Table S3 Observed, estimated (i.e. model-implied), and residual correlations (lower half of matrices), observed covariances (italicized, top half of matrices) and variances (diagonal) for variables in the full model under the a) non-watered and b) watered treatment. Residual correlations are the differences between observed and model-implied unstandardized correlations. Large residuals ([r_r]>0.25) are bolded and suggest that these relationships were not captured by the full model structure.

3a)

		Early seedling traits (PC1)	Late seedling traits (PC1)	Germination (logit)	Emergence (logit)	Establishment (logit)	Seedling survival (logit)	Cumulative survival (logit)	Seed mass	Coleoptile tissue density	Hydrothermal time (log)
Early seedling traits (PC1)	Observed	3.052	*0.218*	*0.424*	*-0.169*	*0.174*	*0.615*	*0.102*	*1.661*	*0.221*	*0.041*
	Estimated										
	Residual										
Late seedling traits (PC1)	Observed	0.095	2.377	*0.404*	*-0.317*	*-0.351*	*-0.195*	*-0.243*	*-0.477*	*0.881*	*0.027*
	Estimated	0.097									
	Residual	-0.002									
Germination	Observed	0.182	0.191	2.517	*-0.298*	*0.05*	*0.167*	*0.538*	*0.668*	*-0.354*	*0.027*
	Estimated	0.234	0.023								
	Residual	-0.052	0.168								
Emergence (logit)	Observed	-0.102	-0.211	-0.196	1.291	*0.118*	*0.088*	*0.839*	*-0.324*	*-0.461*	*-0.001*
	Estimated	-0.197	-0.019	-0.072							
	Residual	0.095	-0.192	-0.124							
Establishment (logit)	Observed	0.162	-0.361	0.051	0.169	0.517	*0.22*	*0.233*	*0.299*	*-0.416*	*-0.027*
	Estimated	0.165	0.016	0.039	-0.033						
	Residual	-0.003	**-0.377**	0.012	0.202						
Seedling survival (logit)	Observed	0.473	-0.166	0.14	0.104	0.401	0.768	*0.276*	*0.542*	*-0.299*	*0.01*
	Estimated	-0.016	-0.164	-0.004	0.003	-0.003					
	Residual	**0.489**	-0.002	0.144	0.101	**0.404**					
Cumulative survival (logit)	Observed	0.062	-0.165	0.359	0.789	0.338	0.33	1.269	*0.123*	*-0.622*	*0.005*
	Estimated	-0.034	-0.023	0.439	0.811	0.106	0.12				
	Residual	0.096	-0.142	-0.08	-0.022	0.232	0.21				
Seed mass	Observed	0.717	-0.228	0.314	-0.214	0.306	0.457	0.083	2.59	*-0.219*	*0.018*
	Estimated	0.724	0.07	0.321	-0.212	0.12	-0.012	-0.009			
	Residual	-0.007	**-0.298**	-0.007	-0.002	0.186	**0.469**	0.092			
Coleoptile tissue density	Observed	0.091	0.401	-0.159	-0.292	-0.406	-0.241	-0.399	-0.099	2.771	*0.012*
	Estimated	0.093	0.009	-0.015	-0.276	0.015	-0.001	-0.24	-0.075		
	Residual	-0.002	**0.392**	-0.144	-0.016	**-0.421**	-0.24	-0.159	-0.024		
Hydrothermal time (log)	Observed	0.182	0.134	0.129	-0.008	-0.28	0.087	0.033	0.089	0.055	0.025
	Estimated	0.061	0.006	0.175	-0.042	0.01	-0.001	0.052	0.072	0.055	
	Residual	0.121	0.128	-0.046	0.034	**-0.29**	0.088	-0.019	0.017	0	

3b)

		Early seedling traits (PC1)	Late seedling traits (PC1)	Germination (logit)	Emergence (logit)	Establishment (logit)	Seedling survival (logit)	Cumulative survival (logit)	Seed mass	Coleoptile tissue density	Hydrothermal time (log)
Early seedling traits (PC1)	Observed	2.51	*0.19*	*0.273*	*0.145*	*0.074*	*0.575*	*0.276*	*1.338*	*0.296*	*0.046*
	Estimated										
	Residual										
Late seedling traits (PC1)	Observed	0.078	3.193	*0.666*	*0.014*	*-0.601*	*-0.058*	*0.148*	*-0.301*	*1.034*	*0.051*
	Estimated	0.08									
	Residual	-0.002									
Germination	Observed	0.137	0.289	2.245	*-0.289*	*-0.12*	*0.245*	*0.659*	*0.787*	*-0.33*	*0.038*
	Estimated	0.26	0.021								
	Residual	-0.123	0.268								
Emergence (logit)	Observed	0.102	0.009	-0.214	1.147	*0.335*	*-0.055*	*0.614*	*-0.209*	*-0.173*	*0.005*
	Estimated	-0.106	-0.008	-0.053							
	Residual	0.208	0.017	-0.161							
Establishment (logit)	Observed	0.057	-0.405	-0.098	0.386	0.898	*0.148*	*0.307*	*0.18*	*-0.424*	*-0.015*
	Estimated	0.058	0.005	0.015	-0.006						
	Residual	-0.001	**-0.410**	-0.113	**0.392**						
Seedling survival (logit)	Observed	0.47	-0.041	0.21	-0.067	0.197	0.825	*0.135*	*0.539*	*-0.073*	*0.025*
	Estimated	-0.003	-0.04	-0.001	0	0					
	Residual	**0.473**	-0.001	0.211	-0.067	0.197					
Cumulative survival (logit)	Observed	0.204	0.095	0.51	0.67	0.369	0.17	1.147	*0.244*	*-0.349*	*0.014*
	Estimated	0.096	0.006	0.604	0.7	0.125	0.051				
	Residual	0.108	0.089	-0.094	-0.030	0.244	0.119				
Seed mass	Observed	0.637	-0.124	0.393	-0.147	0.139	0.439	0.179	2.591	*-0.167*	*0.019*
	Estimated	0.644	0.052	0.401	-0.145	0.037	-0.002	0.155			
	Residual	-0.007	-0.176	-0.008	-0.002	0.102	**0.441**	0.024			
Coleoptile tissue density	Observed	0.135	0.409	-0.158	-0.117	-0.316	-0.057	-0.246	-0.076	2.724	*0.011*
	Estimated	0.111	0.009	-0.029	-0.056	0.006	0	-0.059	-0.103		
	Residual	0.024	**0.400**	-0.129	-0.061	**-0.322**	-0.057	-0.187	0.027		
Hydrothermal time (log)	Observed	0.222	0.215	0.193	0.037	-0.119	0.21	0.105	0.093	0.05	0.025
	Estimated	0.051	0.004	0.23	0.017	0.003	0	0.16	0.063	0.054	
	Residual	0.171	0.211	-0.037	0.020	-0.122	0.210	-0.055	0.030	-0.004	