

S6 Table. Ecological predictors of forest replacement including cultural ancestry (lambda) but not geographic proximity (phi).

Predictor	Relative variable importance	Akaike Weighted Beta estimate	95% confidence interval
Tephra = 3	1.000	-1.167	(-1.573, 0.207)
Abs. Latitude	0.999	-0.034	(-0.048, 0.007)
Log(Area)	0.975	-0.208	(-0.296, 0.045)
Dust	0.898	-0.001	(-0.002, 0)
Tephra = 2	0.877	-0.720	(-1.227, 0.259)
Log(Isolation)	0.772	0.104	(0.029, 0.038)
Log(Elevation)	0.305	0.094	(-0.118, 0.108)
Makatea	0.295	0.170	(-0.22, 0.199)
Age	0.189	-0.032	(-0.136, 0.053)
Log(Rainfall)	0.177	0.041	(-0.065, 0.054)
Dependency	-	Mean	p-value
Lambda	-	0.991	<0.001
Independent	-	0.009	-

Table shows relative variable importance, akaike weighted beta estimate and 95% confidence interval on the mean for PGLS-spatial analysis of the effects of cultural ancestry and putative ecological predictors on forest replacement (n=72). Previously identified significant predictors of deforestation are shown in bold. All values integrate over phylogenetic and sampling uncertainty across 100 replicates from our posterior distribution of language trees.