Supplementary Materials:

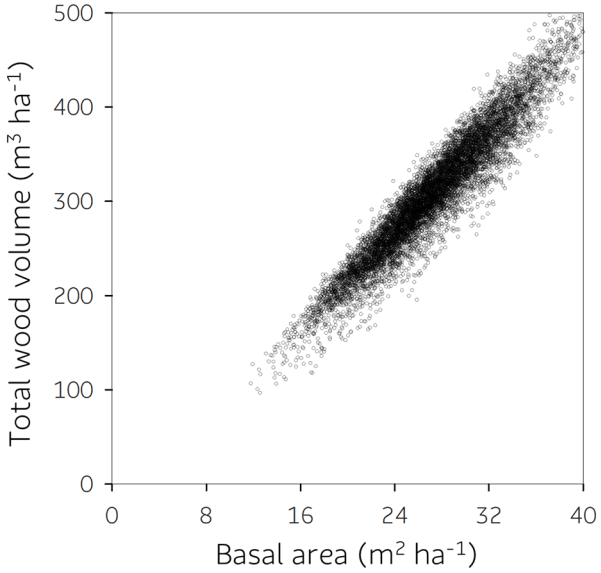

Figure S1. Relationship between basal area and total wood volume (class centre of 6-years-old) for the 9953 forest inventory plots of *Eucalyptus* plantations used in this study.

Table S1. Coefficients of the monthly and annual air temperatures models and statistical indices. Missing values of coefficients were not significative at 5%.

Month	Coefficients of the Multivariate Regression Equation										Statistics	
	$a0$	h	φ	λ	$h\varphi$	$h\lambda$	$\varphi\lambda$	h^2	φ^2	λ^2	R^2_{adj}	p-value
	°C	°C m^{-1}	°C degree^{-1}		°C m $^{-1}$degree^{-1}				°C degree^{-2}			
January	39.653	−0.0140	0.666	−0.0448	-4.12×10^{-4}	-	-	-4.27×10^{-7}	-	-	0.92	<0.001
February	42.141	−0.0157	0.701	−0.0128	-4.95×10^{-4}	-	-	-7.15×10^{-7}	-	-	0.91	<0.001
March	43.024	−0.0169	0.855	−0.0556	-5.39×10^{-4}	-	-	-6.02×10^{-7}	-	-	0.91	<0.001
April	41.421	−0.0141	0.916	−0.0858	-4.25×10^{-4}	-	-	-7.38×10^{-7}	-	-	0.91	<0.001
May	35.315	−0.0079	0.782	−0.0831	-1.58×10^{-4}	-	-	-5.74×10^{-7}	-	-	0.86	<0.001
June	36.236	−0.0114	1.013	−0.1550	-3.12×10^{-4}	-	-	-4.86×10^{-7}	-	-	0.84	<0.001
July	35.504	−0.0095	1.102	−0.2070	-2.40×10^{-4}	-	-	-6.52×10^{-7}	-	-	0.84	<0.001
August	41.087	−0.0127	1.402	−0.2610	-3.97×10^{-4}	-	-	-9.05×10^{-7}	-	-	0.87	<0.001
September	47.712	−0.0112	1.556	−0.2230	-3.49×10^{-4}	-	-	-1.02×10^{-6}	-	-	0.91	<0.001
October	50.746	−0.0144	1.537	−0.1840	-4.78×10^{-4}	-	-	-9.88×10^{-7}	-	-	0.92	<0.001
November	45.088	−0.0169	1.260	−0.1820	5.62×10^{-4}	-	-	-7.25×10^{-7}	-	-	0.91	<0.001
December	44.884	−0.0198	0.996	−0.0859	-6.75×10^{-4}	-	-	-6.28×10^{-7}	-	-	0.91	<0.001
Annual	41.909	−0.0137	1.066	−0.1320	-4.20×10^{-4}	-	-	-7.06×10^{-7}	-	-	0.90	<0.001

$a0$ = intercept of multivariate regression equation; h = altitude in meters; φ = latitude, in decimal degrees (negative in the southern hemisphere); λ = longitude, in decimal degrees (negative values for west of Greenwich meridian); R^2_{adj} = adjusted coefficient of determination.

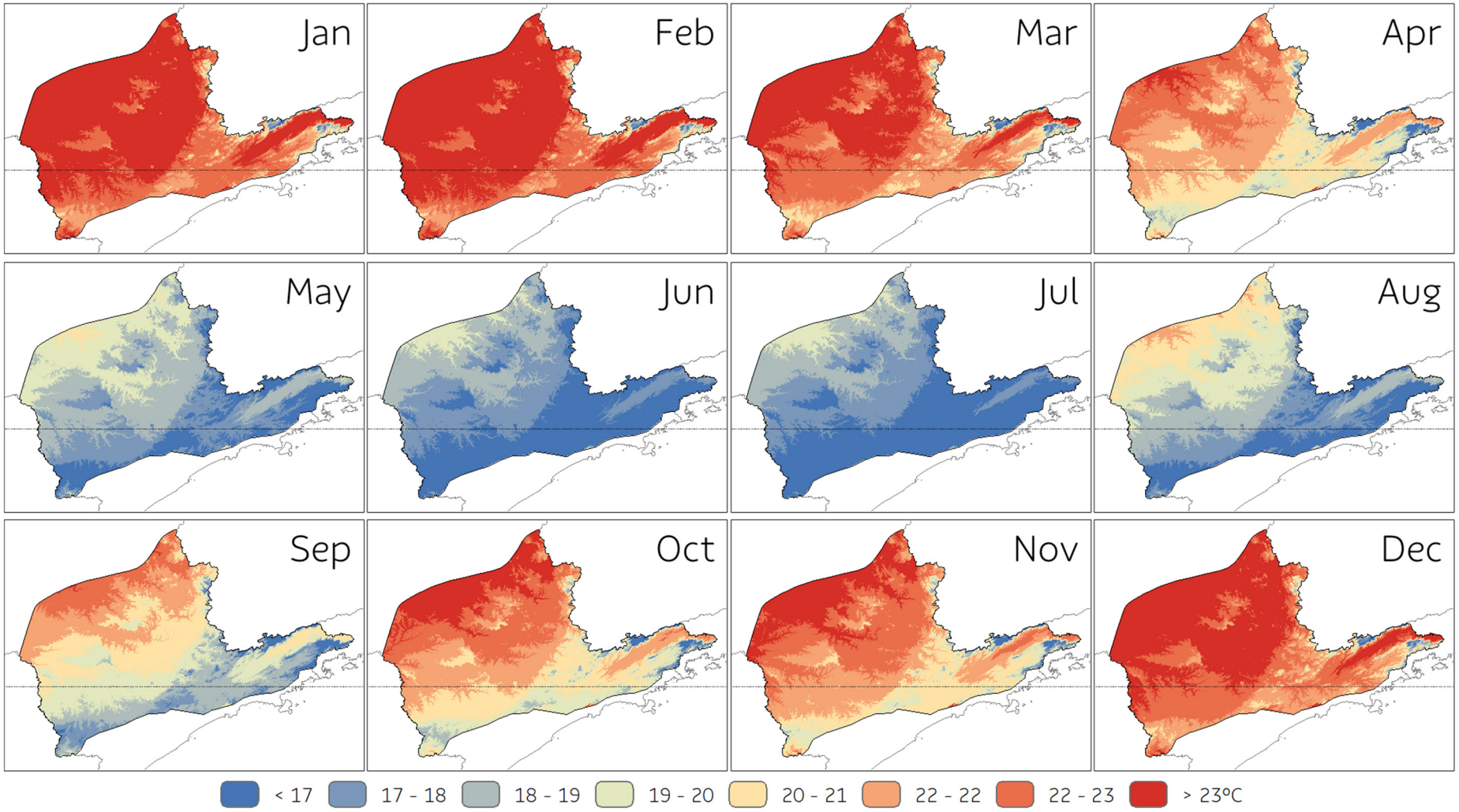

Figure S2. Average monthly temperature (°C) obtained by multivariate nonlinear regression model based on a network of 48 meteorological stations distributed on the study area. These air temperature maps were used to calculate the monthly potential evapotranspiration by method of Thornthwaite [51].

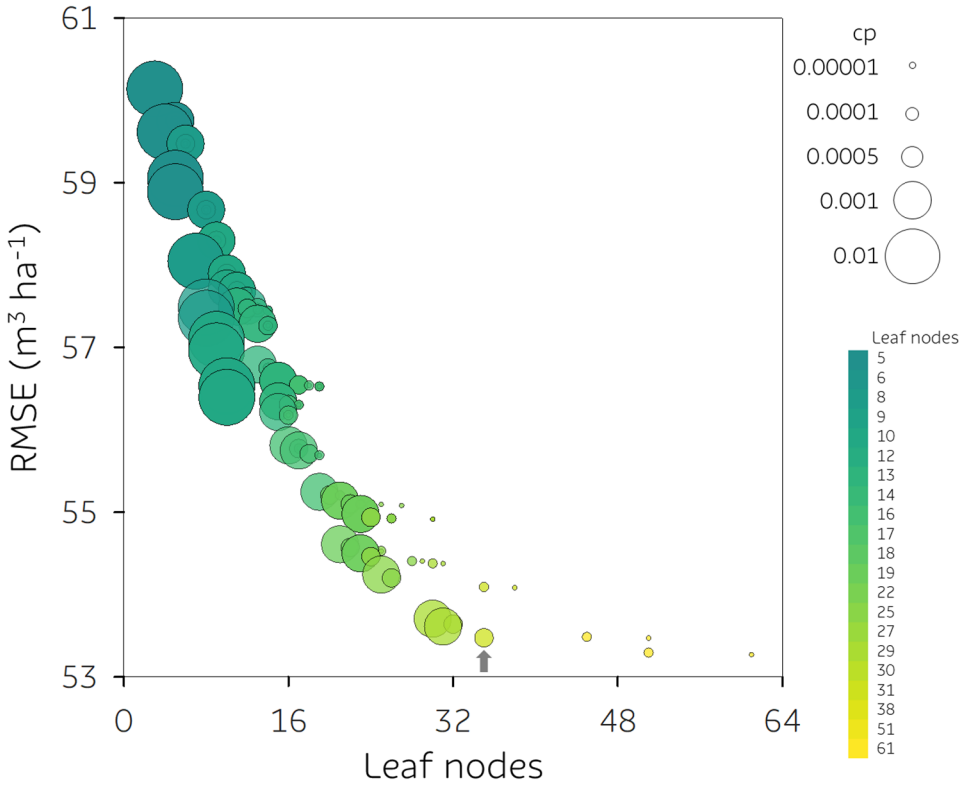

Figure S3. Relationship between RMSE (root mean squared error) and leaf (terminal) nodes for the 450 decision tree models obtained by tuning hyperparameters such as minsplit, minbucket, and cost-complexity factor (cp). Circle size represent the five cp factor (rpart) used in the tuning modelling. Color ramp denote the number of leaf nodes found in the complete (minsplit × minbucket × cp) model tuning. Decision tree setup selected has the following hyperparameters minbucket = 79, minsplit = 158, and cp = 0.0005, for a leaf node = 35, and RMSE = 53.5 m^3 ha^{-1} (see the gray arrow on the plot indicating the rpart hyperparameters setup selected).

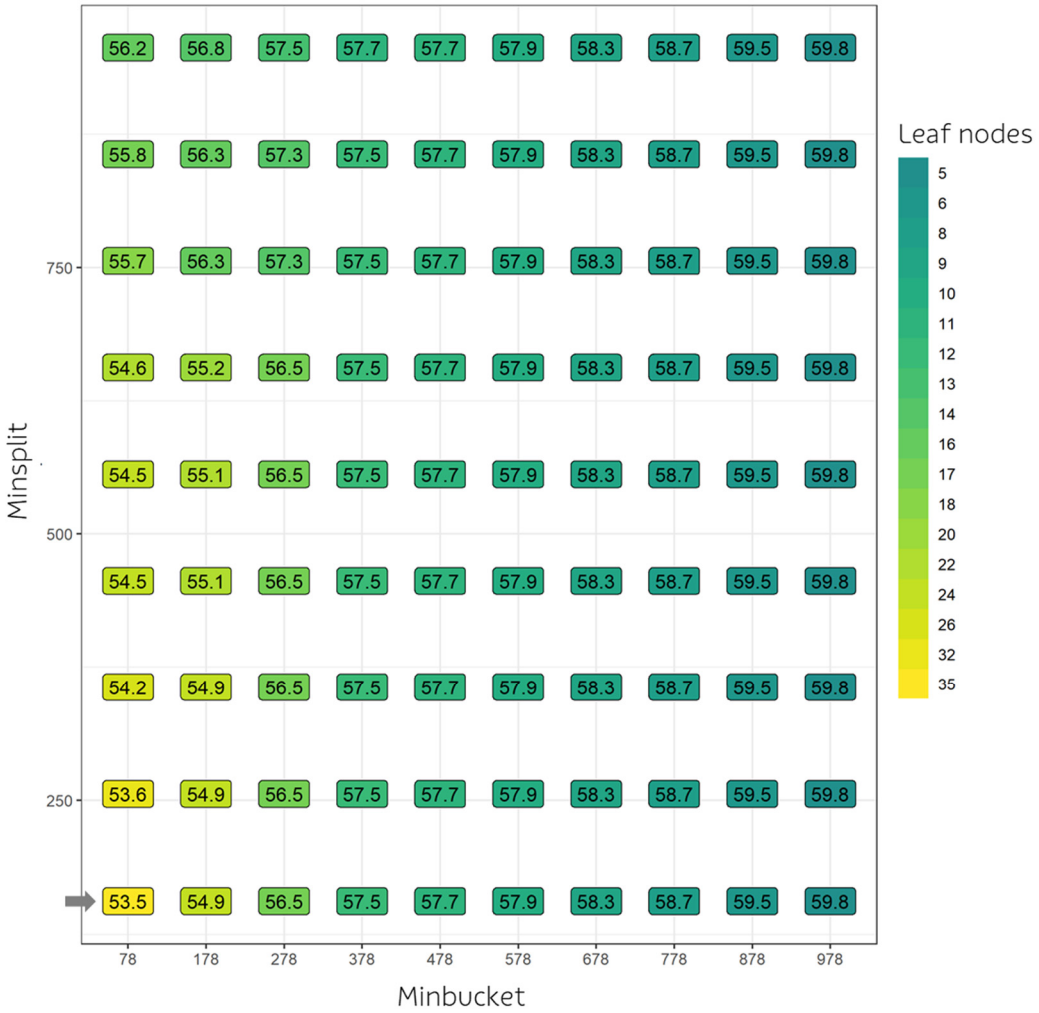

Figure S4. RMSE (root mean squared error) visualization of the decision tree modelling by tuning hyperparameters such as minsplit and minbucket, and for the complexity parameter = 0.0005. Color ramp denote the number of leaf nodes found in the model tuning. The rpart setup selected for the *Eucalyptus* forest zones productivity zoning has minbucket = 79, minsplit = 158, cp = 0.0005, resulting in 35 leaf nodes, and RMSE of 53.5 m^3 ha^{-1} (see the gray arrow on the plot indicating the rpart hyperparameters setup selected).