

Peterson, M. E., Anderson Jr, C. R., Northrup, J. M. and Doherty Jr, P. F. 0000. Reproductive success of mule deer in a natural development area. – Wildlife Biology 2017: wlb.00341.

Appendix 1

Table A1. Model selection results for pregnancy rate of mule deer during early March in the Piceance Basin, northwest Colorado 2012–2014.

Model ^a	ΔAIC_c ^b	w_i ^c	K ^d	AUC ^e
Intercept	0.000	0.776	1	0.500
Study area	3.788	0.117	2	0.529
Year	4.779	0.071	3	0.563
Study area + year	6.601	0.029	4	0.592
Study area \times year	9.265	0.001	6	0.613

^a Variable definition: study area signifies the high and low development winter range.

^b ΔAIC_c is difference in Akaike's information criterion adjusted for small sample size from the top-ranked model ($AIC_c = 141.465$).

^c w_i is AIC_c model weight.

^d K is the number of parameters in the model.

^e AUC is area under receiver operating characteristics curve (i.e. goodness of fit).

Appendix 2

Table A2. Model selection results for in utero fetal rate of mule deer during early March in the Piceance Basin, northwest Colorado, 2012–2014.

Model ^a	ΔAIC_c ^b	w_i ^c	K ^d
Intercept	0.000	0.766	1
Study area	2.817	0.187	2
Year	6.134	0.036	3
Study area + year	8.877	0.009	4
Study area \times year	11.813	0.003	6

^a Variable definitions: study area signifies the high and low development winter range.

^b ΔAIC_c is difference in Akaike's information criterion adjusted for small sample size from the top-ranked model ($AIC_c = 220.317$).

^c w_i is AIC_c model weight.

^d K is the number of parameters in the model.

Appendix 3

Table A3. In utero fetal count of mule deer documented during early March in the Piceance Basin, northwest Colorado, 2012–2014.

Year	Study area and in utero fetal count					
	High development [no. fetus(es)]			Low development [no. fetus(es)]		
	1	2	3	1	2	3
2012	9	31	1	8	31	3
2013	3	32	0	6	32	2
2013	5	25	0	0	16	0
Total	17	88	1	14	79	5

Appendix 4

Table A4. Model selection results for fetal survival of mule deer from March until birth in the Piceance Basin, northwest Colorado, 2012–2014. Only models with an AIC_c weight ≥ 0.005 are shown.

Model ^a	ΔAIC_c ^b	w_i ^c	K ^d
$S_1(\text{study area} \times \text{year}) S_2(\text{year}) p_1(\text{year}) p_2(\text{year}) r(.) a(\text{year}) b(\text{year})$	0.000	0.714	22
$S_1(\text{study area} \times \text{year}) S_2(.) p_1(\text{year}) p_2(.) r(.) a(\text{year}) b(\text{year})$	4.104	0.092	18
$S_1(\text{study area} \times \text{year}) S_2(.) p_1(\text{year}) p_2(\text{year}) r(.) a(\text{year}) b(\text{year})$	4.604	0.712	18
$S_1(\text{study area} \times \text{year}) S_2(.) p_1(\text{year}) p_2(\text{year}) r(.) a(\text{year}) b(\text{year})$	6.504	0.028	20
$S_1(\text{study area} \times \text{year}) S_2(\text{study area}) p_1(\text{year}) p_2(\text{year}) r(.) a(\text{year}) b(\text{year})$	6.328	0.030	21
$S_1(\text{study area} \times \text{year}) S_2(.) p_1(.) p_2(\text{year}) r(.) a(\text{year}) b(\text{year})$	6.504	0.028	18
$S_1(\text{study area}) S_2(.) p_1(\text{year}) p_2(\text{year}) r(.) a(\text{year}) b(\text{year})$	8.126	0.012	16
$S_1(\text{study area} \times \text{year}) S_2(.) p_1(\text{year}) p_2(\text{study area} \times \text{year}) r(.) a(\text{study area} \times \text{year}) b(\text{study area} \times \text{year})$	9.535	0.006	29
$S_1(\text{study area} \times \text{year}) S_2(.) p_1(\text{year}) p_2(\text{year}) r(.) a(\text{study area} \times \text{year}) b(\text{study area} \times \text{year})$	9.689	0.006	26

^a Parameter S_1 is fetal survival probability. All other model parameters are nuisance parameters: S_2 is neonatal survival probability from birth to 5 days old, p_1 is the probability of detecting a neonate ≤ 1 day old given that field crews conducted a search ≤ 1 day after birth, p_2 is the probability of detecting a neonate > 1 day old given that crews conducted a search > 1 day after birth, r is the probability of detecting a stillborn fetus when a vaginal implant transmitter (VIT) was not expelled at a birth site, a is the probability of locating a radio-collared adult female and searching for her neonate(s) ≤ 1 day after birth, and b is the probability a VIT was expelled at a birth site. Study area signifies the high and low development winter range.

^b ΔAIC_c is difference in Akaike's information criterion adjusted for small sample size from the top-ranked model ($AIC_c = 1617.406$).

^c w_i is AIC_c model weight.

^d K is the number of parameters in the model.