SUPPLEMENTARY MATERIALS

Are Painted Turtles (Chrysemys picta) Resilient to the Potential Impact of Climate Change on Vitamin D via Overgrown Floating Vegetation?

Nicholas E. Topping *,† and Nicole Valenzuela *

Department of Ecology, Evolution, and Organismal Biology, Iowa State University, Ames, IA 50011, USA
* Correspondence: topping@iastate.edu (N.E.T.); nvalenzu@iastate.edu (N.V.)
† Current email: nicholas.topping@clarke.edu.

This file contains:
Supplementary Tables S1-S6
Supplementary Figure S1

Supplementary Table S1: Results from the ANOVA tests using untransformed vitamin D3 data, for the raw, relative, delta, and relative delta vitamin D3 values.

Full Model									Reduced Model (Main Effects Only)								
Untransformed Raw Vitamin D3																	
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**	**Factor**		**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	21.120	21.119	0.022	3.563	2.027	0.016	*	**Treatment**	1	25.379	25.379	0.022	3.527	2.040	0.017	*
Day	2	487.957	243.979	0.427	34.249	4.833	0.001	***	**Day**	2	487.957	243.979	0.427	33.907	4.870	0.001	***
FemaleID	42	299.195	7.124	0.262	1.996	2.346	0.012	*	**FemaleID**	42	302.211	7.196	0.264	1.981	2.387	0.009	**
Treatment:Day	2	11.119	5.560	0.010	0.780	0.944	0.189										
Residuals	62	221.296	3.569	0.194					**Residuals**	64	232.415	3.631	0.203				
Total	109	1143.062							**Total**	109	1143.062						
Relative Vitamin D3																	
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**		**Factor**		**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	37.312	37.312	0.001	0.150	-0.088	0.539		**Treatment**	1	37.312	37.312	0.001	0.150	-0.084	0.541	
Day	2	5237.567	2618.784	0.183	10.497	3.644	0.001	***	**Day**	2	5237.567	2618.784	0.183	10.500	3.653	0.001	***
FemaleID	42	10477.760	249.470	0.367	1.223	0.658	0.254		**FemaleID**	42	10475.140	249.408	0.366	1.244	0.720	0.242	
Treatment:Day	2	178.014	89.007	0.006	0.357	-0.128	0.556										
Residuals	62	12649.181	204.019	0.443					**Residuals**	64	12827.195	200.425	0.449				
Total	109	28582.592							**Total**	109	28582.592						
Delta Vitamin D3																	
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**		**Factor**		**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	27.353	27.353	0.027	3.603	2.030	0.014	*	**Treatment**	1	27.353	27.353	0.027	3.635	2.039	0.013	*
Day	2	387.972	193.986	0.385	25.553	4.878	0.001	***	**Day**	2	387.972	193.986	0.385	25.778	4.886	0.001	***
FemaleID	42	318.841	7.591	0.316	1.880	2.003	0.022	*	**FemaleID**	42	316.065	7.525	0.314	1.889	2.030	0.018	*
Treatment:Day	2	4.546	2.273	0.005	0.299	-0.044	0.507										
Residuals	62	250.354	4.038	0.248					**Residuals**	64	254.900	3.983	0.253				
Total	109	1007.597							**Total**	109	1007.597						
Delta Relative Vitamin D3																	
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**		**Factor**		**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	41.767	41.767	0.002	0.184	-0.124	0.568		**Treatment**	1	41.767	41.767	0.002	0.184	-0.118	0.564	
Day	2	4421.438	2210.719	0.169	9.728	3.482	0.001	***	**Day**	2	4421.438	2210.719	0.169	9.742	3.485	0.001	***
FemaleID	42	9544.209	227.243	0.365	1.190	0.564	0.271		**FemaleID**	42	9530.768	226.923	0.364	1.199	0.602	0.255	
Treatment:Day	2	268.615	134.307	0.010	0.591	0.297	0.396										
Residuals	62	11839.963	190.967	0.453					**Residuals**	64	12108.578	189.197	0.463				
Total	109	26158.511							**Total**	109	26158.511						

Significance (Sig): * < 0.05, ** < 0.01, * < 0.001.**

Supplementary Table S2: Results from the ANOVA tests using Box-Cox-transformed vitamin D3 data, for the raw, relative, delta, and relative delta vitamin D3 values.

Full Model									Reduced Model (Main Effects Only)								
Untransformed Vitamin D3																	
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**	**Factor**	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	1.85053	1.85053	0.00576	1.04656	0.98636	0.176		**Treatment**	1	1.85053	1.85053	0.00576	1.03696	1.01263	0.169	
Day	2	150.723	75.3614	0.46875	42.6202	5.06339	0.001	***	**Day**	2	150.723	75.3614	0.46875	42.2293	5.13445	0.001	***
FemaleID	42	74.2648	1.76821	0.23096	1.69874	1.81358	0.032		**FemaleID**	42	74.9521	1.78458	0.2331	1.61938	1.69731	0.044	*
Treatment:Day	2	5.99327	2.99664	0.01864	1.69473	1.73527	0.035	*									
Residuals	62	64.5355	1.0409	0.20071					**Residuals**	64	70.5288	1.10201	0.21935				
Total	109	321.542							**Total**	109	321.542						
Relative Vitamin D3																	
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**	**Factor**		**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	0.09095	0.09095	9.4E-05	0.01134	-1.3102	0.888		**Treatment**	1	0.09095	0.09095	9.4E-05	0.01136	-1.3037	0.884	
Day	2	241.839	120.919	0.25079	15.0795	4.32126	0.001	***	**Day**	2	241.839	120.919	0.25079	15.1032	4.32218	0.001	***
FemaleID	42	336.79	8.01882	0.34925	1.36236	1.09773	0.132		**FemaleID**	42	336.261	8.00622	0.3487	1.34855	1.0915	0.141	
Treatment:Day	2	15.0322	7.51612	0.01559	0.93731	0.86309	0.2										
Residuals	62	364.931	5.88598	0.37843					**Residuals**	64	379.963	5.93693	0.39402				
Total	109	964.32							**Total**	109	964.32						
Delta Vitamin D3																	
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**	**Factor**		**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	46.4782	46.4782	0.02409	3.22396	1.92565	0.029	*	**Treatment**	1	46.4782	46.4782	0.02409	3.24856	1.93282	0.025	
Day	2	745.22	372.61	0.38632	25.8462	4.86259	0.001	***	**Day**	2	745.22	372.61	0.38632	26.0434	4.86696	0.001	***
FemaleID	42	605.491	14.4165	0.31388	1.83726	1.88597	0.03	*	**FemaleID**	42	600.907	14.3073	0.31151	1.85482	1.9233	0.028	*
Treatment:Day	2	7.17345	3.58673	0.00372	0.24879	-0.2118	0.58										
Residuals	62	486.497	7.84672	0.2522					**Residuals**	64	493.67	7.71359	0.25592				
Total	109	1929.04							**Total**	109	1929.04						
Delta Relative Vitamin D3																	
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**		**Factor**		**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	67.758	67.758	0.00167	0.19218	-0.107	0.556		**Treatment**	1	67.758	67.758	0.00167	0.19245	-0.1009	0.554	
Day	2	6935.29	3467.64	0.17063	9.83503	3.51392	0.001	***	**Day**	2	6935.29	3467.64	0.17063	9.84919	3.51757	0.001	***
FemaleID	42	14808.4	352.581	0.36433	1.19107	0.56362	0.28		**FemaleID**	42	14787.1	352.074	0.36381	1.20088	0.60244	0.261	
Treatment:Day	2	410.331	205.165	0.0101	0.5819	0.28644	0.398										
Residuals	62	18353.2	296.02	0.45155					**Residuals**	64	18763.5	293.18	0.46164				
Total	109	40645.2							**Total**	109	40645.2						

Significance (Sig): * < 0.05, ** < 0.01, * < 0.001.**

Supplementary Table S3: Results from the ANCOVA tests using untransformed vitamin D3 data, for the raw, relative, delta, and relative delta vitamin D3 values, using female body size as a covariate.

	Full Model							Reduced Model (Main Effects Only)							
Untransformed Vitamin D3															
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**	**Factor**	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	21.12	21.119	0.0185	2.9601	1.9517	0.019	*	**Treatment**	1	21.12	21.119	0.0185	2.9366	1.9641	0.018	*
Day	2	481.63	240.81	0.4214	33.752	4.7763	0.001	***	**Day**	2	481.6	240.81	0.4214	33.485	4.8186	0.001	***
Size	1	2.15	2.146	0.0019	0.3008	0.2661	0.426		**Size**	1	2.13	2.126	0.0019	0.2957	0.228	0.425	
FemaleID	42	299.66	7.135	0.2622	1.9859	2.5818	0.007	**	**FemaleID**	42	302.1	7.192	0.2643	1.9675	2.5685	0.008	**
Treatment:Day	2	11.14	5.569	0.0097	0.7806	0.849	0.204										
Residuals	61	219.15	3.593	0.1917					**Residuals**	63	230.3	3.655	0.2015				
Total	109	1143							**Total**	109	1143						
Relative Vitamin D3															
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**	**Factor**	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	37.6	37.59	0.0013	0.1683	-0.047	0.515		**Treatment**	1	37.6	37.59	0.0013	0.1696	-0.04 0	0.513	
Day	2	5216.8	2608.4	0.1825	11.68	4.0675	0.001	***	**Day**	2	5217	2608.4	0.1825	11.767	4.097 4	0.001	***
Size	1	5.6	5.56	0.0002	0.0249	-0.997	0.816		**Size**	1	0.6	0.61	2E-05	0.0028	-1.572 6	0.927	
FemaleID	42	9379.8	223.33	0.3282	1.0775	0.3065	0.37		**FemaleID**	42	9310	221.67	0.3257	1.0888	0.336 4	0.368	
Treatment:Day	2	183	91.48	0.0064	0.4096	-0.018	0.523										
Residuals	61	12644	207.27	0.4424					**Residuals**	63	12827	203.6	0.4488				
Total	109	28583							**Total**	109	28583						
Delta Vitamin D3															
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**	**Factor**	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	27.15	27.154	0.027	3.5805	2.1625	0.006	**	**Treatment**	1	27.15	27.154	0.027	3.6121	2.174 8	0.006	**
Day	2	369.12	184.56	0.3663	24.336	4.6329	0.001	***	**Day**	2	369.1	184.56	0.3663	24.551	4.661 8	0.001	***
Size	1	0.31	0.307	0.0003	0.0405	-0.781	0.773		**Size**	1	0.24	0.243	0.0002	0.0324	-0.864 5	0.792	
FemaleID	42	318.52	7.584	0.3161	1.8501	1.9442	0.031	*	**FemaleID**	42	315.7	7.517	0.3134	1.8597	1.943 4	0.034	*
Treatment:Day	2	4.61	2.305	0.0046	0.3039	-0.074	0.545										
Residuals	61	250.05	4.099	0.2482					**Residuals**	63	254.7	4.042	0.2527				
Total	109	1007.6							**Total**	109	1008						
Delta Relative Vitamin D3															
Factor	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**	**Factor**	**DF**	**Sum Sq**	**Mean Sq**	**Rsq**	**F value**	**Z**	**Pr(> F)**	**Sig**
Treatment	1	68.4	68.38	0.0026	0.2973	0.191	0.448		**Treatment**	1	68.4	68.38	0.0026	0.2989	0.2013	0.449	
Day	2	4496.2	2248.1	0.1719	9.7732	3.5523	0.001	***	**Day**	2	4496	2248.1	0.1719	9.8259	3.5767	0.001	***
Size	1	121.1	121.05	0.0046	0.5262	0.5184	0.31		**Size**	1	80.3	80.27	0.0031	0.3508	0.2572	0.415	
FemaleID	42	9661.2	230.03	0.3693	1.1974	0.5333	0.289		**FemaleID**	42	9609	228.79	0.3674	1.1983	0.5401	0.285	
Treatment:Day	2	309.4	154.7	0.0118	0.6725	0.4967	0.315										
Residuals	61	11719	192.11	0.448					**Residuals**	63	12028	190.93	0.4598				
Total	109	26159							**Total**	109	26159						

Significance (Sig): * < 0.05, ** < 0.01, * < 0.001.**

Supplementary Table S4: Results from the ANCOVA tests using Box-Cox-transformed vitamin D3 data, for the raw, relative, delta, and relative delta vitamin D3 values, using female body size as a covariate.

Full Model

Untransformed Vitamin D3

Factor	DF	Sum Sq	Mean Sq	Rsq	F value	Z	Pr(> F)	Sig
Treatment	1	1.05	1.047	0.003	0.579	0.642	0.282	
Day	2	151.76	75.882	0.472	41.96	4.913	0.001	***
Size	1	2.03	2.031	0.006	1.123	1.137	0.133	
FemaleID	42	75.96	1.809	0.236	1.765	2.028	0.023	*
Treatment:Day	2	6.1	3.051	0.019	1.687	1.626	0.043	*
Residuals	61	62.5	1.025	0.194				
Total	109	321.54						

Relative Vitamin D3

Factor	DF	Sum Sq	Mean Sq	Rsq	F value	Z	Pr(> F)	Sig
Treatment	1	0.09	0.094	1E-04	0.013	-1.15	0.854	
Day	2	244.05	122.02	0.253	16.28	4.334	0.001	***
Size	1	6	6.002	0.006	0.801	0.775	0.239	
FemaleID	42	314.87	7.497	0.327	1.274	0.882	0.188	
Treatment:Day	2	13.51	6.754	0.014	0.901	0.795	0.209	
Residuals	61	358.93	5.884	0.372				
Total	109	964.32						

Delta Vitamin D3

Factor	DF	Sum Sq	Mean Sq	Rsq	F value	Z	Pr(> F)	Sig
Treatment	1	46.1	46.1	0.024	3.201	2.051	0.014	*
Day	2	710.21	355.1	0.368	24.65	4.606	0.001	***
Size	1	0.51	0.51	3E-04	0.035	-0.84	0.782	
FemaleID	42	604.94	14.4	0.314	1.808	1.825	0.037	*
Treatment:Day	2	7.29	3.64	0.004	0.253	-0.23	0.603	
Residuals	61	485.99	7.97	0.252				
Total	109	1929						

Delta Relative Vitamin D3

Factor	DF	Sum Sq	Mean Sq	Rsq	F value	Z	Pr(> F)	Sig
Treatment	1	107	106.8	0.003	0.3	0.193	0.45	
Day	2	7042	3521.1	0.173	9.875	3.574	0.001	***
Size	1	170	170.2	0.004	0.477	0.458	0.332	
FemaleID	42	14975	356.6	0.368	1.196	0.527	0.295	
Treatment:Day	2	470	235.1	0.012	0.659	0.473	0.32	
Residuals	61	18183	298.1	0.447				
Total	109	40645.2						

Reduced Model (Main Effects Only)

Untransformed Vitamin D3

Factor	DF	Sum Sq	Mean Sq	Rsq	F value	Z	Pr(> F)	Sig
Treatment	1	1.05	1.047	0.003	0.576	0.672	0.272	
Day	2	151.76	75.882	0.472	41.73	5.026	0.001	***
Size	1	1.92	1.923	0.006	1.058	1.042	0.156	
FemaleID	42	76.38	1.819	0.238	1.67	1.877	0.035	*
Residuals	63	68.61	1.089	0.213				
Total	109	321.54						

Relative Vitamin D3

Factor	DF	Sum Sq	Mean Sq	Rsq	F value	Z	Pr(> F)	Sig
Treatment	1	0.09	0.094	1E-04	0.013	-1.144	0.852	
Day	2	244.05	122.02	0.253	16.39	4.408	0.001	***
Size	1	7.53	7.526	0.008	1.011	0.933	0.194	
FemaleID	42	312.75	7.447	0.324	1.26	0.861	0.196	
Residuals	63	372.44	5.912	0.386				
Total	109	964.32						

Delta Vitamin D3

Factor	DF	Sum Sq	Mean Sq	Rsq	F value	Z	Pr(> F)	Sig
Treatment	1	46.1	46.1	0.024	3.226	2.061	0.013	*
Day	2	710.21	355.1	0.368	24.84	4.629	0.001	***
Size	1	0.4	0.4	2E-04	0.028	-0.944	0.813	
FemaleID	42	600.31	14.29	0.311	1.826	1.837	0.039	*
Residuals	63	493.27	7.83	0.256				
Total	109	1929						

Delta Relative Vitamin D3

Factor	DF	Sum Sq	Mean Sq	Rsq	F value	Z	Pr(> F)	Sig
Treatment	1	107	106.8	0.003	0.301	0.203	0.449	
Day	2	7042	3521.1	0.173	9.927	3.597	0.001	***
Size	1	110	110.4	0.003	0.311	0.183	0.45	
FemaleID	42	14897	354.7	0.367	1.198	0.536	0.296	
Residuals	63	18653	296.1	0.459				
Total	109	40645						

Significance (Sig): * < 0.05, ** < 0.01, * < 0.001.**

Supplementary Table S5: Original data used in this study

FemaleID	FemaleSize (gr)	Treatment	Day	Dilution Factor	RawVitD$_3$	VitD$_3$ relative	Delta VitD$_3$	Delta VitD$_3$ Relative
5	792.4	Clear	d00	2.853254	5.50001	15.692907	0.00001	0.00001
10	632.1	Clear	d00	1.7006617	8.80001	14.965833	0.00001	0.00001
19	478.9	Clear	d00	2.8486754	6.40001	18.231533	0.00001	0.00001
20	665.9	Clear	d00	2.0913405	5.60001	11.711517	0.00001	0.00001
27	537.6	Clear	d00	2.5798713	5.30001	13.673328	0.00001	0.00001
28	632.1	Clear	d00	3.6934553	9.10001	33.610454	0.00001	0.00001
33	491.9	Clear	d00	1.3079307	12.70001	16.610729	0.00001	0.00001
34	536.6	Clear	d00	1.6805992	8.90001	14.957343	0.00001	0.00001
36	569.6	Clear	d00	2.4226421	7.70001	18.654354	0.00001	0.00001
41	603.6	Clear	d00	2.6962062	12.30001	33.163347	0.00001	0.00001
46	755.2	Clear	d00	1.3121516	6.30001	8.2665652	0.00001	0.00001
57	703.2	Clear	d00	1.6987871	7.10001	12.061399	0.00001	0.00001
65	638.6	Clear	d00	2.6189217	6.40001	16.761109	0.00001	0.00001
73	525.2	Clear	d00	1.5250344	6.30001	9.6077267	0.00001	0.00001
81	775.8	Clear	d00	6.6479448	12.60001	83.764114	0.00001	0.00001
92	560.2	Clear	d00	2.8869881	8.50001	24.539409	0.00001	0.00001
97	844.4	Clear	d00	0.9605726	8.50001	8.1648767	0.00001	0.00001
103	722.2	Clear	d00	1.9243009	8.00001	15.394417	0.00001	0.00001
104	524.5	Clear	d00	1.5735083	5.30001	8.3396041	0.00001	0.00001
105	738.1	Clear	d00	2.6823092	7.00001	18.776174	0.00001	0.00001
115	337.1	Clear	d00	0.4566191	6.30001	2.8767103	0.00001	0.00001
7	635	Vegetation	d00	2.4003003	7.60001	18.242292	0.00001	0.00001
8	672.4	Vegetation	d00	2.3652888	6.40001	15.137858	0.00001	0.00001
9	635	Vegetation	d00	3.7123771	10.10001	37.495019	0.00001	0.00001
17	551.8	Vegetation	d00	2.2575366	12.90001	29.122232	0.00001	0.00001
18	674	Vegetation	d00	2.8369129	8.10001	22.979004	0.00001	0.00001
25	575.8	Vegetation	d00	3.6723267	7.70001	28.276925	0.00001	0.00001
29	618.9	Vegetation	d00	1.8754699	4.90001	9.1898124	0.00001	0.00001
32	633.8	Vegetation	d00	2.5496167	8.10001	20.651906	0.00001	0.00001
53	935.6	Vegetation	d00	2.5147039	14.90001	37.469098	0.00001	0.00001
61	527.9	Vegetation	d00	2.1563406	9.40001	20.269611	0.00001	0.00001
66	669.5	Vegetation	d00	2.1738649	8.60001	18.695248	0.00001	0.00001
74	889.8	Vegetation	d00	3.3159037	10.50001	34.816999	0.00001	0.00001
75	596.7	Vegetation	d00	2.274848	3.20001	7.2795237	0.00001	0.00001
78	633.3	Vegetation	d00	2.705151	9.40001	25.428429	0.00001	0.00001
85	474.1	Vegetation	d00	1.50359	6.70001	10.074063	0.00001	0.00001
89	761.9	Vegetation	d00	3.0012912	9.30001	27.912018	0.00001	0.00001
91	496.8	Vegetation	d00	2.1429333	5.60001	12.000436	0.00001	0.00001
94	598.3	Vegetation	d00	2.1011961	5.00001	10.505991	0.00001	0.00001
99	351.2	Vegetation	d00	2.399177	11.80001	28.310298	0.00001	0.00001
100	469.9	Vegetation	d00	4.0909527	8.40001	34.364013	0.00001	0.00001
102	370.6	Vegetation	d00	2.4636766	12.30001	30.303233	0.00001	0.00001
5	797.4	Clear	d30	3.3579887	5.70001	19.140545	0.20001	3.44764838
19	486.3	Clear	d30	2.7015427	8.10001	21.882506	1.70001	3.65098303
20	674.1	Clear	d30	6.2511578	9.40001	58.760894	3.80001	47.04938699
27	565.5	Clear	d30	6.7587549	7.60001	51.366547	2.30001	37.69322923
33	511.8	Clear	d30	3.2826342	7.90001	25.93282	-4.79999	9.32210047
36	600.5	Clear	d30	2.5545271	6.00001	15.327173	-1.69999	-3.32717109
46	761.5	Clear	d30	5.953965	7.40001	44.059351	1.10001	35.79279548
53	927.5	Clear	d30	6.4188086	5.80001	37.2291	-9.09999	-0.23998841
57	722.7	Clear	d30	4.0874786	4.30001	17.576168	-2.79999	5.51477913
65	648.1	Clear	d30	4.2720986	6.50001	27.768651	0.10001	11.00755172
73	547.7	Clear	d30	1.5697118	6.00001	9.4182808	-0.29999	-0.189435899
81	804.5	Clear	d30	7.1099276	10.00001	71.099286	-2.59999	-12.6648185
92	567	Clear	d30	2.6605107	4.60001	12.238359	-3.89999	-12.30103953
97	860.1	Clear	d30	2.0641628	11.10001	22.912217	2.60001	14.74734985
103	718.5	Clear	d30	7.2305746	6.90001	49.890975	-1.09999	34.49656755

104	516.6	Clear	d30	2.3362285	4.30001	10.045793	-0.99999	1.706198397
105	770.4	Clear	d30	4.8652569	5.30001	25.785872	-1.69999	7.00970747
115	349.6	Clear	d30	1.8504442	6.50001	12.027897	0.20001	9.151196695
7	663.6	Vegetation	d30	3.2609987	7.80001	25.4358	0.20001	7.19351789
8	657.7	Vegetation	d30	1.9235857	4.70001	9.0408627	-1.69999	-6.096985668
9	595.6	Vegetation	d30	2.5378139	4.00001	10.151266	-6.09999	-27.34374303
18	710.5	Vegetation	d30	1.4304795	5.80001	8.296791	-2.29999	-14.68220323
25	574	Vegetation	d30	1.9052585	3.40001	6.4778889	-4.29999	-21.79902645
32	638.3	Vegetation	d30	3.4064319	5.60001	19.076029	-2.49999	-1.57586674
61	535.2	Vegetation	d30	6.6359432	6.80001	45.124424	-2.59999	24.8548224
74	876	Vegetation	d30	5.0978977	7.90001	40.273402	-2.59999	30.66568517
75	616.3	Vegetation	d30	8.4121647	11.10001	93.375038	7.90001	58.558049
85	496.5	Vegetation	d30	2.3096404	5.70001	13.16496	-0.99999	3.09090702
91	524.1	Vegetation	d30	2.6693708	7.90001	21.08804	2.30001	9.0876133
94	626.8	Vegetation	d30	1.7803186	8.50001	15.132718	3.50001	4.62673773
99	356.1	Vegetation	d30	2.1485512	10.00001	21.485522	-1.79999	-6.82476607
100	492.1	Vegetation	d30	2.9364289	7.30001	21.435941	-1.09999	-12.92806202
102	378	Vegetation	d30	4.5593648	11.30001	51.520832	-0.99999	21.21760901
117	784.3	Vegetation	d30	5.98948	6.00001	35.93689	0.00001	0.00001
5	796.2	Clear	d60	1.6793032	2.40001	4.0303376	-3.09999	-11.66255946
19	476.3	Clear	d60	1.8472988	5.50001	10.160154	-0.89999	-8.07136912
20	665	Clear	d60	6.6330913	2.80001	18.572666	-2.79999	6.86115899
27	564.7	Clear	d60	4.4361675	2.70001	11.977662	-2.59999	-1.69565536
33	498.2	Clear	d60	3.4676508	5.40001	18.725324	-7.29999	2.11460491
36	590.1	Clear	d60	1.9809077	2.80001	5.5465517	-4.89999	-13.10779211
46	759.4	Clear	d60	4.3696322	5.60001	24.46995	-0.69999	16.20339524
53	909	Clear	d60	3.7294913	5.70001	21.25811	-9.19999	-16.21097798
57	701.6	Clear	d60	1.6202003	0.00001	1.62E-05	-4.3	-17.5761516
65	646.4	Clear	d60	3.6572922	3.70001	13.531991	-2.69999	-3.22910762
73	542.1	Clear	d60	1.4369716	2.70001	3.8798333	-3.59999	-5.727883424
81	820.8	Clear	d60	1.7389434	2.90001	5.0429459	-9.69999	-78.72115825
92	569.7	Clear	d60	6.7451541	2.80001	18.886442	-5.69999	-5.65295713
97	874.5	Clear	d60	6.6211281	2.90001	19.201282	-5.59999	11.03641488
103	705.5	Clear	d60	2.2253014	3.00001	6.6759141	-4.99999	-8.718493326
104	512.2	Clear	d60	1.9037415	2.30001	4.3786155	-2.99999	-3.960978604
105	775.9	Clear	d60	1.999196	0.00001	2.00E-05	-5.3	-25.78585182
115	343.6	Clear	d60	3.1239197	3.40001	10.621337	-2.89999	7.744636775
7	656.6	Vegetation	d60	6.007425	3.40001	20.425255	-4.19999	2.18297306
8	633.9	Vegetation	d60	4.3340569	0.00001	4.33E-05	-4.7	-9.040819381
9	586.8	Vegetation	d60	4.0029655	0.00001	4.00E-05	-4	-10.15122576
18	699.2	Vegetation	d60	7.7055394	2.70001	20.804966	-5.39999	-2.17402797
25	568	Vegetation	d60	5.9333711	0.00001	5.93E-05	-3.4	-6.477829521
32	624	Vegetation	d60	4.4649029	7.40001	33.040292	-0.69999	12.38839604
61	529.7	Vegetation	d60	5.6769928	2.10001	11.921695	-7.29999	-8.34790628
74	874.6	Vegetation	d60	3.3091907	3.30001	10.920339	-7.19999	-23.89664995
75	647.2	Vegetation	d60	5.1609371	3.30001	17.031102	0.10001	9.751588722
85	494	Vegetation	d60	2.2703795	0.00001	2.27E-05	-5.7	-13.16493763
91	529.6	Vegetation	d60	5.0889649	0.00001	5.09E-05	-7.9	-21.08798868
94	628.4	Vegetation	d60	5.9393854	2.20001	13.066658	-2.79999	2.56067724
99	377.7	Vegetation	d60	6.5707425	2.80001	18.398089	-8.99999	-9.91219902
100	502.8	Vegetation	d60	1.9230434	3.10001	5.9614446	-5.29999	-28.40255824
102	361.5	Vegetation	d60	2.419745	1.60001	3.871602	-10.69999	-26.43162082
117	805.9	Vegetation	d60	6.1091579	3.40001	20.771147	0.00001	0.00001

Supplementary Table S6. Results of ANOVA and pairwise tests of differences in temperature and sunlight in the 2023 outdoor experiment. Bold font denotes significant p-values. Because the datalogger in the veg-NW quadrant fell at day 8, additional ANOVA tests were conducted separately for days 1-7 and days 8-12.

ANOVA Sunlight

Factor	DF	Sum Sq	Mean Sq	F value	Pr(>F)
Treatment	1	1.174×10^{11}	1.174×10^{11}	1493.57	**2×10^{-16}**
Quadrant	2	6.463×10^{9}	3.232×10^{9}	41.12	**2×10^{-16}**
Residuals	13820	1.086×10^{12}	7.86×10^{7}		

Pairwise Comparisons - Sunlight

	Clear-NE	Veg-NW	Veg-SE
Veg-NW	**2×10^{-16}**		
Veg-SE	**2×10^{-16}**	0.13	
Clear-SW	**2×10^{-16}**	**2×10^{-16}**	**2×10^{-16}**

ANOVA Temperature

Factor	DF	Sum Sq	Mean Sq	F value	Pr(>F)
Treatment	1	181	181.2	16.26	**5.55×10^{-5}**
Quadrant	2	94	46.8	4.2	**0.015**
Residuals	13820	153994	11.14		

Pairwise Comparisons - Temperature

	Clear-NE	Veg-NW	Veg-SE
Veg-NW	**0.0051**		
Veg-SE	1	0.0798	
Clear-SW	0.7921	**7.8×10^{-6}**	0.1078

ANOVA Temperature (Days 1-7)

Factor	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Treatment	1	20	20.348	2.625	0.105
Quadrant	2	6	7.75	0.367	0.693
Residuals	8060	62469			

ANOVA Temperature (Days 8-12)

Factor	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Treatment	1	500	499.8	80.7	**2×10^{-16}**
Quadrant	2	179	89.7	14.37	**6×10^{-7}**
Residuals	4604	27841	6.2		

Supplementary Figure S1: Overall and daily average solar radiation (A, C) and temperature (B, D) per quadrant during the 2023 experiment. Violin plots depict the mean (dot) and 95% confidence intervals (error bars), while the width of each violin represents the density of data points for a given value. The datalogger in the veg-NW quadrant fell at day 8, likely explaining the warmer overall temperature recorded in that quadrant.

