Supporting information
Table S1: Summary of seedling abundance and size in each treatment in 2014.
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Positive effects of liana cutting on seedlings are reduced during El Niño-induced drought

Michael J. O'Brien[1,2,3], Christopher D. Philipson[4], Glen Reynolds[3], Dzaeman Dzulkifli[5], Jake L. Snaddon[6], Robert Ong[7] and Andy Hector[8]

[1]*Institute of Integrative Biology, ETH Zürich (Swiss Federal Institute of Technology), Universitätstrasse 16, 8092 Zürich, Switzerland*

[2]*URPP Global Change and Biodiversity, University of Zurich, Winterthurerstrasse 190, 8057 Zurich, Switzerland*

[3]*Southeast Asia Rainforest Research Partnership (SEARRP), Unit S10-S12, 1st Floor, The Peak Vista, Block B, Lorang Punjak 1, Tanjung Lipat, Kota Kinabalu, 88400, Malaysia*

[4]*Ecosystem Management, Institute of Terrestrial Ecosystems, ETH Zürich, Universitätstrasse 16, Zurich 8092, Switzerland*

[5]*Tropical Rainforest Conservation & Research Centre, Jalan 7/71B, Pinggiran Taman Tun Dr Ismail, 60000 Kuala Lumpur, Malaysia*

[6]*School of Geography and Environmental Science, University of Southampton, Southampton SO17 1BJ, United Kingdom*

[7]*Forest Research Centre, Sepilok, 90715 Sandakan, Sabah, Malaysia*

[8]*Department of Plant Sciences, University of Oxford, OX1 3RB United Kingdom*

**Corresponding author e-mail*: mikey.j.obrien@gmail.com

Table S1. The summary table of species abundance and size (diameter at base in mm) for all three treatment levels before the second cut in 2014 (n = 6, 6 and 10 plots for control, once-cut and twice-cut, respectively).

	Abundance				Diameter (se)		
	Control	**Once-cut**	**Twice-cut**		**Control**	**Once-cut**	**Twice-cut**
Shorea argentifolia	12	5	19	***Shorea argentifolia***	12.4 (2.5)	18.5 (13.0)	23 (6.7)
Shorea beccariana	9	22	16	***Shorea beccariana***	19.3 (8.2)	13.5 (2.9)	25.4 (9.5)
Dipterocarpus conformis	4	4	5	***Dipterocarpus conformis***	20 (3.7)	33.1 (16.0)	20 (3.1)
Shorea faguetiana	12	20	6	***Shorea faguetiana***	9.2 (2.5)	7.5 (1.8)	9.8 (2.2)
Hopea ferruginea	22	21	30	***Hopea ferruginea***	11.4 (3.3)	6.8 (0.7)	9.4 (1.4)
Shorea gibbosa	7	7	15	***Shorea gibbosa***	14.7 (7.6)	16.6 (8.0)	7.9 (1.0)
Shorea johorensis	26	24	41	***Shorea johorensis***	18.6 (3.0)	19.9 (6.4)	31.2 (7.5)
Dryobalanops lanceolata	21	20	36	***Dryobalanops lanceolata***	16.2 (3.1)	10.1 (1.9)	15.5 (2.6)
Shorea leprosula	9	16	30	***Shorea leprosula***	16.1 (5.5)	22.2 (13.6)	17.5 (3.6)
Shorea macrophylla	13	25	24	***Shorea macrophylla***	26.8 (6.2)	12.6 (1.9)	29.1 (8.7)
Shorea macroptera	16	14	31	***Shorea macroptera***	8.8 (1.5)	11.4 (3.2)	10.9 (1.1)
Parashorea malaanonan	24	20	28	***Parashorea malaanonan***	22.8 (4.4)	6.3 (0.6)	12.4 (1.8)
Shorea ovalis	10	19	25	***Shorea ovalis***	23.7 (4.8)	10.7 (3.6)	18.8 (1.9)
Shorea parvifolia	9	21	25	***Shorea parvifolia***	5.8 (0.6)	30.3 (13.7)	27.2 (5.0)
Hopea sangal	19	18	36	***Hopea sangal***	21.8 (5.0)	15.1 (5.7)	12.5 (1.4)
Parashorea tomentella	19	25	32	***Parashorea tomentella***	14.7 (2.7)	13.4 (3.8)	16.1 (2.2)
Total seedlings	232	281	399	**Mean**	**16.4 (0.4)**	**15.5 (0.5)**	**17.9 (0.5)**

Table S2. The summary table of abundance and size of saplings and trees (DBH in mm) for all three treatment levels before the second cut in 2014 (n = 6, 6 and 10 plots for control, once-cut and twice-cut, respectively).

	Abundance				Diameter (se)		
	Control	**Once-cut**	**Twice-cut**		**Control**	**Once-cut**	**Twice-cut**
Saplings	300	285	496	**Saplings**	22.4 (21.3 - 23.6)	19.2 (18.3 - 20.2)	19 (18.3 - 19.8)
Trees	294	285	502	**Trees**	149.3 (137 - 161.5)	129.4 (118.9 - 139.9)	140.1 (131.8 - 148.4)

Table S3. The ANOVA tables from the linear mixed-effects model of (a) liana density and (b) canopy openness.

Source of variation	d.f.	denominator d.f.	F
a			
Census (factor)	8	1472	57.9***
Complete-cutting contrast	1	19	29.3***
Number of cuttings	1	19	2.6
Contrast x census	8	1472	13.8***
Number x census	8	1472	11.1***
Variance components	**Var.**	**SE**	
Plot	0.15	0.09	
Subplot:Plot	1.02	0.11	
Residual variance	0.93	0.03	
Auto-correlation	0.07	0.03	
b			
Census (factor)	8	1401.4	7.7***
Complete-cutting contrast	1	18.7	2.1
Number of cuttings	1	19.1	23.8***
Contrast x census	8	1400.6	5.2***
Number x census	8	1401.7	2.6**
Variance components	**Var.**	**SE**	
Plot	0.00	0.00	
Subplot:Plot	0.02	0.00	
Residual variance	0.07	0.00	
Auto-correlation	0.06	0.03	

d.f., degrees of freedom; denominator d.f., denominator degrees of freedom,
F, conditional F-statistic; Var., variance component estimate and SE, standard errors for random effects; $^{\dagger}P<0.1$, *P < 0.05, **P < 0.01, ***P < 0.001

Table S4. The ANOVA tables from the linear mixed-effects model of (a) estimations of individual RGR after first cut, (b) size-standardized seedling RGR after first cut, (c) estimations of individual RGR after second cut and (d) size-standardized seedling RGR after second cut.

Source of variation	d.f.	denominator d.f.	F
a			
Day	1	408.9	467.4***
Variance components	**Var.**	**SE**	
Individual:day	2.2E-05	1.1E-05	
Residual variance	4.1E-01	2.5E-02	
Temporal auto-correlation	9.0E-01	6.3E-03	
b			
Initial diameter	1	309.9	8.7**
Climber-cutting treatment	1	12.2	8.2*
Variance components	**Var.**	**SE**	
Plot	-1.1E-07	1.4E-07	
Species	1.7E-07	1.1E-07	
Line:Plot	4.1E-07	2.3E-07	
Species:Plot	5.7E-09	1.6E-07	
Residual variance	2.5E-06	2.3E-07	
c			
Day	1	1048.1	823.5***
Variance components	**Var.**	**SE**	
Individual:day	-7.0E-05	6.7E-06	
Residual variance	7.7E-01	3.4E-02	
Temporal auto-correlation	9.7E-01	1.2E-03	
d			
Initial diameter	1	738.7	32.6***
Complete-cutting contrast	1	18.6	0.5
Number of cuttings	1	17.4	16.7***
Variance components	**Var.**	**SE**	
Plot	2.4E-07	3.7E-07	
Species	1.8E-06	9.1E-07	
Line:Plot	3.9E-07	1.1E-06	
Species:Plot	-3.5E-07	4.9E-07	
Residual variance	3.4E-05	2.0E-06	

d.f., degrees of freedom; denominator d.f., denominator degrees of freedom,
F, conditional F-statistic; Var., variance component estimate and SE, standard errors for random effects; †P<0.1, *P < 0.05, **P < 0.01, ***P < 0.001

Table S5. The ANOVA tables from the linear mixed-effects model of (a) estimations of individual RGR for saplings, (b) size-standardized sapling RGR, (c) estimations of individual RGR for trees and (d) size-standardized tree RGR.

Source of variation	d.f.	denominator d.f.	F
a			
Day	1	1555	153.0***
Variance components	**Var.**	**SE**	
Individual:day	-3.7E-05	2.9E-06	
Residual variance	2.2E-01	7.8E-03	
Temporal auto-correlation	9.4E-01	2.1E-03	
b			
Initial diameter	1	972.8	111.7***
Complete-cutting contrast	1	19.2	0.1
Number of cuttings	1	19.4	24.6***
Variance components	**Var.**	**SE**	
Plot	4.1E-08	2.6E-07	
Subplot:Plot	3.3E-06	7.4E-07	
Residual variance	1.8E-05	8.8E-07	
c			
Day	1	1553.3	159.0***
Variance components	**Var.**	**SE**	
Individual:day	-6.0E-05	1.7E-06	
Residual variance	4.0E-01	1.4E-02	
Temporal auto-correlation	9.8E-01	8.6E-04	
d			
Initial diameter	1	1023.4	242.3***
Complete-cutting contrast	1	19.1	18.1***
Number of cuttings	1	19.6	3.8†
Variance components	**Var.**	**SE**	
Plot	3.7E-07	9.2E-07	
Subplot:Plot	-2.0E-06	2.6E-06	
Residual variance	1.2E-04	6.0E-06	

d.f., degrees of freedom; denominator d.f., denominator degrees of freedom,
F, conditional F-statistic; Var., variance component estimate and SE, standard errors for random effects; †P<0.1, *P < 0.05, **P < 0.01, ***P < 0.001

Table S6. The ANOVA tables from the linear mixed-effects model of seedling survival with a binomial distribution and complimentary log-log link function.

Source of variation	**d.f.**	**denominator d.f.**	**F**
Day	1	291	39.23***
Complete-cutting contrast	1	20.6	0.0
Number of cuttings	1	18.2	1.1
Contrast x day	1	309.5	7.0**
Number x day	1	270.8	1.6
Variance components	**Var.**	**SE**	
Species	0.009	0.005	
Plot	0.002	0.007	
Line:Plot	0.009	0.010	
Census:Line:Plot	0.052	0.013	
Residual variance	0.669	0.013	

d.f., degrees of freedom; denominator d.f., denominator degrees of freedom,
F, conditional F-statistic; Var., variance component estimate and SE, standard errors for random effects; $^{\dagger}P<0.1$, *P < 0.05, **P < 0.01, ***P < 0.001

Table S7. Summary of liana densities per hectare.

	Control		Once-cut		Twice-cut	
Sample	**≥5 cm**	**<5 cm**	**≥5 cm**	**<5 cm**	**≥5 cm**	**<5 cm**
May-14	170 (110 – 230)	5857 (4980 – 6734)	93 (50 – 137)	7808 (6748 – 8869)	34 (19 – 49)	3551 (2988 – 4114)
Jul-14	30 (7 – 53)	4783 (3937 – 5630)	0 (0 – 0)	983 (717 – 1250)	6 (-6 – 18)	826 (668 – 984)
Oct-14	117 (59 – 174)	3348 (2749 – 3948)	2 (-2 – 5)	2619 (2273 – 2964)	2 (-1 – 5)	1258 (1041 – 1476)
Mar-15	117 (69 – 165)	4202 (3340 – 5063)	3 (-1 – 8)	541 (428 – 653)	3 (0 – 6)	975 (722 – 1227)
Jun-15	75 (42 – 108)	3677 (3033 – 4320)	0 (0 – 0)	1720 (1402 – 2038)	1 (-1 – 3)	1053 (869 – 1237)
Oct-15	35 (14 – 56)	2897 (2285 – 3508)	2 (-2 – 5)	1207 (972 – 1441)	0 (0 – 0)	724 (618 – 830)
Mar-16	37 (17 – 57)	3990 (3306 – 4674)	2 (-2 – 5)	1835 (1471 – 2199)	0 (0 – 0)	876 (738 – 1014)
Aug-16	23 (8 – 39)	3422 (2841 – 4002)	2 (-2 – 5)	1445 (1114 – 1776)	0 (0 – 0)	926 (793 – 1059)
May-17	57 (35 – 79)	3142 (2501 – 3782)	18 (-9 – 45)	1725 (1404 – 2046)	1 (-1 – 3)	919 (749 – 1089)