

summary_tables

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2/27/2019

Table 1: Site summaries

Table 2: Model summaries for struct x cohort model for dry years

plot the percent change in growth due to change in drought sensitivity across drought, assuming constant t, dbh, mean growth in past years

Table 3: Cohort and structure summaries overall & by site:

A tibble: 18 x 5

Groups: site [9]

```
site ageclass Tmax DBH Trees 1 AVO Modern 24.1 26.5 3 2 AVO Past 24.1 25.4 3 3 BON Modern 24.9 30.6
2 4 BON Past 24.9 34.4 7 5 ENG Modern 25.0 33.7 2 6 ENG Past 25.0 31.0 4 7 GLA Modern 26.8 42.4 1 8
GLA Past 26.8 45.0 9 9 GLL1 Modern 24.9 55.3 1 10 GLL1 Past 24.9 26.0 12 11 GLL2 Modern 24.9 23.2 8
12 GLL2 Past 24.9 31.9 4 13 GLL3 Modern 24.9 9.95 2 14 GLL3 Past 24.9 26.7 7 15 MOU Modern 25.4 33.1
2 16 MOU Past 25.4 49.0 4 17 UNC Modern 24.1 13.8 28 18 UNC Past 24.1 25.9 4 # A tibble: 2 x 5 ageclass
Tmax DBH DBH.sd Trees 1 Modern 24.6 21.2 NA 49 2 Past 25.0 22.9 NA 54
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Table 1: Site level chronology summaries

Site #	Site	Structure	Mean Age	Time span	Intercorrelation	AR	EPS	Rbar
1	AVO	Forest	76	1901 - 2015	0.602	0.602	0.924	0.519
2	BON	Savanna	116	1818 - 2015	0.557	0.557	0.871	0.237
3	ENG	Forest	68	1934 - 2015	0.524	0.524	0.850	0.299
4	GLA	Savanna	125	1851 - 2015	0.575	0.575	0.919	0.342
5	GLL1	Forest	105	1877 - 2016	0.536	0.536	0.863	0.268
6	GLL2	Savanna	83	1894 - 2016	0.623	0.623	0.943	0.565
7	GLL3	Savanna	73	1893 - 2016	0.630	0.630	0.905	0.474
8	MOU	Forest	76	1901 - 2015	0.602	0.602	0.924	0.519
9	UNC	Savanna	52	1889 - 2016	0.435	0.435	0.754	0.168

Table 2: Parameter Estimates and Model Fit

Parameter	Cohort	Model 1		Model 2	
		Estimate	95% CI	Estimate	95% CI
Intercept	PVC	0.034	(-0.06 - 0.13)	0.106 *	(0.05 - 0.16)
	COR	0.116 *	(0.03 - 0.21)	0.118 *	(0.04 - 0.19)
	UNC	0.061	(-0.02 - 0.14)	0.036	(-0.04 - 0.1)
	MOU	0.281 *	(0.15 - 0.43)	0.219 *	(0.1 - 0.35)
	GLL3	0.191 *	(0.1 - 0.29)	0.14 *	(0.05 - 0.22)
	GLL2	0.082 *	(0 - 0.16)	0.047	(-0.03 - 0.12)
	GLL1	0.014	(-0.12 - 0.13)	-0.019	(-0.12 - 0.09)
	GLA	0.125 *	(0.05 - 0.19)	0.097 *	(0.04 - 0.16)
	ENG	0.213 *	(0.07 - 0.36)	0.158 *	(0.02 - 0.3)
	BON	0.158 *	(0.07 - 0.24)	0.099 *	(0.03 - 0.18)
	AVO	0.157 *	(0.04 - 0.29)	0.11	(0 - 0.23)
DBH	Modern-Savanna	0.535 *	(0.37 - 0.72)	0.014	(-0.03 - 0.06)
	Modern-Forest	0.02	(-0.04 - 0.08)	0.057	(-0.02 - 0.14)
	Past-Savanna	0.538 *	(0.44 - 0.63)	0.069 *	(0.02 - 0.11)
	Past-Forest	0.063 *	(0.01 - 0.13)	-0.025	(-0.09 - 0.04)
Lag-1	Modern-Savanna	0.206 *	(0.02 - 0.37)	0.515 *	(0.43 - 0.61)
	Modern-Forest	0.509 *	(0.42 - 0.6)	0.563 *	(0.38 - 0.75)
	Past-Savanna	0.135 *	(0.02 - 0.24)	0.561 *	(0.49 - 0.63)
	Past-Forest	0.566 *	(0.49 - 0.64)	0.593 *	(0.52 - 0.67)
Lag-2	Modern-Savanna	-0.084	(-0.22 - 0.05)	0.367 *	(0.28 - 0.46)
	Modern-Forest	0.367 *	(0.27 - 0.46)	0.209 *	(0.03 - 0.38)
	Past-Savanna	-0.108 *	(-0.19 - -0.03)	0.212 *	(0.14 - 0.28)
	Past-Forest	0.208 *	(0.14 - 0.28)	0.106 *	(0.02 - 0.19)
Precipitation	Modern-Savanna	0.053	(-0.04 - 0.14)	0.021	(-0.03 - 0.08)
	Modern-Forest	0.039	(-0.02 - 0.1)	0.018	(-0.08 - 0.11)
	Past-Savanna	-0.028	(-0.13 - 0.06)	0.081 *	(0.04 - 0.12)
	Past-Forest	0.123 *	(0.07 - 0.17)	0.084 *	(0.02 - 0.14)
June Tmax x Precip	Modern-Savanna			0.074 *	(0.02 - 0.13)
	Modern-Forest			-0.007	(-0.1 - 0.08)
	Past-Savanna			0.008	(-0.01 - 0.03)
	Past-Forest			-0.008	(-0.04 - 0.02)
	Modern-Savanna	-0.021	(-0.11 - 0.07)	-0.063	(-0.14 - 0.01)
	Modern-Forest	-0.076	(-0.15 - 0)	-0.069	(-0.21 - 0.06)
Model Fit					
June Maximum Temperature	Past-Savanna	-0.045	(-0.11 - 0.02)	-0.039 *	(-0.06 - -0.01)
	Past-Forest	-0.069 *	(-0.11 - -0.03)	-0.067 *	(-0.1 - -0.03)
	Mean Sq. Error	1.402		1.264	
	Bias	-0.003		-0.008	
	R sq	0.719		0.703	
	penalties	21.657		32.174	
	deviances	844.678		821.297	
	penalized deviance	866.336		853.471	

* 95% CI does not contain zero

```

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plot summary table fo temperature % growth change reponses

Table 3: Site Summaries and Age Cohort Summaries

Site #	Site	Structure	Cohort	Trees	Average June Tmax	Average Water Year Precipitation (mm)	Diameter	Mean Ring Width (mm)	Average Interseries Correlation
1	AVO	Forest	Modern	3	24.25	747.93	27.58	2.74	0.61
	AVO	Forest	Past	3	23.56	712.99	13.87	2.23	0.44
2	BON	Savanna	Modern	2	25.19	637.56	31.54	2.43	0.35
	BON	Savanna	Past	7	24.61	592.15	25.52	1.29	0.63
3	ENG	Forest	Modern	2	25.18	715.71	33.95	3.23	0.51
	ENG	Forest	Past	4	24.63	661.04	12.95	2.46	0.51
4	GLA	Savanna	Modern	1	26.86	916.82	45.15	2.44	0.75
	GLA	Savanna	Past	9	26.63	841.66	31.40	1.94	0.62
5	GLL1	Forest	Modern	1	25.19	637.56	55.43	1.29	0.39
	GLL1	Forest	Past	12	24.61	592.15	17.23	1.46	0.55
6	GLL2	Savanna	Modern	8	25.19	637.56	23.70	1.40	0.62
	GLL2	Savanna	Past	4	24.61	592.15	22.13	1.45	0.58
7	GLL3	Savanna	Modern	2	25.19	637.56	9.95	1.00	0.51
	GLL3	Savanna	Past	7	24.61	592.15	17.72	1.57	0.50
8	MOU	Forest	Modern	2	25.45	829.90	33.06	4.71	0.30
	MOU	Forest	Past	4	25.25	766.07	32.38	2.54	0.49
9	UNC	Savanna	Modern	28	24.25	747.93	13.80	1.53	0.48
	UNC	Savanna	Past	4	23.86	689.23	20.34	1.12	0.48

Table 4: Maximum Summer Temperature Summary

Time Period	RCP scenario	Mean June Tmax	95% CI Tmax
1895-1950	Past	26.78	(22.56 - 31.44)
1950-2015	Modern	26.65	(23.66 - 31)
2025-2060	rcp2.6	27.99	(24.57 - 31.78)
	rcp4.5	28.60	(24.26 - 32.91)
	rcp6.0	28.03	(24.5 - 32.12)
	rcp8.5	28.81	(24.95 - 33.17)
2060-2099	rcp2.6	27.56	(23.28 - 31.49)
	rcp4.5	29.72	(26.01 - 34.24)
	rcp6.0	29.13	(25.53 - 32.7)
	rcp8.5	32.07	(27.74 - 36.54)

Table 5: Maximum Summer Temperature Summary

Structure	Total Annual Precipitation	Summer Maximum Temperature	% change in growth relative to 26.2 DegC	95% CI
Forest	515 mm	21.2	15.138	(-8.53 - 41.28)
	950 mm	21.2	35.984	(-26.6 - 123.42)
	515 mm	22.2	11.821	(-6.88 - 31.85)
	950 mm	22.2	27.096	(-21.92 - 90.24)
	515 mm	23.2	8.656	(-5.21 - 23.04)
	950 mm	23.2	19.153	(-16.94 - 61.98)
	515 mm	24.2	5.636	(-3.5 - 14.82)
	950 mm	24.2	12.049	(-11.64 - 37.93)
	515 mm	25.2	2.752	(-1.77 - 7.16)
	950 mm	25.2	5.691	(-6 - 17.44)
	515 mm	26.2	0	(0 - 0)
	950 mm	26.2	0	(0 - 0)
	515 mm	27.2	-2.628	(-6.68 - 1.8)
	950 mm	27.2	-5.095	(-14.85 - 6.38)
	515 mm	28.2	-5.137	(-12.91 - 3.63)
	950 mm	28.2	-9.655	(-27.5 - 13.17)
	515 mm	29.2	-7.532	(-18.73 - 5.5)
	950 mm	29.2	-13.732	(-38.27 - 20.39)
	515 mm	30.2	-9.82	(-24.15 - 7.39)
	950 mm	30.2	-17.371	(-47.43 - 28.07)
Savanna	515 mm	31.2	-12.004	(-29.22 - 9.33)
	950 mm	31.2	-20.614	(-55.24 - 36.24)
	515 mm	21.2	52.171 *	(34.72 - 69.51)
	950 mm	21.2	3.532	(-25.92 - 41.41)
	515 mm	22.2	39.879 *	(26.93 - 52.53)
	950 mm	22.2	2.576	(-21.34 - 31.94)
	515 mm	23.2	28.597 *	(19.58 - 37.25)
	950 mm	23.2	1.748	(-16.47 - 23.11)
	515 mm	24.2	18.24 *	(12.66 - 23.5)
	950 mm	24.2	1.044	(-11.31 - 14.87)
	515 mm	25.2	8.731 *	(6.14 - 11.13)
	950 mm	25.2	0.462	(-5.82 - 7.18)
	515 mm	26.2	0	(0 - 0)
	950 mm	26.2	0	(0 - 0)
	515 mm	27.2	-8.019 *	(-10.02 - -5.79)
	950 mm	27.2	-0.345	(-6.7 - 6.18)
	515 mm	28.2	-15.383 *	(-19.03 - -11.24)
	950 mm	28.2	-0.573	(-12.94 - 12.75)
	515 mm	29.2	-22.148 *	(-27.14 - -16.37)
	950 mm	29.2	-0.687	(-18.77 - 19.72)
	515 mm	30.2	-28.363 *	(-34.44 - -21.21)
	950 mm	30.2	-0.685	(-24.21 - 27.12)
	515 mm	31.2	-34.074 *	(-41.01 - -25.77)
	950 mm	31.2	-0.569	(-29.28 - 34.98)

* 95% CI does not contain zero