

Supplementary Materials

Supplementary Table S1. Mean seed bank species composition in stock-piles and undisturbed (intact) soil at the Hixon study area at four sampling depths and five sampling dates.

	<u>June 2013</u>					<u>August 2013</u>				
	0-10 ¹	10-20	20-30	30-40	Intact	0-10	10-20	20-30	30-40	Intact
Peci ²	0.00	33.33	16.67	32.00	50.00	22.10	29.06	30.93	11.67	0.00
Naja	66.67	33.33	50.00	28.00	25.00	23.99	48.00	30.65	46.67	30.32
Opun	16.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.03
Oxst	0.00	0.00	0.00	0.00	0.00	1.28	5.62	11.85	35.00	36.87
Oxdr	0.00	0.00	0.00	0.00	0.00	3.85	0.00	0.00	0.00	1.04
Chse	0.00	0.00	0.00	0.00	0.00	0.00	4.17	0.00	0.00	0.00
Pahy	0.00	0.00	33.33	20.00	0.00	1.85	0.00	1.67	0.00	3.94
Evve	0.00	0.00	0.00	0.00	0.00	1.67	0.72	0.00	0.00	8.23
Dapu	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.00	1.04
Vepl	16.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vebi	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00
Apsk	0.00	0.00	0.00	0.00	0.00	9.35	6.00	1.67	0.00	6.20
Raco	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.17	0.00	0.00
Lela	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.85	0.00	0.00
Siab	0.00	33.33	0.00	0.00	0.00	8.33	0.00	0.00	0.00	0.00
Glqu	0.00	0.00	0.00	0.00	0.00	1.67	4.05	3.33	0.00	1.52
Pape	0.00	0.00	0.00	0.00	0.00	8.33	0.00	0.00	0.00	0.00
Trho	0.00	0.00	0.00	0.00	0.00	1.28	0.00	0.00	0.00	2.22
Oela	0.00	0.00	0.00	0.00	25.00	13.52	0.00	4.17	0.00	3.03
Popi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.04
Plrh	0.00	0.00	0.00	0.00	0.00	1.85	2.38	0.00	6.67	1.52
Cite	0.00	0.00	0.00	20.00	0.00	0.00	0.00	4.17	0.00	0.00
Nigl	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urre	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Popr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹Depths in cm.

²Species code explained in Table S2.

	April 2014					May 2014					July 2014				
	0-10	10-20	20-30	30-40	Intact	0-10	10-20	20-30	30-40	Intact	0-10	10-20	20-30	30-40	Intact
Peci	50.00	87.50	66.67	66.67	50.00	66.67	91.67	50.00	50.00	86.43	0.00	25.00	33.33	50.00	50.00
Naja	0.00	0.00	0.00	0.00	0.00	23.33	0.00	0.00	0.00	0.00	100.00	62.50	33.33	50.00	0.00
Opun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oxst	0.00	0.00	33.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oxdr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chse	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pahy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Evve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dapu	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vepl	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vebi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apsk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.33	0.00	25.00
Raco	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lela	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siab	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Glqu	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pape	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trho	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oela	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.57	0.00	0.00	0.00	0.00	25.00
Popi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plrh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cite	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nigl	0.00	12.50	0.00	33.33	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urre	0.00	0.00	0.00	0.00	0.00	0.00	8.33	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00
Popr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.50	0.00	0.00	0.00

Supplementary Table S2. Scientific names for species codes in Table S1.

Code	Common Name	Scientific Name	Classification ¹
Peci	Buffelgrass	(L.) Link	MEPW
Urre	Sprawling signalgrass	<i>Urochloa reptans</i> (L.) Stapf	MNAW
Daae	Durban crowfoot	<i>Dactyloctenium aegyptium</i> (L.) Willd.	MEAW
Naja	Jamaican weed	<i>Nama jamaicense</i> L.	DNAW
Chse	Spurge	<i>Chamaesyce serpens</i> (Kunth) Small	DNAW
Pahy	False ragweed	<i>Parthenium hysterophorus</i> L.	DNAW
Popr	Juniperleaf	<i>Polypremum procumbens</i> L.	DNAW
Vebi	Mock vervain	<i>Verbena bipinnatifida</i> Nutt.	DNAW
Aspk	Lazy daisy	<i>Aphanostephus skirrhobasis</i> (DC.) Trel.	DNAW
Glqu	Beaked vervain	<i>Glandularia quadrangulata</i> (A. Heller) Umber	DNAW
Raco	Prairie coneflower	<i>Ratibida columnifera</i> (Nutt.) Woot. & Standl	DNPW
Siab	Spreading sida	<i>Sida abutilifolia</i> Mill.	DNPW
Popi	Shaggy hair portulaca	<i>Portulaca pilosa</i> L.	DNPW
Cite	Texas thistle	<i>Cirsium texanum</i> Buckley	DNPW
Oxdr	Drummond's wood sorrel	<i>Oxalis drummondii</i> A. Gray	DNPW
Vepl	Fanleaf vervain	<i>Verbena plicata</i> Greene	DNPW
Opun	Prickly pear	<i>Opuntia</i> sp.	DNPC
Oxst	Wood sorrel	<i>Oxalis stricta</i> L.	DNPC
Oela	Cutleaf primrose	<i>Oenothera laciniata</i> Hill	DNPC
Trho	Clasping Venus' Looking glass	<i>Triodanis holzingeri</i> McVaugh	DNAC
Lela	Bladderpod	<i>Lesquerella lasiocarpa</i> (Hook ex. A. Gray) S. Watson	DNAC
Evve	Evax	<i>Evax verna</i> Raf.	DNAC
Plrh	Redseed plantain	<i>Plantago rhodosperma</i> Decne.	DNAC
Dapu	Rattlesnake weed	<i>Daucus pusillus</i> Michx.	DNAC
Nigl	Tree tobacco	<i>Nicotiana glauca</i> Graham	DEPW
Pape	Pennsylvania Pellitory	<i>Parietaria pensylvanica</i> Muhl. Ex Willd.	DNAW

¹D = dicot, M = monocot, N = native species, E = exotic species, A = annual, P = perennial, W = warm season growth, and C = cool season growth.

Supplementary Table S3. Mean seed bank species composition in the stock-pile and undisturbed soil at the San Ysidro study area at four sampling depths and five sampling dates.

	June 2013 ¹				August 2013				
	10-20 ²	20-30	30-40	Intact	0-10	10-20	20-30	30-40	Intact
Peci ³	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sppy	0.00	0.00	0.00	31.67	16.67	0.00	0.00	0.00	10.24
Spcr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00
Naja	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	3.13
Thte	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	4.34
Chse	0.00	0.00	0.00	25.00	26.67	100.00	16.67	50.00	34.38
Pahy	25.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	17.19
Pava	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56
Botr	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Opun	0.00	0.00	0.00	0.00	0.00	0.00	33.33	0.00	0.00
Oxst	0.00	0.00	0.00	0.00	0.00	0.00	16.67	0.00	2.78
Popr	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00
Cypo	0.00	0.00	0.00	0.00	6.67	0.00	0.00	0.00	0.00
Apsk	0.00	0.00	0.00	11.67	30.00	0.00	0.00	0.00	15.28
Glqu	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.78
Hemi	0.00	0.00	0.00	6.67	0.00	0.00	0.00	0.00	0.00
Hean	0.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00
Lyca	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Oela	0.00	0.00	0.00	0.00	0.00	0.00	33.33	0.00	2.78
Plrh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56
Urre	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sele	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pabi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cactus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Raco	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹Seedlings emerged in these samples did not survive to an identifiable stage.

²Depths in cm.

³Species code explained in Tables S4.

	April 2014					May 2014					July 2014			
	0-10	10-20	20-30	30-40	Intact	0-10	10-20	20-30	30-40	Intact	0-10	10-20	20-30	Intact
Peci	0.00	0.00	0.00	0.00	0.00	8.33	0.00	0.00	0.00	0.00	3.03	0.00	0.00	0.00
Sppy	7.08	0.00	33.33	0.00	0.00	64.13	58.33	33.33	0.00	34.23	51.21	75.00	100.00	30.83
Spcr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naja	0.00	0.00	0.00	0.00	0.00	0.00	11.11	0.00	0.00	10.71	0.00	0.00	0.00	0.00
Thte	0.00	12.50	0.00	0.00	45.45	0.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00	5.42
Chse	90.54	59.13	55.56	75.00	0.00	5.71	30.56	0.00	0.00	0.00	1.52	0.00	0.00	0.00
Pahy	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pava	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Botr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Opun	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oxst	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Popr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cypo	0.00	0.00	0.00	0.00	0.00	2.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apsk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	1.52	0.00	0.00	16.67
Glqu	0.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00	0.00	13.10	0.00	0.00	0.00	0.00
Hemi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hean	0.00	0.00	0.00	25.00	0.00	0.00	0.00	33.33	0.00	0.00	0.00	0.00	0.00	0.00
Lyca	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oela	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	27.08	16.67	0.00	0.00	30.42
Plrh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Urre	0.00	12.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00	0.00	0.00
Sele	2.38	10.10	11.11	0.00	4.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pabi	0.00	1.92	0.00	0.00	0.00	0.00	0.00	33.33	0.00	4.46	4.55	0.00	0.00	0.00
Daae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00
Tral	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.33	0.00	0.00	0.00	0.00
Cactus	0.00	0.00	0.00	0.00	0.00	2.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Raco	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.52	0.00	0.00	16.67
Soel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.33	0.00	0.00	0.00

Supplementary Table S4. Scientific names for species codes in Table S3.

Code	Common Name	Scientific Name	Classification ¹
Peci	Buffelgrass	<i>Pennisetum ciliare</i> (L.) Link	MEPW
Sppy	Whorled dropseed	<i>Sporobolus pyramidatus</i> (Lam.) Hitchc.	MNPW
Pava	Whiplash pappusgrass	<i>Pappophorum vaginatum</i> Buckley	MNPW
Botr	Red grama	<i>Bouteloua trifida</i> Thurb.	MNPW
Spcr	Sand dropseed	<i>Sporobolus cryptandrus</i> Hitchc.	MNPW
Cypo	Manyspike flatsedge	<i>Cyperus polystachyosi</i> Rottb.	MNPW
Sele	Plains Bristlegrass	<i>Setaria leucopila</i> (Scribn. & Merr.) K. Schum.	MNPW
Urre	Sprawling signalgrass	<i>Urochloa reptans</i> (L.) Stapf	MNAW
Pabi	Pink pappasgrass	<i>Pappophorum bicolor</i> Fourn.	MNPW
Daae	Durban crowfoot	<i>Dactyloctenium aegyptium</i> (L.) Willd	MEAW
Tral	white tridens	<i>Tridens albescens</i> (Vasey) Woot. & Standl.	MNPW
Naja	Jamaican weed	<i>Nama jamaicense</i> L	DNAW
Chse	Spurge	<i>Chamaesyce serpens</i> (Kunth) Small	DNAW
Pahy	False ragweed	<i>Parthenium hysterophorus</i> L	DNAW
Thte	Dogweed	<i>Thymophylla tenuiloba</i> (DC.) Small	DNAW
Popr	Juniperleaf	<i>Polyprenum procumbens</i> L.	DNAW
Aspk	Lazy daisy	<i>Aphanostephus skirrhobasis</i> (DC.) Trel.	DNAW
Glqu	Beaked vervain	<i>Glandularia quadrangulata</i> (A. Heller) Umber	DNAW
Hemi	Sneezeweed	<i>Helenium microcephalum</i> DC.	DNAW
Hean	Scorpion Tail	<i>Heliotropium angiospermum</i> Murray	DNAW
Raco	Prairie coneflower	<i>Ratibida columnifera</i> (Nutt.) Woot. & Standl	DNPW
Lyca	California loosestrife	<i>Lythrum californicum</i> Torr. & A. Gray	DNPW
Opun	Prickly pear	<i>Opuntia</i> sp.	DNPC
Oxst	Wood sorrel	<i>Oxalis stricta</i> L.	DNPC
Oela	Cutleaf primrose	<i>Oenothera laciniata</i> Hill	DNPC
Plrh	Redseed plantain	<i>Plantago rhodosperma</i> Decne	DNAC
Soel	Silver leaf nightshade	<i>Solanum elaeagnifolium</i> Cav.	DNPW
Cactus	Cactus	Unidentified cactus	-

¹D = dicot, M = monocot, N = native species, E = exotic species, A = annual, P = perennial, W = warm season growth, and C = cool season growth.