## 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. Table ?? provides mean count of milkweed ramets. 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 ?? provides mean density of milkweed ramets. Values in table represent the specific counting unit for each species, not necessarily a whole plant.

Table ?? provides average land cover percentage averaged across all data collection events.

Table ?? provides average amount of vegetation across all data collection events.

Table ?? provides total number of monarchs sighted anywhere around site during entire time at site, number of monarchs sighted during a survey period, number of milkweed ramets (an upper limit of 20 per round per site, although the same milkweed may have been surveyed in different rounds), number of monarch eggs counted on milkweed plants (if no milkweed present, no monarch eggs present, number of monarch larvae (caterpillars) counted on milkweed plants (if no milkweed present, no larvae present).

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

Nectar Plant Species	tall1a t	tall2a t.	appla t	tall1a tall2a tapp1a tarm1b tarm2a	l	tbcrla t	tbcr2a tber1a		tber3a t	tber3a tbyd1a tbyd2a tcra1a tcre1a tdun2a tdun3a	byd2a 1	crala	crela t	dun2a		tfisla t	tgrola 1	tgro2a	thar1a
alfalfa	1	1	1	1	7.7	1	1	1	1	379.0	128.7	1	1	1	1	1	272.0	20.3	6.7
birdsfoot trefoil	1	1	1	18.3	ı	•	1	•	1	1	1	1	9.0	1	•	1	ı	ı	1
black eyed susan	1	1	1	1	ı	•	ı	1	1	1	1	1	1	1	•	1	ı	ı	1
black medic	1	8.3	1	1	ı	1	ı	1	ı	1	34.0	ı	1	1	1	1	ı	ı	1
bladder campion	1.0	1	1	1	ı	1	1	1	1	1	1	1	1	1	1	1	ı	1	1
blue vervain	1	1	ı	•	ı	•	ı	1	1	1	1	1	1	1	•	1	ı	ı	1.3
blue wild indigo	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1	1
brown eyed susan	1	1	1	1	1	1	1	1	ı	1	1	1	1	1	1	1	1	1	1
canada goldenrod	1	1	1	ı	1	•	1	1	1	1	1	1	1	1	•	ı	ı	1	1
canada thistle	1	2.0	1	1	ı	1	1	1	1	1	1	1	1	0.7	1	1	93.3	45.3	30.7
carolina horsenettle	ı	1	ı	1	ı	1	1	7.3	2.3	1	1	1	2.7	33.3	9.7	1	1	11.7	1
chicory	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
common cinquefoil	1	1	1	1	1	1	1	1	3.0	1	1	8.7	1	1	1	1	1	1	1
common dandelion	1.3	1.0	1	1	1	1	1	1	0.7	1	1.7	1.3	1	1	1	1	1	1	1
common evening primrose	ı	1	1	1	ı	1	ı	1	ı	ı	1	ı	1	ı	1	1	1	1	1
common mallow	1	2.0	1	1	ı	1	1	1	ı	1	ı	ı	1	1	1	1	ı	ı	1
common milkweed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	0.3	1.0	0.3
common mullein	1.7	2.7	1	1	1	•	1	1	1	1	1	1	1	0.3	•	1	1	1	1
common yarrow	1	1	1	ı	•	•	ı	•	1	1	1	1	1	1	•	ı	ı	ı	1
compass plant	1.0	3.3	1	•	ı	•	1	•	1	1	1	ı	1	1	•	1	ı	ı	1
eastern daisy fleabane	1	1	1	1	ı	1	1	0.3	ı	1	ı	3.3	2.3	11.7	1	1	ı	ı	1
flowering spurge	1	1	•	3.0	1	•	1	•	1	•	1	1	1	•	•	1	1	1	1
golden alexanders	1	1	1	1	1	1	1	3.3	1	1	1	1	1	1	1	1	1	1	1
hoary vervain	1	1	1	1	1	•	1	1	1	1	1	1	1	1	1	1	1	1	1.7
lanceleaf fogfruit	1	1	1	1	1	1	1	1	ı	1	1	1	1	1	16.7	1	1	1	1
morning glory	231.7	1	1	1	ı	1	1	0.3	ı	ı	ı	1	1	Ì	1	1	26.0	10.7	1
musk thistle	ı	1	1	1	ı	1	ı	1	ı	ı	ı	ı	1	ı	1	1	ı	I	ı
ox eye sunflower	ı	1	1	•	ı	•	ı	ı	1	1	ı	1	1	4.0	•	1	ı	ı	1
plantain	ı	1	1	•	ı	•	ı	ı	1	1	ı	1	1	1	•	1	ı	ı	24.3
prickly lettuce	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1	1
purple prairie clover	1	ı	1	1	ı	1	ı	1	1	1	1	ı	1	1	1	1	ı	1	1
queen annes lace	1	1	•	104.0	•	•	1	1	1	•	1	1	85.0	•	•	1	1	1	1
red clover	4.0	ı	16.7	2.7	377.0	1	ı	0.3	124.0	58.0	70.3	161.0	129.0	i	1	1	82.3	415.7	18.7
sawtooth sunflower	ı	1	1	1	ı	1	1	1	ı	1	1	ı	1	1	1	1	1	1	1
smartweed	1.3	1.7	1	1	İ	1	1	11.3	1	1	1	1	1	İ	1	1	1	1	1
stinging nettle	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2.3	1	1	1	1
velvetleaf	ı	1	1	1	1	1	ı	0.7	ı	ı	1	ı	1	ı	1	1	ı	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	2.0	1	1	1	1	33.0
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
whorled milkweed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
wild bergamot	1	1	1	1	1	•	1	1	1	1	1	1	1	1	1	1	1	1	1
wild mustard	1	1	1	1	1	1	1	1	11.0	1	1	1	1	1	1	1	1	1	1
wild parsnip	ı	ı	1	1	İ	1	1	İ	1	0.3	1	1	1	İ	1	İ	1	1	1
yellow sweet clover	1	1	1	1	ı	1	1	1	1	1	1.0	2.3	1	1	1	1	ı	I	4.3

	bedstraw	1	1	1	Ì	1	ı		ı	ı	ı	ı	ı	ı	1	1	1	1	ı	1
	birdsfoot trefoil	1	1	•	10.7	2		,	,		•	•		•	•			1		1
	black eved susan	1.0	1	10.7		- 0	7	,	,	,	,	4.7	0.3	0.7	2.3	1.0	1	'	1.0	1.3
	black medic	1.7	1	1.0			- 102.	5.0	1.3	0.3	0.3	52.3	376.7	'	1	298.0	164.0	'		
	bladder campion	34.0	,		•		1	) I	) I	) 1	) I	) I	. I	ı	1	) )	)	'	'	'
	blue vervain	;	1	1		_	c:			,										,
	brown eved susan	•	۲. ص	1			? '							-		0.7	1 7			•
	bidislohur nightshade	1	. r.	1	;						ı	1	1	) '	1	· '	; '	1	1	
	canada anenome	,		'			,	,	,	ı	١	١	1	'	'	'	'	١	1	,
	conoda thistle																			9.3
	canada unsue	1	ı	1		ı	ı	ı	ı	ı		1	ı	1	1	1	ı	'	ı	
	chicory		ı	1			ı	ı	ı	ı	ı	ı	1	ı	1	ı	I	ı	1	1
	clasping venus looking glass	1	ı	1						ı	۱ (	1	1	1 1	1	1	1	1	1	1
	common cinquetoii common dandelion		1 1	3.0	. 0	- 2	- 0	- 7.3	- 1.7	' '	0.0 0.0	27.3	. 55.0	9.6	1 1	2.0	1 1	' '	- 0.1	' c:
	common demonation		1	;			. '		; '	,	: '	-	. '	11 7		i				. '
	common mallow			' '								' '	' '	1111		' '	' '	' '	' '	
	common miltwood																			
	common minkweed			' '		, ,							' '	' '	' '	. 6	· 65		' '	' '
	common munchin	1	ı	ı		ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	0.0	9.5	1	ı	1
	common pursiane																	' '		
	common yanow			· 60		, ,											, t			
	compass praint														' '		r.o. '		' '	
	CIOWH Vetch	1	1	1		ı			ı	1	1	1	1		1	1	1	ı	1	
	cuiveis 1000 pastern black nightshade		1 1			٠ .					۱ ۱					2 2		' '		; ;
	eastern daisy fleahane					1	י כ			11 7	13.0	' '			49.7		73.7		' '	
	Gastern dansy nearbane	•	1	1		ı	ı			11.1	10.0	1	'			0.0		1	- 00	· -
	neid pennycress		ı	1			ı		ı	ı	ı	ı	1	ı	1	ı	1	ı	70.0	0.1
	ioxgiove beardiongue	1	ı	1		ı	ı		ı	ı	1	ı	1	1	1	1	· .	1	1	
3	groundcherry 1. cl	ı	ı	1						ı		1	ı	ı	ı	ı	0.0	ı	ı	
3	hawkweed		ı	1			1		ı	ı	ı	ı	1	1	1	1	1	1	1	1
	hoary alyssum	1	ı	1			1			ı		۱ (	1	1	1	1	1	1	1	1
	hoary vervain	1	ı	1		ı	ı		ı	ı	ı	0.3	1	ı	· (	ı	1	I	1	1
	Ironweed	1	ı	- 606		1	1		ı	ı	ı	ı	1	ı	1.0	ı	ı	İ	1	1
	marestan	ا د د	ı	20.3		ı	1		ı	ı	ı	ı	1	ı	1	ı	ı	ı	1	1
	muck thietle	6.5	1									1				10.7		1		
	mush timstie		1	1		1	<b>.</b>				1		1			1.5.1	0.0	1	· ~	
	ox eye sunitowei partridge pea	' '		- 2.7	10	. 0			- 04	' '	۱ ۱	· α	- 4	10.3		່ ຕ ຕ	· 65	' '		ر د.ت
	par arago poa nineannle weed	13.3	ı <b>ı</b>	· '			ا ج		) '			;	- '			. c.	0.0	ı <b>ı</b>	. 1	
	prairie cinquefoil	) 1	ı	1	•	,		,	,	33		•	ı	1	1	) 1	. 1		ı	•
	prickly sowthistle	1	1	1	•			ı	1	) ·	1	4.0	5.0	1	1	1	1	ı	1	ı
	prostrate knotweed	1	3.3	1	-		1	ı	1	1	1	1	1	1	1	1	1	1	1	1
	prostrate vervain	12000.0	ı	1	•	ı	- 7	0.0	ı	ı	ı	ı	1	1.7	1	ı	1	ı	1	1
	purple prairie clover	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	queen annes lace	•	ı	1	269.3		1	ı	ı		ı	1	1	1	60.2	2.0	8.3	1	1	1
	red clover	2.7	1	105.7	29.3	3 129.	.7	ı	ı	67.7	356.3	0.89	14.7	181.7	12.3	8.0	9.3	1	506.7	538.7
	rough avens	1	1	1			1 -	ı	1	1	1	1	1 :	1	1	1	1	1	1 1	1
	shepherds purse	1	1	1	1.3		0.	ı	1	1	1	22.7	41.0	İ	1	1	1	1	2.7	31.7
	shortstalk chickweed	1	1	1			1	ı	ı	1	1	1	1	İ	1	1	15.3	1	1	1
	smartweed	1.3	14.3	84.0	1.3	3.	.3	3.7.7		218.3	47.7	1	1	38.0	2.0	2.3	11.3	1412.7	5.0	10.0
	velvetleaf	1	1	0.7		1	1	ı	1	1	1	1	1	1	1	1	1	ı	1	1
	venice mallow	1	1	1				ı	ı	ı	ı	1	1	1	1	1	1	1	1	•
	white clover	•	1	249.0	2.3	3 87.	3	33.7	ı	ı	33.7	450.3	402.7	196.7	0.7	74.7	605.7	1	1.7	1
	white sweet clover	1	2.7	1		1	ı	ı	ı	ı	ı	1	1	1	1	1	1	1	1	1
	whorled milkweed	1	ı	ı		ı	ı	ı	ı	ı	ı	ı	1	1	1	ı	ı	ı	1	1
	wild bergamot	1	1	1		1	1	ı	ı	ı	ı	1	I (	1	1	1	1	1	1 (	I ]
	wild mustard	1	1	1			1	1	1	1	1	1	7.3	1	1	1	1	1	18.3	6.7
																-				

canada thistle	1	11.3	8.3	1	3.0	1	1	ı	1	1	3.0	1	' 	' 		1	9.0	1.3	
carolina horsenettle	1	1	ı	1	1	1	ı	5.7	1.0	1	1	1	1	6.3	5.3	ı	ı	2.3	1
catnip	1	1	1	1	1	1	1	ı	1	1	1	ı	1	16.0	I	1	20.0	1	1
chicory	1 1		1 0	٠ .	1	١ (	1	۱ (	1	1	1	1 1	1 '	1	1 '	1	1	1	1 (
common canducton	120.7	0.12	9.0 -	U.3 -		5.0	- 6	U.3 -	· 8	' (	. t.	114.7	7.0	· 6	0.7		1 1		1.0
common evening primrose		. '	ı	1	1	2.7	i	1	1.0		· ·	1	1	· ·	: '	1	1	1	1
common mullein	1	1	ı	1	1	. 1	1	0.3	1	1	0.3	1	1	18.0	19.3	1	ı	ı	1
common selfheal	1	1	ı	1	1	1	1	ı	1	1	1	I	1	1	ı	ı	ı	1	1
common sneezeweed	1	ı	1	1	1	ı	1	ı	ı	1	1	ı	1	1	1	ı	ı	1	'
common yarrow	1	1	ı	1 (	1	1	1	1	1	1	1	1	3.3	1	1	1	ı	1	1
compass plant	1	ı	1	2.0	1	ı	1 (	ı	ı	1	1	ı	1	1	ı	1	ı	1	1
cup plant	1	1	1	1	1	1	65.0	1	1	1	1	1	1 0	1	1	1	1	1	1
deptiord pink	1	1	ı	1 (	1	1	İ	1 (		1	1	1 (	80.3	' I	1 1	1	1	1	ı
eastern daisy fleabane	1	1	1	195.3	1	1 I	1 (	93.3	197.7	1	1	24.0	928.3	51.7	301.7	ı	ı	ı	'
field pennycress	1	1	1	1	1	13.7	101.0	1	1	1	1	1	1	4.3	1	ı	1	1	1
field thistle	1	ı	1	1 (	1	ı	ı	ı	1	1	ı	1	1	ı	ı	1	ı	1	ı
Howering spurge	1	1	1	 	' 6	1	1	1	1 1	1 1 1	1 1	1	1	1	ı	1	ı	1	1
ioxglove beardtongue	1	ı	1	0.0	. C	ı	1	ı	0.7	5.0	Ø: .	1	1	ı	1	ı	1 1	ı	1
golden alexanders	1	ı	1	0.3	J. (	ı	ı	ı	ı	0.3	1	1	1	ı	ı	ı	0.7	1	1
great blue lobella	1	1	1	1	1	ı	1	1	1	1	ı	1	1	1	1	1	ı	ı	1
groundenerry	1	ı	ı	ı	1	ı	ı	ı	ı	1	1	ı	1	ı	I	ı	ı	ı	1 000
hoary verysin			· <			' -	- 6			. 0	' -	- 1		10.01	1977		10.01		10.3
incary vervani		ı	4.0	1	1	1.0	- C.C	ı		y.c	1.0	1.1	1	10.0	1.121	1	10.0	ı	13.0
lanceles foofmit			ر ن				L.O								L.3				. '
leadulant															į į				'
		ı	1	ı	1	ı	ı	ı	ı	ı	1	ı	1	ı	ı	ı	ı	0.7	ς; ς;
marestail	'	1	13.7	1	30.7	1.7	0.7	1	1	1	'	255.3	6.7	'	1	1	1	· '	1.7
morning glory	0.7	1		'	. 1	1.3		4.0	2.0	'	1	1			'	1	1.7	1.0	. 1
musk thistle	1.7	11.0	1	1.0	1	1	1	1	1	1	1	1	1	41.3	17.7	1	. 1	1	1
new england aster	1	1.7	1	1	1	ı	1	ı	1	1	ı	1	1	1	ı	1	1	1	1
nodding stickseed	1	1	ı	ı	1	1	1	ı	1	1	1	1	1	ı	ı	1	ı	ı	'
ox eye daisy	1	0.7	1	ı	1	ı	ı	1	1	1	1	1	6.7	1	ı	1	ı	1	ı
ox eye sunflower	5.0	1.0	62.7	0.9	65.7	71.0	4.3	7.0	4.3	236.0	144.0	48.0	15.3	83.0	48.7	1	76.7	12.0	22.3
pale purple coneflower	1	1	ı	1	1	1	1.3	1	1	0.7	0.7	1	1	ı	ı	1	ı	1	1
panicledleaf tick trefoil	ı	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	ı	۱ ۰	ı	ı	ı	ı	1
partinge pea nineannle weed	' '			' '							' '			C-T	' '		' '		' '
plantain	4.7	1	1	1	17.0	1	1	1	1	1	1	1	1	1	1.0	1	1	1	1
prairie blazing star	1	1	ı	1	1	1	1	ı	1	1	1	ı	1	1	ı	1	ı	1	1
prairie cinquefoil	1	1	ı	ı	1	1	0.7	ı	1	1	0.3	1	1	ı	1.3	1	ı	ı	'
prickly lettuce	0.3	1	1	1	1	6.7	1	1	1	1	1	3.3	118.0	17.3	3.3	1	11.7	ı	1
prickly sowthistle	1	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1	1
prostrate knotweed	1	1	1	1	1	' <u> </u>	1	1	1	1	1	1	1	1	1	1	1	1	1
prostrate vervain	1	ı	1	1	1	0.7	1	ı	1	1	ı	1 (	1	1	1	1	1	ı	1
purple prairie clover	1	1	1	1 (	1	1	ı	ı	ı	1	1	0.3	1 (	I (	1 J	ı	ı	· ]	1 (
queen annes lace	1 0	1 0	1 1	350.3	1 0	1 2	I	1 1	1 6	' 6	' C	1 0	943.3	2 5	36.7	1		0.7	1.0
red clover	00.0	70.0	7.067	1049.0	5244.0	1.0.5		197.7	008.9	2007	6.111	001.9	0.0001	04.0	109.0	1	0.00	9001.1	080.0
rough avens	1	ı	1	1	1	ı	1	ı	ı	1	1	ı	1	1	1	ı	1	1	1
rough cinqueion	1	ı	1	ı	1	۱ ،	٠ ،	ı	ı	1	1	ı	1	ı	ı	ı	ı	ı	ı
snepnerus purse emertwood	ν. α	· 6	, % , %			<del>.</del>	0.00	170 0	- 006		' '	' '		- c	10.01		190.0	- 20 7	- 1
stiff goldenrod				' '	' '		' '	0.011	0.07	' '	' '	' '	' '		0.01		0.061		- '
stinging nettle	' '			' '				ν: . C		' '		1 1		23.3	. 6	1 1			' '
swamp milkweed	-	1	'	•	8.0	•	1	2 '		'	0.7	1	1	1	i '	1	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 density.

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

Nectar Plant Species	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 t	tcrela t	tdun2a 1	tdun3a 1	tfisla t	grola t	gro2a t	thar1a
alfalfa	1	1	1	1	0.08	1	1	1	1	3.79	1.29	1	1	1	1	1	4.53	0.34	0.22
birdsfoot trefoil	1	ı	1	0.31	1	1	1	1	1	1	1	1	0.10	1	1	1	1	1	1
black eyed susan	1	ı	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	-
blue vervain	ı	ı	ı	1	1	ı	1	1	ı	ı	1	ı	1	1	1	ı	1	ı	0.04
blue wild indigo	1	ı	ı	1	•	1	1	ı	1	ı	ı	1	1	1	1	ı	1	ı	1
brown eyed susan	ı	ı	ı	1	1	1	1	1	1	ı	ı	1	1	ı	1	ı	1	ı	1
canada goldenrod	1	ı	1	1	1	1	ı	1	ı	1	1	1	1	1	1	1	1	1	1
canada thistle	1	0.04	1	1	•	•	1	•	1	1	1	1	1	0.01	1	1	1.56	0.76	1.02
carolina horsenettle	1	ı	ı	1	1	1	1	0.15	0.05	1	1	ı	0.03	0.33	0.10	1	1	0.19	ı
chicory	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
common cinquefoil	1	ı	ı	1	1	1	1	1	0.00	1	1	0.12	1	1	1	1	1	1	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	1
common evening primrose	1	1	ı	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	0.01	0.02	0.01
common mullein	0.03	0.05	1	1	1	1	1	1	1	1	1	1	1	0.00	1	1	1	1	1
common yarrow	1	ı	ı	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
compass plant	0.02	0.07	1	1	1	ı	1	1	1	1	1	ı	1	1	1	1	1	ı	1
eastern daisy fleabane	1	1	1	1	1	ı	ı	0.01	ı	ı	1	0.05	0.02	0.12	ı	1	1	1	ı
flowering spurge	1	ı	1	0.05	1	1	ı	1	ı	1	1	1	1	1	1	1	1	1	1
golden alexanders	1	ı	1	1	1	1	1	0.07	ı	ı	1	ı	1	1	1	1	1	ı	1
hoary vervain	1	ı	ı	1	1	1	ı	1	ı	ı	ı	1	1	1	1	ı	1	1	0.06
lanceleaf fogfruit	1	1	1	1	1	ı	ı	1	ı	ı	1	ı	1	1	0.17	1	1	1	ı
morning glory	4.63	ı	ı	1	1	1	ı	0.01	ı	ı	1	ı	ı	1	1	ı	0.43	0.18	1
musk thistle	1	1	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	1	1	1	ı	1	1	1	1	0.04	1	ı	1	1	1
plantain	1	ı	ı	1	•	1	1	1	1	ı	ı	1	1	1	1	ı	1	ı	0.81
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	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	1	ı	1	1	ı	ı	1	98.0	ı	1	1	1	ı	1
red clover	0.08	ı	0.33	0.04	3.77	ı	ı	0.01	2.48	0.58	0.70	2.30	1.38	1	1	1	1.37	6.93	0.62
sawtooth sunflower	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
smartweed	0.03	0.03	1	1	1	1	ı	0.23	1	1	1	ı	1	1	1	1	1	1	1
stinging nettle	ı	ı	ı	1	1	1	1	1	1	ı	1	1	1	ı	0.02	ı	1	1	1
velvetleaf	1	ı	ı	1	1	1	ı	0.01	ı	ı	ı	1	1	1	1	ı	1	1	1
white clover	7.77	9.47	0.07	1	0.08	0.84	1	1	0.32	6.45	7.57	1.92	0.18	0.02	1	1	1	1	1.10
white sweet clover	1	1	1	1	1	1	1	1	1	0.03	1	0.02	1	1	1	1	1	1	ı
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	1	1	1	1
wild bergamot	ı	ı	ı	1	1	1	1	1	ı	ı	1	ı	1	1	1	1	ı	ı	1
wild mustard	1	ı	ı	1	1	1	1	1	0.22	1	1	1	1	1	1	1	ı	1	1
wild parsnip	1	1	ı	1	1	1	1	1	1	0.00	1	1	1	1	1	ı	1	1	1
yellow sweet clover	1	1	1	1	1	1	1	1	1	1	0.01	0.03	1	1	1	1	1	1	0.14

birdstoot trefoil black eyed susan	' 6	1 1	1 ;	0.18	1	1	1	1	1	1	1	1	1	1	,		ı	1	•
black eyed susan																			
010001000	0.02		0.21	1	0.01	1 6	1 (	1 ,	1 ,	0.05	0.00	0.01	0.05	0.01	1 .	ı	0.05	0.05	-
Diack medic	0.03	ı	0.05	1	1	2.04	0.03	0.01	0.01	0.52	3.77	ı	1	2.98	1.64	ı	ı	ı	ص: ت
bladder campion	0.68	•	•	•	1	•	1	1	1	•	•	1	1			ı	ı	ı	
blue vervain	ı	1	0.02	1	0.00	1	1	1	1	1	1	1	1	1	1	1	ı	1	
brown eyed susan	1	0.01	1	0.01	1	1	1	1	1	1	1	0.01	1	0.01	0.02	1	1	1	
buffalobur nightshade	ı	0.03	ı	1	ı	1	1	1	1	1	1	1	1	1	1	1	1	ı	_
canada anenome	ı	1	ı	1	ı	ı	1	1	1	ı	1	ı	1	1	1	ı	1	ı	_
canada thistle	1	•	1	1	1	1	1	•	•	1	•	ı	•	1	ı	ı	ı	0.04	
chicory	Ì	ı	I	ı	ı	ı	1	1	1	ı	1	ı	1	1	1	ı	1	1	_
clasping venus looking glass	1	1	1	1	1	1	1	1	1	1	1	ı	1	1	1	1	1	1	
common cinquefoil	İ	1	ı	1	ı	1	ı	1	0.01	1	1	0.14	1	1	1	ı	1	ı	_
common dandelion	ı	1	0.06	0.01	0.11	0.11	0.03	1	0.12	0.27	0.55	ı	1	0.02	1	ı	0.02	0.02	_
common evening primrose	1	1	ı	1	1	1	1	1	1	1	1	0.17	1	1	1	1	1	1	_
common mallow	•	•	1	1	1	1	1	•	1	•	•	1	•	•	•	1	1	1	
common milkweed	1	1	1	1	1	1	1	1	1	1	1	ı	1	1	1	1	1	1	
common mullein	ı	1	1	1	1	i	1	1	1	1	1	1	1	0.00	0.00	ı	ı	1	
common purslane	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
common yarrow	1	1	ı	1	ı	ı	1	1	1	ı	1	ı	1	•	1	1	1	1	_
compass plant	1	1	0.01	1	1	1	1	1	1	1	1	1	1	1	0.01	1	1	1	
crown vetch	•	١		'	,	1	,	٠	١	,	'	'	٠	,		,	1	1	
culvers root	1	•	1	•	1	1			•	1	•	•				1		0.01	_
eastern black nightshade	•		1	•	0.03	•		•	•	•	•	1	•	0.07		1	•	I	
eastern daisy fleabane	1	,	,	,	1	,	1	0.23	96.0	,	,	0.35	0.50	0.06	0.74	1	,	1	
field nennycress	,				•	•	,	)   	)   		•		)	)	•		0.33	000	
foxelove beardtonene	'			'		' '	' '				'	١ ١					000	0.02	_
eronndeherry	1		ı	1	ı	ı				1					000	ı	ı		
Broundancii y	ı	ı	ı	ı	ı	ı	I	ı	ı	ı	ı	ı	ı	ı	00.0	ı	ı	ı	
lawkweed			ı		ı	ı	ı			1					ı	ı	ı	ı	0
noary alyssum	1	1	ı	1	1	ı	1	1	1	' 6	1	1		1		ı	ı	ı	0.4
noary vervain	ı	ı	ı	1	ı	ı	1	1	1	0.00	1	ı	' 5	1		ı	ı	1	٦.٠
Ironweed	I	ı	' ;	ı	ı	ı	ı	ı	ı	ı	ı	ı	0.01	1	ı	ı	ı	ı	
marestan	1   		0.41	1	1		1	ı	ı	1	1	ı	1		ı	ı	ı	1	(
morning glory	0.05	ı	ı	1	1 (	1	1	1	1	1	1	ı	1	1 0	1 0	ı	ı	ı	 O
musk thistle	ı	ı	ı	1	0.05	1	ı	1	ı	1	1	ı	1	0.13	0.00	ı	1 ,	1 ,	
ox eye sunflower	ı	ı	l j	1 (	1 (	I (	I (	1	ı	I (	1 j	1 1	1	1 (	1 (	ı	0.01	0.01	
partridge pea	1 J	1	0.05	0.05	0.05	0.10	0.08	1	1	0.08	0.02	0.15	1	0.03	0.00	ı	1	1	
pineapple weed	0.27	ı	ı	1	1	İ	1	]	1	1	1	ı	1	0.03	0.01	ı	ı	ı	
prairie cinquetoil	ı	ı	ı	ı	ı	ı	ı	0.07	ı	1 6	' h	ı		ı	ı	ı	ı	ı	_
prickly sowthistle	ı	1 1	ı	1	ı	1	1	1	1	0.04	0.05	ı	1	1		ı	ı	1	
D.	- 00 076	0.07	ı	ı	ı	1 70	ı		ı	ı		· 60				ı		ı	_
	740.00		ı	'	'	1.40		'	'	'	1	0.07	'			'		1	
purple prairie ciover	ı	ı	ı	' (	ı	ı	ı	1	1	ı	1	ı	- 00	' 60	- 00	ı	1	ı	_
queen annes race red clover	700		. 0	4.43 0.40	1 30	1		1.25.	7 13	- 89 0		- 096	0.97	20.0	0.00	ı	' <del>Z</del>	ν α	-
rough among	0.00	1	7.77	C#.0	1.90	ı	1	1.00	01.1	0.00	0.10	9.5	0.17	0.00	0.0	ı	# 5	0.50	7
Fough avens	ı		ı	' 60	' 0	ı	ı			- 66 0	' -	1				ı	' 6	י ה י פ	_
suepnetus purse shortetally objektood	ı	ı	ı	0.07	0.03	1	1	1	ı	0.43	0.41	ı	1	ı	_ _ _ _	ı	Ť0.0	0.0	_
SIOUSIAIN CHICKWEEU	' 6	' 6	- 00	' 6	٠ ،	ָ הַ	1 2	2 2	י בי	'	'	) H	1 1	' 6	0.10	י עי	' 0	1 '	0
Smartweed	0.03	0.29	1.00	0.07	0.03	0.33	0.73	4.37	0.30	ı	1	0.04	0.07	0.07	0.11 2	0.70	0.00	0.17	٦.٠
velvetleaf	1		0.01	1	1	1			1	1	1	1						1	
venice mallow	ı	ı	1 0	1 6	1 1	' 1	ı	ı	' 1 0	1 (	' 6	1 7	' 6	' 1 !	' 0	ı	' 6	ı	(
white clover	ı	1 1	4.98	0.04	0.87	0.07	ı	ı	0.67	4.50	4.03	2.81	0.01	0.75	0.00	ı	0.03	ı	.7.
white sweet clover	ı	0.05	ı	1	ı	ı	1	ı	ı	ı	1	1	1	ı	1	ı	ı	ı	_
whorled milkweed	ı	ı	ı	ı	ı	ı	ı	1	ı	ı	1	ı	1		ı	ı	ı	ı	
wild bergamot	ı	ı	ı	1	ı	ı	ı	ı	ı	1	1 1	ı	ı	ı	ı	ı	' 6	۱ <del>,</del>	_
wild mustard	1	١	١	'	'	· [	'	'	١	١	0.07	١	'	٠		1	0.31	0.11	

canada thistle	1	0.23	0.17	1	0.03	1	1	1	1	1	0.03	ı	1	1	1	1	0.15	0.02	1
carolina horsenettle	1	1	ı	1	ı	1	1	0.11	0.02	1	1	ı	1	0.06	0.05	ı	ı	0.04	1
catnip	1	1	ı	1	ı	1	1	ı	ı	1	1	ı	1	0.16	1	ı	0.33	1	ı
chicory . , , ;	1 6	1 0	1 0	1 7	1	1 9	1	1 ,	1	1	1	1 7	1 7	1	' 7	ı	ı	1	1 0
common cinquetoil	2.53	0.42	0.00	0.01	1	0.46	. n	0.01	- 100	- 100	- 10	1.64	0.01	- 000	0.01		1	1	0.03
common evening primrose	10:0	10:0				0.10	50.0	' '	0.01	10.0	10:0			00.0	10:0		' '	' '	' '
common mullein	1	1	1	1	1	)	1	0.01	1 '	1	0.00	ı	1	0.18	0.19	1	1	1	1
common selfheal	ı	1	1	1	1	1	1	Ī	1	1	1	ı	1	1	1	•	1	1	1
common sneezeweed	1	1	1	1	1	1	1	ı	1	1	1	ı	1	1	1	ı	1	1	1
common yarrow	1	1	ı	1	ı	1	ı	ı	ı	1	1	ı	0.03	ı	1	ı	1	1	1
compass plant	1	1	İ	0.03	İ	1	1	İ	1	1	1	1	1	1	1	1	1	1	1
cup plant	1	1	ı	1	ı	1	1.30	1	ı	ı	1	ı	ı	1	1	ı	1	1	1
deptford pink	1	1	ı	1	1	1	1	1	1	1	1	1	0.80	1	1	1	1	1	ı
eastern daisy fleabane	1	1	ı	3.26	ı	1	1	1.87	3.95	1	ı	0.34	9.28	0.52	3.02	ı	ı	1	1
field pennycress	1	1	ı	1	ı	0.27	2.02	1	1	1	ı	1	1	0.04	1	1	1	1	1
field thistle	1	1	ı	1	ı	1	ı	1	ı	1	1	ı	ı	1	1	ı	1	1	ı
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	ı	0.08	0.00	1	1	1	0.01	0.06	0.09	İ	ı	1	1	1	1	1	1
golden alexanders	1	ı	ı	0.01	0.02	1	ı	1	ı	0.00	ı	ı	ı	1	ı	1	0.01	1	1
great blue lobelia	1	ı	ı	1	ı	1	ı	1	ı	ı	1	1	ı	1	ı	ı	ı	1	ı
groundcherry	1	1	1	1	1	1	1	1	1	1	1	1	1	1	•	ı	1	1	1
hoary alyssum	1	1	1	1	1	1	1	1	1	1	1	1	1	1	•	ı	1	1	17.97
hoary vervain	0.01	1	0.08	1	ı	0.02	0.01	ı	ı	0.09	0.01	0.02	ı	0.10	1.28	ı	0.17	ı	0.64
ironweed	1	1	0.01	ı	1	1	0.03	1	1	1	1	1	1	1	0.01	1	1	1	0.02
lanceleaf fogfruit	1	1	ı	1	ı	1	1	1	ı	1	1	ı	1	1	0.04	1	1	1	ı
leadplant	1	ı	ı	1	ı	1	ı	1	ı	ı	1	ı	ı	1	ı	ı	ı	1	1
lesser burdock	ı	ı	1	1	1	1	1	1	ı	ı	1	1	1	1	ı	ı	ı	0.01	0.11
marestail	1 ,	1	0.27	1	0.31	0.03	0.01	I (	1 -	ı	ı	3.65	0.02	1	1	ı	1 (	1 (	0.06
morning glory	0.01	1 (	1	1 (	1	0.03	1	0.08	0.04	1	1	1	1	1 ;	1 (	1	0.03	0.02	1
musk thistle	0.03	0.22	ı	0.02	ı	ı	ı	ı	ı	ı	ı	ı	ı	0.41	0.18	ı	ı	ı	1
new england aster	ı	0.03	ı	1	ı	1	ı	ı	ı	ı	ı	ı	ı	ı		ı	ı	ı	1
nodding stickseed	ı	۱ <del>,</del>	ı	1	ı		ı	ı	ı	ı	ı	ı	1 1	ı	ı	ı	ı	1	1
ox eye daisy	1 0	0.01	- - - -	' 6	' 00	' Ç	1 0	1 7	' 6	' ' '	· -	1 0	0.07	' 60	' 6	ı	. 6	' 6	1
ox eye sunnower	0.10	0.02	1.25	0.10	0.00	1.42	0.08	0.14	60.0	2.30	1.44 0.01	60.0	CT.0	0.83	0.49	ı	1.28	0.20	0.74
pale purpie conellower nanicledleaf tick trefoil							o.o.		1 1	10:01	0.01								' '
partridge pea	1	1	ı	1	ı	1	ı	ı	ı	ı	1	ı	1	0.01	1	ı	1	1	ı
pineapple weed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1	1
plantain	0.09	1	ı	1	0.17	1	1	ı	1	ı	1	1	1	1	0.01	ı	ı	1	ı
prairie blazing star	1	1	1	1	1	1	1	1	1	1	1	1	ı	1	1	ı	ı	1	1
prairie cinquefoil	1	1	ı	1	1	1	0.01	1	ı	1	0.00	ı	ı	1	0.01	ı	ı	1	1
prickly lettuce	0.01	1 (	ı	1	ı	0.13	ı	ı	ı	ı	ı	0.02	1.18	0.17	0.03	ı	0.19	ı	ı
prickly sowthistle	ı	0.05	1	1	1	1	1	1	1	1	1	ı	1	1	1	ı	1	1	1
prostrate knotweed	ı	ı	ı	1	I	' 6	ı	ı	ı	ı	ı	ı	ı	ı	1	ı	ı	ı	
prostrate vervain	ı	ı	ı	1	ı	0.01	ı	ı	ı	ı	ı	1 0	ı	1	ı	ı	ı	ı	1
purple prairie clover	ı	ı	ı	л О	ı	1	ı	ı	ı	ı	ı	0.00	· 6	- 000	- 60	ı	ı		- 60 0
queen annes race red clover	1.37	- 22	ν. . α	0.04 17.38	39 44	κ. π.		3 05	- 17 70	- 90 6	' -	0.45	9.45 10.56	0.00	1.03		13.05	0.01 51.36	13 11
rollgh avens	. '	. '	10.5	-	1.70	00:0		5.5	) ·	) i	11:1		00:01	, i	7			07:0	11:01
rongh cincuefoil	ı	ı	ı	1	ı	1		1	ı			ı	ı	ı	ı	ı		1	1
shepherds purse			'			0.09	1.37												· 1
smartweed	1.17	0.19	0.37	1	1	)	. '	3.40	0.40	1	1	1	1	0.03	0.10	1	3.17	0.49	0.06
stiff goldenrod		) I	. I		1		1	)	) I	1	1	1	1	'	) I	1	. '	· ·	)
stinging nettle	ı	1	İ	1	İ	ı	ı	0.10	ı	ı	1	ı	1	0.23	0.03	1	1	1	1
swamp milkweed	'	İ	'	'	0.08	'	'	'	'	'	0.01	'	'	'	'	'	0.03	'	-

Similarly, here are some heatmaps for density of species non planted.

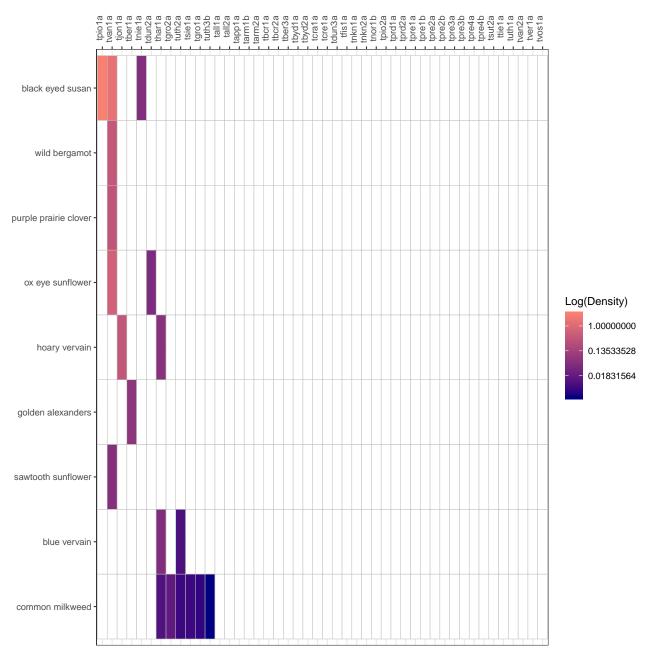


Figure 1: This plot is a heatmap for density of species planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average density for year 2016.

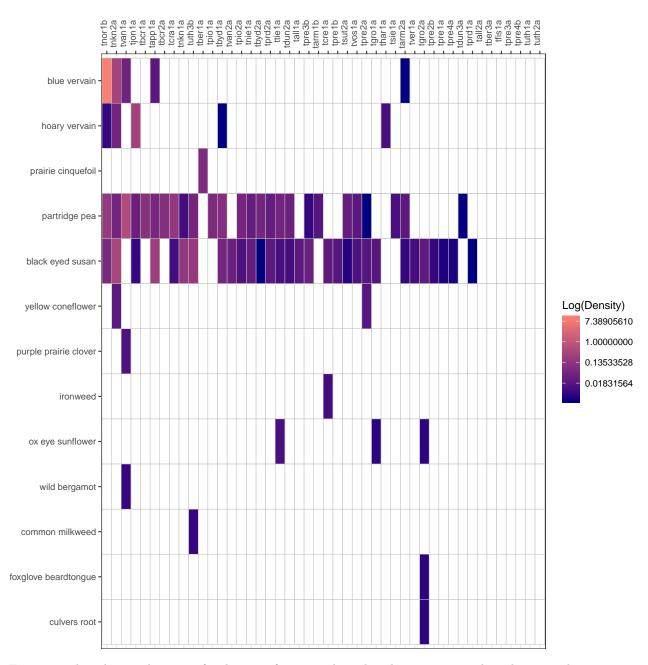


Figure 2: This plot is a heatmap for density of species planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average density for year 2017.

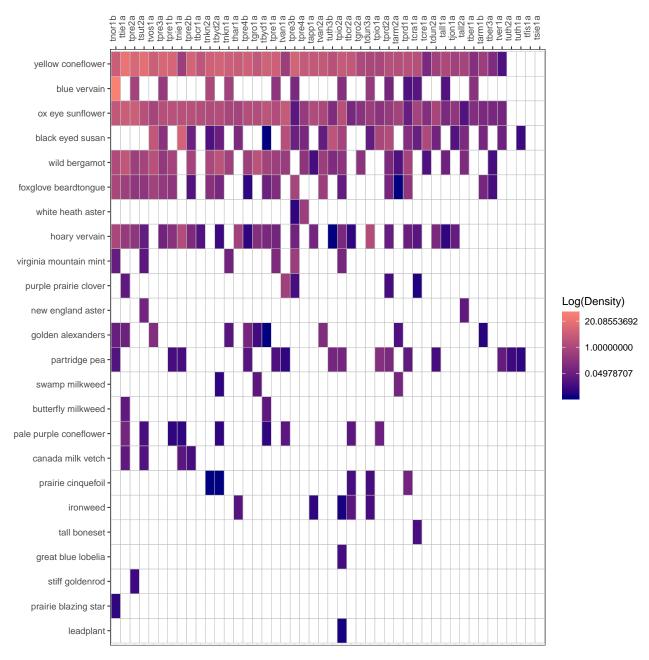


Figure 3: This plot is a heatmap for density of species planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average density for year 2018.

Binary heatmaps for density of species planted.

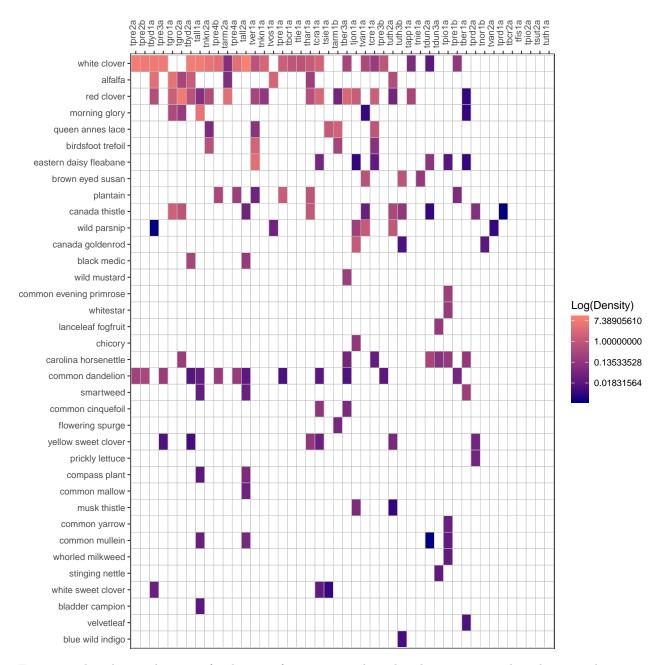


Figure 4: This plot is a heatmap for density of species non planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average density for year 2016.

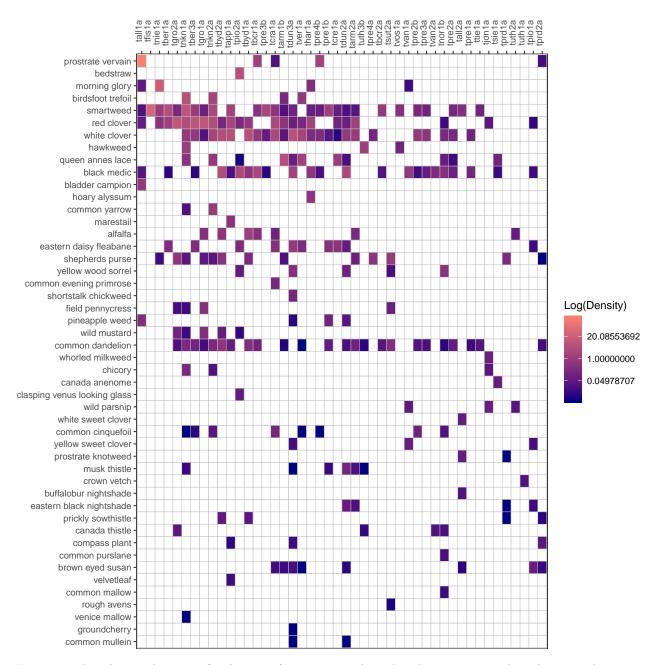


Figure 5: This plot is a heatmap for density of species non planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average density for year 2017.

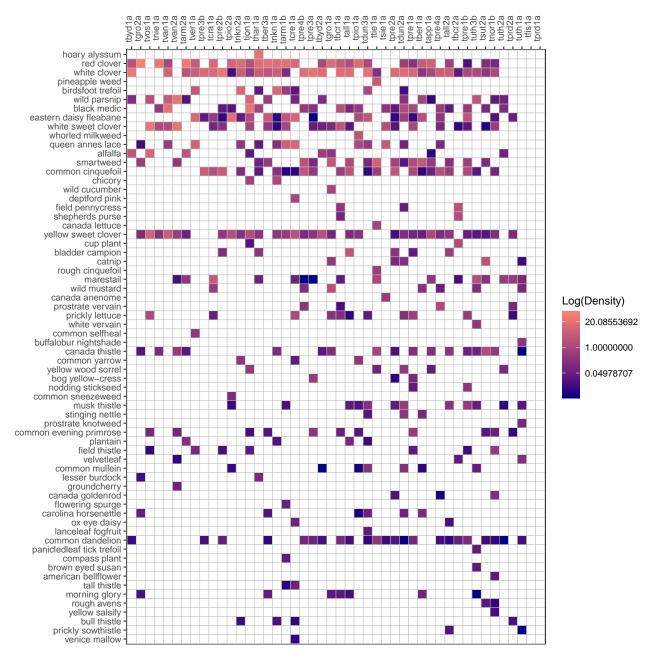
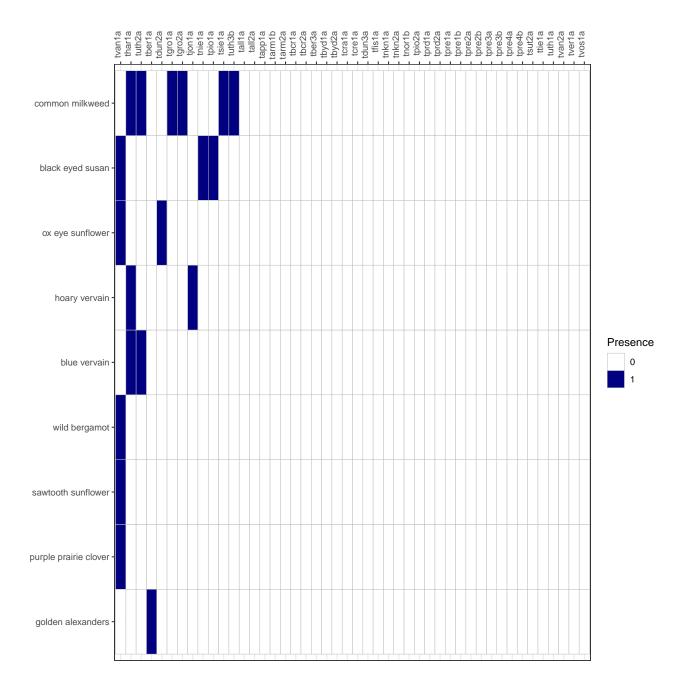
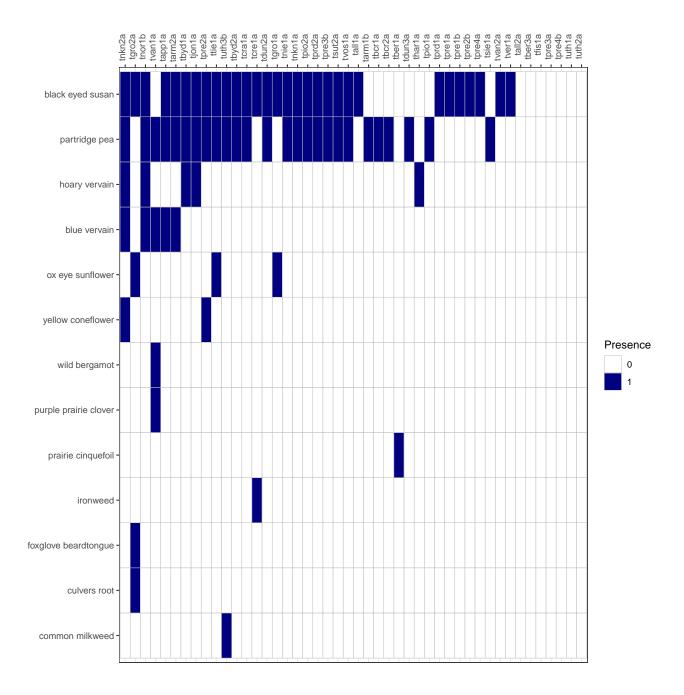
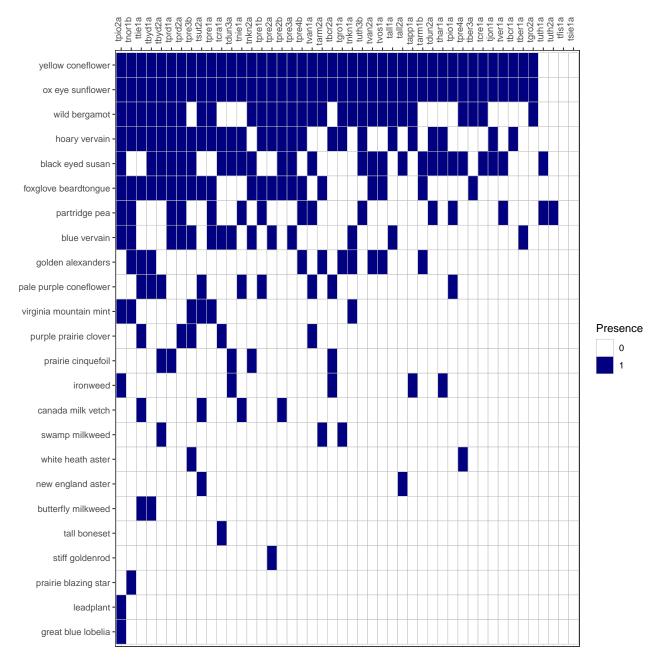


Figure 6: This plot is a heatmap for density of species non planted with transects on the columns and species on the rows sorting transects by average density and sorting species by average density for year 2018.







Binary heatmaps for density of species non planted.

