Supporting Information. Dry conditions and disturbance promote liana seedling survival and abundance. María Natalia Umaña, Jimena Forero-Montaña, Christopher J. Nytch, Jill Thompson, María Uriarte, Jess Zimmerman and Nathan G. Swenson. *Ecology*. 2018.

APPENDIX S1

Table S1. Species codes, scientific names and family for all tree seedlings found across the seedling plots.

Species code	Scientific name	Family
ALCFLO	Alchorneopsis floribunda (Benth.) MŸll. Arg.	Euphorbiaceae
ALCLAT	Alchornea latifolia Sw.	Euphorbiaceae
ANDINE	Andira inermis (W. Wright) Kunth ex DC.	Fabaceae-Faboideae
ARDGLA	Ardisia glauciflora Urb.	Primulaceae
BUCTET	Buchenavia tetraphylla (Aubl.) R. A. Howard	Combretaceae
BYRSPI	Byrsonima spicata (Cav.) DC.	Malpighiaceae
CALCAL	Calophyllum antillanum Britton	Calophyllaceae
CASARB	Casearia arborea (Rich.) Urb.	Salicaceae (Flacourtiaceae)
CASDEC	Casearia decandra Jacq.	Salicaceae (Flacourtiaceae)
CASSYL	Casearia sylvestris Sw.	Salicaceae (Flacourtiaceae)
CECSCH	Cecropia schreberiana Miq. subsp. schreberiana	Urticaceae (Cecropiaceae)
CHIDOM	Chionanthus domingensis Lam.	Oleaceae
CHOVEN	Chione venosa (Sw.) Urb. var. venosa	Rubiaceae
CLUGUN	Clusia gundlachii A. Stahl	Clusiaceae
CLUROS	Clusia rosea Jacq.	Clusiaceae
COMGLA	Comocladia glabra Spreng.	Anacardiaceae
CORBOR	Cordia borinquensis Urb.	Boraginaceae
CORSUL	Cordia sulcata DC.	Boraginaceae
CROPOE	Croton poecilanthus Urb.	Euphorbiaceae
CSSGUI	Cassipourea guianensis Aubl.	Rhizophoraceae
DACEXC	Dacryodes excelsa Vahl	Burseraceae
DENARB	Dendropanax arboreus (L.) Decne. & Planch.	Araliaceae
DRYALB	Drypetes alba Poit.	Euphorbiaceae
DRYGLA	Drypetes glauca Vahl	Putranjivaceae (Euphorbiaceae)
EUGDOM	Eugenia domingensis O. Berg	Myrtaceae
EUGSTA	Eugenia stahlii (Kiaersk.) Krug & Urb.	Myrtaceae
FAROCC	Faramea occidentalis (L.) A. Rich.	Rubiaceae
FICTRI	Ficus trigonata L.	Moraceae
FORPOR	Pinochia corymbosa ssp. portoricensis (Woodson) M.E. Endress & B.F. Hansen	Apocynaceae
GONSPI	Gonzalagunia spicata (Lam.) M. G—mez	Rubiaceae
GUAGLA	Guarea glabra Vahl	Meliaceae
GUAGUI	Guarea guidonia (L.) Sleumer	Meliaceae
GUEVAL	Guettarda valenzuelana A. Rich.	Rubiaceae
HIRRUG	Hirtella rugosa Pers.	Chrysobalanaceae
HOMRAC	Homalium racemosum Jacq.	Salicaceae (Flacourtiaceae)
INGLAU	Inga laurina (Sw.) Willd.	Fabaceae-Mimosoideae

INGVER	Inga vera Willd.	Fabaceae-Mimosoideae
IXOFER	Ixora ferrea (J. F. Gmel.) Benth.	Rubiaceae
LASLAN	Lasianthus lanceolatus (Griseb.) Urb.	Rubiaceae
LONLAT	Lonchocarpus heptaphyllus (Poir.) Kunth ex DC.	Fabaceae-Faboideae
MACUNG	Dolichandra unguis-cati (L.) L.G. Lohman	Bignoniaceae
MANBID	Manilkara bidentata (A. DC.) A. Chev.	Sapotaceae
MATDOM	Matayba domingensis (DC.) Radlk.	Sapindaceae
MELHER	Meliosma herbertii Rolfe	Sabiaceae
MICPRA	Miconia prasina (Sw.) DC.	Melastomataceae
MICRAC	Miconia racemosa (Aubl.) DC.	Melastomataceae
MYRDEF	Myrcia deflexa (Poir.) DC.	Myrtaceae
MYRLEP	Myrcia leptoclada DC. (syn. Myrcia amazonica)	Myrtaceae
MYRSPL	Myrcia splendens (Sw.) DC.	Myrtaceae
MYRSPP	Myrcia sp.	Myrtaceae
OCOLEU	Ocotea leucoxylon (Sw.) Laness.	Lauraceae
OCOSIN	Nectandra turbacensis (Kunth) Nees	Lauraceae
ORMKRU	Ormosia krugii Urb.	Fabaceae-Faboideae
OXALAU	Oxandra laurifolia (Sw.) A. Rich.	Annonaceae
PALRIP	Palicourea croceoides Ham.	Rubiaceae
PHIANG	Philodendron consanguineum Schott	Araceae
PIPBLA	Piper blattarum Spreng.	Piperaceae
PIPGLA	Piper glabrescens (Miq.) C. DC.	Piperaceae
PIPHIS	Piper hispidum Sw.	Piperaceae
PREMON	Prestoea acuminata (Willd.) H. E. Moore var. montana (Graham) A. J. Hend. & Galeano	Arecaceae
PSESPU	Pseudolmedia spuria (Sw.) Griseb.	Moraceae
PSYBER	Psychotria berteroana DC.	Rubiaceae
PSYBRA	Psychotria brachiata Sw.	Rubiaceae
PSYDEF	Psychotria deflexa DC.	Rubiaceae
PSYMAL	Psychotria maleolens Urb.	Rubiaceae
RHEPOR	Garcinia portoricensis (Urb.) Alain	Clusiaceae
ROYBOR	Roystonea borinquena O. F. Cook	Arecaceae
SAMSPI	Samyda spinulosa Vent.	Salicaceae (Flacourtiaceae)
SAPLAU	Sapium laurocerasus Desf.	Euphorbiaceae
SCHMOR	Schefflera morototoni (Aubl.) Maguire	Araliaceae
SIMAMA	Simarouba amara DC.	Simaroubaceae
SLOBER	Sloanea berteroana Choisy ex DC.	Elaeocarpaceae
SYZJAM	Syzygium jambos (L.) Alston	Myrtaceae
TABHET	Tabebuia heterophylla (DC.) Britton	Bignoniaceae
TETBAL	Tetragastris balsamifera (Sw.) Oken	Burseraceae
TRIPAL	Trichilia pallida Sw.	Meliaceae
UREBAC	Urera baccifera (L.) Gaudich. ex Wedd.	Urticaceae

Table S2. Intercept, land use and annual rainfall effects on SES liana Survival. Values are coefficients estimated by a linear mixed model. The confidence intervals were estimated by bootstrapping. Bolded values indicate significant effects.

	Estimate	**CI**		**t-value**
		2.50	**97.5**	
Intercept	**0.46**	**0.28**	**0.63**	5.127
Low land use	**-0.35**	**-0.58**	**-0.11**	-2.906
Annual rainfall	**-0.54**	**-0.65**	**-0.43**	-9.58

Table S3. Intercept, land use and annual rainfall effects on SES liana Growth. Values are coefficients estimated by a linear mixed model. The confidence intervals were estimated by bootstrapping.

	Estimate	**CI**		**t-value**
		2.50	**97.5**	
Intercept	-0.119	-0.259	0.02	-1.67
Low land use	0.105	-0.080	0.29	1.115
Annual rainfall	0.005	-0.071	0.08	0.13

Table S4. Intercept and crowding effects on SES liana survival. The crowding effect was calculated as the density of lianas per station. Values are coefficients estimated by a linear mixed model. The confidence intervals were estimated by bootstrapping. Bold numbers show significant effects.

	Estimate	**CI**		**t-value**
		2.50	**97.5**	
Intercept	0.66	0.19	1.14	2.761
Log10(Crowding liana)	**-0.30**	**-0.53**	**-0.07**	**-2.584**

Table S5. Intercept and crowding effects on SES liana survival. The crowding effect was calculated as the density of neighbors per station. Values are coefficients estimated by a linear mixed model. The confidence intervals were estimated by bootstrapping.

	Estimate	CI		t-value
		2.50	97.5	
Intercept	0.343	-0.29	0.98	1.495
Log(Crowding total)	-0.022	-0.39	0.35	-0.081

Table S6. Intercept and crowding effects on SES liana growth rates. The crowding effect was calculated as the density of lianas per station. Values are coefficients estimated by a linear mixed model. The confidence intervals were estimated by bootstrapping.

	Estimate	CI		t-value
		2.50	97.5	
Intercept	0.53	0.12	0.94	2.53
Log10(Crowding total)	**-0.40**	**-0.68**	**-0.13**	**-2.87**

Table S7. Intercept and crowding effects on SES liana growth rates. The crowding effect was calculated as the density of neighbors per station. Values are coefficients estimated by a linear mixed model. The confidence intervals were estimated by bootstrapping.

	Estimate	CI		t-value
		2.50	97.5	
Intercept	0.19	-0.070	0.457	1.43
Log10(Crowding liana)	**-0.19**	**-0.366**	**-0.007**	**-2.04**

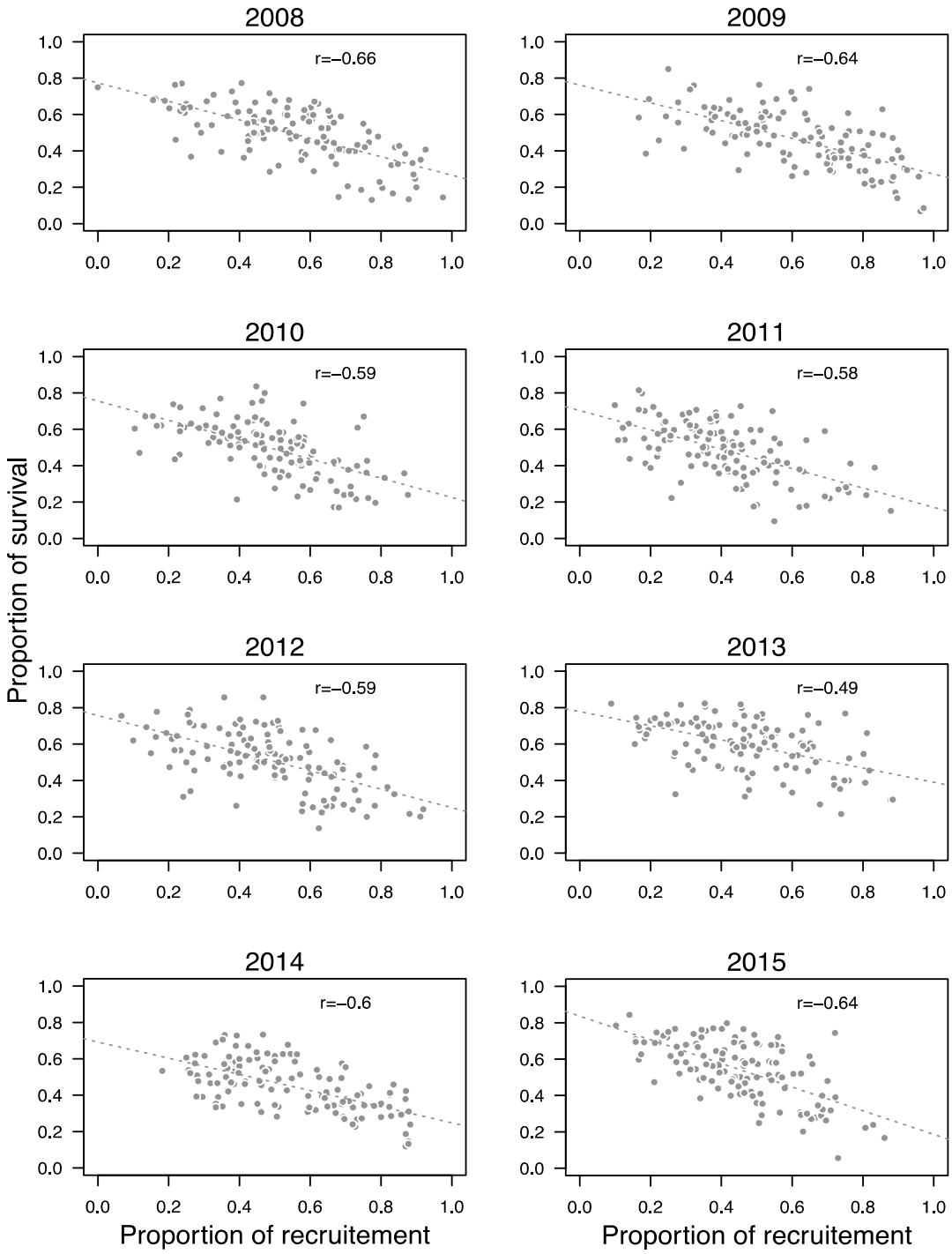

Fig. S1. Correlations between proportion of seedling survival and proportion of recruitment for each of the seedling stations. All correlations were significant (p-value <0.05).