ISU Monarch Data Summary for NCIG

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Table 1 provides average land cover percentage averaged across all data collection events.

Table 1: Daubenmire: average land cover % across all rounds

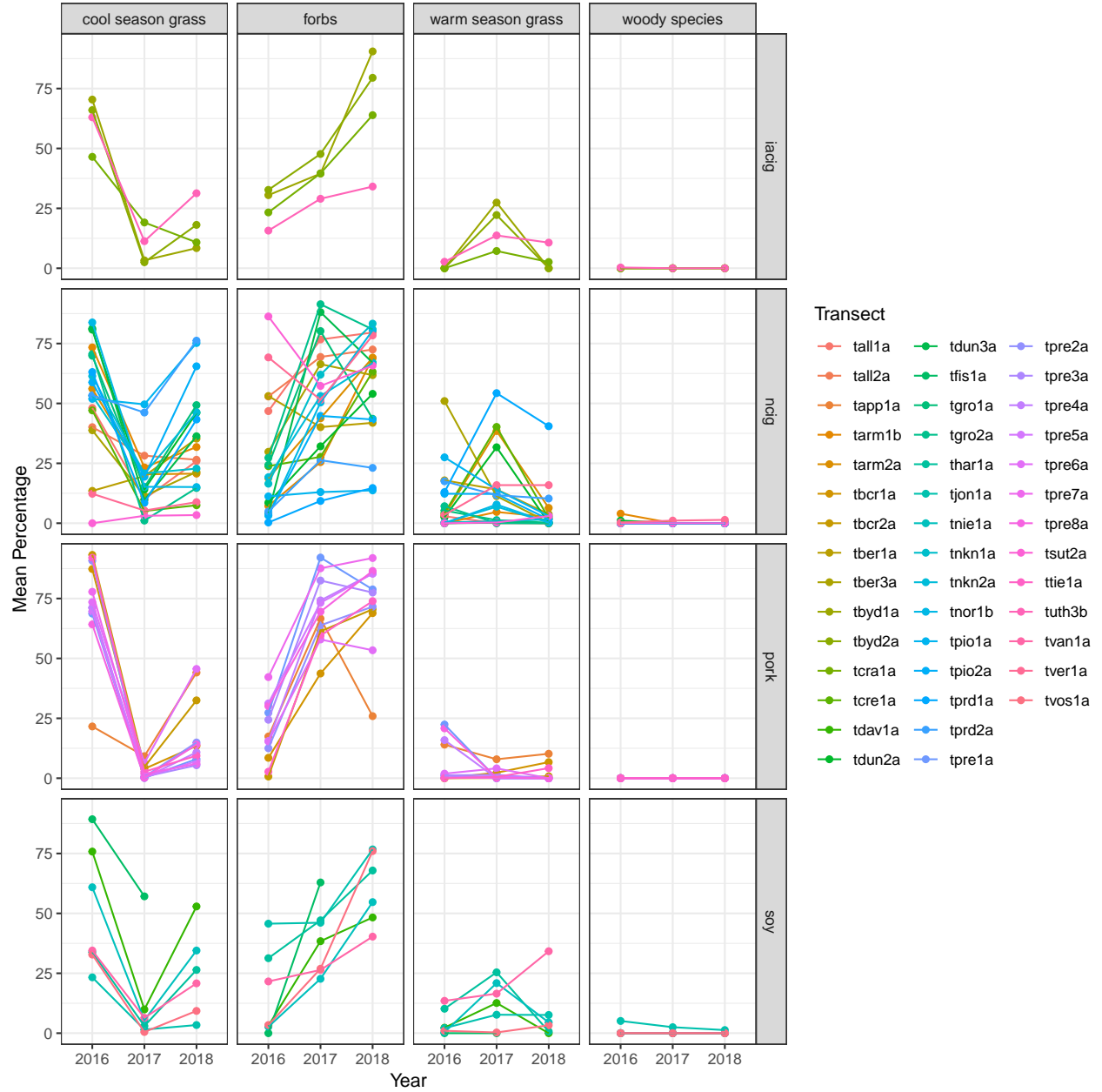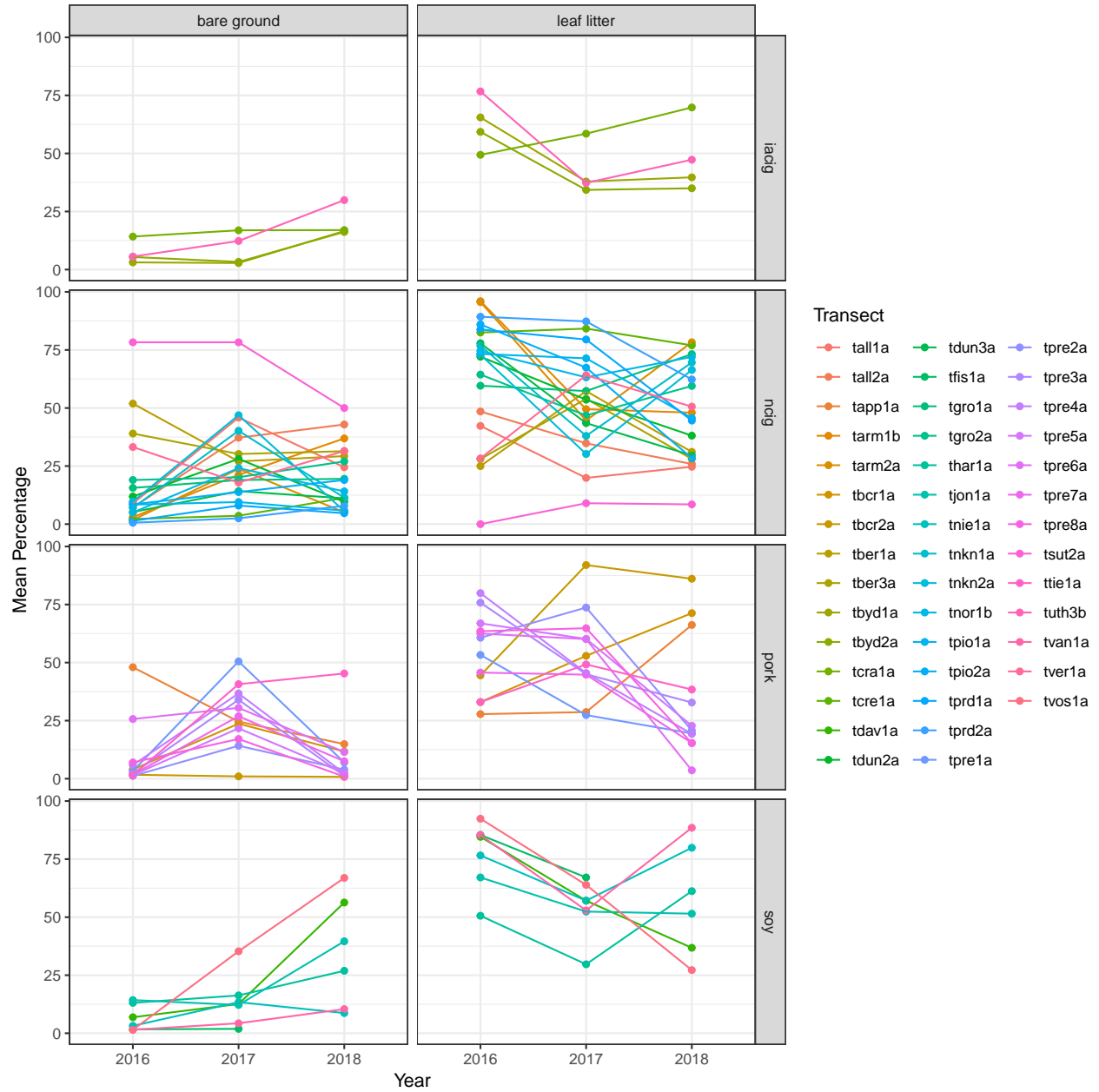| transectID	cool season grass			warm season grass			forbs			woody species			bare ground			leaf litter		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
tall1a	48	10	26	3	0	0	47	77	80	0	0	0	9	46	24	42	20	25
tall2a	40	28	26	0	0	0	53	69	72	0	0	0	7	37	43	48	35	26
tapp1a	22	9	44	14	8	10	17	67	26	0	0	0	48	25	15	28	29	66
tarm1b	73	23	32	0	5	3	7	26	69	4	0	0	3	21	37	96	50	48
tarm2a	56	20	21	3	38	6	19	44	69	0	0	0	2	24	5	96	45	78
tbcr1a	87	4	14	0	2	7	8	44	69	0	0	0	4	24	12	33	53	71
tbcr2a	93	5	32	0	0	1	1	61	70	0	0	0	2	1	1	44	92	86
tber1a	14	20	35	18	14	4	53	40	42	0	0	0	52	27	29	25	57	31
tber3a	39	11	21	51	11	0	30	66	62	0	0	0	39	30	31	28	54	28
tbyd1a	70	3	8	0	27	0	30	40	90	0	0	0	3	3	17	66	38	40
tbyd2a	66	2	18	0	22	0	33	48	80	0	0	0	5	3	16	59	34	35
tcra1a	46	19	11	0	7	3	23	40	64	0	0	0	14	17	17	49	58	70
tcre1a	47	5	8	4	40	2	24	28	63	0	0	0	2	4	11	82	84	77
tdav1a	76	10	53	2	13	0	3	38	48	0	0	0	7	13	56	85	57	37
tdun2a	81	14	46	2	32	0	9	32	54	1	0	0	12	28	10	72	54	38
tdun3a	81	10	36	0	0	0	4	88	67	0	0	0	5	14	11	78	44	30
tfis1a	89	57	na	0	0	na	0	63	na	0	0	na	2	2	na	85	67	na
tgro1a	70	15	49	5	1	0	24	80	44	0	0	0	16	19	20	60	57	73
tgro2a	71	1	15	7	0	0	27	91	81	0	0	0	19	20	27	64	47	60
thar1a	34	3	26	10	25	1	31	47	68	0	0	0	13	16	27	51	30	61
tjon1a	23	2	3	2	8	8	46	46	77	5	2	1	14	12	40	67	52	52
tnie1a	61	5	34	0	21	4	3	23	55	0	0	0	3	13	9	77	57	80
tnkn1a	53	21	23	0	1	2	16	62	83	0	0	0	7	40	11	77	38	70
tnkn2a	61	21	46	0	7	0	19	53	67	0	0	0	10	47	6	73	30	66
tnor1b	84	15	15	0	8	0	3	50	80	0	0	0	5	24	14	75	63	72
tpio1a	52	50	75	28	14	3	11	13	14	0	0	0	8	10	6	73	71	46
tpio2a	59	19	66	12	12	2	3	45	43	0	0	0	8	14	19	86	67	28
tprd1a	63	8	43	13	54	40	0	9	15	0	0	0	1	8	5	84	80	45
tprd2a	53	46	76	18	12	10	5	26	23	0	0	0	1	2	8	89	87	62
tpre1a	69	0	8	22	0	0	27	92	79	0	0	0	3	50	7	53	27	20
tpre2a	91	1	15	1	0	0	12	64	72	0	0	0	1	14	4	61	74	21
tpre3a	71	1	5	1	1	0	24	82	78	0	0	0	2	34	1	76	45	33
tpre4a	71	0	11	16	0	0	16	74	85	0	0	0	6	37	2	80	46	19
tpre5a	70	0	7	0	1	0	31	73	85	0	0	0	2	22	2	67	60	23
tpre6a	74	6	46	2	4	0	15	58	53	0	0	0	26	30	12	62	60	4
tpre7a	78	2	6	0	0	0	42	88	92	0	0	0	2	27	8	46	45	15
tpre8a	64	0	14	21	0	0	30	70	86	0	0	0	7	17	1	64	65	15
tsut2a	0	3	3	0	0	3	86	57	66	0	0	0	78	78	50	0	9	8
ttie1a	92	3	9	0	0	4	3	60	74	0	0	0	2	41	45	33	49	38
tuth3b	63	11	31	3	14	11	16	29	34	0	0	0	6	12	30	77	37	47
tvan1a	34	6	21	14	16	34	22	26	40	0	0	0	2	4	10	85	53	88
tver1a	12	5	9	4	16	16	69	52	78	0	1	1	33	18	32	28	64	51
tvos1a	33	0	9	1	0	3	3	27	76	0	0	0	2	35	67	92	64	27
Mean	59	12	26	6	10	4	22	53	64	0	0	0	11	22	19	63	52	45

Figure 1: This plots the mean percentage of land cover by year and is faceted by class. The colors correspond to the different trasects.

Figure 2: This plots the mean percentage of land cover by year and is faceted by class. The colors correspond to the different trasects.

Transect

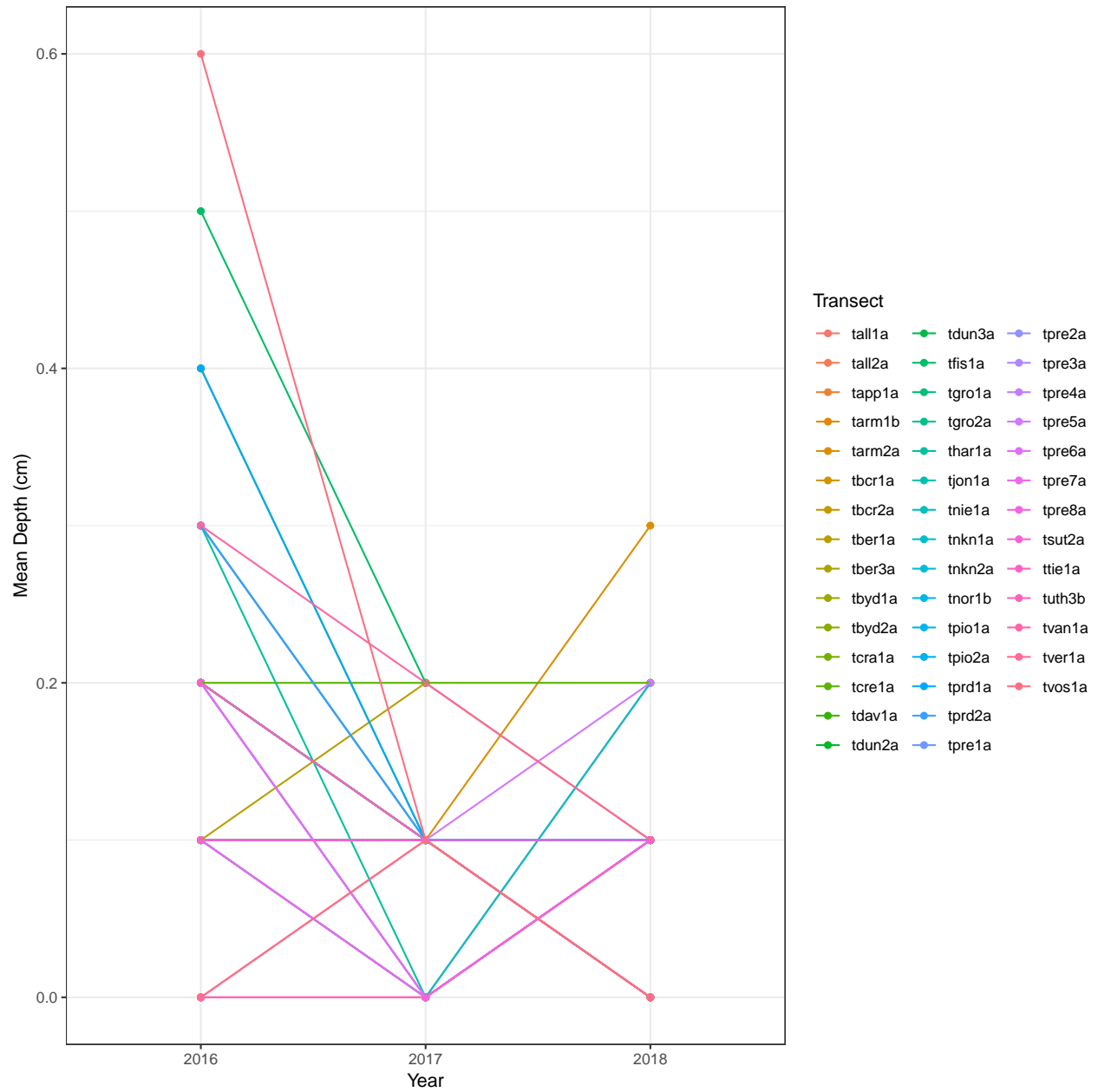|		
tall1a	tdun3a	tpre2a
tall2a	tfis1a	tpre3a
tapp1a	tgro1a	tpre4a
tarm1b	tgro2a	tpre5a
tarm2a	thar1a	tpre6a
tbcr1a	tjon1a	tpre7a
tbcr2a	tnie1a	tpre8a
tber1a	tnkn1a	tsut2a
tber3a	tnkn2a	ttie1a
tbyd1a	tnor1b	tuth3b
tbyd2a	tpio1a	tvan1a
tcra1a	tpio2a	tver1a
tcre1a	tprd1a	tvos1a
tdav1a	tprd2a	
tdun2a	tpre1a	

Mean Depth (cm)

Year

Figure 3: This plots the mean percentage of land cover by year and is faceted by class. The colors correspond to the different transects.

Table 2: Daubenmire Milkweed: average ramet stems across all rounds

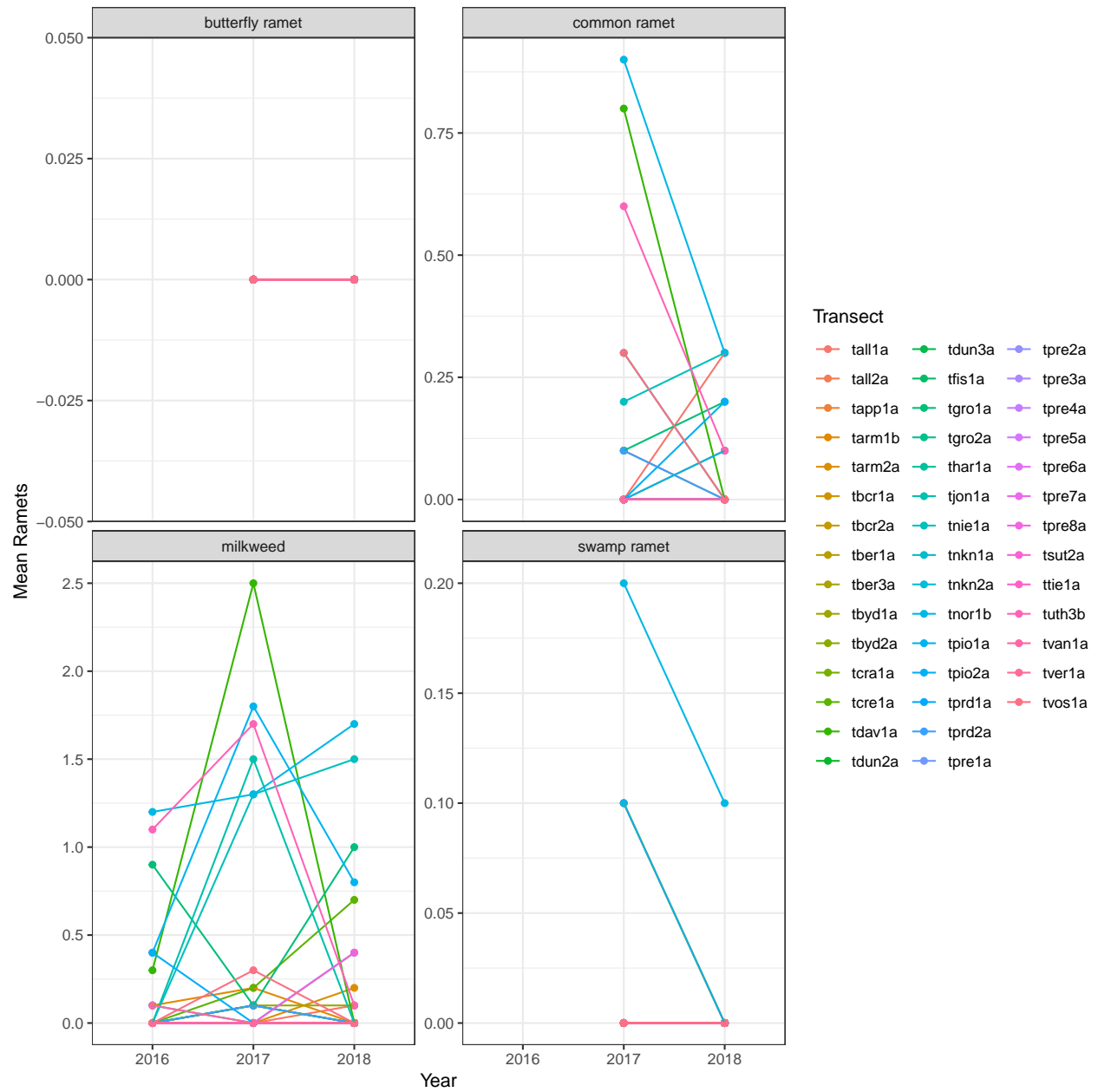| transectID	butterfly ramet			common ramet			milkweed			swamp ramet		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
tall1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.3	0.0	0.0	0.1
tall2a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tapp1a	na	0.0	0.0	na	0.0	0.0	na	0.1	0.0	0.0	0.1	0.0
tarm1b	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.1	0.2	0.0
tarm2a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.1	0.0	0.0	0.2
tbcr1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.1	0.0
tbcr2a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tber1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tber3a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tbyd1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.1	0.1
tbyd2a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tcra1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tcre1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.2	0.7
tdav1a	na	0.0	0.0	na	0.0	0.0	na	0.8	0.0	0.3	2.5	0.0
tdum2a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.1	0.0
tdum3a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tfis1a	na	0.0	na	na	0.0	na	na	0.0	na	0.0	0.0	na
tgro1a	na	0.0	0.0	na	0.0	0.0	na	0.1	0.2	0.9	0.1	1.0
tgro2a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
thar1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.1	0.0	0.0
tjon1a	na	0.0	0.0	na	0.0	0.0	na	0.3	0.0	0.0	1.5	0.0
tnie1a	na	0.0	0.0	na	0.0	0.0	na	0.2	0.3	0.0	1.3	1.5
tnkn1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tnkn2a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tnor1b	na	0.0	0.0	na	0.0	0.0	na	0.9	0.3	1.2	1.3	1.7
tpio1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.1	0.4	1.8	0.8
tpio2a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.2	0.4	0.0	0.4
tprd1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tprd2a	na	0.0	0.0	na	0.0	0.0	na	0.1	0.0	0.0	0.1	0.0
tpre1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tpre2a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tpre3a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tpre4a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tpre5a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tpre6a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tpre7a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tpre8a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tsut2a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.4
ttie1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tuth3b	na	0.0	0.0	na	0.0	0.0	na	0.6	0.1	1.1	1.7	0.1
tvan1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.1	0.0	0.0
tver1a	na	0.0	0.0	na	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0
tvos1a	na	0.0	0.0	na	0.0	0.0	na	0.3	0.0	0.0	0.3	0.0
Mean	na	0.0	0.0	na	0.0	0.0	na	0.1	0.0	0.1	0.3	0.2

Figure 4: This plots the mean ramets by year and is faceted by species. The colors correspond to the different transects.

	Df	Sum of Sq	RSS	AIC	F value	Pr(>F)
<none>			298637.75	4601.74		
class	5	295536.14	594173.90	5120.07	149.83	0.0000
year	2	648.84	299286.59	4599.40	0.82	0.4398
grant	3	1125.88	299763.64	4598.63	0.95	0.4153