

Figure S1. Location of the studied tropical dry forest old fields close to the Chamela-Cuixmala Biosphere Reserve, Jalisco, México. Old-field sites include: SC = Santa Cruz, CI = Caimán I and CII = Caimán II.

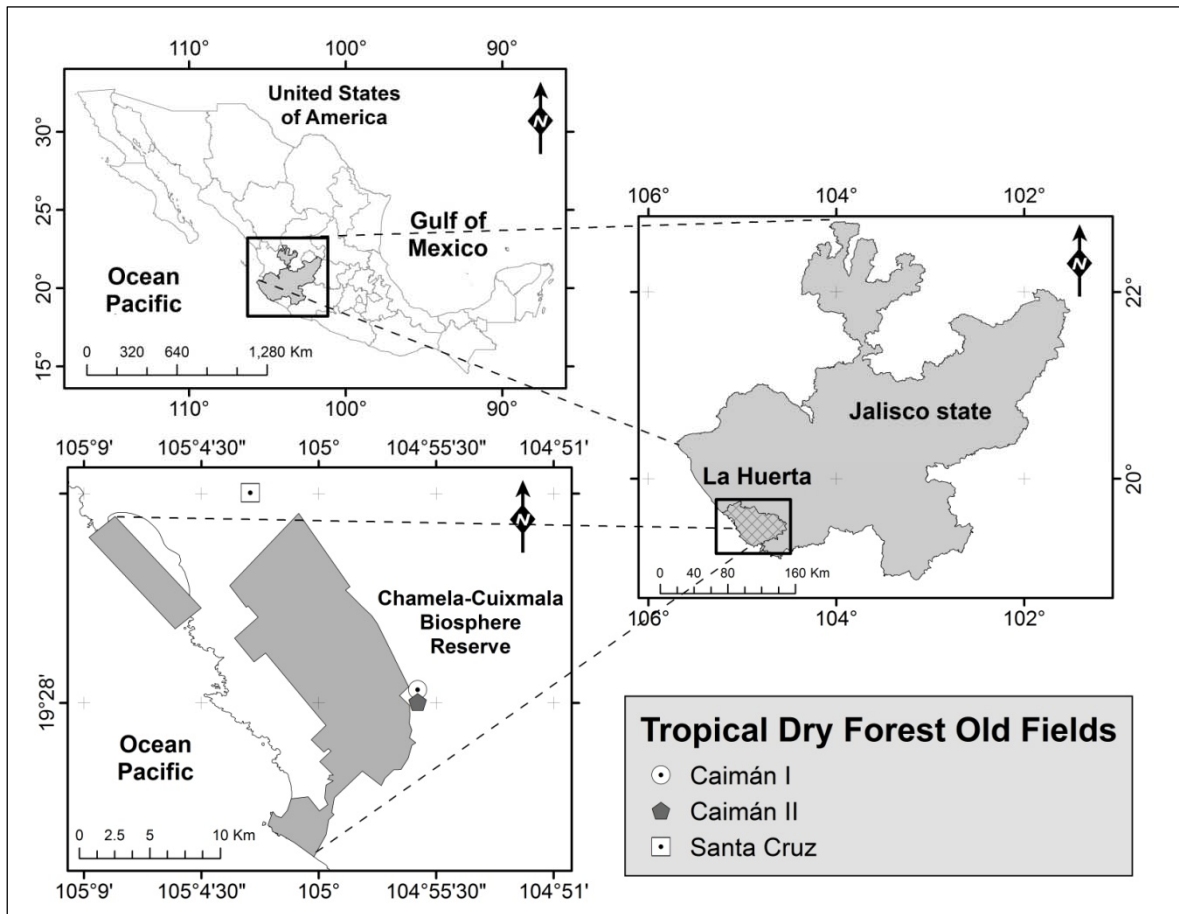


Fig. S2. Woody individual (> 1 cm d.b.h.) before (a) and after (b) climbing plants removal and (c) soil plowing within permanent 25 m^2 ($5\text{ m} \times 5\text{ m}$) plot established within 0.1 ha blocks.



Table S1. List of tree species present within three abandoned old fields (SC, CI and CII) in Chamela, Mexico. The number of stems, ≥ 1 cm diameter at breast height, at assisted natural regeneration (ANR) treatment (soil plowing and climbing plants removal) and control (C) are indicated for each of three old fields.

Family / Species	SC		C I		C II		Total
	ANR	C	ANR	C	ANR	C	
Achatocarpaceae	0	0	0	0	0	0	0
<i>Achatocarpus gracilis</i> Griseb.	0	0	0	0	0	3	3
Apocynaceae	0	0	0	0	0	0	0
<i>Rauvolfia tetraphylla</i> L.	3	1	0	0	0	0	4
<i>Stemmadenia</i> cf. <i>grandiflora</i> (Jacq.) Miers.	0	0	0	0	0	1	1
Asclepiadaceae	0	0	0	0	0	0	0
<i>Marsdenia</i> aff <i>edulis</i> L.	1	0	0	0	0	0	1
Bignoniaceae	0	0	0	0	0	0	0
Bignoniaceae sp.	1	0	0	0	0	0	1
Bombacaceae	0	0	0	0	0	0	0
<i>Ceiba grandiflora</i> Rose	2	0	0	0	0	0	2
Boraginaceae	0	0	0	0	0	0	0
<i>Cordia alliodora</i> (Ruiz & Pav.) Oken.	0	0	2	9	0	0	11
<i>Cordia eleagnoides</i> DC.	2	0	0	0	0	0	2
<i>Tournefortia</i> sp.	0	0	0	0	0	2	2
Capparaceae	0	0	0	0	0	0	0
<i>Crateva tapia</i> L.	0	0	0	0	2	0	2
<i>Forchammeria pallida</i> Liebm	0	0	0	0	0	5	5
Capparidaceae	0	0	0	0	0	0	0
<i>Capparis verrucosa</i> Jacq.	0	0	0	0	0	4	4
Euphorbiaceae	0	0	0	0	0	0	0
<i>Cnidoscolus spinosus</i> Lundell.	0	0	0	0	1	0	1
<i>Croton alamosanus</i> Rose.	0	0	0	0	0	3	3
<i>Croton</i> sp.	0	5	0	0	0	0	5
<i>Pyramea mexicana</i> Standl.	0	0	2	0	0	0	2
Fabaceae	0	0	0	0	0	0	0
<i>Acacia cochliacantha</i> S.Watson	0	0	0	0	0	2	2
<i>Acacia farnesiana</i> (L.) Willd.	10	0	0	0	0	1	11
<i>Acacia</i> sp.	3	14	10	22	0	3	52
<i>Apoplanesia paniculata</i> Presl.	0	0	0	2	0	0	2
<i>Bauhinia pauletia</i> Pers.	7	3	0	0	0	2	12
<i>Caesalpinia eriostachys</i> Benth.	0	2	8	6	3	3	22
<i>Caesalpinia</i> sp.	0	0	0	0	1	0	1
<i>Caesalpinia</i> sp1	0	0	0	0	3	0	3
<i>Caesalpinia</i> sp2	0	0	0	0	1	1	2

Family / Species	SC		C I		C II		Total
	ANR	C	ANR	C	ANR	C	
<i>Caesalpinia mexicana</i> A. Gray	0	0	0	0	0	1	1
<i>Erythrina lanata</i> Rose var. <i>occidentalis</i> (Standl.) Krokovff & Barneby	0	0	0	0	0	1	1
<i>Ictademia</i> sp.	0	0	0	3	0	0	3
<i>Lonchocarpus eriocarinalis</i> Micheli.	0	0	0	0	0	3	3
<i>Lonchocarpus longipedicellatus</i> Pittier	0	0	5	0	0	0	5
<i>Lonchocarpus</i> sp.	26	6	16	15	6	7	72
<i>Mimosa arenosa</i> (Willd.) Poir.	6	0	0	0	0	0	6
<i>Mimosa</i> sp.	0	0	0	6	0	0	6
<i>Piptadenia constricta</i> (Micheli) J.F. Macbr.	0	0	0	6	0	0	6
<i>Platymiscium lasiocarpum</i> (Willd.) Benth.	0	0	0	0	0	4	4
<i>Senna</i> sp.	0	0	3	0	0	0	3
<i>Senna mollissima</i> (Bonpl. ex Willd.) H.S. Irwin & Barneby	0	0	3	0	0	0	3
<i>Piscidia carthagenensis</i> Jacq.	0	0	4	0	0	0	4
<i>Calliandra tergemina</i> (L.) Benth.	0	0	4	0	0	0	4
<i>Poeppigia procesa</i> C. Presl	0	0	0	0	5	1	6
<i>Myrospermum frutescens</i> Jacq.	0	0	0	0	0	3	3
<i>Acaciella angustissima</i> (Mill.) Britton & Rose	1	0	0	0	0	0	1
Fabaceae sp.	0	1	0	0	0	0	1
Flacourtiaceae							
<i>Casearia corymbosa</i> HBK.	3	6	2	0	0	0	11
<i>Xylosma</i> sp.	0	0	0	0	1	0	1
Hernandiaceae							
<i>Gyrocarpus jatrophifolius</i> Domin	0	2	0	0	0	0	2
Malpigheaceae							
<i>Malpighia</i> sp.	0	1	0	0	0	0	1
Meliaceae							
Meliaceae sp.	0	0	0	0	0	1	1
Nictaginaceae							
<i>Guapira</i> cf. <i>macrocarpa</i> Miranda	0	0	0	1	0	0	1
Polygonaceae							
<i>Coccoloba liebmannii</i> Lindau.	0	0	1	0	0	0	1
<i>Coccoloba</i> sp1	0	1	0	2	0	0	3
<i>Coccoloba</i> sp2	3	1	0	0	0	0	4
<i>Coccoloba</i> sp3	2	1	0	0	0	0	3
<i>Coccoloba</i> sp4	2	1	0	0	0	0	3
<i>Coccoloba</i> sp5	1	1	0	0	0	0	2
<i>Ruprechtia fusca</i> Fern.	0	0	6	0	0	0	6
Rutaceae							

Family / Species	SC		C I		C II		Total
	ANR	C	ANR	C	ANR	C	
<i>Zanthoxylum fagara</i> (L.) Sarg.	0	0	0	5	3	0	8
Sapindaceae							
<i>Thouinidium decandrum</i> (Humb. & Bonpl.) Radlk.	0	0	2	0	0	0	2
<i>Thouinia paucidentata</i> Radlk	0	0	0	0	0	3	3
Verbenaceae							
<i>Citharexylum hirtellum</i> Standley.	0	0	4	0	0	0	4
Unknown sp1	0	0	0	0	0	13	13
Unknown sp2	0	0	4	0	0	0	4
Unknown sp3	0	0	0	0	0	9	9
Unknown sp4	17	10	0	3	2	0	32
	90	56	76	80	28	76	406

Table S2. Land-use history and characteristics of three tropical dry forest old fields in the Chamela-Cuixmala Biosphere Reserve, Jalisco, Mexico. Initials indicate the following: S-B = slash-and-burn cycles; TE = timber extraction; WE = wood extraction; G = cattle grazing. According to Trilleras-Mohta (2008).

	Santa Cruz (SC)	Caimán I (CI)	Caimán II (CII)
Time of abandonment† (2004)	1	4	12
Year of first S-B	1981	1995	1975
Year of last S-B	2003	2000	1992
S-B frequency*	7	3	6
Time of cattle activity	22	5	17
Years of usage	22	8	17
Land-use	TE, WE y G	WE y G	G
Landscape matrix	Cattle pastures and secondary forests	Primary forest	Primary forest
Coordinates			
Latitude N	19° 28.1'	19° 22.9'	19° 28.7'
Longitude W	104° 56.2'	105° 57'	104° 56.1'
Altitude	220	200	200
Slope	18°	30°	20°
Trees and shrubs > 2.5 cm	402	431	72
Trees and shrubs > 1 cm	834	996	505

† Time since +cattle was removed before this study

* Total number of fire events

Table S3. Maximum likelihood linear mixed models for repeated measurements to detect the effect of treatment (control vs. climbing plant removal and soil plowing) on: (A) aboveground biomass, and (B) canopy cover of trees ≥ 1 cm dbh within three old fields of the Chamela-Cuixmala region, Jalisco, Mexico.

Factors	Coefficients (Beta)	Standard Error	F	df Num	df Deno	<i>p</i>
(A) Aboveground biomass						
Between groups						
Treatment	1.237	0.550	2.22	1	24.7	0.149
Site	-1.175	0.550	8.07	2	24.7	0.002
Treatment \times Site	-0.254	0.778	24.94	2	24.7	> 0.0001
Within groups						
Time	-0.061	0.016	12.17	1	24.0	0.002
Treatment \times Time	0.031	0.024	1.186	1	24.0	0.287
Site \times Time	-0.254	0.777	25.86	2	24.0	> 0.0001
Treatment \times Site \times Time	-0.009	0.033	0.73	2	24.0	0.491
(B) Canopy cover						
Between groups						
Treatment	-2.743	2.776	11.33	1	11.6	0.005
Site	8.457	2.776	11.61	2	11.6	0.001
Treatment \times Site	-3.23	3.926	0.75	2	11.6	0.492
Within groups						
Time	0.281	0.074	91.74	1	8.6	> 0.0001
Treatment \times Time	0.238	0.104	19.81	1	8.6	0.002
Site \times Time	-0.217	0.104	7.28	2	8.6	0.014
Treatment \times Site \times Time	0.303	0.148	6.18	2	8.6	0.022

Supplemental Material S1. Detailed description for recruitment and mortality rates in terms of number of stems, ~~and~~ basal area and net basal area relative accumulation.

The relative rate of tree annual mortality (M_{BA}) and recruitment (R_{BA}) was calculated as the proportion of the BA at T_0 . The relative rate of biomass accumulation (G_{BA}) was calculated as a proportion of initial BA (T_0) of all surviving trees. The relative rates of recruitment (R_x) and mortality (M_x) in terms of the number of stems (SN) and / or BA were calculated as the proportion of SN and BA at T_0 (April 2005) and corrected according to the time of measurement (month 37, May 2008): $R_x = [(X_i + R_f) / X_i]^{365/t^{-1}}$ and $M_x = 1 - [1 - (M / X_i)]^{365/t}$, where: R_x and M_x are stem recruitment and mortality, respectively, and can be used for SN and BA. In addition, X_i is the initial BA and / or SN. The relative rate of accumulation in basal area (G_{BA}) was calculated with the initial BA (T_0 , April 2005) of all trees that survived throughout the end of the study (T_2 or 37 months, May 2008): $G_{AB} = [(AB_{S(i)} + C) / AB_{S(i)}]^{365/t^{-1}}$, where $AB_{S(i)}$ is the initial BA of all surviving stems, G is the accumulation in basal area (BA final – BA initial), and t is the time at the end of the experiment (37 months) expressed in years.