

**TABLE S3****Phenotypes assessed in the Batlow and Flynn populations**

Trait no.	Trait description	Trait type	Trait	Population
trait1	max density	late wood/ juvenile	Derived	Batlow
trait2	max density	late wood/ mature	Derived	Batlow
trait3	max density 1997	mature	Derived	Batlow
trait4	max density 1991	juvenile	Derived	Batlow
trait5	ring width	whole core	Primary	Batlow
trait6	cumulative ring width	whole core	Primary	Batlow
trait7	density	whole core	Primary	Batlow
trait8	density	juvenile	Derived	Batlow
trait9	density	mature	Derived	Batlow
trait10	% juvenile density of mature density	whole core	Derived	Batlow
trait11	min density	early wood/ whole core	Primary	Batlow
trait12	max density	late wood/ whole core	Primary	Batlow
trait13	% min dens of max dens	whole core	Derived	Batlow
trait14	radial diameter	whole core	Primary	Batlow
trait15	tangential diameter	whole core	Primary	Batlow
trait16	cell population	whole core	Primary	Batlow
trait17	coarseness	whole core	Primary	Batlow
trait18	wall thickness	whole core	Primary	Batlow
trait19	specific surface area	whole core	Primary	Batlow
trait20	MFA	whole core	Primary	Batlow
trait21	MOE	whole core	Primary	Batlow
trait22	min density	early wood/ juvenile	Derived	Batlow
trait23	min density	early wood/ mature	Derived	Batlow
trait24	ring width	juvenile	Derived	Batlow
trait25	ring width	mature	Derived	Batlow
trait26	cumulative ring width	juvenile	Derived	Batlow
trait27	cumulative ring width	mature	Derived	Batlow
trait28	radial diameter	juvenile	Derived	Batlow
trait29	radial diameter	mature	Derived	Batlow
trait30	tangential diameter	juvenile	Derived	Batlow
trait31	tangential diameter	mature	Derived	Batlow
trait32	cell population	juvenile	Derived	Batlow
trait33	cell population	mature	Derived	Batlow
trait34	coarseness	juvenile	Derived	Batlow
trait35	coarseness	mature	Derived	Batlow
trait36	wall thickness	juvenile	Derived	Batlow
trait37	wall thickness	mature	Derived	Batlow
trait38	specific surface area	juvenile	Derived	Batlow
trait39	specific surface area	mature	Derived	Batlow
trait40	MFA	juvenile	Derived	Batlow
trait41	MFA	mature	Derived	Batlow
trait42	MOE	juvenile	Derived	Batlow
trait43	MOE	mature	Derived	Batlow
trait44	% mature MFA of juvenile MFA	whole core	Derived	Batlow
trait45	% juvenile MOE of mature MOE	whole core	Derived	Batlow
trait46	LWP	whole core	Derived	Batlow
trait47	min MFA	early wood/ whole core	Derived	Batlow
trait48	max MFA	late wood/ whole core	Derived	Batlow
trait49	min MFA	early wood/ juvenile	Derived	Batlow
trait50	min MFA	early wood/ mature	Derived	Batlow
trait51	max MFA	late wood/ juvenile	Derived	Batlow
trait52	max MFA	late wood/ mature	Derived	Batlow

trait53	min MOE	early wood/ whole core	Derived	Batlow
trait54	max MOE	late wood/ whole core	Derived	Batlow
trait55	min MOE	early wood/ juvenile	Derived	Batlow
trait56	min MOE	early wood/ mature	Derived	Batlow
trait57	max MOE	late wood/ juvenile	Derived	Batlow
trait58	max MOE	late wood/ mature	Derived	Batlow
trait59	juvenile rings	juvenile	Derived	Batlow
trait60	PCA1	PCA	Derived	Batlow
trait61	PCA2	PCA	Derived	Batlow
trait62	PCA3	PCA	Derived	Batlow
trait40*	Average MFA (4-7)	juvenile	primary	Flynn
trait42*	Average MOE (4-7)	juvenile	primary	Flynn
trait8*	Average Density (4-7)	juvenile	primary	Flynn
trait63	Core Length	whole core	primary	Flynn
trait64	core area	whole core	primary	Flynn
trait65	Area Weighted Density	whole core	primary	Flynn
trait66	Area Weighted MFA	whole core	primary	Flynn
trait67	Area Weighted MOE	whole core	primary	Flynn
trait68	Ring 1 Width	individual ring	primary	Flynn
trait69	Ring 2 Width	individual ring	primary	Flynn
trait70	Ring 3 Width	individual ring	primary	Flynn
trait71	Ring 4 Width	individual ring	primary	Flynn
trait72	Ring 5 Width	individual ring	primary	Flynn
trait73	Ring 6 Width	individual ring	primary	Flynn
trait74	Ring 7 Width	individual ring	primary	Flynn
trait75	Ring 1 Density	individual ring	primary	Flynn
trait76	Ring 2 Density	individual ring	primary	Flynn
trait77	Ring 3 Density	individual ring	primary	Flynn
trait78	Ring 4 Density	individual ring	primary	Flynn
trait79	Ring 5 Density	individual ring	primary	Flynn
trait80	Ring 6 Density	individual ring	primary	Flynn
trait81	Ring 7 Density	individual ring	primary	Flynn
trait82	Ring 1 MFA	individual ring	primary	Flynn
trait83	Ring 2 MFA	individual ring	primary	Flynn
trait84	Ring 3 MFA	individual ring	primary	Flynn
trait85	Ring 4 MFA	individual ring	primary	Flynn
trait86	Ring 5 MFA	individual ring	primary	Flynn
trait87	Ring 6 MFA	individual ring	primary	Flynn
trait88	Ring 7 MFA	individual ring	primary	Flynn
trait89	Ring 1 MOE	individual ring	primary	Flynn
trait90	Ring 2 MOE	individual ring	primary	Flynn
trait91	Ring 3 MOE	individual ring	primary	Flynn
trait92	Ring 4 MOE	individual ring	primary	Flynn
trait93	Ring 5 MOE	individual ring	primary	Flynn
trait94	Ring 6 MOE	individual ring	primary	Flynn
trait95	Ring 7 MOE	individual ring	primary	Flynn

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