ISU Monarch Data Summary for NCIG

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Table 1 and 2 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 4 and 5 provide nectar plant species density (per 100m2) averaged across all data collection events.

Table 1: 2016 nectar plant species: mean count across all surveys

Nectar Plant Species t	tallla t	all2a ta	ppla ta	tall2a tappla tarm1b tarm2a	arm2a t	bcrla t	ocr2a t	berla t	ber3a t	bydla t	byd2a	tcrala 1	tcrela t	tdav1a	tdun2a	tdun3a	tfisla	tgrola	tgro2a
alfalfa			1	1	7.7	1	1	1	1	379.0	128.7	1		1	1	1	1	272.0	20.3
birdsfoot trefoil	ı	ı	ı	18.3	1	ı	1	1	ı	ı	1	1	0.6	1	ı	ı	1	ı	1
black eyed susan	1	ı	1	1	•	1	1	1	1	1	1	1	•	1	1	1	1	1	1
black medic	1	8.3	1	1	1	1	1	1	1	1	34.0	1	1	1	1	1	1	1	1
bladder campion	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
blue vervain	1	ı	1	1	1	ı	ı	ı	1	ı	1	1	1	1	1	ı	ı	ı	1
blue wild indigo	ı	ı	ı	ı	1	ı	ı	1	ı	ı	1	1	1	1	1	ı	ı	ı	1
brown eyed susan	1	ı	ı	ı	1	ı	ı	ı	ı	ı	1	1	1	1	1	ı	ı	1	1
canada goldenrod	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
canada thistle	1	2.0	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1	1	93.3	45.3
carolina horsenettle	•	1	1	ı	1	1	1	7.3	2.3	1	1	1	2.7	1	33.3	9.7	1	1	11.7
chicory	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
common cinquefoil	1	1	ı	ı	1	1	1	1	3.0	ı	1	8.7	1	1	1	ı	ı	1	1
common dandelion	1.3	1.0	ı	ı	1	1	1	1	0.7	1	1.7	1.3	1	1	1	1	1	1	1
common evening primrose	1	ı	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
common mallow	1	2.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
common milkweed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.3	1.0
common mullein	1.7	2.7	1	1	1	1	1	1	1	1	1	1	1	1	0.3	1	1	1	1
common yarrow	1	ı	ı	1	1	1	ı	1	1	1	1	1	1	1	1	1	1	1	1
compass plant	1.0	3.3	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
eastern daisy fleabane	ı	ı	ı	1	1	1	1	0.3	ı	ı	1	3.3	2.3	1	11.7	ı	1	ı	1
flowering spurge	1	ı	ı	3.0	1	ı	ı	ı	ı	1	ı	1	1	1	1	1	1	1	1
golden alexanders	1	ı	ı	1	1	1	1	3.3	1	1	1	1	1	1	1	1	1	1	1
hoary vervain	1	1	ı	ı	ı	1	ı	1	ı	ı	ı	ı	1	ı	1	ı	ı	1	1
lanceleaf fogfruit	ı	ı	ı	1	1	1	1	1	ı	ı	1	1	1	1	1	16.7	1	ı	1
ý.	231.7	ı	ı	ı	1	1	ı	0.3	ı	1	1	1	ı	1	1	1	1	26.0	10.7
musk thistle	1	ı	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ox eye sunflower	1	ı	ı	ı	1	1	ı	ı	ı	1	1	1	1	1	4.0	1	1	1	1
plantain	1	ı	ı	ı	1	1	ı	ı	ı	1	1	1	1	1	1	1	1	1	1
prickly lettuce	1	ı	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
purple prairie clover	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
queen annes lace	1	1	1	104.0	1	1	1	1	1	1	1	1	85.0	1	1	1	1	1	1
red clover	4.0	ı	16.7	2.7	377.0	ı	ı	0.3	124.0	58.0	70.3	161.0	129.0	1	1	1	1	82.3	415.7
sawtooth sunflower	1	ı	ı	ı	1	1	ı	1	ı	ı	1	1	1	1	1	1	ı	1	1
smartweed	1.3	1.7	ı	1	1	1	ı	11.3	1	1	1	1	1	1	1	1	1	1	1
stinging nettle	1	ı	ı	ı	1	ı	ı	ı	ı	1	ı	1	1	1	1	2.3	1	1	1
		ı	ı	ı	1	1	ı	0.7	ı	ı	ı	1	1	1	1	1	1	1	1
white clover	388.7	473.3	3.3	1	8.0	42.0	1	1	16.0	644.7	757.0	134.3	13.7	1	2.0	1	1	1	1
white sweet clover	1	1	1	1	1	1	1	1	1	3.3	1	1.7	1	1	1	1	1	1	1
whitestar	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
whorled milkweed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1	1
wild bergamot	1	ı	ı	1	1	ı	ı	1	1	ı	1	1	1	1	1	ı	ı	ı	1
wild mustard	1	1	1	1	ı	1	1	ı	11.0	1	1	1	1	1	1	ı	1	ı	1
wild parsnip	1	1	1	1	ı	1	1	ı	1	0.3	1	1	1	0.3	1	ı	1	ı	1
yellow sweet clover	1	1	1	1	1	1	1	1	1	1	1.0	2.3	1	1	1	1	'	1	1

	bedstraw	ı	1	'										,		ļ.	'	1		ı
	birdsfoot trefoil	ı	ı	ı	10.7	1	1	1	•					ı	ı		1	1	1	1
	black eyed susan	1.0	1	10.7	1	0.7	1 (1 (. (4.7	$\begin{array}{ccc} 7 & & 0.3 \\ & & & \end{array}$		0.7	5.3	1.7	1.0	1 (1	1.0
	black medic	1.7	ı	1.0	1	1	102.0	1.3	.:.0	3 0.3			7	ı	1		298.0	164.0	ı	1
	bladder campion	34.0	ı	ı	1	1	ı	1	•	,	ı	1	1	ı	ı	ı	1	ı	1	1
	blue vervain	ı	1	1.0	1	0.3	1	1	•					1	,	1	1	1	1	1
	brown eyed susan	1	0.3	1	0.7	'	1	1	•		ı	1	1	1.0	ı	ı	0.7	1.7	1	1
	buffalobur nightshade	1	1.3	1	1	1	ı	1				1	ı	ı	ı	ı	ı	1	ı	ı
	canada anenome	ı	ı	1	1	1	1	1	•				1	ı	ı	ı	1	1	1	1
	canada thistle	1	ı	1	1	1	1	ı	•			1	ı	ı	ı	1.3	ı	ı	ı	ı
	chicory	ı	1	1	1	1	1	1	•				1	ı	ı	ı	1	1	1	1
	clasping venus looking glass	1	1	1	1	1	1							ı	ı	ı	ı	1	1	ı
	common cinquefoil	ı	ı	1	1	1	1		•	- 0.5		1		2.6	ı	ı	ı	1	1	ı
	common dandelion	1	ı	3.0	0.3	11.0	5.7	1.7		. 6.0) 27.3			ı	ı	ı	2.0	1	ı	1.0
	common evening primrose	ı	1	ı	1	1	ı		•			1		11.7	ı	ı	1	1	ı	ı
	common mallow	1	1	1	1	1	1	1	•				1	1	1	ı	1	1	1	1
	common milkweed	1	1	1	1	1	1	1				1	1	1	ı	1	1	1	1	1
	common mullein	ı	ı	1	1	'	1	1	•				1	ı	1	ı	0.3	0.3	1	1
	common purslane	1	1	1	1	1	1	1				1	1	1	1	ı	1	1	1	1
	common yarrow	1	1	1	1	1	1	1	•				1	1	1	ı	1	1	1	1
	compass plant	1	1	0.3	1	1	1	1	•				1	1	1	ı	1	1.3	1	1
	crown vetch	ı	1	1	'	1	1	1	,	,	,		1	1	,	ı	1	1	1	1
	culvers root	1	1	1	1	1	1	1	•					1	,	1	1	1	1	1
	eastern black nightshade	ı	ı	ı	1	2.0	1	1	'	,					ı	ı	6.7	1	1	1
	eastern daisy fleabane	1	1	1	1	1	1	1	11.7					24.3 4	49.7	1	0.9	73.7	1	1
	field pennycress	ı	ı	ı	1	1	ı	1	,	,		1			ı	ı	ı	ı	ı	20.0
	foxglove beardtongue	1	ı	ı	1	'	ı	1	'	,		1	1	ı	ı	ı	1	ı	1	1
	groundcherry	1	1	ı	1	1	1	1	'				1	1	1	1	1	0.3	1	1
3	hawkweed	1	ı	ı	1	1	ı	1	'	'	'	1	1	ı	ı	ı	ı	1	ı	ı
	hoary alyssum	1	ı	ı	1	'	1	1	'	,			1	ı	ı	ı	1	ı	1	1
	hoary vervain	ı	ı	ı		1	ı	1	,	,	.0	3	1	ı	ı	ı	ı	ı	ı	ı
	ironweed	ı	1	İ	1	1	1	1	'	,	,	1	1	ı	1.0	1	1	1	1	1
	marestail	1	1	20.3	1	1	1	1	'		ı		1	1	1	1	1	1	1	1
	morning glory	2.3	1	1	1	1	1	1	•	'			,	1	ı	ı	1	1	1	1
	musk thistle	1	ı	ı	1	2.0	ı	1	•	'		1	1	ı	ı	ı	12.7	0.3	ı	ı
	ox eye sunflower	1	ı	1	1	1	1	1		'				ı	ı	ı	ı	1	ı	0.3
	partridge pea	ı	1	2.7	1.0	2.0	5.0				- 8.0			10.3	ı	ı	3.3	0.3	1	1
	pineapple weed	13.3	ı	ı	1	1	ı	ı	. (,	1	ı	ı	ı	ı	3.3	0.7	ı	ı
	prairie cinquetoil	ı	ı	ı	1	1	1	1	 	· ~	,	1 (1 (ı	ı	ı	1	ı	1	1
	prickly sowthistle	1	٠ ،	1	1	1	ı	1			- 4.	O 73	<u>.</u>	ı	ı	ı	ı	1	ı	ı
	prostrate vervain	12000 0	ი.ი	' '	' '	' '	- 0 02	' '						- 1		' '	' '	' '		
	programs vervam purple prairie clover	-	1	1			2 '	1	,					: '	,	1	1	1	1	1
	queen annes lace	1	ı	ı	269.3	'	ı	1	'				1	6	2.9	ı	2.0	8.3	ı	ı
	red clover	2.7	1	105.7	29.3	129.7	I	ı	67.7	7 356.3	8 68.0	0 14.7	.7 181.7		12.3	ı	8.0	9.3	ı	506.7
	rough avens	ı	1	İ	1		1	1	•			1	1	ı	1	1	1	1	1	1
	shepherds purse	ı	1	1	1.3	9.0	1	1	•		- 22.	7 41.0	0.	1	ı	1	1	1	1	2.7
	shortstalk chickweed	1 (1 (1 (1 (1 (']	(1	ı	1 (1 (ı	1 (15.3	1 1	1 (
	smartweed	1.3	14.3	84.0	1.3	က က	17.7	39.7	218.3	3 47.7	.	1	ı ښ	38.0	7.0	ı	2.3	11.3	1412.7	5.0
	velvetleat	1	1	0.7	1	1	ı	ı				ı	1	ı	ı	ı	ı	ı	ı	ı
	venice mailow	ı	ı	- 070		01	2 2	1						1 1	1 1	ı	1 1	1 1 200	ı	1 1
	white clover	1	1 1	249.0	2.3	87.3	33.7	1		- 55.7	450.3	3 402.7	./ 190.). <u>(</u>	0.7	ı	74.1	<i>)</i> .cno	ı	J. (
	whorled milkweed		- ' i	1 1				' '	. '	. '										
	wild bergamot	ı	ı	1			,	1	,	,	,		,	ı	,	ı	ı	ı	ı	ı
	wild mustard	1	1	1	'	1	1	1	'				7.3	1	1	ı	1	1	1	18.3

	canada thistle	ı	11.3	8.3	1	3.0	1	ı	1	1	1	3.0	'	'	19.3	'	1	'	9.0	1.3
	carolina horsenettle	ı	ı	1	1	1	ı	ı	5.7	1.0	1	1	1	1	ı	6.3	5.3	1	'	2.3
	catnip	1	ı	1	1	1	ı	ı	1	ı	1	1	ı	1	1	16.0	1	1	20.0	1
	chicory	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	common cinquefoil	$126.7_{-0.2}$	21.0	3.0	0.3	ı	$\frac{23.0}{5.0}$	1 (0.3	1 (1 (1 (114.7	0.7	ı	1 (0.7	1	ı	ı
	common dandelion	0.7	0.3	1	•	1	2.0	2.3	1	0.3	1.0	1.3	1	1	1	0.3	0.7	ı	1	ı
	common evening primrose	1	1	1	1	1	2.7	İ	1 (1.0	1	1 (1	1	4.0	1 (1 (1	1	1
	common mullein	1	ı	1	1	1	1	1	0.3	1	1	0.3	1	1	1	18.0	19.3	1	1	1
	common selfheal	ı	ı	1	1	1	ı	1	1	1	ı	ı	ı	1	1	ı	1	1	1	1
	common sneezeweed	ı	ı	1	1	1	İ	ı	ı	ı	ı	ı	İ	1 6	ı	ı	ı	1	1	1
	common yarrow	ı	ı	ı	۱ (ı	ı	ı	ı	ı	ı	I	I	3.3	ı	I	ı	1	1	1
	compass plant	1	ı	ı	5.0	İ	ı	1 (1	1	ı	ı	ı	1	1	ı	1	ı	1	1
	cup plant	1	1	1	1	1	1	65.0	ı	1	1	ı	1	1 6	1	1	1	1	1	1
	deptiord pink	ı	1	1	1 (1	1	1	1 (ı	ı	1 (80.3	1	1 1	·]	1	1	1
	eastern daisy fleabane	1	ı	1	195.3	1	1 I	1 (93.3	197.7	1	1	24.0	928.3	1	51.7	301.7	1	1	1
	field pennycress	ı	1	1	1	1	13.7	101.0	ı	1	1	ı	1	1	1	4.3	1	1	1	1
	field thistle	ı	ı	ı	1 (ı	ı	1	ı	1	ı	ı	ı	1	1	ı	ı	1	ı	ı
	Howering spurge	1	1	1	က) က (1 6	1	1	ı	' I	 	' 1	1	1	0	1	1	1	1	1
	foxglove beardtongue	ı	ı	ı	5.0	 	ı	ı	ı	0.7	5.7	8.7	ı	ı	23.3	ı	ı	1	1 1	ı
	golden alexanders	ı	ı	ı	0.3	1.7	ı	ı	ı	ı	0.3	ı	1	1	9.9	ı	ı	1	0.7	1
	great blue lobella	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	I	I	ı		I	ı	1	1	ı
	groundcherry	ı	ı	ı	1	ı	ı	ı	1	I	ı	I	I	1	3.0	I	ı	1	1	1
	hoary alyssum	۱ (ı	١ (1	ı	1 (١ ٥	ı	ı	۱ (1 (1 '	1	1	1 0	1 1	1	' (I
	hoary vervain	0.3	ı	4.0	1	ı	1.0	0.3	ı	ı	9.3	1.0	1.7	ı	ı	10.0	127.7	1	10.0	1
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1	ı	O.3	1	1	1	1.3	1	1	1	1	1	1	1	1	L.3	1	1	1
	lancelear logiruit	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	4.0	ı	1	ı
	leadplant	ı		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1 1
4	lesser burdock	ı	1	1 1	1	1 1	1 '	1 1	ı	ı	ı	ı	2 7 1	1 '	1 1	ı	ı	1	1	0.7
	marestall	1 1	ı	13.7	1	30.7	J	0.7	· ·	1 6	1	1	255.3	0.7	0.7	1	1	1	1 '	1 (
	morning glory	0.7	ı (ı	' -	ı	1.3	ı	4.0	2.0	ı	I	ı	ı	ı	1 6	1 1	1	1.7	1.0
	musk tnistle	J. (11.0	ı	1.0	ı	ı	ı	ı	1	ı	ı	1	1	1	41.3	T (· · (1	ı	1
	new england aster	ı	J. (1	1	1	1	1	ı	1	ı	ı	1	1	1	1	1	1	1	1
	nodding stickseed	ı	1 1	ı	1	ı	ı	ı	ı	ı	ı	ı	ı	1 1	ı	ı	ı	1	1	1
	ox eye daisy	и 1 С	1.0	- 60	· 0	י ני	1	۱ ،	1	۱ ،	- 266	' (0 0 0	1.0	1 1	· 60	1 1	'	1 20	- 61
	ox eye sunnower	0.6	1.0	07.7	0.0	7.60	0.17	4.5 5.1	0.7	4.3	230.0	144.0	48.0	15.5	47.3	93.0	48.1	1	1.0.1	12.0
	paie pui pie conenowei nanieladlaaf tiek trafoil									' '	;	; '	' '					' '	' '	' '
	partridge pea					' '	1 1	1 1	1 1						1 1	1.3			' '	' '
	pineapple weed	1	1	1	'	1	'	1	1	1	1	1	1	'	'	1	1	1	'	'
	plantain	4.7	1	1	1	17.0	1	1	ı	1	1	ı	1	1	1	1	1.0	1	1	1
	prairie blazing star	ı	1	1	1	1	ı	İ	ı	1	1	ı	ı	1	ı	I	1	1	1	1
	prairie cinquefoil	1 (1	1	1	ı	1]	0.7	ı	ı	1	0.3	1 (1 (ı	1 (1.3	•	' !	1
	prickly lettuce	0.3	I (1	ı	1	6.7	1	ı	1	1	ı	 	118.0	1	17.3	3.3	1	11.7	1
	prickly sowthistle	1	T:0	ı	1	İ	ı	ı	1	1	ı	ı	ı	1	1	ı	1	ı	1	1
	prostrate knotweed	1	1	1	1	1	' 1	1	ı	1	1	ı	1	1	1	1	1	1	1	1
	prostrate vervain	1	ı	i	1	İ	0.7	ı	ı	1	ı	ı	1 (1	ı	ı	1	•	1	1
	purple prairie clover	ı	ı	1	1 0	1	ı	ı	ı	1	ı	ı	0.3	1 0	1	1 6	1 1	1	ı	1 1
	queen annes lace	. 600	. 00	200	350.3	- 677	1 76 5	ı	1 01 1	. 000	- 500	. 6	- 66133	943.3	ı	6.3	36.7	1	100	0.7
	red clover	08.3	28.3	7.062	1043.0	3244.0	170.3	1	196.7	889.3	200.3	111.3	001.3	1056.3	1	54.0	103.0	ı	783.0	3081.7
	rough avens	ı	ı	1	1	ı	İ	ı	1	ı	ı	ı	I	ı	I	ı	ı	1	1	1
	shonhords mireo	1	1	1	1	1	· ~	- c 89	1	1	1	1	1	1	1	1	1		1	1
	snepnetus purse smartweed	νς × × ×	. 6	18.3	' '	' '			170.0	- 006		' '	' '		16.7	. 6	10.0	' '	190.0	- 29 7
	stiff coldenrod	? '	; ;		' '				0.011	0.07					- '	i	0.01	' '	.001	
	stinging nettle	ı	•	1	ı	1	ı	•	5.0	ı	ı		,	ı	,	23.3	2.3	1		1
	swamp milkweed		'	'	'	8.0	'	'		'	'	0.7	'	'	'	·		'	1.7	'

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 4: 2016 Nectar plant species density: average density (count $/\ \mathrm{m2})$ across all rounds

Nectar Plant Species t	tallla t	all2a ta	ppla ta	tall2a tapp1a tarm1b tarm2a	arm2a t	bcrla t	bcr2a t	berla 1	tber3a t	bydla t	tbyd2a 1	tcrala	tcrela t	tdavla 1	tdun2a	tdun3a	tfisla	tgrola	tgro2a
alfalfa	1	,	1	1	0.08	1	ı	1	1	3.79	1.29	1	1	1	1	1	1	4.53	0.34
birdsfoot trefoil	ı	1	ı	0.31	1	1	1	ı	ı	1	1	1	0.10	1	1	1	ı	1	1
black eyed susan	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
black medic	1	0.17	1	1	1	1	1	1	1	1	0.34	1	1	1	1	1	1	1	1
bladder campion	0.02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
blue vervain	1	ı	ı	1	1	ı	1	1	1	1	1	1	ı	1	1	1	ı	1	1
blue wild indigo	ı	ı	ı	ı	1	ı	1	ı	ı	ı	1	1	1	ı	1	1	ı	ı	1
brown eyed susan	1	ı	1	1	1	1	1	1	1	ı	1	1	1	1	1	1	ı	1	1
canada goldenrod	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
canada thistle	1	0.04	ı	1	1	1	1	1	1	1	1	1	1	1	0.01	•	1	1.56	0.76
carolina horsenettle	1	1	ı	1	1	1	•	0.15	0.05	ı	1	1	0.03	1	0.33	0.10	1	1	0.19
chicory	1	ı	ı	1	1	1	1	1	1	ı	1	1	1	1	1	1	1	1	1
common cinquefoil	1	1	ı	1	1	ı	1	ı	90.0	ı	ı	0.12	1	1	1	1	ı	ı	1
common dandelion	0.03	0.02	ı	1	1	1	1	1	0.01	1	0.02	0.02	1	1	1	•	1	1	1
common evening primrose	•	1	1	1	1	1	•	•	1	1	1	1	1	1	•	•	1	1	1
common mallow	1	0.04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
common milkweed	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.01	0.02
common mullein	0.03	0.05	1	1	1	1	1	1	1	1	1	1	1	1	0.00	1	1	1	1
common yarrow	•	1	1	1	1	1	1	•	1	1	1	1	1	1	•	•	1	1	1
compass plant	0.02	0.07	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1
eastern daisy fleabane	ı	ı	1	ı	1	ı	1	0.01	ı	ı	1	0.05	0.02	1	0.12	1	ı	1	1
flowering spurge	1	ı	ı	0.05	1	1	1	1	1	ı	1	ı	1	1	1	1	ı	1	1
golden alexanders	1	ı	ı	1	1	1	1	0.02	1	1	1	1	1	1	1	1	1	1	1
hoary vervain	1	ı	ı	ı	1	ı	ı	1	ı	ı	ı	ı	1	1	1	ı	ı	1	1
lanceleaf fogfruit	ı	ı	1	ı	1	ı	1	1	ı	ı	1	1	1	1	1	0.17	ı	1	1
morning glory	4.63	ı	ı	1	1	ı	1	0.01	1	ı	ı	1	1	1	1	1	ı	0.43	0.18
musk thistle	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ox eye sunflower	1	ı	ı	1	1	ı	1	1	1	ı	1	1	1	1	0.04	1	1	1	1
plantain	1	ı	ı	ı	1	ı	1	1	ı	1	1	1	1	1	1	1	1	1	1
prickly lettuce	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
purple prairie clover	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
queen annes lace	ı	ı	ı	1.73	1	ı	1	1	1	ı	ı	1	98.0	1	1	1	ı	1	1
red clover	0.08	ı	0.33	0.04	3.77	1	1	0.01	2.48	0.58	0.70	2.30	1.38	1	1	1	ı	1.37	6.93
sawtooth sunflower	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1
smartweed	0.03	0.03	1	1	1	1	1	0.23	1	1	1	1	1	1	1	1	ı	1	1
stinging nettle	1	ı	ı	1	1	1	1	1	1	ı	1	1	1	1	1	0.02	1	1	1
velvetleaf	1	ı	ı	ı	1	ı	ı	0.01	ı	ı	ı	ı	1	1	1	ı	ı	1	1
white clover	7.77	9.47	0.02	1	0.08	0.84	1	1	0.32	6.45	7.57	1.92	0.18	1	0.02	1	1	ı	1
white sweet clover	1	1	1	1	1	1	1	1	1	0.03	1	0.02	1	1	1	1	1	1	1
whitestar	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
whorled milkweed	1	1	1	1	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1
wild bergamot	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1
wild mustard	1	1	1	1	1	1	1	ı	0.22	1	1	1	1	ı	1	1	1	1	1
wild parsnip	1	1	ı	1	1	1	1	ı	1	0.00	1	1	1	0.01	1	1	1	1	1
yellow sweet clover	ı	1	1	1	1	1	1	1	1	1	0.01	0.03	1	1	1	1	1	1	1

birdsfoot trefoil black eyed susan black medic blader campion	1 6	ı	1	0.18	1	•	1	1	1	•	1	1	1 (1 0	1	ı	'	1 (
black eyed susan black medic blader campion)	0					0	0	,			,			
black metric bladder campion	0.02	ı	0.21	ı	0.01	. 2	- 600	- 60	- 100	0.05	0.00	0.01	0.02	0.03	0.01	1 64		7.05
Diadder campion	0.03	ı	0.02	1	1	2.04	0.03	0.01	0.01	0.52	3.77	1	1	0.22	2.98	1.04		ı
ii .	0.68	ı	1 (1	1 (ı	1	ı	ı	ı	ı	ı	ı	ı	i	ı	ı	
blue vervain	1	1 ,	0.02	1 ,	0.00	ı	1	1	1	ı	ı	1 ,	ı	1	1 ,	1 (ı	ı
brown eyed susan	1	0.01	1	0.01	1	1	1	1	1	1	1	0.01	1	1	0.01	0.05		
buffalobur nightshade '	1	0.03	ı	1	1	ı	ı	ı	ı	1	ı	ı	ı	1	1	1	ı	
canada anenome	1	ı	ı	ı	ı	ı	ı	ı	1	ı	1	1	1	1 6	1	ı	ı	
canada thistle		ı	ı		1	ı	ı	1	ı	ı	ı	ı	ı	0.03	ı	ı	ı	ı
chicory	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	,	ı
clasping venus looking glass	1	ı	1	1	1	1	1	1	1 ,	1	1	1 .	ı	1	ı	ı	ı	
common cinquefoil	1	ı	1	1	1	1	1	1	0.01	1	1	0.14	ı	1	1	ı	ı	
common dandelion	1	ı	90.0	0.01	0.11	0.11	0.03	1	0.12	0.27	0.55	ı	1	1	0.02	ı	·	0.05
common evening primrose	1	ı	1	1	1	1	1	1	1	1	1	0.17	1	1	1	1	1	,
common mallow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı
common milkweed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
common mullein	•	1	1	•	1	•	1	1	1	1	1	1	ı	•	0.00	0.00	ı	,
common purslane	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	
common yarrow	1	ı	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	,
compass plant	1	1	0.01	1	1	1	1	1	1	1	1	1	1	1	1	0.01	ı	ı
crown vetch	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	,
culvers root	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
eastern black nightshade	1	ı	1	1	0.02	1	1	1	1	1	1	1	1	1	0.07	1	1	ı
eastern daisy fleabane	1	1	1	1	1	1	1	0.23	0.26	1	1	0.35	0.50	1	90.0	0.74	,	
field pennycress	1	ı	ı	1	1	1	1	1	1	ı	1	1	ı	1	1	ı	1	0.33
foxglove beardtongue	1	ı	ı	1	1	ı	1	1	1	ı	1	1	ı	1	1	ı	1	
groundcherry	•	1	ı	1	1	1	1	1	1	1	1	1	ı	1	1	0.00	ı	ı
ے hawkweed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	,	1
hoary alyssum	•	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	,
hoary vervain	•	ı	ı	•	1	1	1	1	1	0.00	1	1	ı	•	1	ı	ı	٠
ironweed	1	1	1	1	1	1	1	1	1	1	1	1	0.01	1	1	1	ı	•
marestail	1	ı	0.41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı
morning glory	0.05	1	ı	1	1	ı	1	1	1	1	1	1	1	1	1	1	1	
musk thistle	1	ı	ı	1	0.02	ı	1	1	1	ı	1	1	ı	1	0.13	0.00	1	
ox eye sunflower	1	ı	ı	1	1	ı	ı	ı	ı	ı	ı	1	1	1	ı	ı	1	0.01
partridge pea	1	1	0.05	0.02	0.02	0.10	0.08	1	1	0.08	0.05	0.15	1	1	0.03	0.00	1	
pineapple weed	0.27	ı	ı	1	1	ı	ı	ı	ı	ı	1	ı	1	1	0.03	0.01	ı	
prairie cinquefoil	1	1	1	1	1	1	1	0.02	1	1	1	1	1	1	1	1	ı	,
prickly sowthistle	ı	1 1	ı	ı	ı	ı	ı	ı	ı	0.04	0.02	ı	1	ı	1	ı	ı	1
pe	' 0	0.07	ı	ı	ı	' 5	ı	ı	ı	ı	ı	' 6	ı	ı	ı	ı	ı	
	240.00	ı	ı	1	1	1.40	ı	ı	ı	ı	1	0.02	ı	ı	ı	ı	ı	
purple prairie clover	1	ı	ı	1 6	1	1	ı	1	1	1	ı	1	- 1	1	- 60	- 00	ı	1
queen annes lace	ט ט	ı	. 1.	4.49	1 00 1	ı	ı	 	1 1	- 000	- - - -	- 000	0.97	1	0.02	0.08	1	' -
rough avens	0.00		2.11	0.43	06.1			1.00	61.1	0.00	0.10	7.00	0.17		0.00	60.0		0.44
shepherds purse	' '			0.02	0.09	' '		' '		0.23	0.41	' '		' '	' '			0.04
shortstalk chickweed	1	1	1	'		1	1	1	1) 		1	1	1	1	0.15	,	1 1
smartweed	0.03	0.29	1.68	0.03	0.03	0.35	0.79	4.37	0.95	ı	1	0.54	0.07	1	0.02	0.11 28	3.25 (0.08
velvetleaf	1	1	0.01	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	•
venice mallow	1	1	I	1	1	1	ı	ı	ı	1	1	ı	ı	1	1	ı	ı	
white clover	1	1	4.98	0.04	0.87	0.07	1	1	0.67	4.50	4.03	2.81	0.01	1	0.75	90.9	-	0.03
white sweet clover	1	0.05	ı	1	1	1	ı	ı	ı	ı	ı	1	1	1	ı	ı	ı	1
whorled milkweed	1	ı	ı	1	1	1	ı	ı	ı	ı	1	1	ı	1	ı	ı	ı	
wild bergamot	1	ı	ı	1	1	1	1	ı	ı	ı	1	1	1	1	1	ı	ı	
wild mustard	1	1	1	1	1	1	1	1	1	1	0.07	1	1	1	1	1	-	.31

canada thistle	'	0.23	0.17	1	0.03	'	'	'	'	,	0.03	'	'	0.39	'	ı	ı	0.15	0.02
carolina horsenettle	ı	1	1	1	1	ı	1	0.11	0.03	1	1	1	1	ı	0.06	0.02	•	I (0.04
catnip	ı	ı	ı	1	ı	1	ı	ı	ı	ı	I	ı	ı	1	0.16	1	ı	0.33	l .
chicory	1 0	1 0	1 0	1 7	1	1 9	ı	' 7	1	1	1	1 6	' ;	1	1	1 7	ı	1	1
common cinquefoil	2.53	0.42	90.0	0.01	ı	0.46	1 1	0.01	' 7	۱ .	1 6	1.64	0.01	1	1 0	0.01	ı	1	1
common dandellon	0.01	0.01	ı	ı	ı	0.10	0.05	1	0.01	0.01	0.01	ı	1	1 (0.00	0.01	ı	ı	ı
common evening primrose	1	1	1	1	1	0.05	İ	' 6	0.05	1	1 0	İ	1	0.08	1 0	1 0	ı	İ	1
common mullein	ı	ı	ı	1	ı	ı	ı	0.01	ı	ı	0.00	ı	ı	ı	0.18	0.19	ı	ı	ı
common succession	1	ı	1	1	1	'	ı	'	1		ı	ı	1	'	1	'	ı	1	ı
				' '	' '			' '					- 0 03		' '	' '			' '
compass plant				0 03			' 1						50.0	' '	' '	' '			
cum plant				5			1 30								•				
cup prant dentford nink				' '			T:00	, ,					08.0	' '		' '	' '	1 1	
eastern daisy fleahane		1		3.26		1	ı	1.87	3.95		1	0.34	00.0	1	0.52	3.02	ı	ı	1
field pennycress	1	1	1) ' !	1	0.27	2.03	. 1)	1	1) ' !	1	0.04	'	1	1	1
field thistle	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1
flowering spurge	1	1	1	90.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
foxglove beardtongue	1	1	1	0.08	0.00	ı	1	1	0.01	90.0	0.00	1	1	0.47	1	1	1	ı	1
golden alexanders	ı	1	1	0.01	0.02	ı	ı	1	1	0.00	1	1	1	0.13	1	1	ı	0.01	1
great blue lobelia	1	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1
groundcherry	1	1	1	1	1	1	1	1	1	1	1	1	1	90.0	1	1	1	1	1
hoary alyssum	1	ı	1	1	ı	1	1	1	ı	1	1	1	1	1	1	1	ı	1	1
hoary vervain	0.01	ı	0.08	1	1	0.02	0.01	1	1	0.09	0.01	0.05	1	1	0.10	1.28	ı	0.17	1
ironweed	ı	ı	0.01	1	ı	ı	0.03	ı	ı	ı	ı	ı	ı	ı	1	0.01	ı	ı	ı
lancelear rogitum	ı		ı	1	ı	1	ı	1	ı		ı	ı			1	0.04	ı	ı	1
leaupiant lesser burdock			' '		' '														. 10
S reser baraca marestail	ı		0.27		0.31	0.03	0.01	ı	ı		ı	3.65	0.07	0.01			ı	ı	10.0
morning glory	0.01	ı	; ' !	•	I	0.03	I	0.08	0.04		1) I	. I))	•	•	1	0.03	0.03
musk thistle	0.03	0.22	1	0.03	1) !	1) I	1 1	1	1	1	ı	ı	0.41	0.18	1)	'
new england aster	1	0.03	1	1	1	1	1	1	1	1	1	1	1	1	1	•	ı	1	1
nodding stickseed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	•	1
ox eye daisy	1	0.01	1	1	1	1	1	1	1	1	1	1	0.02	1	1	1	ı	1	1
ox eye sunflower	0.10	0.02	1.25	0.10	0.66	1.42	0.09	0.14	0.09	2.36	1.44	0.69	0.15	0.95	0.83	0.49	1	1.28	0.20
pale purple coneflower	1	1	1	1	1	1	0.03	1	1	0.01	0.01	1	1	1	1	1	1	1	1
panicledleaf tick trefoil	ı	ı	1	1	1	ı	1	ı	ı	ı	ı	1	1	ı	' 5	1	1	İ	1
partrigge pea	ı	ı	ı	1	ı	ı	ı	ı	ı		ı	1	1	ı	0.01	ı	ı	ı	ı
pineappie weed nlantain	- 000				0 17		1 1									- 10 0	1 1	1 1	
prairie blazing star	0	1	1	1	1:0	1	1	1	1	1	1	1	1	1	1		1	1	1
prairie cinquefoil	1	1	ı	•	1	1	0.01	1	ı	•	0.00	1	•	1	1	0.01	1	1	1
prickly lettuce	0.01	1	1	1	1	0.13	1	ı	ı	1	1	0.02	1.18	ı	0.17	0.03	ı	0.19	1
prickly sowthistle	1	0.02	1	1	1	1	İ	1	1	1	1	1	1	1	1	1	1	İ	1
prostrate knotweed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	ı	1
prostrate vervain	1	1	ı	1	1	0.01	ı	1	ı	1	1	1	1	1	1	1	ı	ı	1
purple prairie clover	ı	1	ı	1 1	ı	ı	ı	ı	ı	1	1	0.00	1 (ı	1 (1 1	ı	ı	1 (
queen annes lace	1 1	1 	1 7	5.84 8.6	1 7	1 0 1	ı	1 1	1 1 1	1 0	1 7 7	1 1	9.43	ı	0.06	0.37	1	1 1	0.01
red clover	1.37	0.57	5.81	17.38	32.44	3.53	ı	3.95	17.79	2.00	1.11	9.45	10.56	1	0.54	1.03	ı	13.05	51.36
rough avens	1	ı	ı	1	1	1	ı	1	1	ı	ı	ı	1	1	1	1	ı	ı	ı
rough cinqueion	ı	1	ı	1	ı	' 00	1 07	ı	ı	1	ı	ı	1	1	1	ı	ı	İ	ı
snepnerus purse smartweed	1 17	0.10	- 0 37	' '	' '	60.03	1.01	3.40	- 0 40		' '	' '		0.33	- 60 0	0.10	' '	3 17	0.49
stiff goldenrod	1:1	0.10	5.			' ') ·) 		' '			00.0	70.0	0.10			C#:0
stinging nettle	1	1	1	'	'	1	1	0.10	1	1	1	1	'	1	0.23	0.05	1	1	1
swamp milkweed	'	'	İ	'	0.08	'	'		į	·	0.01	'	,	,				0.03	'

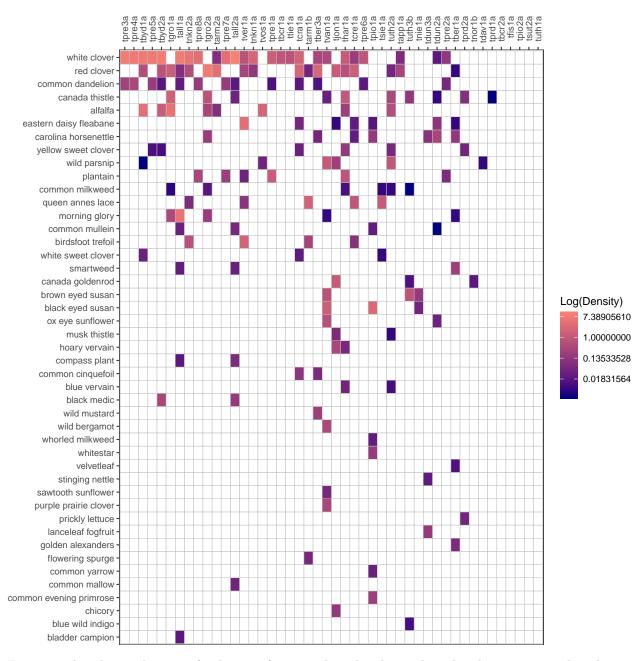


Figure 1: This plot is a heatmap for density of species planted and non-planted with transects on the columns and species on the rows sorting transects by average density and sorting species by avg presence for year 2016.

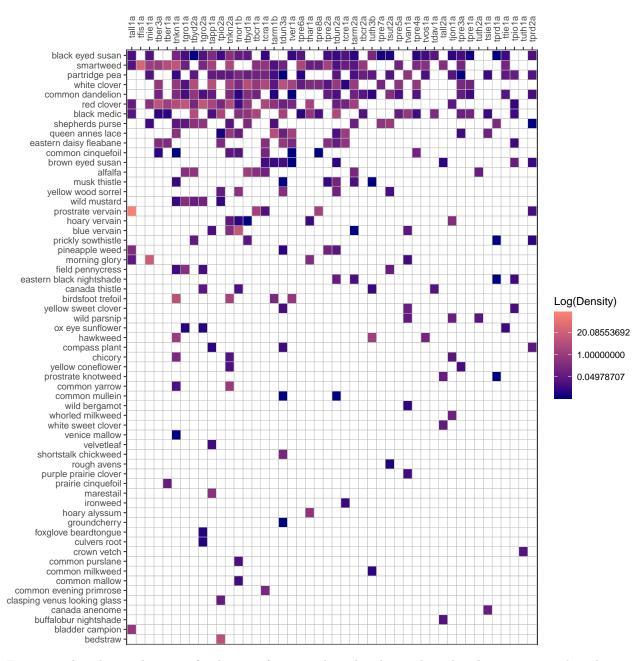


Figure 2: This plot is a heatmap for density of species planted and non-planted with transects on the columns and species on the rows sorting transects by average density and sorting species by avg presence for year 2017.

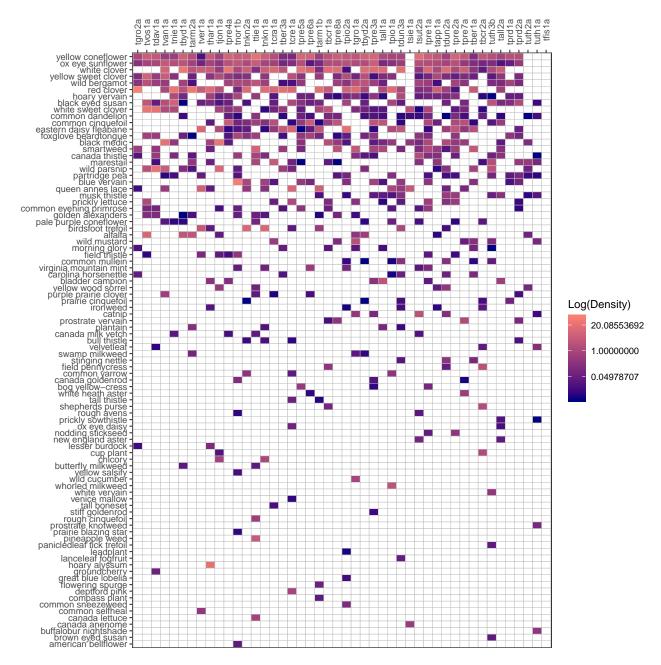


Figure 3: This plot is a heatmap for density of species planted and non-planted with transects on the columns and species on the rows sorting transects by average density and sorting species by avg presence for year 2018.

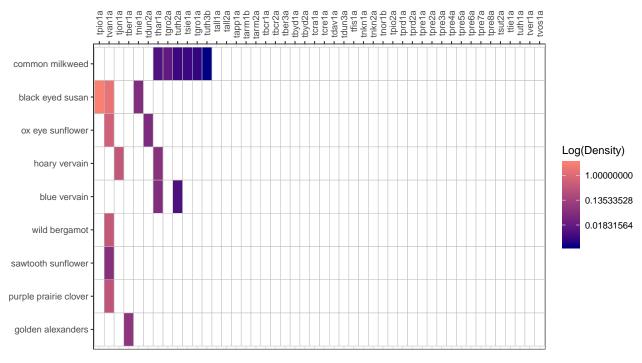


Figure 4: This plot is a heatmap for density of species planted with transects on the columns and species on the rows sorting transects by average density and sorting species by avg presence for year 2016.

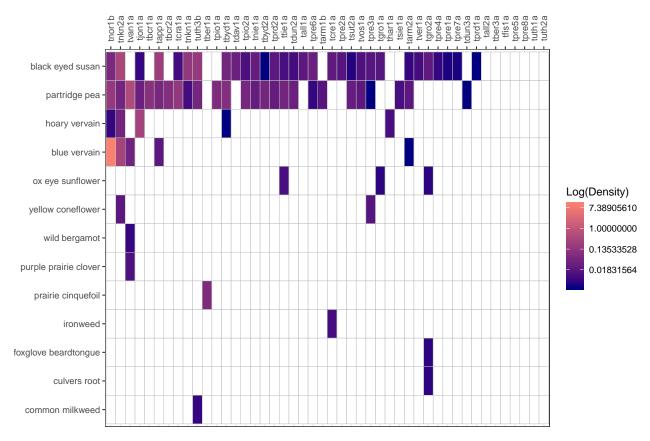


Figure 5: This plot is a heatmap for density of species planted with transects on the columns and species on the rows sorting transects by average density and sorting species by avg presence for year 2017.

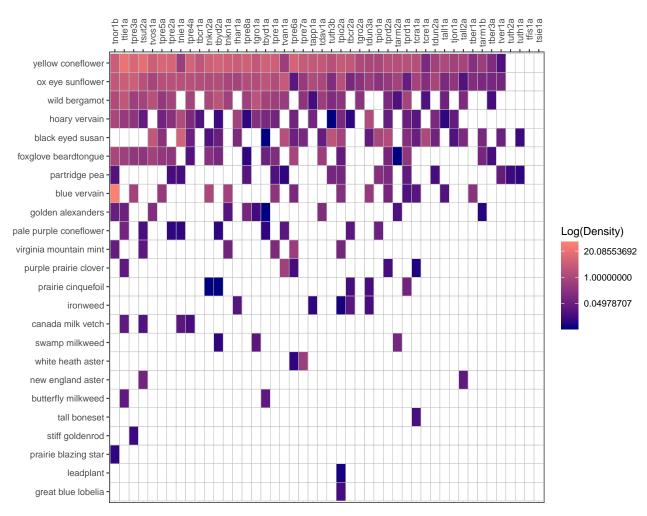


Figure 6: This plot is a heatmap for density of species planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average presence for year 2018.

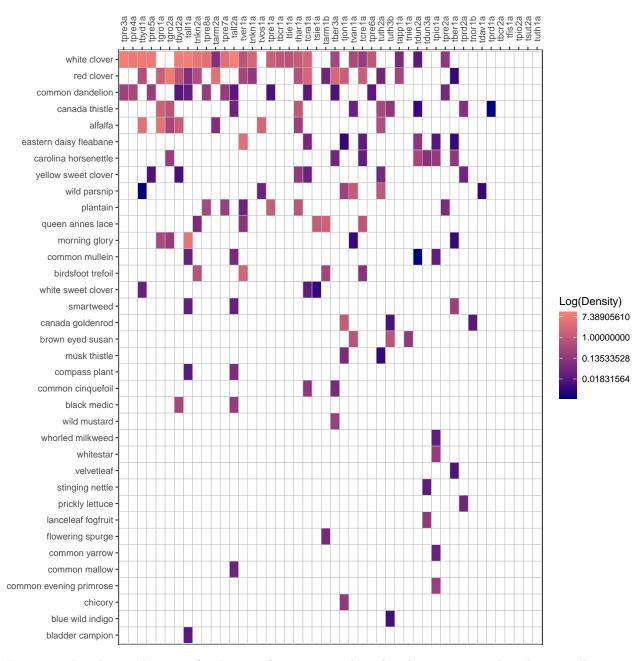


Figure 7: This plot is a heatmap for density of species non planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average presence for year 2016.

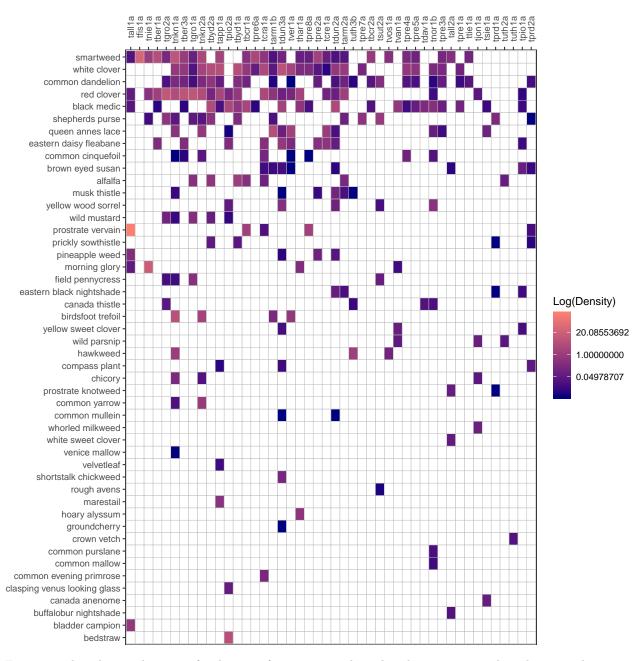


Figure 8: This plot is a heatmap for density of species non planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average presence for year 2017.

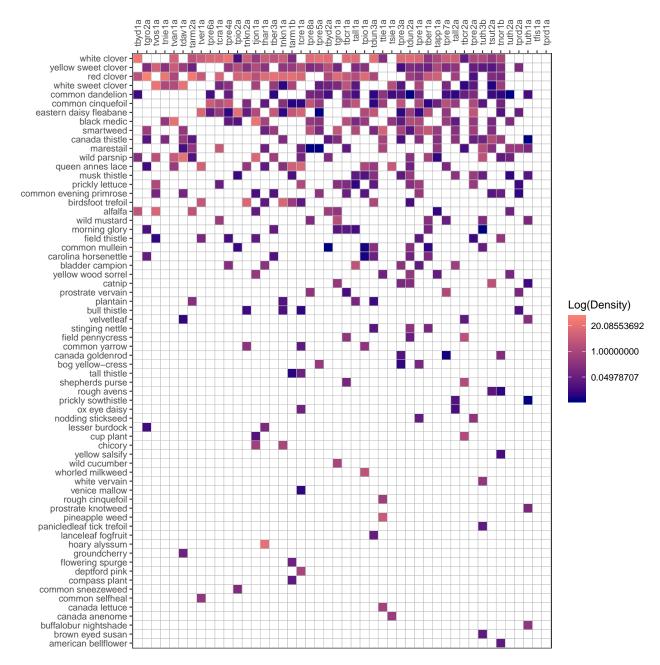


Figure 9: This plot is a heatmap for density of species non planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average presence for year 2018.