SUPPLEMENTARY MATERIAL

Annexure S1. ***Testing the influence of environmental and spatial factors on variation in species composition***

We tested the contribution of environment and pure space to the variation in species composition among all our sampling sites, irrespective of land tenure type, using Redundancy Analyses (RDA) (Rao, 1964). We created a single species abundance matrix, including sacred forest and reserve forest sites, where the sites were rows and individual species abundances were the columns. We excluded two SF sites from this analysis, as they did not have four sampling quadrats, resulting in 8 SF sites and 9 RF sites. The species abundance matrix was Hellinger transformed (henceforth SA matrix) before computing the RDAs (Borcard et al., 2018). We built a corresponding environmental matrix with rows as sites and columns with data on environmental predictors. We also tested for spatial structures in species composition using Principal Coordinate Analyses of Neighbour Matrices (PCNM) analyses (Dray et al., 2006). To do this, we computed the Euclidean distance matrix among the sampling sites and modified the entries in the matrix. Distance values greater than a threshold were given a fixed large value and values below the threshold value were retrained as such. The threshold value was determined using the minimum spanning tree algorithm to compute the minimum spatial distance that connected each sampling site to at least one other site. The threshold value is simply four times this distance, and the Euclidean distance matrix was appropriately 'truncated' using this threshold. A Principal Coordinate Analysis of this truncated distance matrix yielded the PCNMs, which we used to test for different scales in spatial structure of species composition (Borcard et al., 2018).

We first tested for spatial trends in species composition by computing an RDA between the SA matrix and the matrix of site locations (XY). Any spatial structure in species composition with a scale larger than the study area would give rise to spatial trends. Next we computed the RDA between SA matrix and the environmental matrix, to test and select the variables with significant influence on species abundance. Finally, we computed the RDA between the SA matrix and the PCNMs to test for spatial structures. These above analyses together enable us to quantify differences in environmental or spatial factors that could explain the variation in species abundances among these sites. Since we chose our study sites within a relatively environmentally homogenous block to specifically tease apart the influence of land use, we did not expect to see significant influence of these environmental or spatial factors. The above analyses were carried out using the 'vegan' package (Oksanen et al., 2018) in R (R Development Core Team, 2011).

Results show that the RDA of the SA matrix with the XY coordinates of the sites was non-significant (F = 1.178, df_{model}=2, $df_{residuals}$=14, P=0.245), indicating that there were no significant spatial trends in species abundances among all the sites.

Since there was no significant trend, we did not detrend the SA matrix data in further analyses. The RDA of the SA matrix with a matrix of seven environmental variables (elevation, slope, aspect, dry months rainfall, annual rainfall, mean monthly temperature, TCI) was non-significant (F = 1.05, df_{model}=7, $df_{residuals}$=9, P=0.372), showing no significant explanatory power of these factors on variation in species abundance.

For PCNM analyses we found that 11 of the 16 were positive, so we chose these 11 components and the RDA of the SA matrix with these components was non-significant, showing no detectable spatial structure in species abundances (F = 1.131, df_{model}=11, $df_{residuals}$=5, P=0.292).

Borcard D., Gillet F. & Legendre P. (2018) *Numerical Ecology with R*. 2nd ed. New York, NY, USA: Springer

Legendre P., Mi X., Ren H., Ma K., Yu M., Sun I.-F. & He F. (2009) Partitioning beta diversity in a subtropical broad-leaved forest of China. *Ecology* **90**: 663–674

Rao C. R. (1964) The Use and Interpretation of Principal Component Analysis in Applied Research. *Sankhyā: The Indian Journal of Statistics, Series A (1961-2002)* **26**: 329–358

Annexure S2. Testing the influence of landuse on species richness, diversity and basal areas

We use a linear mixed effects model, to test the influence of land tenure (sacred forest or reserve forest) on species richness. Although sacred forest and reserve forest patches are quite distinct land uses, we sampled only a small subset of such sites in the landscape and we expect significant variation within each land tenure category. We, therefore, treated land tenure as a random effects predictor. We built two models, one of which was an intercept-only model another which modelled the influence of land tenure. The models were fitted using maximum likelihood (ML) instead of the usual restricted maximum likelihood (REML) so that we could carry out a Likelihood Ratio Test on the two models to determine statistical significance of the influence of land tenure (variable name below = landuse).

(i) Species richness (S)

```
a <- lmer(SR~1+(1|landuse), data=splu)
b <- lmer(SR~landuse+(1|landuse), data=splu)

> anova(a,b)

refitting model(s) with ML (instead of REML)
Data: splu
Models:
a: SR ~ 1 + (1 | landuse)
b: SR ~ landuse + (1 | landuse)

   Df  AIC  BIC     logLik deviance  Chisq Chi Df Pr(>Chisq)
a  3 116.28 118.78 -55.143   110.28
b  4 113.17 116.50 -52.583   105.17 5.1187      1    0.02367 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

(ii) Shannon Diversity (H)

```
a <- lmer(Shannon~1+(1|landuse), data=diversity.data)
b <- lmer(Shannon~landuse+(1|landuse), data=diversity.data)

> anova(a,b)
refitting model(s) with ML (instead of REML)
Data: diversity.data
Models:
a: Shannon ~ 1 + (1 | landuse)
b: Shannon ~ landuse + (1 | landuse)
  Df    AIC    BIC  logLik deviance  Chisq Chi Df Pr(>Chisq)
a  3 35.858 38.357 -14.929   29.858
b  4 34.043 37.376 -13.021   26.043 3.8149      1     0.0508 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

(iii) Evenness (H/log(S))

```
a <- lmer(Evenness~1+(1|landuse), data=diversity.data)
b <- lmer(Evenness~landuse+(1|landuse), data=diversity.data)

> anova(a,b)
refitting model(s) with ML (instead of REML)
Data: diversity.data
Models:
a: Evenness ~ 1 + (1 | landuse)
b: Evenness ~ landuse + (1 | landuse)
  Df     AIC     BIC logLik deviance  Chisq Chi Df Pr(>Chisq)
a  3 -8.2720 -5.7724 7.1360  -14.272
b  4 -9.3932 -6.0603 8.6966  -17.393 3.1212      1    0.07728 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

(iv) Biomass (expressed as Basal Area)

```
a <- lmer(BasalArea~1+(1|landuse))
b <- lmer(BasalArea~landuse+(1|landuse))

> anova(a,b)
refitting model(s) with ML (instead of REML)
Data: NULL
Models:
a: BasalArea ~ 1 + (1 | landuse)
b: BasalArea ~ landuse + (1 | landuse)
  Df    AIC    BIC  logLik deviance  Chisq Chi Df Pr(>Chisq)
a  3 222.66 225.50 -108.33   216.66
b  4 219.11 222.89 -105.56   211.11 5.5525      1    0.01845 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

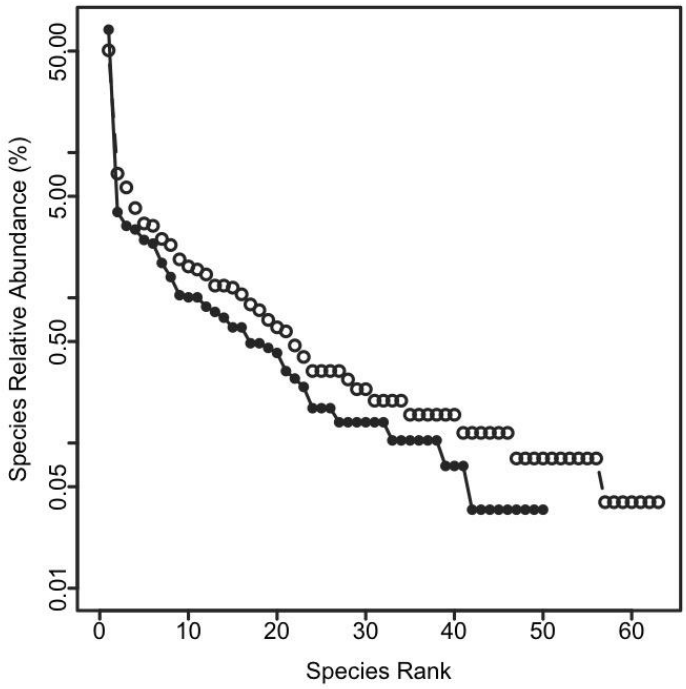

Fig S1. Species Rank-Abundance Distributions. Open circles correspond to sacred forests and closed circles to reserve forests

Table S1. List of species that occurs in our study sites and the respective presence or absence in sacred forests and reserve forests.

Species Code	Genus	Species	Family	Authority	Sacred Forest	Reserve Forest
ALBILE	Albizzia	lebbeck	FABACEAE	(L.)Benth.	Y	Y
ANOGAC	Anoigessus	acuminata	COMBRETACEAE	Roxb. ex DC.	Y	Y
BRIDRE	Bridelia	retusa	PHYLLANTHACEAE	(L.) Spreng	Y	Y
BUCHLA	Buchanania	lanzan	ANACARDIACEAE	Spreng.	Y	Y
CALLFL	Callicarpa	floribunda	LAMIACEAE	L.	Y	Y
CAREAR	Careya	arborea	LECYTHIDACEAE	Roxb.	Y	Y
CASEEL	Casearia	elliptica	SALICACEAE	Willd.	Y	Y
CASSFI	Cassia	fistula	FABACEAE	L.	Y	Y
CASSGL	Cassine	glauca	CELASTRACEAE	(Rottb.) Kuntze	Y	Y
CROTRO	Croton	roxburghii	EUPHORBIACEAE	Balak.	Y	Y
DIOSME	Diospyros	melanoxylon	EBENACEAE	Roxb.	Y	Y
DIOSMO	Diospyros	montana	EBENACEAE	Roxb.	Y	Y
DIOSSY	Diospyros	sylvatica	EBENACEAE	Roxb.	Y	Y
FICUBE	Ficus	benghalensis	MORACEAE	L.	Y	Y
FLACRA	Flacourtia	ramontchi	SALICACEAE	(Burm .f.) Merr.	Y	Y
GLOCVE	Glochidion	velutinum	EUPHORBIACEAE	Wight	Y	Y
HALDCO	Haldinia	cordifolia	RUBIACEAE	(Roxb.) Ridsdale	Y	Y
HOLAAT	Holarrhena	antidysenterica	APOCYANACEAE	(Linn.)	Y	Y
LAGEPA	Lagerstroemia	parviflora	LYTHRACEAE	Roxb.	Y	Y
LANNCO	Lannea	coromandelica	ANACARDIACEAE	(Houtt.) Merr.	Y	Y
MADHIN	Madhuca	indica	SAPOTACEAE	J.F. Gmel	Y	Y
MALLPH	Mallotus	philippensis	EUPHORBIACEAE	(Lam.) Muell.Arg	Y	Y
MANGIN	Mangifera	indica	ANACARDIACEAE	L.	Y	Y
MORITI	Morinda	tinctoria	RUBIACEAE	Roxb.	Y	Y
PHYLEM	Phyllanthus	emblica	PHYLLANTHACEAE	L.	Y	Y
PONGPI	Pongamia	pinnata	FABACEAE	(l.) Pierre	Y	Y
PROTSE	Protium	serratum	BURSERACEAE	(Wall.ex Colebr.) Engl.	Y	Y

PTERMA	Pterocarpus	marsupium	DIPTEROCARPACEAE	f.	Y	Y
SCHLOL	Scleichera	oleosa	SAPINDACEAE	(Lour.) Oken	Y	Y
SEMEAN	Semecarpus	anacardium	ANACARDIACEAE	L. f.	Y	Y
SHORRO	Shorea	robusta	DIPTEROCARPACEAE	Gaertn. f.	Y	Y
STERPE	Stereospermum	personatum	BIGNONIACEAE	(Hassk.) Chatterjee	Y	Y
SYMPRA	Symplocos	racemosa	SYMPLOCACEAE	Jacq.	Y	Y
SYZYCE	Syzygium	cerasoides	MYRTACEAE	(Roxb.)	Y	Y
SYZYCU	Syzygium	cumini	MYRTACEAE	(L.) Skeels.	Y	Y
TERMAL	Terminalia	alata	COMBRETACEAE	Heyne ex Roth	Y	Y
TERMBE	Terminalia	bellirica	COMBRETACEAE	(Gaertn.) Roxb.	Y	Y
TERMCH	Terminalia	chebula	COMBRETACEAE	Retz.	Y	Y
WENDTI	Wendlandia	tinctoria	RUBIACEAE	(Roxb.) DC	Y	Y
WOODFR	Woodfordia	fruticosa	LYTHRACEAE	(L.) Kurz	Y	Y
XYLIXY	Xylia	xylocarpa	FABACEAE	Roxb. Taub.	Y	Y
ALANSA	Alangium	salvifolium	ALANGIACEAE	(L. f.) Wangerin	Y	N
ANNOSQ	Annona	squamosa	ANNONACEAE	L.	Y	N
ANTIGH	Antidesma	ghaesembilla	PHYLLANTHACEAE	Gaertn.	Y	N
APOROC	Aporosa	octandra	PHYLLANTHACEAE	Buch.-Ham-ex D.Don) Vickery	Y	N
ARDISO	Ardisia	solanacea	PRIMULACEAE	Roxb.	Y	N
BENKMA	Benkara	malabarica	RUBIACEAE	(Lam.) Tirveng	Y	N
BOMBCE	Bombax	ceiba	MALVACEAE	L.	Y	N
BREYVI	Breynia	vitis	PHYLLANTHACEAE	(Burm .f.) C.E.C.Fischer	Y	N
CANTDI	Canthium	diococcum	RUBIACEAE	(Gaertn.)	Y	N
CORDDI	Cordia	dichotoma	BORAGINACEAE	Forst. f.	Y	N
DESMOO	Desmodium	oojeinensis	FABACEAE	(Roxb.)	Y	N
ERYTSU	Erythrina	suberosa	FABACEAE	Roxb.	Y	N
FICUHI	Ficus	hispida	MORACEAE	L.f.	Y	N
FICURE	Ficus	religiosa	MORACEAE	Linn.	Y	N
GARDLA	Gardenia	latifolia	RUBIACEAE	Ait.	Y	N
GARUPI	Garuga	pinnata	BURSERACEAE	Roxb.	Y	N

GREWTI	Grewia	tilifolia	MALVACEAE	F.Muell .ex Benth.	Y	N
HYMEOR	Hymenodictyon	orixense	RUBIACEAE	(Roxb. Mabb.	Y	N
LAGEDI	Lagerstroemia	diflora	LYTHRACEAE	L.	Y	N
MEMEUM	Memecylon	umbellatum	MELASTOMATACEAE	Burm.f.	Y	N
MILIVE	Miliusa	velutina	ANNONACEAE	(Dunal) Hook.f. and Thomson	Y	N
MITRPA	Mitragyna	parvifolia	RUBIACEAE	(Roxb.)Korth	Y	N
NYCTAR	Nyctanthes	arbor-tristis	OLEACEAE	L.	Y	N
OROXIN	Oroxylum	indicum	BIGNONIACEAE	Vent.	Y	N
STERCH	Stereospermum	chelonoides	BIGNONIACEAE	(L. fil.) DC	Y	N
VITENI	Vitex	negundo	LAMIACEAE	L.	Y	N
VITEPE	Vitex	peduncularis	LAMIACEAE	Wall.ex Schauer	Y	N
ALSTSC	Alstonia	scholaris	APOCYANACEAE	(L.)R.Br.	N	Y
BAUHVA	Bauhinia	vahlii	FABACEAE	Wright and Arn.	N	Y
CALLTO	Callicarpa	tomentosa	LAMIACEAE	L.(Murr).	N	Y
COMBDE	Combretum	decandrum	COMBRETACEAE	Jacq.	N	Y
LONIRA	Lonicera	ramiflora	OLEACEAE	Wall.	N	Y
NARICR	Naringi	crenulata	RUTACEAE	(Roxb.) D.H. Nicolson	N	Y
OUGEOO	Ougeinia	oojeinensis	FABACEAE	(Roxb.) Hochr.	N	Y
TECTGR	Tectona	grandis	LAMIACEAE	L.f.	N	Y