

Ecography

**ECOG-03126**

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**Supplementary material**

## Appendix 1

### Non-peatland forest type dataset descriptions

Seasonally-flooded forest plot data came from the published dataset of Honorio Coronado et al. (2015). These 11 plots were 0.5 ha in area and based on the RAINFOR protocol (Phillips et al. 2009), whereby all trees with a diameter at breast height (dbh)  $\geq 10$  cm were measured and identified.

White-sand forest data came from a number of data sources. Data from 16 white-sand forest plots came from the published dataset of Fine et al. (2010). Thirteen of these plots consist of 0.1 ha forest plots in *varillal* type forests (defined by a canopy height 10-20 m [García Villacorta et al. 2003]), where all trees  $\geq 5$  cm dbh were identified and specimens collected. A further three 0.025 ha plots were established by Fine *et al* in extremely stunted *chamizal* type forest (defined by a canopy lower than 5 m [Encarnación 1985, García Villacorta et al. 2003]). Due to the small size classes found in these *chamizal* forests, all trees  $\geq 2.5$  cm dbh were identified and specimens were collected. A further eight plots completed the dataset from white sand forest: four were 0.1 ha plots established by O. Phillips, and included all stems  $\geq 2$  cm dbh and four plots were 1 ha permanent monitoring plots from the RAINFOR network (Peacock et al. 2007), where all stems  $\geq 10$  cm dbh were tagged and identified (Appendix 2).

The *terra firme* plot data consisted of 29, one ha permanent monitoring plots from the RAINFOR network (Peacock et al. 2007, Pitman, et al. 2008, Honorio Coronado et al. 2009). These plots are located across northern Peru on upland, well-drained soils (Appendix 2). Within these plots all trees  $\geq 10$  cm dbh were identified and specimens were collected.

### Comparing diversity and composition across datasets

In order to make comparisons of species composition and diversity among forest types it was necessary to combine datasets with different sampling protocols. Plot sizes and field sampling protocols varied in order to capture a representative sample of the floristic composition of adult trees in any given forest type. For example, white-sand forests consist of far smaller trees than *terra firme* forests; if white-sand forest inventories were limited to stems  $> 10$  cm dbh then the majority of adult trees would be excluded from the census. As a result, 0.1 ha plots with a 2 cm dbh limit were used in white-sand forests. However, the use of 0.1 ha plots with a 2 cm dbh limit allows a greater proportion of the flora to be sampled than 1 ha plots with a 10 cm dbh limit, meaning 0.1 ha plots produce higher estimates of diversity than 1 ha plots (typically  $\sim 10\%$  more species per number of stems sampled; Phillips et al. 2003a, Baraloto et al. 2013). In the context of this study, this result means that the diversity estimates for *terra firme* and seasonally-flooded plots are probably slightly underestimated (approx. 10%) compared with other forest types, as small trees were not sampled.

Morphospecies of these different floristic datasets were consistently identified within, but not among, the different datasets. To make valid comparisons of floristic composition and diversity among datasets, all morphospecies and individuals not identified to species level were classified as unidentified morphospecies and excluded from all subsequent analyses. These exclusions led to 2-19 % loss of individuals across plots, apart from in *terra firme* forests where it was 36 % (Table 1). However, we expect the process of excluding morphospecies to have little effect on our results. A previous study, using a forest plot dataset with a similar proportion (23–56 %) of unidentified morphospecies, has shown that there is a strong correlation ( $R^2 > 0.98$ ) between estimates of floristic similarity when morphospecies are included or excluded (Pos et al. 2014). The exclusion of morphospecies was shown to have an effect on estimates of Fishers alpha (particularly in high diversity plots), but correlations were still strong ( $R^2 > 0.96$ ) between estimates with and without morphospecies (Pos et al. 2014).

As plots of different sizes contained variable numbers of stems, species richness and alpha-diversity were estimated using a standard number of 500 identified stems for each plot. These comparisons were based on unified interpolated/extrapolated rarefaction curves for each plot, following the multinomial model method of Colwell et al. (2012). In this rarefaction method, species richness and diversity are estimated by examining (by resampling without replacement 1000 times) the form of the relationship between the number of individual trees and the number of species within each plot. The final rarefaction curves (Figure A1), and subsequent estimates of diversity, are mean values calculated from all plots within each forest type. All extrapolated rarefaction curves were generated using *estimate-S* (Colwell 2013). 500 stems was chosen to estimate species richness and diversity as this number of stems was deemed to provide a sufficiently representative sample of the underlying community, demonstrated by a clear levelling-off of rarefaction curves for all forest types (Figure A1). Furthermore, as 68% plots contained > 250 identified individuals, species richness was rarely extrapolated by more than a factor of two which is well within the constraints of the method (Colwell et al. 2012). Only four plots in total, all from white-sand forest, contained fewer than 166 (79-155) identified stems and were extrapolated by a factor of more than three. This is expected to have little effect on our results as the remaining 20 white-sand plots contained many more individuals.

**Table A1** Environmental characteristics of the five different forest types discussed in this paper, as observed in northern Amazonian Peru.

<b>Forest type</b>	<b>Forest structure</b>	<b>Substrate character</b>	<b>Observed hydroperiod</b>
<b>Pole forest</b>	Low canopy (< 20 m), thin-stemmed trees	Peat	Water table at surface, no evidence of previous flooding
<b>Palm swamp</b>	Dominated by arboreal palms, open canopy	Peat	Water table at surface, some evidence of previous flooding
<b>Terra firme forest</b>	High canopy (>30 m), large trees	Clay mineral soil	No evidence of previous flooding
<b>Seasonally-flooded forest</b>	High canopy (>30 m), large trees	Clay mineral soil	Strong evidence of previous flooding
<b>White-sand forest</b>	Low canopy (< 20 m), thin trees	Quartzitic white-sand soil	No or very little evidence of previous flooding

**Table A2** The ten most abundant tree species found in palm swamp peatlands, the total number of individuals in all 15 0.5 ha palm swamp plots, and the total number of plots in which the taxa occur.

Species	Authority	Number of individuals	Number of plots	Ecological guild
<i>Mauritia flexuosa</i> <sup>§</sup>	L.f.	1535	15	PF spill-over
<i>Mauritiella armata</i> <sup>§</sup>	(Mart.) Burret	379	8	Generalist
<i>Tabebuia insignis</i> var. <i>monophylla</i> #	(Miq.) Sandwith	259	5	PF spill-over
<i>Euterpe precatoria</i> <sup>§</sup>	Mart.	214	10	Generalist
<i>Virola pavonis</i> <sup>§</sup>	(A.DC.) A.C.Sm.	181	11	Generalist
<i>Socratea exorrhiza</i> <sup>§</sup>	(Mart.) H.Wendl.	128	8	Generalist
<i>Symphonia globulifera</i> <sup>§</sup>	L.f.	114	12	TF spill-over
<i>Ilex vismiifolia</i> <sup>§</sup>	Reissek	75	6	PF spill-over
<i>Hura crepitans</i> <sup>§</sup>	L.	67	9	SF spill-over
<i>Eschweilera albiflora</i>	(DC.) Miers	59	6	Generalists

# possible peatland endemic species

<sup>§</sup> significant indicator species

**Table A3** The ten most abundant tree species found in peatland pole forest, the total number of individuals in all 11 0.5 ha plots, and the total number of plots in which the taxa occur.

<b>Species</b>	<b>Authority</b>	<b>Number of individuals</b>	<b>Number of plots</b>	<b>Ecological Guild</b>
<i>Pachira brevipes</i> <sup>**§</sup>	(A.Robyns) W.S.Alverson	2727	9	WS spill-over
<i>Cybianthus cf. reticulatus</i> <sup>§</sup>	(Benth. ex Miq.) G.Agostini	1364	7	PS spill-over
<i>Tabebuia insignis var. monophylla</i> # <sup>§</sup>	(Miq.) Sandwith	839	8	PS spill-over
<i>Platycarpum loretensis</i> <sup>**§</sup>	Dávila & L. Kinoshita	536	8	WS spill-over
<i>Hevea guianensis</i> <sup>§</sup>	Aubl.	415	10	Generalist
<i>Macaranga multijugum</i>	(DC.) Benth.	406	2	PS spill-over
<i>Mauritia flexuosa</i>	L.f.	257	9	PS spill-over
<i>Mauritiella armata</i>	(Mart.) Burret	248	3	Generalist
<i>Oxandra mediocris</i> <sup>§</sup>	Diels	222	7	Functional specialist
<i>Pagamea guianensis</i> <sup>§</sup>	Aubl.	214	4	WS spill-over

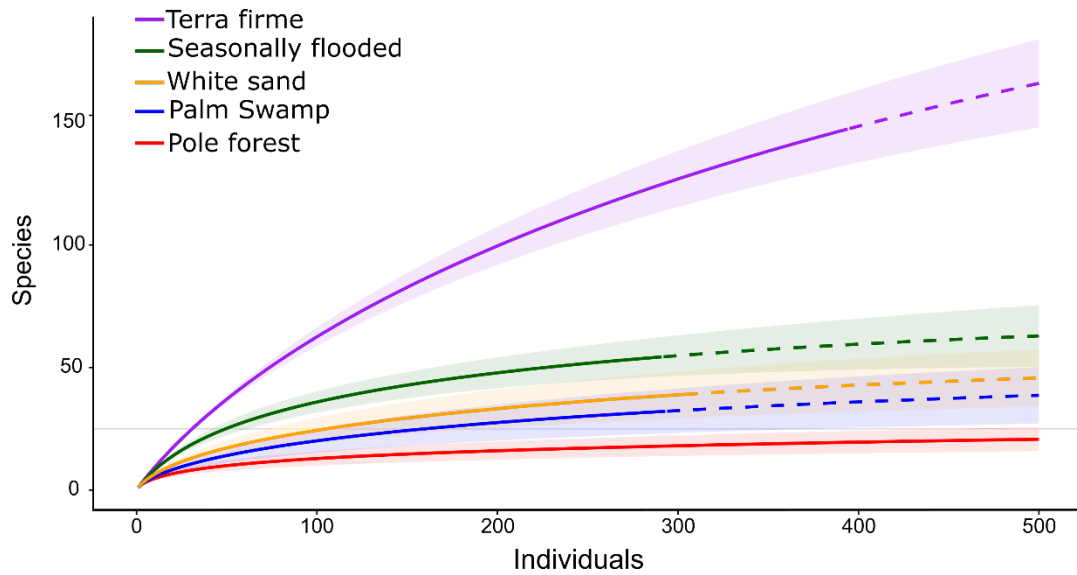
\* species endemic to Loreto (peatland pole forests and white-sand forests)

# possible peatland endemic species

§ significant indicator species

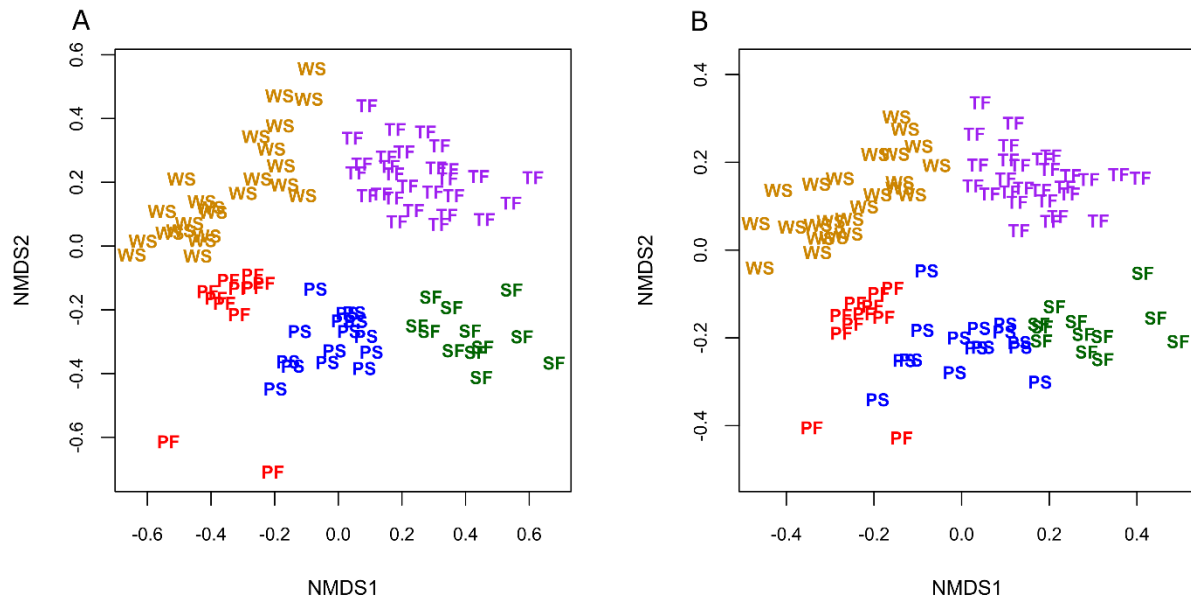
**Table A4 Comparison of peatland pole forest alpha diversity against previously reported low – diversity forests across Amazonia. Values given in parentheses indicate subplots contained within the main plot.**

Reference	Forest type	Plot size (ha)	Mean stem number	Min. diameter	Mean Sp. Richness	Mean Fishers $\alpha$	Shannon index
<b>This study</b>	<b>Pole forest</b>	<b>0.5 (0.04)</b>	<b>500</b>	<b>10 (2)</b>	<b>20.02</b>	<b>4.57</b>	<b>1.78</b>
Targhetta et al. 2015	Igapó	0.5	360	10	24.17	–	–
Nascimento et al. 2014	monodominant	0.25	448	10	30	–	2.82
Johnson and Gillman (1995)	mixed	1	974	5	74.5	–	–
Marimon et al. (2001)	monodominant	0.6	–	5	44	–	2.37
ter Steege et al. (2000)	Guiana Shield swamp	1	–	10	–	7.5	–

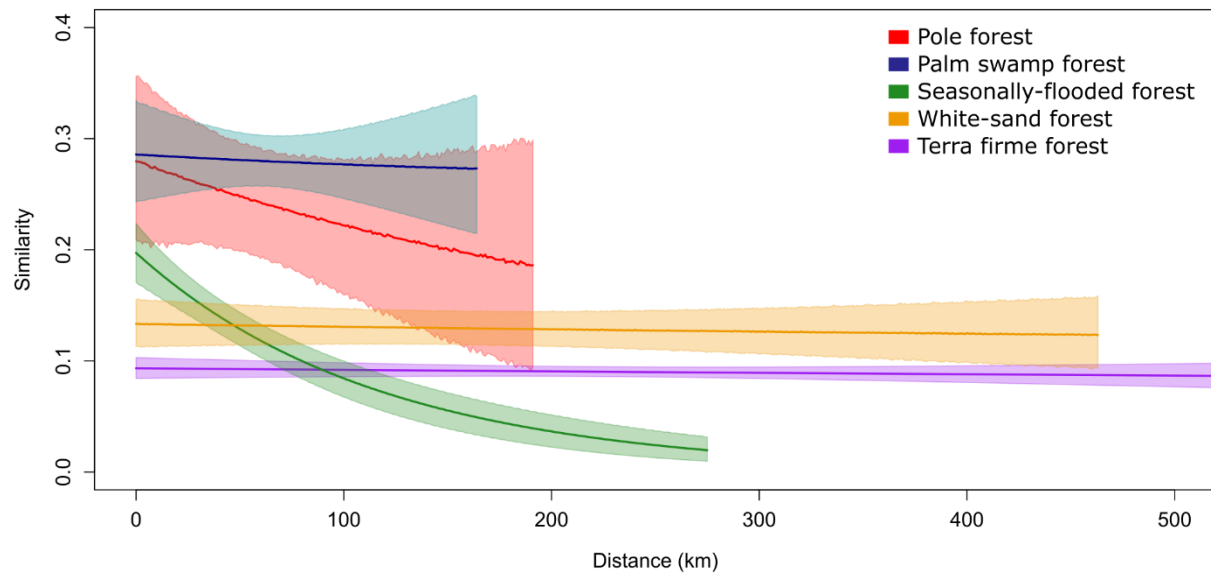


**Figure A1.** Mean extrapolated rarefaction curves for the five forest types. Rarefaction was undertaken for each plot separately and averaged within each forest type. Shading represents 95% confidence intervals. Solid lines represent the average number of individuals that were interpolated through rarefaction, whilst dashed lines represent the average number of individuals that were estimated using extrapolated rarefaction for each forest type.

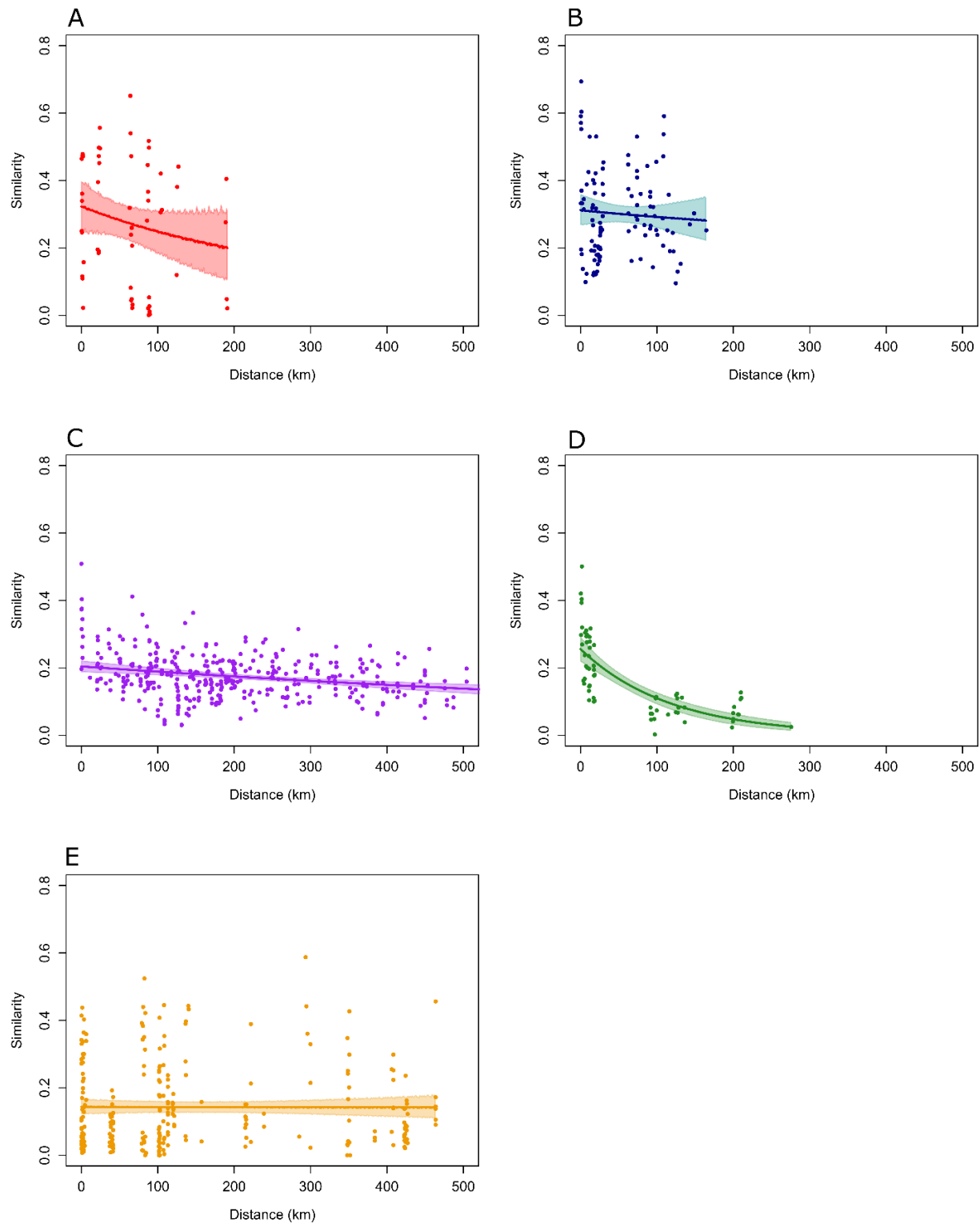




**Figure A2.** NMDS ordinations based on a random sample of 79 individuals for each plot, showing the similarity of all 89 forest plots within and among forest types. Panel A is an NMDS ordination based on tree species abundance data (Hellinger distance), Panel B is an NMDS ordination based on all tree species presence/absence data. (Jaccard distance) Both ordinations were optimized for two dimensions. Labels and colours correspond to forest types: Peatland pole forest (PF, red); palm swamp (PS, blue); seasonally-flooded forest (SF, green); terra firme (TF, purple); white-sand forests (WS, orange). The corresponding analyses using all individuals in each plot are presented in figure 4.



**Figure A3.** Floristic similarity (inverse Hellinger distance based on tree species abundance data in a random sample of 79 individuals for each plot) between pairs of plots, within forest types, as a function of geographical distance between the plots. Solid lines show the mean similarity from the GLM models and shaded areas show the 95% confidence interval of the model fits. The corresponding analysis using all individuals in each plot is presented in figure 5.



**Figure A4.** Distance decay plots for each forest type showing the individual points for each plot pair. Panels show different forest types: Pole forest (panel A), Palm swamp (panel B), Terra firme (panel C), Seasonally flooded forest (panel D) and White sand forest (panel E).

## References

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## Appendix 2 Details of all plots used.

Plot Code	Locality	Lat.	Long.	Plot area (ha)	Min stem dbh (cm)	Forest type	Reference or senior team for RAINFOR plots
OLL-01	Ollanta	-4.448	-74.848	0.5	10 (2)	PF	This study
OLL-02	Ollanta	-4.452	-74.856	0.5	10 (2)	PF	This study
OLL-03	Ollanta	-4.454	-74.861	0.5	10 (2)	PF	This study
OLL-04	Ollanta	-4.457	-74.867	0.5	10 (2)	PF	This study
MIF-01	Miraflores	-4.407	-74.063	0.5	10 (2)	PF	This study
MIF-02	Miraflores	-4.415	-74.074	0.5	10 (2)	PF	This study
MIF_03	Miraflores	-4.410	-74.060	0.5	10	PF	This study
NYO-01	Nueva York	-4.417	-74.280	0.5	10 (2)	PF	This study
NYO-02	Nueva York	-4.395	-74.265	0.5	10 (2)	PF	This study
NYO_03	Nueva York	-4.400	-74.270	0.5	10	PF	This study
SJO_P1	San Jorge	-4.062	-73.192	0.5	10 (2)	PF	Kelly <i>et al.</i> 2014
VEN-05	Veinte de Enero	-4.686	-73.819	0.5	10 (2)	PS	This study
VEN-04	Veinte de Enero	-4.679	-73.819	0.5	10 (2)	PS	This study
VEN-03	Veinte de Enero	-4.676	-73.819	0.5	10 (2)	PS	This study
VEN_02	Veinte de Enero	-4.668	-73.819	0.5	10 (2)	PS	Honorio Coronado <i>et al.</i> 2015
VEN_01	Veinte de Enero	-4.672	-73.820	0.5	10 (2)	PS	Honorio Coronado <i>et al.</i> 2015
REQ-05	Requena	-4.812	-73.820	0.5	10	PS	Honorio Coronado <i>et al.</i> 2015
REQ-13	Requena	-4.836	-73.833	0.5	10	PS	Honorio Coronado <i>et al.</i> 2015
REQ-01	Requena	-4.906	-73.821	0.5	10	PS	Honorio Coronado <i>et al.</i> 2015
REQ-04	Requena	-4.879	-73.793	0.5	10	PS	Honorio Coronado <i>et al.</i> 2015
JEN-14	Jenaro Herrera	-4.836	-73.833	0.5	10	PS	Honorio Coronado <i>et al.</i> 2015
JEN-15	Jenaro Herrera	-4.836	-73.652	0.5	10	PS	Honorio Coronado <i>et al.</i> 2015
QUI-01	Quistococh	-3.840	-73.319	0.5	10 (2)	PS	Roucoux <i>et al.</i> 2013

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SRI-01	Santa Rita	-4.576	-74.374	0.5	10 (2)	PS	This study
SRO-01	San Roque	-4.532	-74.630	0.5	10 (2)	PS	This study
PRN-01	Parinari	-4.524	-74.469	0.5	10	PS	This study
NAP-01	PV7 terrace	-0.880	-75.210	1	10	TF	Pitman <i>et al</i> 2008
NAP-02	PV7	-0.880	-75.210	1	10	TF	Pitman <i>et al</i> 2008
NAP-03	polvorín Vencedores	-1.140	-75.020	1	10	TF	Pitman <i>et al</i> 2008
NAP-04	Santa	-1.420	-74.620	1	10	TF	Pitman <i>et al</i> 2008
NAP-05	María Ingano	-1.870	-74.670	1	10	TF	Pitman <i>et al</i> 2008
NAP-06	Llacta Boca	-2.380	-74.090	1	10	TF	Pitman <i>et al</i> 2008
NAP-07	Curaray San José	-2.510	-73.660	1	10	TF	Pitman <i>et al</i> 2008
NAP-08	Santa Teresa	-2.830	-73.560	1	10	TF	Pitman <i>et al</i> 2008
YAR-01	Curacinha	-5.050	-72.730	1	10	TF	Pitman <i>et al</i> 2008
YAR-02	Buenavista	-4.830	-72.390	1	10	TF	Pitman <i>et al</i> 2008
QBC-01	Quebrada Blanco	-4.360	-73.160	1	10	TF	Pitman <i>et al</i> 2008
QBC-02	Quebrada Blanco	-4.360	-73.160	1	10	TF	Pitman <i>et al</i> 2008
YAG-01	Yaguas	-2.860	-71.420	1	10	TF	Pitman <i>et al</i> 2008
MAR-01	Maronal	-2.970	-72.130	1	10	TF	Pitman <i>et al</i> 2008
APY-01	Apayacu	-3.120	-72.710	1	10	TF	Pitman <i>et al</i> 2008
ORS-01	Río Orosa	-3.620	-72.240	1	10	TF	Pitman <i>et al</i> 2008
SAP-01	Sabalillo	-3.340	-72.310	1	10	TF	Pitman <i>et al</i> 2008
NAU-01	Nauta	-4.440	-73.610	1	10	TF	Pitman <i>et al</i> 2008
ALP-01	Allpahuayo -Mishana	-3.949	-73.435	1	10	TF	Abel Monteagudo, Tim Baker, Javier Silva Espejo, Oliver Phillips, Roel Brienen, Yadvinder Malhi; RAINFOR
ALP-02	Allpahuayo -Mishana	-3.952	-73.438	1	10	TF	Abel Monteagudo, Tim Baker, Oliver Phillips, Roel Brienen; RAINFOR
YAN-01	Yanamono	-3.435	-72.845	1	10	TF	Oliver Phillips, Rodolfo Vasquez, Roel Brienen, Tim Baker; RAINFOR
YAN-02	Yanamono	-3.434	-72.845	1	10	TF	Oliver Phillips, Rodolfo Vasquez, Roel Brienen,

SUC-01	Sucusari	-3.252	-72.908	1	10	TF	Tim Baker; RAINFOR Oliver Phillips, Rodolfo Vasquez, Roel Brienem, Tim Baker, Nestor Jaramillo; RAINFOR
SUC-02	Sucusari	-3.250	-72.904	1	10	TF	Oliver Phillips, Rodolfo Vasquez, Roel Brienem, Tim Baker, Nestor Jaramillo; RAINFOR
SUC-04	Sucusari	-3.251	-72.891	1	10	TF	Oliver Phillips, Rodolfo Vasquez, Roel Brienem, Tim Baker; RAINFOR
SUC-05	Sucusari	-3.256	-72.894	1	10	TF	Oliver Phillips, Rodolfo Vasquez, Roel Brienem, Tim Baker, Nestor Jaramillo; RAINFOR
JEN-11	Jenaro Herrera	-4.878	-73.629	1	10	TF	Euridice Honorio, Oliver Phillips, Roel Brienem, Tim Baker; RAINFOR
JEN-13	Jenaro Herrera	-4.924	-73.538	1	10	TF	Euridice Honorio, Oliver Phillips, Roel Brienem, Tim Baker; RAINFOR
SUC-03	Sucusari	-3.250	-72.917	1	10	SF	Oliver Phillips, Rodolfo Vasquez, Roel Brienem, Tim Baker; RAINFOR
BVA_P1	Buena vista	-4.240	-73.200	0.5	10 (2)	SF	Kelly <i>et al.</i> 2014
REQ-02	Requena	-4.917	-73.788	0.5	10	SF	Honorio Coronado <i>et al.</i> 2015
REQ-03	Requena	-4.885	-73.791	0.5	10	SF	Honorio Coronado <i>et al.</i> 2015
REQ-06	Requena	-4.823	-73.806	0.5	10	SF	Honorio Coronado <i>et al.</i> 2015
REQ-07	Requena	-4.811	-73.803	0.5	10	SF	Honorio Coronado <i>et al.</i> 2015
REQ-08	Requena	-4.815	-73.790	0.5	10	SF	Honorio Coronado <i>et al.</i> 2015
REQ-09	Requena	-4.819	-73.789	0.5	10	SF	Honorio Coronado <i>et al.</i> 2015
REQ-10	Requena	-4.915	-73.746	0.5	10	SF	Honorio Coronado <i>et al.</i> 2015
REQ-11	Requena	-4.955	-73.720	0.5	10	SF	Honorio Coronado <i>et al.</i> 2015
REQ-12	Requena	-4.959	-73.725	0.5	10	SF	Honorio Coronado <i>et al.</i> 2015
AMB	Allpahuayo -Mishana	-3.951	-73.400	0.1	5	WS	Fine <i>et al.</i> 2010
AMC	Allpahuayo -Mishana	-3.948	-73.412	0.1	5	WS	Fine <i>et al.</i> 2010
AMD	Allpahuayo -Mishana	-3.942	-73.439	0.1	5	WS	Fine <i>et al.</i> 2010
ANV	Upper Nanay	-3.741	-74.122	0.1	5	WS	Fine <i>et al.</i> 2010
ANC	Upper Nanay	-3.741	-74.133	0.025	2.5	WS	Fine <i>et al.</i> 2010
JEB	Jeberos	-5.300	-76.267	0.1	5	WS	Fine <i>et al.</i> 2010
JH1	Jenaro	-4.850	-73.600	0.1	5	WS	Fine <i>et al.</i> 2010

JH2	Herrera Jenaro	-4.850	-73.600	0.1	5	WS	Fine <i>et al.</i> 2010
JHC	Herrera Jenaro	-4.850	-73.600	0.025	2.5	WS	Fine <i>et al.</i> 2010
MP	Morona	-4.267	-77.233	0.1	5	WS	Fine <i>et al.</i> 2010
MB	Morona	-4.267	-77.233	0.1	5	WS	Fine <i>et al.</i> 2010
TA1	Tamshiyacu	-3.983	-73.067	0.1	5	WS	Fine <i>et al.</i> 2010
TA2	Tamshiyacu	-3.983	-73.067	0.1	5	WS	Fine <i>et al.</i> 2010
TAC	Tamshiyacu	-3.983	-73.067	0.025	2.5	WS	Fine <i>et al.</i> 2010
MAT	Matses	-5.855	-73.754	0.1	5	WS	Fine <i>et al.</i> 2010
ALP-18	Allpahuayo -Mishana	-3.954	-73.429	0.1	2	WS	Oliver Phillips, Rodolfo Vasquez; RAINFOR
ALP-24	Allpahuayo -Mishana	-3.955	-73.430	0.1	2	WS	Oliver Phillips, Rodolfo Vasquez; RAINFOR
ALP-25	Allpahuayo -Mishana	-3.953	-73.437	0.1	2	WS	Oliver Phillips, Rodolfo Vasquez; RAINFOR
ALP-26	Allpahuayo -Mishana	-3.952	-73.411	0.1	2	WS	Oliver Phillips, Rodolfo Vasquez; RAINFOR
ALP-30	Allpahuayo -Mishana	-3.954	-73.427	1	10	WS	Abel Monteagudo, Tim Baker, Javier Silva Espejo, Oliver Phillips, Yadvinder Malhi; RAINFOR
ALP-40	Allpahuayo -Mishana	-3.941	-73.440	1	10	WS	Abel Monteagudo, Freddy Ramirez, Oliver Phillips; RAINFOR
ALP-50	Allpahuayo -Mishana	-3.951	-73.410	1	10	WS	Roosevelt Garcia, Oliver Phillips; RAINFOR
JEN-12	Jenaro Herrera	-4.899	-73.629	1	10	WS	Euridice Honorio, Oliver Phillips, Roel Brienens, Tim Baker; RAINFOR

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**Appendix 3.1 Lists of species that qualify for pole forest specialist ecological guild or pole forest indicator species**

<i>Species</i>	<b>Family</b>	<b>Authority</b>	<b>Number of individuals</b>	<b>Number of plots</b>	<b>Ecological Guild</b>
<i>Dendropanax resinusus</i>	<i>Araliaceae</i>	(Marchal) Frodin	79	1	strict specialist
<i>Himatanthus bracteatus</i>	<i>Apocynaceae</i>	(A.DC.) Woodson	26	4	strict specialist
<i>Machaerium macrophyllum</i>	<i>Fabaceae</i>	Benth.	11	1	strict specialist
<i>Ryania pyrifer*</i>	<i>Salicaceae</i>	(Rich.) Uittien & Sleumer	10	2	strict specialist
<i>Lueheopsis hoehnei #*</i>	Malvaceae	Burret	39	3	strict specialist
<i>Oxandra mediocris*</i>	Annonaceae	Diels	222	7	func. specialist
<i>Sagotia racemosa</i>	Euphorbiaceae	Baill.	119	1	func. specialist
<i>Vochysia venulosa</i>	Vochysiaceae	Warm.	81	81	func. specialist
<i>Chrysophyllum amazonicum*</i>	Sapotaceae	T.D.Penn.	76	6	func. specialist
<i>Mouriri nigra</i>	Melastomataceae	(DC.) Morley	50	2	func. specialist
<i>Aniba guianensis</i>	Lauraceae	Aubl.	35	1	func. specialist
<i>Oxandra riedeliana*</i>	Annonaceae	R.E. Fr.	34	2	func. specialist
<i>Ormosia coccinea*</i>	Fabaceae	(Aubl.) Jacks.	32	7	func. specialist
<i>Bocageopsis multiflora*</i>	Annonaceae	(Mart.) R.E.Fr.	26	2	func. specialist
<i>Aniba hostmanniana</i>	Lauraceae	(Nees) Mez	16	1	func. specialist
<i>Symmeria paniculata</i>	Polygonaceae	Benth.	15	1	func. specialist
<i>Chimarrhis hookeri</i>	Rubiaceae	K.Schum.	13	1	func. specialist

<i>Heisteria acuminata</i>	Olacaceae	(Humb. & Bonpl.) Engl.	12	1	func. specialist
<i>Botryarrhena pendula</i>	Rubiaceae	Ducke	7	1	func. specialist
<i>Mauritia flexuosa</i>	Arecaceae	L.f.	257	9	PS spillover
<i>Tabebuia insignis var. monophylla</i> #*	Bignoniaceae	(Miq.) Sandwith	839	8	PS spillover
<i>Ilex vismiifolia</i>	Aquifoliaceae	Reissek	72	6	PS spillover
<i>Cybianthus cf. reticulatus</i> #*	Primulaceae	(Benth. ex Miq.) G.Agostini	1364	7	PS spillover
<i>Macrobium multijugum</i>	Fabaceae	(DC.) Benth.	406	2	PS spillover
<i>Buchenavia amazonia</i>	Combretaceae	Alwan & Stace	3	1	PS spillover
<i>Brosimum utile</i> *	Moraceae	(Kunth) Oken	25	8	Generalist
<i>Cariniana decandra</i> *	Lecythidaceae	Ducke	79	4	TF spillover
<i>Ficus americana</i> *	Moraceae	Aubl.	13	7	Other
<i>Guatteria decurrens</i> *	Annonaceae	R.E.Fr.	47	7	WS spillover
<i>Hevea guianensis</i> *	Euphorbiaceae	Aubl.	415	10	Generalist
<i>Macrobium_angustifolium</i> *	Fabaceae	(Benth.) Cowan	45	4	WS spillover
<i>Ocotea_cernua</i> *	Lauraceae	(Nees) Mez	18	4	other

# refers to species that are found only in peatland ecosystems

\*refers to indicator species

### Appendix 3.2 Lists of species that qualify for palm swamp specialist ecological guilds

Species	Family	Authority	Number of individuals	Number of plots	Ecological Guild
<i>Inga sapindoides</i> *	Fabaceae	Willd.	33	3	strict specialist
<i>Bactris brongniartii</i>	Arecaceae	Mart.	18	1	strict specialist
<i>Macrobium huberianum</i>	Fabaceae	Ducke	13	1	strict specialist
<i>Amanoa oblongifolia</i>	Phyllanthaceae	Müll.Arg.	11	2	strict specialist
<i>Terminalia dichotoma</i> *	Combretaceae	G.Mey.	9	4	strict specialist
<i>Crematosperma microcarpum</i>	Annonaceae	R.E.Fr.	5	2	strict specialist
<i>Ruptiliocarpon caracolito</i> *	Lepidobotryaceae	Hammel & N.Zamora	52	4	func. specialist
<i>Amanoa guianensis</i>	Phyllanthaceae	Aubl.	20	3	func. specialist
<i>Astrocaryum jauari</i>	Arecaceae	Mart.	16	2	func. specialist
<i>Cecropia latiloba</i> *	Urticaceae	Miq.	15	4	func. specialist
<i>Protium glabrescens</i>	Burseraceae	Swart	13	2	func. specialist
<i>Coccoloba peruviana</i>	Polygonaceae	Lindau	9	3	func. specialist
<i>Alchornea latifolia</i> #	Euphorbiaceae	Sw.	8	2	func. specialist
<i>Bactris concinna</i>	Arecaceae	Mart.	8	1	func. specialist
<i>Pterocarpus santalinoides</i>	Fabaceae	DC.	8	1	func. specialist
<i>Klarobelia inundata</i>	Annonaceae	Chatrou	7	4	func. specialist
<i>Oenocarpus balickii</i>	Arecaceae	F.Kahn	6	1	func. specialist
<i>Inga chartacea</i>	Fabaceae	Poepp.	5	1	func. specialist
<i>Ficus maxima</i>	Moraceae	Mill.	4	2	func. specialist

<i>Mauritia flexuosa</i>	Areaceae	L.f.	1535	15	peatland pole forest spill-over
<i>Tabebuia insignis</i> var. <i>monophylla</i> #	Bignoniaceae	(Miq.) Sandwith	259	5	peatland pole forest spill-over
<i>Ilex vismiifolia</i> *	Aquifoliaceae	Reissek	75	6	peatland pole forest spill-over
<i>Cybianthus cf. reticulatus</i>	Primulaceae	(Benth. ex Miq.) G.Agostini	13	2	peatland pole forest spill-over
<i>Macrolobium multijugum</i>	Fabaceae	(DC.) Benth.	11	5	peatland pole forest spill-over
<i>Lueheopsis hoehnei</i> #	Malvaceae	Burret	2	2	peatland pole forest spill-over
<i>Sloanea guianensis</i>	Elaeocarpaceae	(Aubl.) Benth.	12	3	peatland pole forest spill-over
<i>Ficus americana</i>	Moraceae	Aubl.	3	3	peatland pole forest spill-over
<i>Alchorneopsis floribunda</i> *	Euphorbiaceae	(Benth.) Müll.Arg.	7	4	Other
<i>Buchenavia Amazonia</i> *	Combretaceae	Alwan & Stace	22	5	Other
<i>Buchenavia macrophylla</i> *	Combretaceae	Spruce ex Eichler	7	4	Other
<i>Cecropia engleriana</i> *	Urticaceae	Snethl.	9	5	SF spill-over
<i>Cespedesia spathulata</i> *		(Ruiz & Pav.) Planch.	21	3	Other
<i>Diospyros artanthifolia</i> *			7	4	Other
<i>Euterpe precatória</i> *	Areaceae	Mart.	214	10	Generalist
<i>Hura crepitans</i> *	Euphorbiaceae	L.	67	9	SF spill-over

<i>Mauritia flexuosa</i> *	Arecaceae	L.f.	1535	15	PF spill-over
<i>Mauritiella armata</i> *	Arecaceae	(Mart.) Burret	379	8	Generalist
<i>Pachira aquatica</i> *	Malvaceae		15	8	SF spill-over
<i>Socratea exorrhiza</i> *	Arecaceae	(Mart.) H.Wendl.	128	8	Generalist
<i>Symphonia globulifera</i> *	Clusiaceae	L.f.	114	12	TF spill-over
<i>Virola pavonis</i> *	Myristicaceae	(A.DC.) A.C.Sm.	181	11	Generalist

# refers to species that are found only in peatland ecosystems