Supplemental material

Table S1. Model-selection results for determining model structure for capture (*p*) and recapture (*c*) probabilities for a robust design analysis of grizzly bear (*Ursus arctos*) population size and temporary movements associated with the Elk Reduction Program in Grand Teton National Park, Wyoming, USA, 2014–2015. We fixed survival (*S*) between primary periods 3 and 4 (denning period and spring) to 0.979 and for all other transitions between primary periods to 1. We used time-variant temporary emigration parameters (γ_i'', γ_i') for all models. Capture (*c*) and recapture (*p*) probabilities were modeled as time-variant across primary periods (*i*), year (*yr*), or constant (.); trap response (*p, c*) or no trap response (*p = c*); and an individual covariates for sex (*sex*).

Model number and description[a]	AIC$_c$[b]	ΔAIC$_c$[c]	AIC$_c$ weight[d]	*K*[e]	−2log(L)
1. *S*, γ_i'', γ_i', $p_{.,\,sex} = c_{.,\,sex}$	319.72	0.00	0.44	11	293.32
2. *S*, γ_i'', γ_i', p_{yr}, c_{yr}	320.03	0.31	0.38	13	287.75
3. *S*, γ_i'', γ_i', $p_.$, $c_.$	323.27	3.55	0.08	11	296.87
4. *S*, γ_i'', γ_i', $p_{.,\,sex}$, $c_{.,\,sex}$	324.13	4.41	0.05	13	291.85
5. *S*, γ_i'', γ_i', $p_{yr} = c_{yr}$	324.72	5.00	0.04	11	298.32
6. *S*, γ_i'', γ_i', $p_{yr,\,sex}$, $c_{yr,\,sex}$	326.63	6.91	0.01	17	281.30
7. *S*, γ_i'', γ_i', p_i, $c_.$	333.19	13.47	0	16	291.29
8. *S*, γ_i'', γ_i', p_i, c_i	343.86	24.14	0	21	283.38

[a] The parameters γ_i'' and γ_i' reflect the probability of a bear being unavailable for detection in period *i* given that it was available or unavailable, respectively, in the previous period.
[b] Akaike's Information Criterion adjusted for small sample size.
[c] Difference in AIC$_c$ compared with lowest AIC$_c$ model.
[d] AIC$_c$ model weight.
[e] No. of model parameters.