.244	113.743	240.618
N.sum2[4]	92.382	47.040	36.758	63.596	81.444	107.796	215.489
N.sum2[5]	88.765	40.863	37.553	62.950	79.905	104.042	193.557
N.sum2[6]	86.050	35.691	38.579	62.618	79.064	100.906	176.806
N.sum2[7]	83.815	31.754	39.229	62.454	78.050	98.423	163.807
N.sum2[8]	82.003	29.012	39.584	62.411	77.138	95.939	153.174
N.sum2[9]	80.858	27.201	39.922	62.556	76.711	94.326	146.031
N.sum2[10]	80.511	25.986	40.748	63.207	76.827	93.547	140.730
N.sum2[11]	80.864	25.175	41.998	64.134	77.577	93.798	138.649
N.sum2[12]	81.587	24.734	42.666	65.038	78.470	94.566	138.486
N.sum2[13]	82.169	24.576	43.568	65.504	79.247	95.411	138.367
N.sum2[14]	82.223	24.580	43.512	65.636	79.219	95.493	139.190
N.sum2[15]	81.926	24.852	43.099	65.246	78.919	94.879	137.838
N.sum2[16]	81.521	25.358	42.798	64.611	78.331	94.577	138.076
N.sum2[17]	81.062	25.813	41.624	63.813	77.629	94.532	138.538
N.sum2[18]	80.435	26.013	40.139	63.105	76.966	94.207	138.673
N.sum2[19]	79.464	26.000	38.268	61.873	76.256	93.542	138.084
N.sum2[20]	78.129	26.003	36.068	60.316	75.137	92.630	137.066
N.sum2[21]	76.913	26.580	33.161	58.638	74.076	91.845	136.581
N.sum2[22]	76.554	28.378	30.148	57.138	73.415	92.324	140.012
N.sum2[23]	77.928	32.232	27.679	56.421	73.889	94.370	151.228
N.sum2[24]	82.202	40.245	25.744	57.110	76.124	99.600	176.656
N.sum2[25]	91.218	58.141	23.906	58.976	81.004	108.782	225.957
R.growth[1]	-0.094	0.104	-0.323	-0.144	-0.080	-0.031	0.079
R.growth[2]	-0.065	0.084	-0.245	-0.105	-0.056	-0.018	0.087
R.growth[3]	-0.041	0.069	-0.186	-0.074	-0.036	-0.006	0.090
R.growth[4]	-0.026	0.062	-0.158	-0.055	-0.022	0.004	0.093
R.growth[5]	-0.019	0.062	-0.151	-0.045	-0.015	0.010	0.097
R.growth[6]	-0.017	0.065	-0.153	-0.041	-0.011	0.013	0.098
R.growth[7]	-0.015	0.063	-0.151	-0.040	-0.009	0.015	0.094
R.growth[8]	-0.009	0.059	-0.139	-0.035	-0.004	0.021	0.096
R.growth[9]	0.000	0.056	-0.124	-0.027	0.002	0.030	0.106
R.growth[10]	0.007	0.055	-0.111	-0.020	0.007	0.037	0.117
R.growth[11]	0.011	0.055	-0.103	-0.017	0.010	0.040	0.123
R.growth[12]	0.008	0.054	-0.100	-0.019	0.008	0.035	0.116
R.growth[13]	0.001	0.054	-0.110	-0.026	0.003	0.028	0.106
R.growth[14]	-0.004	0.055	-0.121	-0.033	-0.001	0.024	0.101
R.growth[15]	-0.007	0.055	-0.125	-0.036	-0.002	0.022	0.100
R.growth[16]	-0.008	0.054	-0.127	-0.036	-0.003	0.021	0.097
R.growth[17]	-0.010	0.055	-0.134	-0.035	-0.004	0.019	0.090
R.growth[18]	-0.015	0.058	-0.148	-0.040	-0.008	0.016	0.087
R.growth[19]	-0.020	0.065	-0.165	-0.048	-0.013	0.015	0.089
R.growth[20]	-0.021	0.070	-0.178	-0.052	-0.013	0.016	0.100

R.growth[21]	-0.014	0.075	-0.182	-0.046	-0.007	0.024	0.122
R.growth[22]	0.004	0.082	-0.167	-0.031	0.006	0.039	0.164
R.growth[23]	0.031	0.097	-0.149	-0.014	0.021	0.070	0.251
R.growth[24]	0.064	0.123	-0.135	0.000	0.040	0.116	0.367
Deviance	1,420.778	13.449	1,395.640	1,411.556	1,420.474	1,429.634	1,448.337

Tables A4.13. Bayesian generalized linear mixed model output for **Spectacled Eider** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	1.384	0.008	1.369	1.378	1.384	1.389	1.401
MSE.CV	3.032	0.018	2.998	3.019	3.031	3.043	3.070
SSE	22,294.243	134.986	22,048.779	22,202.710	22,289.728	22,380.015	22,574.510
Trend	1.013	0.012	0.989	1.005	1.013	1.021	1.037
R.trend	0.013	0.012	-0.011	0.005	0.013	0.021	0.036
M.dens	0.240	0.011	0.221	0.232	0.239	0.246	0.263
M.y0	-0.002	0.074	-0.155	-0.049	-0.001	0.046	0.142
M.blyr	-1.687	0.083	-1.848	-1.741	-1.688	-1.633	-1.519
M.cell	0.000	0.013	-0.026	-0.008	0.000	0.008	0.024
R.mid	-1.499	0.038	-1.574	-1.525	-1.499	-1.474	-1.426
b.ADOY	-0.400	0.046	-0.489	-0.431	-0.400	-0.370	-0.309
b.ADOY.2	-0.084	0.025	-0.132	-0.101	-0.084	-0.067	-0.036
SD.surv	2.518	0.583	1.663	2.113	2.421	2.815	3.930
SD.y0	0.366	0.073	0.249	0.316	0.358	0.407	0.531
SD.cell	0.343	0.042	0.262	0.315	0.343	0.371	0.424
SD.lam[1]	0.210	0.065	0.109	0.164	0.204	0.247	0.363
SD.lam[2]	0.742	0.561	0.075	0.371	0.612	0.963	2.183
SD.lam[3]	1.814	1.552	0.061	0.845	1.414	2.282	6.233
SD.lam[4]	1.841	1.699	0.126	0.779	1.357	2.345	6.381
SD.lam[5]	4.683	4.042	0.140	1.307	3.431	7.211	14.014
SD.lam[6]	1.729	0.472	1.010	1.399	1.642	1.987	2.874
SD.lam[7]	1.643	0.621	0.894	1.224	1.493	1.859	3.303
SD.lam[8]	1.178	1.891	0.102	0.226	0.415	0.954	7.425
S.eff[1]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S.eff[2]	-1.596	0.290	-2.174	-1.791	-1.592	-1.398	-1.045
S.eff[3]	-2.666	0.459	-3.628	-2.961	-2.650	-2.347	-1.819
S.eff[4]	-2.543	0.452	-3.496	-2.833	-2.519	-2.234	-1.714
S.eff[5]	-2.615	0.543	-3.781	-2.953	-2.582	-2.240	-1.647
S.eff[6]	-2.400	0.537	-3.561	-2.735	-2.364	-2.025	-1.441
S.eff[7]	-2.014	0.357	-2.720	-2.252	-2.005	-1.769	-1.349
S.eff[8]	-3.028	0.723	-4.648	-3.462	-2.965	-2.524	-1.792
S.eff[9]	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S.eff[10]	-2.252	0.361	-2.989	-2.489	-2.239	-2.007	-1.590
S.eff[11]	-1.808	0.334	-2.485	-2.025	-1.798	-1.578	-1.185
S.eff[12]	-2.872	0.488	-3.909	-3.184	-2.843	-2.532	-1.998
S.eff[13]	-1.417	0.329	-2.073	-1.638	-1.412	-1.191	-0.781
S.eff[14]	-0.496	0.225	-0.933	-0.648	-0.497	-0.347	-0.053
S.eff[15]	-2.100	0.413	-2.964	-2.369	-2.084	-1.815	-1.327
y0[1]	-1.001	0.279	-1.582	-1.182	-0.993	-0.812	-0.471

y0[2]	0.472	0.205	0.076	0.334	0.470	0.606	0.879
y0[3]	0.308	0.178	-0.041	0.190	0.306	0.422	0.669
y0[4]	0.300	0.171	-0.033	0.185	0.302	0.410	0.644
y0[5]	-0.104	0.167	-0.438	-0.213	-0.104	0.007	0.227
y0[6]	-0.091	0.165	-0.416	-0.201	-0.088	0.020	0.234
y0[7]	0.170	0.160	-0.143	0.063	0.168	0.276	0.488
y0[8]	-0.044	0.166	-0.373	-0.155	-0.045	0.066	0.288
y0[9]	-0.226	0.164	-0.552	-0.333	-0.225	-0.119	0.099
y0[10]	0.282	0.171	-0.049	0.169	0.279	0.393	0.618
y0[11]	-0.076	0.170	-0.409	-0.185	-0.078	0.035	0.259
y0[12]	0.212	0.165	-0.112	0.105	0.211	0.320	0.536
y0[13]	-0.278	0.167	-0.607	-0.389	-0.277	-0.167	0.050
y0[14]	0.214	0.165	-0.112	0.104	0.215	0.325	0.539
y0[15]	-0.056	0.171	-0.394	-0.169	-0.054	0.055	0.280
y0[16]	-0.028	0.173	-0.363	-0.144	-0.026	0.084	0.319
y0[17]	0.058	0.172	-0.275	-0.059	0.056	0.170	0.406
y0[18]	-0.370	0.174	-0.716	-0.486	-0.368	-0.250	-0.036
y0[19]	0.115	0.169	-0.221	0.004	0.114	0.226	0.449
y0[20]	0.358	0.171	0.033	0.243	0.355	0.471	0.699
y0[21]	-0.254	0.176	-0.617	-0.369	-0.250	-0.133	0.080
y0[22]	0.187	0.180	-0.166	0.065	0.189	0.308	0.540
y0[23]	0.008	0.189	-0.369	-0.111	0.013	0.134	0.382
y0[24]	0.040	0.213	-0.391	-0.097	0.044	0.183	0.452
y0[25]	-0.236	0.260	-0.739	-0.411	-0.236	-0.062	0.277
N.sum[1]	1,306.441	239.804	889.543	1,136.518	1,289.277	1,454.706	1,822.540
N.sum[2]	6,220.748	826.944	4,791.346	5,637.981	6,155.970	6,739.890	8,026.123
N.sum[3]	5,794.599	731.112	4,488.303	5,296.061	5,742.299	6,239.878	7,377.983
N.sum[4]	6,266.733	755.915	4,915.413	5,743.401	6,220.866	6,744.032	7,899.678
N.sum[5]	4,515.740	558.613	3,535.191	4,120.376	4,488.665	4,861.424	5,701.685
N.sum[6]	4,880.396	606.633	3,818.036	4,459.648	4,843.874	5,251.720	6,204.212
N.sum[7]	6,681.235	816.976	5,219.851	6,099.648	6,625.490	7,196.739	8,441.926
N.sum[8]	5,636.467	676.269	4,437.192	5,167.937	5,601.833	6,051.173	7,102.669
N.sum[9]	4,878.395	513.238	3,965.137	4,522.862	4,846.182	5,207.552	5,955.671
N.sum[10]	8,384.157	961.053	6,667.408	7,713.092	8,319.733	8,994.871	10,443.756
N.sum[11]	6,024.741	724.197	4,743.082	5,515.497	5,981.722	6,475.258	7,549.461
N.sum[12]	8,174.383	915.970	6,516.159	7,541.254	8,117.417	8,761.406	10,103.628
N.sum[13]	5,053.376	594.498	3,979.909	4,637.422	5,008.437	5,424.855	6,358.427
N.sum[14]	8,268.534	926.177	6,597.735	7,625.712	8,217.729	8,843.602	10,227.324
N.sum[15]	6,282.190	740.465	4,963.111	5,763.671	6,227.807	6,753.220	7,839.074
N.sum[16]	6,427.371	771.094	5,034.742	5,888.869	6,389.633	6,920.274	8,090.601
N.sum[17]	6,961.254	802.651	5,542.469	6,400.564	6,918.284	7,463.475	8,651.052
N.sum[18]	4,518.719	550.324	3,551.103	4,133.399	4,479.848	4,867.960	5,663.028
N.sum[19]	7,278.680	835.608	5,810.839	6,686.926	7,229.954	7,804.082	9,088.236
N.sum[20]	9,133.760	1,090.452	7,236.085	8,365.849	9,044.367	9,816.709	11,519.431

N.sum[21]	4,806.432	620.884	3,701.123	4,376.707	4,772.351	5,191.962	6,147.513
N.sum[22]	7,117.502	876.524	5,553.824	6,510.722	7,054.053	7,669.828	8,951.931
N.sum[23]	5,590.052	699.895	4,364.923	5,102.777	5,534.600	6,029.207	7,093.992
N.sum[24]	5,368.398	663.170	4,173.659	4,909.371	5,323.673	5,795.402	6,812.432
N.sum[25]	3,784.157	482.179	2,923.208	3,449.204	3,751.882	4,082.881	4,806.787
N.sum2[1]	3,857.117	966.898	2,370.522	3,162.010	3,712.198	4,412.273	6,109.938
N.sum2[2]	4,193.426	823.151	2,915.312	3,602.053	4,083.442	4,673.253	6,082.768
N.sum2[3]	4,577.375	724.219	3,402.584	4,058.641	4,496.862	5,014.167	6,208.686
N.sum2[4]	4,978.946	681.940	3,827.203	4,492.033	4,917.423	5,383.830	6,479.323
N.sum2[5]	5,364.048	660.932	4,206.545	4,906.655	5,314.973	5,762.195	6,819.379
N.sum2[6]	5,713.592	651.162	4,595.133	5,266.142	5,651.760	6,104.680	7,149.244
N.sum2[7]	6,026.105	684.786	4,878.231	5,562.337	5,951.221	6,419.885	7,593.638
N.sum2[8]	6,306.326	757.913	5,053.308	5,783.768	6,222.001	6,731.605	8,056.158
N.sum2[9]	6,557.593	821.489	5,204.713	5,990.221	6,463.715	7,022.699	8,460.295
N.sum2[10]	6,776.925	843.146	5,396.750	6,187.875	6,683.234	7,255.130	8,692.663
N.sum2[11]	6,955.486	837.243	5,581.192	6,369.269	6,862.447	7,433.804	8,891.213
N.sum2[12]	7,080.848	835.854	5,745.530	6,493.188	6,983.755	7,554.024	9,009.954
N.sum2[13]	7,143.561	841.496	5,805.975	6,541.549	7,052.748	7,623.175	9,046.116
N.sum2[14]	7,148.315	844.572	5,722.535	6,554.696	7,064.321	7,651.255	9,044.505
N.sum2[15]	7,116.737	855.153	5,634.881	6,525.333	7,046.942	7,635.278	8,995.645
N.sum2[16]	7,075.248	873.486	5,520.490	6,481.718	7,009.717	7,584.656	8,996.143
N.sum2[17]	7,038.933	874.936	5,482.006	6,449.238	6,956.160	7,545.517	9,012.560
N.sum2[18]	7,003.891	847.217	5,550.186	6,434.310	6,921.932	7,478.370	8,949.003
N.sum2[19]	6,947.285	818.243	5,553.455	6,392.410	6,863.060	7,426.546	8,825.883
N.sum2[20]	6,833.311	823.749	5,470.293	6,269.692	6,736.939	7,288.998	8,732.435
N.sum2[21]	6,630.079	844.171	5,267.267	6,056.264	6,519.977	7,076.913	8,629.255
N.sum2[22]	6,326.662	846.052	4,920.026	5,752.352	6,229.770	6,782.443	8,323.533
N.sum2[23]	5,953.057	886.856	4,471.946	5,349.140	5,869.766	6,446.380	8,018.514
N.sum2[24]	5,572.386	1,052.823	3,865.314	4,833.023	5,456.081	6,181.025	7,991.584
N.sum2[25]	5,244.079	1,314.445	3,090.717	4,295.160	5,098.599	6,009.270	8,260.382
R.growth[1]	0.095	0.075	-0.025	0.041	0.088	0.139	0.271
R.growth[2]	0.094	0.067	-0.016	0.045	0.089	0.134	0.245
R.growth[3]	0.087	0.053	-0.007	0.050	0.085	0.122	0.198
R.growth[4]	0.076	0.044	-0.004	0.046	0.075	0.106	0.162
R.growth[5]	0.064	0.044	-0.017	0.035	0.062	0.093	0.149
R.growth[6]	0.053	0.045	-0.040	0.027	0.053	0.081	0.142
R.growth[7]	0.045	0.041	-0.039	0.020	0.045	0.069	0.128
R.growth[8]	0.038	0.035	-0.032	0.015	0.038	0.061	0.110
R.growth[9]	0.033	0.035	-0.032	0.010	0.032	0.054	0.105
R.growth[10]	0.026	0.038	-0.051	0.004	0.025	0.048	0.108
R.growth[11]	0.018	0.041	-0.071	-0.002	0.018	0.041	0.103
R.growth[12]	0.009	0.040	-0.084	-0.011	0.011	0.031	0.086
R.growth[13]	0.001	0.040	-0.093	-0.020	0.004	0.024	0.081
R.growth[14]	-0.005	0.040	-0.099	-0.025	-0.001	0.018	0.074

R.growth[15]	-0.006	0.038	-0.094	-0.025	-0.004	0.016	0.066
R.growth[16]	-0.005	0.036	-0.079	-0.026	-0.005	0.016	0.067
R.growth[17]	-0.005	0.037	-0.071	-0.028	-0.007	0.015	0.084
R.growth[18]	-0.008	0.042	-0.080	-0.035	-0.012	0.013	0.098
R.growth[19]	-0.017	0.045	-0.096	-0.046	-0.020	0.007	0.088
R.growth[20]	-0.031	0.042	-0.115	-0.059	-0.030	-0.004	0.051
R.growth[21]	-0.048	0.045	-0.141	-0.078	-0.046	-0.015	0.032
R.growth[22]	-0.063	0.059	-0.198	-0.100	-0.058	-0.019	0.037
R.growth[23]	-0.073	0.077	-0.257	-0.117	-0.063	-0.016	0.047
R.growth[24]	-0.074	0.087	-0.288	-0.123	-0.062	-0.010	0.057
Deviance	23,906.684	40.847	23,827.955	23,879.346	23,906.461	23,934.024	23,987.716

Tables A4.14. Bayesian generalized linear mixed model output for **King Eider** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	3.411	0.059	3.318	3.372	3.404	3.442	3.548
MSE.CV	3.856	0.067	3.750	3.811	3.847	3.890	4.010
SSE	66,377.412	1,150.781	64,565.109	65,606.901	66,229.082	66,977.262	69,041.198
Trend	1.046	0.019	1.009	1.032	1.046	1.061	1.081
R.trend	0.045	0.019	0.009	0.031	0.045	0.059	0.078
M.dens	0.497	0.022	0.460	0.482	0.494	0.509	0.545
M.y0	0.001	0.071	-0.142	-0.045	0.000	0.047	0.143
M.blyr	-1.140	0.078	-1.290	-1.192	-1.140	-1.089	-0.986
M.cell	0.000	0.016	-0.032	-0.011	0.000	0.011	0.032
R.mid	-0.983	0.029	-1.040	-1.003	-0.983	-0.963	-0.927
b.ADOY	-0.129	0.043	-0.211	-0.158	-0.130	-0.101	-0.045
b.ADOY.2	-0.083	0.020	-0.123	-0.097	-0.084	-0.070	-0.045
SD.surv	1.556	0.343	1.043	1.318	1.500	1.736	2.394
SD.y0	0.347	0.070	0.235	0.297	0.337	0.388	0.508
SD.cell	0.525	0.025	0.477	0.508	0.525	0.543	0.575
SD.lam[1]	1.246	0.232	0.872	1.083	1.218	1.384	1.777
SD.lam[2]	2.389	0.708	1.450	1.901	2.246	2.709	4.170
SD.lam[3]	1.865	2.404	0.040	0.328	0.913	2.443	9.126
SD.lam[4]	3.669	2.616	0.602	1.777	3.015	4.753	10.902
SD.lam[5]	7.446	4.126	0.454	4.050	7.382	10.826	14.590
SD.lam[6]	0.984	0.487	0.325	0.697	0.864	1.139	2.298
SD.lam[7]	1.594	1.030	0.472	0.894	1.348	1.906	4.358
SD.lam[8]	0.616	1.146	0.013	0.108	0.246	0.557	4.249
S.eff[1]	-0.893	0.366	-1.630	-1.134	-0.884	-0.638	-0.191
S.eff[2]	-1.228	0.212	-1.645	-1.370	-1.224	-1.085	-0.814
S.eff[3]	-1.866	0.236	-2.341	-2.019	-1.861	-1.703	-1.416
S.eff[4]	-2.394	0.281	-2.951	-2.581	-2.391	-2.205	-1.855
S.eff[5]	-1.971	0.247	-2.463	-2.137	-1.967	-1.806	-1.499
S.eff[6]	-1.267	0.251	-1.764	-1.433	-1.261	-1.101	-0.779
S.eff[7]	-1.080	0.209	-1.492	-1.220	-1.079	-0.938	-0.679
S.eff[8]	-1.308	0.246	-1.786	-1.472	-1.305	-1.143	-0.829
S.eff[9]	-2.208	0.263	-2.731	-2.380	-2.203	-2.029	-1.693
S.eff[10]	-0.779	0.173	-1.123	-0.894	-0.780	-0.661	-0.444
S.eff[11]	-1.296	0.184	-1.665	-1.419	-1.294	-1.170	-0.939
S.eff[12]	-0.543	0.176	-0.888	-0.662	-0.542	-0.425	-0.200
S.eff[13]	-1.000	0.190	-1.377	-1.126	-0.999	-0.868	-0.630
S.eff[14]	-0.635	0.170	-0.971	-0.749	-0.633	-0.522	-0.301
S.eff[15]	-0.785	0.187	-1.144	-0.913	-0.784	-0.655	-0.427
y0[1]	-0.972	0.326	-1.632	-1.194	-0.964	-0.745	-0.364

y0[2]	0.478	0.221	0.044	0.329	0.477	0.630	0.896
y0[3]	0.447	0.175	0.102	0.330	0.449	0.564	0.795
y0[4]	0.210	0.184	-0.145	0.083	0.210	0.336	0.567
y0[5]	0.199	0.199	-0.207	0.067	0.209	0.338	0.562
y0[6]	-0.259	0.204	-0.686	-0.386	-0.249	-0.122	0.118
y0[7]	-0.136	0.183	-0.509	-0.251	-0.133	-0.015	0.221
y0[8]	-0.208	0.176	-0.563	-0.318	-0.206	-0.092	0.132
y0[9]	0.101	0.173	-0.239	-0.013	0.097	0.208	0.456
y0[10]	0.280	0.170	-0.036	0.167	0.272	0.385	0.638
y0[11]	0.059	0.164	-0.255	-0.050	0.053	0.164	0.396
y0[12]	-0.094	0.155	-0.396	-0.197	-0.095	0.008	0.210
y0[13]	-0.158	0.150	-0.460	-0.257	-0.157	-0.055	0.136
y0[14]	-0.042	0.151	-0.345	-0.140	-0.039	0.059	0.257
y0[15]	-0.180	0.161	-0.515	-0.282	-0.174	-0.072	0.125
y0[16]	0.182	0.161	-0.146	0.079	0.184	0.288	0.497
y0[17]	-0.025	0.164	-0.342	-0.135	-0.026	0.082	0.301
y0[18]	0.126	0.159	-0.169	0.016	0.120	0.227	0.460
y0[19]	-0.025	0.163	-0.336	-0.135	-0.027	0.083	0.296
y0[20]	-0.009	0.173	-0.358	-0.125	-0.006	0.105	0.327
y0[21]	0.006	0.179	-0.363	-0.109	0.008	0.122	0.365
y0[22]	0.183	0.172	-0.154	0.071	0.178	0.294	0.541
y0[23]	-0.133	0.168	-0.473	-0.241	-0.132	-0.021	0.200
y0[24]	0.106	0.197	-0.299	-0.022	0.111	0.238	0.485
y0[25]	-0.104	0.267	-0.627	-0.285	-0.113	0.065	0.435
N.sum[1]	1,927.028	338.362	1,336.795	1,693.044	1,907.307	2,137.283	2,662.535
N.sum[2]	10,790.505	1,229.516	8,633.971	9,917.648	10,711.414	11,563.961	13,427.118
N.sum[3]	13,579.140	1,355.589	11,127.002	12,621.061	13,511.121	14,471.476	16,446.824
N.sum[4]	13,299.813	1,295.410	10,992.075	12,396.592	13,224.553	14,128.935	16,039.057
N.sum[5]	15,388.054	1,391.868	12,860.507	14,399.795	15,336.579	16,290.128	18,303.501
N.sum[6]	10,729.592	1,087.021	8,823.794	9,968.114	10,656.486	11,423.622	13,082.260
N.sum[7]	12,693.419	1,349.997	10,226.998	11,734.888	12,652.316	13,537.504	15,533.170
N.sum[8]	11,962.124	1,148.504	9,852.907	11,156.776	11,907.313	12,721.277	14,338.303
N.sum[9]	16,339.939	1,385.372	13,804.781	15,408.282	16,244.228	17,220.989	19,275.731
N.sum[10]	19,780.932	1,676.010	16,734.048	18,635.660	19,678.482	20,833.972	23,345.200
N.sum[11]	16,299.668	1,468.737	13,588.817	15,253.396	16,245.268	17,263.452	19,378.865
N.sum[12]	14,550.582	1,271.487	12,184.402	13,654.989	14,502.450	15,378.443	17,165.210
N.sum[13]	14,302.009	1,244.775	12,037.309	13,443.486	14,243.967	15,085.311	16,898.768
N.sum[14]	16,781.976	1,388.744	14,246.403	15,819.471	16,699.481	17,689.562	19,738.530
N.sum[15]	15,169.631	1,398.356	12,597.065	14,199.792	15,121.283	16,074.261	18,031.043
N.sum[16]	22,369.429	1,840.063	18,984.887	21,089.134	22,295.478	23,574.384	26,270.985
N.sum[17]	18,547.763	1,606.158	15,598.427	17,411.189	18,485.804	19,596.456	21,864.848
N.sum[18]	21,826.305	1,794.308	18,554.247	20,581.479	21,738.303	22,996.292	25,525.237
N.sum[19]	18,887.968	1,721.043	15,757.876	17,681.071	18,804.744	19,983.130	22,502.811
N.sum[20]	19,101.064	1,701.755	15,956.506	17,939.901	19,011.456	20,176.182	22,683.185

N.sum[21]	19,016.303	1,686.309	15,967.474	17,858.585	18,910.456	20,094.730	22,635.443
N.sum[22]	21,844.198	1,924.742	18,355.171	20,494.271	21,761.197	23,060.075	25,899.605
N.sum[23]	15,050.634	1,426.188	12,436.012	14,060.884	14,979.157	15,954.104	18,038.813
N.sum[24]	17,786.520	1,590.591	14,895.513	16,667.353	17,702.464	18,829.744	21,088.665
N.sum[25]	13,315.487	1,214.459	11,092.582	12,475.663	13,267.391	14,081.979	15,845.606
N.sum2[1]	5,636.634	1,845.482	2,826.882	4,236.002	5,375.227	6,793.328	9,871.087
N.sum2[2]	7,244.934	1,541.261	4,796.294	6,128.731	7,043.765	8,157.739	10,801.355
N.sum2[3]	9,310.841	1,422.268	6,935.925	8,347.451	9,153.648	10,122.612	12,502.290
N.sum2[4]	11,595.527	1,949.634	8,582.420	10,222.845	11,307.455	12,653.605	16,063.337
N.sum2[5]	13,621.813	2,600.034	9,862.112	11,782.363	13,152.114	14,921.869	19,956.235
N.sum2[6]	14,979.613	2,818.354	10,872.135	12,985.994	14,490.336	16,410.050	21,918.945
N.sum2[7]	15,621.209	2,675.341	11,661.290	13,728.928	15,176.692	17,052.448	21,996.711
N.sum2[8]	15,809.468	2,516.304	12,042.457	14,039.111	15,476.464	17,095.556	22,034.515
N.sum2[9]	15,875.074	2,459.100	11,854.242	14,234.317	15,579.808	17,170.493	21,490.902
N.sum2[10]	16,057.005	2,404.692	11,843.375	14,490.020	15,837.795	17,377.623	21,541.856
N.sum2[11]	16,470.052	2,298.766	12,397.924	14,944.680	16,287.184	17,806.420	21,518.190
N.sum2[12]	17,117.894	2,188.280	13,262.503	15,595.715	16,985.661	18,486.005	21,774.225
N.sum2[13]	17,917.471	2,201.882	14,209.548	16,299.724	17,777.059	19,333.950	22,642.240
N.sum2[14]	18,739.521	2,437.723	14,816.406	17,069.378	18,497.911	19,990.811	24,483.910
N.sum2[15]	19,462.433	2,767.402	15,280.375	17,609.849	19,088.257	20,768.390	26,416.991
N.sum2[16]	20,012.817	2,933.071	15,462.655	18,056.947	19,645.106	21,446.208	27,594.197
N.sum2[17]	20,385.210	2,839.452	15,533.931	18,490.093	20,070.604	21,997.390	26,909.212
N.sum2[18]	20,620.826	2,690.925	15,704.918	18,778.684	20,396.959	22,288.012	26,268.555
N.sum2[19]	20,740.399	2,794.062	15,997.596	18,729.616	20,440.120	22,438.241	26,904.586
N.sum2[20]	20,677.191	3,076.295	15,749.072	18,545.711	20,226.767	22,414.426	27,959.329
N.sum2[21]	20,293.663	3,123.405	14,983.489	18,213.313	19,921.853	21,996.449	27,706.757
N.sum2[22]	19,504.295	2,760.124	14,507.484	17,638.330	19,284.643	21,103.703	25,576.917
N.sum2[23]	18,405.496	2,506.648	14,046.722	16,747.005	18,155.642	19,811.619	24,203.954
N.sum2[24]	17,246.657	3,135.390	12,202.862	15,093.911	16,883.871	18,981.935	24,541.345
N.sum2[25]	16,260.671	4,388.402	8,924.095	13,231.330	15,847.049	18,716.807	26,603.599
R.growth[1]	0.282	0.149	0.059	0.166	0.257	0.387	0.611
R.growth[2]	0.261	0.132	0.060	0.159	0.242	0.355	0.550
R.growth[3]	0.217	0.099	0.058	0.139	0.208	0.288	0.435
R.growth[4]	0.158	0.065	0.043	0.110	0.154	0.202	0.291
R.growth[5]	0.095	0.054	-0.018	0.064	0.095	0.128	0.202
R.growth[6]	0.045	0.065	-0.108	0.007	0.053	0.088	0.153
R.growth[7]	0.014	0.071	-0.150	-0.028	0.027	0.064	0.127
R.growth[8]	0.005	0.065	-0.150	-0.036	0.015	0.053	0.106
R.growth[9]	0.012	0.056	-0.109	-0.024	0.019	0.051	0.107
R.growth[10]	0.027	0.053	-0.080	-0.007	0.029	0.062	0.128
R.growth[11]	0.040	0.055	-0.064	0.006	0.037	0.070	0.170
R.growth[12]	0.046	0.057	-0.054	0.011	0.040	0.075	0.188
R.growth[13]	0.044	0.056	-0.062	0.011	0.040	0.072	0.183
R.growth[14]	0.037	0.050	-0.067	0.006	0.036	0.067	0.151

R.growth[15]	0.027	0.044	-0.062	-0.001	0.028	0.058	0.111
R.growth[16]	0.019	0.044	-0.074	-0.008	0.021	0.049	0.099
R.growth[17]	0.012	0.051	-0.106	-0.014	0.014	0.045	0.112
R.growth[18]	0.005	0.058	-0.139	-0.021	0.010	0.039	0.119
R.growth[19]	-0.005	0.056	-0.140	-0.031	-0.001	0.030	0.097
R.growth[20]	-0.020	0.046	-0.114	-0.049	-0.018	0.011	0.074
R.growth[21]	-0.038	0.051	-0.141	-0.072	-0.036	-0.003	0.062
R.growth[22]	-0.057	0.078	-0.239	-0.101	-0.048	-0.006	0.084
R.growth[23]	-0.072	0.106	-0.320	-0.131	-0.060	-0.006	0.127
R.growth[24]	-0.079	0.120	-0.363	-0.146	-0.065	-0.005	0.150
Deviance	41,463.463	47.358	41,372.782	41,431.734	41,463.143	41,494.556	41,560.223

Tables A4.15. Bayesian generalized linear mixed model output for **White-winged Scoter** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.5%	25%	50%	75%	97.5%
MSE	3.645	1.424	2.611	2.906	3.248	3.852	7.136
MSE.CV	7.910	3.091	5.666	6.308	7.049	8.361	15.487
SSE	10,868.093	4,246.454	7,785.235	8,666.627	9,685.490	11,488.148	21,279.073
Trend	1.116	0.036	1.051	1.092	1.114	1.138	1.191
R.trend	0.109	0.032	0.050	0.088	0.108	0.129	0.175
M.dens	0.334	0.069	0.226	0.286	0.325	0.372	0.490
M.y0	-0.012	0.158	-0.333	-0.111	-0.012	0.086	0.309
M.blyr	-2.028	0.207	-2.441	-2.164	-2.023	-1.889	-1.638
M.cell	0.000	0.013	-0.029	-0.006	0.000	0.005	0.028
R.mid	-1.978	0.088	-2.150	-2.037	-1.977	-1.919	-1.806
b.ADOY	-1.863	0.189	-2.256	-1.987	-1.857	-1.731	-1.514
b.ADOY.2	-0.701	0.131	-0.965	-0.788	-0.700	-0.610	-0.448
Sd.y0	0.763	0.186	0.452	0.631	0.743	0.873	1.179
SD.cell	0.172	0.104	0.029	0.089	0.155	0.239	0.407
y0[1]	1.073	0.592	-0.002	0.662	1.048	1.459	2.298
y0[2]	-1.498	0.689	-2.974	-1.917	-1.439	-1.017	-0.299
y0[3]	0.518	0.445	-0.359	0.224	0.516	0.809	1.408
y0[4]	-0.188	0.423	-1.027	-0.467	-0.189	0.094	0.639
y0[5]	-0.196	0.402	-1.009	-0.457	-0.190	0.072	0.576
y0[6]	0.232	0.430	-0.605	-0.052	0.224	0.513	1.097
y0[7]	-0.312	0.443	-1.213	-0.603	-0.305	-0.020	0.557
y0[8]	0.366	0.418	-0.436	0.085	0.357	0.640	1.205
y0[9]	0.031	0.470	-0.904	-0.277	0.035	0.342	0.956
y0[10]	-0.467	0.490	-1.469	-0.789	-0.455	-0.139	0.466
y0[11]	-0.556	0.447	-1.448	-0.849	-0.552	-0.250	0.298
y0[12]	0.283	0.414	-0.510	-0.004	0.283	0.553	1.128
y0[13]	-0.124	0.473	-1.041	-0.438	-0.124	0.188	0.824
y0[14]	-0.106	0.410	-0.893	-0.379	-0.109	0.162	0.719
y0[15]	-0.660	0.470	-1.586	-0.974	-0.656	-0.338	0.239
y0[16]	0.125	0.368	-0.588	-0.125	0.122	0.368	0.860
y0[17]	0.530	0.367	-0.169	0.282	0.524	0.770	1.275
y0[18]	-0.763	0.445	-1.647	-1.060	-0.759	-0.466	0.111
y0[19]	0.820	0.372	0.109	0.570	0.810	1.061	1.574
y0[20]	-0.362	0.381	-1.113	-0.612	-0.363	-0.113	0.397
y0[21]	0.709	0.377	-0.008	0.456	0.698	0.956	1.478
y0[22]	0.753	0.429	-0.039	0.461	0.737	1.025	1.644
y0[23]	0.488	0.408	-0.291	0.215	0.480	0.752	1.316
y0[24]	-0.415	0.425	-1.257	-0.695	-0.415	-0.138	0.422
y0[25]	-0.589	0.457	-1.492	-0.886	-0.586	-0.289	0.304
SD.lam[1]	0.543	0.215	0.262	0.402	0.500	0.625	1.152
SD.lam[2]	3.764	1.905	1.336	2.339	3.277	4.754	8.670

SD.lam[3]	4.176	2.181	1.151	2.450	3.709	5.575	9.193
SD.lam[4]	2.971	2.084	0.124	1.418	2.538	4.084	8.211
SD.lam[5]	4.512	2.789	0.239	2.124	4.276	6.788	9.631
SD.lam[6]	2.735	0.896	1.666	2.149	2.537	3.047	5.060
SD.lam[7]	5.289	2.269	2.123	3.364	4.601	7.284	9.604
SD.lam[8]	1.181	1.368	0.081	0.357	0.703	1.456	5.215
N.sum[1]	1,969.064	1,307.754	548.586	1,104.729	1,633.498	2,437.726	5,427.412
N.sum[2]	170.352	132.087	25.927	80.461	135.674	221.290	513.814
N.sum[3]	1,125.896	546.451	442.484	743.602	1,007.354	1,370.656	2,476.059
N.sum[4]	573.799	252.858	240.594	400.190	524.402	689.088	1,202.281
N.sum[5]	601.306	252.131	251.801	422.904	553.066	725.591	1,221.177
N.sum[6]	1,010.335	483.606	396.909	675.911	907.254	1,222.156	2,233.103
N.sum[7]	645.516	327.734	228.490	417.600	575.752	790.392	1,449.592
N.sum[8]	1,372.963	638.217	543.992	927.609	1,236.838	1,662.445	2,977.650
N.sum[9]	1,124.845	594.089	372.345	714.935	997.884	1,387.934	2,617.132
N.sum[10]	776.520	418.378	237.568	483.628	685.853	967.806	1,834.091
N.sum[11]	786.087	372.363	283.603	523.399	714.391	968.560	1,697.199
N.sum[12]	2,048.559	893.260	833.271	1,412.971	1,881.443	2,488.479	4,212.870
N.sum[13]	1,606.676	811.244	568.320	1,047.406	1,434.919	1,962.976	3,678.254
N.sum[14]	1,833.870	794.917	741.137	1,274.497	1,679.045	2,226.536	3,825.804
N.sum[15]	1,252.558	638.484	432.422	811.316	1,117.000	1,539.915	2,860.466
N.sum[16]	2,988.636	1,013.017	1,550.875	2,263.473	2,817.891	3,514.389	5,465.198
N.sum[17]	5,187.216	1,621.361	2,821.026	4,044.730	4,908.459	6,058.261	9,119.999
N.sum[18]	1,739.053	789.091	708.904	1,186.177	1,574.519	2,096.742	3,733.035
N.sum[19]	9,424.111	3,097.446	5,026.746	7,292.040	8,906.626	10,957.956	16,906.811
N.sum[20]	3,345.398	1,141.083	1,678.861	2,534.056	3,155.204	3,937.542	6,126.667
N.sum[21]	10,916.963	3,159.249	6,267.743	8,679.045	10,409.342	12,576.516	18,422.078
N.sum[22]	13,237.514	5,460.255	6,044.489	9,417.775	12,125.005	15,755.691	27,098.525
N.sum[23]	11,006.090	3,809.556	5,674.811	8,349.842	10,306.180	12,885.995	20,408.531
N.sum[24]	4,922.924	1,731.182	2,489.686	3,722.742	4,605.375	5,798.920	9,022.623
N.sum[25]	4,545.058	1,550.359	2,361.306	3,466.030	4,267.287	5,302.377	8,390.257
N.sum2[1]	645.736	370.725	194.985	389.487	556.660	800.923	1,592.819
N.sum2[2]	646.612	329.130	225.176	416.374	573.918	792.141	1,484.711
N.sum2[3]	658.566	303.259	255.331	444.223	596.934	800.738	1,428.901
N.sum2[4]	681.695	288.661	288.261	476.729	625.210	821.059	1,410.439
N.sum2[5]	716.024	280.850	324.056	517.157	665.225	853.317	1,418.106
N.sum2[6]	762.343	277.722	358.605	564.543	715.263	905.122	1,444.553
N.sum2[7]	822.515	280.165	404.379	622.989	778.182	973.231	1,490.857
N.sum2[8]	899.522	289.138	448.652	695.547	858.466	1,062.127	1,573.971
N.sum2[9]	997.082	304.323	508.930	784.882	959.611	1,167.433	1,699.623
N.sum2[10]	1,119.199	325.936	577.062	895.781	1,085.988	1,305.853	1,857.451
N.sum2[11]	1,269.588	355.698	659.551	1,029.087	1,240.573	1,471.445	2,062.644
N.sum2[12]	1,450.671	394.494	759.870	1,191.186	1,426.677	1,673.438	2,312.878
N.sum2[13]	1,662.964	439.771	889.159	1,378.958	1,634.689	1,904.943	2,612.129
N.sum2[14]	1,907.972	488.989	1,065.018	1,594.464	1,866.461	2,170.177	3,003.502
N.sum2[15]	2,196.493	547.441	1,284.878	1,844.033	2,137.714	2,480.986	3,451.700

N.sum2[16]	2,544.345	626.800	1,534.881	2,132.499	2,462.287	2,857.594	4,029.902
N.sum2[17]	2,965.498	737.454	1,833.060	2,469.276	2,857.337	3,331.333	4,765.885
N.sum2[18]	3,465.824	884.718	2,126.859	2,857.032	3,329.304	3,912.770	5,644.982
N.sum2[19]	4,037.867	1,069.338	2,424.172	3,293.750	3,875.693	4,590.014	6,586.413
N.sum2[20]	4,659.193	1,283.151	2,720.272	3,759.076	4,466.291	5,330.198	7,675.188
N.sum2[21]	5,303.192	1,509.811	2,992.680	4,240.685	5,097.633	6,117.264	8,854.505
N.sum2[22]	5,957.608	1,762.151	3,195.035	4,704.607	5,718.388	6,937.484	10,017.359
N.sum2[23]	6,646.686	2,142.295	3,368.622	5,136.171	6,327.580	7,821.060	11,605.365
N.sum2[24]	7,439.202	2,810.627	3,425.814	5,498.410	6,956.386	8,841.280	14,242.373
N.sum2[25]	8,431.664	3,900.588	3,281.277	5,775.800	7,653.651	10,178.222	18,153.689
R.growth[1]	0.030	0.101	-0.191	-0.026	0.041	0.093	0.207
R.growth[2]	0.039	0.094	-0.164	-0.016	0.049	0.097	0.202
R.growth[3]	0.049	0.083	-0.128	-0.002	0.058	0.103	0.191
R.growth[4]	0.060	0.073	-0.096	0.014	0.068	0.109	0.184
R.growth[5]	0.071	0.067	-0.080	0.031	0.080	0.116	0.186
R.growth[6]	0.083	0.065	-0.065	0.046	0.090	0.125	0.193
R.growth[7]	0.095	0.062	-0.045	0.062	0.101	0.134	0.205
R.growth[8]	0.107	0.061	-0.024	0.074	0.111	0.144	0.218
R.growth[9]	0.119	0.061	-0.009	0.085	0.120	0.155	0.238
R.growth[10]	0.129	0.062	0.003	0.094	0.128	0.164	0.258
R.growth[11]	0.136	0.060	0.023	0.100	0.133	0.168	0.269
R.growth[12]	0.139	0.056	0.037	0.105	0.135	0.168	0.267
R.growth[13]	0.140	0.057	0.042	0.105	0.134	0.169	0.270
R.growth[14]	0.143	0.061	0.041	0.104	0.135	0.174	0.287
R.growth[15]	0.148	0.065	0.042	0.107	0.139	0.180	0.305
R.growth[16]	0.153	0.066	0.048	0.111	0.143	0.185	0.315
R.growth[17]	0.154	0.065	0.051	0.112	0.145	0.187	0.313
R.growth[18]	0.150	0.064	0.040	0.109	0.143	0.184	0.303
R.growth[19]	0.140	0.064	0.022	0.101	0.136	0.176	0.280
R.growth[20]	0.127	0.064	-0.001	0.087	0.126	0.165	0.262
R.growth[21]	0.113	0.071	-0.033	0.068	0.113	0.157	0.254
R.growth[22]	0.102	0.086	-0.076	0.051	0.105	0.155	0.265
R.growth[23]	0.097	0.101	-0.117	0.040	0.102	0.158	0.285
R.growth[24]	0.097	0.110	-0.140	0.037	0.104	0.163	0.303
Deviance	3,247.895	12.804	3,223.167	3,239.177	3,247.774	3,256.234	3,273.567

Tables A4.16. Bayesian generalized linear mixed model output for **Long-tailed Duck** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	8.304	0.079	8.152	8.249	8.304	8.358	8.458
MSE.CV	4.539	0.043	4.455	4.509	4.539	4.568	4.623
SSE	216,902.8	2,074.4	212,919.6	215,475.6	216,896.7	218,307.5	220,912.2
Trend	0.993	0.004	0.986	0.990	0.993	0.995	1.000
R.trend	-0.007	0.004	-0.015	-0.010	-0.007	-0.005	0.000
M.dens	0.814	0.011	0.792	0.806	0.814	0.821	0.835
M.y0	0.001	0.021	-0.044	-0.012	0.001	0.015	0.039
M.yz	-0.271	0.029	-0.329	-0.291	-0.271	-0.251	-0.215
M.blyr	0.316	0.024	0.271	0.298	0.315	0.332	0.365
M.cell	0.000	0.005	-0.010	-0.003	0.000	0.003	0.010
M.psi	0.449	0.004	0.442	0.447	0.449	0.451	0.456
R.mid	2.451	0.055	2.343	2.414	2.450	2.487	2.562
b.ADOY	0.008	0.015	-0.020	-0.002	0.008	0.018	0.037
b.ADOY.2	-0.005	0.006	-0.018	-0.010	-0.005	-0.001	0.007
z.ADOY	0.120	0.028	0.063	0.100	0.120	0.139	0.173
z.ADOY.2	0.038	0.013	0.012	0.029	0.038	0.047	0.065
SD.surv	0.189	0.046	0.117	0.156	0.183	0.214	0.294
SD.surv.z	0.394	0.094	0.250	0.328	0.382	0.447	0.608
SD.y0	0.102	0.019	0.072	0.089	0.100	0.113	0.144
SD.yz	0.374	0.065	0.267	0.328	0.366	0.411	0.519
SD.cell	0.209	0.010	0.191	0.202	0.209	0.216	0.228
SD.cell.z	0.545	0.022	0.501	0.530	0.546	0.560	0.590
SD.lam[1]	0.147	0.043	0.079	0.112	0.143	0.176	0.241
SD.lam[2]	0.362	0.118	0.194	0.280	0.342	0.419	0.649
SD.lam[3]	0.705	0.912	0.012	0.120	0.441	0.889	3.586
SD.lam[4]	0.168	0.176	0.006	0.050	0.116	0.226	0.642
SD.lam[5]	3.905	4.979	0.037	0.402	1.550	5.650	17.614
SD.lam[6]	0.744	0.187	0.440	0.610	0.717	0.852	1.171
SD.lam[7]	0.648	0.281	0.203	0.474	0.661	0.818	1.237
SD.lam[8]	0.331	0.482	0.039	0.097	0.176	0.359	1.651
S.eff[1]	-0.033	0.062	-0.155	-0.074	-0.032	0.008	0.090
S.eff[2]	0.110	0.056	-0.001	0.072	0.109	0.147	0.219
S.eff[3]	0.107	0.055	0.000	0.069	0.107	0.144	0.217
S.eff[4]	0.098	0.054	-0.007	0.062	0.098	0.134	0.206
S.eff[5]	0.116	0.053	0.014	0.081	0.116	0.151	0.221
S.eff[6]	0.049	0.060	-0.065	0.008	0.049	0.090	0.168
S.eff[7]	0.118	0.059	0.001	0.078	0.118	0.159	0.232
S.eff[8]	0.283	0.074	0.140	0.233	0.283	0.331	0.434
S.eff[9]	-0.241	0.071	-0.382	-0.289	-0.242	-0.193	-0.101

S.eff[10]	0.118	0.056	0.008	0.081	0.118	0.156	0.228
S.eff[11]	-0.029	0.053	-0.132	-0.064	-0.030	0.007	0.077
S.eff[12]	0.314	0.064	0.187	0.271	0.313	0.358	0.437
S.eff[13]	0.244	0.061	0.123	0.202	0.245	0.285	0.365
S.eff[14]	0.124	0.057	0.013	0.085	0.123	0.162	0.237
S.eff[15]	0.076	0.059	-0.038	0.036	0.075	0.116	0.193
S.eff.z[1]	0.123	0.136	-0.144	0.033	0.123	0.213	0.395
S.eff.z[2]	-0.086	0.129	-0.339	-0.173	-0.087	0.002	0.168
S.eff.z[3]	0.073	0.130	-0.175	-0.016	0.071	0.161	0.334
S.eff.z[4]	-0.087	0.130	-0.342	-0.175	-0.088	0.002	0.167
S.eff.z[5]	-0.304	0.134	-0.568	-0.393	-0.304	-0.211	-0.042
S.eff.z[6]	0.109	0.140	-0.165	0.013	0.106	0.203	0.386
S.eff.z[7]	0.240	0.141	-0.034	0.144	0.239	0.334	0.525
S.eff.z[8]	0.470	0.154	0.177	0.368	0.468	0.571	0.781
S.eff.z[9]	0.816	0.156	0.518	0.710	0.815	0.917	1.126
S.eff.z[10]	0.297	0.135	0.036	0.206	0.296	0.386	0.562
S.eff.z[11]	0.643	0.143	0.371	0.544	0.640	0.739	0.928
S.eff.z[12]	-0.145	0.134	-0.406	-0.235	-0.145	-0.055	0.121
S.eff.z[13]	-0.244	0.131	-0.498	-0.332	-0.243	-0.153	0.009
S.eff.z[14]	0.165	0.132	-0.081	0.076	0.164	0.255	0.425
S.eff.z[15]	0.108	0.135	-0.149	0.014	0.107	0.196	0.386
y0[1]	0.011	0.062	-0.116	-0.029	0.012	0.052	0.128
y0[2]	0.025	0.053	-0.084	-0.010	0.026	0.060	0.125
y0[3]	-0.064	0.049	-0.165	-0.095	-0.063	-0.031	0.028
y0[4]	0.062	0.045	-0.030	0.033	0.063	0.092	0.149
y0[5]	0.085	0.043	-0.002	0.057	0.085	0.114	0.169
y0[6]	-0.036	0.043	-0.121	-0.065	-0.036	-0.007	0.045
y0[7]	-0.049	0.045	-0.140	-0.078	-0.049	-0.020	0.038
y0[8]	-0.172	0.047	-0.267	-0.204	-0.171	-0.139	-0.084
y0[9]	0.119	0.044	0.033	0.090	0.118	0.147	0.205
y0[10]	0.084	0.042	-0.001	0.056	0.083	0.112	0.169
y0[11]	0.158	0.041	0.077	0.131	0.157	0.185	0.240
y0[12]	-0.163	0.049	-0.264	-0.195	-0.162	-0.129	-0.067
y0[13]	-0.129	0.048	-0.225	-0.160	-0.128	-0.097	-0.035
y0[14]	-0.050	0.043	-0.136	-0.080	-0.050	-0.020	0.033
y0[15]	0.022	0.046	-0.069	-0.008	0.022	0.052	0.111
y0[16]	0.014	0.046	-0.075	-0.017	0.014	0.045	0.105
y0[17]	0.032	0.042	-0.053	0.003	0.032	0.061	0.113
y0[18]	0.071	0.043	-0.015	0.042	0.071	0.100	0.156
y0[19]	0.022	0.045	-0.066	-0.007	0.023	0.052	0.110
y0[20]	0.126	0.044	0.040	0.096	0.127	0.157	0.212
y0[21]	-0.047	0.049	-0.142	-0.080	-0.047	-0.015	0.047
y0[22]	-0.035	0.049	-0.134	-0.068	-0.034	-0.002	0.059
y0[23]	-0.099	0.052	-0.203	-0.133	-0.098	-0.063	-0.003

y0[24]	0.067	0.053	-0.039	0.033	0.068	0.102	0.167
y0[25]	-0.030	0.059	-0.149	-0.069	-0.029	0.008	0.082
yz[1]	-0.286	0.097	-0.478	-0.352	-0.285	-0.222	-0.098
yz[2]	-0.149	0.095	-0.339	-0.213	-0.147	-0.086	0.034
yz[3]	-0.266	0.091	-0.450	-0.327	-0.264	-0.204	-0.089
yz[4]	-0.328	0.083	-0.495	-0.383	-0.328	-0.272	-0.167
yz[5]	-0.404	0.085	-0.572	-0.461	-0.404	-0.347	-0.238
yz[6]	-0.463	0.086	-0.634	-0.520	-0.462	-0.403	-0.299
yz[7]	-0.408	0.099	-0.602	-0.475	-0.406	-0.339	-0.217
yz[8]	-0.234	0.097	-0.426	-0.297	-0.234	-0.169	-0.047
yz[9]	-0.301	0.095	-0.490	-0.366	-0.300	-0.238	-0.119
yz[10]	-0.421	0.095	-0.612	-0.484	-0.420	-0.358	-0.239
yz[11]	-0.668	0.105	-0.875	-0.737	-0.666	-0.597	-0.464
yz[12]	0.048	0.095	-0.141	-0.015	0.048	0.110	0.232
yz[13]	0.052	0.091	-0.131	-0.009	0.051	0.113	0.232
yz[14]	-0.227	0.090	-0.406	-0.288	-0.226	-0.165	-0.054
yz[15]	-0.135	0.095	-0.325	-0.198	-0.134	-0.070	0.049
yz[16]	0.054	0.083	-0.112	0.000	0.055	0.110	0.216
yz[17]	-0.410	0.086	-0.582	-0.468	-0.408	-0.353	-0.242
yz[18]	-0.414	0.087	-0.590	-0.473	-0.414	-0.354	-0.244
yz[19]	-0.158	0.085	-0.327	-0.215	-0.156	-0.100	0.004
yz[20]	-0.690	0.091	-0.873	-0.750	-0.690	-0.628	-0.518
yz[21]	0.064	0.083	-0.102	0.009	0.066	0.121	0.224
yz[22]	-0.259	0.089	-0.434	-0.320	-0.257	-0.198	-0.086
yz[23]	-0.312	0.091	-0.491	-0.371	-0.310	-0.251	-0.136
yz[24]	-0.513	0.091	-0.691	-0.573	-0.512	-0.452	-0.332
yz[25]	0.054	0.087	-0.120	-0.005	0.054	0.113	0.223
N.sum[1]	45,940.904	2,456.112	41,355.745	44,257.495	45,875.766	47,609.907	50,807.665
N.sum[2]	43,881.349	2,307.279	39,435.606	42,302.225	43,841.012	45,417.105	48,546.992
N.sum[3]	42,035.808	1,979.006	38,363.811	40,656.716	41,985.506	43,354.497	46,022.924
N.sum[4]	48,769.173	2,066.773	44,774.021	47,371.213	48,738.306	50,147.003	52,899.610
N.sum[5]	51,281.620	2,095.919	47,308.367	49,861.356	51,258.481	52,709.518	55,436.248
N.sum[6]	46,320.677	1,899.842	42,574.943	45,027.472	46,287.985	47,598.532	50,065.634
N.sum[7]	44,701.466	2,161.124	40,508.317	43,260.454	44,634.258	46,147.251	49,026.481
N.sum[8]	36,844.809	1,846.280	33,254.258	35,568.746	36,819.325	38,083.488	40,474.639
N.sum[9]	50,461.149	2,391.818	45,929.688	48,786.658	50,415.623	52,089.427	55,194.432
N.sum[10]	50,861.717	2,298.148	46,483.174	49,260.349	50,838.305	52,388.600	55,480.654
N.sum[11]	59,453.275	2,573.262	54,527.450	57,716.304	59,444.475	61,164.630	64,610.733
N.sum[12]	32,517.942	1,806.688	29,141.704	31,281.712	32,469.583	33,705.178	36,140.240
N.sum[13]	33,547.703	1,808.775	30,101.318	32,303.154	33,529.448	34,738.774	37,173.966
N.sum[14]	41,008.332	1,927.380	37,287.621	39,694.264	41,000.781	42,284.027	44,876.560
N.sum[15]	42,404.958	2,149.043	38,242.968	40,949.255	42,369.351	43,829.684	46,742.387
N.sum[16]	38,664.962	1,858.833	35,147.014	37,385.086	38,634.218	39,939.362	42,372.648
N.sum[17]	47,845.033	1,931.147	44,132.824	46,528.330	47,827.433	49,109.946	51,751.275

N.sum[18]	49,854.135	2,086.109	45,842.956	48,446.186	49,827.407	51,231.218	53,965.540
N.sum[19]	42,869.270	1,945.238	39,153.973	41,547.584	42,846.300	44,167.279	46,760.131
N.sum[20]	57,817.925	2,223.323	53,572.814	56,266.378	57,791.000	59,300.330	62,228.175
N.sum[21]	36,143.115	1,756.668	32,814.021	34,951.056	36,099.956	37,299.105	39,702.481
N.sum[22]	42,111.289	1,919.436	38,417.122	40,813.307	42,086.338	43,389.676	45,957.477
N.sum[23]	40,350.184	1,835.374	36,834.712	39,128.706	40,318.581	41,535.339	44,039.839
N.sum[24]	51,368.665	2,156.982	47,272.873	49,926.936	51,336.624	52,794.712	55,745.734
N.sum[25]	37,058.388	1,832.282	33,544.605	35,812.417	37,045.306	38,251.429	40,724.107
N.sum2[1]	45,742.432	2,842.617	40,435.588	43,824.836	45,631.138	47,523.082	51,742.667
N.sum2[2]	43,081.123	2,465.330	38,471.666	41,411.508	42,999.400	44,707.736	48,113.671
N.sum2[3]	45,113.928	2,286.366	40,813.587	43,553.060	45,055.896	46,584.162	49,869.856
N.sum2[4]	46,140.067	2,047.991	42,232.704	44,739.291	46,112.571	47,469.437	50,283.497
N.sum2[5]	47,402.608	1,998.057	43,622.892	46,034.231	47,359.554	48,746.746	51,448.873
N.sum2[6]	48,337.335	1,919.913	44,682.835	47,009.628	48,311.948	49,629.786	52,163.627
N.sum2[7]	47,248.888	2,034.213	43,342.338	45,863.873	47,244.381	48,629.485	51,261.615
N.sum2[8]	44,024.580	1,990.346	40,151.666	42,709.652	44,023.675	45,310.159	47,978.112
N.sum2[9]	45,090.937	1,948.848	41,376.706	43,771.917	45,049.033	46,373.672	48,908.230
N.sum2[10]	47,062.322	1,929.510	43,283.901	45,770.406	47,051.087	48,360.560	50,850.208
N.sum2[11]	51,093.171	2,063.966	46,955.143	49,766.218	51,102.995	52,463.893	55,160.517
N.sum2[12]	38,495.916	1,883.405	34,847.767	37,249.853	38,491.251	39,736.573	42,174.560
N.sum2[13]	38,384.539	1,830.702	34,727.109	37,183.038	38,391.953	39,618.911	41,933.256
N.sum2[14]	43,379.592	1,858.452	39,773.925	42,145.589	43,359.988	44,611.089	46,991.508
N.sum2[15]	41,744.606	1,914.211	38,121.893	40,447.154	41,723.340	43,010.913	45,636.920
N.sum2[16]	38,365.001	1,714.514	35,080.225	37,213.903	38,355.093	39,503.623	41,735.774
N.sum2[17]	46,646.615	1,821.302	43,148.668	45,402.717	46,625.993	47,844.547	50,263.871
N.sum2[18]	46,721.739	1,846.409	43,177.471	45,463.231	46,710.636	47,925.480	50,363.954
N.sum2[19]	42,182.638	1,821.083	38,728.099	40,935.402	42,139.520	43,371.999	45,865.114
N.sum2[20]	51,277.702	1,991.797	47,440.082	49,947.162	51,243.445	52,580.911	55,267.908
N.sum2[21]	38,132.663	1,815.631	34,704.293	36,902.481	38,085.316	39,337.181	41,807.048
N.sum2[22]	43,891.572	2,057.821	40,020.486	42,522.339	43,828.034	45,194.792	48,074.060
N.sum2[23]	44,842.050	2,189.456	40,808.122	43,372.518	44,757.652	46,248.488	49,357.308
N.sum2[24]	48,360.355	2,423.989	43,830.447	46,718.000	48,261.633	49,881.179	53,533.089
N.sum2[25]	38,452.175	2,248.314	34,132.970	36,935.409	38,393.167	39,896.430	43,049.295
R.growth[1]	-0.060	0.056	-0.170	-0.098	-0.059	-0.021	0.049
R.growth[2]	0.046	0.049	-0.050	0.013	0.047	0.080	0.143
R.growth[3]	0.023	0.045	-0.063	-0.008	0.023	0.053	0.112
R.growth[4]	0.027	0.042	-0.054	-0.001	0.026	0.056	0.109
R.growth[5]	0.020	0.043	-0.062	-0.009	0.019	0.048	0.105
R.growth[6]	-0.023	0.046	-0.114	-0.053	-0.023	0.009	0.064
R.growth[7]	-0.071	0.051	-0.170	-0.104	-0.071	-0.038	0.029
R.growth[8]	0.024	0.052	-0.075	-0.010	0.023	0.059	0.127
R.growth[9]	0.043	0.050	-0.055	0.010	0.043	0.076	0.140
R.growth[10]	0.082	0.046	-0.009	0.052	0.082	0.113	0.171
R.growth[11]	-0.283	0.056	-0.392	-0.321	-0.283	-0.246	-0.175

R.growth[12]	-0.003	0.061	-0.120	-0.045	-0.003	0.038	0.119
R.growth[13]	0.123	0.056	0.016	0.084	0.122	0.161	0.233
R.growth[14]	-0.039	0.055	-0.145	-0.075	-0.038	-0.003	0.070
R.growth[15]	-0.084	0.056	-0.195	-0.122	-0.084	-0.046	0.023
R.growth[16]	0.196	0.049	0.098	0.163	0.195	0.229	0.293
R.growth[17]	0.002	0.044	-0.085	-0.028	0.002	0.032	0.087
R.growth[18]	-0.102	0.048	-0.196	-0.135	-0.102	-0.069	-0.009
R.growth[19]	0.195	0.045	0.108	0.164	0.196	0.226	0.285
R.growth[20]	-0.297	0.049	-0.391	-0.329	-0.296	-0.264	-0.202
R.growth[21]	0.141	0.053	0.038	0.105	0.140	0.176	0.246
R.growth[22]	0.021	0.049	-0.075	-0.011	0.021	0.054	0.122
R.growth[23]	0.075	0.047	-0.018	0.044	0.076	0.107	0.167
R.growth[24]	-0.230	0.052	-0.329	-0.265	-0.229	-0.196	-0.128
Deviance	61,298.857	224.283	60,869.105	61,143.749	61,296.687	61,450.610	61,746.722

Tables A4.17. Bayesian generalized linear mixed model output for **Red-breasted Merganser** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	0.484	0.011	0.473	0.477	0.481	0.487	0.510
MSE.CV	2.772	0.061	2.713	2.736	2.756	2.789	2.923
SSE	3,226.105	70.918	3,157.545	3,184.574	3,208.099	3,246.773	3,401.791
Trend	1.038	0.016	1.009	1.028	1.038	1.049	1.072
R.trend	0.038	0.015	0.009	0.027	0.037	0.047	0.070
M.dens	0.085	0.009	0.069	0.079	0.084	0.090	0.103
M.y0	-0.001	0.033	-0.068	-0.014	0.000	0.013	0.069
M.blyr	-2.649	0.105	-2.857	-2.720	-2.649	-2.578	-2.443
M.cell	0.000	0.005	-0.010	-0.002	0.000	0.002	0.010
R.mid	-2.694	0.076	-2.844	-2.745	-2.694	-2.643	-2.546
b.ADOY	0.024	0.107	-0.196	-0.047	0.028	0.099	0.219
b.ADOY.2	-0.074	0.065	-0.200	-0.119	-0.073	-0.030	0.052
SD.surv	0.998	0.292	0.533	0.796	0.960	1.162	1.695
SD.y0	0.137	0.090	0.011	0.064	0.126	0.195	0.340
SD.cell	0.075	0.046	0.014	0.041	0.067	0.097	0.196
SD.lam[1]	0.082	0.050	0.023	0.042	0.067	0.118	0.196
SD.lam[2]	0.812	0.568	0.071	0.408	0.711	1.113	2.249
SD.lam[3]	0.898	0.796	0.074	0.379	0.701	1.164	2.985
SD.lam[4]	1.319	1.684	0.028	0.344	0.746	1.565	6.291
SD.lam[5]	5.550	4.005	0.284	2.173	4.586	8.393	14.148
SD.lam[6]	1.516	0.899	0.363	0.683	1.469	2.250	3.254
SD.lam[7]	5.736	2.574	2.158	3.685	5.398	7.300	11.801
SD.lam[8]	0.691	1.540	0.010	0.098	0.238	0.556	5.467
S.eff[1]	0.321	0.505	-0.629	-0.021	0.315	0.653	1.328
S.eff[2]	0.570	0.457	-0.308	0.263	0.551	0.868	1.514
S.eff[3]	0.442	0.456	-0.408	0.137	0.426	0.737	1.391
S.eff[4]	1.372	0.421	0.573	1.088	1.365	1.649	2.215
S.eff[5]	0.957	0.451	0.107	0.650	0.943	1.249	1.877
S.eff[6]	-0.273	0.514	-1.272	-0.616	-0.278	0.071	0.733
S.eff[7]	1.302	0.469	0.433	0.979	1.291	1.608	2.279
S.eff[8]	0.484	0.486	-0.447	0.150	0.476	0.801	1.473
S.eff[9]	-1.251	0.642	-2.600	-1.667	-1.216	-0.801	-0.095
S.eff[10]	1.316	0.463	0.441	0.996	1.303	1.620	2.244
S.eff[11]	0.516	0.401	-0.241	0.241	0.511	0.779	1.325
S.eff[12]	0.140	0.405	-0.626	-0.135	0.132	0.402	0.955
S.eff[13]	0.024	0.427	-0.788	-0.259	0.011	0.306	0.881
S.eff[14]	0.274	0.421	-0.529	-0.012	0.268	0.548	1.112
S.eff[15]	0.719	0.400	-0.034	0.442	0.711	0.985	1.527
y0[1]	0.008	0.152	-0.296	-0.061	0.002	0.068	0.355

y0[2]	-0.030	0.149	-0.371	-0.095	-0.013	0.041	0.264
y0[3]	-0.086	0.165	-0.510	-0.159	-0.043	0.009	0.168
y0[4]	0.027	0.144	-0.262	-0.043	0.012	0.091	0.356
y0[5]	0.153	0.182	-0.072	0.014	0.101	0.249	0.609
y0[6]	-0.043	0.151	-0.405	-0.107	-0.019	0.033	0.228
y0[7]	-0.052	0.151	-0.414	-0.116	-0.024	0.026	0.215
y0[8]	-0.015	0.143	-0.332	-0.075	-0.005	0.051	0.275
y0[9]	-0.019	0.141	-0.343	-0.082	-0.008	0.047	0.269
y0[10]	-0.006	0.142	-0.320	-0.070	-0.003	0.059	0.299
y0[11]	0.008	0.140	-0.285	-0.054	0.003	0.070	0.318
y0[12]	-0.031	0.145	-0.373	-0.095	-0.012	0.039	0.249
y0[13]	0.033	0.141	-0.242	-0.037	0.014	0.097	0.368
y0[14]	0.012	0.136	-0.268	-0.052	0.005	0.075	0.314
y0[15]	0.003	0.140	-0.294	-0.063	0.001	0.067	0.310
y0[16]	0.024	0.137	-0.249	-0.041	0.009	0.086	0.337
y0[17]	0.054	0.142	-0.199	-0.023	0.027	0.117	0.393
y0[18]	0.015	0.137	-0.265	-0.050	0.006	0.074	0.320
y0[19]	-0.073	0.160	-0.471	-0.143	-0.035	0.016	0.182
y0[20]	-0.024	0.145	-0.356	-0.089	-0.011	0.043	0.258
y0[21]	-0.040	0.144	-0.379	-0.102	-0.019	0.032	0.225
y0[22]	0.048	0.145	-0.211	-0.027	0.021	0.110	0.414
y0[23]	0.004	0.142	-0.294	-0.061	0.002	0.069	0.314
y0[24]	0.045	0.144	-0.210	-0.030	0.020	0.108	0.390
y0[25]	-0.035	0.142	-0.371	-0.100	-0.016	0.035	0.236
N.sum[1]	751.890	261.999	346.034	573.294	715.279	889.701	1,354.379
N.sum[2]	688.674	195.843	373.022	550.737	666.338	805.552	1,141.154
N.sum[3]	646.040	164.421	349.779	533.549	634.225	747.084	1,011.528
N.sum[4]	735.508	169.173	457.817	617.459	712.983	832.718	1,114.869
N.sum[5]	870.389	216.114	550.388	719.158	833.572	982.576	1,399.202
N.sum[6]	745.677	164.303	461.182	631.152	734.433	842.060	1,113.525
N.sum[7]	773.539	171.048	461.654	658.803	764.701	876.435	1,137.327
N.sum[8]	834.398	175.043	532.846	715.197	820.217	934.667	1,218.611
N.sum[9]	864.677	170.621	564.812	748.778	853.358	970.530	1,238.454
N.sum[10]	918.437	188.739	593.254	791.876	902.731	1,027.099	1,329.816
N.sum[11]	980.536	197.047	643.565	847.512	961.928	1,093.733	1,421.651
N.sum[12]	995.693	193.709	647.210	865.469	983.034	1,107.202	1,412.344
N.sum[13]	1,122.510	233.935	753.468	964.854	1,091.990	1,241.884	1,679.499
N.sum[14]	1,151.628	224.916	790.509	996.967	1,123.832	1,276.347	1,660.868
N.sum[15]	1,195.941	238.966	805.045	1,034.049	1,166.682	1,330.531	1,757.710
N.sum[16]	1,275.184	242.824	891.869	1,112.154	1,245.848	1,405.700	1,845.184
N.sum[17]	1,377.936	261.284	967.989	1,195.567	1,342.688	1,516.134	1,977.100
N.sum[18]	1,391.663	257.192	960.917	1,220.893	1,365.580	1,534.793	1,969.345
N.sum[19]	1,337.457	257.382	841.515	1,168.418	1,327.866	1,495.171	1,880.685
N.sum[20]	1,455.217	268.491	986.796	1,273.778	1,432.623	1,603.573	2,043.154

N.sum[21]	1,475.242	272.408	988.912	1,295.720	1,456.424	1,633.771	2,062.604
N.sum[22]	1,656.017	331.544	1,149.626	1,430.794	1,608.518	1,826.008	2,439.853
N.sum[23]	1,628.706	322.080	1,102.309	1,414.208	1,593.400	1,799.311	2,380.774
N.sum[24]	1,761.459	370.856	1,187.688	1,509.833	1,705.995	1,950.716	2,651.665
N.sum[25]	1,717.467	385.548	1,081.410	1,450.481	1,679.410	1,940.772	2,600.915
N.sum2[1]	751.875	246.978	351.010	582.000	724.454	886.966	1,314.230
N.sum2[2]	712.575	180.495	414.775	584.278	693.581	818.437	1,118.864
N.sum2[3]	705.187	149.558	454.839	599.227	691.718	793.586	1,040.585
N.sum2[4]	720.250	142.785	482.748	619.346	707.563	804.800	1,037.364
N.sum2[5]	748.196	142.879	513.852	648.718	734.309	831.307	1,069.136
N.sum2[6]	781.604	139.700	544.493	682.496	769.873	866.133	1,092.033
N.sum2[7]	816.021	136.499	574.251	719.634	805.636	903.441	1,104.696
N.sum2[8]	849.852	136.721	601.377	753.288	841.471	937.928	1,139.700
N.sum2[9]	885.881	139.050	635.252	788.854	879.964	976.453	1,180.610
N.sum2[10]	927.840	142.923	672.216	829.092	920.756	1,018.747	1,234.683
N.sum2[11]	977.559	150.622	715.091	875.022	966.704	1,066.580	1,309.226
N.sum2[12]	1,033.391	162.293	764.800	924.585	1,017.807	1,124.311	1,396.034
N.sum2[13]	1,090.471	172.562	815.773	972.996	1,071.802	1,184.118	1,482.678
N.sum2[14]	1,144.557	177.531	865.156	1,021.955	1,124.618	1,242.638	1,551.698
N.sum2[15]	1,197.268	180.442	911.436	1,073.308	1,176.785	1,298.252	1,613.516
N.sum2[16]	1,252.873	185.691	949.159	1,125.343	1,233.336	1,357.079	1,671.167
N.sum2[17]	1,314.040	192.477	983.963	1,184.010	1,295.812	1,421.856	1,737.932
N.sum2[18]	1,379.556	197.691	1,034.718	1,245.136	1,364.537	1,496.910	1,810.127
N.sum2[19]	1,443.734	201.789	1,094.022	1,301.470	1,428.428	1,567.417	1,880.951
N.sum2[20]	1,499.136	208.753	1,143.138	1,350.644	1,482.848	1,624.599	1,962.878
N.sum2[21]	1,545.045	220.910	1,174.043	1,388.698	1,525.418	1,677.596	2,035.939
N.sum2[22]	1,585.820	234.476	1,192.804	1,421.389	1,563.094	1,722.885	2,112.423
N.sum2[23]	1,630.901	252.507	1,208.286	1,453.512	1,605.245	1,784.507	2,201.714
N.sum2[24]	1,695.821	297.868	1,193.227	1,487.080	1,659.390	1,872.745	2,383.732
N.sum2[25]	1,799.683	394.987	1,143.800	1,526.281	1,758.157	2,029.750	2,700.871
R.growth[1]	-0.032	0.114	-0.243	-0.092	-0.035	0.015	0.269
R.growth[2]	-0.001	0.092	-0.159	-0.051	-0.007	0.033	0.257
R.growth[3]	0.024	0.065	-0.087	-0.012	0.019	0.050	0.198
R.growth[4]	0.040	0.043	-0.042	0.014	0.038	0.063	0.136
R.growth[5]	0.046	0.040	-0.046	0.025	0.047	0.069	0.123
R.growth[6]	0.045	0.044	-0.070	0.027	0.049	0.070	0.120
R.growth[7]	0.042	0.043	-0.069	0.025	0.045	0.065	0.116
R.growth[8]	0.042	0.039	-0.046	0.024	0.042	0.061	0.118
R.growth[9]	0.047	0.038	-0.022	0.026	0.043	0.064	0.132
R.growth[10]	0.052	0.040	-0.010	0.029	0.046	0.069	0.154
R.growth[11]	0.055	0.039	-0.003	0.031	0.049	0.072	0.159
R.growth[12]	0.054	0.035	-0.003	0.032	0.049	0.069	0.142
R.growth[13]	0.049	0.035	-0.015	0.030	0.047	0.065	0.125
R.growth[14]	0.046	0.039	-0.037	0.029	0.047	0.064	0.116

R.growth[15]	0.046	0.040	-0.049	0.029	0.049	0.067	0.117
R.growth[16]	0.048	0.037	-0.037	0.030	0.050	0.070	0.116
R.growth[17]	0.049	0.035	-0.027	0.029	0.050	0.071	0.116
R.growth[18]	0.046	0.037	-0.033	0.026	0.046	0.067	0.120
R.growth[19]	0.038	0.040	-0.041	0.017	0.038	0.057	0.121
R.growth[20]	0.030	0.039	-0.044	0.008	0.030	0.050	0.113
R.growth[21]	0.025	0.038	-0.052	0.002	0.027	0.049	0.099
R.growth[22]	0.027	0.046	-0.074	0.000	0.031	0.057	0.113
R.growth[23]	0.036	0.062	-0.106	0.003	0.040	0.073	0.149
R.growth[24]	0.051	0.077	-0.122	0.012	0.053	0.094	0.206
Deviance	5,313.262	12.987	5,287.470	5,304.646	5,313.559	5,322.097	5,338.074

Tables A4.18. Bayesian generalized linear mixed model output for **Jaeger (Pomarine, Parasitic, and Long-tailed combined)** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	0.424	0.001	0.422	0.423	0.424	0.425	0.427
MSE.CV	1.468	0.005	1.460	1.465	1.468	1.471	1.477
SSE	10,570.015	32.637	10,507.649	10,547.745	10,569.196	10,592.371	10,634.587
Trend	0.999	0.012	0.975	0.992	0.999	1.007	1.023
R.trend	-0.001	0.012	-0.025	-0.008	-0.001	0.007	0.023
M.dens	0.163	0.006	0.153	0.158	0.162	0.166	0.177
M.y0	-0.005	0.076	-0.161	-0.053	-0.004	0.044	0.144
M.blyr	-1.978	0.080	-2.135	-2.030	-1.978	-1.925	-1.818
M.cell	0.000	0.006	-0.012	-0.004	0.000	0.004	0.012
R.mid	0.929	0.099	0.747	0.860	0.926	0.993	1.134
b.ADOY	0.065	0.032	0.003	0.043	0.064	0.086	0.128
b.ADOY.2	-0.013	0.014	-0.039	-0.022	-0.013	-0.003	0.015
SD.surv	0.605	0.140	0.389	0.507	0.584	0.683	0.926
SD.y0	0.385	0.067	0.279	0.337	0.377	0.424	0.537
SD.cell	0.234	0.024	0.184	0.218	0.235	0.252	0.278
SD.lam[1]	0.336	0.084	0.196	0.279	0.325	0.382	0.524
SD.lam[2]	0.706	0.244	0.366	0.543	0.664	0.821	1.307
SD.lam[3]	1.585	1.834	0.083	0.573	1.063	1.899	7.026
SD.lam[4]	1.782	1.648	0.081	0.568	1.331	2.501	6.129
SD.lam[5]	4.894	4.049	0.161	1.456	3.788	7.746	13.958
SD.lam[6]	1.580	0.361	1.009	1.281	1.556	1.847	2.312
SD.lam[7]	3.841	1.423	1.939	2.855	3.543	4.479	7.517
SD.lam[8]	0.440	0.617	0.006	0.117	0.229	0.477	2.337
S.eff[1]	0.145	0.165	-0.181	0.033	0.145	0.257	0.472
S.eff[2]	-0.414	0.120	-0.653	-0.494	-0.413	-0.335	-0.182
S.eff[3]	-0.482	0.150	-0.777	-0.582	-0.481	-0.380	-0.193
S.eff[4]	-1.195	0.145	-1.485	-1.292	-1.191	-1.095	-0.916
S.eff[5]	-0.347	0.131	-0.606	-0.438	-0.345	-0.256	-0.099
S.eff[6]	-0.302	0.147	-0.589	-0.401	-0.300	-0.206	-0.016
S.eff[7]	-0.400	0.153	-0.710	-0.503	-0.399	-0.298	-0.103
S.eff[8]	-0.619	0.156	-0.927	-0.723	-0.616	-0.514	-0.320
S.eff[9]	-0.926	0.153	-1.232	-1.028	-0.923	-0.825	-0.624
S.eff[10]	-0.664	0.139	-0.931	-0.757	-0.664	-0.570	-0.391
S.eff[11]	-0.217	0.158	-0.530	-0.325	-0.215	-0.108	0.084
S.eff[12]	-0.112	0.145	-0.395	-0.211	-0.110	-0.013	0.171
S.eff[13]	-0.267	0.153	-0.568	-0.370	-0.271	-0.166	0.036
S.eff[14]	0.073	0.142	-0.209	-0.022	0.074	0.168	0.350
S.eff[15]	-0.516	0.110	-0.730	-0.590	-0.516	-0.441	-0.304
y0[1]	-0.652	0.243	-1.123	-0.810	-0.656	-0.499	-0.171

y0[2]	0.425	0.193	0.031	0.300	0.426	0.550	0.815
y0[3]	-0.205	0.170	-0.549	-0.312	-0.201	-0.092	0.125
y0[4]	0.567	0.149	0.266	0.469	0.568	0.669	0.851
y0[5]	0.055	0.148	-0.241	-0.042	0.056	0.151	0.347
y0[6]	-0.212	0.148	-0.502	-0.311	-0.214	-0.115	0.080
y0[7]	-0.272	0.152	-0.583	-0.371	-0.270	-0.170	0.023
y0[8]	0.191	0.146	-0.093	0.094	0.192	0.288	0.478
y0[9]	0.338	0.148	0.049	0.240	0.335	0.437	0.630
y0[10]	0.185	0.156	-0.114	0.081	0.182	0.287	0.510
y0[11]	-0.453	0.174	-0.790	-0.570	-0.457	-0.342	-0.097
y0[12]	-0.205	0.172	-0.522	-0.323	-0.213	-0.094	0.156
y0[13]	-0.377	0.167	-0.694	-0.489	-0.383	-0.268	-0.040
y0[14]	-0.438	0.155	-0.737	-0.540	-0.438	-0.338	-0.130
y0[15]	0.786	0.139	0.519	0.691	0.785	0.879	1.062
y0[16]	0.259	0.145	-0.034	0.163	0.264	0.357	0.535
y0[17]	0.039	0.159	-0.305	-0.063	0.053	0.151	0.323
y0[18]	-0.017	0.168	-0.379	-0.123	-0.004	0.099	0.289
y0[19]	-0.106	0.167	-0.460	-0.212	-0.097	0.008	0.200
y0[20]	0.078	0.158	-0.236	-0.026	0.082	0.183	0.387
y0[21]	0.013	0.155	-0.300	-0.087	0.016	0.115	0.309
y0[22]	-0.045	0.158	-0.355	-0.149	-0.048	0.058	0.274
y0[23]	0.120	0.164	-0.193	0.012	0.116	0.226	0.456
y0[24]	0.057	0.189	-0.298	-0.071	0.052	0.174	0.455
y0[25]	-0.251	0.226	-0.669	-0.403	-0.266	-0.107	0.227
N.sum[1]	3,724.701	456.676	2,891.294	3,402.027	3,703.140	4,020.028	4,682.679
N.sum[2]	10,995.367	902.390	9,318.913	10,374.183	10,964.005	11,586.757	12,853.059
N.sum[3]	5,979.861	543.912	4,962.322	5,606.064	5,965.219	6,340.455	7,099.496
N.sum[4]	13,266.393	826.058	11,696.862	12,706.709	13,235.091	13,811.088	14,933.805
N.sum[5]	8,185.139	595.120	7,080.313	7,771.829	8,172.615	8,575.969	9,404.327
N.sum[6]	6,393.075	510.564	5,438.628	6,041.704	6,372.476	6,729.713	7,432.972
N.sum[7]	6,070.700	613.886	4,929.481	5,651.801	6,043.086	6,471.032	7,352.617
N.sum[8]	9,522.061	794.027	8,052.980	8,971.580	9,492.214	10,048.370	11,149.255
N.sum[9]	10,793.182	884.222	9,102.785	10,192.629	10,770.522	11,370.332	12,606.375
N.sum[10]	9,053.820	760.939	7,675.414	8,521.217	9,028.880	9,547.253	10,641.116
N.sum[11]	4,712.086	521.170	3,764.837	4,351.261	4,688.082	5,052.131	5,783.249
N.sum[12]	6,005.840	598.219	4,899.067	5,585.157	5,983.656	6,403.193	7,238.314
N.sum[13]	5,097.686	522.256	4,155.405	4,737.783	5,072.316	5,435.560	6,194.274
N.sum[14]	4,885.962	489.737	3,982.978	4,548.908	4,871.281	5,203.314	5,897.266
N.sum[15]	16,984.451	1,151.380	14,857.860	16,188.215	16,941.377	17,730.584	19,350.472
N.sum[16]	10,303.005	700.268	8,966.244	9,819.898	10,289.788	10,762.670	11,715.179
N.sum[17]	8,452.123	589.160	7,343.937	8,043.059	8,441.686	8,842.325	9,640.667
N.sum[18]	8,081.647	596.727	6,973.838	7,667.624	8,053.667	8,486.492	9,283.702
N.sum[19]	7,371.163	569.032	6,307.651	6,978.886	7,356.661	7,741.476	8,551.403
N.sum[20]	8,683.898	629.534	7,515.555	8,240.535	8,668.987	9,094.364	9,963.580

N.sum[21]	7,886.450	575.573	6,816.099	7,493.311	7,862.158	8,263.050	9,052.213
N.sum[22]	7,185.901	572.715	6,131.154	6,785.158	7,169.539	7,560.949	8,373.449
N.sum[23]	8,201.001	619.396	7,042.762	7,768.020	8,185.309	8,611.801	9,466.778
N.sum[24]	7,509.084	582.280	6,421.200	7,107.988	7,496.956	7,894.432	8,690.592
N.sum[25]	5,427.088	495.829	4,510.889	5,087.088	5,403.395	5,752.515	6,459.682
N.sum2[1]	7,812.676	1,752.848	4,925.040	6,605.424	7,641.301	8,826.584	11,540.362
N.sum2[2]	7,812.412	1,384.055	5,492.285	6,869.229	7,674.729	8,610.115	10,718.432
N.sum2[3]	7,931.956	1,154.483	5,935.498	7,144.505	7,850.622	8,604.811	10,505.874
N.sum2[4]	8,135.302	1,057.422	6,282.851	7,388.784	8,062.369	8,756.216	10,508.506
N.sum2[5]	8,357.950	1,024.281	6,568.176	7,656.887	8,269.311	8,958.015	10,697.639
N.sum2[6]	8,523.739	1,000.460	6,715.352	7,847.823	8,460.987	9,101.431	10,761.020
N.sum2[7]	8,569.490	982.671	6,777.775	7,913.575	8,493.887	9,139.818	10,762.736
N.sum2[8]	8,477.832	973.620	6,776.796	7,833.179	8,380.219	9,044.718	10,677.555
N.sum2[9]	8,299.347	975.685	6,520.418	7,666.544	8,233.426	8,870.959	10,473.953
N.sum2[10]	8,113.706	1,007.976	6,168.144	7,477.859	8,099.992	8,708.920	10,259.947
N.sum2[11]	7,987.950	1,063.274	5,874.643	7,315.242	8,019.948	8,624.139	10,189.437
N.sum2[12]	7,954.392	1,088.344	5,777.172	7,284.551	8,005.187	8,603.241	10,173.566
N.sum2[13]	8,011.236	1,035.249	5,931.895	7,391.302	8,051.638	8,619.298	10,080.085
N.sum2[14]	8,141.620	917.156	6,377.803	7,570.196	8,134.124	8,675.436	10,035.188
N.sum2[15]	8,337.700	851.212	6,718.092	7,797.392	8,272.819	8,849.347	10,153.642
N.sum2[16]	8,572.279	969.897	7,004.783	7,905.521	8,428.517	9,118.512	10,787.002
N.sum2[17]	8,783.084	1,178.681	7,120.512	7,963.688	8,515.167	9,346.628	11,713.635
N.sum2[18]	8,892.792	1,283.442	7,182.705	7,985.711	8,584.158	9,511.189	12,052.209
N.sum2[19]	8,851.695	1,222.562	7,067.985	7,975.197	8,596.860	9,515.185	11,839.467
N.sum2[20]	8,666.149	1,088.098	6,920.292	7,912.656	8,533.652	9,261.403	11,132.305
N.sum2[21]	8,395.147	1,000.876	6,702.273	7,744.954	8,281.658	8,919.113	10,654.141
N.sum2[22]	8,109.849	999.920	6,410.534	7,438.894	8,005.497	8,689.359	10,338.570
N.sum2[23]	7,868.296	1,097.179	5,912.654	7,134.560	7,806.733	8,522.765	10,214.696
N.sum2[24]	7,707.852	1,316.608	5,359.354	6,817.794	7,659.702	8,495.201	10,566.089
N.sum2[25]	7,640.947	1,647.685	4,630.983	6,533.970	7,573.820	8,594.900	11,302.675
R.growth[1]	0.009	0.069	-0.114	-0.036	0.001	0.052	0.159
R.growth[2]	0.020	0.063	-0.091	-0.022	0.012	0.059	0.157
R.growth[3]	0.027	0.053	-0.066	-0.008	0.022	0.061	0.140
R.growth[4]	0.028	0.044	-0.054	-0.001	0.024	0.055	0.122
R.growth[5]	0.020	0.040	-0.057	-0.005	0.017	0.043	0.109
R.growth[6]	0.006	0.040	-0.080	-0.016	0.006	0.029	0.084
R.growth[7]	-0.011	0.040	-0.106	-0.031	-0.004	0.014	0.063
R.growth[8]	-0.022	0.042	-0.119	-0.046	-0.013	0.005	0.050
R.growth[9]	-0.024	0.044	-0.119	-0.050	-0.015	0.005	0.053
R.growth[10]	-0.017	0.041	-0.114	-0.037	-0.010	0.010	0.053
R.growth[11]	-0.005	0.035	-0.086	-0.022	0.000	0.016	0.059
R.growth[12]	0.008	0.034	-0.053	-0.012	0.005	0.026	0.083
R.growth[13]	0.018	0.045	-0.052	-0.011	0.008	0.041	0.129
R.growth[14]	0.025	0.055	-0.056	-0.011	0.008	0.053	0.161

R.growth[15]	0.027	0.056	-0.054	-0.010	0.009	0.057	0.173
R.growth[16]	0.022	0.048	-0.055	-0.008	0.011	0.048	0.135
R.growth[17]	0.011	0.037	-0.058	-0.010	0.007	0.031	0.086
R.growth[18]	-0.004	0.037	-0.078	-0.026	-0.003	0.016	0.077
R.growth[19]	-0.020	0.045	-0.128	-0.042	-0.011	0.009	0.058
R.growth[20]	-0.031	0.050	-0.155	-0.055	-0.019	0.002	0.043
R.growth[21]	-0.035	0.050	-0.152	-0.065	-0.024	0.000	0.045
R.growth[22]	-0.032	0.055	-0.164	-0.064	-0.025	0.004	0.065
R.growth[23]	-0.026	0.063	-0.183	-0.057	-0.017	0.012	0.090
R.growth[24]	-0.018	0.068	-0.192	-0.049	-0.009	0.022	0.108
Deviance	32,950.909	53.702	32,849.548	32,913.169	32,950.326	32,987.358	33,058.950

Tables A4.19. Bayesian generalized linear mixed model output for **Sabine's Gull** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	1.019	0.006	1.008	1.015	1.019	1.023	1.031
MSE.CV	2.288	0.013	2.263	2.279	2.287	2.296	2.314
SSE	18,718.627	106.035	18,520.182	18,645.922	18,713.725	18,787.933	18,935.536
Trend	1.026	0.009	1.010	1.020	1.026	1.032	1.047
R.trend	0.026	0.009	0.010	0.020	0.025	0.032	0.046
M.dens	0.189	0.006	0.179	0.185	0.189	0.193	0.201
M.y0	-0.001	0.045	-0.090	-0.030	0.000	0.028	0.088
M.blyr	-2.019	0.057	-2.129	-2.057	-2.019	-1.981	-1.906
M.cell	0.000	0.019	-0.036	-0.013	0.000	0.012	0.036
R.mid	-0.214	0.046	-0.303	-0.245	-0.213	-0.183	-0.124
b.ADOY	-0.156	0.034	-0.222	-0.180	-0.157	-0.133	-0.089
b.ADOY.2	0.029	0.016	-0.003	0.018	0.029	0.040	0.061
SD.surv	0.384	0.107	0.219	0.309	0.369	0.442	0.629
SD.y0	0.241	0.049	0.160	0.206	0.235	0.269	0.351
SD.cell	0.563	0.024	0.518	0.547	0.563	0.579	0.612
SD.lam[1]	0.252	0.065	0.147	0.203	0.246	0.293	0.393
SD.lam[2]	1.725	0.619	0.886	1.289	1.612	2.021	3.293
SD.lam[3]	0.878	1.168	0.084	0.330	0.547	0.928	4.887
SD.lam[4]	1.605	1.529	0.076	0.642	1.203	2.062	5.591
SD.lam[5]	4.566	3.944	0.132	1.330	3.312	7.054	13.866
SD.lam[6]	1.462	0.385	0.878	1.178	1.391	1.707	2.339
SD.lam[7]	1.728	1.346	0.454	0.628	1.354	2.517	4.895
SD.lam[8]	0.263	0.503	0.001	0.026	0.082	0.256	1.676
S.eff[1]	-0.320	0.186	-0.698	-0.444	-0.317	-0.191	0.032
S.eff[2]	-0.188	0.160	-0.514	-0.292	-0.185	-0.079	0.125
S.eff[3]	-0.060	0.156	-0.377	-0.163	-0.057	0.044	0.244
S.eff[4]	-0.175	0.152	-0.474	-0.276	-0.173	-0.072	0.121
S.eff[5]	-0.262	0.167	-0.599	-0.372	-0.257	-0.147	0.054
S.eff[6]	-0.534	0.182	-0.896	-0.655	-0.529	-0.408	-0.191
S.eff[7]	0.159	0.178	-0.192	0.039	0.158	0.275	0.518
S.eff[8]	-0.587	0.240	-1.083	-0.742	-0.580	-0.418	-0.148
S.eff[9]	0.266	0.155	-0.037	0.161	0.267	0.371	0.561
S.eff[10]	0.080	0.147	-0.208	-0.019	0.079	0.178	0.367
S.eff[11]	-0.308	0.154	-0.614	-0.410	-0.307	-0.203	-0.011
S.eff[12]	0.184	0.149	-0.112	0.085	0.184	0.285	0.476
S.eff[13]	-0.379	0.165	-0.714	-0.488	-0.374	-0.268	-0.055
S.eff[14]	0.266	0.137	-0.004	0.174	0.265	0.358	0.536
S.eff[15]	-0.395	0.165	-0.725	-0.506	-0.393	-0.282	-0.085
y0[1]	-0.107	0.158	-0.426	-0.210	-0.105	-0.002	0.197

y0[2]	0.013	0.135	-0.244	-0.077	0.013	0.101	0.287
y0[3]	0.008	0.124	-0.233	-0.076	0.008	0.091	0.252
y0[4]	0.312	0.121	0.075	0.230	0.313	0.393	0.555
y0[5]	0.103	0.117	-0.129	0.027	0.105	0.182	0.330
y0[6]	0.297	0.115	0.071	0.223	0.295	0.372	0.524
y0[7]	-0.580	0.135	-0.859	-0.670	-0.575	-0.489	-0.326
y0[8]	-0.363	0.134	-0.630	-0.451	-0.361	-0.271	-0.105
y0[9]	0.072	0.128	-0.172	-0.017	0.069	0.158	0.329
y0[10]	0.075	0.129	-0.171	-0.011	0.072	0.160	0.337
y0[11]	0.128	0.125	-0.113	0.045	0.124	0.210	0.385
y0[12]	-0.096	0.127	-0.342	-0.180	-0.095	-0.010	0.153
y0[13]	-0.066	0.117	-0.292	-0.145	-0.066	0.012	0.164
y0[14]	-0.092	0.116	-0.320	-0.169	-0.091	-0.013	0.132
y0[15]	-0.063	0.117	-0.296	-0.143	-0.060	0.018	0.160
y0[16]	0.181	0.118	-0.050	0.102	0.183	0.260	0.415
y0[17]	0.064	0.120	-0.172	-0.014	0.065	0.142	0.305
y0[18]	0.143	0.121	-0.092	0.063	0.145	0.221	0.381
y0[19]	0.180	0.122	-0.059	0.098	0.180	0.259	0.421
y0[20]	-0.159	0.119	-0.389	-0.239	-0.159	-0.079	0.074
y0[21]	-0.035	0.120	-0.268	-0.117	-0.035	0.045	0.201
y0[22]	0.079	0.121	-0.161	-0.001	0.081	0.160	0.319
y0[23]	0.106	0.119	-0.129	0.027	0.107	0.183	0.343
y0[24]	0.001	0.134	-0.266	-0.090	0.002	0.093	0.262
y0[25]	-0.223	0.168	-0.554	-0.336	-0.222	-0.109	0.101
N.sum[1]	3,742.783	382.730	3,048.369	3,480.108	3,725.329	3,987.894	4,536.632
N.sum[2]	4,314.812	448.916	3,510.059	3,999.504	4,291.325	4,603.076	5,251.926
N.sum[3]	4,369.563	421.778	3,601.896	4,072.341	4,350.355	4,634.989	5,261.861
N.sum[4]	5,987.075	519.710	5,055.718	5,615.083	5,954.203	6,331.383	7,028.872
N.sum[5]	4,870.679	421.751	4,100.335	4,577.308	4,854.943	5,145.607	5,757.856
N.sum[6]	5,889.545	494.880	4,986.368	5,551.652	5,864.087	6,205.054	6,917.426
N.sum[7]	2,447.976	287.643	1,915.105	2,252.519	2,435.219	2,633.946	3,056.913
N.sum[8]	3,054.259	326.035	2,457.276	2,821.129	3,037.841	3,272.227	3,735.137
N.sum[9]	4,806.665	436.335	4,005.904	4,507.132	4,788.063	5,092.727	5,710.376
N.sum[10]	5,014.522	451.049	4,185.404	4,699.100	5,000.860	5,311.006	5,941.181
N.sum[11]	5,600.321	497.837	4,681.968	5,254.685	5,575.288	5,916.870	6,648.383
N.sum[12]	4,803.689	447.070	3,969.911	4,500.288	4,785.954	5,088.351	5,736.597
N.sum[13]	5,340.929	470.701	4,465.783	5,015.041	5,324.558	5,645.347	6,311.781
N.sum[14]	5,604.364	477.717	4,718.315	5,271.686	5,586.840	5,919.607	6,589.311
N.sum[15]	6,180.382	529.087	5,206.232	5,812.373	6,160.710	6,526.577	7,262.816
N.sum[16]	8,384.357	641.764	7,206.227	7,941.035	8,367.839	8,808.993	9,730.796
N.sum[17]	7,865.333	618.799	6,715.667	7,442.601	7,843.106	8,267.519	9,169.377
N.sum[18]	8,890.077	671.986	7,625.746	8,425.822	8,868.087	9,323.323	10,272.468
N.sum[19]	9,560.334	750.850	8,183.326	9,033.475	9,528.320	10,055.949	11,092.853
N.sum[20]	6,978.400	579.990	5,903.753	6,581.000	6,963.370	7,354.833	8,171.469

N.sum[21]	7,977.210	638.362	6,806.997	7,534.427	7,944.160	8,392.225	9,326.189
N.sum[22]	8,928.534	730.263	7,575.328	8,419.708	8,903.775	9,414.838	10,423.358
N.sum[23]	9,036.988	702.394	7,728.225	8,553.176	9,011.468	9,490.805	10,494.063
N.sum[24]	7,969.724	637.646	6,778.923	7,526.524	7,946.345	8,388.233	9,278.746
N.sum[25]	6,214.610	522.585	5,239.854	5,855.406	6,197.418	6,548.911	7,308.192
N.sum2[1]	4,313.553	638.684	3,222.569	3,857.600	4,267.917	4,690.966	5,721.873
N.sum2[2]	4,391.135	514.301	3,463.920	4,025.538	4,367.796	4,715.657	5,474.519
N.sum2[3]	4,469.154	472.629	3,623.454	4,133.323	4,444.508	4,771.121	5,470.308
N.sum2[4]	4,519.280	469.059	3,722.491	4,196.841	4,470.768	4,805.106	5,546.450
N.sum2[5]	4,527.197	440.381	3,782.727	4,227.759	4,486.570	4,787.169	5,483.134
N.sum2[6]	4,506.049	395.525	3,796.402	4,232.243	4,481.579	4,748.814	5,349.504
N.sum2[7]	4,489.574	390.338	3,772.238	4,212.470	4,474.412	4,752.062	5,297.119
N.sum2[8]	4,515.180	435.086	3,686.886	4,202.939	4,510.969	4,818.795	5,370.486
N.sum2[9]	4,612.370	486.697	3,667.587	4,264.794	4,611.082	4,956.923	5,543.295
N.sum2[10]	4,798.775	514.090	3,789.639	4,436.834	4,802.280	5,164.669	5,770.681
N.sum2[11]	5,079.234	513.060	4,080.037	4,721.945	5,086.202	5,439.234	6,065.587
N.sum2[12]	5,444.265	497.463	4,452.433	5,109.645	5,451.219	5,771.335	6,420.906
N.sum2[13]	5,869.788	488.343	4,891.241	5,557.572	5,873.439	6,165.902	6,872.791
N.sum2[14]	6,323.175	503.259	5,380.637	5,998.534	6,301.600	6,614.585	7,431.289
N.sum2[15]	6,775.695	550.719	5,827.328	6,396.411	6,719.695	7,104.123	8,029.127
N.sum2[16]	7,206.521	620.883	6,220.205	6,752.011	7,132.015	7,574.470	8,617.257
N.sum2[17]	7,601.030	683.983	6,513.893	7,097.901	7,530.435	8,002.610	9,148.063
N.sum2[18]	7,946.585	716.544	6,766.348	7,426.208	7,888.789	8,377.038	9,533.761
N.sum2[19]	8,227.959	730.619	6,971.510	7,694.614	8,177.986	8,691.411	9,826.132
N.sum2[20]	8,424.847	754.284	7,122.169	7,886.089	8,357.153	8,892.325	10,074.519
N.sum2[21]	8,517.616	775.780	7,199.946	7,985.556	8,435.372	8,981.245	10,285.478
N.sum2[22]	8,498.038	768.700	7,182.535	7,963.341	8,422.828	8,951.307	10,224.442
N.sum2[23]	8,385.360	797.861	6,988.173	7,830.521	8,307.906	8,882.266	10,122.535
N.sum2[24]	8,227.508	985.629	6,541.946	7,531.107	8,138.619	8,834.507	10,382.068
N.sum2[25]	8,078.468	1,316.697	5,851.769	7,124.297	7,961.400	8,920.693	10,929.191
R.growth[1]	0.022	0.055	-0.083	-0.012	0.019	0.049	0.150
R.growth[2]	0.019	0.048	-0.075	-0.010	0.018	0.044	0.124
R.growth[3]	0.011	0.035	-0.063	-0.011	0.013	0.034	0.081
R.growth[4]	0.002	0.029	-0.057	-0.018	0.004	0.024	0.054
R.growth[5]	-0.004	0.036	-0.084	-0.026	0.000	0.023	0.053
R.growth[6]	-0.004	0.041	-0.100	-0.026	0.004	0.027	0.057
R.growth[7]	0.005	0.038	-0.088	-0.016	0.013	0.032	0.063
R.growth[8]	0.020	0.030	-0.050	0.003	0.025	0.041	0.071
R.growth[9]	0.039	0.026	-0.019	0.025	0.041	0.056	0.088
R.growth[10]	0.057	0.029	0.005	0.038	0.055	0.075	0.121
R.growth[11]	0.070	0.033	0.018	0.046	0.066	0.089	0.146
R.growth[12]	0.076	0.034	0.022	0.050	0.072	0.096	0.155
R.growth[13]	0.075	0.034	0.022	0.048	0.071	0.097	0.150
R.growth[14]	0.069	0.034	0.015	0.044	0.065	0.090	0.143

R.growth[15]	0.061	0.031	0.008	0.040	0.058	0.080	0.131
R.growth[16]	0.053	0.028	0.005	0.035	0.050	0.068	0.120
R.growth[17]	0.044	0.027	-0.002	0.027	0.042	0.059	0.106
R.growth[18]	0.035	0.029	-0.020	0.017	0.034	0.051	0.103
R.growth[19]	0.024	0.031	-0.040	0.005	0.025	0.041	0.088
R.growth[20]	0.011	0.030	-0.052	-0.007	0.013	0.031	0.065
R.growth[21]	-0.002	0.032	-0.066	-0.024	-0.002	0.022	0.056
R.growth[22]	-0.014	0.042	-0.100	-0.042	-0.012	0.019	0.059
R.growth[23]	-0.022	0.054	-0.147	-0.055	-0.016	0.019	0.066
R.growth[24]	-0.024	0.061	-0.172	-0.061	-0.018	0.021	0.073
Deviance	29,493.584	44.060	29,408.552	29,463.989	29,492.695	29,522.343	29,583.442

Tables A4.20. Bayesian generalized linear mixed model output for **Glaucous Gull** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	1.044	0.003	1.038	1.042	1.044	1.046	1.051
MSE.CV	1.780	0.006	1.769	1.776	1.779	1.783	1.791
SSE	25,608.022	80.576	25,452.623	25,553.257	25,606.669	25,661.018	25,772.080
Trend	1.018	0.006	1.007	1.014	1.018	1.022	1.031
R.trend	0.018	0.006	0.007	0.014	0.017	0.022	0.030
M.dens	0.260	0.004	0.252	0.257	0.260	0.263	0.269
M.y0	0.001	0.030	-0.058	-0.019	0.000	0.020	0.060
M.blyr	-1.503	0.036	-1.574	-1.527	-1.503	-1.479	-1.432
M.cell	0.000	0.010	-0.020	-0.007	0.000	0.007	0.020
R.mid	0.758	0.052	0.658	0.723	0.758	0.793	0.860
b.ADOY	-0.061	0.020	-0.101	-0.075	-0.061	-0.048	-0.025
b.ADOY.2	-0.003	0.010	-0.023	-0.010	-0.003	0.003	0.016
SD.surv	0.134	0.047	0.052	0.102	0.129	0.161	0.236
SD.y0	0.151	0.029	0.104	0.131	0.148	0.169	0.216
SD.cell	0.390	0.016	0.359	0.379	0.390	0.401	0.421
SD.lam[1]	0.235	0.051	0.150	0.197	0.232	0.269	0.340
SD.lam[2]	1.242	0.499	0.621	0.902	1.128	1.457	2.557
SD.lam[3]	0.822	0.738	0.065	0.346	0.616	1.027	2.889
SD.lam[4]	0.924	0.901	0.032	0.331	0.658	1.206	3.481
SD.lam[5]	4.311	3.953	0.105	1.109	2.948	6.663	13.722
SD.lam[6]	0.601	0.275	0.280	0.402	0.513	0.737	1.299
SD.lam[7]	1.109	0.871	0.254	0.391	0.689	1.776	3.083
SD.lam[8]	0.345	0.483	0.004	0.086	0.189	0.398	1.808
S.eff[1]	-0.118	0.086	-0.297	-0.173	-0.114	-0.058	0.039
S.eff[2]	-0.120	0.090	-0.308	-0.179	-0.117	-0.056	0.041
S.eff[3]	-0.051	0.082	-0.216	-0.105	-0.049	0.004	0.106
S.eff[4]	0.095	0.084	-0.058	0.037	0.092	0.150	0.270
S.eff[5]	-0.009	0.079	-0.164	-0.061	-0.009	0.042	0.152
S.eff[6]	0.081	0.087	-0.080	0.022	0.077	0.137	0.264
S.eff[7]	0.020	0.081	-0.139	-0.034	0.019	0.073	0.184
S.eff[8]	0.171	0.101	-0.008	0.097	0.167	0.237	0.379
S.eff[9]	0.142	0.091	-0.021	0.077	0.138	0.202	0.331
S.eff[10]	0.014	0.081	-0.145	-0.039	0.014	0.067	0.178
S.eff[11]	0.068	0.082	-0.089	0.013	0.065	0.122	0.231
S.eff[12]	0.042	0.078	-0.107	-0.011	0.040	0.093	0.205
S.eff[13]	-0.080	0.082	-0.247	-0.133	-0.077	-0.024	0.075
S.eff[14]	0.088	0.080	-0.061	0.032	0.084	0.141	0.253
S.eff[15]	-0.133	0.084	-0.303	-0.189	-0.131	-0.073	0.021
y0[1]	0.175	0.102	-0.021	0.108	0.173	0.241	0.380

y0[2]	-0.159	0.089	-0.341	-0.217	-0.159	-0.101	0.014
y0[3]	-0.048	0.079	-0.204	-0.100	-0.047	0.004	0.108
y0[4]	-0.041	0.074	-0.194	-0.088	-0.040	0.009	0.099
y0[5]	0.170	0.070	0.030	0.125	0.170	0.216	0.310
y0[6]	-0.046	0.075	-0.195	-0.097	-0.046	0.004	0.101
y0[7]	0.024	0.076	-0.122	-0.027	0.023	0.073	0.179
y0[8]	-0.087	0.078	-0.235	-0.139	-0.087	-0.035	0.069
y0[9]	0.041	0.080	-0.111	-0.013	0.040	0.093	0.206
y0[10]	-0.071	0.081	-0.228	-0.124	-0.072	-0.017	0.093
y0[11]	-0.086	0.080	-0.241	-0.138	-0.087	-0.033	0.073
y0[12]	0.006	0.075	-0.139	-0.045	0.004	0.056	0.155
y0[13]	-0.105	0.074	-0.254	-0.153	-0.104	-0.056	0.035
y0[14]	-0.085	0.073	-0.231	-0.132	-0.083	-0.036	0.054
y0[15]	0.035	0.076	-0.117	-0.016	0.035	0.086	0.187
y0[16]	0.329	0.082	0.164	0.272	0.330	0.386	0.485
y0[17]	0.158	0.083	-0.008	0.103	0.159	0.214	0.316
y0[18]	-0.030	0.080	-0.189	-0.083	-0.028	0.025	0.125
y0[19]	-0.003	0.074	-0.144	-0.052	-0.003	0.047	0.145
y0[20]	-0.232	0.075	-0.385	-0.280	-0.231	-0.181	-0.087
y0[21]	0.063	0.075	-0.084	0.012	0.063	0.112	0.211
y0[22]	-0.018	0.077	-0.164	-0.070	-0.019	0.033	0.136
y0[23]	0.003	0.078	-0.149	-0.050	0.002	0.054	0.158
y0[24]	0.154	0.083	-0.007	0.099	0.154	0.209	0.319
y0[25]	-0.124	0.097	-0.322	-0.186	-0.123	-0.060	0.061
N.sum[1]	11,918.695	766.964	10,510.324	11,383.067	11,901.198	12,405.464	13,504.797
N.sum[2]	8,505.453	568.535	7,446.600	8,117.881	8,483.019	8,877.441	9,664.176
N.sum[3]	9,490.077	573.136	8,402.831	9,092.044	9,485.608	9,860.587	10,636.906
N.sum[4]	9,564.852	537.291	8,551.628	9,202.480	9,552.027	9,909.329	10,645.704
N.sum[5]	11,858.282	617.163	10,713.475	11,435.146	11,845.785	12,271.294	13,108.730
N.sum[6]	9,614.377	550.256	8,579.748	9,232.884	9,594.252	9,974.511	10,744.254
N.sum[7]	10,413.351	630.007	9,239.208	9,982.434	10,391.388	10,821.984	11,714.511
N.sum[8]	9,442.770	584.058	8,338.745	9,044.408	9,430.751	9,835.037	10,636.227
N.sum[9]	10,924.531	662.217	9,672.946	10,470.041	10,903.461	11,359.446	12,296.112
N.sum[10]	10,007.003	585.031	8,883.027	9,617.453	9,991.796	10,387.758	11,197.125
N.sum[11]	10,175.640	607.650	9,017.959	9,758.066	10,163.980	10,569.258	11,388.646
N.sum[12]	11,590.113	645.977	10,352.455	11,149.931	11,588.056	12,012.563	12,904.280
N.sum[13]	10,855.223	612.314	9,676.546	10,433.356	10,843.476	11,264.353	12,116.597
N.sum[14]	11,599.837	642.024	10,403.918	11,161.571	11,582.250	12,025.084	12,916.220
N.sum[15]	13,653.679	762.188	12,253.357	13,134.740	13,629.005	14,150.064	15,220.712
N.sum[16]	19,001.043	942.511	17,229.357	18,344.432	18,989.049	19,634.330	20,874.943
N.sum[17]	16,445.063	823.828	14,882.955	15,883.937	16,428.936	16,993.387	18,089.685
N.sum[18]	13,842.745	734.779	12,430.207	13,351.770	13,834.388	14,327.347	15,312.582
N.sum[19]	14,308.147	757.391	12,885.273	13,795.368	14,286.212	14,806.241	15,844.235
N.sum[20]	11,393.206	674.155	10,136.570	10,928.322	11,366.832	11,847.144	12,767.084

N.sum[21]	15,301.506	796.173	13,801.495	14,752.736	15,293.614	15,838.730	16,882.651
N.sum[22]	14,201.761	786.319	12,750.176	13,653.556	14,185.339	14,726.481	15,780.081
N.sum[23]	14,692.396	788.299	13,179.537	14,159.618	14,675.960	15,213.327	16,318.014
N.sum[24]	17,439.186	889.717	15,716.164	16,836.889	17,428.625	18,013.692	19,239.978
N.sum[25]	13,527.851	735.403	12,147.636	13,011.478	13,510.904	14,004.888	15,018.416
N.sum2[1]	10,156.330	976.939	8,388.710	9,485.017	10,113.062	10,765.528	12,194.600
N.sum2[2]	10,111.519	769.240	8,685.514	9,596.562	10,091.615	10,609.543	11,738.423
N.sum2[3]	10,089.402	632.705	8,881.843	9,662.474	10,079.882	10,494.358	11,411.137
N.sum2[4]	10,095.661	568.446	9,043.622	9,706.034	10,078.847	10,458.084	11,272.983
N.sum2[5]	10,131.935	553.349	9,127.835	9,746.296	10,111.700	10,479.843	11,286.112
N.sum2[6]	10,198.018	568.356	9,101.201	9,816.366	10,192.471	10,553.494	11,369.778
N.sum2[7]	10,295.402	601.066	9,087.264	9,907.754	10,298.258	10,686.663	11,486.513
N.sum2[8]	10,431.081	635.227	9,125.553	10,020.338	10,446.334	10,862.750	11,645.220
N.sum2[9]	10,619.274	656.854	9,288.912	10,187.237	10,643.385	11,090.116	11,825.904
N.sum2[10]	10,879.344	661.035	9,551.452	10,427.541	10,914.625	11,363.166	12,076.789
N.sum2[11]	11,228.895	647.043	9,919.272	10,789.366	11,272.594	11,698.906	12,386.564
N.sum2[12]	11,674.533	617.089	10,397.557	11,280.995	11,707.071	12,084.065	12,836.140
N.sum2[13]	12,203.948	593.106	11,061.624	11,834.100	12,191.062	12,549.346	13,487.837
N.sum2[14]	12,782.709	629.516	11,723.348	12,363.764	12,709.411	13,130.315	14,242.703
N.sum2[15]	13,357.761	751.577	12,177.288	12,806.404	13,255.167	13,815.692	15,096.965
N.sum2[16]	13,862.060	887.370	12,477.156	13,174.734	13,736.669	14,434.932	15,894.491
N.sum2[17]	14,234.593	935.742	12,736.510	13,499.249	14,117.929	14,858.754	16,287.532
N.sum2[18]	14,449.255	862.310	12,996.502	13,785.091	14,383.965	15,055.764	16,230.685
N.sum2[19]	14,530.625	745.342	13,179.816	13,985.547	14,503.815	15,040.352	16,071.162
N.sum2[20]	14,542.868	718.439	13,172.770	14,046.556	14,514.009	15,016.951	16,013.184
N.sum2[21]	14,562.614	787.530	12,938.235	14,056.818	14,581.672	15,076.874	16,112.685
N.sum2[22]	14,652.308	852.135	12,885.950	14,101.089	14,667.398	15,200.271	16,378.274
N.sum2[23]	14,847.819	904.678	13,070.328	14,241.246	14,844.276	15,447.000	16,664.431
N.sum2[24]	15,155.247	1,071.995	13,125.574	14,427.595	15,129.160	15,839.752	17,315.367
N.sum2[25]	15,552.925	1,456.851	12,950.746	14,598.385	15,477.479	16,410.192	18,847.666
R.growth[1]	-0.003	0.029	-0.061	-0.022	0.000	0.017	0.052
R.growth[2]	-0.001	0.027	-0.054	-0.019	0.001	0.017	0.049
R.growth[3]	0.001	0.023	-0.045	-0.014	0.002	0.017	0.044
R.growth[4]	0.004	0.020	-0.040	-0.009	0.005	0.018	0.040
R.growth[5]	0.006	0.019	-0.034	-0.006	0.009	0.019	0.040
R.growth[6]	0.009	0.018	-0.030	-0.001	0.012	0.022	0.040
R.growth[7]	0.013	0.016	-0.023	0.003	0.015	0.024	0.042
R.growth[8]	0.018	0.016	-0.019	0.009	0.019	0.028	0.046
R.growth[9]	0.024	0.017	-0.013	0.015	0.024	0.034	0.057
R.growth[10]	0.032	0.018	-0.001	0.020	0.030	0.043	0.072
R.growth[11]	0.039	0.019	0.009	0.025	0.036	0.051	0.083
R.growth[12]	0.045	0.022	0.012	0.027	0.041	0.059	0.094
R.growth[13]	0.046	0.025	0.011	0.027	0.042	0.063	0.104
R.growth[14]	0.044	0.025	0.009	0.025	0.039	0.059	0.103

R.growth[15]	0.037	0.020	0.006	0.022	0.033	0.049	0.085
R.growth[16]	0.026	0.015	-0.003	0.017	0.026	0.035	0.059
R.growth[17]	0.015	0.017	-0.025	0.007	0.018	0.026	0.045
R.growth[18]	0.006	0.023	-0.055	-0.006	0.011	0.022	0.041
R.growth[19]	0.001	0.026	-0.065	-0.013	0.006	0.019	0.039
R.growth[20]	0.001	0.023	-0.051	-0.013	0.005	0.018	0.036
R.growth[21]	0.006	0.019	-0.033	-0.007	0.008	0.019	0.040
R.growth[22]	0.013	0.023	-0.031	-0.001	0.013	0.025	0.065
R.growth[23]	0.020	0.031	-0.035	0.003	0.018	0.032	0.104
R.growth[24]	0.024	0.036	-0.037	0.004	0.021	0.037	0.127
Deviance	49,495.674	53.963	49,392.595	49,458.900	49,495.658	49,531.701	49,602.443

Tables A4.21. Bayesian generalized linear mixed model output for **Arctic Tern** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	1.533	0.008	1.519	1.527	1.532	1.538	1.549
MSE.CV	2.142	0.011	2.122	2.134	2.141	2.149	2.164
SSE	33,219.883	168.147	32,910.883	33,102.978	33,212.144	33,330.945	33,564.706
Trend	1.014	0.006	1.002	1.010	1.014	1.018	1.026
R.trend	0.014	0.006	0.002	0.010	0.014	0.018	0.026
M.dens	0.333	0.007	0.319	0.328	0.333	0.338	0.348
M.y0	0.001	0.027	-0.053	-0.016	0.001	0.019	0.054
M.blyr	-1.453	0.037	-1.525	-1.478	-1.452	-1.428	-1.380
M.cell	0.000	0.014	-0.028	-0.010	0.000	0.009	0.027
R.mid	0.329	0.038	0.255	0.303	0.329	0.354	0.402
b.ADOY	-0.077	0.028	-0.132	-0.096	-0.078	-0.059	-0.022
b.ADOY.2	-0.012	0.013	-0.037	-0.021	-0.012	-0.003	0.012
SD.surv	0.326	0.078	0.208	0.272	0.315	0.366	0.517
SD.y0	0.136	0.029	0.089	0.116	0.133	0.153	0.201
SD.cell	0.506	0.018	0.471	0.494	0.506	0.518	0.542
SD.lam[1]	0.550	0.112	0.377	0.467	0.535	0.615	0.809
SD.lam[2]	1.328	0.503	0.719	0.980	1.203	1.542	2.652
SD.lam[3]	0.711	0.780	0.016	0.151	0.498	0.961	2.871
SD.lam[4]	1.068	0.704	0.327	0.621	0.883	1.288	2.983
SD.lam[5]	4.531	4.095	0.122	1.178	3.084	7.104	14.021
SD.lam[6]	2.582	1.031	1.131	1.677	2.486	3.294	4.782
SD.lam[7]	1.067	0.497	0.405	0.597	1.068	1.430	2.092
SD.lam[8]	0.430	1.401	0.006	0.059	0.135	0.303	2.154
S.eff[1]	0.021	0.123	-0.221	-0.063	0.021	0.103	0.263
S.eff[2]	-0.157	0.118	-0.388	-0.234	-0.158	-0.077	0.070
S.eff[3]	-0.224	0.115	-0.446	-0.301	-0.224	-0.146	0.002
S.eff[4]	0.232	0.105	0.027	0.161	0.232	0.301	0.433
S.eff[5]	-0.030	0.106	-0.237	-0.102	-0.031	0.041	0.180
S.eff[6]	-0.247	0.116	-0.475	-0.325	-0.247	-0.168	-0.022
S.eff[7]	-0.019	0.107	-0.234	-0.091	-0.019	0.053	0.189
S.eff[8]	-0.025	0.122	-0.267	-0.108	-0.025	0.056	0.215
S.eff[9]	-0.564	0.124	-0.805	-0.650	-0.564	-0.480	-0.324
S.eff[10]	-0.303	0.103	-0.506	-0.374	-0.302	-0.234	-0.101
S.eff[11]	-0.557	0.116	-0.786	-0.635	-0.555	-0.478	-0.335
S.eff[12]	0.106	0.100	-0.088	0.038	0.106	0.174	0.303
S.eff[13]	-0.173	0.102	-0.375	-0.242	-0.172	-0.105	0.028
S.eff[14]	0.403	0.100	0.209	0.335	0.402	0.470	0.601
S.eff[15]	-0.207	0.108	-0.419	-0.279	-0.206	-0.133	0.002
y0[1]	-0.086	0.107	-0.304	-0.154	-0.083	-0.013	0.116

y0[2]	0.008	0.090	-0.171	-0.051	0.009	0.068	0.181
y0[3]	0.074	0.081	-0.084	0.020	0.073	0.127	0.234
y0[4]	-0.072	0.076	-0.223	-0.123	-0.071	-0.021	0.077
y0[5]	0.025	0.074	-0.119	-0.024	0.025	0.075	0.172
y0[6]	0.020	0.076	-0.132	-0.031	0.021	0.071	0.171
y0[7]	0.047	0.078	-0.105	-0.005	0.046	0.097	0.205
y0[8]	-0.141	0.079	-0.301	-0.191	-0.140	-0.088	0.011
y0[9]	0.146	0.080	-0.009	0.093	0.144	0.198	0.302
y0[10]	0.154	0.075	0.014	0.102	0.152	0.204	0.304
y0[11]	-0.102	0.075	-0.248	-0.152	-0.101	-0.051	0.043
y0[12]	-0.048	0.076	-0.191	-0.099	-0.048	0.002	0.103
y0[13]	0.003	0.077	-0.145	-0.048	0.002	0.054	0.162
y0[14]	-0.155	0.079	-0.315	-0.207	-0.153	-0.101	-0.004
y0[15]	-0.073	0.078	-0.228	-0.125	-0.072	-0.020	0.080
y0[16]	0.222	0.075	0.081	0.172	0.220	0.270	0.378
y0[17]	0.116	0.073	-0.025	0.068	0.114	0.164	0.266
y0[18]	0.066	0.073	-0.074	0.017	0.066	0.115	0.210
y0[19]	0.014	0.075	-0.132	-0.035	0.014	0.063	0.162
y0[20]	-0.254	0.080	-0.418	-0.306	-0.250	-0.200	-0.106
y0[21]	0.047	0.077	-0.106	-0.004	0.047	0.098	0.198
y0[22]	0.013	0.078	-0.145	-0.037	0.013	0.064	0.167
y0[23]	0.006	0.080	-0.152	-0.046	0.008	0.061	0.159
y0[24]	0.047	0.085	-0.122	-0.008	0.047	0.103	0.212
y0[25]	-0.050	0.098	-0.255	-0.113	-0.048	0.015	0.138
N.sum[1]	8,636.725	752.378	7,262.314	8,126.423	8,598.980	9,122.064	10,178.143
N.sum[2]	10,239.809	854.802	8,630.276	9,650.954	10,206.486	10,790.862	12,006.800
N.sum[3]	11,813.940	869.308	10,207.214	11,212.215	11,768.670	12,390.048	13,620.752
N.sum[4]	11,016.458	714.083	9,677.026	10,524.382	10,999.585	11,478.090	12,473.270
N.sum[5]	13,060.442	818.846	11,552.055	12,500.236	13,038.117	13,607.130	14,762.196
N.sum[6]	13,894.297	893.645	12,179.315	13,282.694	13,875.363	14,482.821	15,703.256
N.sum[7]	15,128.716	1,100.165	13,115.597	14,352.627	15,085.391	15,851.740	17,465.730
N.sum[8]	13,137.323	940.746	11,387.693	12,492.695	13,104.815	13,749.235	15,078.658
N.sum[9]	18,155.296	1,243.243	15,873.757	17,291.352	18,093.506	18,966.442	20,797.321
N.sum[10]	18,821.861	1,199.837	16,579.076	17,994.026	18,747.715	19,616.846	21,297.235
N.sum[11]	14,927.456	1,018.829	13,053.774	14,213.060	14,879.418	15,607.258	16,996.291
N.sum[12]	16,071.959	1,059.696	14,085.027	15,348.722	16,045.115	16,763.762	18,238.536
N.sum[13]	17,238.914	1,120.981	15,103.673	16,469.084	17,212.640	17,982.616	19,509.358
N.sum[14]	14,977.053	1,022.086	13,080.705	14,273.838	14,950.313	15,638.488	17,040.022
N.sum[15]	16,478.126	1,109.205	14,385.527	15,718.611	16,443.088	17,205.311	18,708.339
N.sum[16]	22,296.956	1,236.160	19,987.125	21,445.123	22,246.165	23,100.837	24,800.901
N.sum[17]	20,009.122	1,068.378	17,998.852	19,267.864	19,974.114	20,706.319	22,199.871
N.sum[18]	18,771.026	1,038.565	16,831.975	18,065.950	18,742.473	19,429.627	20,895.476
N.sum[19]	17,359.992	999.353	15,498.086	16,669.153	17,334.858	18,021.974	19,390.130
N.sum[20]	12,807.399	852.297	11,188.855	12,211.938	12,785.485	13,375.913	14,511.695

N.sum[21]	16,536.178	940.945	14,761.023	15,890.286	16,509.281	17,161.477	18,438.734
N.sum[22]	15,243.435	927.716	13,477.915	14,609.981	15,213.979	15,849.908	17,149.618
N.sum[23]	14,425.606	886.428	12,736.040	13,812.007	14,401.995	15,014.431	16,243.219
N.sum[24]	14,335.266	875.330	12,656.994	13,734.673	14,318.577	14,901.214	16,140.152
N.sum[25]	12,426.124	815.284	10,908.953	11,865.688	12,399.018	12,963.022	14,085.580
N.sum2[1]	9,531.480	1,035.214	7,694.284	8,817.153	9,475.655	10,181.594	11,724.649
N.sum2[2]	10,272.857	879.225	8,711.040	9,676.730	10,227.580	10,813.170	12,148.764
N.sum2[3]	11,089.996	784.544	9,614.408	10,559.772	11,068.598	11,589.033	12,696.863
N.sum2[4]	11,967.827	757.725	10,541.314	11,463.125	11,942.712	12,460.647	13,529.471
N.sum2[5]	12,873.813	766.393	11,472.497	12,344.362	12,843.957	13,371.765	14,466.387
N.sum2[6]	13,762.088	800.742	12,308.494	13,205.419	13,728.566	14,282.949	15,424.594
N.sum2[7]	14,580.362	868.547	13,018.076	13,989.778	14,534.200	15,129.323	16,399.263
N.sum2[8]	15,283.348	935.827	13,620.344	14,649.029	15,242.289	15,861.794	17,244.703
N.sum2[9]	15,854.782	951.787	14,135.208	15,219.725	15,813.684	16,451.298	17,802.519
N.sum2[10]	16,311.049	922.252	14,601.607	15,673.011	16,283.158	16,911.789	18,176.126
N.sum2[11]	16,690.971	910.149	14,961.011	16,054.217	16,674.478	17,287.898	18,495.760
N.sum2[12]	17,034.181	946.756	15,258.520	16,382.792	17,010.848	17,654.239	18,976.302
N.sum2[13]	17,361.340	988.743	15,468.181	16,712.033	17,339.350	17,993.481	19,360.921
N.sum2[14]	17,665.525	993.646	15,758.320	17,008.578	17,649.709	18,317.001	19,655.028
N.sum2[15]	17,911.587	976.073	16,034.403	17,260.465	17,885.538	18,542.422	19,861.617
N.sum2[16]	18,044.838	972.916	16,185.807	17,386.350	18,010.679	18,670.753	20,035.366
N.sum2[17]	18,006.359	975.823	16,170.659	17,348.965	17,956.821	18,632.138	20,045.515
N.sum2[18]	17,756.906	947.243	16,000.673	17,105.254	17,709.648	18,355.007	19,757.791
N.sum2[19]	17,297.534	897.518	15,667.038	16,680.785	17,257.745	17,866.604	19,239.383
N.sum2[20]	16,672.130	878.602	15,043.755	16,092.157	16,644.125	17,202.891	18,497.293
N.sum2[21]	15,952.413	893.032	14,311.489	15,353.344	15,926.293	16,483.708	17,793.696
N.sum2[22]	15,208.353	900.254	13,572.720	14,604.000	15,176.329	15,754.420	17,043.474
N.sum2[23]	14,492.361	920.949	12,810.402	13,869.579	14,448.964	15,060.985	16,448.240
N.sum2[24]	13,834.223	1,039.511	11,952.388	13,132.889	13,790.318	14,445.656	16,105.655
N.sum2[25]	13,240.862	1,278.014	10,978.337	12,362.371	13,169.426	14,012.236	15,974.144
R.growth[1]	0.077	0.034	0.014	0.054	0.075	0.098	0.154
R.growth[2]	0.078	0.031	0.021	0.057	0.076	0.096	0.145
R.growth[3]	0.077	0.025	0.029	0.060	0.076	0.092	0.130
R.growth[4]	0.073	0.021	0.032	0.059	0.073	0.087	0.116
R.growth[5]	0.067	0.021	0.027	0.053	0.066	0.080	0.112
R.growth[6]	0.058	0.021	0.018	0.045	0.057	0.070	0.101
R.growth[7]	0.047	0.018	0.013	0.035	0.047	0.058	0.083
R.growth[8]	0.037	0.016	0.004	0.026	0.037	0.048	0.067
R.growth[9]	0.029	0.019	-0.011	0.018	0.029	0.041	0.062
R.growth[10]	0.023	0.021	-0.023	0.012	0.024	0.036	0.062
R.growth[11]	0.020	0.021	-0.025	0.009	0.021	0.033	0.058
R.growth[12]	0.019	0.018	-0.019	0.009	0.019	0.030	0.053
R.growth[13]	0.017	0.017	-0.015	0.006	0.017	0.029	0.052
R.growth[14]	0.014	0.019	-0.023	0.002	0.013	0.026	0.055

R.growth[15]	0.007	0.020	-0.031	-0.005	0.007	0.019	0.049
R.growth[16]	-0.002	0.019	-0.039	-0.014	-0.002	0.009	0.036
R.growth[17]	-0.014	0.017	-0.049	-0.025	-0.014	-0.003	0.021
R.growth[18]	-0.026	0.019	-0.063	-0.039	-0.026	-0.014	0.012
R.growth[19]	-0.037	0.021	-0.078	-0.051	-0.037	-0.023	0.005
R.growth[20]	-0.044	0.020	-0.086	-0.057	-0.044	-0.031	-0.004
R.growth[21]	-0.048	0.019	-0.087	-0.061	-0.047	-0.035	-0.010
R.growth[22]	-0.048	0.023	-0.095	-0.064	-0.048	-0.033	-0.003
R.growth[23]	-0.047	0.030	-0.109	-0.065	-0.047	-0.029	0.010
R.growth[24]	-0.046	0.033	-0.115	-0.065	-0.045	-0.025	0.020
Deviance	45,223.268	52.528	45,122.394	45,187.118	45,222.125	45,258.552	45,326.912

Tables A4.22. Bayesian generalized linear mixed model output for **Red-throated Loon** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.50%	25%	50%	75%	97.50%
MSE	0.373	0.001	0.370	0.372	0.373	0.374	0.375
MSE.CV	1.762	0.006	1.751	1.758	1.762	1.766	1.774
SSE	6,344.404	20.574	6,304.360	6,330.587	6,344.278	6,358.066	6,384.904
Trend	0.966	0.011	0.944	0.958	0.966	0.973	0.987
R.trend	-0.035	0.011	-0.058	-0.042	-0.035	-0.028	-0.013
M.dens	0.093	0.005	0.085	0.090	0.093	0.096	0.104
M.y0	0.001	0.068	-0.132	-0.042	0.001	0.043	0.142
M.blyr	-2.610	0.079	-2.770	-2.659	-2.609	-2.559	-2.454
M.cell	0.000	0.008	-0.016	-0.005	0.000	0.005	0.017
R.mid	-1.061	0.057	-1.171	-1.100	-1.062	-1.023	-0.952
b.ADOY	-0.126	0.044	-0.213	-0.156	-0.126	-0.096	-0.042
b.ADOY.2	0.014	0.019	-0.023	0.000	0.013	0.027	0.052
SD.surv	0.758	0.171	0.497	0.637	0.734	0.853	1.157
SD.y0	0.342	0.069	0.228	0.293	0.335	0.383	0.499
SD.cell	0.243	0.049	0.142	0.209	0.245	0.275	0.336
SD.lam[1]	0.414	0.160	0.155	0.298	0.408	0.514	0.757
SD.lam[2]	1.806	0.712	0.872	1.322	1.662	2.125	3.606
SD.lam[3]	1.098	1.432	0.066	0.377	0.716	1.273	4.474
SD.lam[4]	1.666	1.842	0.021	0.407	1.062	2.277	6.796
SD.lam[5]	5.420	4.056	0.287	2.030	4.370	8.294	14.160
SD.lam[6]	1.240	0.416	0.687	0.911	1.147	1.508	2.201
SD.lam[7]	3.552	2.380	0.977	1.679	2.997	4.542	9.739
SD.lam[8]	0.490	0.678	0.024	0.131	0.264	0.538	2.748
S.eff[1]	-0.831	0.227	-1.295	-0.984	-0.831	-0.678	-0.393
S.eff[2]	-0.758	0.231	-1.223	-0.913	-0.754	-0.602	-0.304
S.eff[3]	-0.633	0.212	-1.053	-0.775	-0.636	-0.488	-0.222
S.eff[4]	-0.462	0.218	-0.887	-0.612	-0.459	-0.314	-0.042
S.eff[5]	0.078	0.205	-0.319	-0.060	0.078	0.217	0.481
S.eff[6]	-0.334	0.246	-0.838	-0.497	-0.331	-0.166	0.140
S.eff[7]	0.636	0.237	0.172	0.475	0.638	0.795	1.108
S.eff[8]	1.009	0.251	0.521	0.837	1.011	1.181	1.490
S.eff[9]	0.544	0.212	0.127	0.401	0.541	0.685	0.967
S.eff[10]	0.736	0.192	0.361	0.606	0.737	0.865	1.114
S.eff[11]	-0.022	0.210	-0.436	-0.160	-0.020	0.117	0.392
S.eff[12]	0.613	0.216	0.182	0.465	0.615	0.755	1.037
S.eff[13]	0.710	0.200	0.323	0.573	0.710	0.848	1.098
S.eff[14]	0.453	0.210	0.048	0.311	0.448	0.594	0.866
S.eff[15]	1.087	0.223	0.648	0.939	1.083	1.237	1.531
y0[1]	0.184	0.249	-0.322	0.024	0.189	0.348	0.673

y0[2]	-0.098	0.200	-0.497	-0.228	-0.095	0.036	0.283
y0[3]	0.158	0.173	-0.178	0.044	0.159	0.270	0.496
y0[4]	0.133	0.160	-0.182	0.027	0.133	0.240	0.444
y0[5]	0.192	0.153	-0.104	0.090	0.193	0.292	0.501
y0[6]	0.114	0.163	-0.196	0.001	0.110	0.218	0.446
y0[7]	-0.654	0.193	-1.037	-0.782	-0.652	-0.524	-0.285
y0[8]	-0.523	0.191	-0.893	-0.653	-0.523	-0.392	-0.146
y0[9]	0.156	0.172	-0.166	0.041	0.149	0.267	0.518
y0[10]	0.168	0.174	-0.164	0.051	0.163	0.281	0.534
y0[11]	0.200	0.169	-0.124	0.084	0.198	0.313	0.534
y0[12]	-0.067	0.175	-0.405	-0.182	-0.067	0.049	0.283
y0[13]	-0.044	0.171	-0.385	-0.155	-0.046	0.068	0.296
y0[14]	-0.030	0.171	-0.375	-0.142	-0.028	0.086	0.304
y0[15]	-0.318	0.186	-0.695	-0.437	-0.314	-0.195	0.030
y0[16]	0.522	0.168	0.188	0.411	0.524	0.633	0.848
y0[17]	0.071	0.169	-0.269	-0.038	0.070	0.184	0.399
y0[18]	0.287	0.161	-0.031	0.183	0.286	0.394	0.612
y0[19]	-0.013	0.173	-0.358	-0.127	-0.013	0.101	0.326
y0[20]	-0.234	0.182	-0.594	-0.353	-0.231	-0.111	0.120
y0[21]	-0.039	0.178	-0.393	-0.158	-0.039	0.079	0.316
y0[22]	-0.215	0.193	-0.599	-0.343	-0.213	-0.084	0.163
y0[23]	-0.432	0.199	-0.826	-0.564	-0.431	-0.298	-0.041
y0[24]	0.307	0.201	-0.069	0.169	0.307	0.441	0.711
y0[25]	0.207	0.228	-0.242	0.053	0.210	0.363	0.645
N.sum[1]	5,464.960	744.487	4,168.211	4,941.950	5,410.200	5,932.741	7,085.118
N.sum[2]	3,780.500	499.965	2,910.894	3,422.587	3,752.494	4,095.278	4,824.659
N.sum[3]	4,497.124	523.273	3,554.439	4,137.478	4,467.987	4,828.381	5,611.301
N.sum[4]	4,065.339	457.306	3,250.230	3,748.014	4,032.696	4,357.722	5,028.214
N.sum[5]	4,018.481	449.933	3,213.439	3,702.714	3,993.646	4,305.456	4,957.009
N.sum[6]	3,475.950	430.489	2,712.870	3,172.276	3,446.502	3,748.009	4,381.369
N.sum[7]	1,523.541	252.210	1,080.270	1,348.355	1,509.567	1,679.726	2,058.934
N.sum[8]	1,639.486	258.229	1,184.290	1,456.483	1,623.094	1,809.090	2,186.056
N.sum[9]	3,076.720	397.198	2,367.669	2,798.545	3,051.106	3,334.143	3,919.117
N.sum[10]	3,018.566	395.112	2,315.372	2,743.062	2,993.479	3,255.527	3,895.240
N.sum[11]	3,065.486	396.069	2,368.550	2,789.786	3,036.499	3,315.119	3,912.483
N.sum[12]	2,331.838	329.890	1,759.738	2,093.199	2,305.069	2,543.757	3,041.984
N.sum[13]	2,369.912	323.234	1,797.003	2,138.414	2,348.004	2,575.668	3,056.341
N.sum[14]	2,376.531	320.439	1,813.480	2,153.194	2,354.759	2,581.454	3,064.473
N.sum[15]	1,750.806	281.454	1,253.868	1,556.220	1,729.851	1,927.750	2,369.043
N.sum[16]	3,908.877	460.412	3,091.725	3,581.261	3,873.998	4,210.648	4,875.183
N.sum[17]	2,394.549	312.982	1,836.161	2,180.912	2,378.913	2,588.863	3,058.034
N.sum[18]	2,834.859	349.759	2,208.702	2,593.523	2,809.019	3,057.429	3,591.860
N.sum[19]	2,006.693	289.584	1,479.967	1,803.248	1,994.247	2,190.449	2,624.989
N.sum[20]	1,544.124	240.516	1,116.026	1,374.285	1,529.195	1,697.419	2,066.383

N.sum[21]	1,813.780	262.946	1,347.849	1,632.471	1,799.260	1,977.520	2,378.030
N.sum[22]	1,501.618	240.186	1,077.367	1,330.722	1,488.943	1,651.684	2,022.624
N.sum[23]	1,215.546	206.463	854.866	1,069.032	1,200.353	1,347.137	1,660.142
N.sum[24]	2,580.947	347.544	1,970.437	2,342.805	2,556.718	2,794.185	3,344.374
N.sum[25]	2,411.295	344.138	1,813.721	2,167.295	2,389.044	2,628.319	3,140.356
N.sum2[1]	4,918.532	1,153.183	3,203.306	4,112.417	4,714.853	5,538.549	7,773.093
N.sum2[2]	4,467.916	812.726	3,158.353	3,904.311	4,358.012	4,929.154	6,398.334
N.sum2[3]	4,102.201	613.248	3,095.262	3,685.459	4,031.091	4,441.240	5,504.774
N.sum2[4]	3,796.175	500.092	2,957.050	3,452.085	3,746.184	4,084.172	4,921.754
N.sum2[5]	3,531.791	431.873	2,737.737	3,242.695	3,513.484	3,796.990	4,461.219
N.sum2[6]	3,300.475	396.905	2,532.371	3,037.615	3,298.451	3,551.329	4,104.638
N.sum2[7]	3,099.832	385.957	2,335.035	2,847.448	3,106.588	3,353.974	3,856.252
N.sum2[8]	2,931.574	380.776	2,182.840	2,682.100	2,950.731	3,195.299	3,647.003
N.sum2[9]	2,802.383	367.829	2,055.096	2,558.262	2,825.736	3,058.646	3,472.376
N.sum2[10]	2,715.384	344.439	2,025.036	2,486.996	2,737.312	2,948.818	3,355.231
N.sum2[11]	2,666.626	318.751	2,040.937	2,457.029	2,678.234	2,866.715	3,315.888
N.sum2[12]	2,643.953	304.423	2,082.813	2,453.426	2,639.680	2,813.859	3,321.205
N.sum2[13]	2,628.163	306.174	2,105.580	2,437.513	2,600.432	2,777.084	3,330.300
N.sum2[14]	2,599.529	313.549	2,091.232	2,399.614	2,556.330	2,745.736	3,393.527
N.sum2[15]	2,546.711	314.565	2,054.537	2,343.402	2,492.894	2,683.064	3,377.123
N.sum2[16]	2,467.671	303.374	2,001.380	2,272.253	2,421.862	2,598.422	3,249.480
N.sum2[17]	2,368.078	279.269	1,925.724	2,189.304	2,336.888	2,497.155	3,037.048
N.sum2[18]	2,259.163	250.869	1,825.175	2,100.084	2,238.220	2,392.194	2,817.848
N.sum2[19]	2,154.089	235.528	1,724.146	1,997.993	2,144.329	2,298.534	2,651.759
N.sum2[20]	2,064.702	238.325	1,604.059	1,906.064	2,060.182	2,220.284	2,552.526
N.sum2[21]	2,002.012	246.502	1,529.991	1,835.325	1,998.099	2,165.371	2,503.814
N.sum2[22]	1,973.022	252.516	1,494.328	1,801.943	1,966.400	2,134.810	2,495.708
N.sum2[23]	1,981.023	268.797	1,505.453	1,795.071	1,965.471	2,152.370	2,549.185
N.sum2[24]	2,026.615	324.590	1,482.212	1,797.059	1,994.352	2,226.942	2,737.945
N.sum2[25]	2,107.662	439.870	1,429.704	1,798.064	2,044.392	2,354.677	3,138.962
R.growth[1]	-0.086	0.068	-0.257	-0.121	-0.070	-0.040	0.011
R.growth[2]	-0.080	0.062	-0.236	-0.113	-0.065	-0.037	0.010
R.growth[3]	-0.075	0.053	-0.203	-0.106	-0.065	-0.036	0.004
R.growth[4]	-0.071	0.047	-0.178	-0.099	-0.063	-0.036	0.000
R.growth[5]	-0.068	0.046	-0.175	-0.092	-0.059	-0.035	0.000
R.growth[6]	-0.063	0.044	-0.170	-0.085	-0.055	-0.034	0.005
R.growth[7]	-0.057	0.040	-0.147	-0.077	-0.051	-0.033	0.017
R.growth[8]	-0.045	0.035	-0.115	-0.066	-0.045	-0.028	0.036
R.growth[9]	-0.031	0.036	-0.093	-0.052	-0.036	-0.015	0.057
R.growth[10]	-0.017	0.042	-0.079	-0.044	-0.027	0.002	0.089
R.growth[11]	-0.008	0.045	-0.068	-0.039	-0.021	0.013	0.107
R.growth[12]	-0.006	0.045	-0.066	-0.037	-0.019	0.017	0.108
R.growth[13]	-0.011	0.042	-0.074	-0.038	-0.021	0.009	0.095
R.growth[14]	-0.021	0.038	-0.094	-0.041	-0.025	-0.004	0.073

R.growth[15]	-0.031	0.036	-0.115	-0.048	-0.030	-0.014	0.043
R.growth[16]	-0.041	0.038	-0.133	-0.057	-0.033	-0.017	0.019
R.growth[17]	-0.046	0.041	-0.153	-0.066	-0.036	-0.019	0.013
R.growth[18]	-0.048	0.044	-0.160	-0.067	-0.037	-0.019	0.015
R.growth[19]	-0.043	0.042	-0.143	-0.061	-0.036	-0.018	0.023
R.growth[20]	-0.032	0.037	-0.112	-0.050	-0.030	-0.011	0.037
R.growth[21]	-0.015	0.037	-0.084	-0.038	-0.020	0.007	0.067
R.growth[22]	0.003	0.048	-0.073	-0.031	-0.007	0.031	0.117
R.growth[23]	0.019	0.062	-0.071	-0.025	0.005	0.055	0.171
R.growth[24]	0.031	0.069	-0.069	-0.018	0.014	0.070	0.203
Deviance	17,910.782	39.820	17,832.574	17,882.962	17,910.414	17,938.906	17,987.837

Tables A4.23. Bayesian generalized linear mixed model output for **Pacific Loon** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.5%	25%	50%	75%	97.5%
MSE	2.639	0.011	2.618	2.631	2.639	2.646	2.661
MSE.CV	2.071	0.009	2.055	2.065	2.071	2.076	2.088
SSE	67,583.267	281.653	67,056.840	67,392.351	67,576.025	67,761.293	68,153.355
Trend	1.001	0.006	0.990	0.997	1.000	1.004	1.013
R.trend	0.001	0.006	-0.010	-0.003	0.000	0.004	0.013
M.dens	0.561	0.010	0.542	0.554	0.560	0.567	0.582
M.y0	0.002	0.052	-0.102	-0.033	0.004	0.037	0.099
M.blyr	-0.807	0.055	-0.912	-0.845	-0.810	-0.769	-0.694
M.cell	0.000	0.012	-0.022	-0.008	0.000	0.008	0.023
R.mid	0.595	0.029	0.540	0.576	0.595	0.614	0.652
b.ADOY	0.044	0.022	0.001	0.029	0.044	0.059	0.089
b.ADOY.2	0.001	0.009	-0.015	-0.004	0.001	0.007	0.018
SD.surv	0.354	0.079	0.232	0.298	0.344	0.398	0.537
SD.y0	0.245	0.040	0.181	0.217	0.241	0.270	0.335
SD.cell	0.462	0.014	0.435	0.452	0.462	0.471	0.490
SD.lam[1]	0.480	0.103	0.328	0.405	0.462	0.539	0.724
SD.lam[2]	1.329	0.377	0.822	1.073	1.261	1.500	2.212
SD.lam[3]	1.150	1.088	0.169	0.537	0.835	1.327	4.533
SD.lam[4]	0.391	0.419	0.012	0.121	0.264	0.501	1.571
SD.lam[5]	3.585	3.884	0.044	0.580	1.924	5.599	13.584
SD.lam[6]	1.348	0.418	0.645	1.030	1.350	1.614	2.240
SD.lam[7]	0.743	0.448	0.284	0.394	0.505	1.094	1.750
SD.lam[8]	0.503	0.874	0.039	0.122	0.231	0.499	3.105
S.eff[1]	-0.213	0.087	-0.388	-0.270	-0.213	-0.154	-0.046
S.eff[2]	-0.085	0.081	-0.243	-0.140	-0.086	-0.030	0.072
S.eff[3]	-0.387	0.081	-0.547	-0.442	-0.388	-0.331	-0.228
S.eff[4]	-0.151	0.077	-0.304	-0.202	-0.150	-0.098	0.000
S.eff[5]	-0.215	0.080	-0.371	-0.268	-0.214	-0.161	-0.058
S.eff[6]	-0.245	0.083	-0.408	-0.302	-0.244	-0.189	-0.084
S.eff[7]	0.335	0.084	0.170	0.278	0.335	0.392	0.502
S.eff[8]	-0.047	0.090	-0.224	-0.107	-0.046	0.014	0.128
S.eff[9]	-0.747	0.093	-0.929	-0.809	-0.744	-0.683	-0.569
S.eff[10]	-0.380	0.083	-0.543	-0.435	-0.380	-0.324	-0.217
S.eff[11]	-0.437	0.081	-0.595	-0.493	-0.437	-0.382	-0.280
S.eff[12]	-0.279	0.080	-0.438	-0.332	-0.279	-0.224	-0.123
S.eff[13]	-0.196	0.081	-0.357	-0.252	-0.195	-0.140	-0.040
S.eff[14]	-0.162	0.080	-0.319	-0.216	-0.164	-0.108	-0.006
S.eff[15]	-0.041	0.083	-0.206	-0.097	-0.041	0.015	0.120
y0[1]	-0.238	0.117	-0.470	-0.314	-0.238	-0.161	-0.008

y0[2]	-0.001	0.103	-0.203	-0.068	-0.004	0.067	0.205
y0[3]	0.122	0.093	-0.066	0.061	0.120	0.183	0.309
y0[4]	0.243	0.087	0.068	0.185	0.242	0.303	0.413
y0[5]	0.154	0.083	-0.011	0.099	0.155	0.210	0.316
y0[6]	0.086	0.083	-0.076	0.029	0.085	0.141	0.248
y0[7]	-0.422	0.085	-0.593	-0.479	-0.421	-0.365	-0.255
y0[8]	-0.073	0.082	-0.232	-0.129	-0.072	-0.018	0.087
y0[9]	0.167	0.080	0.012	0.112	0.166	0.222	0.325
y0[10]	-0.021	0.081	-0.181	-0.077	-0.020	0.035	0.136
y0[11]	0.078	0.081	-0.081	0.022	0.076	0.133	0.235
y0[12]	-0.003	0.081	-0.162	-0.057	-0.002	0.052	0.151
y0[13]	-0.126	0.081	-0.284	-0.181	-0.125	-0.069	0.028
y0[14]	-0.078	0.081	-0.238	-0.133	-0.077	-0.022	0.076
y0[15]	-0.162	0.083	-0.325	-0.218	-0.162	-0.103	-0.003
y0[16]	0.379	0.079	0.222	0.325	0.380	0.433	0.529
y0[17]	0.056	0.080	-0.100	0.002	0.056	0.111	0.211
y0[18]	0.236	0.081	0.075	0.182	0.236	0.289	0.397
y0[19]	-0.161	0.085	-0.329	-0.218	-0.159	-0.105	0.008
y0[20]	-0.198	0.088	-0.377	-0.256	-0.197	-0.139	-0.026
y0[21]	-0.264	0.090	-0.445	-0.323	-0.262	-0.202	-0.091
y0[22]	0.202	0.092	0.019	0.141	0.204	0.263	0.380
y0[23]	0.108	0.096	-0.087	0.046	0.110	0.173	0.294
y0[24]	0.391	0.101	0.183	0.325	0.391	0.457	0.588
y0[25]	-0.436	0.114	-0.668	-0.509	-0.434	-0.360	-0.214
N.sum[1]	22,402.290	1,242.853	20,105.401	21,528.467	22,368.757	23,218.983	24,957.587
N.sum[2]	28,690.546	1,669.219	25,597.349	27,530.710	28,631.257	29,767.989	32,153.930
N.sum[3]	32,779.138	1,669.293	29,627.162	31,616.838	32,748.335	33,881.955	36,155.117
N.sum[4]	37,349.973	1,722.447	34,032.657	36,157.973	37,329.165	38,446.327	40,857.413
N.sum[5]	34,463.273	1,522.008	31,612.082	33,403.823	34,438.621	35,481.232	37,567.494
N.sum[6]	32,395.801	1,462.004	29,646.397	31,373.471	32,359.987	33,358.667	35,361.204
N.sum[7]	19,594.650	1,160.167	17,413.890	18,806.330	19,570.800	20,355.180	21,938.836
N.sum[8]	27,815.236	1,424.817	25,089.827	26,837.291	27,781.512	28,757.519	30,688.739
N.sum[9]	35,400.586	1,684.937	32,208.527	34,244.180	35,366.878	36,529.418	38,830.026
N.sum[10]	29,384.222	1,459.182	26,605.570	28,382.849	29,337.919	30,365.681	32,385.878
N.sum[11]	32,435.656	1,662.018	29,295.363	31,281.227	32,397.498	33,536.380	35,809.421
N.sum[12]	29,915.289	1,457.159	27,107.770	28,927.585	29,874.367	30,912.600	32,871.685
N.sum[13]	26,441.665	1,316.256	23,963.777	25,548.028	26,415.203	27,297.254	29,114.185
N.sum[14]	27,672.082	1,342.410	25,116.874	26,772.337	27,650.009	28,564.315	30,381.062
N.sum[15]	25,388.602	1,370.636	22,794.745	24,443.462	25,347.456	26,302.291	28,173.353
N.sum[16]	43,391.941	1,789.782	40,031.962	42,145.209	43,366.423	44,558.620	47,003.842
N.sum[17]	31,283.349	1,379.553	28,690.027	30,329.896	31,234.211	32,183.945	34,081.989
N.sum[18]	37,282.569	1,591.455	34,300.475	36,198.113	37,244.281	38,359.581	40,474.692
N.sum[19]	24,973.310	1,184.381	22,717.014	24,151.571	24,942.205	25,763.713	27,330.837
N.sum[20]	23,955.364	1,195.016	21,696.626	23,134.113	23,925.990	24,747.033	26,367.818

N.sum[21]	22,352.674	1,074.146	20,253.747	21,637.317	22,334.840	23,045.444	24,542.112
N.sum[22]	35,472.793	1,614.857	32,403.307	34,377.652	35,444.534	36,528.851	38,730.882
N.sum[23]	32,207.992	1,502.928	29,309.073	31,189.596	32,179.722	33,204.158	35,177.822
N.sum[24]	42,597.240	1,823.505	39,157.173	41,342.110	42,535.777	43,788.674	46,363.336
N.sum[25]	18,616.155	992.531	16,721.518	17,936.076	18,598.562	19,269.340	20,611.146
N.sum2[1]	29,443.570	2,871.548	24,039.526	27,514.690	29,307.678	31,217.354	35,570.487
N.sum2[2]	29,717.892	2,504.926	24,967.411	28,037.585	29,575.068	31,297.087	35,032.991
N.sum2[3]	30,014.071	2,215.748	25,848.071	28,540.443	29,889.492	31,352.252	34,672.381
N.sum2[4]	30,297.902	1,990.654	26,565.222	28,969.730	30,212.041	31,528.446	34,484.020
N.sum2[5]	30,539.616	1,806.028	27,190.432	29,326.174	30,462.264	31,643.944	34,321.457
N.sum2[6]	30,723.574	1,668.980	27,665.153	29,605.278	30,629.044	31,761.135	34,247.543
N.sum2[7]	30,847.993	1,600.506	27,931.006	29,778.193	30,736.335	31,819.357	34,228.115
N.sum2[8]	30,920.982	1,584.146	27,964.125	29,883.549	30,795.943	31,853.542	34,397.665
N.sum2[9]	30,961.107	1,573.701	28,137.648	29,936.419	30,817.307	31,877.113	34,490.969
N.sum2[10]	30,984.341	1,544.298	28,239.950	29,985.878	30,822.406	31,856.064	34,529.115
N.sum2[11]	30,997.098	1,506.445	28,271.439	30,031.227	30,833.188	31,845.189	34,362.557
N.sum2[12]	30,995.266	1,476.284	28,307.990	30,059.127	30,850.306	31,833.586	34,317.142
N.sum2[13]	30,968.642	1,448.718	28,318.367	30,077.021	30,817.219	31,764.475	34,288.181
N.sum2[14]	30,909.207	1,412.697	28,376.154	30,025.875	30,769.409	31,651.933	34,220.649
N.sum2[15]	30,816.202	1,382.408	28,345.928	29,940.723	30,689.349	31,570.459	33,994.251
N.sum2[16]	30,697.659	1,386.860	28,182.397	29,808.520	30,586.851	31,504.319	33,778.211
N.sum2[17]	30,565.659	1,429.962	27,969.702	29,620.087	30,482.702	31,391.619	33,660.718
N.sum2[18]	30,431.214	1,491.171	27,670.900	29,431.477	30,387.580	31,341.322	33,658.227
N.sum2[19]	30,301.520	1,564.026	27,421.857	29,243.020	30,276.165	31,263.080	33,644.025
N.sum2[20]	30,180.350	1,662.661	27,174.829	29,034.613	30,147.670	31,193.508	33,600.551
N.sum2[21]	30,072.162	1,795.068	26,873.879	28,828.517	30,013.185	31,161.200	33,810.893
N.sum2[22]	29,979.180	1,957.360	26,501.733	28,650.149	29,890.749	31,128.998	34,107.966
N.sum2[23]	29,903.121	2,159.021	26,027.841	28,447.652	29,820.911	31,155.871	34,504.630
N.sum2[24]	29,847.846	2,427.310	25,523.274	28,196.270	29,755.637	31,241.376	35,133.740
N.sum2[25]	29,818.388	2,776.776	24,793.120	27,905.510	29,688.427	31,467.773	35,959.203
R.growth[1]	0.010	0.020	-0.026	-0.002	0.007	0.021	0.056
R.growth[2]	0.011	0.019	-0.024	0.000	0.008	0.021	0.053
R.growth[3]	0.010	0.017	-0.022	0.000	0.008	0.020	0.046
R.growth[4]	0.008	0.015	-0.023	-0.001	0.007	0.018	0.041
R.growth[5]	0.006	0.015	-0.027	-0.002	0.006	0.015	0.038
R.growth[6]	0.004	0.015	-0.029	-0.004	0.004	0.013	0.035
R.growth[7]	0.002	0.014	-0.027	-0.005	0.003	0.010	0.031
R.growth[8]	0.001	0.012	-0.024	-0.006	0.002	0.008	0.027
R.growth[9]	0.001	0.012	-0.025	-0.006	0.001	0.007	0.027
R.growth[10]	0.000	0.013	-0.025	-0.007	0.000	0.007	0.030
R.growth[11]	0.000	0.013	-0.025	-0.007	-0.001	0.006	0.031
R.growth[12]	-0.001	0.013	-0.027	-0.007	-0.001	0.006	0.026
R.growth[13]	-0.002	0.013	-0.028	-0.009	-0.002	0.005	0.024
R.growth[14]	-0.003	0.014	-0.031	-0.010	-0.002	0.004	0.026

R.growth[15]	-0.004	0.014	-0.033	-0.011	-0.003	0.004	0.024
R.growth[16]	-0.004	0.014	-0.036	-0.011	-0.003	0.003	0.022
R.growth[17]	-0.005	0.014	-0.035	-0.011	-0.003	0.003	0.021
R.growth[18]	-0.004	0.014	-0.033	-0.012	-0.004	0.003	0.022
R.growth[19]	-0.004	0.014	-0.036	-0.011	-0.003	0.004	0.023
R.growth[20]	-0.004	0.014	-0.035	-0.011	-0.003	0.004	0.024
R.growth[21]	-0.003	0.014	-0.034	-0.012	-0.003	0.005	0.026
R.growth[22]	-0.003	0.016	-0.036	-0.012	-0.003	0.006	0.031
R.growth[23]	-0.003	0.018	-0.039	-0.012	-0.002	0.007	0.036
R.growth[24]	-0.002	0.019	-0.043	-0.012	-0.002	0.008	0.039
Deviance	74,913.174	59.400	74,799.244	74,872.776	74,912.251	74,953.482	75,031.893

Tables A4.24. Bayesian generalized linear mixed model output for **Yellow-billed Loon** observed during aerial surveys 1992-2016 on the Arctic Coastal Plain, Alaska. We provide summaries including mean, SE, and several quantiles of the posterior distribution for model and derived parameters. See Table A4.4 for a key to parameter names.

Parameter	Mean	SD	2.5%	25.0%	50.0%	75.0%	97.5%
MSE	0.262	0.002	0.258	0.260	0.261	0.262	0.266
MSE.CV	1.586	0.011	1.567	1.579	1.585	1.591	1.610
SSE	2,532.328	17.269	2,502.153	2,521.731	2,530.556	2,541.130	2,571.068
Trend	1.044	0.012	1.021	1.036	1.044	1.053	1.069
R.trend	0.043	0.012	0.021	0.035	0.043	0.051	0.067
M.dens	0.090	0.006	0.079	0.086	0.089	0.094	0.103
M.y0	-0.005	0.067	-0.143	-0.048	-0.004	0.039	0.123
M.blyr	-2.725	0.083	-2.887	-2.780	-2.726	-2.669	-2.561
M.cell	0.000	0.006	-0.013	-0.002	0.000	0.002	0.013
R.mid	-0.556	0.103	-0.751	-0.625	-0.559	-0.489	-0.347
b.ADOY	-0.977	0.065	-1.107	-1.020	-0.975	-0.934	-0.850
b.ADOY.2	-0.306	0.047	-0.400	-0.337	-0.306	-0.274	-0.215
SD.y0	0.331	0.074	0.208	0.280	0.323	0.375	0.495
SD.cell	0.101	0.077	0.011	0.026	0.095	0.154	0.272
SD.lam[1]	0.735	0.195	0.450	0.598	0.703	0.839	1.200
SD.lam[2]	1.230	0.544	0.384	0.865	1.168	1.508	2.547
SD.lam[3]	5.079	2.159	1.736	3.380	4.767	6.610	9.534
SD.lam[4]	1.500	1.273	0.065	0.647	1.178	1.973	4.977
SD.lam[5]	3.635	2.731	0.127	1.312	2.968	5.608	9.419
SD.lam[6]	1.856	0.545	1.086	1.429	1.745	2.226	3.066
SD.lam[7]	1.205	0.475	0.527	0.827	1.180	1.489	2.268
SD.lam[8]	0.453	0.926	0.000	0.071	0.183	0.428	3.115
y0[1]	0.610	0.250	0.142	0.440	0.605	0.774	1.112
y0[2]	-0.298	0.205	-0.717	-0.434	-0.287	-0.160	0.085
y0[3]	-0.429	0.199	-0.846	-0.552	-0.423	-0.294	-0.057
y0[4]	-0.001	0.174	-0.348	-0.116	0.000	0.116	0.335
y0[5]	0.182	0.171	-0.142	0.069	0.178	0.294	0.519
y0[6]	0.155	0.184	-0.206	0.034	0.156	0.275	0.512
y0[7]	-0.252	0.189	-0.630	-0.379	-0.250	-0.123	0.109
y0[8]	-0.049	0.191	-0.422	-0.177	-0.048	0.078	0.334
y0[9]	-0.272	0.203	-0.680	-0.407	-0.269	-0.134	0.116
y0[10]	-0.046	0.186	-0.408	-0.170	-0.047	0.079	0.316
y0[11]	0.006	0.180	-0.352	-0.113	0.005	0.125	0.366
y0[12]	0.309	0.184	-0.045	0.183	0.306	0.429	0.679
y0[13]	-0.335	0.194	-0.729	-0.459	-0.332	-0.208	0.041
y0[14]	-0.017	0.178	-0.383	-0.133	-0.015	0.102	0.329
y0[15]	-0.156	0.179	-0.525	-0.271	-0.152	-0.037	0.186
y0[16]	0.376	0.183	0.024	0.252	0.376	0.498	0.735
y0[17]	0.023	0.176	-0.324	-0.093	0.023	0.140	0.363

y0[18]	0.175	0.168	-0.154	0.063	0.175	0.286	0.503
y0[19]	0.143	0.175	-0.199	0.025	0.142	0.257	0.493
y0[20]	-0.233	0.179	-0.589	-0.348	-0.232	-0.113	0.111
y0[21]	0.072	0.173	-0.274	-0.043	0.069	0.186	0.416
y0[22]	0.074	0.179	-0.280	-0.046	0.072	0.196	0.425
y0[23]	-0.184	0.188	-0.564	-0.305	-0.181	-0.060	0.181
y0[24]	0.364	0.194	-0.007	0.235	0.362	0.487	0.762
y0[25]	-0.351	0.219	-0.794	-0.495	-0.345	-0.203	0.067
N.sum[1]	1,682.124	356.145	1,093.897	1,432.978	1,646.039	1,891.245	2,491.650
N.sum[2]	663.348	127.405	445.965	573.485	653.901	741.041	943.489
N.sum[3]	574.077	109.266	384.021	497.196	564.838	643.311	809.088
N.sum[4]	869.498	131.787	635.819	778.514	861.458	951.602	1,149.982
N.sum[5]	1,045.019	146.850	789.041	942.511	1,034.170	1,134.577	1,364.410
N.sum[6]	1,034.986	167.970	743.094	918.058	1,019.990	1,139.858	1,393.639
N.sum[7]	708.889	128.614	485.486	618.506	698.555	786.985	989.510
N.sum[8]	901.765	158.276	626.838	788.532	889.567	1,000.620	1,243.237
N.sum[9]	760.175	144.174	508.961	660.781	745.748	848.887	1,078.852
N.sum[10]	1,009.700	167.311	724.853	890.766	995.811	1,112.614	1,366.359
N.sum[11]	1,142.752	178.379	828.377	1,016.796	1,130.348	1,253.596	1,528.764
N.sum[12]	1,682.554	278.018	1,197.320	1,483.343	1,659.289	1,860.334	2,271.863
N.sum[13]	968.219	175.949	659.053	846.172	956.024	1,076.974	1,352.523
N.sum[14]	1,450.264	232.434	1,051.370	1,284.121	1,430.879	1,595.392	1,960.843
N.sum[15]	1,378.518	223.185	984.899	1,221.509	1,365.327	1,519.968	1,858.176
N.sum[16]	2,543.579	397.354	1,849.060	2,259.742	2,512.703	2,792.616	3,398.140
N.sum[17]	1,918.077	281.484	1,426.188	1,715.710	1,900.156	2,095.430	2,522.582
N.sum[18]	2,366.827	302.960	1,837.817	2,153.394	2,345.009	2,555.928	3,025.813
N.sum[19]	2,416.781	363.133	1,786.140	2,160.047	2,390.864	2,641.899	3,212.084
N.sum[20]	1,729.758	269.160	1,267.550	1,538.970	1,712.333	1,895.475	2,320.715
N.sum[21]	2,423.109	359.816	1,792.689	2,169.485	2,395.550	2,644.641	3,224.697
N.sum[22]	2,503.639	382.707	1,849.858	2,231.195	2,469.448	2,741.839	3,340.904
N.sum[23]	1,993.324	300.850	1,468.474	1,782.642	1,972.212	2,174.165	2,642.305
N.sum[24]	3,550.766	493.246	2,684.086	3,202.033	3,519.592	3,860.606	4,604.461
N.sum[25]	1,806.132	300.530	1,282.689	1,594.881	1,784.694	1,994.156	2,454.696
N.sum2[1]	964.786	219.005	635.962	809.395	931.112	1,080.154	1,474.960
N.sum2[2]	939.362	170.850	663.637	819.920	918.987	1,034.984	1,326.999
N.sum2[3]	922.819	143.546	682.673	823.114	907.684	1,005.295	1,247.679
N.sum2[4]	915.442	131.251	692.869	823.776	904.028	994.100	1,203.721
N.sum2[5]	917.626	126.037	691.576	829.255	909.676	995.032	1,185.968
N.sum2[6]	930.365	125.743	701.577	842.874	925.760	1,009.322	1,191.953
N.sum2[7]	954.902	130.968	715.254	865.659	949.466	1,040.241	1,226.171
N.sum2[8]	992.262	139.723	731.708	895.055	987.217	1,085.516	1,277.039
N.sum2[9]	1,043.521	148.340	762.488	940.564	1,040.577	1,143.563	1,337.053
N.sum2[10]	1,110.099	154.885	815.574	1,004.447	1,105.343	1,216.451	1,415.389
N.sum2[11]	1,193.620	160.181	886.688	1,085.233	1,190.917	1,303.886	1,511.113

N.sum2[12]	1,295.021	166.384	977.386	1,184.590	1,291.639	1,401.903	1,639.005
N.sum2[13]	1,413.448	175.164	1,091.722	1,297.449	1,408.181	1,516.074	1,795.980
N.sum2[14]	1,545.845	187.684	1,218.479	1,421.121	1,534.711	1,647.684	1,967.415
N.sum2[15]	1,687.435	205.566	1,347.874	1,550.834	1,666.107	1,794.518	2,173.856
N.sum2[16]	1,831.364	228.354	1,467.737	1,675.637	1,801.893	1,952.365	2,369.514
N.sum2[17]	1,969.127	249.866	1,572.360	1,794.513	1,933.937	2,106.454	2,551.962
N.sum2[18]	2,092.940	262.589	1,677.016	1,906.095	2,060.747	2,245.949	2,691.130
N.sum2[19]	2,198.973	267.895	1,763.372	2,006.677	2,168.338	2,356.406	2,813.074
N.sum2[20]	2,288.718	276.906	1,828.845	2,095.166	2,259.854	2,449.853	2,910.474
N.sum2[21]	2,367.754	297.619	1,858.372	2,165.247	2,336.014	2,539.906	3,028.850
N.sum2[22]	2,443.141	329.444	1,876.669	2,220.325	2,410.870	2,635.161	3,174.553
N.sum2[23]	2,522.338	375.717	1,892.007	2,266.279	2,485.456	2,735.737	3,355.505
N.sum2[24]	2,612.629	449.268	1,872.808	2,307.762	2,562.860	2,859.691	3,582.595
N.sum2[25]	2,719.303	559.329	1,806.944	2,341.265	2,655.918	3,024.212	3,979.237
R.growth[1]	-0.019	0.065	-0.169	-0.055	-0.011	0.028	0.086
R.growth[2]	-0.014	0.059	-0.153	-0.047	-0.007	0.030	0.077
R.growth[3]	-0.006	0.049	-0.121	-0.035	-0.002	0.030	0.069
R.growth[4]	0.003	0.042	-0.092	-0.023	0.007	0.035	0.071
R.growth[5]	0.014	0.041	-0.078	-0.010	0.019	0.043	0.080
R.growth[6]	0.026	0.041	-0.069	0.003	0.031	0.052	0.096
R.growth[7]	0.038	0.038	-0.047	0.018	0.041	0.060	0.110
R.growth[8]	0.050	0.034	-0.022	0.031	0.050	0.069	0.122
R.growth[9]	0.062	0.034	-0.004	0.043	0.060	0.080	0.137
R.growth[10]	0.073	0.037	0.011	0.050	0.068	0.092	0.160
R.growth[11]	0.082	0.039	0.023	0.056	0.076	0.103	0.180
R.growth[12]	0.088	0.039	0.031	0.060	0.082	0.109	0.185
R.growth[13]	0.090	0.040	0.030	0.061	0.084	0.112	0.184
R.growth[14]	0.088	0.040	0.025	0.059	0.081	0.111	0.185
R.growth[15]	0.082	0.038	0.015	0.056	0.077	0.103	0.172
R.growth[16]	0.072	0.034	0.004	0.051	0.070	0.092	0.147
R.growth[17]	0.061	0.032	-0.008	0.043	0.061	0.081	0.124
R.growth[18]	0.050	0.035	-0.029	0.031	0.052	0.071	0.114
R.growth[19]	0.040	0.039	-0.049	0.019	0.044	0.064	0.111
R.growth[20]	0.033	0.039	-0.053	0.010	0.037	0.058	0.104
R.growth[21]	0.030	0.038	-0.050	0.007	0.033	0.056	0.099
R.growth[22]	0.030	0.042	-0.058	0.004	0.033	0.058	0.107
R.growth[23]	0.032	0.049	-0.074	0.002	0.035	0.063	0.125
R.growth[24]	0.034	0.054	-0.083	0.002	0.037	0.068	0.140
Deviance	8,228.017	22.695	8,175.305	8,214.354	8,231.969	8,244.350	8,263.594