



PREDICTING THE VESSEL LUMEN AREA TREE-RING PARAMETER OF *QUERCUS ROBUR* WITH LINEAR AND NONLINEAR MACHINE LEARNING ALGORITHMS

SUPPLEMENTARY MATERIALS

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Table S1. Tuned parameter values for the nonlinear methods: Artificial Neural Networks (ANN), Model Trees (MT), Bagging of Model Trees (BMT) and Random Forests of regression trees (RF).

Method	Parameter	Tuned parameter values	
		QURO-1	QURO-2
ANN	neurons – number of neurons used	3	1
MT	M – minimum number of instances per leaf	8	16
MT	N – use unpruned tree/rules	FALSE	TRUE
MT	U – use unsmoothed predictions	TRUE	FALSE
MT	R – build regression tree/rule rather than a model tree/rule	FALSE	FALSE
BMT	P – size of each bag, as a percentage of the training set size	100	100
BMT	I – number of iterations	100	100
BMT	M – minimum number of instances per leaf	16	16
BMT	N – use unpruned tree/rules	FALSE	FALSE
BMT	U – use unsmoothed predictions	FALSE	TRUE
BMT	R – build regression tree/rule rather than a model tree/rule	FALSE	FALSE
RF	P – size of each bag, as a percentage of the training set size	100	100
RF	I – number of iterations	100	100
RF	depth – the maximum depth of the tree, 0 for unlimited	2	2

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A) QURO_1

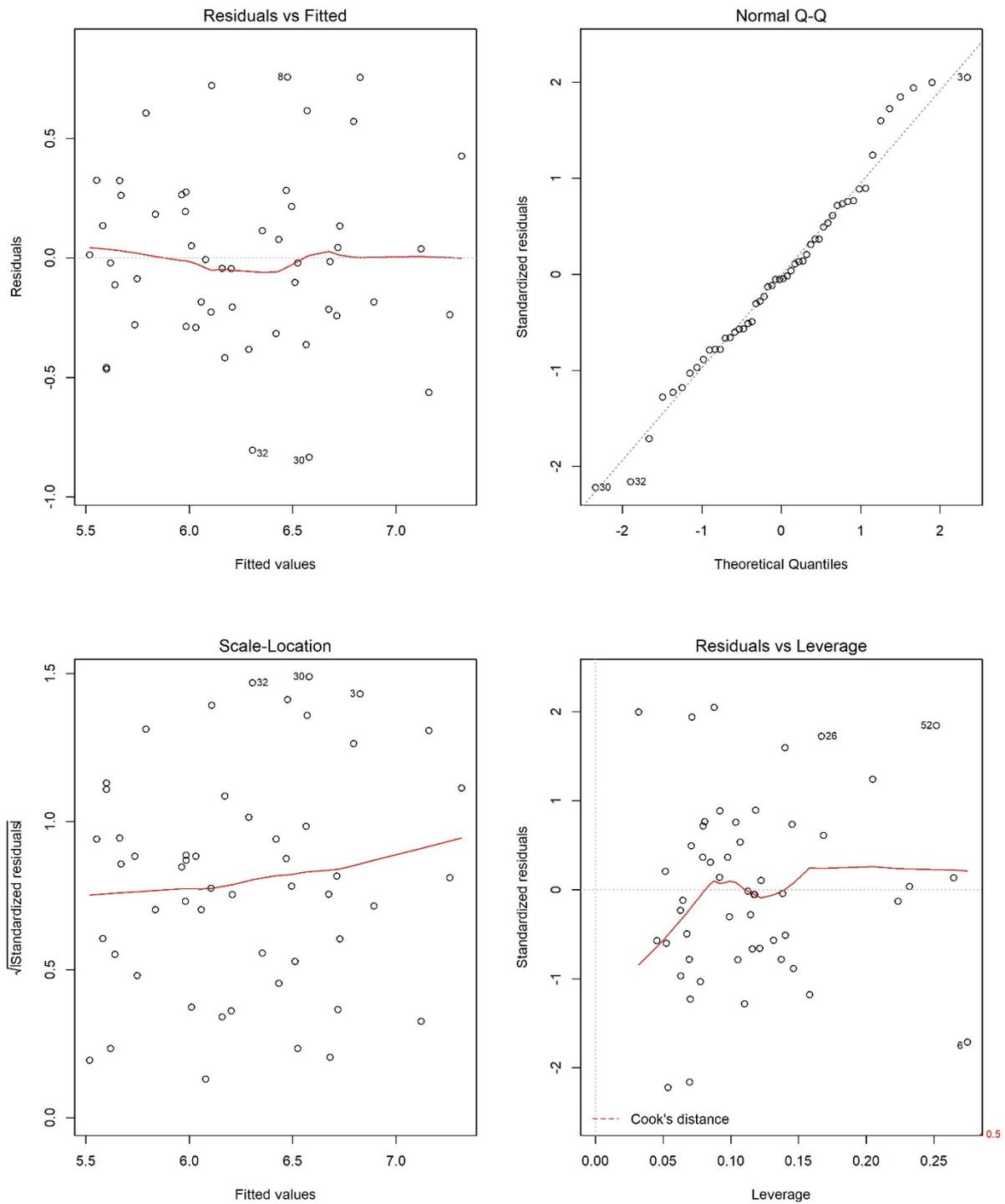


Fig. S1. Diagnostic plots of multiple linear regression models for A) QURO_1 and B) QURO_2. The diagnostic plots presented below are residuals vs. fitted values, normal probability plot of the residuals (Normal Q-Q), scale-location plot and residuals vs. leverage.

B) QURO_2

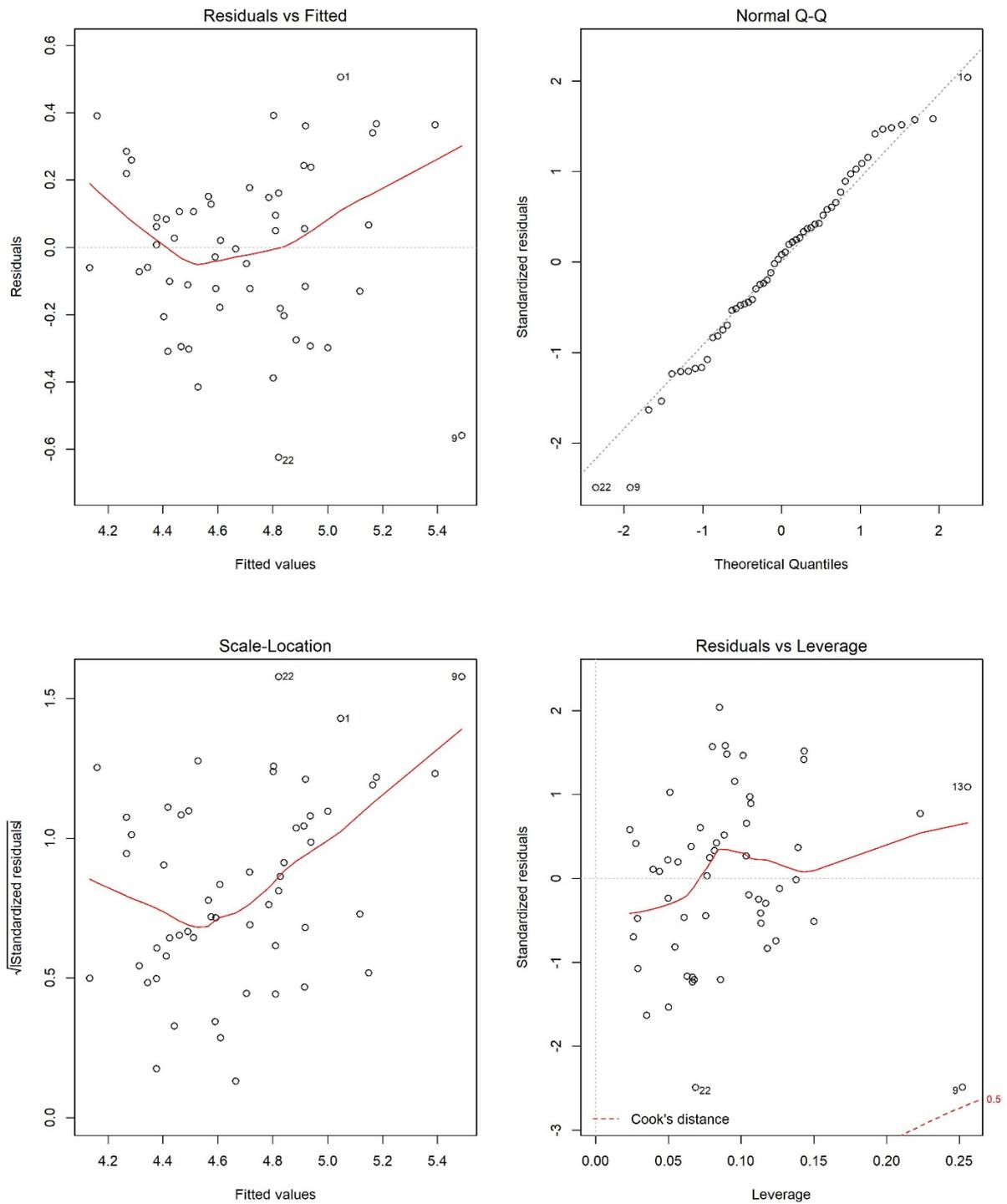


Fig. S1. Continuation.