summary_tables

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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 13.7 30 18 UNC Past 24.1 25.9 4 # A tibble: 2 x 5 ageclass Tmax DBH DBH.sd Trees 1 Modern 24.6 20.9 NA 51 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	UNC	0.099 *	(0.01 - 0.18)	0.075	(-0.02 - 0.16)
	MOU	0.326 *	(0.18 - 0.48)	0.318 *	(0.17 - 0.48)
	GLL3	0.216 *	(0.11 - 0.32)	0.197 *	(0.09 - 0.3)
	GLL2	0.093 *	(0 - 0.18)	0.072	(-0.02 - 0.17)
	GLL1	0.027	(-0.12 - 0.17)	0.017	(-0.13 - 0.15)
	GLA	0.108 *	(0.03 - 0.18)	0.102 *	(0.02 - 0.18)
	ENG	0.256 *	(0.1 - 0.42)	0.238 *	(0.09 - 0.4)
	BON	0.169 *	(0.07 - 0.27)	0.149 *	(0.05 - 0.25)
	AVO	0.186 *	(0.05 - 0.33)	0.165 *	(0.03 - 0.31)
DBH	Modern-Savanna	0.047	(-0.01 - 0.11)	0.045	(-0.02 - 0.11)
	Modern-Forest	0.056	(-0.03 - 0.14)	0.05	(-0.05 - 0.15)
	Past-Savanna	0.088 *	(0.02 - 0.16)	0.078 *	(0.01 - 0.15)
	Past-Forest	-0.012	(-0.12 - 0.1)	-0.011	(-0.12 - 0.09)
Lag-1	Modern-Savanna	0.53 *	(0.43 - 0.64)	0.522 *	(0.43 - 0.62)
	Modern-Forest	0.549 *	(0.33 - 0.75)	0.514 *	(0.32 - 0.69)
	Past-Savanna	0.562 *	(0.46 - 0.66)	0.556 *	(0.46 - 0.66)
	Past-Forest	0.503 *	(0.39 - 0.62)	0.491 *	(0.38 - 0.6)
Lag-2	Modern-Savanna	0.348 *	(0.24 - 0.46)	0.359 *	(0.26 - 0.45)
	Modern-Forest	0.141	(-0.06 - 0.33)	0.187 *	(0 - 0.37)
	Past-Savanna	0.22 *	(0.13 - 0.31)	0.23 *	(0.14 - 0.31)
	Past-Forest	0.066	(-0.06 - 0.18)	0.097	(-0.02 - 0.21)
Precipitation	Modern-Savanna	0.07 *	(0.01 - 0.13)	0.027	(-0.04 - 0.09)
	Modern-Forest	0.013	(-0.09 - 0.12)	0.014	(-0.09 - 0.11)
	Past-Savanna	0.133 *	(0.08 - 0.2)	0.125 *	(0.06 - 0.2)
	Past-Forest	0.085	(-0.02 - 0.19)	0.088	(-0.02 - 0.2)
June Tmax x Precip	Modern-Savanna			0.077 *	(0.01 - 0.14)
	Modern-Forest			-0.018	(-0.11 - 0.07)
	Past-Savanna			0	(-0.04 - 0.04)
	Past-Forest			-0.031	(-0.11 - 0.05)
June Maximum Temperature	Modern-Savanna	-0.135 *	(-0.18 - -0.08)	-0.059	(-0.15 - 0.02)
	Modern-Forest	-0.058	(-0.15 - 0.03)	-0.079	(-0.21 - 0.04)
	Past-Savanna	-0.057 *	(-0.09 - -0.02)	-0.057 *	(-0.1 - -0.01)
	Past-Forest	-0.061 *	(-0.11 - -0.01)	-0.096 *	(-0.2 - 0)
Model Fit					
	Mean Sq. Error	1.841		0.201	
	Bias	-0.070		0.038	
	R sq	0.692		0.748	
	penalties	25.860		183.846	
	deviances	493.230		1444.931	
	penalized deviance	519.090		1628.777	

* 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	30	24.25	747.93	13.70	1.51	0.45
	UNC	Savanna	Past	4	23.86	689.23	20.34	1.12	0.47

Table 4: Maximum Summer Temperature Summary

Time Period	RCP scenario	Mean June Tmax	95% CI Tmax
1895-1950	Past	26.34	(22.56 - 31.11)
1950-2015	Modern	26.56	(23.56 - 30.92)
2025-2060	rcp2.6	27.71	(24.24 - 30.98)
	rcp4.5	28.38	(24.17 - 32.7)
	rcp6.0	27.81	(24.38 - 31.32)
	rcp8.5	28.57	(24.88 - 32.13)
2060-2099	rcp2.6	27.26	(22.98 - 30.92)
	rcp4.5	29.50	(25.98 - 33.68)
	rcp6.0	28.93	(25.48 - 32.3)
	rcp8.5	31.92	(27.72 - 36.44)

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	14.654	(-11.27 - 45.79)
	950 mm	21.2	35.023	(-24.49 - 123.79)
	515 mm	22.2	11.424	(-9.12 - 35.21)
	950 mm	22.2	26.359	(-20.13 - 90.49)
	515 mm	23.2	8.352	(-6.92 - 25.38)
	950 mm	23.2	18.622	(-15.51 - 62.15)
	515 mm	24.2	5.429	(-4.67 - 16.28)
	950 mm	24.2	11.709	(-10.63 - 38.02)
	515 mm	25.2	2.647	(-2.36 - 7.83)
	950 mm	25.2	5.527	(-5.46 - 17.48)
	515 mm	26.2	0	(0 - 0)
	950 mm	26.2	0	(0 - 0)
	515 mm	27.2	-2.519	(-7.26 - 2.42)
	950 mm	27.2	-4.942	(-14.88 - 5.78)
	515 mm	28.2	-4.917	(-14 - 4.9)
	950 mm	28.2	-9.359	(-27.55 - 11.89)
	515 mm	29.2	-7.199	(-20.25 - 7.44)
	950 mm	29.2	-13.301	(-38.33 - 18.36)
	515 mm	30.2	-9.371	(-26.04 - 10.04)
	950 mm	30.2	-16.814	(-47.5 - 25.2)
	515 mm	31.2	-11.438	(-31.41 - 12.7)
	950 mm	31.2	-19.936	(-55.32 - 32.43)
Savanna	515 mm	21.2	51.126 *	(30.65 - 72.74)
	950 mm	21.2	-4.899	(-35.13 - 33.51)
	515 mm	22.2	39.091 *	(23.84 - 54.85)
	950 mm	22.2	-4.2	(-29.26 - 26.01)
	515 mm	23.2	28.04 *	(17.4 - 38.81)
	950 mm	23.2	-3.365	(-22.87 - 18.94)
	515 mm	24.2	17.89 *	(11.29 - 24.44)
	950 mm	24.2	-2.39	(-15.89 - 12.26)
	515 mm	25.2	8.566 *	(5.49 - 11.55)
	950 mm	25.2	-1.27	(-8.29 - 5.95)
	515 mm	26.2	0	(0 - 0)
	950 mm	26.2	0	(0 - 0)
	515 mm	27.2	-7.872 *	(-10.36 - -5.21)
	950 mm	27.2	1.426	(-5.62 - 9.04)
	515 mm	28.2	-15.108 *	(-19.64 - -10.14)
	950 mm	28.2	3.013	(-10.92 - 18.9)
	515 mm	29.2	-21.76 *	(-27.96 - -14.82)
	950 mm	29.2	4.77	(-15.92 - 29.65)
	515 mm	30.2	-27.876 *	(-35.42 - -19.25)
	950 mm	30.2	6.704	(-20.64 - 41.37)
	515 mm	31.2	-33.501 *	(-42.11 - -23.46)
	950 mm	31.2	8.824	(-25.1 - 54.15)

* 95% CI does not contain zero