AN EXPERIMENTAL APPROACH TO UNDERSTANDING ELEVATION LIMITS IN THE NORTHERN GRAY-CHEEKED SALAMANDER, *PLETHODON MONTANUS*

NICHOLAS M. CARUSO, JEREMY F. JACOBS, AND LESLIE J. RISSLER

Figure S1. Starting and ending SVL by transplant elevation (A) and origin population (B) of the Northern Gray-cheeked Salamander (*Plethodon montanus*) from the Pisgah National Forest in western North Carolina, USA. Black points and lines show the change in SVL for each individual, while gray points represent individuals who did not survive to the end of the experiment.

Figure S2. Starting and ending mass by transplant elevation (A) and origin population (B) of the Northern Gray-cheeked Salamander (*Plethodon montanus*) from the Pisgah National Forest in western North Carolina, USA. Black points and lines show the change in mass for each individual, while gray points represent individuals who did not survive to the end of the experiment.
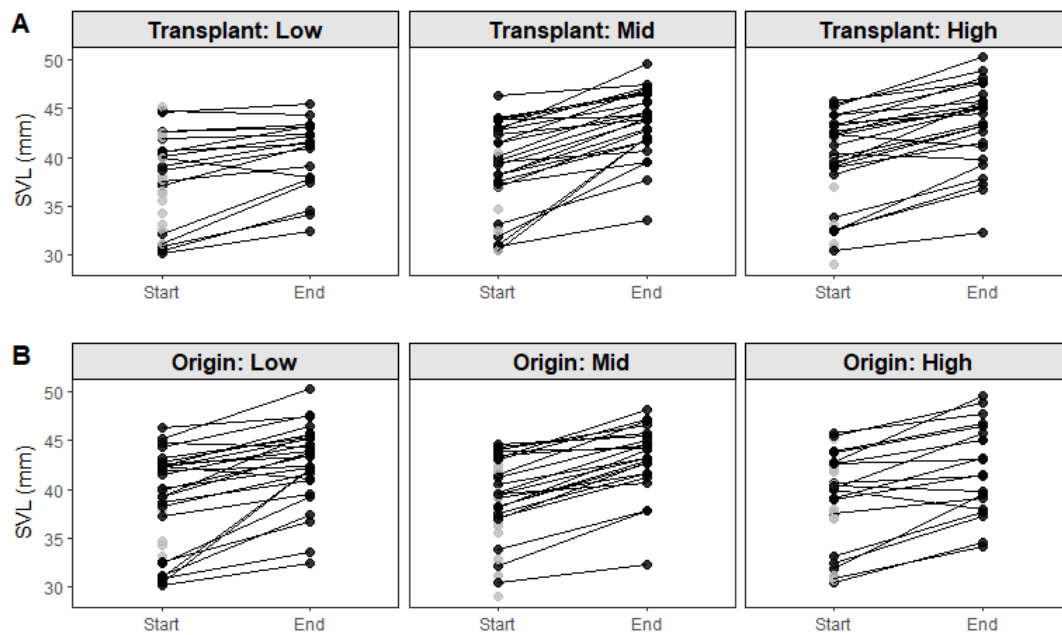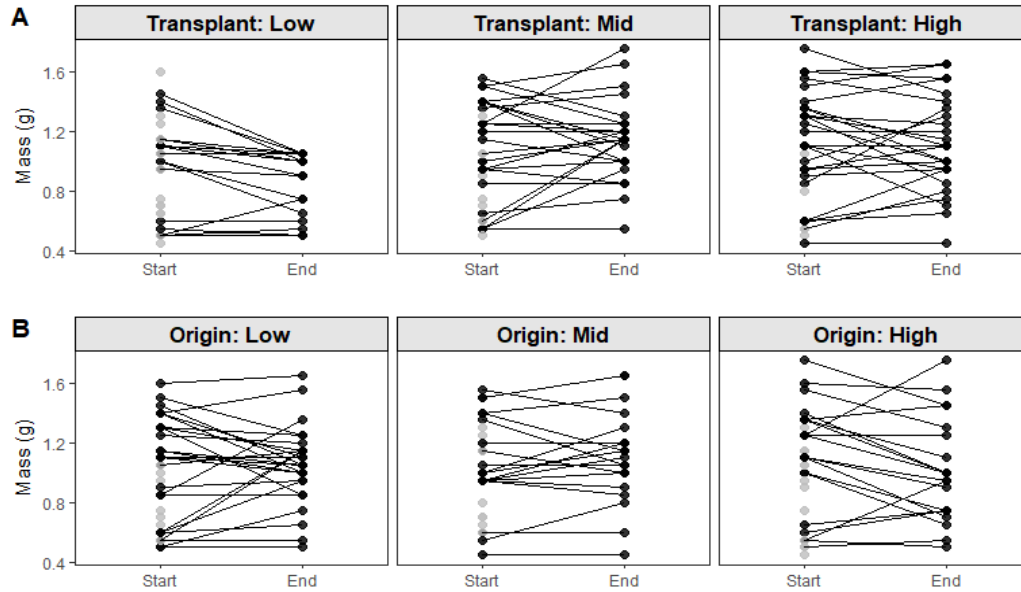

Figure S3. Starting and ending BCI by transplant elevation (A) and origin population (B) of the Northern Gray-cheeked Salamander (*Plethodon montanus*) from the Pisgah National Forest in western North Carolina, USA. Black points and lines show the change in BCI for each individual, while gray points represent individuals who did not survive to the end of the experiment.

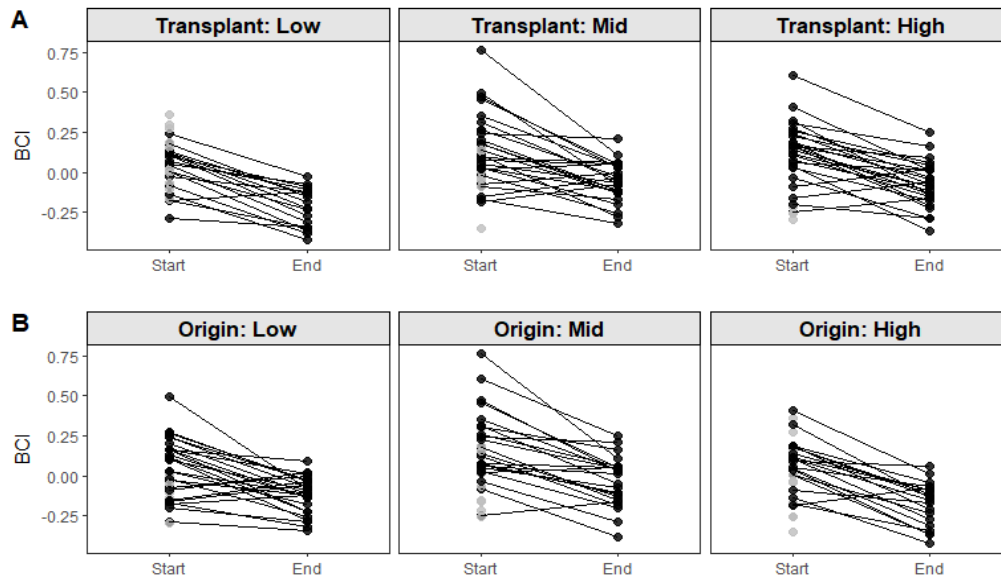**Figure S4.** Size distribution of survivors and nonsurvivors of the Northern Gray-cheeked Salamander (*Plethodon montanus*) from the Pisgah National Forest in western North Carolina, USA used in a reciprocal translocation experiment. Points below density distributions are actual sizes for each category with red lines denoting median, as well as lower and upper 95% quantiles of each size distribution.
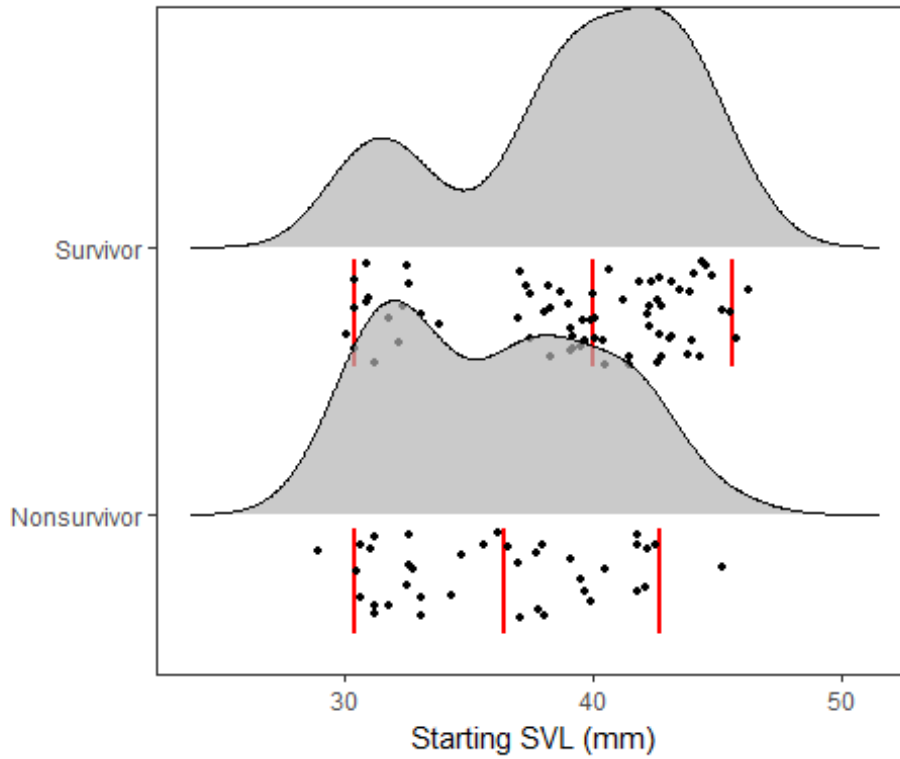
Table S1. Parameters, AICc and delta AICc for the mixed effects models for survival of the Northern Gray-cheeked Salamander (*Plethodon montanus*) from the Pisgah National Forest in western North Carolina, USA. Models with interactions (denoted with a "*") include all main effects associated with interactions. Bolded models were included in model averaging (i.e., Delta AICc ≤ 2).

Fixed Effects	k	AICc	Delta AICc
BCI*Transplant	**8**	**136.66**	**0.00**
Origin + BCI*Transplant	**10**	**137.22**	**0.55**
BCI + Origin	**6**	**137.82**	**1.16**
BCI	**4**	**138.07**	**1.41**
BCI + Transplant + Origin	**8**	**138.57**	**1.91**
BCI + Transplant	6	138.67	2.01
Origin*BCI + BCI*Transplant	12	140.69	4.03
BCI*Origin	8	141.05	4.39
Transplant + Origin*BCI	10	142.02	5.35
Transplant	5	145.58	8.91
BCI*Transplant + Transplant*Origin	14	145.64	8.98
Intercept Only	3	145.77	9.11
Transplant + Origin	7	146.90	10.24
Origin	5	147.01	10.35
BCI + Transplant*Origin	12	147.43	10.77
BCI*Transplant + Origin*BCI + Transplant*Origin	16	148.26	11.60
Origin*BCI + Transplant*Origin	14	151.04	14.38
Transplant*Origin	11	153.62	16.95

Table S2. Parameters, AICc and delta AICc for the mixed effects models for snout-to-vent length (SVL) change of the Northern Gray-cheeked Salamander (*Plethodon montanus*) from the Pisgah National Forest in western North Carolina, USA. Models with interactions (denoted with a "*") include all main effects associated with interactions. Bolded models were included in model averaging (i.e., Delta AICc ≤ 2).

Fixed Effects	k	AICc	Delta AICc
BCI + Transplant	**7**	**-829.74**	**0.00**
BCI	**5**	**-828.52**	**1.21**
Transplant + Origin*BCI	11	-827.10	2.63
BCI*Transplant	9	-826.45	3.28
Origin*BCI	9	-826.18	3.56
BCI + Transplant + Origin	9	-825.03	4.70
BCI + Origin	7	-824.28	5.45
Intercept Only	4	-823.12	6.61
Origin*BCI + BCI*Transplant	13	-822.20	7.53
Transplant	6	-822.06	7.67
Origin + BCI*Transplant	11	-821.86	7.88
Origin*BCI + Transplant*Origin	15	-819.42	10.31
Origin	6	-818.94	10.79
Transplant + Origin	8	-817.51	12.23
BCI + Transplant*Origin	13	-815.06	14.68
BCI*Transplant + Origin*BCI + Transplant*Origin	17	-813.62	16.12
BCI*Transplant + Transplant*Origin	15	-812.02	17.72
Transplant*Origin	12	-809.07	20.67
BCI*Transplant*Origin	21	-805.84	23.89

Table S3. Parameters, AICc and delta AICc for the mixed effects models for mass change of the Northern Gray-cheeked Salamander (*Plethodon montanus*) from the Pisgah National Forest in western North Carolina, USA. Models with interactions (denoted with a "*") include all main effects associated with interactions. Bolded models were included in model averaging (i.e., Delta AICc ≤ 2).

Fixed Effects	k	AICc	Delta AICc
Transplant + BCI*Origin	**11**	**-649.73**	**0.00**
BCI*Origin	**9**	**-648.78**	**0.96**
BCI + Transplant	7	-645.99	3.74
Origin + Transplant*BCI	13	-645.69	4.04
BCI + Origin + Transplant	9	-645.31	4.42
BCI + Origin	7	-644.70	5.03
BCI	5	-644.65	5.08
BCI*Origin + Origin*Transplant	15	-641.53	8.20
Transplant*BCI	9	-641.21	8.53
Origin + Transplant*BCI	11	-641.11	8.62
BCI + Origin*Transplant	13	-636.87	12.86
Intercept Only	4	-635.82	13.91
BCI*Origin + Transplant*BCI + Origin*Transplant	17	-635.50	14.24
Transplant	6	-634.31	15.43
Origin	6	-634.26	15.48
Origin + Transplant	8	-632.05	17.69
Transplant*BCI + Origin*Transplant	15	-631.77	17.96
Origin*Transplant	12	-626.40	23.33
BCI*Transplant*Origin	21	-624.34	25.39

Table S4. Parameters, AICc and delta AICc for the mixed effects models for male reproductive condition of the Northern Gray-cheeked Salamander (*Plethodon montanus*) from the Pisgah National Forest in western North Carolina, USA. Models with interactions (denoted with a "*") include all main effects associated with interactions. Bolded models were included in model averaging (i.e., Delta AICc ≤ 2).

Fixed Effects	k	AICc	Delta AICc
BCI	**3**	62.86	0.00
BCI + Transplant	5	67.50	4.64
BCI + Origin	5	67.94	5.08
BCI*Transplant	7	69.20	6.34
Intercept Only	2	71.66	8.80
Transplant	4	72.05	9.19
BCI + Origin + Transplant	7	74.38	11.52
Origin	4	74.72	11.86
BCI*Origin	7	74.97	12.11
Origin + BCI*Transplant	9	76.72	13.86
Origin + Transplant	6	77.62	14.76
Transplant + BCI*Origin	9	83.17	20.31
BCI*Transplant + BCI*Origin	11	88.18	25.32
BCI + Origin*Transplant	11	95.58	32.72
Origin*Transplant	10	96.34	33.48
BCI*Origin + Origin*Transplant	13	107.47	44.61
BCI*Transplant + Origin*Transplant	13	107.95	45.09
BCI*Transplant + BCI*Origin + Origin*Transplant	15	132.06	69.20
BCI*Transplant*Origin	18	214.48	151.62