ISU Monarch Data Summary for NCIG

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Table ?? and ?? provide mean count of nectar plant species averaged across all data collection events. Values in table represent the specific counting unit for each species, not necessarily a whole plant. Table ?? and ?? provide nectar plant species density (per 100m2) averaged across all data collection events.

Here are some heatmaps for density of species planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average presence.

Table 1: 2016 Nectar plant species density: average density (count / m2) across all rounds

			ŀ																	ı
ectar Plant Species	sillat	sallat	tarm1b	tarm2a	tberla	tber3a	terela	s2nubt	s&nubt	slorgt	sSorgt	tnknla	tnkn2a	$_{\rm tuor1b}$	sloiqt	tpio2a	${\rm tprd1a}$	$\operatorname{tprd2a}$	tsut2a	tverla
ack eyed susan	•	1	1	1	1	1	1	1	1	1	1	1	1	1	2.63	1	1	1	1	1
common milkweed	1	1	- 1	1	'	- 1	1	'	1	0.01	0.02	- 1	- 1	1	1	1	1	1	1	1
golden alexanders	١	1	1	1	0.07	1	1	1	- 1	1	1	- 1	1	1	1	1	1	1	1	ı
eye sunflower	1	1	1	1	1	1	1	0.04	1	1	1	- 1	1	1	1	1	- 1	- 1	1	1

Table 2: 2016 Nectar plant species density: average density (count / m2) across all rounds

tverla	'	1.91	1	1	1	1	1	1	1	1	1	1	1	1	3.73	1
tsut2a	,		1	,	,		1	,	1		,	1	,	1	1	ı
s2brqt	'	1	1	1	1	0.08	1	1	ı	1	1	1	1	1	1	1
slbrqt	'	1	1	1	1	0.00	1	1	ı	1	1	1	1	1	1	1
tpio2a	١.	- 1	- 1	•	•	- 1	- 1	•	1	- 1	1	1	1	1	1	1
sloiqt	'	1	1	1	1	1	0.17	1	ı	0.22	1	0.02	0.03	1	0.02	1
dlront	١	1	1	1	0.02	1	1	1	1	1	1	1	1	1	1	1
tnkn2a	١.	29.0	1	ı	'	1	1	ı	1	1	1	1	ı	1	1	1
tnknla	١,	'		,	,			,		,	,	,	,	1		
tgro2a	0.34	1	1	1	1	92.0	0.19	1	ı	1	1	1	1	1	1	1
slorgt	4.53	1	1	1	1	1.56	'	1	ı	1	1	1	1	1	1	1
tdun3a	-	1	1	1	1	1	01.0	1	ı	1	1	1	ı	1	1	1
e2nubt	١.	1	١	١	١	0.01	0.33	١	1	1	1	00.0	1	1).12	1
terela	١.	01.10	1	1	1		0.03	1	ı	1	1	'	ı	1	0.02	1
tber3a	١.	'	1	1	1	1		90.0	.01	1	1	1	1	1	'	1
tberla	١.	1	1	ı	ı	1	0.15	'	'	1	1	1	ı	1	.01	1
esmret	80.0	1	1	1	1	1	'	1	1	1	1	1	1	1	'	1
tarmlb		0.31	1	1	1	1	1	1	ı	1	1	1	ı	1	1	0.05
sSllst	١.	_).17	1	ı).04	1	ı	0.03	1	0.04	0.05	ı	0.07	1	'
sIllat	1	ı	1	0.03	ı	1	ı	ı	0.03	ı	1	0.03	ı	0.02	1	ı
Nectar Plant Species	alfalfa	birdsfoot trefoil	black medic	bladder campion	canada goldenrod	canada thistle	carolina horsenettle	common cinquefoil	common dandelion	common evening primrose	common mallow	common mullein	common yarrow	compass plant	eastern daisy fleabane	flowering spurge

Table 3: 2016 Nectar plant species density: average density (count $/\ \mathrm{m2})$ across all rounds

	tverla	-	,)4	,	11	.32	1	1	,	.72	1	1	1	1
				0.0		0.	0				0.				
	sStust	1	1	1	1	1	1	1	1	1	- 1	- 1	1	- 1	1
	s2brqt	1	1	1	0.04	1	1	1	1	1	1	1	1	1	0.04
	tprdla	1	1	1	1	1	1	1	1	1	- 1	- 1	1	- 1	1
	s2oiqt	1	1	1	1	1	1	1	1	1	- 1	- 1	1	- 1	1
	sloiqt	1	1	1	1	1	1	1	1	1	1	0.17	0.02	1	1
	diront	1	1	1	1	1	1	1	1	1	- 1	1	1	- 1	1
	tnkn2a	1	1	1	1	0.07	0.50	1	1	1	4.74	1	1	1	1
	tnknla	'	1	1	1	1	0.15	1	1	1	2.09	1	1	1	1
	s2013t	1	0.18	1	1	1	6.93	ı	ı	1	1	1	ı	1	1
,	slorgt	1	0.43	1	1	1	1.37	ı	ı	1	1	1	1	1	1
	ь£пиbt	0.17	'	1	1	1	1	1	0.03	1	1	1	1	1	1
)	e2nubt	-	1	ı	1	1	1	1	'	1	0.03	1	1	1	1
,	terela		1	1	١	98.0	1.38	ı	ı	1	0.18	1	ı	1	1
	tber3a		1	1	١	'	2.48	ı	ı	1	0.32 (1	ı	0.22	1
	therla		0.01	1	1	1		0.23	1	- 0.01	'	1	ı	1	1
ı	tarm2a		1	1	1	1	3.77 0.01	1	1	1	80.0	1	1	1	1
ı	d1mrst		1	1	١	1.73	0.04	1	1	1	1	1	1	1	1
	s2llst		1	1	1	1	1	0.03	1	1	9.47	1	1	1	1
	sillat		4.63	1	1	1	0.08	0.03	1	1	7.77	1	ı	1	1
	Nectar Plant Species	lanceleaf fogfruit	morning glory	plantain	prickly lettuce	queen annes lace	red clover	smartweed	stinging nettle	velvetleaf	white clover	whitestar	whorled milkweed	wild mustard	yellow sweet clover

Table 4: 2016 Nectar plant species density: average density (count / m2) across all rounds

ttiela
tpre8a
tpre7a
tpre6a
tpre5a
tpre4a
tpre3a
tpre2a
tprela
tber2a
tberla
tappla
Nectar Plant Species

Table 5: 2016 Nectar plant species density: average density (count / m2) across all rounds

ttiels	ı
tpre8a	0.18
4pre7a	0.17
tpre6a	0.02
tpre5a	0.19
tpre4a	0.37
tbre3a	0.27
tpre2a	0.05
tprela	0.01
tber2a	ı
tpcrla	ı
tappla	1
Nectar Plant Species	common dandelion

Table 6: 2016 Nectar plant species density: average density (count $/\ \mathrm{m2})$ across all rounds

1963 1973 1983 1913	dı	- 0.22 0.37 -		
геБа	đį			
re3a re4a				
rela	dı dı	1.23 0.07	1	0
cr1a	$^{\mathrm{tp}}$	-	1	
ppla	et		0.33	0
	Nectar Plant Species	plantain	red clover	wibito olorion

Table 7: 2016 Nectar plant species density: average density (count / m2) across all rounds

զջպող	0.00
terala	1
tbyd2a	1
tbydla	1
Nectar Plant Species	common milkweed

Table 8: 2016 Nectar plant species density: average density (count $/\ \mathrm{m2})$ across all rounds

	s1b	e2b	sla	qgų
Nectar Plant Species	tрм	ф	ter	դոդ
alfalfa	3.79 1.29	1.29	1	1
black medic	1	0.34	1	
blue wild indigo	1	ı	1	0.01
brown eyed susan	1	1	1	0.77
canada goldenrod	1	1	1	0.01
canada thistle	1	1	1	0.14
common cinquefoil	1	1	0.12	
common dandelion	1	0.02	0.02	'
eastern daisy fleabane	1	1	0.05	1

Table 9: 2016 Nectar plant species density: average density (count $/\ \mathrm{m2})$ across all rounds

Nectar Plant Species	tbydla	tbyd2a	terala	զջպող
red clover	0.58	$0.58 \ 0.70 \ 2.30$	2.30	١.
white clover	6.45	6.45 7.57 1.92	1.92	1
white sweet clover	0.03	1	0.02	1
wild parsnip	0.00	1	1	1
yellow sweet clover	1	0.01 0.03	0.03	

Table 10: 2016 Nectar plant species density: average density (count / m2) across all rounds

tvosla	1	1	1	1	1	,	,	1
elnevt	0.05 1.42	'	'	'	0.61	0.35	0.05	0.39
sləint	0.05	1	1	1	1	1	1	1
tjonla	1	1	'	0.38	1	1	1	1
tharla	1	0.04	0.01	0.06	1	1	1	1
slsit	1	1	1	1	1	1	1	1
s1vsbt	1	1	1	1	1	1	1	1
Nectar Plant Species	black eyed susan	blue vervain	common milkweed	hoary vervain	ox eye sunflower	purple prairie clover	sawtooth sunflower	wild bergamot

Table 11: 2016 Nectar plant species density: average density (count / m2) across all rounds

Nootar Dlant Gracies	stvsb:	sfsfa	harla	slnoį	s19in:	sInsv:	SISOV
olfelfa		Į.	1 66 0	ĵ	ļ.	1) c
dildild	ı	ı	0.77	•	•	1	7.OT
brown eyed susan	1	1	1	1	0.15 0.69	0.69	1
canada goldenrod	1	1	1	1.07	1	1	1
canada thistle	1	1	1.02	1	1	0.03	1
chicory	1	- 1	1	0.15	1	1	1
eastern daisy fleabane	1	-1	1	0.01	1	1	1

Table 12: 2016 Nectar plant species density: average density (count $\ /\ \mathrm{m2}$) across all rounds

glory stle	j	noţt	fəint	Tvan	[sovi
stle	'	١	1	0.01	'
	'	0.07	- 1	1	1
plantain (0.81	1	1	1	1
- ·	0.62	1.29	- 1	1	1
white clover 1	1.10	1	1	0.39	ı
wild parsnip 0.01 -	'	0.23	1	1.11	0.04
clover	0.14	1	1	1	1

Table 13: 2017 Nectar plant species density: average density (count / m2) across all rounds

erla	ev.t	0.01	1	1	1	1	'	1	1	1	'
sStr	ısı	0.00	1	1	1	1	1	1	0.03	1	'
rd2a	tbi	0.02	1	1	1	١	1	1	0.03	1	'
rdla	tbi	00.0	1	1	1	١	1	1	•	1	٠
ьЅоі	tpi	0.01 0.00 0.02 0.00 0.01	1	1	1	1	1	1	0.05	1	1
sloi	tpi	'	ı	1	ı	ı	ı	1	0.07	ı	٠
dIro	uı	90.0	10.02	1	1	0.01	1	1	0.16 0	1	1
кп2а	[u1			1	1	0.04	1	1	0.04	1	0.02
knla	[uţ	- 0.02 0.02 0.15 0.37	1	1	1	1	1		0.01	1	'
гога	rgt	0.02	1	0.01	0.01	1	1	0.01	1	1	1
rola	rgt	0.02	ı	1	1	1	1	0.01	1	1	1
eEnu	pt	'	1	1	1	٠	1	'	00.0	1	٠
eZau	pt	0.01	1	1	1	٠	1	1	0.03	1	٠
.e1a	ter	0.02 0.01	ı	1	1	١	0.01	1	'	1	١.
егзя	qı		1	1			'		1	ī	
er1a		١.	1	1	1	٠	1	1	1	20.0	1
rm2a	tet	0.01	00.0	1	1	٠	1	1	0.02	1	٠
qĮmi	tet	'	'	1	1	١	1	1	0.02	1	٠
ll2a	ts.	,	1	1	1	1			,	ï	
ßIII		0.02	1	1	1	1	١	1	1	1	1
	Nectar Plant Species	black eyed susan (blue vervain	culvers root	foxglove beardtongue	hoary vervain	ironweed	ox eye sunflower	partridge pea	prairie cinquefoil	yellow coneflower

Table 14: 2017 Nectar plant species density: average density (count / m2) across all rounds

ŧ	tver18	1	1	0.70	1	1	0.00	1	1	1	1	0.00	0.00	1	1	1	1	1	1	0.20	1	'
ŧ	չՀդոsդ	ľ	1	1	١	1	1	1	1	1	1	1	0.30	1	1	1	1	1	1	1	20.0	1
8	tprd2	'	1	1	1	1	0.01	1	1	1	1	1	0.02	1	ı	1	1	0.04	1	1	'	1
છ	tprdl	١	•	1	١	1	1	1	1	1	1	1	'	ı	1	1	1	'	00.0	1	1	1
τ	s2oiqt	١	5.36	•	2.55	1	1	1	1	1	90.0	•	1	1	1	1	1	1	'	0.24	1	1
e	stoiqt	'	1	•	0.01	1	0.07	1	1	1	'	1	1	1	1	1	1	1	0.01	0.01	•	1
q	front	١	1	1	0.33	1	1	1	0.02	1	1	0.03	0.01	0.01	1	0.03	1	1	1	1	1	'
ક	շսպսդ	١	1	1.84	1	1	1	1	1	0.03	1	0.04	0.21	1	1	1	0.89	1	1	1	1	1
s.	tnknl	١	1	5.74	1	1	1	1	1	0.18	1	0.00	0.20	1	1	1	0.05	1	1	1	0.01	1
16	Sorgt	'	1	1	1	1	1	1	0.04	1	1	1	0.05	1	1	1	1	1	1	1	0.02	1
16	terols	0.34	1	1	1	1	1	1	1	1	1	1	0.02	1	1	1	1	1	1	1	0.33	1
88	քառթդ	١	1	1	1.64	1	0.03	1	1	1	1	1	1	1	0.00	1	1	0.01	1	0.74	1	0.00
83	շսոթդ	'	1	1	2.98	1	0.01	1	1	1	1	1	0.02	1	0.00	1	1	1	0.07	90.0	1	1
ŧ	terela	'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.50	1	'
9	tper3	'	1	1	0.01	1	1	1	1	1	1	0.01	0.12	1	1	1	1	1	1	0.26	1	1
9	tberl	'	1	1	0.01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.23	1	1
6	tarmž	0.16	1	1	1	1	1	1	1	1	1	1	0.11	1	1	1	1	1	0.02	1	1	1
q	tarml	١	1	0.18	1	1	0.01	1	1	1	1	1	0.01	1	1	1	1	1	1	1	1	1
	e2llet	'	1	1	١	1	0.01	0.03	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	sIllat	١	•	1	0.03	89.0	1	1	1	1	1	1	1	1	ı	1	1	1	1	1	1	1
	Nectar Plant Species	alfalfa	bedstraw	birdsfoot trefoil	black medic	bladder campion	brown eyed susan	buffalobur nightshade	canada thistle	chicory	clasping venus looking glass	common cinquefoil	common dandelion	common mallow	common mullein	common purslane	common yarrow	compass plant	eastern black nightshade	eastern daisy fleabane	field pennycress	groundcherry

Table 15: 2017 Nectar plant species density: average density (count $\ /\$ m2) across all rounds

Nectar Plant Species	sillat	sSllst	d1mrst	szmrst	tberla	tper3a	terela	62aubt	s&nubt	slorgt	s201gt	tnknla	tnkn2a	divont	ьloiqt	s2oiqt	slbrqt	s2brqt	tsut2a sl19vt	DT TO A 0
hawkweed	ı	١.	١.		١.	,	١.	١.	١.	١,	- 1.	70.	١,	١,	,					١.
morning glory	0.02	1	1	1	1	1	1	1	,	,	1	,	1	,	1	,		,		
musk thistle	1	1	1	0.02	ı	ı	-	$0.13 \ 0.$	0.00	1	- 0	0.01	1	1	1	1	1	1	'	
pineapple weed	0.27	1	1	1	ı	ı	-	0.03 0.	0.01	,	1	ı	1	,	1	,	1	,	'	
prickly sowthistle	ı	1	1	1	1	ı	1	ı	,	1	1	1	1	1	1	0.00	0.01	1	'	
prostrate knotweed	1	0.07	1	1	1	1	1	,	,	1	1	1	1	1	1	00.00	0			
	240.00	1	1	1	ı	ı	ı	ı	,	,	,	,	1	,	1		- 0.02	2		
queen annes lace	1	1	4.49	1	ı	-		0.02 0.	80.0	1	- 0.	0.43 0.	0.68 0.	0.07	0.0(00	1		- 1.60	_
red clover	0.05	1	0.49	1.30	.35 7	.13 0	0.12 0	0.08 0.	0.09 8.44		8.98 3.	$3.60 \ 3.$	3.96 0.	0.01 0.	0.1	17	1		- 0.16	
rough avens	1	1	1	ı	1	ı	,	1	,	,	1	1	1	,	1		1	- 0.00		
shepherds purse	ı	1	0.02	0.09	1	ı	1	ı	- 0.	0.04 0.	$0.53 \ 0.$	0.04 0.	0.03	1	1	- 0.21	0.00	0 0.86		
shortstalk chickweed	1	١	1	1	,	ı	,	- 0	0.15	,		,	,	,	,	1	ı		'	
smartweed	0.03	0.29	0.02	0.03 4	4.37 0	0.95 0	0.07 0	0.02 0.	0.11 0.	0.08 0.	0.17 7.	7.83 2.	2.57	ı	1	1	1	1	'	
venice mallow	1	1	1	ı	ı	ı	,	,	ı		0	00	,		,	1	1			
white clover	1	1	0.04	28.0	0	0 29.0	0.01 0	.75 6.	0.06 0.	0.03	- 0.		1.74 0.	18	,		1	1	- 1.85	
white sweet clover	1	0.05	1	ı	1	ı	,	1	ı	,	,	,	1	,	1	1	1			
wild mustard	1	1	1	•	ı	ı	ı	,	- 0.	$0.31 \ 0.$	11 0.	01	,	,	-0)1				
yellow sweet clover	1	1	1	1	ı	ı	·	- 0	0.02		ï			-	0.02	,	,			
yellow wood sorrel	ı	1	•	1	1	1	0 -	.10 0.	0.32		1		- 0.	40	- 0	0.05		- 0.0	~	. 1

Table 16: 2017 Nectar plant species density: average density (count / m2) across all rounds

.01	ı	.01	.04	1
0 -	ı	-	-	1
0.00	•	1	•	1
0.03	1	1	0.01	1
١.	1	1	1	1
0.01	1	1	1	1
0.02	1	1	0.00	0.02
0.02	1	1	1	1
0.00	1	1	1	1
'	1	1	80.0	1
١.	1	1	0.10	1
0.21	0.02	1	0.05	1
black eyed susan	blue vervain	ox eye sunflower	partridge pea	yellow coneflower
		$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0.21 - 0.00 0.02 0.02 0.01 - 0.03 0.00 - 0.02 0.02 - 0.03 0.00 - 0.02 0.02 - 0.03 0.00 - 0.03 0.00 - 0.03 0.00 - 0.03 0.00 - 0.03 0.00 - 0.03 0.00 - 0.03 0.00 - 0.03 0.00 - 0.03 0.00 - 0.03 0.00 0.00	susan 0.21 - $0.000 0.02 0.02 0.01 - 0.03 0.00$ - 0.02 0 0.02 0 $0.03 0.00$ - 0.03 0 0.00 - 0.05 0 0.10 0 0.08 0 0.00 0 0 0.00 0 0.00 0 0 0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Table 17: 2017 Nectar plant species density: average density (count / m2) across all rounds

ttiela	'	1	1	0.03	1	1
tpre8a	1	0.02	0.00	1	1	1
tpre7a	١.	1	1	ı	1	1
tpre6a	1	0.01	1	1	1	1
tpre5a	1	0.07	1	0.02	1	1
tpre4a	1	0.01	0.11	0.03	1	1
tpre3a	1	0.08	1	0.06	1	1
tpre2a	'	1	1	0.06	1	0.33
tprela	'	0.13	1	0.01	1	1
tber2a	1	0.03	1	0.03	1	1
tbcrla	0.33	2.04	1	0.11	1	1
sIqqst	'	0.02	1	0.06	0.01	1
Nectar Plant Species	alfalfa	black medic	common cinquefoil	common dandelion	compass plant	eastern daisy fleabane

Table 18: 2017 Nectar plant species density: average density (count $\ /\ \mathrm{m2}$) across all rounds

Cies 14. Cappla 15. Cherla 16. Cherla 17. Chrela 17. Chrela	tpre5a tpre6a tpre8a tpre8a	1 1		1 1		1 1 1	1.55	1 1.55			- 1.55 1.55
6144 tappla 6.41 t			ı	ı	1			1 1	1 1 1	- - 0.18 0.	- 0.01
61419 1		1	ı	1	1	5	0.01	0.01	0.01	0.01	0.01
slqqst 11		'	0.01	0.11			1			1.51	1.51
slqqst 14		'	'					ı	1 1	1 1 1	1 1 1 1
e1qqet 14		'	1	1	1	1		'	1 1	- - 0.35 0.79	- - 0.79
0.0		'	1	1	1.40	1		'	1 1	0.35	- - 0.35
	ਰ pp Nectar Plant Species ਦੌ	0.41		1	•	1		2.11	2.11	2.11	2.11 - 1.68 0.01

Table 19: 2017 Nectar plant species density: average density (count / m2) across all rounds

Nectar Plant Species	tbydla	tbyd2a	terala	զջպոդ
black eyed susan	0.05	0.05 0.00 0.01 0.17	0.01	0.17
common milkweed	1	1	1	0.01
hoary vervain	0.00	1	1	1
partridge pea	0.08	$0.08 \ 0.05 \ 0.15 \ 0.05$	0.15	0.05

Table 20: 2017 Nectar plant species density: average density (count / m2) across all rounds

	ßl	zs	8		
	pΛ	ρΛ	[81	τр	
Nectar Plant Species	ф	qţ	te		
alfalfa	1.13	1.13 0.54 0.10	0.10	1	
black medic	0.52	0.52 3.77	1	1	
brown eyed susan	1	1	0.01	1	
canada thistle	1	1	1	0.01	
common cinquefoil	1	1	0.14	1	
common dandelion	0.27	0.27 - 0.55	1	0.01	
common evening primrose	1	1	0.17	1	
eastern daisy fleabane	1	1	0.35	1	

Table 21: 2017 Nectar plant species density: average density (count / m2) across all rounds

Table 22: 2017 Nectar plant species density: average density (count / m2) across all rounds

Nectar Plant Species	slvsbt slsft	slsit	tharla	sInoit	sləint	stasvt	tvosla	
black eyed susan	0.03	1	1	- 0.01 0.03	0.03	1	- 0.01	
blue vervain	1	- 1	1	1	1	0.04	'	
hoary vervain	1	1	0.01	0.28	1	1	1	
partridge pea	1	- 1	1	0.03	0.03	0.49	0.02	
purple prairie clover	1	1	1	1	1	0.01	1	
wild bergamot	1	1	1	1	1	0.01	1	

Table 23: 2017 Nectar plant species density: average density (count $\ /\ \mathrm{m2}$) across all rounds

etar Plant Species	stvsbt	s Isht	tharla	sInoit	sləint	sInsvt	slsovi
	0.22		0.52	'	1	0.67	١.
	0.03	1	1	1	1	1	1
	1	1	1	0.04	-1	1	١.

Table 24: 2017 Nectar plant species density: average density (count / m2) across all rounds

Nectar Plant Species 4	tdavl	stsit	thar	sInoįt	sləint	Insvi	Isovi
hawkweed -	١,	1	'	'	١	1	0.13
hoary alyssum	,	1	0.49	1	1	1	1
morning glory	1	1	0.26	1	15.23	0.01	1
red clover	1	1	1.82	0.04	0.41	1	1
shepherds purse	1	1	1	1	0.01	1	1
smartweed -	1	28.25	0.08	1	1.09	1	0.34
white clover	1	1	0.21	1	1	1	1
whorled milkweed	1	1	1	0.09	1	1	1
wild parsnip	1	1	1	0.08	1	0.05	1
yellow sweet clover	,	1	1	1	1	0.07	1

Table 25: 2018 Nectar plant species density: average density (count $/\ \mathrm{m2})$ across all rounds

Nectar Plant Species	sillat	s2llst	d1mrst	tarm2a	therla	tber3a	terela	62nubt	s&nubt	slorgt	szorgt	tnknla	едияиз	dlront	sloiqt	s2oiqt	tprdla	tprd2a	estuet	tverla
black eyed susan	1	0.11	0.09	1	1	ı	1.11	0.07	0.04		,	- 0.	0.02	'	0.88	0.72	0.15	1.27	'	0.05
blue vervain	0.02	1	1	1	0.19	•	1	1	0.35	ı	0 -	0.62 1.	1.03 4	45.77	'	0.17	0.02	0.08	•	1
canada milk vetch	1	1	1	1	1	1	1	1	1	ı	,	,	,	1	1	1	1	1	0.03	1
foxglove beardtongue	1	1	0.08	0.00	'	0.01	1	1	1	ı	,	- 0	19	0.89	'	0.04	0.27	0.08	0.25	1
golden alexanders	1	1	0.01	0.03	1	1	1	1	'	0.01	0 -	02	1	0.05	1	1	1	1	1	1
great blue lobelia	1	1	1	1	1	1	ı	1	1	ı	1	,	ı	1	1	0.01	1	١	ı	1
hoary vervain	0.01	1	1	1	ı	ı	1	0.10	1.28 ().17	ı	ı	1	0.88	1	0.00	0.05	0.04	0.04	1
ironweed	1	1	1	1	1	ı	1	1	0.01	ı	1	1	1	1	'	0.00	1	1	1	1
leadplant	1	1	1	1	1	1	1	1	1	ı	1	1	1	1	1	0.00	1	1	1	1
new england aster	1	0.03	1	1	ı	ı	1	ı	1	ı	ı	ı	ı	ı	ı	1	1	1	0.07	1
ox eye sunflower	0.10	0.02	0.10	99.0	0.14	0.09).15 (0.83	0.49	1.28 0.	20 0.	0.81 1.	25	2.91	0.20	1.83	0.04	0.34	1.72	90.0
pale purple coneflower	1	1	1	1	1	1	1	1	1	1	í	ï	i	'	0.05	1	1	•	0.01	1
partridge pea	1	1	1	1	1	1	1	0.01	1	ı	ı	,	1	0.02	0.16	80.0	0.03	0.10	1	0.04
prairie blazing star	1	1	1	1	1	1	1	1	1	1	,	,	1	0.01	1	1	1	1	1	1
prairie cinquefoil	1	1	1	1	1	1	1	1	0.01	ı	ı	- 0.	00	•	1	1	20.0	٠	•	1
purple prairie clover	1	1	1	1	1	1	1	1	1	1	í	ï	i	1	1	1	1	0.01	1	1
swamp milkweed	1	1	1	0.08	1	1	1	1	'	0.03	í	ï	i	1	1	1	1	•	1	1
virginia mountain mint	1	1	1	1	1	1	1	1	1	,	0 -	20	ı	0.04	'	90.0	1	•	0.03	1
wild bergamot	0.06	0.12	1	0.03	1	0.01	0.02	1	1	2.08 0.	0.21 0.	0.56 0.	0.98	1.15	'	0.22	0.73	0.11	0.70	1
yellow coneflower	1.13	0.78	0.49	1.55	0.16	0.13 (0.10	09.0	06.0	2.76 1.	1.05 5	5.03 5.	5.20	4.40 (0.90	3.41	1.83	1.65	5.93	0.03

Table 26: 2018 Nectar plant species density: average density (count $\ /\$ m2) across all rounds

	ßll	12a	q1m.	жуш.	erla	в £ 13	.e1a	rurs	egur	slo	гося	sinz	sznz	dire	slo	620	slb:	ezp.	ıtZa	srla
Nectar Plant Species	[61	[61	tst	ıst	edt.	eq1	ter	ıpı	ıpı	ıgı	ıgı	լսդ	լսդ	оиз	iqt		ıdı	ıdı	nst	ЭЛŢ
alfalfa	١.	١	٠	2.47	١.	١.	'	١.	').26	,					١.			,	'
american bellflower	1	1	1	1	1	1	1	1	1	ı	1		0 -	.03	,	1	1	1	1	1
birdsfoot trefoil	1	1	0.42	1	1	1	0.03	0.01	1.12	1	03	9.73 1	10.25	,	,	1	,	,	1	3.32
black medic	0.10	0.03	1	1	1	1	1	1.35	1	,	ı	ı	1	- 0	0.38 0	.02	,	- 0.	10	ı
bladder campion	2.47	0.53	1	1	1	1	1	1	1	1	1	1	1	,	,	1	1	1	1	1
bull thistle	1	1	1	1	1	1	0.01	1	1	1	-	0.03	0.01	,	1	1	-0	.02	1	1
canada goldenrod	1	1	1	1	1	1	1	1	1	ı		1	0 -	0.15	1	1	1	1	1	1
canada thistle	1	0.23	1	0.03	1	1	1	1	1	0.15 0	0.02	0.13	0 -	0.39	,	1	,	- I.	40	1
carolina horsenettle	1	1	1	ı	0.11	0.02	1	90.0	0.05	0 -		1	1	- 0	00	ı	1	ı	1	1
catnip	1	1	1	1	1	1	1	0.16	1	0.33	1	1	1	,	,	1	,	- 2.	2.21	1
chicory	1	1	1	1	1	1	1	1	1	1	-	.07	1	ı		1	,		,	1
common cinquefoil	2.53	0.42	0.01	1	0.01	1	0.01	1	0.01	,	١	.18	0.13 0.	80.0	,	ı	,	,	1	١
common dandelion	0.01	0.01	1	1	1	0.01	1	0.00	0.01	ı	ı	1	0 -	.01	,	1	,	- 0.	0.01	ı
common evening primrose	1	1	1	1	1	0.02	1	1	1	1	ı	ı	0 -		05	ı	-0	0. 10	0.02	1
common mullein	1	1	1	1	0.01	1	1	0.18	0.19	1	1	ı	ı		0.00 0	.01	,	1	1	1
common selfheal	1	1	1	1	1	1	1	1	ı	1	ı	ı	1	ı	,	ı	1	,	١	0.30
common sneezeweed	1	1	1	1	1	1	1	1	1	ı	ı	ı	ı	,	0	.12	1	1	ı	1
common yarrow	1	1	1	1	1	1	0.03	1	•		ı	ı	0.24	- 0	0.26	ı	1		1	1
compass plant	1	1	0.03	1	1	1	1	1	•	ı	ı	ı	1		,	ı	,	,	,	1
deptford pink	1	1	1	1	1	1	0.80	1	•	ı	ı	ı	,		,	ı	,	,	,	1
eastern daisy fleabane	1	1	3.26	1	1.87	3.95	9.28	0.52	3.02		١	.01	0.04 0.	0.02 1.	1.27 17	.02	- 0.	35	- 1().25
field pennycress	1	1	1	1	1	1	1	0.04	ı	ı	ı	ı	1	ı	,	ı	ı	ı	,	1
field thistle	1	1	1	1	1	1	1	1	•	•	ı	ı	0 -	.31	,	ı	,	,	'	0.10
flowering spurge	1	1	90.0	1	1	1	1	1	1							٠				1

Table 27: 2018 Nectar plant species density: average density (count / m2) across all rounds

tverla	•	ı	ı	1	1	ı	ı	ı	ı	ı	5.97	1.14	ı	ı	1	ı	ı	F.88	ı	ı	ı	ı	ı	ı		1
tsut2a		ı	0.18	1	ı	1	1	1	٠	ı	1	0.14 4	0.03	0.13	•	1	•	0.31	0.00	1	1	1	ı	1	0.03	1
s2brqt	'	1	0.39	1	1	1	1	0.01	1	0.10	1	'	1	'	1	1	1	1	1	1	1	1	1	1	0.12	1
tprdla	ı	1	1	- 1	1	1	1	1	1	1	1	1	ı	ı	1	1	1	1	1	1	1	1	1	1	1	
sSoigt	'	1	1	1	0.01	1	1	1	1	1	1	6.99	1	1	1	1	1	0.01	1	1	1	1	1	1	1.59	1
sloigt	'	1	1	1	0.02	1	1	1	1	ı	0.98	11.99	1	1	1	1	1	1	1	2.41	1	1	1	1	0.20	1
dlront		ı	1	1	1	ı	1	1	•	ı	1	0.09	0.01	1	1	1	•	1.06	0.50	1	1	1	0.03	0.01	0.13	1
tnkn2a		1	1	1	1	1	1	1	•	ı	0.33	1.84	1	1	1	1	•	4.95	1	1	1	1	ı	1	0.17	1
tnknla		1	1	1	1	1	0.02	1	1	1	0.19	13.32 1	1	1	1	1	1	4.97	0.01	1	1	1	1	1	0.29	
620131		0.01	1	0.02	1	1	1	1	1	1	0.01		1	0.49	1	1	1	1	1	1	1	1	1	1	0.14	1
slorgt	1	1	1	0.03	1	1	1	0.19	1	1	1	13.05	1	3.17	1	1	1	1	0.11	1	0.84	1.94	1	1	0.08	
tdun3a	0.04	1	1	1	0.18	1	0.01	0.03	ı	ı	0.37	1.03	1	0.10	0.02	1	1	17.47	1	ı	1	ı	1	1	1	1
e2nubt	1	1	1	1	0.41	1	1	0.17	1	1	0.06	0.54	1	0.02	0.23	1	1	14.32	1	ı	1	1	0.20	1	0.13	0.32
terela	'	1	0.07	1	1	0.07	1	1.18	ı	ı	9.43	10.56	1	1	1	90.0	0.01	1	1	1	1	1	0.08	1	1.93	1
tper3a		1	1	0.04	ı	1	1	1	ı	ı	1	62.71	1	0.40	1	1	1	2.45	0.37	1	1	1	0.52	1	1	1
tberla		1	1	80.0	ı	1	1	1	•	ı	1	3.95	1	3.40	0.10	1	•	0.24	1	1	1	0.18	0.71	1	0.05	
szmrst	1	1	0.31	1	1	1	0.17	1	ı	ı	1	32.44	1	1	1	1	1	2.40	1	ı	1	ı	0.02	1	90.0	1
d1mrst	1	1	1	1	0.03	1	1	1	1	1	5.84		1	1	1	0.01	1	0.12	0.91	1	1	1	1	1	0.39	1
s2llst		1	1	1	0.22	- 0.01	1	1	0.03	ı	1	0.57	1	0.19	•	1	•	5.20	1	1	1	1	ı	1	0.26	
sillat	1	1	ı	0.01	0.03 0.22	1	0.09	0.01	ı	ı	1	1.37 0.57	1	1.17 0.19	1	1	1	13.97 5.20	0.03	ı	ı	ı	1	1	0.13 0.26	1
Nectar Plant Species	lanceleaf fogfruit	lesser burdock	marestail	morning glory	musk thistle	ox eye daisy	plantain	prickly lettuce	prickly sowthistle	prostrate vervain	queen annes lace	red clover	rough avens	smartweed	stinging nettle	tall thistle	venice mallow	white clover	white sweet clover	whorled milkweed	wild cucumber	wild mustard	wild parsnip	yellow salsify	yellow sweet clover	yellow wood sorrel

Table 28: 2018 Nectar plant species density: average density (count $\ /\ \mathrm{m2}$) across all rounds

tpre7a	- 60.0	1	0.03	0.03	-0.01 0.53	- 0.08 0.06	- 0.01 0.36		$0.36 \ 1.45 \ 4.27$	- 0.08	- 0.02	1	0.03	1	1	0.46 -	0.00 0.00
гргеба		0.10	ı	ı	0.77	ı	0.07	ı		ı	ı	ı	0.01	ı	0.45	0.01 0.	
tpre5a	0.20 0.05	0.35	1	1	0.31	1	0.07	1	1.67 0.03	1	1	1	1	1	1	1	06.0
tpre4a	0.05	1	1	0.01	0.02	1	0.11	1	1.83	1	1	1	1	1	1	1	0 70
tpre3a	'	0.66	1	1	0.26	1	0.24	1	4.77	1	1	1	1	0.01	1	1	5
tpre2a	'	1	1	1	0.25	1	0.19	1	1.90	0.01	0.01	1	1	1	1	1	0.75
tprela	'	0.25	1	1	0.13	1	0.02	1	1.38	1	0.02	1	1	ı	0.12	1	0 50
tpcr2a	'	1	1	1	1	1	0.01	0.03	0.09	0.03	1	0.01	1	1	1	1	
tberla	'	1	1	1	1	1	0.02	1	1.42	1	1	1	1	ı	1	1	
afqqat	'	1	1	1	'	1	0.08	0.01	1.25	1	1	1	1	1	1	1	0.01
Nectar Plant Species	black eyed susan	blue vervain	butterfly milkweed	canada milk vetch	foxglove beardtongue	golden alexanders	hoary vervain	ironweed	ox eye sunflower	pale purple coneflower	partridge pea	prairie cinquefoil	purple prairie clover	stiff goldenrod	virginia mountain mint	white heath aster	wild bergemot

Table 29: 2018 Nectar plant species density: average density (count / m2) across all rounds

	pla	rla	rza			в 5 е			вде	в7е		ßl
Nectar Plant Species	tap	tpc	tpc	tpre	tpre	tpre	tpre	tpre	tpre	tpre	tpre	əitt
alfalfa	0.01	1	'	'	'	1	1	'	1	1	'	1
black medic	1	1.71	1	1.08	0.33	0.33 0.03	0.03	0.03 0.22	'	0.44	0.44 - 0.37	'
bladder campion	1	1	1	0.03	1	0.22	0.15	1	1	1	1	1
bog yellow-cress	1	1	1	0.09	1	0.01	1	0.38	1	1	1	1
canada goldenrod	1	1	1	1	1	0.02	1	1	1	0.00	1	1
canada lettuce	1	1	1	1	1	1	1	1	1	1	1	0.72
canada thistle	0.17	1	ı	0.15	0.05	0.02	1	1	1	1	1	0.78
catnip	1	1	1	1	1	0.11	1	1	1	1	1	1
common cinquefoil	90.0	0.46	1	1.18	1.19	2.73	4.10	0.35	4.73	1.92	2.64	0.56
common dandelion	1	0.10	0.05	0.08	0.12	0.02	0.04	0.06	0.01	0.01	0.00	0.23
common evening primrose	1	0.05	1	0.36	1	1	1	0.23	1	1	1	1
cup plant	1	1	1.30	1	1	1	1	1	1	1	1	1
eastern daisy fleabane	1	1	1	0.01	0.01 2.77	0.01	0.01	0.01 0.00	0.03	0.30	1	1
field pennycress	1	0.27	0.27 2.02	1	1	1	1	1	1	1	1	1
field thistle	1	1	1	- 0.03 0.01	0.01	1	0.01	1	1	1	1	1

Table 30: 2018 Nectar plant species density: average density (count / m2) across all rounds

s leitt	0.0	1	1	1	4.17	1	1	1	ı	0.56	1	7.56	1	0.16	1	1	1	1	0.07
tpre8a	0.00	1	1	1	1	1	0.24	1	1	1	1	2.22	1	13.73	1	0.13	1	0.12	1
s791qt	· '	1	1	1	1	1	1.24	0.10	ı	1	1	1	1	5.04	0.10	0.05	1	0.14	1
tpre6a	·	1	1	1	1	1	1	1	1	1	1	1	1	9.97	1	1	1	1	1
tpre5a	0.00	1	1	ı	1	1	1	1	1	1	1	0.10	ı	19.70	0.04	1	ı	0.24	ı
tpre4a	'	1	1	ı	1	1	1	1	1	1	1	1	ı	24.20	0.21	1	ı	0.29	ı
tpre3a	'	1	0.03	ı	1	1	1	1	1	1	1	0.78	ı	12.45	0.02	1	ı	0.01	ı
tpre2a	· '	1	0.44	0.26	1	0.53 0.40	1	1	0.02	1	1	0.54	1	1.09	0.03	1	1	0.04	1
tprela	. '	1	1	0.04	1	0.53	1	1	0.21	1	1	1.31	'	9.91	0.97	1	'	0.08	1
tber2a	0.	1	1	1	1	1	1	1	ı	1	1.37	1	0.03	0.03	0.01	1	1	1	1
tberla	0.03	0.03	1	ı	1	0.13	0.01	1	3.53	1	0.09	1	1	14.34	2.51	1	ı	1	1
tappla	0::	1	1	1	'	1	1	1	5.81	1	1	0.37	1	1.03	1	1	0.01	1.16	0.04
Nectar Plant Species	marestail	morning glory	musk thistle	nodding stickseed	pineapple weed	prickly lettuce	prostrate vervain	queen annes lace	red clover	rough cinquefoil	shepherds purse	smartweed	velvetleaf	white clover	white sweet clover	wild mustard	wild parsnip	yellow sweet clover	yellow wood sorrel

Table 31: 2018 Nectar plant species density: average density (count / m2) across all rounds

	в.	. 63	æ	q
	ĮΡ	ZP/	s1s	ξЦ:
Nectar Plant Species	tpì	tpì	ter	դոդ
black eyed susan	0.00	0.05	0.00 0.05 0.05 2.29	2.29
blue vervain	1	1	0.02	'
butterfly milkweed	0.03	1	'	1
foxglove beardtongue	0.06	0.09	1	1
golden alexanders	0.00	1	1	1
hoary vervain	0.09	0.01	0.02	0.00
ox eye sunflower	2.36	1.44	0.69	0.13
pale purple coneflower	0.01	0.01	1	1
partridge pea	1	1	1	0.08
prairie cinquefoil	1	0.00	1	1
purple prairie clover	1	1	0.00	1
swamp milkweed	1	0.01	1	1
tall boneset	1	1	0.01	1
wild bergamot	0.68	0.68 2.26	1	0.13
yellow coneflower	5.90	6.87	6.87 1.66 1.82	1.82

Table 32: 2018 Nectar plant species density: average density (count $\ /\$ m2) across all rounds

Nectar Plant Species	tbydla	tbyd2a	terala	զջպդոդ
alfalfa	2.73	2.73 0.52	1	1
brown eyed susan	1	1	1	0.03
canada thistle	1	0.03	1	0.07
common cinquefoil	1	1	1.64	0.02
common dandelion	0.01	0.01 0.01	1	1
common mullein	1	0.00	1	0.04
eastern daisy fleabane	1	'	-0.34	'

Table 33: 2018 Nectar plant species density: average density (count $\ /\$ m2) across all rounds

	s1b	e2b	sla	qgq
Nectar Plant Species	ұрх	ф	ters	դոդ
marestail	1	1	3.65	3.65 1.67
morning glory	1	1	ı	0.00
musk thistle	1	ı	1	0.05
panicledleaf tick trefoil	1	1	1	0.03
prickly lettuce	1	ı	0.05	1
red clover	2.06	1.11	9.45	1
white clover	28.82	13.27	10.94	1.20
white sweet clover	1	0.07	0.08	1
white vervain	1	1	1	0.30
wild mustard	1	ı	0.43	0.13
wild parsnip	0.15	0.14	1	2.38
yellow sweet clover	1	1.83	1	0.03

Table 34: 2018 Nectar plant species density: average density (count $\ /\$ m2) across all rounds

	stvsb	sisi	harla	ionla	s19in	sInsv	sisov
Nectar Plant Species)Ţ	11	[]	ţţ	ιţ	rJ	t
black eyed susan	0.04	١.	0.11	0.05	- 0.11 0.02 6.33 1.67 2.88	1.67	2.88
canada milk vetch	1	-1	1	1	0.03	1	1
foxglove beardtongue	0.47	-1	1	1	1	1	0.63
golden alexanders	0.13	-1	1	1	1	1	0.14
hoary vervain	1	-1	0.64	0.04 1.36	1.36	1	1
ironweed	1	1	0.02	1	1	1	1
ox eye sunflower	0.95	- 1	0.74	0.26	$0.74 \ 0.26 \ 1.69$		$3.35 ext{ }0.77$
pale purple coneflower	1	-1	1	1	0.01	0.03	1
partridge pea	1	1	1	1	0.01	0.01	1
purple prairie clover	1	1	1	1	1	0.58	'
wild bergamot	0.48	-1	1	1	1	0.40	1.85
yellow coneflower	3.15	1	4.10	0.63	3.15 - 4.10 0.63 0.49 0.46 4.85	0.46	4.85

Table 35: 2018 Nectar plant species density: average density (count / m2) across all rounds

Nectar Plant Species	sivsbt	sfsit	tharla	sInoit	sləint	sInsvt	froot
alfalfa	'	1	'	0.03	'	'	9.23
birdsfoot trefoil	1	- 1	0.03	1	1	ļ	1
black medic	1	-1	0.78	23.93	0.33	19.20	1
bladder campion	1	-1	0.22	1	1	1	1
canada thistle	0.39	ı	1	1	0.12	ı	ı
chicory	1	1	1	0.67	ı	1	1
common cinquefoil	1	-1	0.03	1	1	1	1
common evening primrose	0.08	1	1	0.01	1	1	0.09
cup plant	1	1	1	0.02	1	1	1
eastern daisy fleabane	1	1	1	1.33	1	1	1
field thistle	1	1	1	0.03	1	•	0.01
groundcherry	0.06	-1	1	1	1	1	1

Table 36: 2018 Nectar plant species density: average density (count / m2) across all rounds

Nectar Plant Species	stvsbt	slant	tharla	sInoit	sleint	efnevt	sisovi
hoary alyssum	'	'	17.97	'	'	1	'
lesser burdock	1	- 1	0.11	'	1	1	1
marestail	0.01	1	0.06	1	ı	1	ı
prickly lettuce	ı	1	1	1	1	1	1.20
queen annes lace	1	1	0.03	1	1	0.40	1
red clover	ı	1	13.11	1.95	25.49	1.04	ı
smartweed	0.33	1	0.06	1	1	1	ı
velvetleaf	0.01	1	1	1	ı	1	ı
white clover	ı	1	4.44	0.37	ı	7.33	ı
white sweet clover	21.26	- 1	1	0.75	1.23	1.33	23.58
wild parsnip	21.51	1	1	9.38	ı	4.11	2.00
yellow sweet clover	0.47	1	0.22	1.41	0.20	4.27	6.89
yellow wood sorrel	1	1	1	0.35	1	1	

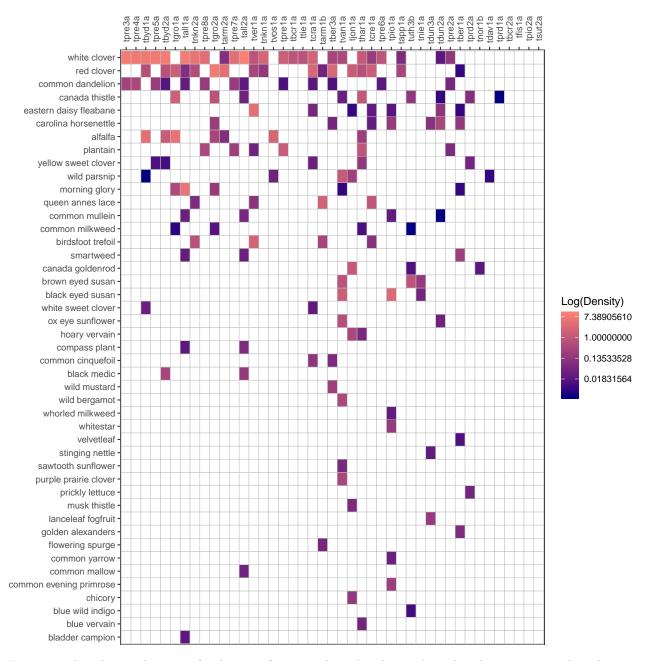


Figure 1: This plot is a heatmap for density of species planted and non-planted with transects on the columns and species on the rows sorting transects by average density and sorting species by avg presence for year 2016.

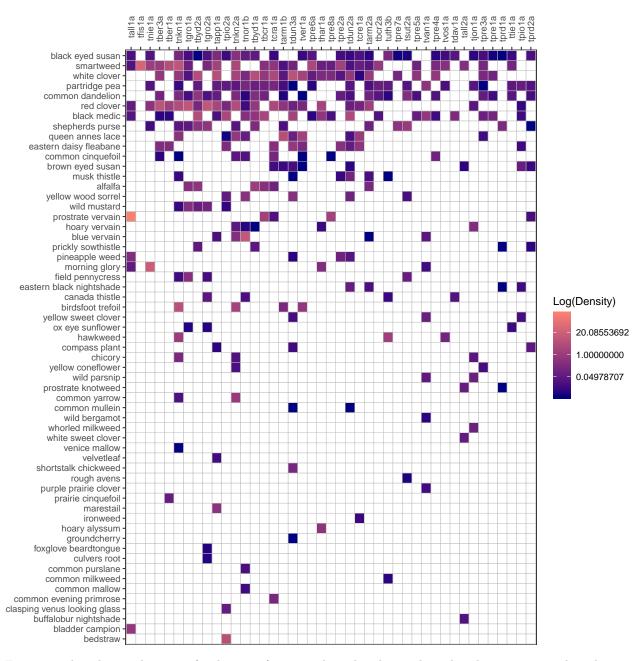


Figure 2: This plot is a heatmap for density of species planted and non-planted with transects on the columns and species on the rows sorting transects by average density and sorting species by avg presence for year 2017.

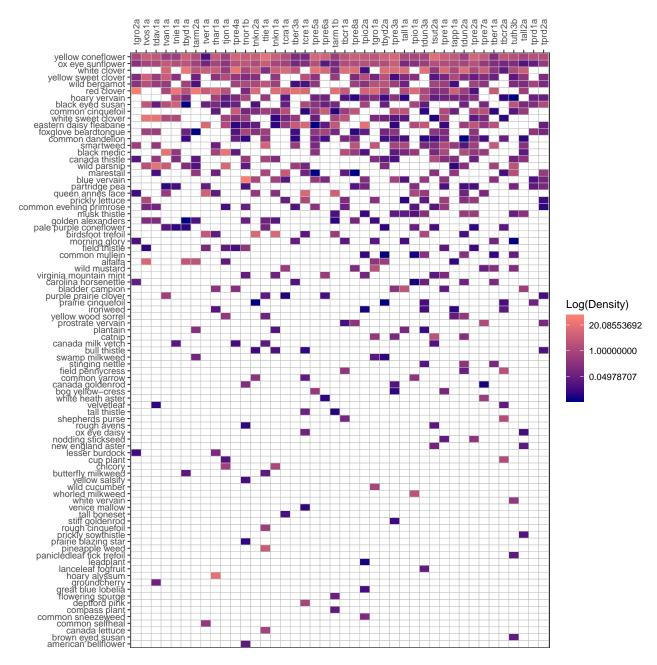


Figure 3: This plot is a heatmap for density of species planted and non-planted with transects on the columns and species on the rows sorting transects by average density and sorting species by avg presence for year 2018.

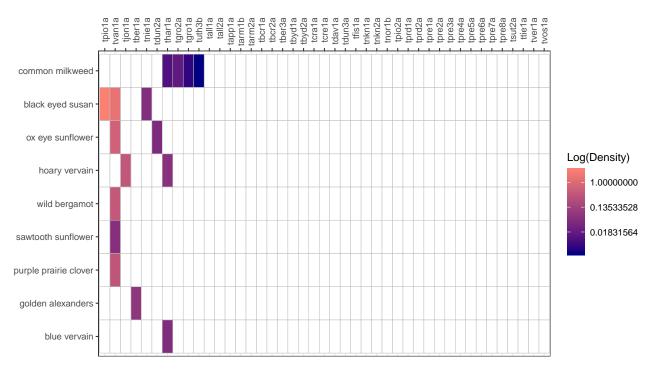


Figure 4: This plot is a heatmap for density of species planted with transects on the columns and species on the rows sorting transects by average density and sorting species by avg presence for year 2016.

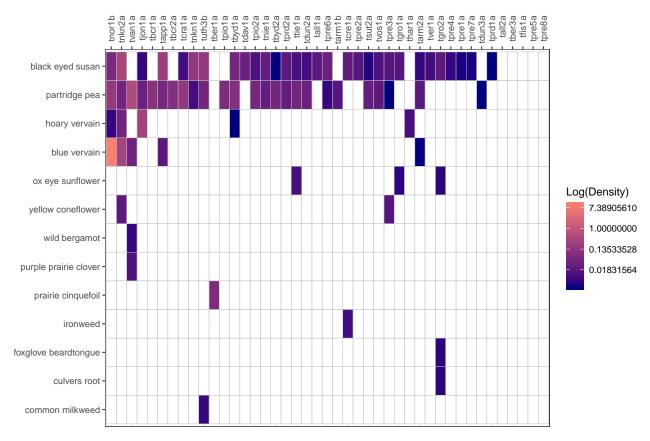


Figure 5: This plot is a heatmap for density of species planted with transects on the columns and species on the rows sorting transects by average density and sorting species by avg presence for year 2017.

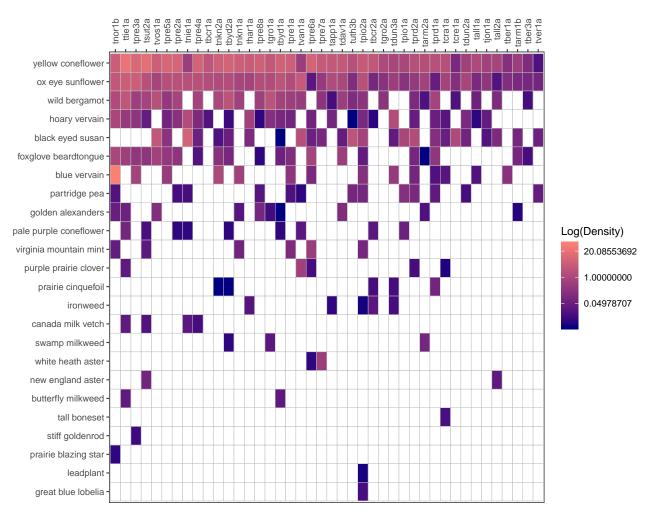


Figure 6: This plot is a heatmap for density of species planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average presence for year 2018.

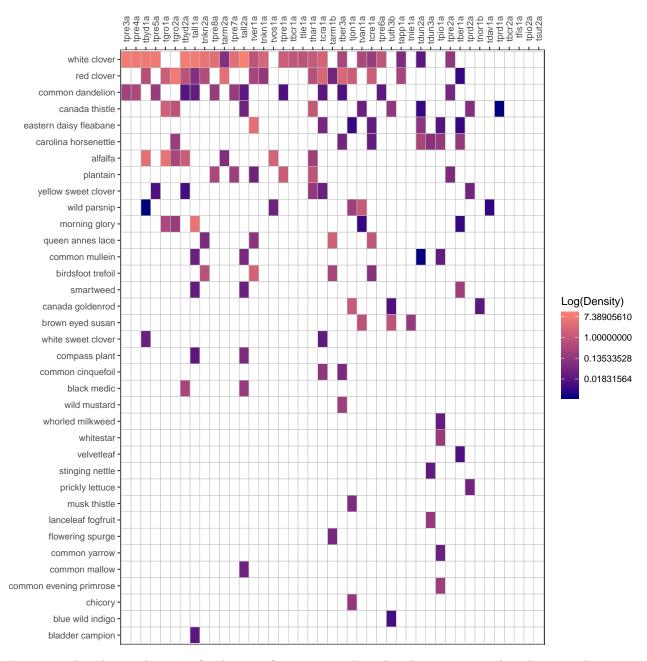


Figure 7: This plot is a heatmap for density of species non planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average presence for year 2016.

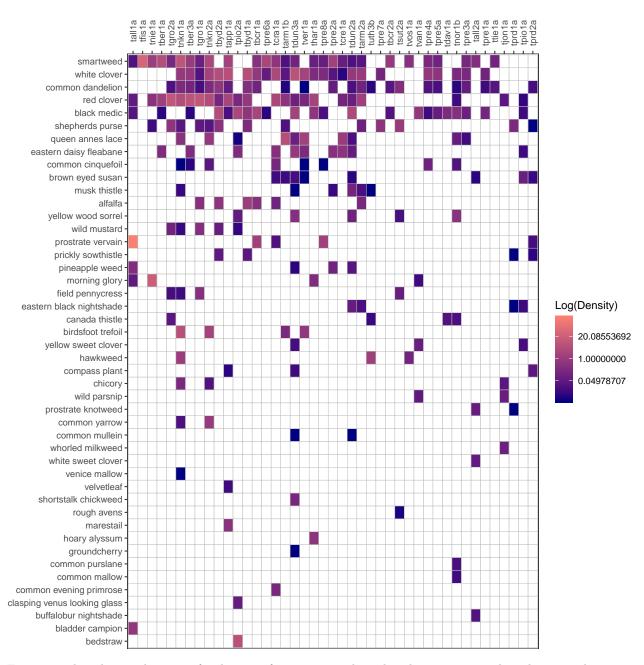


Figure 8: This plot is a heatmap for density of species non planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average presence for year 2017.

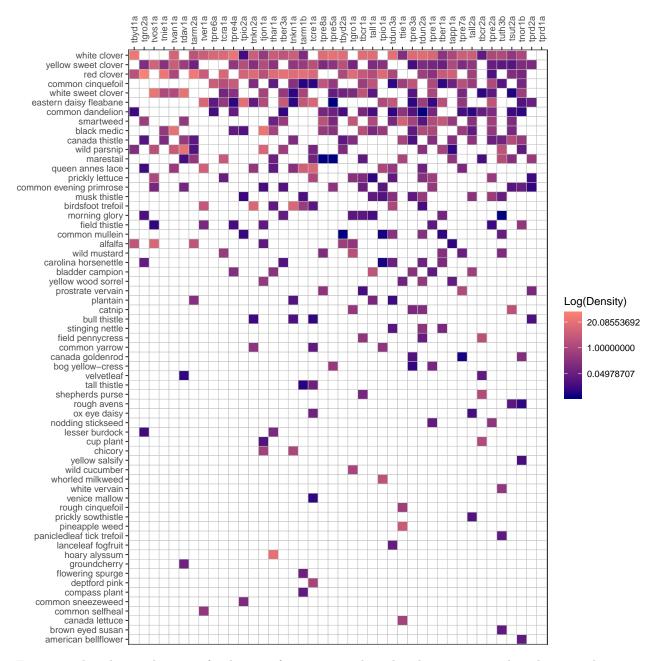


Figure 9: This plot is a heatmap for density of species non planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average presence for year 2018.