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Supplementary Information for

Feast and famine in the green desert: Insights into honey bee declines in an intensively farmed agroecosystem

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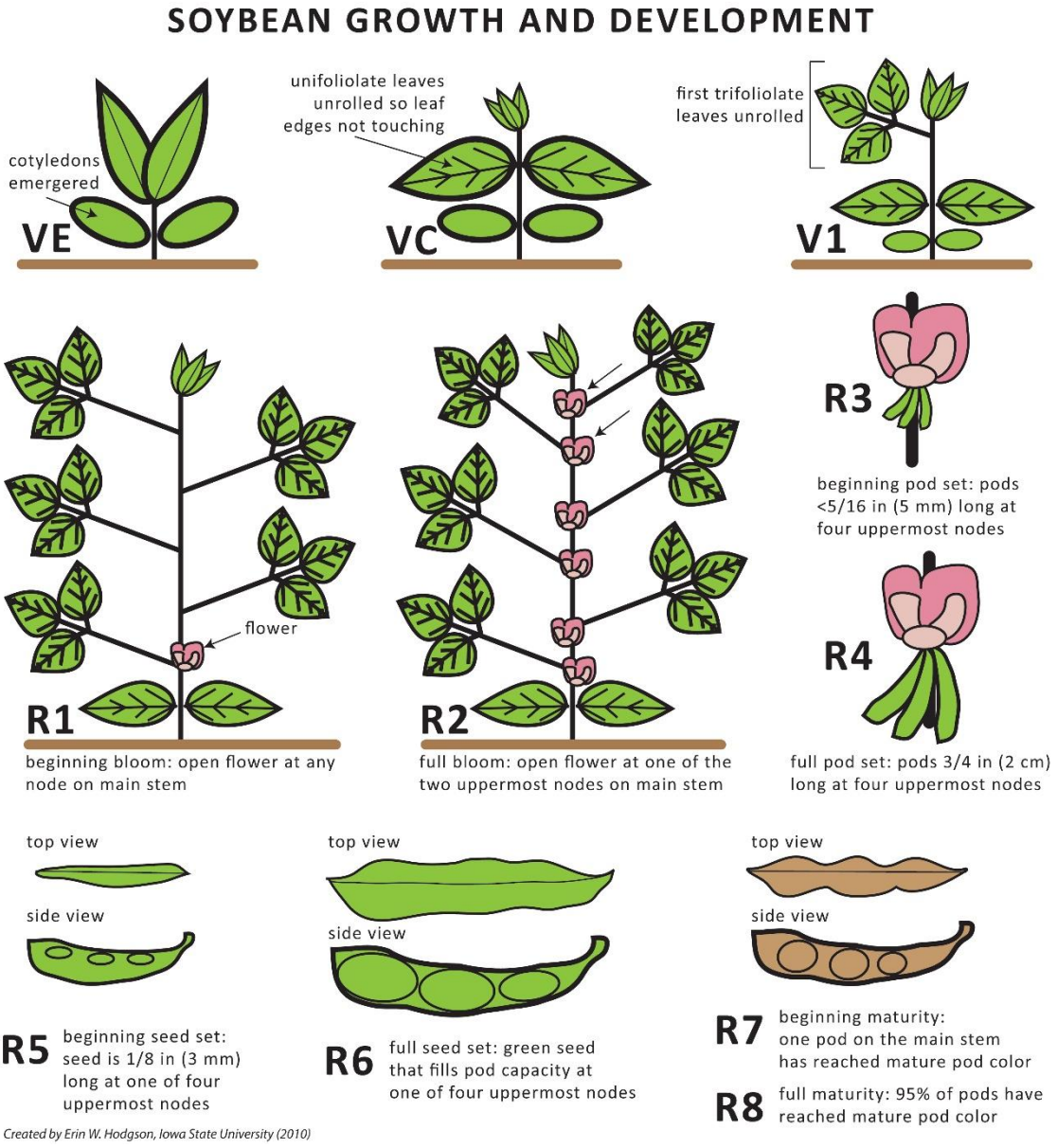
SI Figure S1. Measurement guide used to quantify soybean growth stage for all sites in 2015 and 2016.



SI Table S1. Iowa farms surveyed in 2015 & 2016

Year	Site Name	Cultivation Category	County	Percent Landuse in 1.6 km Radius of Field[1]				Farm Coordinates
				Cropland	Developed	Grassland	Woodland	
2015	JUL	High	Story	78%	7%	9%	6%	41.9648972° -93.62951389°
2015	OFAR	High	Marshall	75%	6%	17%	2%	42.033889° -93.0285389°
2015	WDAI	High	Story	88%	8%	4%	0%	41.97079167° -93.658989°
2015	GLI	High	Marshall	93%	5%	2%	0%	42.145356° -93.1175°
2015	LIPP	High	Boone	74%	8%	11%	7%	42.0476361° -93.72373889°
2015	LIOP	Low	Marshall	44%	21%	27%	8%	42.0072472° -92.9658083°
2015	CAT	Low	Story	56%	9%	15%	20%	42.0583167° -93.68207778°
2015	CURT	Low	Story	30%	31%	21%	19%	42.00281° -93.6715194°
2015	HOR	Low	Story	44%	5%	26%	25%	42.1069694° -93.5810972°
2015	IARIV	Low	Marshall	55%	5%	19%	20%	42.1402083° -93.04970278°
2016	OAK	High	Story	91%	5%	3%	0%	41.929764° -93.639831°
2016	IVI	High	Boone	93%	5%	3%	0%	41.994122° -93.751983°
2016	TRA1	High	Boone	79%	4%	16%	1%	42.137892° -93.831206°
2016	EDAI	High	Story	82%	8%	10%	1%	41.972141° -93.629994°
2016	UTH	High	Story	87%	3%	9%	1%	41.921955° -93.747422°
2016	KOST	Low	Boone	13%	29%	15%	43%	42.050572° -93.918092°
2016	HAG	Low	Story	52%	4%	13%	32%	42.090914° -94.011750°
2016	CURT	Low	Story	27%	34%	20%	19%	42.003816° -93.668273°
2016	TRA3	Low	Boone	50%	6%	14%	29%	42.123217° -93.912994°
2016	ONT	Low	Story	12%	46%	11%	31%	42.037406° -93.665611°

[1]Landscape categories based on individual features of landscape listed in table 2.

SI Table S2. Individual landscape features surrounding soybean farms within a 1.6 km buffer in Iowa in 2015 and 2016.

Site	Year	Cultivation Category	Corn	Soybeans	Sweet Corn	Rye	Oats	Alfalfa	Other Hay	Other Crops	Wildflower /Clover	Fallow crop	Apples	Open Water	Develped open space	Developed low intensity	Developed med intensity
JUL	2015	High	43.77%	32.96%	0.00%	0.00%	0.05%	0.69%	0.43%	0.00%	0.00%	0.00%	0.00%	0.13%	5.53%	0.96%	0.48%
OLD	2015	High	46.92%	26.87%	0.00%	0.00%	0.07%	0.58%	0.22%	0.00%	0.00%	0.00%	0.00%	0.00%	5.59%	0.74%	0.08%
WDAI	2015	High	56.08%	31.20%	0.00%	0.00%	0.34%	0.47%	0.07%	0.00%	0.00%	0.01%	0.00%	0.00%	5.35%	0.96%	0.99%
GLI	2015	High	40.24%	52.55%	0.00%	0.00%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.17%	0.02%	0.02%
LIP	2015	High	53.46%	19.89%	0.00%	0.00%	0.00%	0.08%	0.08%	0.00%	0.00%	0.00%	0.00%	0.18%	6.34%	0.85%	0.23%
LPAR	2015	Low	28.72%	14.49%	0.00%	0.00%	0.00%	0.54%	0.26%	0.00%	0.00%	0.00%	0.00%	0.54%	14.40%	4.10%	1.72%
CATT	2015	Low	18.45%	31.99%	0.04%	0.00%	0.05%	2.26%	3.22%	0.01%	0.00%	0.01%	0.00%	0.23%	7.05%	1.65%	0.12%
CUR1	2015	Low	11.72%	12.91%	0.01%	0.00%	0.22%	2.62%	2.26%	0.02%	0.04%	0.01%	0.00%	0.41%	14.04%	7.67%	6.77%
HOR	2015	Low	18.01%	24.58%	0.00%	0.00%	0.01%	0.41%	0.49%	0.00%	0.00%	0.00%	0.00%	1.60%	3.08%	0.54%	0.02%
IRIV	2015	Low	25.03%	28.44%	0.00%	0.00%	0.88%	0.29%	0.07%	0.00%	0.01%	0.00%	0.00%	2.41%	2.91%	0.11%	0.00%
OAK	2016	High	60.70%	29.07%	0.00%	0.00%	0.16%	0.53%	0.63%	0.00%	0.00%	0.00%	0.00%	0.00%	4.91%	0.24%	0.11%
IVI	2016	High	53.28%	39.53%	0.00%	0.00%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.32%	0.19%	0.02%
TRA1	2016	High	49.46%	25.11%	0.00%	0.00%	0.08%	1.60%	3.14%	0.01%	0.01%	0.00%	0.00%	0.02%	3.63%	0.06%	0.00%
EDAI	2016	High	46.52%	34.09%	0.00%	0.01%	0.07%	0.40%	0.49%	0.00%	0.00%	0.00%	0.00%	0.17%	5.48%	1.35%	0.93%
UTH	2016	High	50.78%	35.84%	0.01%	0.00%	0.00%	0.08%	0.18%	0.00%	0.00%	0.05%	0.00%	0.00%	3.25%	0.12%	0.04%
KOS	2016	Low	6.47%	5.36%	0.00%	0.00%	0.05%	0.35%	0.58%	0.01%	0.00%	0.00%	0.00%	1.29%	16.96%	9.22%	0.94%
HAG	2016	Low	30.65%	17.87%	0.00%	0.00%	0.37%	0.98%	1.63%	0.00%	0.00%	0.00%	0.00%	0.34%	3.50%	0.14%	0.00%
CUR2	2016	Low	8.56%	12.44%	0.01%	0.00%	0.22%	3.29%	2.45%	0.02%	0.04%	0.07%	0.00%	0.30%	16.93%	8.41%	6.71%
TRA3	2016	Low	32.15%	17.71%	0.00%	0.00%	0.00%	0.54%	0.02%	0.00%	0.00%	0.00%	0.00%	0.01%	6.21%	0.14%	0.00%
ONT	2016	Low	6.44%	4.42%	0.00%	0.00%	0.00%	0.89%	0.20%	0.04%	0.00%	0.00%	0.00%	0.00%	21.65%	17.94%	5.19%
HOR	2015	Ag Site	18.01%	24.58%	0.00%	0.00%	0.01%	0.41%	0.49%	0.00%	0.00%	0.00%	0.00%	1.60%	3.08%	0.54%	0.02%
SAND	2016	Prairie	29.12%	7.15%	0.00%	0.00%	0.00%	0.36%	1.23%	0.00%	0.00%	0.00%	0.04%	1.17%	11.09%	0.74%	0.01%

Land use surrounding each farm was quantified in ArcGIS, ArcMap 10.3.1 using a 1.6 km radius centered on the apiary location. Land use features were based on the USDA-NASS cropland data layer for 2015 and 2016 at a 30 m x 30 m resolution (https://nassgeodata.gmu.edu/CropScape/). Using the 'isecpolyrst' function in Geospatial Modeling Environment (Version 0.7.4.0) the proportion of all landscape feature classes were identified by counting pixels associated with each land category (SI Table S2).

SI Table S3. Land use classifications combined to create four land use[1] categories in 2015 & 2016.

Cropland	**Developed**	**Grassland**	**Woodland**
Soybean	Open Water	Clover/Wildflower	Deciduous Forest
Corn	Developed Open Space	Fallow Crop	Evergreen Forest
Sweet Corn	Developed Low Intensity	Grass/Pasture	Mixed Forest
Rye	Developed Medium Intensity		Shrub land
Oats	Developed High Intensity		Woody Wetland
Alfalfa	Barren		Herbaceous Wetland
Other Hay			Apples
Other Crops			

[1]Land use features were based on the USDA-NASS cropland data layer for 2015 and 2016 within a 1.6 km radius of each soybean farm.

SI Table S4. Mite load and queen presence as fixed factors in 2015 & 2016.

	Mite Load[1]			**Queen Presence[2]**		
	F	Df	p-value	F	Df	p-value
Mass	0.84	1, 38.05	0.3638	0.12	4, 37.78	0.9746
Immature bee population	0.34	1, 38	0.5638	0.41	4, 37.45	0.7968
Adult bee population	0.1	1, 25.97	0.7566	0.28	4, 23.92	0.8886

[1]Mites per 300 bees as measured monthly during 2015 and 2016

[2]Queen presence is measured as binary 1 (present) and 0 (absent) at each inspection in 2015 and 2016

SI Table S5. Simple effect comparisons of interaction between cultivation category and sampling week least squares means for apiary mass in 2015 and 2016. Adjustment for multiple comparisons: Tukey-Kramer

Simple Effect Level	Cultivation Category	Cultivation Category	Estimate	Standard Error	DF	t Value	Pr > |t|	Adj P
Week 22	Low Cultivation	High Cultivation	2.2116	2.7961	79.58	0.79	0.4313	0.4304
Week 24	Low Cultivation	High Cultivation	-0.2988	2.2546	43.3	-0.13	0.8952	0.8948
Week 26	Low Cultivation	High Cultivation	-2.8491	2.7961	79.58	-1.02	0.3113	0.3102
Week 27	Low Cultivation	High Cultivation	-0.9209	2.7961	79.58	-0.33	0.7428	0.7424
Week 28	Low Cultivation	High Cultivation	-3.4988	2.2546	43.3	-1.55	0.1280	0.1232
Week 30	Low Cultivation	High Cultivation	-3.9157	2.2546	43.3	-1.74	0.0895	0.0848
Week 32	Low Cultivation	High Cultivation	-9.3333	2.2546	43.3	-4.14	0.0002	<.0001
Week 34	Low Cultivation	High Cultivation	-7.7574	2.7961	79.58	-2.77	0.0069	0.0064
Week 36	Low Cultivation	High Cultivation	-7.3504	2.7961	79.58	-2.63	0.0103	0.0096
Week 38	Low Cultivation	High Cultivation	-7.8591	2.7961	79.58	-2.81	0.0062	0.0057
Week 39	Low Cultivation	High Cultivation	-3.7749	2.7961	79.58	-1.35	0.1808	0.1794
Week 42	Low Cultivation	High Cultivation	-3.8926	2.7961	79.58	-1.39	0.1678	0.1663
Week 43	Low Cultivation	High Cultivation	-5.5410	2.7961	79.58	-1.98	0.0510	0.0497

SI Table S6. Simple effect comparisons of interaction between cultivation category and sampling week least squares means for apiary immature bee population (i.e. Brood) in 2015 and 2016. Adjustment for multiple comparisons: Tukey-Kramer

Simple Effect Level	Cultivation Category	Cultivation Category	Estimate	Standard Error	DF	t Value	Pr > |t|
Week 22	Low Cultivation	High Cultivation	3.5952	57.7091	122.1	0.06	0.9504
Week 24	Low Cultivation	High Cultivation	-3.2992	57.7091	122.1	-0.06	0.9545
Week 26	Low Cultivation	High Cultivation	7.2962	57.7091	122.1	0.13	0.8996
Week 27	Low Cultivation	High Cultivation	-26.9660	57.7091	122.1	-0.47	0.6411
Week 28	Low Cultivation	High Cultivation	-47.8189	41.9798	95.58	-1.14	0.2575
Week 30	Low Cultivation	High Cultivation	-99.8669	41.9798	95.58	-2.38	0.0194
Week 32	Low Cultivation	High Cultivation	-28.4920	41.9798	95.58	-0.68	0.4990
Week 34	Low Cultivation	High Cultivation	-71.2019	57.7091	122.1	-1.23	0.2196
Week 36	Low Cultivation	High Cultivation	-183.90	57.7091	122.1	-3.19	0.0018
Week 38	Low Cultivation	High Cultivation	-54.8881	57.7091	122.1	-0.95	0.3434
Week 39	Low Cultivation	High Cultivation	-88.7360	57.7091	122.1	-1.54	0.1267
Week 42	Low Cultivation	High Cultivation	-18.3270	57.7091	122.1	-0.32	0.7513
Week 43	Low Cultivation	High Cultivation	-0.3410	57.7091	122.1	-0.01	0.9953

SI Table S7. Simple effect comparisons of interaction between cultivation category and sampling week least squares means for apiary adult bee population in 2016. Adjustment for multiple comparisons: Tukey-Kramer

Simple Effect Level	Cultivation Category	Cultivation Category	Estimate	Standard Error	DF	t Value	Pr > |t|	Adj P
Week 22	Low Cultivation	High Cultivation	0.8500	3.3249	23.84	0.26	0.8004	0.7990
Week 24	Low Cultivation	High Cultivation	-0.3000	3.3249	23.84	-0.09	0.9289	0.9284
Week 27	Low Cultivation	High Cultivation	-3.4250	3.3249	23.84	-1.03	0.3133	0.3064
Week 28	Low Cultivation	High Cultivation	-3.9000	3.3249	23.84	-1.17	0.2524	0.2447
Week 30	Low Cultivation	High Cultivation	-3.4000	3.3249	23.84	-1.02	0.3168	0.3099
Week 32	Low Cultivation	High Cultivation	-15.9250	3.3249	23.84	-4.79	<.0001	<.0001
Week 34	Low Cultivation	High Cultivation	-14.2000	3.3249	23.84	-4.27	0.0003	<.0001
Week 36	Low Cultivation	High Cultivation	-8.5750	3.3249	23.84	-2.58	0.0165	0.0120
Week 39	Low Cultivation	High Cultivation	-9.2000	3.3249	23.84	-2.77	0.0108	0.0072
Week 43	Low Cultivation	High Cultivation	-5.5250	3.3249	23.84	-1.66	0.1097	0.1009

SI Table S8. Type III fixed effects of continuous measures of landscape on apiary weight, immature bee population, and adult bee population in 2015 and 2016.

	Weight (Kg)				Immature bee population				Adult bee population			
Effect	Num DF	Den DF	F Value	Pr > F	Num DF	Den DF	F Value	Pr > F	Num DF	Den DF	F Value	Pr > F
Grassland	1	17.5	0.01	0.939	1	18.6	0.13	0.7202	1	6	0.65	0.4524
Woodland	1	15.9	5.27	0.0356	1	15.7	0.19	0.6675	1	6	3.47	0.1117
Developed	1	15.4	0	0.9704	1	14.7	0.59	0.4557	1	6	0.23	0.6478
Week	12	103	11.78	<.0001	12	93.5	4.69	<.0001	9	54	16.42	<.0001
Year	1	17.4	1.44	0.2463	1	27.9	3.94	0.0571	.	.	.	.
Grassland* Week	12	104	0.26	0.9942	12	92.4	0.44	0.9421	9	54	1.35	0.2335
Woodland* Week	12	103	2.93	0.0016	12	94.3	0.55	0.8778	9	54	2.19	0.0368
Developed *Week	12	103	0.27	0.992	12	94	0.55	0.8751	9	54	1.03	0.4254
Cropland	1	17.5	5.84	0.0268	1	17.5	3.62	0.0735	1	8	5.15	0.0529
Week	12	128	1.92	0.0375	12	119	3.15	0.0006	9	72	3.12	0.0032
Year	1	20.6	1.1	0.3059	1	34.7	3.91	0.0561	.	.	.	.
Cropland* Week	12	128	2.7	0.0028	12	118	1.71	0.0734	9	72	6.31	<.0001

Grassland, Woodland, and Developed were all ran in one model while cropland was ran in a separate model due to collinearity of landscape features.
Adult bee population was measured in 2016 only

SI Table S9. Simple effect comparisons of interaction between cultivation category and sampling week least squares means for apiary nurse bee lipid percent in 2015 and 2016. Adjustment for multiple comparisons: Tukey-Kramer

Simple Effect Level	Cultivation Category	Cultivation Category	Estimate	Standard Error	DF	t Value	Pr > |t|	Adj P
Week 24	Low Cultivation	High Cultivation	-0.1828	0.2858	69	-0.64	0.5246	0.5246
Week 28	Low Cultivation	High Cultivation	0.2410	0.2858	69	0.84	0.4021	0.4021
Week 32	Low Cultivation	High Cultivation	-0.2712	0.4042	69	-0.67	0.5046	0.5046
Week 34	Low Cultivation	High Cultivation	-0.4791	0.4042	69	-1.19	0.2400	0.2400
Week 43	Low Cultivation	High Cultivation	-0.1623	0.2858	69	-0.57	0.5720	0.5720

SI Table S10. Differences of least squares means for apiary nurse bee lipid content between weeks in 2015 and 2016.

Week	Week	Estimate	SE	DF	t Value	Pr > |t|	Adj P
24	**28**	1.0074	0.2021	69	4.98	<.0001	**<.0001**
24	**32**	1.2566	0.2609	69	4.82	<.0001	**<.0001**
24	**34**	1.1298	0.2609	69	4.33	<.0001	**0.0005**
24	**43**	1.8425	0.2021	69	9.12	<.0001	**<.0001**
28	**32**	0.2492	0.2609	69	0.96	0.3429	0.874
28	**34**	0.1224	0.2609	69	0.47	0.6405	0.9899
28	**43**	0.835	0.2021	69	4.13	<.0001	0.0009
32	**34**	-0.1268	0.3301	69	-0.38	0.702	**0.9953**
32	**43**	0.5858	0.2609	69	2.25	0.028	0.1757
34	**43**	0.7126	0.2609	69	2.73	0.008	0.0595

SI Table S11. Rates of apiary growth and decline in high and low cultivation in 2015 and 2016.

	Cultivation Category	Rate Comparison	Estimate	Standard Error	DF	t Value	Pr > |t|
Weight	High Cultivation	Rate of gain vs Rate of loss	-0.9414	1.8966	592.8	-0.5	0.6198
	Low Cultivation	Rate of gain vs Rate of loss	0.763	1.8966	592.8	0.4	0.6876
	Low Cultivation vs High Cultivation	Rate of gain	-5.5938	2.0978	594	-2.67	0.0079
	Low Cultivation vs High Cultivation	Rate of Loss	3.8893	1.6025	591.7	2.43	0.0155
Immature bee population	High Cultivation	Rate of gain vs Rate of loss	-56.47	46.739	553	-1.21	0.2275
	Low Cultivation	Rate of gain vs Rate of loss	-32.728	46.739	553	-0.7	0.4841
	Low Cultivation vs High Cultivation	Rate of gain	-87.433	51.571	556	-1.7	0.0906
	Low Cultivation vs High Cultivation	Rate of Loss	63.691	39.447	550.2	1.61	0.107
Adult bee population	High Cultivation	Rate of gain vs Rate of loss	-2.8458	2.1949	350	-1.3	0.1956
	Low Cultivation	Rate of gain vs Rate of loss	0.02917	2.1949	350	0.01	0.9894
	Low Cultivation vs High Cultivation	Rate of gain	-4.5	2.2585	350	-1.99	0.0471
	Low Cultivation vs High Cultivation	Rate of Loss	7.375	2.1294	350	3.46	0.0006

Rate of gain calculated from colony initiation to peak weight, weeks () May, June, and July
Rate of loss calculated from peak weight to the end of the season, weeks () August, September, October.

SI Table S12. Differences of least squares means for colony pollen collection type in high and low cultivation landscapes in 2015 and 2016.

Cultivation Category	Pollen Type	Cultivation Category	Pollen Type	Estimate	DF	t Value	Pr > |t|	Adj P
High	Clover	High	Partridge Pea	67.2209	36	4.03	0.0003	**0.003**
High	Clover	High	Trace	67.5546	36	4.05	0.0003	**0.003**
High	Clover	Low	Clover	12.0419	51.14	0.68	0.4997	0.983
High	Clover	Low	Partridge Pea	55.1787	51.14	3.12	0.003	**0.039**
High	Clover	Low	Trace	75.7701	51.14	4.28	<.0001	**0.002**
High	Partridge Pea	High	Trace	0.3338	36	0.02	0.9841	1
High	Partridge Pea	Low	Clover	-55.179	51.14	-3.12	0.003	**0.039**
High	Partridge Pea	Low	Partridge Pea	-12.0422	51.14	-0.68	0.4997	0.983
High	Partridge Pea	Low	Trace	8.5492	51.14	0.48	0.6314	0.997
High	Trace	Low	Clover	-55.5128	51.14	-3.13	0.0029	**0.037**
High	Trace	Low	Partridge Pea	-12.3759	51.14	-0.7	0.4879	0.981
High	Trace	Low	Trace	8.2155	51.14	0.46	0.6447	0.997
Low	Clover	Low	Partridge Pea	43.1368	36	2.59	0.0138	0.126
Low	Clover	Low	Trace	63.7282	36	3.82	0.0005	**0.006**
Low	Partridge Pea	Low	Trace	20.5914	36	1.24	0.2246	0.817

SI Table S13. Pollen grains identified in honey sampled from colonies biweekly throughout soybean bloom in 2016.

Week	Percent Soybean Fields Blooming	Cultivation Category	Total pollen pellets sampled	Mean percent pollen found in honey			
				Red+white clover	Birdsfoot trefoil	Soybean	Rest (including 8 minor species and other unkown species)
28	100	High Cultivation	1500	38.93%	3.73%	0.40%	57.33%
30	100	High Cultivation	1500	61.93%	22.73%	0.00%	15.33%
32	100	High Cultivation	1100	52.53%	17.53%	0.73%	29.93%
34	0	High Cultivation	720	36.50%	5.25%	0.33%	58.25%
28	100	Low Cultivation	1500	25.67%	1.20%	0.00%	73.13%
30	100	Low Cultivation	1500	40.87%	4.53%	0.20%	54.60%
32	100	Low Cultivation	1200	50.83%	0.92%	0.08%	48.25%
34	0	Low Cultivation	860	23.00%	11.08%	0.79%	65.92%

SI Table S14. Growth stage[1] of each apiary soybean farm in 2015 and 2016.

Year	Site Name	Cultivation Category	Calender week						
			22	24	26	28	30	32	34
2015	JUL	High	.	V2	V4	R1	R2	R3	.
2015	OFAR	High	.	V3	R1	R2	R3	R4	.
2015	WDAI	High	.	V3	R1	R2	R3	R4	.
2015	GLI	High	.	V3	R1	R2	R3	R4	.
2015	LIPP	High	.	V1	V3	R1	R2	R4	.
2015	LIOP	Low	.	V1	V4	R1	R2	R3	.
2015	CAT	Low	.	V3	V5	R1	R2	R4	.
2015	CURT	Low	.	V4	R1	R2	R3	R4	.
2015	HOR	Low	.	V5	R1	R2	R3	R4	.
2015	IARIV	Low	.	V1	V3	R1	R3	R4	.
2016	OAK	High	VE	V2	R1	R2	R3	R4	R5
2016	IVI	High	VE	V1	V3	R1	R3	R4	R5
2016	TRA1	High	VE	V1	R1	R2	R3	R4	R5
2016	EDAI	High	VC	V4	R1	R1	R3	R4	R5
2016	UTH	High	VE	VC	V3	R2	R3	R4	R5
2016	KOST	Low	VE	VC	R1	R2	R3	R4	R5
2016	HAG	Low	VC	V1	R1	R2	R3	R4	R5
2016	CURT	Low	VE	V5	R1	R2	R3	R4	R5
2016	TRA3	Low	VC	V2	R1	R2	R3	R4	R5
2016	ONT	Low	VE	V1	R1	R2	R3	R4	R5

[1]Growth stage based on Figure S1).

SI Table S15. Simple effect comparisons of interaction between landscape type and sampling week least squares means for colony weight in prairie project during 2016. Adjustment for multiple comparisons: Tukey-Kramer

Simple Effect Level	Landscape	Landscape	Estimate	Standard Error	DF	t Value	Pr > |t|	Adj P
Week 36	Agricultural Site	Prairie	0.01000	2.6561	76	0.00	0.9970	0.9970
Week 37	Agricultural Site	Prairie	-0.3400	2.6561	76	-0.13	0.8985	0.8985
Week 38	Agricultural Site	Prairie	-7.8000	2.6561	76	-2.94	0.0044	**0.0044**
Week 39	Agricultural Site	Prairie	-8.6400	2.6561	76	-3.25	0.0017	**0.0017**
Week 40	Agricultural Site	Prairie	-6.9500	2.6561	76	-2.62	0.0107	**0.0107**

SI Table S16. Simple effect comparison of least square means of lipid content in honey bees in prairie and agricultural sites by month.

Week	Landscape	Landscape	Estimate	Df	t Value	p-value
32	Agricultural Site	Prairie	0.00117	30	0.41	0.6864
34	Agricultural Site	Prairie	0.00278	30	0.97	0.3394
36	Agricultural Site	Prairie	0.00393	30	1.37	0.1796
38	Agricultural Site	Prairie	-0.0033	30	-1.15	0.2579
40	Agricultural Site	Prairie	-0.00861	30	-3.01	**0.0053**

SI Table S17. List of forbs found directly preceding and during the time when our experimental colonies were placed next to reconstructed prairies, as part of the prairie rescue experiment (flowering date data collected 2017). For any given date, (-) denotes present but not in bloom (+) denotes present and in bloom.

Common Name	**Scientific Name**	**26-Jul**	**1-Aug**	**7-Aug**	**22-Aug**	**7-Sep**	**19-Sep**
Culver's Root	*Veronicastrum virginicum*	+	+	+	-	-	-
Queen Anne's Lace	*Daucus carota*	+	+	+	+	-	-
Rosinweed	*Silphium integrifolium*	+	+	+	+	+	-
Canada Goldenrod	*Solidago canadensis*	+	+	+	+	+	+
Flowering Spurge	*Euphorbia corollata*	+	+	+	+	-	-
White Sweet Clover	*Melilotus albus*	+	+	+	+	+	-
Gray-headed Coneflower	*Ratibida pinnata*	+	+	+	-	-	-
Showy Tick Trefoil	*Desmodium canadense*	+	+	+	+	+	-
Slender Mountain Mint	*Pycnanthemum tenuifolium*	+	+	+	+	-	-
Red Clover	*Trifolium pratense*	+	+	+	+	+	+
Bee Balm	*Monarda fistulosa*	+	+	+	-	-	-
Partridge Pea	*Chamaecrista fasciculata*	+	+	+	+	+	-
Rattlesnake Master	*Eryngium yuccifolium*	+	+	+	-	-	-
Purple Prairie Clover	*Dalea purpurea*	+	+	-	-	-	-
Cup Plant	*Silphium perfoliatum*	-	+	+	+	-	-
Ironweed	*Vernonia fasciculata*	-	+	+	-	-	-
Thistle	*Cirsium*	-	-	-	+	+	+
Sawtooth Sunflower	*Helianthus grosseserratus*	-	-	-	-	+	+
Stiff Goldenrod	*Solidago rigida*	-	-	-	-	+	+
Common Boneset	*Eupatorium perfoliatum*	-	-	-	-	+	+
Tall Coreopsis	*Coreopsis tripteris*	-	-	-	-	+	-
Heath Aster	*Symphyotrichum ericoides*	-	-	-	-	+	+