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2021

## Dataset for Response of the Invasive *Alliaria Petiolata* to Extreme Temperatures and Drought

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### Recommended Citation

Anderson, Roger C.; Anderson, Rebecca; Bauer, Jonathan T.; Loebach, Christopher; Mullarkey, Alicia; and Engelhardt, Megan, "Dataset for Response of the Invasive *Alliaria Petiolata* to Extreme Temperatures and Drought" (2021). *Faculty Publications – Biological Sciences*. 31.  
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# SUPPORTING INFORMATION

## Response of the invasive *Alliaria petiolata* to extreme temperatures and drought

Roger C. Anderson, M. Rebecca Anderson, Jonathan T. Bauer, Christopher Loebach, Alicia Mullarkey,  
and Megan Engelhardt

### Ecosphere

### Appendix S1: Fig. S1

Data is used to generate Fig. S1, which includes densities of rosettes and mature plants from  
2004 -2014

**/\*Data are rosettes, plotid (plot identification), counts, and quadrats. There are two  
woods each with two blocks. Quadno are quadrat numbers, numbers 1-11 indicate  
sample years from 2004-2014. Codes are SAS for PROC GLIMMIX.\*/**

Data rostrent;

Input plotid woods block quadno @;

do i=1 to 11; /\*2004-2014\*/

input time count @@;

count1 = (count + 1);

output;

end;

datalines;

1	1	1	1	1	1	2	6	3	0	4	8	5	1	6	0	7	0	8	0	9	0	10	7	11	0
2	1	1	7	1	2	2	0	3	0	4	7	5	2	6	0	7	1	8	0	9	0	10	6	11	1
3	1	1	9	1	1	2	10	3	0	4	10	5	4	6	0	7	0	8	0	9	0	10	1	11	0
4	1	1	10	1	0	2	4	3	0	4	4	5	0	6	0	7	0	8	0	9	0	10	0	11	1

5	1	1	15	1	1	2	4	3	0	4	4	5	4	6	0	7	0	8	1	9	0	10	10	11	0
6	1	1	17	1	0	2	14	3	0	4	11	5	2	6	0	7	0	8	0	9	0	10	5	11	0
7	1	1	21	1	5	2	7	3	0	4	22	5	2	6	0	7	0	8	1	9	0	10	4	11	3
8	1	1	23	1	0	2	4	3	0	4	7	5	5	6	0	7	0	8	0	9	0	10	4	11	0
9	1	1	26	1	6	2	13	3	0	4	10	5	4	6	0	7	1	8	0	9	0	10	15	11	0
10	1	1	30	1	3	2	6	3	0	4	9	5	6	6	0	7	0	8	1	9	0	10	16	11	2
11	1	1	31	1	0	2	11	3	0	4	10	5	4	6	0	7	0	8	0	9	0	10	4	11	0
12	1	1	36	1	2	2	11	3	0	4	4	5	0	6	1	7	0	8	4	9	0	10	20	11	0
13	1	1	42	1	0	2	0	3	0	4	5	5	0	6	0	7	0	8	0	9	0	10	1	11	0
14	1	1	44	1	1	2	17	3	0	4	3	5	6	6	0	7	4	8	0	9	0	10	44	11	1
15	1	1	47	1	0	2	6	3	0	4	2	5	7	6	0	7	0	8	1	9	0	10	10	11	0
16	1	1	48	1	1	2	6	3	0	4	7	5	4	6	0	7	0	8	0	9	0	10	5	11	4
17	1	1	53	1	0	2	7	3	0	4	7	5	7	6	2	7	0	8	6	9	0	10	17	11	4
18	1	1	56	1	2	2	11	3	0	4	5	5	2	6	0	7	0	8	0	9	0	10	15	11	0
19	1	1	57	1	0	2	6	3	0	4	3	5	9	6	0	7	0	8	0	9	0	10	4	11	0
20	1	1	60	1	1	2	11	3	0	4	11	5	0	6	1	7	0	8	0	9	0	10	7	11	2
21	1	2	1	1	14	2	6	3	6	4	5	5	19	6	0	7	0	8	3	9	0	10	12	11	6
22	1	2	7	1	1	2	11	3	0	4	5	5	8	6	2	7	0	8	1	9	0	10	5	11	0
23	1	2	9	1	27	2	8	3	0	4	2	5	5	6	0	7	2	8	5	9	1	10	0	11	10
24	1	2	10	1	16	2	11	3	0	4	16	5	9	6	6	7	0	8	3	9	0	10	0	11	2
25	1	2	15	1	0	2	13	3	2	4	3	5	20	6	1	7	0	8	1	9	0	10	1	11	11
26	1	2	17	1	3	2	6	3	0	4	3	5	3	6	2	7	0	8	1	9	0	10	0	11	2
27	1	2	21	1	1	2	0	3	0	4	5	5	6	6	0	7	2	8	0	9	0	10	2	11	0
28	1	2	23	1	7	2	7	3	0	4	0	5	6	6	0	7	0	8	1	9	0	10	0	11	2
29	1	2	26	1	0	2	4	3	1	4	8	5	19	6	0	7	1	8	3	9	2	10	17	11	2
30	1	2	30	1	0	2	1	3	0	4	9	5	10	6	13	7	1	8	1	9	0	10	17	11	9
31	1	2	31	1	0	2	0	3	0	4	16	5	9	6	0	7	1	8	8	9	0	10	5	11	0
32	1	2	36	1	5	2	2	3	0	4	2	5	3	6	0	7	0	8	13	9	2	10	9	11	1
33	1	2	42	1	3	2	17	3	0	4	3	5	0	6	1	7	0	8	1	9	0	10	13	11	6
34	1	2	44	1	0	2	4	3	0	4	1	5	4	6	4	7	0	8	0	9	0	10	6	11	0


35	1	2	47	1	0	2	36	3	1	4	8	5	0	6	3	7	0	8	1	9	0	10	0	11	2
36	1	2	48	1	3	2	2	3	1	4	2	5	3	6	2	7	0	8	1	9	0	10	1	11	11
37	1	2	53	1	0	2	4	3	0	4	17	5	8	6	16	7	0	8	27	9	0	10	11	11	1
38	1	2	56	1	3	2	7	3	0	4	11	5	3	6	2	7	1	8	0	9	0	10	0	11	1
39	1	2	57	1	4	2	27	3	0	4	1	5	6	6	1	7	1	8	3	9	0	10	20	11	7
40	1	2	60	1	0	2	1	3	.	4	13	5	20	6	4	7	0	8	0	9	0	10	0	11	0
41	2	3	1	1	1	2	1	3	0	4	2	5	0	6	22	7	1	8	0	9	0	10	0	11	2
42	2	3	7	1	0	2	23	3	1	4	4	5	4	6	0	7	0	8	0	9	0	10	0	11	0
43	2	3	9	1	7	2	18	3	0	4	9	5	1	6	.	7	.	8	.	9	.	10	1	11	0
44	2	3	10	1	7	2	3	3	0	4	18	5	10	6	5	7	0	8	0	9	0	10	0	11	.
45	2	3	15	1	0	2	0	3	0	4	4	5	0	6	0	7	0	8	3	9	1	10	0	11	1
46	2	3	17	1	3	2	12	3	1	4	6	5	4	6	1	7	1	8	2	9	1	10	0	11	0
47	2	3	21	1	3	2	15	3	1	4	3	5	1	6	1	7	0	8	1	9	0	10	0	11	.
48	2	3	23	1	1	2	22	3	0	4	10	5	8	6	0	7	0	8	4	9	0	10	0	11	0
49	2	3	26	1	1	2	27	3	1	4	8	5	4	6	1	7	0	8	0	9	0	10	1	11	0
50	2	3	30	1	2	2	8	3	1	4	8	5	6	6	0	7	0	8	0	9	0	10	0	11	0
51	2	3	31	1	5	2	13	3	4	4	6	5	8	6	1	7	2	8	7	9	1	10	1	11	0
52	2	3	36	1	0	2	31	3	0	4	11	5	13	6	0	7	0	8	9	9	0	10	5	11	1
53	2	3	42	1	1	2	5	3	2	4	10	5	17	6	1	7	0	8	4	9	0	10	0	11	2
54	2	3	44	1	1	2	16	3	0	4	8	5	8	6	2	7	0	8	5	9	0	10	0	11	0
55	2	3	47	1	0	2	14	3	0	4	2	5	0	6	0	7	0	8	1	9	0	10	0	11	0
56	2	3	48	1	4	2	9	3	0	4	12	5	6	6	0	7	0	8	1	9	1	10	1	11	2
57	2	3	53	1	2	2	18	3	3	4	2	5	1	6	0	7	0	8	2	9	0	10	0	11	0
58	2	3	56	1	0	2	14	3	0	4	5	5	4	6	0	7	0	8	0	9	0	10	3	11	0
59	2	3	57	1	1	2	9	3	0	4	2	5	5	6	0	7	0	8	0	9	0	10	6	11	17
60	2	3	60	1	0	2	32	3	0	4	1	5	1	6	3	7	0	8	2	9	0	10	3	11	1
61	2	4	3	1	0	2	26	3	0	4	8	5	11	6	3	7	0	8	5	9	0	10	0	11	0
62	2	4	4	1	3	2	18	3	3	4	4	5	9	6	0	7	1	8	6	9	0	10	8	11	2
63	2	4	6	1	1	2	19	3	0	4	8	5	11	6	3	7	0	8	2	9	0	10	2	11	7
64	2	4	12	1	1	2	13	3	0	4	7	5	3	6	0	7	1	8	4	9	0	10	2	11	0

65	2	4	13	1	0	2	5	3	0	4	2	5	4	6	0	7	0	8	1	9	0	10	4	11	11
66	2	4	15	1	1	2	5	3	0	4	1	5	5	6	0	7	0	8	0	9	1	10	0	11	0
67	2	4	19	1	0	2	5	3	0	4	9	5	7	6	0	7	0	8	2	9	1	10	10	11	4
68	2	4	21	1	4	2	2	3	0	4	10	5	8	6	2	7	0	8	0	9	1	10	10	11	9
69	2	4	26	1	2	2	0	3	2	4	3	5	2	6	0	7	2	8	0	9	0	10	3	11	3
70	2	4	27	1	1	2	3	3	1	4	6	5	11	6	1	7	0	8	0	9	0	10	2	11	0
71	2	4	31	1	2	2	29	3	0	4	5	5	0	6	0	7	0	8	0	9	2	10	1	11	2
72	2	4	32	1	4	2	22	3	1	4	0	5	8	6	0	7	0	8	0	9	0	10	0	11	11
73	2	4	37	1	5	2	1	3	0	4	2	5	5	6	1	7	0	8	1	9	0	10	12	11	1
74	2	4	43	1	6	2	7	3	2	4	1	5	2	6	2	7	0	8	0	9	0	10	4	11	2
75	2	4	45	1	2	2	2	3	0	4	3	5	2	6	1	7	2	8	3	9	0	10	7	11	2
76	2	4	48	1	0	2	21	3	1	4	4	5	3	6	1	7	2	8	0	9	0	10	0	11	1
77	2	4	49	1	2	2	38	3	1	4	16	5	4	6	5	7	3	8	8	9	0	10	0	11	0
78	2	4	54	1	0	2	18	3	0	4	1	5	.	6	.	7	.	8	.	9	.	10	.	11	.
79	2	4	55	1	1	2	18	3	1	4	5	5	1	6	0	7	3	8	2	9	3	10	1	11	13
80	2	4	51	1	0	2	7	3	3	4	2	5	.	6	.	7	.	8	.	9	.	10	.	11	.

;

```
ods html close; /* close previous */
ods html; /* open new */;
ods html;
ods graphics on ;
proc glimmix data = rostrcnt;
class plotid block time;
model count1 = time /dist = poisson htype=3 ;
Random block /subject = plotid type=ar(1) ;
covtest glm / classical ;
```

```
*output out = Residuals
*      pred    = Pred
*      resraw  = Resraw
*      reschi  = Reschi
*      resdev  = Resdev
*      stdreschi = Stdreschi
*      stdresdev = Stdresdev
*      reslik  = Reslik;
Lsmeans time/ilink pdiff adjust = tukey;
*proc sort;
*by time;
*proc means n mean std stderr min max;
*by time;
*var count;
run;
proc sort;
by time;
proc means n mean std stderr min max;
by time;
var count;
run;
```



**/\*Data are mature plants, plotid, counts, quadrats. There are two woods each with two blocks. Quadno are quadrat numbers, numbers 1-11 indicate sample years from 2004-2014.**

**Codes are SAS for PROC GLIMMIX.\*/**

Data maturplt;

Input plotid woods block quadno @;

do i=1 to 11;

input time count @@;

count1 = (count+1);

output;

end;

datalines;

1	1	1	1	1	0	2	0	3	14	4	0	5	0	6	0	7	0	8	0	9	1	10	0	11	1
2	1	1	7	1	2	2	0	3	1	4	0	5	5	6	0	7	0	8	0	9	3	10	0	11	0
3	1	1	9	1	8	2	0	3	22	4	0	5	0	6	0	7	0	8	0	9	1	10	.	11	0
4	1	1	10	1	1	2	0	3	7	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	0
5	1	1	15	1	0	2	0	3	14	4	0	5	0	6	0	7	1	8	0	9	8	10	0	11	1
6	1	1	17	1	5	2	0	3	28	4	0	5	0	6	0	7	0	8	0	9	1	10	0	11	1
7	1	1	21	1	3	2	0	3	11	4	0	5	0	6	0	7	0	8	0	9	1	10	0	11	0
8	1	1	23	1	1	2	0	3	11	4	0	5	2	6	0	7	0	8	0	9	0	10	0	11	1
9	1	1	26	1	5	2	0	3	24	4	0	5	1	6	0	7	0	8	0	9	2	10	0	11	0
10	1	1	30	1	1	2	0	3	18	4	0	5	0	6	1	7	0	8	0	9	13	10	0	11	0
11	1	1	31	1	7	2	0	3	13	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	2
12	1	1	36	1	1	2	0	3	8	4	0	5	1	6	3	7	0	8	0	9	3	10	0	11	1
13	1	1	42	1	0	2	0	3	.	4	0	5	2	6	0	7	1	8	0	9	0	10	0	11	1
14	1	1	44	1	5	2	0	3	24	4	0	5	1	6	1	7	0	8	0	9	4	10	0	11	4
15	1	1	47	1	9	2	0	3	15	4	0	5	0	6	0	7	1	8	0	9	2	10	0	11	0
16	1	1	48	1	2	2	0	3	26	4	0	5	0	6	2	7	0	8	0	9	1	10	1	11	0



17	1	1	53	1	1	2	0	3	22	4	0	5	0	6	0	7	1	8	0	9	1	10	1	11	0
18	1	1	56	1	9	2	0	3	15	4	0	5	2	6	0	7	1	8	0	9	0	10	0	11	0
19	1	1	57	1	6	2	0	3	20	4	0	5	0	6	0	7	0	8	0	9	1	10	0	11	0
20	1	1	60	1	3	2	0	3	8	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	0
21	1	2	1	1	0	2	3	3	5	4	0	5	1	6	0	7	1	8	0	9	3	10	0	11	0
22	1	2	7	1	3	2	0	3	9	4	0	5	0	6	0	7	0	8	0	9	1	10	0	11	0
23	1	2	9	1	0	2	0	3	12	4	0	5	0	6	1	7	0	8	0	9	1	10	1	11	0
24	1	2	10	1	0	2	1	3	15	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	0
25	1	2	15	1	3	2	0	3	18	4	0	5	0	6	0	7	3	8	1	9	4	10	1	11	0
26	1	2	17	1	4	2	0	3	15	4	0	5	0	6	0	7	1	8	0	9	1	10	0	11	0
27	1	2	21	1	0	2	0	3	0	4	1	5	2	6	1	7	0	8	0	9	2	10	0	11	0
28	1	2	23	1	0	2	1	3	24	4	0	5	0	6	0	7	0	8	0	9	3	10	0	11	0
29	1	2	26	1	3	2	0	3	33	4	0	5	0	6	0	7	0	8	0	9	1	10	0	11	0
30	1	2	30	1	0	2	0	3	4	4	0	5	2	6	0	7	0	8	0	9	8	10	0	11	0
31	1	2	31	1	0	2	0	3	3	4	0	5	0	6	0	7	2	8	0	9	0	10	0	11	0
32	1	2	36	1	0	2	0	3	10	4	0	5	0	6	1	7	0	8	1	9	4	10	1	11	0
33	1	2	42	1	1	2	2	3	27	4	0	5	2	6	0	7	0	8	0	9	0	10	0	11	0
34	1	2	44	1	1	2	0	3	9	4	0	5	4	6	0	7	0	8	0	9	1	10	0	11	0
35	1	2	47	1	11	2	0	3	18	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	0
36	1	2	48	1	0	2	2	3	4	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	0
37	1	2	53	1	3	2	0	3	25	4	0	5	2	6	0	7	3	8	0	9	2	10	1	11	0
38	1	2	56	1	2	2	0	3	15	4	0	5	1	6	1	7	1	8	0	9	0	10	0	11	0
39	1	2	57	1	16	2	0	3	17	4	0	5	1	6	0	7	2	8	0	9	0	10	0	11	0
40	1	2	60	1	0	2	0	3	.	4	0	5	0	6	0	7	0	8	0	9	1	10	0	11	0
41	2	3	1	1	0	2	0	3	3	4	0	5	3	6	0	7	0	8	0	9	0	10	1	11	0
42	2	3	7	1	7	2	0	3	18	4	0	5	0	6	0	7	1	8	0	9	0	10	0	11	0
43	2	3	9	1	1	2	0	3	9	4	0	5	0	6	.	7	.	8	.	9	.	10	0	11	0
44	2	3	10	1	1	2	0	3	4	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	.
45	2	3	15	1	0	2	0	3	3	4	0	5	1	6	0	7	0	8	0	9	0	10	1	11	0
46	2	3	17	1	5	2	0	3	12	4	0	5	1	6	0	7	0	8	0	9	1	10	0	11	0

47	2	3	21	1	5	2	1	3	8	4	0	5	2	6	0	7	0	8	0	9	0	10	0	11	.
48	2	3	23	1	7	2	0	3	23	4	0	5	0	6	1	7	0	8	0	9	0	10	0	11	0
49	2	3	26	1	4	2	0	3	7	4	0	5	1	6	0	7	0	8	0	9	0	10	0	11	0
50	2	3	30	1	5	2	0	3	1	4	0	5	0	6	0	7	2	8	0	9	1	10	0	11	0
51	2	3	31	1	6	2	0	3	8	4	0	5	0	6	0	7	4	8	0	9	0	10	3	11	0
52	2	3	36	1	24	2	0	3	16	4	0	5	0	6	0	7	4	8	0	9	0	10	0	11	0
53	2	3	42	1	6	2	0	3	20	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	0
54	2	3	44	1	9	2	0	3	18	4	0	5	1	6	0	7	2	8	0	9	0	10	0	11	0
55	2	3	47	1	4	2	0	3	12	4	0	5	1	6	0	7	0	8	0	9	0	10	1	11	0
56	2	3	48	1	17	2	0	3	12	4	0	5	0	6	0	7	3	8	0	9	0	10	1	11	0
57	2	3	53	1	9	2	0	3	2	4	0	5	1	6	0	7	0	8	0	9	0	10	0	11	0
58	2	3	56	1	0	2	0	3	18	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	0
59	2	3	57	1	4	2	0	3	10	4	0	5	0	6	1	7	0	8	0	9	0	10	1	11	0
60	2	3	60	1	11	2	0	3	10	4	0	5	2	6	0	7	0	8	0	9	2	10	4	11	0
61	2	4	3	1	9	2	0	3	13	4	0	5	0	6	2	7	1	8	0	9	0	10	0	11	0
62	2	4	4	1	6	2	0	3	14	4	0	5	0	6	1	7	0	8	1	9	1	10	0	11	0
63	2	4	6	1	5	2	0	3	7	4	0	5	0	6	0	7	0	8	0	9	1	10	1	11	1
64	2	4	12	1	6	2	0	3	13	4	0	5	0	6	1	7	1	8	0	9	0	10	0	11	0
65	2	4	13	1	3	2	0	3	14	4	0	5	0	6	0	7	0	8	0	9	1	10	1	11	1
66	2	4	15	1	0	2	0	3	9	4	0	5	0	6	0	7	1	8	0	9	0	10	1	11	0
67	2	4	19	1	4	2	0	3	16	4	0	5	0	6	2	7	0	8	0	9	0	10	0	11	0
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70	2	4	27	1	3	2	0	3	6	4	1	5	3	6	0	7	0	8	0	9	2	10	0	11	2
71	2	4	31	1	8	2	0	3	53	4	0	5	0	6	0	7	0	8	3	9	0	10	8	11	0
72	2	4	32	1	2	2	0	3	25	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	0
73	2	4	37	1	1	2	0	3	4	4	0	5	0	6	0	7	2	8	0	9	3	10	0	11	0
74	2	4	43	1	2	2	2	3	13	4	0	5	0	6	0	7	2	8	0	9	0	10	0	11	1
75	2	4	45	1	2	2	0	3	10	4	0	5	0	6	2	7	0	8	1	9	0	10	10	11	0
76	2	4	48	1	10	2	1	3	15	4	0	5	0	6	2	7	0	8	0	9	0	10	4	11	0

<b>77</b>	<b>2</b>	<b>4</b>	<b>49</b>	<b>1</b>	<b>9</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>18</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>11</b>	<b>0</b>
<b>78</b>	<b>2</b>	<b>4</b>	<b>54</b>	<b>1</b>	<b>13</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>.</b>	<b>6</b>	<b>.</b>	<b>7</b>	<b>.</b>	<b>8</b>	<b>.</b>	<b>9</b>	<b>.</b>	<b>10</b>	<b>.</b>	<b>11</b>	<b>.</b>
<b>79</b>	<b>2</b>	<b>4</b>	<b>55</b>	<b>1</b>	<b>14</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>10</b>	<b>5</b>	<b>11</b>	<b>0</b>
<b>80</b>	<b>2</b>	<b>4</b>	<b>51</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>.</b>	<b>6</b>	<b>.</b>	<b>7</b>	<b>.</b>	<b>8</b>	<b>.</b>	<b>9</b>	<b>.</b>	<b>10</b>	<b>.</b>	<b>11</b>	<b>.</b>

```

;
ods html close; /* close previous */
ods html; /* open new */;
ods html;
ods graphics on;
proc glimmix data = maturplt ;
class plotid block time;
model count1 = time /dist = poisson htype=3 ;
Random block /subject = plotid type=ar(1) ;
covtest glm / classical ;
*output out          = Residuals
*      pred          = Pred
*      resraw        = Resraw
*      reschi        = Reschi
*      resdev        = Resdev
*      stdreschi     = Stdreschi
*      stdresdev     = Stdresdev
*      reslik        = Reslik;
Lsmeans time/ilink pdiff adjust = tukey;
*proc sort;
*by time;

```

```
*proc means n mean std stderr min max;  
*by time;  
*var count;  
run;  
proc sort;  
by time;  
proc means n mean std stderr min max;  
by time;  
var count;  
run;
```

Fig. S1

Counts of 1st-yr rosettes and 2nd-yr mature flowering plants in control plots 2004-2014.

