

The impact of climate on the dominant height and climate thresholds for *P. elliottii*, *P. taeda*, *P. patula* and *P. patula* x *P. tecunumanii* plantation forests

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Supplemental Information

Supplemental Table S1. Enumeration ages of the respective sampled plantations per investigated species.

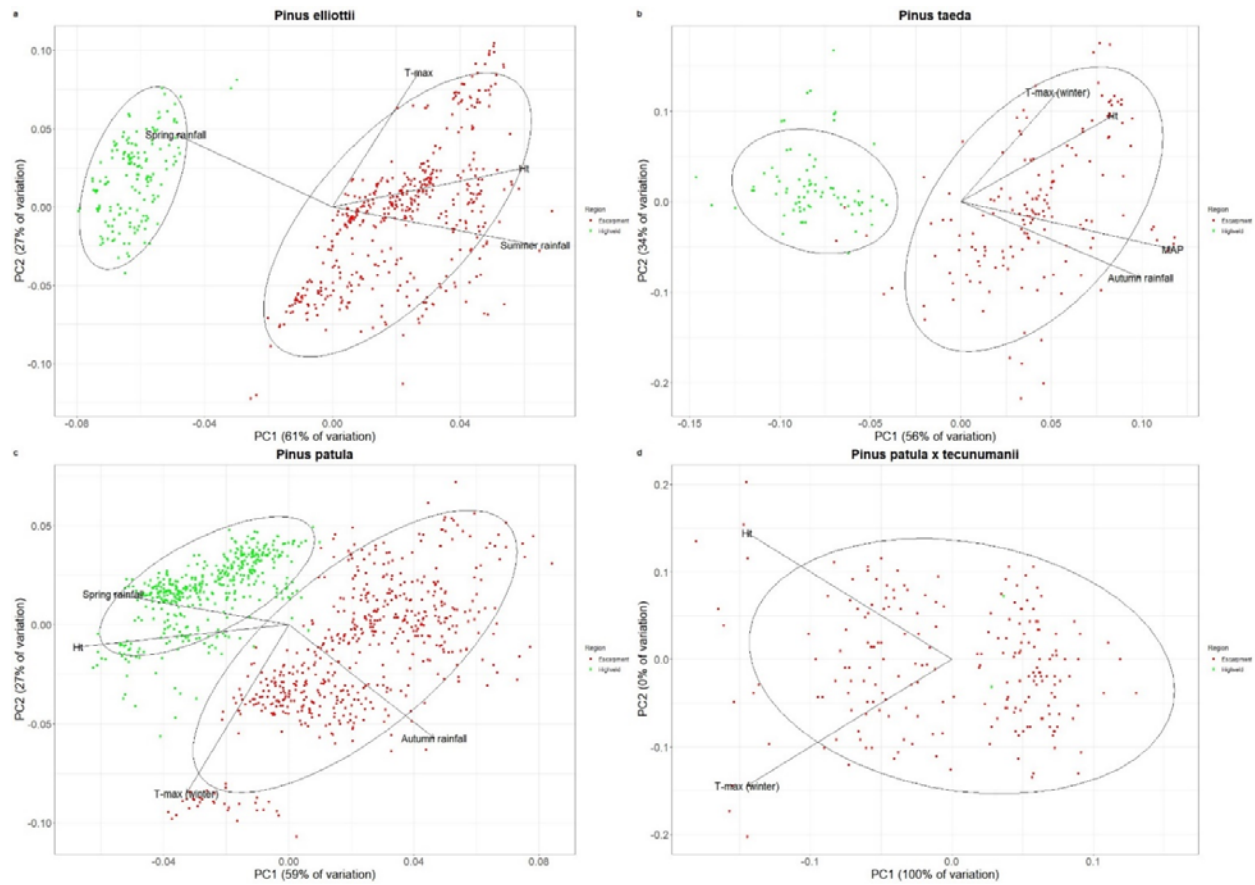
Species	Plantation age (years)																				Total		
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		23	25
<i>P. elliotii</i>	0	0	3	4	47	46	58	86	104	88	64	69	24	10	5	5	0	2	0	1	1	0	617
<i>P. taeda</i>	0	0	0	1	28	9	25	19	32	22	27	24	13	11	8	9	5	0	0	0	0	0	233
<i>P. patula</i>	0	43	43	29	58	78	122	132	102	84	77	82	71	38	16	8	8	13	5	0	4	2	1015
<i>P. patula x P. tecunumanii</i>	1	58	37	18	20	32	16	7	15	7	1	2	2	1	0	0	0	0	0	0	0	0	217
Total	1	101	83	52	153	165	221	244	253	201	169	177	110	60	29	22	13	15	5	1	5	2	2082

Supplemental Table S2. Demarcation of South African seasons per month (Van der Merwe et al. 2023c).

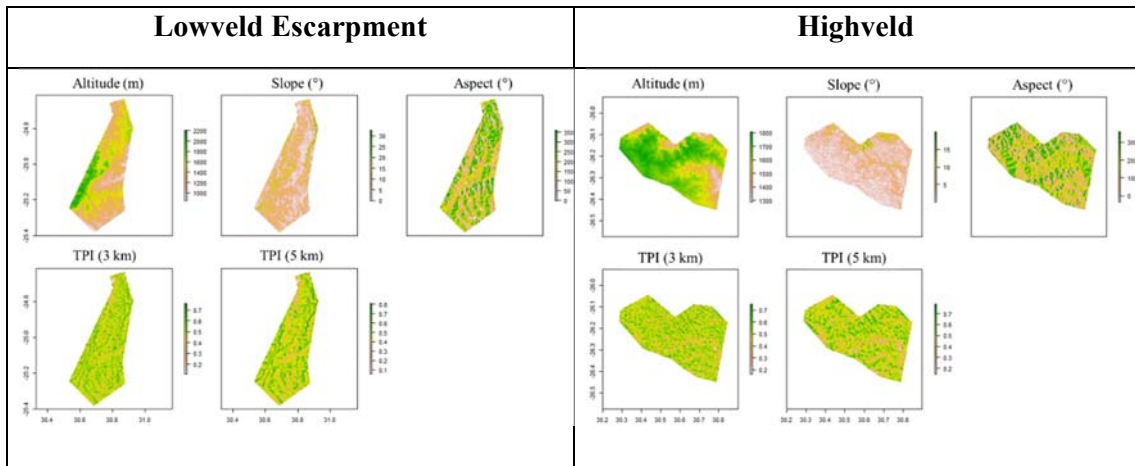
Season	Months											
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Summer												
Autumn												
Winter												
Spring												

Supplemental Table S3. Minimum, mean and maximum dominant height at age 20 years for the respective Lowveld and Highveld forestry regions, according to species.

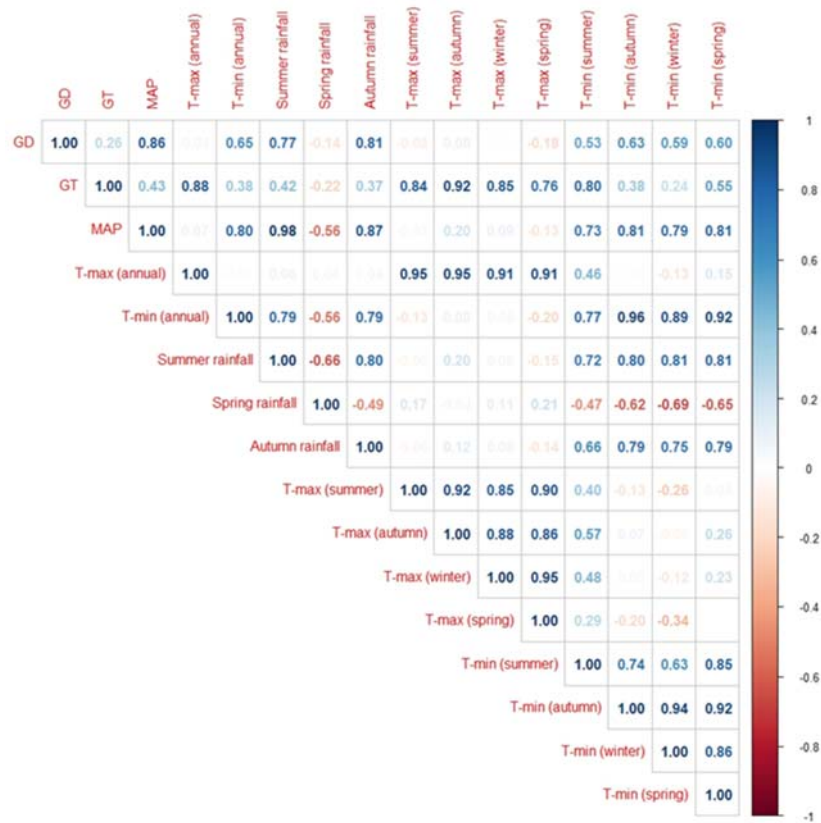
Species	Dominant height (meters) - age 20 years					
	Lowveld			Highveld		
	min	mean	max	min	mean	max
<i>P. elliottii</i>	22.1	24.5	27.2	20.8	23.2	25.3
<i>P. taeda</i>	20.5	23.3	25.5	20.4	22.7	23.8
<i>P. patula</i>	25.3	27.1	29.0	26.9	28.2	29.1
<i>P. patula</i> x <i>P. tecunumanii</i>	29.8	31.2	32.8	30.4	31.1	32.4



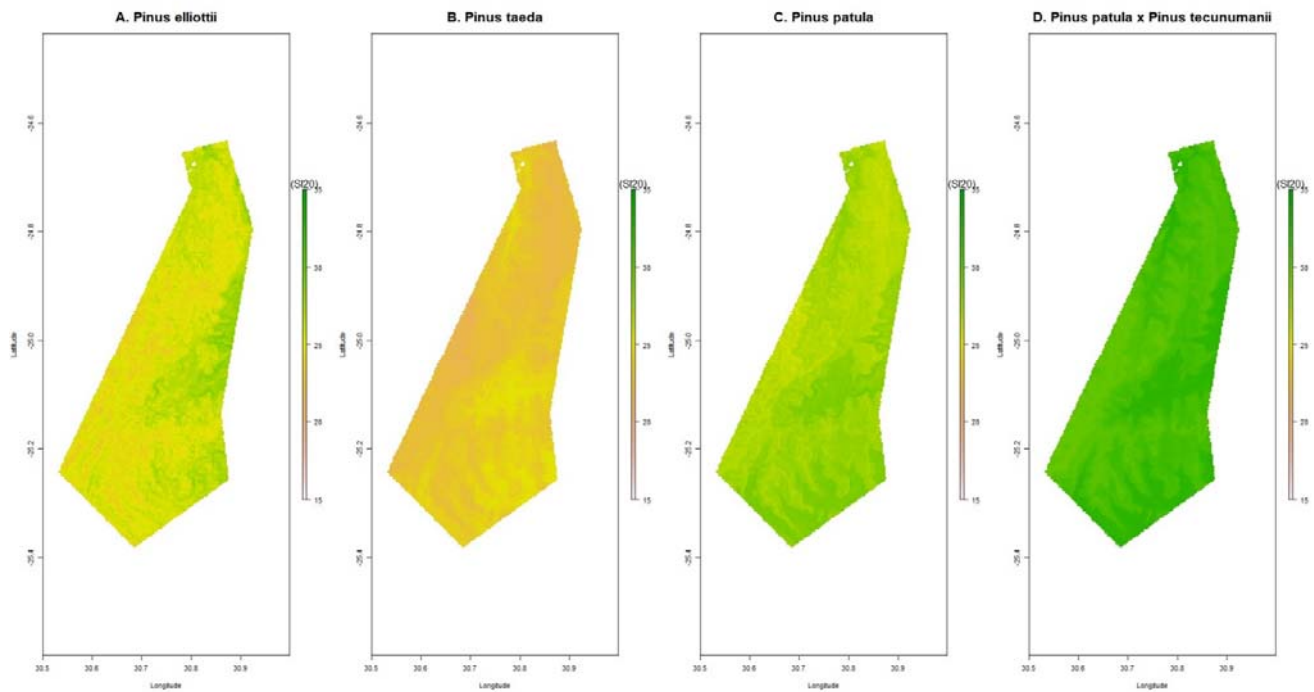
Supplemental Figure S1. Component analysis for the respective investigated species, while taking the significant model variables into account at a normalised age of 20 years A) *P. elliottii*, B) *P. taeda*, C) *P. patula*, D) *P. patula x P. tecunumanii* trees.



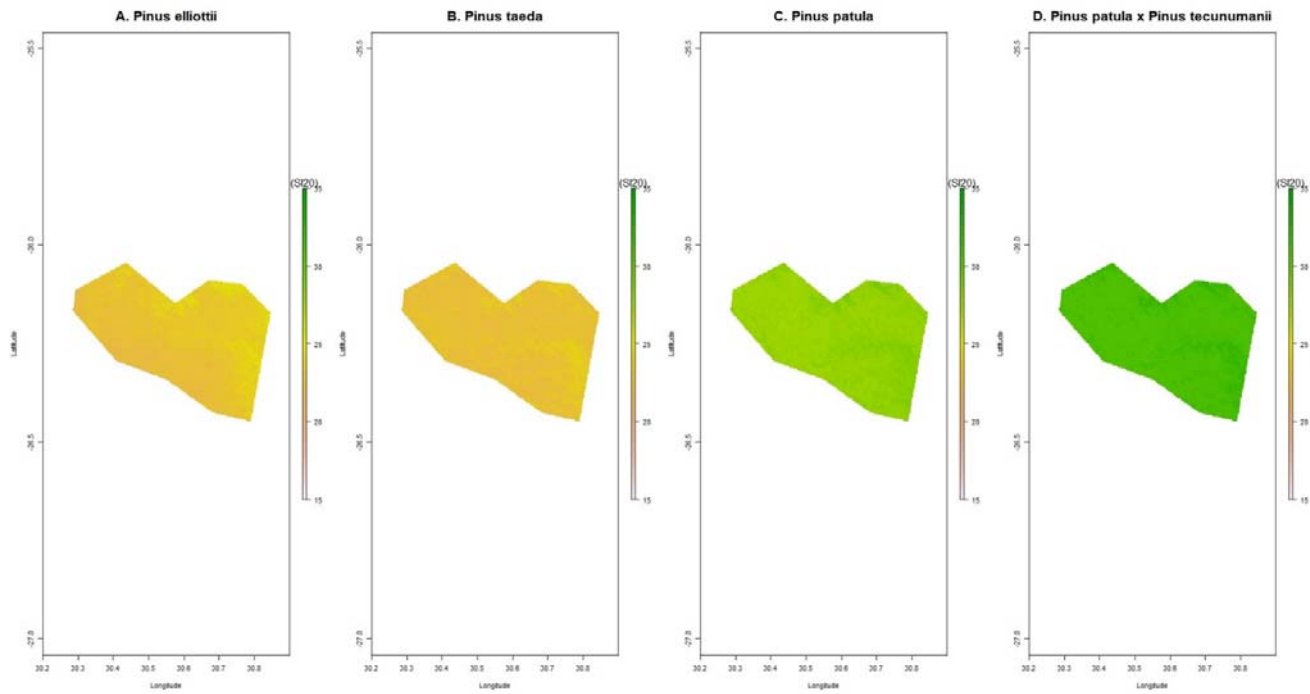
Supplemental Figure S2. Independent variables associated with terrain conditions for plantations located on the Lowveld Escarpment, as extracted from the Advanced Land Observing Satellite-1's (ALOS), Palsar instrument (Van der Merwe et al. 2023c).



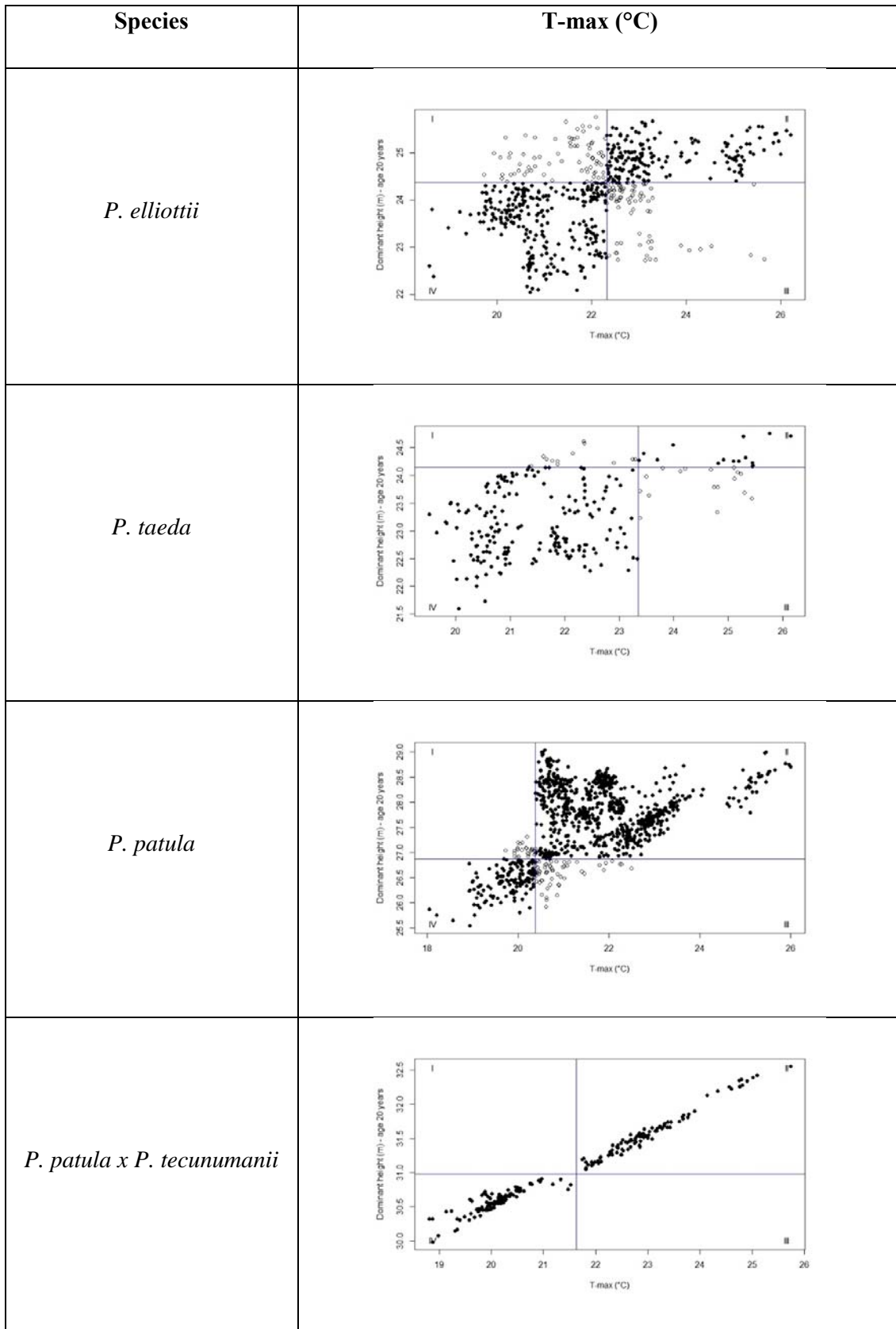
Supplemental Figure S3. Pearson's correlation coefficient (PCC) matrix showing relationships between growth days (GD), growth temperature (GT), annual and seasonal maximum temperature (T-max), annual and seasonal minimum temperature (T-min), mean annual precipitation (MAP) and seasonal rainfall.



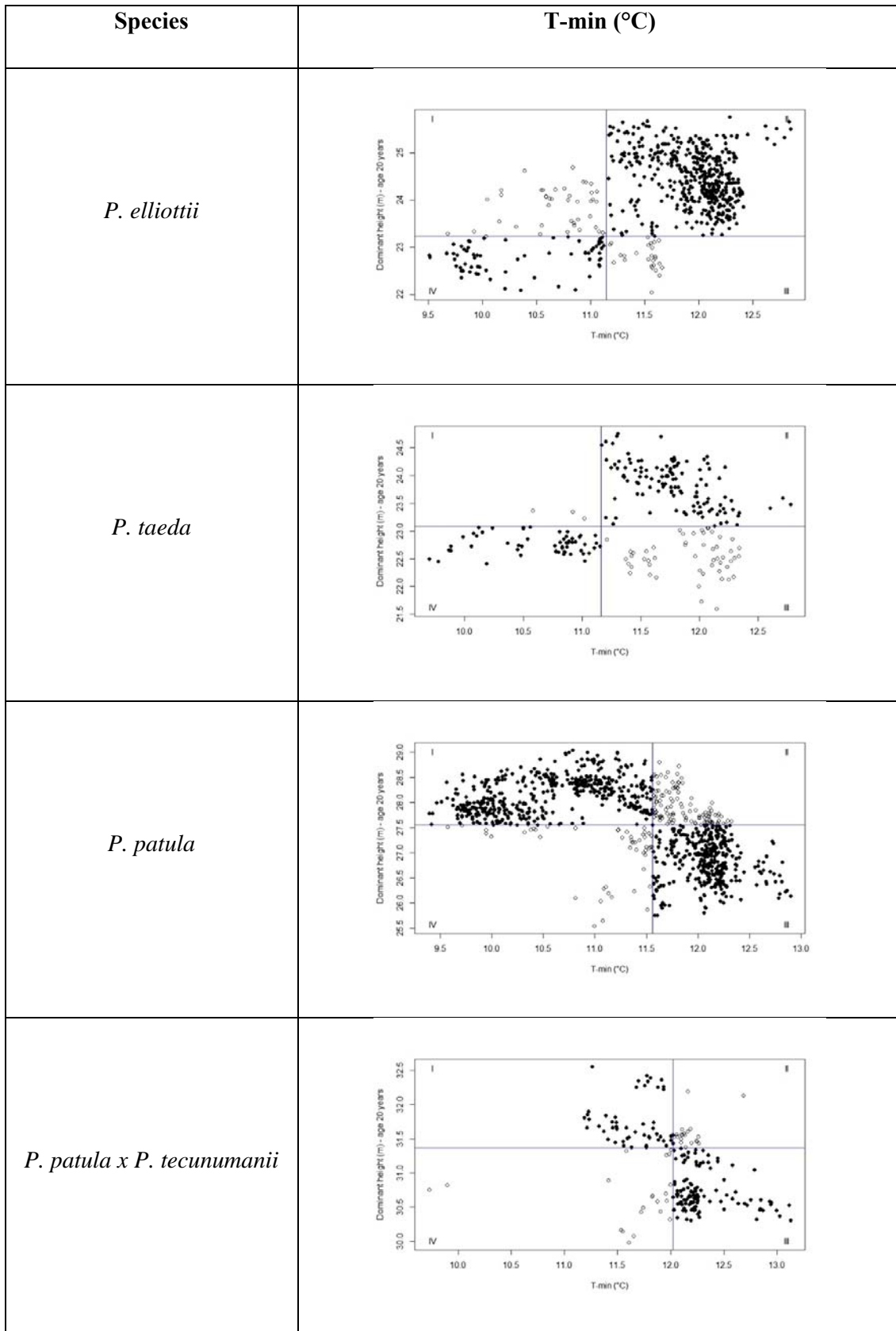
Supplemental Figure S4. Projected dominant height growth at age 20 years for the Highveld A) *P. elliottii*, B) *P. taeda*, C) *P. patula*, and D) *P. patula x P. tecunumanii*.



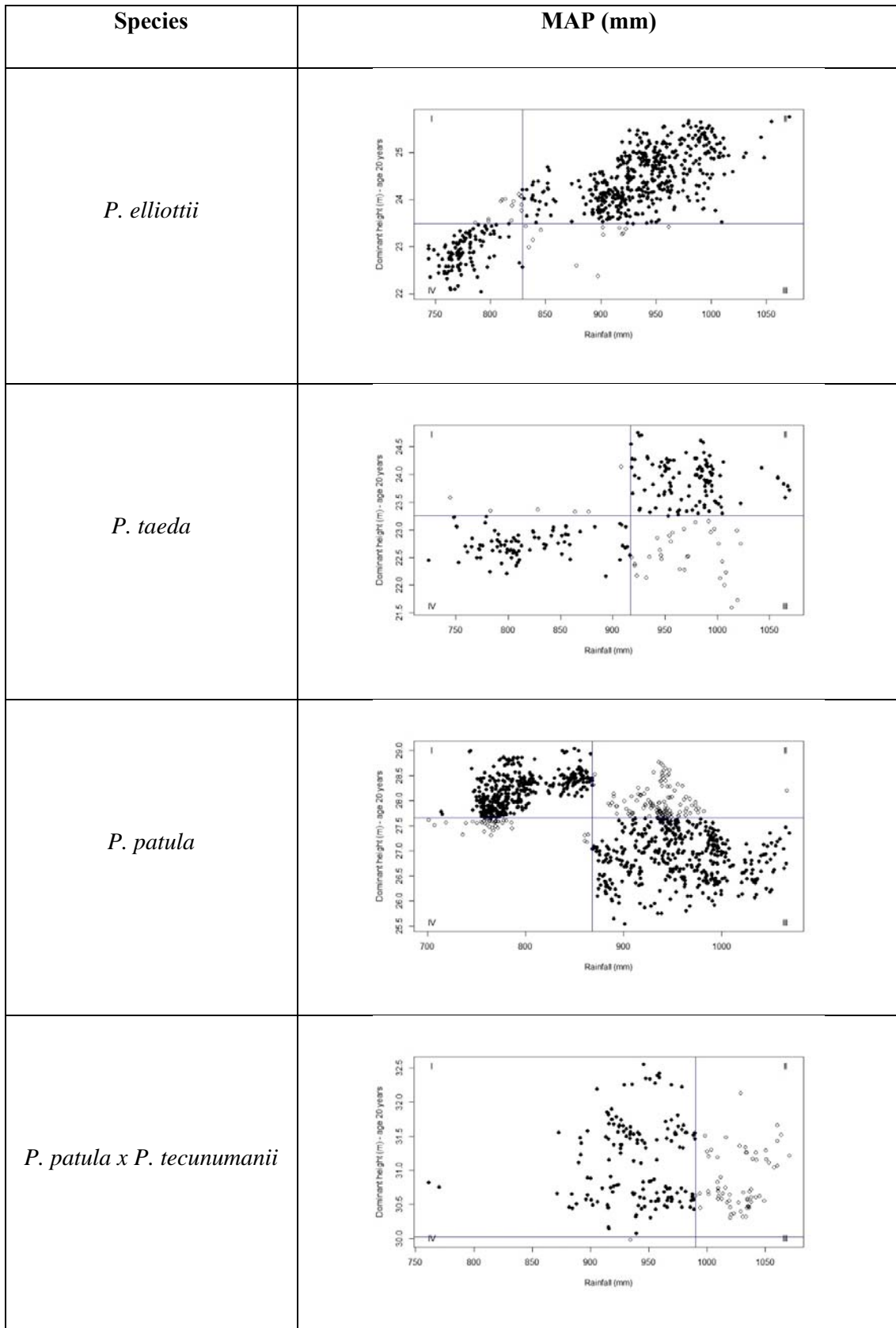
Supplemental Figure S5. Projected dominant height growth at age 20 years for the Lowveld A) *P. elliottii*, B) *P. taeda*, C) *P. patula*, and D) *P. patula* x *P. tecunumanii*.



Supplemental Figure S6. Cate-Nelson analysis with annual maximum temperature (T-max) and dominant height thresholds per species.



Supplemental Figure S7. Cate-Nelson analysis with annual minimum temperature (T-min) and dominant height thresholds per species.



Supplemental Figure S8. Cate-Nelson analysis with mean annual precipitation (rainfall) and dominant height thresholds per species.