

## Supplemental information S1 Table

### Parameter values, means, SD and 95%CI.

**S1 Table.** Numbers in bold indicate statistically significant effect sizes or covariates, different letters indicate statistically significant differences between biomes or strata (i.e., 95% credible intervals [CI] do not intersect with zero).

Parameter	Mean±SD	95% CI
<b>Hierarchical analysis of effect sizes</b>		
<i>ES1</i> <sub>managed biomass reduction, abundance</sub>	0.114±0.198	-0.194, 0.508
<i>ES1</i> <sub>managed biomass reduction, change</sub>	0.442±0.963	-1.50, 2.29
<i>ES1</i> <sub>managed biomass reduction, diversity</sub>	0.324±0.322	-0.183, 1.15
<i>ES1</i> <sub>managed biomass reduction, growth</sub>	0.207±0.165	-0.088, 0.483
<i>ES1</i> <sub>managed biomass reduction, reproduction</sub>	<b>3.04±0.188</b>	<b>2.69, 3.4</b>
<i>ES1</i> <sub>managed biomass reduction, resilience</sub>	-0.049±0.616	-1.27, 0.993
<i>ES2</i> <sub>managed biomass reduction</sub>	0.649±0.755	-0.919, 2.14
$\sigma$ <sub>managed, biomass reduction</sub>	3.46±2.23	0.765, 9.0
<i>ES1</i> <sub>managed diversity, growth</sub>	0.074±0.931	-1.80, 1.91
<i>ES1</i> <sub>managed diversity, resilience</sub>	0.041±0.998	-2.71, 2.74
<i>ES2</i> <sub>managed, diversity</sub>	0.050±1.37	-2.74, 2.85
$\sigma$ <sub>managed, diversity</sub>	3.96±2.87	0.114, 9.57
<i>ES1</i> <sub>natural diversity, diversity</sub>	0.022±3.89	-7.61, 7.71
<i>ES1</i> <sub>natural, diversity, growth</sub>	0.016±3.88	-7.58, 7.71
<i>ES1</i> <sub>natural, diversity, resilience</sub>	0.028±3.89	-7.58, 7.58
<i>ES2</i> <sub>natural, diversity</sub>	-0.094±1.14	-2.41, 2.20
$\sigma$ <sub>natural, diversity</sub>	3.86±2.77	0.151, 9.51
<i>ES1</i> <sub>managed, fertility, abundance</sub>	-0.210±0.949	-2.12, 1.58
<i>ES1</i> <sub>managed, fertility, growth</sub>	0.217±0.705	-1.06, 1.66
<i>ES2</i> <sub>managed, fertility</sub>	0.007±1.33	-2.71, 2.74
$\sigma$ <sub>managed, fertility</sub>	3.90±2.87	0.101, 9.57
<i>ES1</i> <sub>natural, fertility, abundance</sub>	0.484±0.63	-0.657, 1.71
<i>ES1</i> <sub>natural, fertility, diversity</sub>	0.531±0.52	-0.491, 1.55
<i>ES1</i> <sub>natural, fertility, growth</sub>	0.582±0.597	-0.586, 1.70
<i>ES1</i> <sub>natural, fertility, resilience</sub>	0.238±0.585	-0.844, 1.31
<i>ES2</i> <sub>natural, fertility</sub>	0.441±0.722	-1.08, 1.93
$\sigma$ <sub>natural, fertility</sub>	1.93±2.23	0.040, 8.46
<i>ES1</i> <sub>natural, moisture gradient, abundance</sub>	<b>0.533±0.225</b>	<b>0.143, 0.960</b>
<i>ES1</i> <sub>natural, moisture gradient, diversity</sub>	<b>0.685±0.353</b>	<b>0.144, 1.71</b>
<i>ES1</i> <sub>natural, moisture gradient, growth</sub>	0.205±0.287	-0.514, 0.661
<i>ES1</i> <sub>natural, moisture gradient, reproduction</sub>	<b>2.85±0.15</b>	<b>2.61, 3.14</b>
<i>ES1</i> <sub>natural, moisture gradient, resilience</sub>	-0.129±0.071	-0.246, 0.034

<i>ES2</i> <sub>natural, moisture gradient</sub>	0.782±0.801	-0.877, 2.39
$\sigma$ <sub>natural, moisture gradient</sub>	3.54±2.34	0.706, 9.15
<i>ESI</i> <sub>managed, second disturbance, abundance</sub>	-0.490±0.6	-1.69, 0.54
<i>ESI</i> <sub>managed, second disturbance, change</sub>	-0.516±0.73	-2.10, 0.880
<i>ESI</i> <sub>managed, second disturbance, diversity</sub>	-0.439±0.588	-1.61, 0.735
<i>ESI</i> <sub>managed, second disturbance, growth</sub>	-0.393±0.517	-1.43, 0.532
<i>ES2</i> <sub>managed, second disturbance</sub>	-0.444±0.733	-1.95, 1.03
$\sigma$ <sub>managed, second disturbance</sub>	1.68±2.12	0.022, 8.13
<i>ESI</i> <sub>natural, second disturbance, abundance</sub>	-0.024±0.246	-0.479, 0.442
<i>ESI</i> <sub>natural, second disturbance, diversity</sub>	-0.286±0.337	-0.973, 0.352
<i>ESI</i> <sub>natural, second disturbance, growth</sub>	0.112±0.363	-0.534, 0.787
<i>ESI</i> <sub>natural, second disturbance, resilience</sub>	<b>-0.706±0.505</b>	<b>-1.86, -0.007</b>
<i>ES2</i> <sub>natural, second disturbance</sub>	-0.215±0.627	-1.58, 1.15
$\sigma$ <sub>natural, second disturbance</sub>	1.65±2.16	0.017, 8.21
<i>ESI</i> <sub>managed, severity, abundance</sub>	<b>1.88±0.002</b>	<b>1.87, 1.88</b>
<i>ESI</i> <sub>managed, severity, change</sub>	-0.284±0.656	-1.48, 1.18
<i>ESI</i> <sub>managed, severity, diversity</sub>	-0.128±0.178	-0.458, 0.213
<i>ESI</i> <sub>managed, severity, growth</sub>	-0.192±0.332	-0.702, 0.371
<i>ESI</i> <sub>managed, severity, reproduction</sub>	0.196±0.96	-1.62, 2.09
<i>ESI</i> <sub>managed, severity, resilience</sub>	0.621±0.747	-0.573, 1.99
<i>ES2</i> <sub>managed, severity</sub>	0.340±0.681	-1.06, 1.70
$\sigma$ <sub>managed, severity</sub>	2.54±2.04	0.422, 8.29
<i>ESI</i> <sub>natural, severity, abundance</sub>	-0.235±0.228	-0.598, 0.221
<i>ESI</i> <sub>natural, severity, diversity</sub>	0.145±0.336	-0.541, 0.783
<i>ESI</i> <sub>natural, severity, growth</sub>	<b>1.62±0.409</b>	<b>1.06, 2.34</b>
<i>ESI</i> <sub>natural, severity, resilience</sub>	-0.077±0.853	-1.78, 1.55
<i>ES2</i> <sub>natural, severity</sub>	0.340±0.88	-1.49, 2.12
$\sigma$ <sub>natural, severity</sub>	3.18±2.48	0.338, 9.13
$\sigma$ <sub>study random effects</sub>	1.06±0.138	0.833, 1.37
<b>Analysis of biomass reduction treatments</b>		
$\alpha$ <sub>drought</sub>	<b>0.440±0.171</b>	<b>0.090, 0.771</b>
$\alpha$ <sub>fire</sub>	-0.007±0.092	-0.225, 0.152
$\alpha$ <sub>herbivory</sub>	0.776±0.492	-0.195, 1.74
$\alpha$ <sub>logging</sub>	0.113±0.093	-0.104, 0.273
$\sigma\alpha^2$ <sub>study random effects</sub>	0.465±0.110	0.296, 0.724
<b>Analysis of Moisture gradients</b>		
intercept $\beta 1$ <sub>boreal</sub>	1.39±0.312	0.052, 2.59 a
intercept $\beta 1$ <sub>Mediterranean</sub>	0.491±0.431	-0.425, 1.36 a
intercept $\beta 1$ <sub>temperate</sub>	0.205±0.148	-0.026, 0.498 a
intercept $\beta 1$ <sub>tropical</sub>	-0.209±0.704	-1.53, 1.21 a
effect of location DMI $\beta 2$ <sub>boreal</sub>	<b>1.44±0.206</b>	<b>1.02, 1.84 a</b>
effect of location DMI $\beta 2$ <sub>Mediterranean</sub>	0.310±0.438	-0.465, 1.19 ab
effect of location DMI $\beta 2$ <sub>temperate</sub>	-0.326±0.256	-0.785, 0.158 b

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effect of location DMI $\beta_2$ <small>tropical</small>	-0.062±0.277	-0.667, 0.441 b
effect of years since disturbance $\beta_3$ <small>boreal</small>	-0.556±0.469	-1.48, 0.349 a
effect of years since disturbance $\beta_3$ <small>Mediterranean</small>	1.08±0.691	-0.277, 2.53 a
effect of years since disturbance $\beta_3$ <small>temperate</small>	0.263±0.243	-0.155, 0.775 a
effect of years since disturbance $\beta_3$ <small>tropical</small>	<b>0.361±0.016</b>	<b>0.328, 0.394 a</b>
$\sigma_{\beta^2}$ <small>study random effects</small>	0.923±0.312	0.490, 1.68
<b>Analysis of severity of disturbance</b>		
effect of disturbance severity $\gamma$ <small>adult trees</small>	<b>-0.567±0.040</b>	<b>-0.646, -0.488 a</b>
effect of disturbance severity $\gamma$ <small>all strata</small>	<b>0.223±0.036</b>	<b>0.161, 0.304 b</b>
effect of disturbance severity $\gamma$ <small>seedlings</small>	<b>0.659±0.039</b>	<b>0.581, 0.741 c</b>
$\sigma_{\gamma^2}$ <small>study random effects</small>	0.880±0.186	0.583, 1.31

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