

### **Supplementary material: model selection and model averaged results**

Model selection procedure for fecal crude fiber (upper table) and fecal protein content in brown bear feces (adult males, lone females, and females with cubs-of-the-year), collected in Sweden in 2010.

$AIC_c$  = second-order bias-corrected Akaike's Information Criteria value,  $\Delta AIC_C$  = second-order bias-corrected Akaike's Information Criteria model difference values,  $AIC_{CW}$  = second-order bias-corrected Akaike's Information Criteria model model weight. + indicates whether or not a model term was included in the candidate model.

Rank	Intercept	Age	Season	Canopy cover	Field Exposure time	Drying time	Reproductive state	Age * Season	Age * Reproductive state	Season * Reproductive state	Canopy cover * Field exposure time	AICc	ΔAICc	AICcw
1	+		+	+	+	+	+			+		2924	0	0.215
2	+	+	+	+	+	+	+	+		+		2925	0.9741	0.132
3	+	+	+	+	+	+	+			+		2925	1.05	0.127
4	+		+	+	+	+	+			+	+	2925	1.264	0.114
5	+	+	+	+	+	+	+	+	+	+		2925	1.489	0.102
6	+	+	+	+	+	+	+		+	+		2926	1.979	0.08
7	+	+	+	+	+	+	+			+	+	2926	2.307	0.068
8	+	+	+	+	+	+	+	+		+	+	2926	2.424	0.064
9	+	+	+	+	+	+	+	+	+	+	+	2926	2.919	0.05
10	+	+	+	+	+	+	+		+	+	+	2927	3.19	0.044
11	+		+	+	+	+						2935	11.36	0.001

Rank	Intercept	Age	Season	Canopy cover	Field exposure time	Drying time	Reproductive state	Age * Season	Age * Reproductive state	Season * Reproductive state	Canopy cover * Field exposure time	AICc	ΔAICc	AICcw
1	+		+	+	+	+	+			+		2597	0	0.21
2	+	+	+	+	+	+	+		+	+		2597	0.1389	0.196
3	+		+	+	+	+	+			+	+	2598	1.137	0.119
4	+	+	+	+	+	+	+		+	+	+	2598	1.185	0.116
5	+	+	+	+	+	+	+	+	+	+		2598	1.527	0.098
6	+	+	+	+	+	+	+			+		2599	2.024	0.076
7	+	+	+	+	+	+	+	+	+	+	+	2600	2.706	0.054
8	+	+	+	+	+	+	+			+	+	2600	3.163	0.043
9	+	+	+	+	+	+	+	+		+		2601	3.803	0.031
10	+	+	+	+	+	+	+	+		+	+	2602	5.028	0.017
11	+		+	+	+	+						2604	6.769	0.007

Modeling results after averaging all models with  $\Delta AIC_c$  values  $< 2$  to predict fecal crude fiber and fecal protein content in feces ( $N = 491$ ) collected from brown bears (adult males, lone females, and females/cubs) in south central Sweden during the mating and the postmating season in 2010. High fecal crude fiber values indicate poor diet quality, whereas high fecal protein values indicate high diet quality.

Model term	Fecal crude fiber			Fecal protein		
	$\beta$	$\sigma$	p value	$\beta$	$\sigma$	p value
Intercept	19.268	1.4160	$< 0.001$	15.6021	0.9183	$< 0.001$
Canopy cover	-0.0009	0.0102	0.9319	0.0189	0.0072	0.0087
Field time	0.0039	0.0080	0.6234	-0.0093	0.0057	0.0988
Oven time	-0.0231	0.0056	$< 0.001$	0.0110	0.0040	0.0055
Age	0.0422	0.1792	0.8138	0.1891	0.1211	0.1185
Adult males vs. lone females	-0.0190	1.5991	0.9905	-1.1348	1.0541	0.2817
Females/cubs vs. lone females	2.7737	1.3644	0.0421	-2.1384	0.9495	0.0243
Postmating season vs. mating season	4.3263	1.0240	$< 0.001$	-7.7798	0.6109	$< 0.001$
Seasonal interaction 'adult males'	-1.7151	1.2869	0.1826	1.4212	0.9030	0.1156
Seasonal interaction 'females with cubs'	-6.9804	1.7157	$< 0.001$	3.9202	1.2003	0.0011
Interaction 'age' & 'season'	0.2293	0.1529	0.1337	-0.3848	0.1695	0.0232
Interaction 'age' & 'adult males'	0.4505	0.2591	0.0820	-0.3145	0.2532	0.2141
Interaction 'age' & 'females/cubs'	0.2257	0.3790	0.5515	-0.0898	0.1086	0.4084
Interaction 'field time' & 'canopy cover'	-0.0004	0.0004	0.3553	0.0003	0.0003	0.3231