

Supplemental Tables and Figures

Table S1. HBEF songbird and small mammal species distribution shifts in relation to time in years. Asterisks (*) denote statistically significant p-values ($p < 0.05$), and periods (.) denote near significant p-values ($0.05 < p < 0.10$).

Year (1999 - 2016)											
High Elevation Species						Low Elevation Species					
Spp	% Occu	Intercept	R ²	p	Sig?	Spp	% Occu	Intercept	R ²	p	Sig?
BLPW	2.5%	-7.19	0.01	0.303		BCCH	2.5%	-0.06	-0.07	0.911	
	5%	-1.63	-0.03	0.492			5%	0.00	-0.07	1.000	
	25%	-0.22	-0.06	0.692			25%	-0.53	-0.07	0.801	
	50%	-0.19	-0.04	0.553			50%	-2.41	-0.02	0.413	
	75%	-0.11	-0.04	0.505			75%	-0.97	-0.06	0.721	
	95%	-0.04	0.04	0.231			95%	0.42	-0.06	0.760	
	97.5%	-0.01	-0.05	0.589			97.5%	0.43	-0.06	0.704	
MAWA	2.5%	6.50	0.09	0.132		BTBW	2.5%	-0.20	-0.07	0.838	
	5%	7.40	0.10	0.127			5%	-0.23	-0.07	0.827	
	25%	2.64	0.08	0.147			25%	0.24	-0.07	0.788	
	50%	1.23	0.05	0.195			50%	0.72	0.01	0.315	
	75%	0.56	0.05	0.209			75%	1.33	0.06	0.191	
	95%	0.07	-0.03	0.453			95%	1.93	0.08	0.153	
	97.5%	0.06	0.04	0.213			97.5%	1.99	0.08	0.149	
DEJU	2.5%	6.12	0.00	0.319		HETH	2.5%	-1.28	-0.02	0.412	
	5%	6.54	0.04	0.234			5%	-1.27	-0.02	0.423	
	25%	2.56	0.08	0.145			25%	-0.21	-0.07	0.893	
	50%	1.33	0.15	0.077	.		50%	1.30	-0.02	0.434	
	75%	0.69	0.22	0.038	*		75%	3.08	0.06	0.190	
	95%	0.11	0.09	0.136			95%	1.50	-0.05	0.601	
	97.5%	0.02	-0.04	0.501			97.5%	1.58	-0.04	0.549	
SWTH	2.5%	0.63	0.02	0.264		OVEN	2.5%	-0.40	0.11	0.113	
	5%	1.19	0.09	0.136			5%	-0.61	0.12	0.107	
	25%	6.40	0.42	0.004	**		25%	-0.72	0.02	0.264	
	50%	1.99	0.03	0.248			50%	-0.15	-0.07	0.842	
	75%	0.67	-0.05	0.571			75%	0.71	-0.03	0.463	
	95%	0.06	-0.07	0.874			95%	2.06	0.13	0.097	.
	97.5%	0.01	-0.07	0.956			97.5%	2.50	0.17	0.064	.
WIWR	2.5%	-0.58	-0.03	0.445		REVI	2.5%	0.03	-0.07	0.788	
	5%	-1.02	-0.03	0.440			5%	0.11	-0.05	0.584	
	25%	-2.02	-0.04	0.523			25%	0.50	-0.01	0.381	
	50%	-1.41	-0.05	0.640			50%	0.87	0.01	0.316	
	75%	-0.62	-0.05	0.631			75%	1.43	0.03	0.240	
	95%	-0.13	-0.05	0.605			95%	2.77	0.10	0.129	
	97.5%	-0.07	-0.05	0.579			97.5%	3.13	0.14	0.087	
RESQ	2.5%	-0.96	-0.03	0.49		EACH	2.5%	1.90	0.05	0.20	
	5%	-0.64	-0.06	0.67			5%	1.93	0.05	0.22	
	25%	0.74	-0.06	0.76			25%	0.60	-0.07	0.76	
	50%	1.73	-0.05	0.57			50%	-1.69	-0.04	0.51	
	75%	2.93	0.01	0.30			75%	-4.00	0.03	0.25	
	95%	3.21	0.05	0.21			95%	-6.09	0.07	0.18	
	97.5%	3.18	0.05	0.20			97.5%	-6.44	0.07	0.18	

Table S2. HBEF songbird and small mammal species distribution shifts in relation to mean spring temperature. Mean May temperature was used for all species, excluding BLPW, where mean June temperature was used. Asterisks (*) denote statistically significant p-values ($p < 0.05$), and periods (.) denote near significant p-values ($0.05 < p < 0.10$).

Mean Spring Temperature (1999 - 2016)											
High Elevation Species						Low Elevation Species					
Spp	% Occu	Intercept	R ²	p	Sig?	Spp	% Occu	Intercept	R ²	p	Sig?
BLPW	2.5%	14.81	-0.06	0.656		BCCH	2.5%	-1.78	-0.01	0.373	
	5%	9.47	-0.01	0.392			5%	-0.94	-0.06	0.759	
	25%	4.93	0.21	0.041	*		25%	3.64	-0.06	0.669	
	50%	3.47	0.34	0.011	*		50%	-1.98	-0.07	0.870	
	75%	1.83	0.33	0.012	*		75%	4.52	-0.06	0.682	
	95%	0.42	0.47	0.002	**		95%	6.19	0.02	0.262	
	97.5%	0.16	0.23	0.034	*		97.5%	6.55	0.09	0.135	
MAWA	2.5%	14.05	-0.02	0.437		BTBW	2.5%	8.71	0.30	0.016	*
	5%	12.29	-0.04	0.547			5%	10.29	0.38	0.007	**
	25%	10.00	0.06	0.178			25%	10.40	0.61	0.000	***
	50%	6.17	0.12	0.102			50%	7.06	0.38	0.007	**
	75%	2.95	0.13	0.098	.		75%	3.77	-0.01	0.370	
	95%	0.54	0.10	0.127			95%	3.43	-0.04	0.545	
	97.5%	0.35	0.17	0.061	.		97.5%	4.39	-0.03	0.446	
DEJU	2.5%	5.32	-0.07	0.834		HETH	2.5%	-0.52	-0.07	0.935	
	5%	6.70	-0.06	0.769			5%	0.25	-0.07	0.969	
	25%	5.18	-0.03	0.482			25%	4.24	-0.04	0.509	
	50%	2.35	-0.03	0.464			50%	8.94	0.07	0.174	
	75%	0.86	-0.04	0.553			75%	16.51	0.15	0.076	.
	95%	0.13	-0.06	0.662			95%	15.98	0.08	0.155	
	97.5%	-0.02	-0.07	0.837			97.5%	17.05	0.13	0.095	.
SWTH	2.5%	1.24	-0.05	0.596		OVEN	2.5%	-0.90	-0.01	0.390	
	5%	2.86	-0.01	0.390			5%	-1.00	-0.04	0.534	
	25%	17.94	0.16	0.067	.		25%	0.40	-0.07	0.882	
	50%	4.20	-0.04	0.555			50%	2.78	-0.01	0.361	
	75%	2.63	-0.05	0.581			75%	5.78	0.10	0.129	
	95%	-0.03	-0.07	0.983			95%	10.12	0.22	0.040	*
	97.5%	-0.21	-0.07	0.818			97.5%	11.05	0.21	0.041	*
WIWR	2.5%	2.72	-0.01	0.378		REVI	2.5%	0.77	0.14	0.082	.
	5%	4.74	-0.01	0.377			5%	1.62	0.21	0.040	*
	25%	15.28	0.04	0.224			25%	6.43	0.53	0.001	***
	50%	15.55	0.06	0.190			50%	10.95	0.67	0.000	***
	75%	6.29	0.04	0.216			75%	15.86	0.70	0.000	***
	95%	1.39	0.07	0.171			95%	21.55	0.55	0.001	***
	97.5%	0.58	0.02	0.279			97.5%	19.41	0.42	0.004	**
RESQ	2.5%	-5.36	0.00	0.333		EACH	2.5%	4.57	-0.03	0.478	
	5%	-4.86	-0.02	0.432			5%	3.07	-0.06	0.653	
	25%	-2.23	-0.07	0.822			25%	0.59	-0.08	0.942	
	50%	5.85	-0.05	0.637			50%	1.82	-0.07	0.868	
	75%	13.59	0.03	0.236			75%	3.96	-0.07	0.791	
	95%	16.16	0.11	0.115			95%	0.83	-0.08	0.967	
	97.5%	16.44	0.12	0.099	.		97.5%	-3.17	-0.07	0.879	

Table S3. HBEF songbird and small mammal species distribution shifts in relation to mean spring precipitation. Mean May precipitation was used for all species, excluding BLPW, where mean June precipitation was used. Asterisks (*) denote statistically significant p-values ($p < 0.05$), and periods (.) denote near significant p-values ($0.05 < p < 0.10$).

Mean Spring Precipitation (1999 - 2014)											
High Elevation Species						Low Elevation Species					
Spp	% Occu	Intercept	R ²	p	Sig?	Spp	% Occu	Intercept	R ²	p	Sig?
BLPW	2.5%	-11.37	-0.07	0.711		BCCH	2.5%	-1.40	-0.02	0.415	
	5%	1.63	-0.08	0.826			5%	-2.09	0.00	0.348	
	25%	1.13	-0.07	0.666			25%	-5.74	-0.01	0.380	
	50%	0.86	-0.06	0.589			50%	-0.54	-0.08	0.963	
	75%	0.46	-0.06	0.581			75%	6.96	-0.05	0.524	
	95%	0.01	-0.08	0.943			95%	5.02	-0.01	0.369	
	97.5%	0.09	0.00	0.327			97.5%	4.29	0.00	0.345	
MAWA	2.5%	14.42	-0.02	0.416		BTBW	2.5%	-1.50	-0.07	0.714	
	5%	21.92	0.03	0.265			5%	-0.77	-0.08	0.861	
	25%	9.75	0.06	0.204			25%	0.38	-0.08	0.916	
	50%	4.10	0.01	0.305			50%	-1.62	-0.06	0.582	
	75%	1.66	-0.01	0.383			75%	-3.52	-0.02	0.403	
	95%	0.25	-0.04	0.507			95%	-0.69	-0.08	0.903	
	97.5%	0.21	0.02	0.275			97.5%	1.42	-0.08	0.806	
DEJU	2.5%	45.35	0.22	0.051	.	HETH	2.5%	-6.51	0.01	0.309	
	5%	37.26	0.17	0.083	.		5%	-7.12	0.03	0.269	
	25%	8.73	0.05	0.220			25%	-8.81	0.08	0.171	
	50%	3.81	0.06	0.198			50%	-8.10	0.06	0.208	
	75%	1.88	0.10	0.139			75%	-0.53	-0.08	0.946	
	95%	0.43	0.19	0.066	.		95%	11.35	0.02	0.287	
	97.5%	0.17	0.20	0.063	.		97.5%	12.74	0.06	0.198	
SWTH	2.5%	-1.52	-0.05	0.523		OVEN	2.5%	-0.57	-0.06	0.592	
	5%	-1.83	-0.06	0.593			5%	-0.91	-0.05	0.572	
	25%	0.44	-0.08	0.962			25%	-0.89	-0.07	0.746	
	50%	6.47	-0.01	0.371			50%	0.19	-0.08	0.952	
	75%	5.00	0.01	0.304			75%	1.45	-0.07	0.703	
	95%	1.69	0.03	0.265			95%	3.73	-0.03	0.446	
	97.5%	1.08	0.04	0.235			97.5%	4.23	-0.03	0.432	
WIWR	2.5%	0.96	-0.07	0.742		REVI	2.5%	0.05	-0.08	0.915	
	5%	1.65	-0.07	0.747			5%	0.09	-0.08	0.917	
	25%	4.41	-0.07	0.733			25%	1.24	-0.05	0.574	
	50%	5.46	-0.07	0.665			50%	2.50	-0.02	0.397	
	75%	-2.47	-0.06	0.636			75%	4.26	0.02	0.280	
	95%	-0.75	-0.03	0.442			95%	5.98	0.00	0.332	
	97.5%	-0.43	-0.01	0.382			97.5%	5.31	-0.02	0.412	
RESQ	2.5%	0.49	-0.08	0.931		EACH	2.5%	0.31	-0.09	0.955	
	5%	-0.02	-0.08	0.997			5%	0.63	-0.09	0.904	
	25%	-4.59	-0.06	0.618			25%	7.06	0.05	0.224	
	50%	-7.84	-0.04	0.516			50%	15.95	0.19	0.079	.
	75%	-8.21	-0.04	0.479			75%	22.80	0.18	0.080	.
	95%	-3.92	-0.07	0.714			95%	22.59	0.07	0.190	
	97.5%	-1.90	-0.08	0.857			97.5%	21.47	0.05	0.230	

Table S4. AICc table. Bolded models are the most parsimonious we examined for each group. β estimates for each group are listed for models with $< 2 \Delta AICc$.

Model	df	AICc	$\Delta AICc$	wAICc	β_i	p
Low Elevation Birds (97.5% quantile)						
Temperature	3	176.22	0.00	0.57	49.17	0.044
Temperature + Precipitation	4	178.91	2.70	0.15	-	0.068
Precipitation	3	179.30	3.09	0.12	-	0.217
Time + Temperature	4	180.10	3.88	0.08	-	0.727
Time	3	180.59	4.37	0.06	-	0.492
Time + Temperature + Precipitation	5	183.83	7.62	0.01	-	0.763
High Elevation Birds (2.5% quantile)						
Precipitation	3	190.73	0.00	0.38	-10.75	0.440
Temperature	3	191.44	0.71	0.27	-1.35	0.904
Time	3	191.45	0.72	0.26	-0.19	0.950
Temperature + Precipitation	4	194.77	4.04	0.05	-	0.981
Time + Temperature	4	195.48	4.75	0.04	-	0.971
Time + Temperature + Precipitation	5	199.83	9.10	0.00	-	0.998
Mammals (50% quantile)						
Temperature	3	162.33	0.00	0.31	4.08	0.600
Precipitation	3	162.38	0.05	0.31	2.97	0.629
Time	3	162.44	0.11	0.30	-0.82	0.665
Time + Temperature	4	166.36	4.03	0.04	-	0.637
Temperature + Precipitation	4	166.50	4.17	0.04	-	0.691
Time + Temperature + Precipitation	5	171.71	9.38	0.00	-	0.627

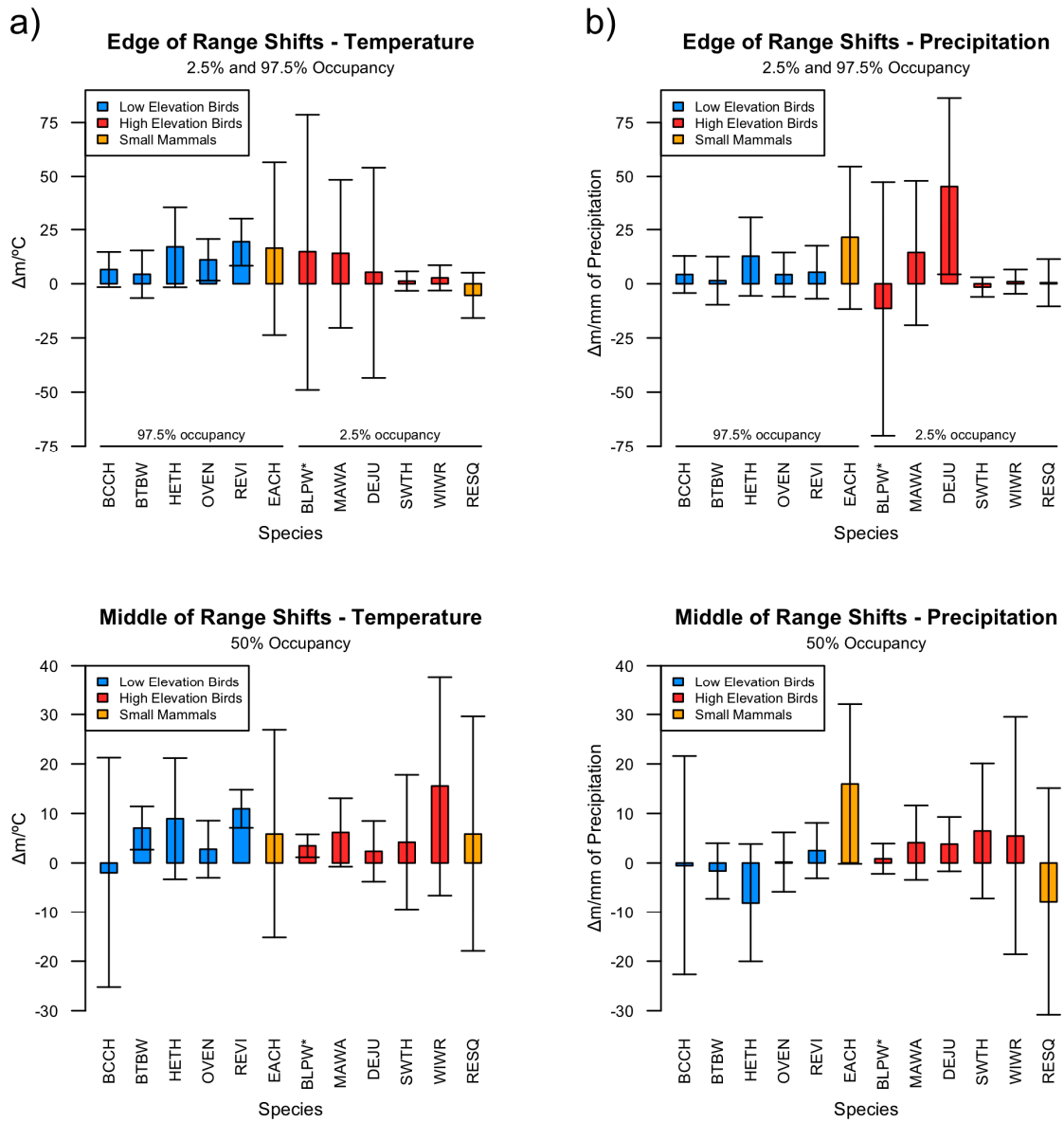


Figure S1. Elevational distribution shifts in target species in relation to (a) temperature and (b) precipitation within HBEF, New Hampshire. Asterisk (*) denotes usage of mean June temperature.

tedssdfstmtemperatures in place of mean May temperatures.