

Table 4-1. The actual and projected distribution of hoary marmots (a) and collared pikas (b) amongst age-classes. Data for both species are from populations in the Ruby Range, Yukon. Projected distributions are based on Leslie matrix models that assume a stable-age distribution (the proportional abundance of age-classes that would allow all segments of the population to change at the same rate).

a. Hoary marmots

Year	Projected				Actual			
	Age 0	Age 1	Age 2	Age A	Age 0	Age 1	Age 2	Age A
2000	0.15	0.14	0.14	0.58	0.07	0.33	0.13	0.48
2001	0.2	0.17	0.16	0.47	0.11	0.06	0.33	0.5
2002	0.24	0.2	0.16	0.4	0.32	0.08	0.05	0.55
2003	0.27	0.11	0.1	0.52	0.2	0.25	0.05	0.51
2004	0.24	0.21	0.22	0.33	0.17	0.17	0.22	0.44
2008	0.31	0.2	0.14	0.36	0.34	0.22	0.07	0.37
2009	0.38	0.05	0.05	0.52	0.16	0.06	0.29	0.48
Mean	0.26	0.15	0.13	0.48	0.2	0.17	0.16	0.48

b. Collared pikas

Year	Projected		Actual	
	Age J	Age A	Age J	Age A
1998	0.35	0.65	0.35	0.65
1999	0.53	0.48	0.5	0.5
2000	0.29	0.71	0.33	0.67
2001	0.67	0.33	0.73	0.27
2002	0.5	0.5	0.54	0.46
2003	0.73	0.27	0.47	0.53
2004	0.7	0.3	0.69	0.31
2005	0.51	0.49	0.48	0.52
2006	0.39	0.61	0.32	0.68
2007	0.45	0.55	0.41	0.59
2008	0.24	0.76	0.19	0.81
2009	0.37	0.63	0.36	0.64
Mean	0.47	0.53	0.44	0.56

Table 4-2. Results of Life Table Response Experiments (LTREs) conducted for hoary marmot and collared pika populations in the Ruby Range, Yukon. The hoary marmot LTRE was parameterized with data collected between 1999 and 2004, and between 2007 and 2009. The collared pika LTRE includes data collected between 1998 and 2009. Values represent the proportional contributions of age-specific survival and fecundity parameters to variation in the projected population growth rate (λ_{asym}), averaged over time. SE represents 1 standard error, which was estimated by bootstrapping. The hoary marmot LTRE was run with and without the matrix representing the interval from 2003 to 2004, because trapping effort in 2004 was lower than in other years, and the reliability of parameter estimates from that period was questionable.

Hoary marmots			
	w/o 2004		
Parameter	LTRE contribution	SE	
Juv. Surv. (P_0)	0.64	0.16	
Yearl. Surv. (P_1)	0.02	0.09	
Two-yr. Surv. (P_2)	0.09	0.11	
Adult Surv. (P_A)	0.08	0.06	
Two-yr. Fert. (F_2)	0.04	0.04	
Adult Fert. (F_A)	0.13	0.15	
	with 2004		
Parameter	LTRE contribution	SE	
Juv. Surv. (P_0)	0.18	0.06	
Yearl. Surv. (P_1)	0.13	0.05	
Two-yr. Surv. (P_2)	0.28	0.05	
Adult Surv. (P_A)	0.22	0.03	
Two-yr. Fert. (F_2)	0.07	0.02	
Adult Fert. (F_A)	0.13	0.07	
Collared Pikas			
Parameter	LTRE contribution	SE	
Juv. Surv. (P_j)	0.18	0.06	
Adult Surv. (P_A)	0.07	0.07	
Juv. Fert. (F_j)	0.41	0.14	
Adult Fert. (F_A)	0.34	0.13	

Table 4-3. Seniority parameters (γ) for hoary marmots and collared pika populations in the Ruby Range, Yukon. Seniority parameters were estimated from reverse-time mark-recapture models in which all age-classes were pooled. Maximum-likelihood estimates, standard errors (SE), and lower (LCL) & upper (UCL) bounds of 95 % confidence intervals are shown.

Hoary marmots				
	Estimate	SE	LCL	UCL
1999	0.55	0.06	0.43	0.66
2000	0.66	0.05	0.56	0.76
2001	0.60	0.05	0.51	0.68
2002	0.69	0.05	0.59	0.77
2003	0.74	0.05	0.62	0.83
2007	0.58	0.06	0.45	0.69
2008	0.86	0.06	0.71	0.94
Mean	0.67	0.05	0.55	0.76

Collared pikas				
	Estimate	SE	LCL	UCL
1998	0.31	0.06	0.21	0.43
1999	0.34	0.09	0.19	0.52
2000	0.17	0.06	0.09	0.31
2001	0.33	0.07	0.21	0.47
2002	0.40	0.09	0.25	0.57
2003	0.38	0.08	0.25	0.54
2004	0.19	0.05	0.11	0.30
2005	0.55	0.07	0.42	0.68
2006	0.41	0.06	0.30	0.53
2007	0.56	0.07	0.42	0.70
2008	0.34	0.06	0.23	0.47
Mean	0.36	0.07	0.24	0.50