

Ecography

ECOG-05334

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Supplementary material

1 **Supplementary material**

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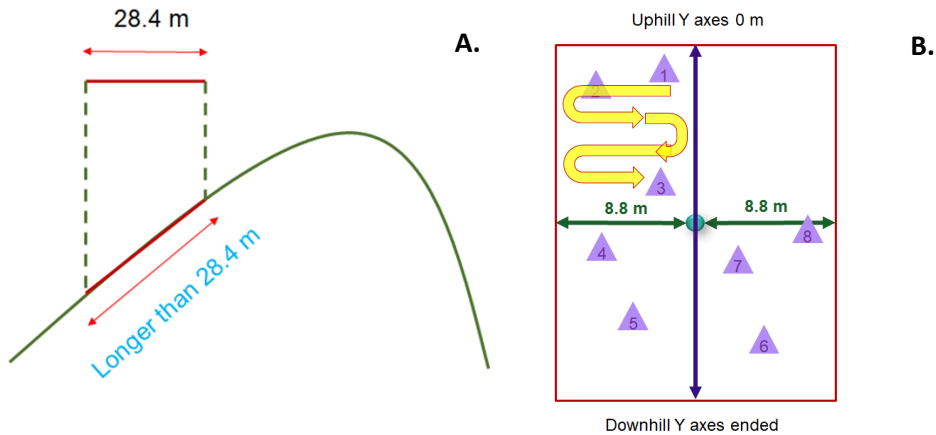


Fig.A1: Representation of double sampling method and plot layout. A. Plot Y axes are adjusted according to the slope to ensure a standard plot size in remote sensing imagery. *B.* Plot X axes run horizontally, divided into two sides of 8.8m and Plot Y axes run downslope. Sampling runs from the top left of the plot to the bottom right.

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12 *Table A1: Variable collected in the NFI and their description.*

Variable	Description
Office	The district office where the staff who conducted the survey were based (Hsinchu, Pingtung, Chiayi, Hualien, Luodong, Taitung, Nantou or Dongshih).
Plot number	Unique number for each inventory plot.
Tree number	Unique identification number of each tree within the plot.
Record type	A value of 1 or 2 to identify which side of the plot the tree was recorded from.
Y axis	Distance (m) along the Y axis of the plot the record was observed.
X axis	Distance (m) along the X axis of the plot the record was observed.
Chinese name	Chinese name of tree.
English name	English name of tree.
Scientific name	Scientific name of tree recorded to species or variety level.
Diameter at breast height (dbh)	Diameter of tree (cm) at breast height (1.3m high).
Height	Height of tree (m). Estimated visually by highly trained surveyors.

Branch height	Height (m) of lowest branches of tree.
Tree crown level	Size of tree crown (m). Most estimated, but some measured with measuring tape.
P.S.	Numbers are a code for a modified method of calculating tree height when dbh and height values seem odd. They are used for trees with multiple stems and are also used to help calculate volume. Some observations have the letter A or B next to them to indicate which side of the plot the observation was recorded. Most values given in Chinese.
Volume	Some species specific equations (dominant species), others general equations. Uses dbh and tree height.
Tree X	X coordinate of tree
Tree Y	Y coordinate of tree
Plot X	Longitudinal plot centre coordinate.
Plot Y	Latitudinal plot centre coordinate.
Slope	Plot slope angle (degrees)
Aspect	Plot aspect (degrees)
Elevation	Plot elevation (meters a.s.l.). Recorded using GPS.
Terrain	Categorisation of terrain class (1=flat, low altitude plain. 2=platform, high elevation, plateau. 3=beach. 4=hill. 5=mountain. 6=valley. 7=ridge).
Survey date	Date plot was surveyed in the format yyyyymmdd.

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15 *Table A2: Results from generalized linear models (glm) run for each species and each life stage using two models. Model 1 is*
 16 *a standard glm and Model 2 is a glm with a quadratic term. Selected models are indicated, *higher pseudo R2 value*
 17 ***lower AIC value. Highlighted results indicate species which did not favour the curved distribution and were therefore not*
 18 *included in further analysis.*

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Species	Life stage	Model	Pseudo R2	AIC
<i>Acer albopurpurascens</i>	Adult	1	0.03	580.4
		2	0.08*	550.4**
	Juvenile	1	0.03	417.8
		2	0.05*	412**
<i>Castanopsis cuspidata</i>	Adult	1	0.00	838
		2	0.04*	807.8**
	Juvenile	1	0.01	680.4
		2	0.03*	668.6**
<i>Ardisia sieboldii</i>	Adult	1	0.22	705.7
		2	0.23*	695.1**
	Juvenile	1	0.23	607.5
		2	0.25*	595.5**
<i>Beilschmiedia erythrophloia</i>	Adult	1	0.02	920.1
		2	0.14*	810**

	Juvenile	1	0.02	726.7
		2	0.09*	673.6**
<i>Celtis formosana</i>	Adult	1	0.11	632.3
		2	0.15*	603.8**
	Juvenile	1	0.09	461.8
		2	0.13*	441.7**
<i>Callicarpa formosana</i>	Adult	1	0.00	543.3
		2	0.12*	482.2**
	Juvenile	1	0.00	367.1
		2	0.08*	340.9**
<i>Alnus formosana</i>	Adult	1	0.05	974.5
		2	0.17*	852.9**
	Juvenile	1	0.03	536.9
		2	0.10*	500.9**
<i>Chamaecyparis formosensis</i>	Adult	1	0.09	884.7
		2	0.22*	760.3**
	Juvenile	1	0.08	571.5
		2	0.17*	518.3**
<i>Abies kawakamii</i>	Adult	1	0.65	185.4
		2	0.71*	157.2**
	Juvenile	1	0.61	135.8
		2	0.68*	113.1**
<i>Cyclobalanopsis sessilifolia</i>	Adult	1	0.01	467.9
		2	0.06*	447.3**
	Juvenile	1	0.01	319.1
		2	0.07*	303.7**
<i>Cyclobalanopsis longinux</i>	Adult	1	0.00	1156
		2	-0.13	1024**
	Juvenile	1	0.00	910.7
		2	0.09*	832.2**
<i>Cleyera japonica</i>	Adult	1	0.01	730.3
		2	0.03*	721.8**
	Juvenile	1	0.01	539.3
		2	0.01	537.4**
<i>Cinnamomum subavenium</i>	Adult	1	0.00	622
		2	0.10*	561.9**
	Juvenile	1	0.00	438.8
		2	0.11*	392.1**
<i>Cryptomeria japonica</i>	Adult	1	0.00	577.5
		2	0.02*	569.4**
	Juvenile	1	0.00	503.7
		2	0.03*	494.2**
<i>Cyclobalanopsis glauca</i>	Adult	1	0.02	746.7
		2	0.05*	728**
	Juvenile	1	0.04	626.1
		2	0.05*	620.6**
<i>Cryptocarya chinensis</i>	Adult	1	0.09	507.1
		2	0.18*	456.6**
	Juvenile	1	0.09	370
		2	0.16*	342.3**
<i>Cinnamomum insularimontanum</i>	Adult	1	0.00	627.3
		2	0.07*	584.1**
	Juvenile	1	0.00	503
		2	0.05*	482**
<i>Cyclobalanopsis morii</i>	Adult	1	0.10	546.4
		2	0.28*	439.6**
	Juvenile	1	0.10	331
		2	0.36*	240.5**
<i>Daphniphyllum glaucescens</i>	Adult	1	0.01	570.7
		2	0.02*	566.1**
	Juvenile	1	0.02	360
		2	0.03*	359.9**
<i>Elaeocarpus japonicus</i>	Adult	1	0.00	1020
		2	0.08*	937.4**
	Juvenile	1	0.00	739.2

<i>Dendropanax dentiger</i>	Adult	2	0.08*	679.4**
		1	0.02	502.6
	Juvenile	2	0.13*	446.9**
		1	0.01	348.6
<i>Elaeocarpus sylvestris</i>	Adult	2	0.12*	313.8**
		1	0.03	693.4
	Juvenile	2	0.06*	681**
		1	0.05	492.3
<i>Cyclobalanopsis stenophylloides</i>	Adult	2	0.08*	481.5**
		1	0.05	848.5
	Juvenile	2	0.14*	766.9**
		1	0.05	646
<i>Deutzia pulchra</i>	Adult	2	0.14*	590**
		1	0.00	505
	Juvenile	2	0.03*	490.2**
		1	0.00	389.6
<i>Diospyros eriantha</i>	Adult	2	0.02*	383.7**
		1	0.21	337.1**
	Juvenile	2	0.21	338.9
		1	0.26	274.4
<i>Diospyros morrisiana</i>	Adult	2	0.30*	262.6**
		1	0.08	638.5
	Juvenile	2	0.14*	599**
		1	0.09	412.3
<i>Engelhardia roxburghiana</i>	Adult	2	0.12*	399**
		1	0.06	858.7
	Juvenile	2	0.13*	797.8**
		1	0.05	664
<i>Ficus fistulosa</i>	Adult	2	0.12*	622.1**
		1	0.07	840.7**
	Juvenile	2	0.07	842.6
		1	0.10	692.1**
<i>Ficus erecta</i>	Adult	2	0.10	694
		1	0.05	423.7
	Juvenile	2	0.11*	399.5**
		1	0.07	295.2
<i>Glochidion rubrum</i>	Adult	2	0.13*	276.2**
		1	0.09	723.3
	Juvenile	2	0.13*	698.5**
		1	0.10	553.2
<i>Ficus septica</i>	Adult	2	0.12*	541.8**
		1	0.28	290.8
	Juvenile	2	0.30*	287.9**
		1	0.26	239.2**
<i>Eurya loquaiana</i>	Adult	2	0.27*	240.3
		1	0.01	1082
	Juvenile	2	0.06*	1035**
		1	0.01	840.9
<i>Fissistigma oldhamii</i>	Adult	2	0.03*	824.2**
		1	0.09	652.3
	Juvenile	2	0.17*	593.9**
		1	0.09	548.8
<i>Ilex ficoidea</i>	Adult	2	0.17*	501.8**
		1	0.00	567.3
	Juvenile	2	0.05*	541.3**
		1	0.01	421.9
<i>Eriobotrya deflexa</i>	Adult	2	0.05*	407.6**
		1	0.00	459.1
	Juvenile	2	0.07*	427.8**
		1	0.00	315.3
<i>Eurya glaberrima</i>	Adult	2	0.14*	275.1**
		1	0.20	396.4
	Juvenile	2	0.28*	359.5**
		1	0.17	293.8
		2	0.24*	271.9**

<i>Litsea acuminata</i>	Adult	1	0.00	1636
		2	0.21*	1288**
	Juvenile	1	0.00	1376
		2	0.15*	1174**
<i>Lagerstroemia subcostata</i>	Adult	1	0.19	1027
		2	0.25*	952.7**
	Juvenile	1	0.21	748.6
		2	0.23*	734.1**
<i>Illicium anisatum</i>	Adult	1	0.05	405.6
		2	0.13*	371.7**
	Juvenile	1	0.05	300.8
		2	0.11*	283.1**
<i>Litsea hypophaea</i>	Adult	1	0.07	605.4
		2	0.10*	589.9**
	Juvenile	1	0.08	496.7
		2	0.11*	478.3**
<i>Itea parviflora</i>	Adult	1	0.01	840
		2	0.12*	750.4**
	Juvenile	1	0.01	661.9
		2	0.07*	622.8**
<i>Ilex formosana</i>	Adult	1	0.00	443.7
		2	0.05*	426.7**
	Juvenile	1	0.00	322
		2	0.02*	318.3**
<i>Illicium arborescens</i>	Adult	1	0.00	381.2
		2	0.07*	357.9**
	Juvenile	1	0.01	326.6
		2	0.05*	315.6**
<i>Litsea acutivena</i>	Adult	1	0.02	527.5
		2	0.04*	515.4**
	Juvenile	1	0.02	417.1
		2	0.04*	409.9**
<i>Litsea elongata</i>	Adult	1	0.03	540
		2	0.12*	490.6**
	Juvenile	1	0.03	398.8
		2	0.15*	350.3**
<i>Michelia compressa</i>	Adult	1	0.01	989.5
		2	0.05*	957.9**
	Juvenile	1	0.02	645.7
		2	0.04*	633.6**
<i>Machilus thunbergii</i>	Adult	1	0.02	1551
		2	0.10*	1427**
	Juvenile	1	0.01	1261
		2	0.06*	1191**
<i>Mallotus japonicus</i>	Adult	1	0.12	429.4**
		2	0.12	431.4
	Juvenile	1	0.14	335.6**
		2	0.14	337
<i>Machilus zuihoensis</i>	Adult	1	0.02	1311
		2	0.10*	1200**
	Juvenile	1	0.01	1022
		2	0.08*	956.5**
<i>Neolitsea aciculata</i>	Adult	1	0.01	546.4
		2	0.12*	486.6**
	Juvenile	1	0.00	382.3
		2	0.07*	357.2**
<i>Neolitsea acuminatissima</i>	Adult	1	0.11	701.3
		2	0.22*	618.9**
	Juvenile	1	0.10	545.2
		2	0.18*	500.7**
<i>Machilus japonica</i>	Adult	1	0.04	1588
		2	0.08*	1528**
	Juvenile	1	0.01	1301
		2	0.03*	1275**

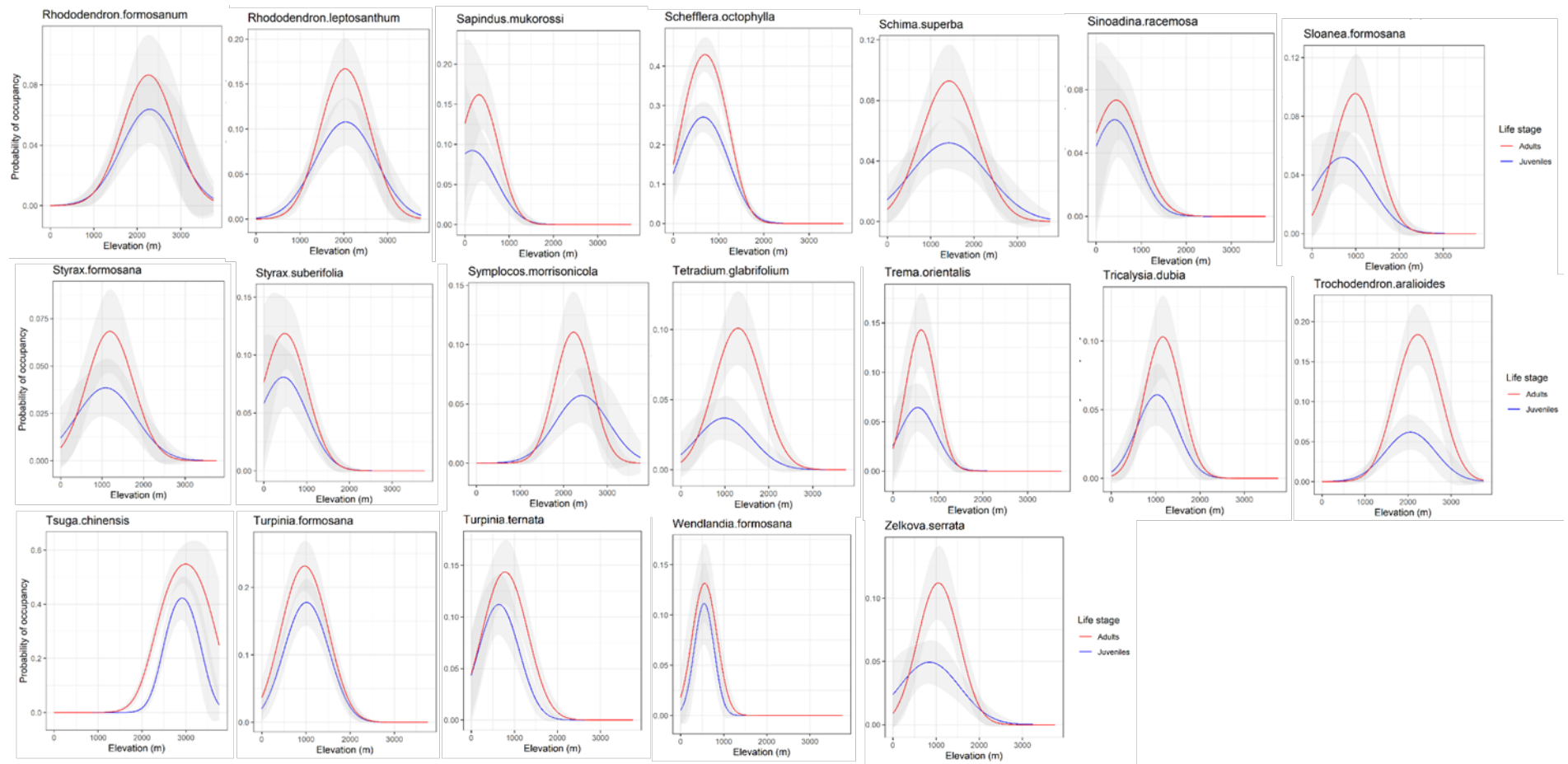


Fig.A2: Probability of occupancy of 75 subtropical montane tree species over an elevation gradient in Taiwan. Red lines refer to the adult life stage and blue lines refer to the juvenile life stage. Grey shaded areas represent confidence intervals of estimates (1.96 standard deviations of the mean).