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The impact of sustainable forest management on plant and bird diversity in East Kalimantan, Indonesia

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Appendix 1

List of all tree species recorded in the 10 × 10 m subplot. After each family, genus and species name respectively plant type, observed number of stems (N) and number of subplots having at least on stem exceeding 1.3 m in high of this species (S) per forest disturbance type (0 = primary forest, 1 = secondary forest, 1 year after logged, 2 = 5 years after logged, 3 = 10 years after logged).

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Actinidiaceae	<i>Saurauia</i>	sp.1	dicot tree	0	1	0	0	0	1	0	0
Alangiaceae	<i>Alangium</i>	javanicum	dicot tree	0	3	0	0	0	3	0	0
Anacardiaceae	<i>Buchanania</i>	sessifolia	dicot tree	2	3	2	3	2	3	2	3
Anacardiaceae	<i>Dracontomelon</i>	dao	dicot tree	0	1	1	0	0	1	1	0
Anacardiaceae	<i>Drimycarpus</i>	luridus	dicot tree	1	3	0	0	1	3	0	0
Anacardiaceae	<i>Gluta</i>	macrocarpa	dicot tree	0	0	1	0	0	0	1	0
Anacardiaceae	<i>Gluta</i>	renghas	dicot tree	0	0	8	11	0	0	8	10
Anacardiaceae	<i>Gluta</i>	wallichii	dicot tree	0	0	1	0	0	0	1	0
Anacardiaceae	<i>Koordersiodendron</i>	pinnatum	dicot tree	0	2	0	0	0	2	0	0
Anacardiaceae	<i>Mangifera</i>	macrocarpa	dicot tree	0	0	0	1	0	0	0	1
Anacardiaceae	<i>Mangifera</i>	pajang	dicot tree	1	0	0	0	1	0	0	0
Anacardiaceae	<i>Semecarpus</i>	glaucous	dicot tree	0	1	0	0	0	1	0	0
Annonaceae	<i>Cyathocalyx</i>	sumatrana	dicot tree	0	1	0	0	0	1	0	0
Annonaceae	<i>Enicosanthum</i>	paradoxum	dicot tree	1	1	0	0	1	1	0	0
Annonaceae	<i>Mezzettia</i>	parviflora	dicot tree	2	1	1	4	1	1	1	4
Annonaceae	<i>Polyalthia</i>	cauliflora	dicot tree	2	6	0	0	2	4	0	0
Annonaceae	<i>Polyalthia</i>	glauca	dicot tree	2	1	0	0	2	1	0	0
Annonaceae	<i>Polyalthia</i>	lateriflora	dicot tree	1	0	0	0	1	0	0	0
Annonaceae	<i>Polyalthia</i>	rumphii	dicot tree	0	3	2	1	0	3	2	1
Annonaceae	<i>Polyalthia</i>	sumatrana	dicot tree	2	0	0	0	2	0	0	0
Annonaceae	<i>Popowia</i>	hirta	dicot tree	0	1	0	0	0	1	0	0
Annonaceae	<i>Popowia</i>	pisocarpa	dicot tree	0	0	1	0	0	0	1	0
Annonaceae	<i>Sageraea</i>	lanceolata	dicot tree	1	0	0	1	1	0	0	1
Annonaceae	<i>Xylopia</i>	ferruginea	dicot tree	1	4	6	4	1	4	6	4
Apocynaceae	<i>Alstonia</i>	angustifolia	dicot tree	0	0	2	1	0	0	2	1
Apocynaceae	<i>Alstonia</i>	iwahigensis	dicot tree	1	0	1	0	1	0	1	0
Bignoniaceae	<i>Radermachera</i>	pinnata	dicot tree	0	0	0	2	0	0	0	2
Burseraceae	<i>Canarium</i>	denticulatum	dicot tree	5	0	5	9	5	0	4	8
Burseraceae	<i>Canarium</i>	littorale	dicot tree	6	1	5	5	5	1	5	5
Burseraceae	<i>Canarium</i>	megalanthum	dicot tree	9	7	1	0	8	6	1	0
Burseraceae	<i>Dacryodes</i>	rostrata	dicot tree	6	5	2	0	6	5	2	0
Burseraceae	<i>Dacryodes</i>	<i>rugosa</i>	dicot tree	7	1	4	2	7	1	4	2
Burseraceae	<i>Santiria</i>	<i>apiculata</i>	dicot tree	0	2	0	0	0	2	0	0
Burseraceae	<i>Santiria</i>	<i>griffithii</i>	dicot tree	0	2	5	7	0	2	5	6

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Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Caesalpiniaceae	Cynometra	<i>elmeri</i>	dicot tree	16	1	0	0	14	1	0	0
Caesalpiniaceae	Dialium	<i>indum</i>	dicot tree	6	3	3	5	6	3	3	5
Caesalpiniaceae	Dialium	<i>platysepalum</i>	dicot tree	0	0	1	0	0	0	1	0
Caesalpiniaceae	Koompassia	<i>excelsa</i>	dicot tree	0	1	0	0	0	1	0	0
Caesalpiniaceae	Koompassia	<i>malaccensis</i>	dicot tree	2	1	7	8	2	1	7	8
Caesalpiniaceae	Saraca	<i>declinata</i>	dicot tree	9	3	0	0	8	2	0	0
Caesalpiniaceae	Sindora	<i>leiocarpa</i>	dicot tree	0	4	1	0	0	4	1	0
Caesalpiniaceae	Sindora	<i>velutina</i>	dicot tree	1	1	2	1	1	1	2	1
Celastraceae	Kokoona	<i>reflexa</i>	dicot tree	0	1	2	2	0	1	2	2
Celastraceae	Lophopetalum	<i>javanicum</i>	dicot tree	1	0	3	6	1	0	3	6
Chrysobalanaceae	Atuna	<i>racemosa</i>	dicot tree	0	1	0	0	0	1	0	0
Chrysobalanaceae	Parinari	<i>canaroides</i>	dicot tree	1	0	1	0	1	0	1	0
Chrysobalanaceae	Parinari	<i>oblongifolia</i>	dicot tree	1	0	1	0	1	0	1	0
Crypteroniaceae	Crypteronia	<i>borneensis</i>	dicot tree	1	0	0	0	1	0	0	0
Crypteroniaceae	Crypteronia	<i>griffithii</i>	dicot tree	2	2	0	0	2	2	0	0
Dilleniaceae	<i>Dillenia</i>	<i>excelsa</i>	dicot tree	7	0	1	0	5	0	1	0
Dilleniaceae	<i>Dillenia</i>	<i>reticulata</i>	dicot tree	0	0	1	0	0	0	1	0
Dipterocarpaceae	<i>Anisoptera</i>	<i>costata</i>	dicot tree	0	0	1	5	0	0	1	4
Dipterocarpaceae	<i>Cotylelobium</i>	<i>melanoxylum</i>	dicot tree	1	0	1	4	1	0	1	4
Dipterocarpaceae	<i>Dipterocarpus</i>	<i>acutangulus</i>	dicot tree	2	0	3	1	2	0	3	1
Dipterocarpaceae	<i>Dipterocarpus</i>	<i>confertus</i>	dicot tree	3	0	1	1	3	0	1	1
Dipterocarpaceae	<i>Dipterocarpus</i>	<i>crinitus</i>	dicot tree	0	0	0	1	0	0	0	1
Dipterocarpaceae	<i>Dipterocarpus</i>	<i>eurynchus</i>	dicot tree	1	0	0	0	1	0	0	0
Dipterocarpaceae	<i>Dipterocarpus</i>	<i>grandiflorus</i>	dicot tree	0	0	4	4	0	0	4	4
Dipterocarpaceae	<i>Dipterocarpus</i>	<i>lowii</i>	dicot tree	9	0	0	0	9	0	0	0
Dipterocarpaceae	<i>Dipterocarpus</i>	<i>palembanicus</i>	dicot tree	0	0	0	6	0	0	0	5
Dipterocarpaceae	<i>Dipterocarpus</i>	<i>stellatus</i>	dicot tree	0	0	0	8	0	0	0	7
Dipterocarpaceae	<i>Dipterocarpus</i>	<i>tempehes</i>	dicot tree	0	1	0	0	0	1	0	0
Dipterocarpaceae	<i>Dipterocarpus</i>	<i>verrucosus</i>	dicot tree	0	0	1	1	0	0	1	1
Dipterocarpaceae	<i>Dryobalanops</i>	<i>beccarii</i>	dicot tree	0	5	0	0	0	5	0	0
Dipterocarpaceae	<i>Dryobalanops</i>	<i>lanceolata</i>	dicot tree	0	3	0	0	0	3	0	0
Dipterocarpaceae	Hopea	<i>cernua</i>	dicot tree	0	0	21	10	0	0	15	9
Dipterocarpaceae	Hopea	<i>dryobalanoides</i>	dicot tree	0	9	0	0	0	7	0	0
Dipterocarpaceae	Hopea	<i>pachycarpa</i>	dicot tree	2	2	3	0	2	2	3	0
Dipterocarpaceae	Hopea	<i>semicuneata</i>	dicot tree	76	0	0	0	54	0	0	0
Dipterocarpaceae	Parashorea	<i>malaanonan</i>	dicot tree	0	2	0	0	0	2	0	0
Dipterocarpaceae	Parashorea	<i>smithisii</i>	dicot tree	1	0	0	0	1	0	0	0
Dipterocarpaceae	Shorea	<i>agamii</i>	dicot tree	1	1	0	2	1	1	0	2
Dipterocarpaceae	Shorea	<i>almon</i>	dicot tree	0	1	1	0	0	1	1	0
Dipterocarpaceae	Shorea	<i>atrinerivosa</i>	dicot tree	0	0	1	0	0	0	1	0
Dipterocarpaceae	Shorea	<i>beccariana</i>	dicot tree	0	0	4	2	0	0	4	2
Dipterocarpaceae	Shorea	<i>collaris</i>	dicot tree	0	0	0	1	0	0	0	1
Dipterocarpaceae	Shorea	<i>elliptica</i>	dicot tree	0	1	0	0	0	1	0	0
Dipterocarpaceae	Shorea	<i>exelliptica</i>	dicot tree	0	1	2	7	0	1	2	7

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Dipterocarpaceae	Shorea	hopeifolia	dicot tree	1	0	0	2	1	0	0	2
Dipterocarpaceae	Shorea	inappendiculata	dicot tree	0	0	0	10	0	0	0	8
Dipterocarpaceae	Shorea	laevis	dicot tree	0	1	1	3	0	1	1	3
Dipterocarpaceae	Shorea	leprosula	dicot tree	3	6	1	0	3	4	1	0
Dipterocarpaceae	Shorea	longisperma	dicot tree	0	0	0	1	0	0	0	1
Dipterocarpaceae	Shorea	macrophylla	dicot tree	0	0	0	4	0	0	0	3
Dipterocarpaceae	Shorea	macroptera	dicot tree	1	0	5	6	1	0	5	6
Dipterocarpaceae	Shorea	maxwelliana	dicot tree	0	0	0	6	0	0	0	6
Dipterocarpaceae	Shorea	mecistopterix	dicot tree	1	0	0	0	1	0	0	0
Dipterocarpaceae	Shorea	mujogensis	dicot tree	1	0	0	0	1	0	0	0
Dipterocarpaceae	Shorea	ovalis	dicot tree	0	0	1	1	0	0	1	1
Dipterocarpaceae	Shorea	parvifolia	dicot tree	1	24	6	12	1	18	6	10
Dipterocarpaceae	Shorea	parvistipulata	dicot tree	3	6	3	6	3	6	3	6
Dipterocarpaceae	Shorea	patoiensis	dicot tree	1	0	0	0	1	0	0	0
Dipterocarpaceae	Shorea	pauciflora	dicot tree	2	1	5	3	2	1	5	3
Dipterocarpaceae	Shorea	pinanga	dicot tree	3	17	6	1	3	9	5	1
Dipterocarpaceae	Shorea	retusa	dicot tree	0	0	1	7	0	0	1	7
Dipterocarpaceae	Shorea	seminis	dicot tree	0	6	0	0	0	2	0	0
Dipterocarpaceae	Shorea	smithiana	dicot tree	4	5	1	4	4	5	1	4
Dipterocarpaceae	Vatica	micrantha	dicot tree	0	3	0	0	0	2	0	0
Dipterocarpaceae	Vatica	nitens	dicot tree	1	0	5	13	1	0	5	13
Dipterocarpaceae	Vatica	oblongifolia	dicot tree	5	3	9	6	5	3	9	5
Dipterocarpaceae	Vatica	umbonata	dicot tree	0	0	5	0	0	0	4	0
Ebenaceae	Diospyros	banthamensis	dicot tree	2	0	0	0	2	0	0	0
Ebenaceae	Diospyros	borneensis	dicot tree	9	11	0	2	9	11	0	2
Ebenaceae	Diospyros	buxifolia	dicot tree	0	5	1	1	0	5	1	1
Ebenaceae	Diospyros	confertiflora	dicot tree	1	0	0	0	1	0	0	0
Ebenaceae	Diospyros	curranii	dicot tree	16	5	0	0	15	5	0	0
Ebenaceae	Diospyros	densa	dicot tree	0	1	1	0	0	1	1	0
Ebenaceae	Diospyros	pendula	dicot tree	1	0	0	0	1	0	0	0
Ebenaceae	Diospyros	sp.1	dicot tree	0	2	0	0	0	2	0	0
Elaeocarpaceae	Elaeocarpus	beccarii	dicot tree	0	1	0	0	0	1	0	0
Elaeocarpaceae	Elaeocarpus	macrocerus	dicot tree	0	0	0	1	0	0	0	1
Elaeocarpaceae	Elaeocarpus	sp.	dicot tree	0	0	0	1	0	0	0	1
Elaeocarpaceae	Elaeocarpus	stipularis	dicot tree	0	1	1	2	0	1	1	2
Elaeocarpaceae	Sloanea	javanica	dicot tree	0	1	0	0	0	1	0	0
Erythroxylaceae	Erythroxylum	cuneatum	dicot tree	1	1	0	0	1	1	0	0
Euphorbiaceae	Aporosa	benthamiana	dicot tree	0	1	0	0	0	1	0	0
Euphorbiaceae	Aporosa	dioica	dicot tree	3	7	2	1	3	7	2	1
Euphorbiaceae	Aporosa	nervosa	dicot tree	0	0	1	0	0	0	1	0
Euphorbiaceae	Aporosa	nitida	dicot tree	0	1	1	0	0	1	1	0
Euphorbiaceae	Baccaurea	angulata	dicot tree	0	4	0	0	0	2	0	0
Euphorbiaceae	Baccaurea	macrocarpa	dicot tree	0	7	0	0	0	6	0	0
Euphorbiaceae	Baccaurea	sumatrana	dicot tree	0	2	1	0	0	2	1	0

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Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Euphorbiaceae	Chaetocarpus	castanocarpus	dicot tree	19	4	3	12	18	4	3	12
Euphorbiaceae	Cleistanthus	erycibifolius	dicot tree	1	0	0	0	1	0	0	0
Euphorbiaceae	Cleistanthus	myrianthus	dicot tree	1	1	0	0	1	1	0	0
Euphorbiaceae	Croton	argyratus	dicot tree	6	0	0	0	5	0	0	0
Euphorbiaceae	Croton	caudatus	dicot tree	1	0	0	0	1	0	0	0
Euphorbiaceae	Drypetes	kikir	dicot tree	1	0	11	6	1	0	10	6
Euphorbiaceae	Drypetes	longifolia	dicot tree	3	4	0	0	3	4	0	0
Euphorbiaceae	Galearia	fulva	dicot tree	7	0	0	0	3	0	0	0
Euphorbiaceae	Macaranga	bancana	dicot tree	0	0	3	0	0	0	3	0
Euphorbiaceae	Macaranga	beccariana	dicot tree	0	0	4	2	0	0	3	1
Euphorbiaceae	Macaranga	gigantea	dicot tree	0	1	3	10	0	1	1	9
Euphorbiaceae	Macaranga	hypoleuca	dicot tree	0	2	5	2	0	1	5	2
Euphorbiaceae	Mallotus	muticus	dicot tree	0	5	0	0	0	5	0	0
Euphorbiaceae	Moultonianthus	leembruggianus	dicot tree	1	0	3	2	1	0	3	2
Euphorbiaceae	Neoscortechinia	kingii	dicot tree	2	2	11	10	2	2	10	9
Euphorbiaceae	Paracroton	pendulus	dicot tree	2	0	2	0	2	0	2	0
Euphorbiaceae	Pimelodendron	griffithianum	dicot tree	4	3	0	4	4	3	0	4
Euphorbiaceae	Trigonostemon	laevigatus	dicot tree	0	1	0	0	0	1	0	0
Fagaceae	Castanopsis	fulva	dicot tree	0	0	2	0	0	0	2	0
Fagaceae	Lithocarpus	coopertus	dicot tree	4	6	9	4	4	5	8	4
Fagaceae	Lithocarpus	garciae	dicot tree	0	5	1	0	0	4	1	0
Flacourtiaceae	Hydnocarpus	polypetala	dicot tree	19	0	0	0	18	0	0	0
Flacourtiaceae	Ryparosa	kostermansii	dicot tree	0	3	0	0	0	3	0	0
Guttiferae	Calophyllum	gracilipes	dicot tree	0	0	1	2	0	0	1	2
Guttiferae	Calophyllum	soulatri	dicot tree	0	4	0	0	0	4	0	0
Guttiferae	Calophyllum	wallichianum	dicot tree	4	0	3	3	4	0	3	3
Guttiferae	Garcinia	celebica	dicot tree	2	1	0	1	2	1	0	1
Guttiferae	Garcinia	sp.1	dicot tree	0	0	0	1	0	0	0	1
Guttiferae	Kayea	borneensis	dicot tree	13	1	0	1	13	1	0	1
Guttiferae	Mesua	conoidea	dicot tree	0	1	1	0	0	1	1	0
Hypericaceae	Cratoxylum	sumatranum	dicot tree	17	0	0	0	12	0	0	0
Icacinaeae	Stemonurus	scorpioides	dicot tree	4	1	1	2	4	1	1	2
Lauraceae	Alseodaphne	elmeri	dicot tree	1	5	14	8	1	5	14	8
Lauraceae	Alseodaphne	sp.	dicot tree	0	1	0	0	0	1	0	0
Lauraceae	Beilschmiedia	dictyoneura	dicot tree	0	2	0	0	0	2	0	0
Lauraceae	Cinnamomum	cuspidatum	dicot tree	0	1	0	0	0	1	0	0
Lauraceae	Cryptocarya	crassinervia	dicot tree	0	0	0	1	0	0	0	1
Lauraceae	Dehaasia	peduncularis	dicot tree	1	2	0	0	1	2	0	0
Lauraceae	Endiandra	kingiana	dicot tree	4	5	6	6	4	5	6	6
Lauraceae	Eusideroxylon	zwageri	dicot tree	0	25	0	0	0	23	0	0
Lauraceae	Litsea	firma	dicot tree	3	0	0	0	3	0	0	0
Lauraceae	Litsea	oppositifolia	dicot tree	1	0	1	0	1	0	1	0

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Lecythidaceae	<i>Barringtonia</i>	macrostachya	dicot tree	6	4	12	9	6	4	9	9
Lecythidaceae	<i>Barringtonia</i>	pendula	dicot tree	1	1	3	6	1	1	3	6
Lecythidaceae	<i>Planchonia</i>	vallida	dicot tree	1	0	0	0	1	0	0	0
Loganiaceae	<i>Fagraea</i>	racemosa	dicot tree	0	1	0	0	0	1	0	0
Magnoliaceae	<i>Magnolia</i>	candollii	dicot tree	4	1	1	0	4	1	1	0
Magnoliaceae	<i>Magnolia</i>	pendula	dicot tree	0	0	0	1	0	0	0	1
Malvaceae	<i>Durio</i>	dulcis	dicot tree	1	2	0	0	1	2	0	0
Malvaceae	<i>Durio</i>	graveolens	dicot tree	3	2	0	2	3	2	0	2
Malvaceae	<i>Durio</i>	griffithii	dicot tree	0	0	1	0	0	0	1	0
Malvaceae	<i>Durio</i>	oxleyanus	dicot tree	1	1	0	1	1	1	0	1
Malvaceae	<i>Durio</i>	testudinarius	dicot tree	0	1	0	0	0	1	0	0
Melastomataceae	<i>Memecylon</i>	borneensis	dicot tree	1	2	5	0	1	2	5	0
Melastomataceae	<i>Memecylon</i>	edule	dicot tree	4	0	0	0	4	0	0	0
Melastomataceae	<i>Memecylon</i>	oleaefolium	dicot tree	0	0	2	1	0	0	2	1
Melastomataceae	<i>Pternandra</i>	azurea	dicot tree	1	0	1	0	1	0	1	0
Melastomataceae	<i>Pternandra</i>	galeata	dicot tree	0	0	0	1	0	0	0	1
Melastomataceae	<i>Pternandra</i>	rostrata	dicot tree	0	2	1	2	0	2	1	2
Meliaceae	<i>Aglaia</i>	pachyphylla	dicot tree	2	4	0	0	2	4	0	0
Meliaceae	<i>Aglaia</i>	shawiana	dicot tree	1	1	0	0	1	1	0	0
Meliaceae	<i>Aglaia</i>	simplicifolia	dicot tree	0	1	0	0	0	1	0	0
Meliaceae	<i>Aglaia</i>	sp.1	dicot tree	0	0	1	0	0	0	1	0
Meliaceae	<i>Aglaia</i>	tomentosa	dicot tree	0	1	1	0	0	1	1	0
Meliaceae	<i>Chisocheton</i>	sp.	dicot tree	0	1	0	0	0	1	0	0
Mimosaceae	<i>Archidendron</i>	cockburnii	dicot tree	3	4	0	0	3	4	0	0
Mimosaceae	<i>Parkia</i>	speciosa	dicot tree	1	0	2	0	1	0	2	0
Moraceae	<i>Artocarpus</i>	anisophyllus	dicot tree	4	0	1	5	4	0	1	5
Moraceae	<i>Artocarpus</i>	elasticus	dicot tree	5	6	7	2	5	6	7	2
Moraceae	<i>Artocarpus</i>	lanceifolius	dicot tree	1	5	0	0	1	5	0	0
Moraceae	<i>Ficus</i>	variegata	dicot tree	0	0	0	1	0	0	0	1
Moraceae	<i>Parartocarpus</i>	bracteatus	dicot tree	2	2	1	0	2	2	1	0
Myristicaceae	<i>Gymnacranthera</i>	farquhariana	dicot tree	5	12	2	3	5	11	2	3
Myristicaceae	<i>Horsfieldia</i>	borneensis	dicot tree	0	0	1	0	0	0	1	0
Myristicaceae	<i>Horsfieldia</i>	polyspherula	dicot tree	0	1	14	4	0	1	13	4
Myristicaceae	<i>Knema</i>	elmeri	dicot tree	1	0	2	1	1	0	2	1
Myristicaceae	<i>Knema</i>	furfuracea	dicot tree	3	0	0	1	3	0	0	1
Myristicaceae	<i>Knema</i>	laurina	dicot tree	8	16	1	2	7	15	1	2
Myristicaceae	<i>Knema</i>	subhirtella	dicot tree	0	0	1	0	0	0	1	0
Myristicaceae	<i>Myristica</i>	iners	dicot tree	2	9	1	0	2	9	1	0
Myristicaceae	<i>Myristica</i>	villosa	dicot tree	1	5	3	12	1	5	3	12
Myrsinaceae	<i>Ardisia</i>	korthalsiana	dicot tree	0	0	1	1	0	0	1	1
Myrsinaceae	<i>Ardisia</i>	sp.	dicot tree	0	1	0	0	0	1	0	0
Myrtaceae	<i>Syzygium</i>	caudatilimba	dicot tree	5	8	1	0	5	8	1	0
Myrtaceae	<i>Syzygium</i>	leptostemon	dicot tree	0	0	0	1	0	0	0	1

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Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Myrtaceae	<i>Syzygium</i>	sp.	dicot tree	1	0	0	0	1	0	0	0
Myrtaceae	<i>Syzygium</i>	sp.1	dicot tree	0	1	0	0	0	1	0	0
Myrtaceae	<i>Syzygium</i>	sp.2	dicot tree	0	1	1	1	0	1	1	1
Myrtaceae	<i>Syzygium</i>	sp.3	dicot tree	0	1	0	0	0	1	0	0
Myrtaceae	<i>Syzygium</i>	sp.4	dicot tree	0	3	1	5	0	3	1	5
Myrtaceae	<i>Syzygium</i>	tawahense	dicot tree	16	15	42	21	13	14	32	20
Myrtaceae	<i>Tristania</i>	whitiana	dicot tree	1	0	0	0	1	0	0	0
Oleaceae	<i>Ochanostachys</i>	amentacea	dicot tree	0	1	1	1	0	1	1	1
Oleaceae	<i>Strombosia</i>	ceylanica	dicot tree	3	1	2	7	3	1	2	7
Oleaceae	<i>Chionanthus</i>	sp.1	dicot tree	15	2	9	0	14	2	9	0
Oleaceae	<i>Chionanthus</i>	sp.2	dicot tree	1	0	0	0	1	0	0	0
Oxalidaceae	<i>Sarcotheca</i>	diversifolia	dicot tree	1	0	1	3	1	0	1	3
Oxalidaceae	<i>Sarcotheca</i>	rubrinervis	dicot tree	4	4	2	0	4	4	2	0
Palmae	<i>Oncosperma</i>	horidum	palm tree	0	7	0	3	0	5	0	1
Papilionaceae	<i>Fordia</i>	splendidissima	dicot tree	1	0	0	0	1	0	0	0
Polygalaceae	<i>Xanthophyllum</i>	affine	dicot tree	2	0	7	2	2	0	7	2
Polygalaceae	<i>Xanthophyllum</i>	clovis	dicot tree	1	0	0	0	1	0	0	0
Polygalaceae	<i>Xanthophyllum</i>	obscurum	dicot tree	4	1	3	4	3	1	2	4
Polygalaceae	<i>Xanthophyllum</i>	rufum	dicot tree	0	0	1	0	0	0	1	0
Polygalaceae	<i>Xanthophyllum</i>	stipitatum	dicot tree	1	0	0	1	1	0	0	1
Rhizophoraceae	<i>Anisophyllea</i>	corneri	dicot tree	1	0	3	1	1	0	2	1
Rhizophoraceae	<i>Carallia</i>	brachiata	dicot tree	0	1	0	0	0	1	0	0
Rosaceae	<i>Prunus</i>	beccarii	dicot tree	1	2	2	0	1	2	2	0
Rubiaceae	<i>Anthocephalus</i>	chinensis	dicot tree	0	1	1	0	0	1	1	0
Rubiaceae	<i>Gardenia</i>	tubifera	dicot tree	3	1	0	0	3	1	0	0
Rubiaceae	<i>Hypobathrum</i>	sp.	dicot tree	0	0	1	0	0	0	1	0
Rubiaceae	<i>Musaendopsis</i>	sp.	dicot tree	2	0	0	0	2	0	0	0
Rubiaceae	<i>Nauclea</i>	subdita	dicot tree	1	3	2	0	1	3	2	0
Rubiaceae	<i>Neonauclea</i>	gigantea	dicot tree	0	1	0	0	0	1	0	0
Rubiaceae	<i>Pertusadina</i>	euryncha	dicot tree	0	0	0	1	0	0	0	1
Rubiaceae	<i>Porterandia</i>	anisophylla	dicot tree	0	1	0	1	0	1	0	1
Rubiaceae	<i>Rothmannia</i>	schoemania	dicot tree	0	1	0	0	0	1	0	0
Rubiaceae	<i>Tarenna</i>	rostrata	dicot tree	0	1	0	0	0	1	0	0
Rubiaceae	<i>Timonius</i>	flavescens	dicot tree	2	0	1	0	2	0	1	0
Rubiaceae	<i>Urophyllum</i>	arborescens	dicot tree	0	1	0	0	0	1	0	0
Sapindaceae	<i>Dimocarpus</i>	longan	dicot tree	1	3	0	0	1	3	0	0
Sapindaceae	<i>Nephelium</i>	laurinum	dicot tree	2	0	0	2	2	0	0	2
Sapindaceae	<i>Nephelium</i>	rambutan-ake	dicot tree	0	2	0	0	0	2	0	0
Sapindaceae	<i>Paranephelium</i>	xestophyllum	dicot tree	0	1	0	0	0	1	0	0
Sapindaceae	<i>Pometia</i>	pinnata	dicot tree	5	0	1	0	5	0	1	0
Sapindaceae	<i>Xerospermum</i>	noronhianum	dicot tree	0	0	0	3	0	0	0	3

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Sapotaceae	Madhuca	<i>kingiana</i>	dicot tree	5	1	5	0	5	1	5	0
Sapotaceae	Madhuca	<i>malaccensis</i>	dicot tree	8	1	46	58	7	1	37	42
Sapotaceae	Madhuca	<i>sericea</i>	dicot tree	1	0	5	2	1	0	5	2
Sapotaceae	Madhuca	<i>sessilis</i>	dicot tree	5	1	0	0	5	1	0	0
Sapotaceae	Palaquium	<i>beccarianum</i>	dicot tree	1	0	0	0	1	0	0	0
Sapotaceae	Palaquium	<i>borneensis</i>	dicot tree	0	1	0	0	0	1	0	0
Sapotaceae	Palaquium	<i>calophyllum</i>	dicot tree	0	16	5	5	0	14	5	4
Sapotaceae	Palaquium	<i>quercifolium</i>	dicot tree	0	1	0	0	0	1	0	0
Sapotaceae	Palaquium	<i>sp.1</i>	dicot tree	0	0	1	0	0	0	1	0
Sapotaceae	Palaquium	<i>stenophyllum</i>	dicot tree	12	1	7	6	12	1	6	6
Sapotaceae	Payena	<i>acuminata</i>	dicot tree	0	0	0	1	0	0	0	1
Simaroubaceae	Allanthospermum	<i>borneensis</i>	dicot tree	0	0	0	47	0	0	0	42
Simaroubaceae	<i>Irvingia</i>	<i>malayana</i>	dicot tree	0	0	0	1	0	0	0	1
Sterculiaceae	Heritiera	<i>elata</i>	dicot tree	6	0	2	1	6	0	2	1
Sterculiaceae	Heritiera	<i>symplicifolia</i>	dicot tree	1	0	4	2	1	0	4	2
Sterculiaceae	Scaphium	<i>macropodium</i>	dicot tree	3	3	3	10	3	3	3	10
Sterculiaceae	Sterculia	<i>macrophylla</i>	dicot tree	1	0	1	0	1	0	1	0
Sterculiaceae	Sterculia	<i>rubiginosa</i>	dicot tree	3	2	1	1	3	2	1	1
Symplocaceae	Symplocos	<i>crassipes</i>	dicot tree	2	1	0	0	2	1	0	0
Theaceae	Tetramerista	<i>glabra</i>	dicot tree	0	0	3	0	0	0	3	0
Thymelaeaceae	Gonystylus	<i>bancanus</i>	dicot tree	2	0	1	0	2	0	1	0
Thymelaeaceae	Gonystylus	<i>macrophyllus</i>	dicot tree	5	2	0	4	5	2	0	4
Tiliaceae	Grewia	<i>fibrocarpa</i>	dicot tree	0	2	0	0	0	2	0	0
Tiliaceae	Microcos	<i>crassifolia</i>	dicot tree	0	3	1	0	0	3	1	0
Tiliaceae	Pentace	<i>adenophora</i>	dicot tree	3	1	1	0	3	1	1	0
Tiliaceae	Pentace	<i>laxiflora</i>	dicot tree	0	1	2	1	0	1	2	1
Tiliaceae	Pentace	<i>polyantha</i>	dicot tree	2	0	0	2	1	0	0	2
Ulmaceae	Gironniera	<i>nervosa</i>	dicot tree	3	3	10	9	3	3	10	9
Verbenaceae	Teijsmanniodendron	<i>coriaceum</i>	dicot tree	32	0	0	0	23	0	0	0
Verbenaceae	Teijsmanniodendron	<i>pteropodium</i>	dicot tree	7	0	1	0	7	0	1	0

Appendix 2

List of all saplings species recorded in the 5 x 5 m subplot. After each family, genus and species name respectively plant type, observed number of stems (N) and number of subplots having at least on stem exceeding dbh < 10 cm in height ≥ 1.5 m of this species (S) per forest disturbance type (0 = primary forest, 1 = secondary forest, 1 year after logged, 2 = 5 years after logged, 3 = 10 years after logged).

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Anacardiaceae	<i>Buchanania</i>	sessifolia	dicot tree	0	1	0	2	0	1	0	2
Anacardiaceae	<i>Drimycarpus</i>	luridus	dicot tree	1	1	0	1	1	1	0	1
Anacardiaceae	<i>Gluta</i>	renghas	dicot tree	1	0	0	7	1	0	0	3
Anacardiaceae	<i>Koordersiodendron</i>	pinnatum	dicot tree	0	1	1	0	0	1	1	0
Anacardiaceae	<i>Mangifera</i>	pajang	dicot tree	3	0	0	0	3	0	0	0
Annonaceae	<i>Anaxagorea</i>	javanica	dicot tree	4	0	0	0	3	0	0	0
Annonaceae	<i>Goniiothalamus</i>	macrophyllus	dicot tree	1	0	0	0	1	0	0	0
Annonaceae	<i>Mezzettia</i>	parviflora	dicot tree	1	0	2	2	1	0	2	2
Annonaceae	<i>Polyalthia</i>	cauliflora	dicot tree	0	3	0	0	0	3	0	0
Annonaceae	<i>Polyalthia</i>	lateriflora	dicot tree	0	1	0	0	0	1	0	0
Annonaceae	<i>Polyalthia</i>	microtus	dicot tree	0	1	0	0	0	1	0	0
Annonaceae	<i>Polyalthia</i>	rumphii	dicot tree	2	0	2	1	2	0	2	1
Annonaceae	<i>Popowia</i>	hirta	dicot tree	3	0	0	0	2	0	0	0
Annonaceae	<i>Popowia</i>	pisocarpa	dicot tree	0	0	0	1	0	0	0	1
Annonaceae	<i>Sageraea</i>	lanceolata	dicot tree	0	0	1	1	0	0	1	1
Annonaceae	<i>Xylopia</i>	ferruginea	dicot tree	5	2	4	0	5	2	4	0
Apocynaceae	<i>Alstonia</i>	iwahigensis	dicot tree	0	0	0	1	0	0	0	1
Bignoniaceae	<i>Radermachera</i>	pinnata	dicot tree	1	0	0	0	1	0	0	0
Burseraceae	<i>Canarium</i>	denticulatum	dicot tree	0	0	6	4	0	0	5	2
Burseraceae	<i>Canarium</i>	littorale	dicot tree	2	0	2	1	2	0	2	1
Burseraceae	<i>Canarium</i>	megalanthum	dicot tree	0	0	0	1	0	0	0	1
Burseraceae	<i>Dacryodes</i>	rostrata	dicot tree	4	3	4	2	3	3	3	2
Burseraceae	<i>Dacryodes</i>	rugosa	dicot tree	1	0	1	0	1	0	1	0
Burseraceae	<i>Santiria</i>	griffithii	dicot tree	0	0	0	1	0	0	0	1
Caesalpiniaceae	<i>Cynometra</i>	elmeri	dicot tree	0	2	0	0	0	2	0	0
Caesalpiniaceae	<i>Koompassia</i>	malaccensis	dicot tree	0	0	1	0	0	0	1	0
Caesalpiniaceae	<i>Saraca</i>	declinata	dicot tree	2	0	0	0	1	0	0	0
Caesalpiniaceae	<i>Sindora</i>	velutina	dicot tree	0	1	0	0	0	1	0	0
Celastraceae	<i>Lophopetalum</i>	javanicum	dicot tree	0	1	0	3	0	1	0	2
Chrysobalanaceae	<i>Parinari</i>	canaroides	dicot tree	4	0	1	0	3	0	1	0
Chrysobalanaceae	<i>Parinari</i>	oblongifolia	dicot tree	0	1	0	0	0	1	0	0
Compositae	<i>Vernonia</i>	arborea	dicot tree	0	0	0	1	0	0	0	1
Crypteroniaceae	<i>Crypteronia</i>	griffithii	dicot tree	1	1	3	0	1	1	3	0

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Dilleniaceae	Dillenia	<i>excelsa</i>	dicot tree	3	0	0	0	2	0	0	0
Dilleniaceae	Dillenia	<i>reticulata</i>	dicot tree	1	0	1	1	1	0	1	1
Dilleniaceae	Dillenia	<i>suffruticosa</i>	dicot tree	0	1	0	0	0	1	0	0
Dipterocarpaceae	Cotylelobium	<i>melanoxylum</i>	dicot tree	0	0	2	1	0	0	2	1
Dipterocarpaceae	Dipterocarpus	<i>acutangulus</i>	dicot tree	4	0	2	0	3	0	1	0
Dipterocarpaceae	Dipterocarpus	<i>grandiflorus</i>	dicot tree	0	0	0	1	0	0	0	1
Dipterocarpaceae	Dipterocarpus	<i>palembanicus</i>	dicot tree	0	0	0	2	0	0	0	2
Dipterocarpaceae	Dipterocarpus	<i>tempehes</i>	dicot tree	1	0	0	0	1	0	0	0
Dipterocarpaceae	Dryobalanops	<i>beccarii</i>	dicot tree	0	1	0	0	0	1	0	0
Dipterocarpaceae	Hopea	<i>cernua</i>	dicot tree	0	0	0	2	0	0	0	1
Dipterocarpaceae	Hopea	<i>pachycarpa</i>	dicot tree	0	0	1	0	0	0	1	0
Dipterocarpaceae	Hopea	<i>semicuneata</i>	dicot tree	10	0	0	0	3	0	0	0
Dipterocarpaceae	Shorea	<i>agamii</i>	dicot tree	0	0	1	0	0	0	1	0
Dipterocarpaceae	Shorea	<i>angustifolia</i>	dicot tree	1	5	0	0	1	1	0	0
Dipterocarpaceae	Shorea	<i>atrinvrosa</i>	dicot tree	0	0	0	5	0	0	0	3
Dipterocarpaceae	Shorea	<i>beccariana</i>	dicot tree	0	0	0	1	0	0	0	1
Dipterocarpaceae	Shorea	<i>collaris</i>	dicot tree	0	0	4	0	0	0	2	0
Dipterocarpaceae	Shorea	<i>guiso</i>	dicot tree	1	0	0	0	1	0	0	0
Dipterocarpaceae	Shorea	<i>macroptera</i>	dicot tree	1	0	0	10	1	0	0	3
Dipterocarpaceae	Shorea	<i>maxwelliana</i>	dicot tree	0	0	0	1	0	0	0	1
Dipterocarpaceae	Shorea	<i>mujogensis</i>	dicot tree	0	5	0	0	0	1	0	0
Dipterocarpaceae	Shorea	<i>ovalis</i>	dicot tree	1	0	0	0	1	0	0	0
Dipterocarpaceae	Shorea	<i>parvifolia</i>	dicot tree	0	5	6	4	0	3	4	4
Dipterocarpaceae	Shorea	<i>parvistipulata</i>	dicot tree	0	1	0	2	0	1	0	1
Dipterocarpaceae	Shorea	<i>patoiensis</i>	dicot tree	1	0	0	2	1	0	0	1
Dipterocarpaceae	Shorea	<i>pauciflora</i>	dicot tree	0	0	1	0	0	0	1	0
Dipterocarpaceae	Shorea	<i>pinanga</i>	dicot tree	0	6	3	0	0	3	3	0
Dipterocarpaceae	Shorea	<i>smithiana</i>	dicot tree	0	1	6	0	0	1	3	0
Dipterocarpaceae	Vatica	<i>nitens</i>	dicot tree	0	0	4	0	0	0	2	0
Dipterocarpaceae	Vatica	<i>oblongifolia</i>	dicot tree	4	0	7	3	4	0	5	3
Dipterocarpaceae	Vatica	<i>umbonata</i>	dicot tree	0	0	1	1	0	0	1	1
Ebenaceae	Diospyros	<i>borneensis</i>	dicot tree	2	6	1	0	2	4	1	0
Ebenaceae	Diospyros	<i>buxifolia</i>	dicot tree	1	1	2	1	1	1	2	1
Ebenaceae	Diospyros	<i>curranii</i>	dicot tree	3	0	2	0	3	0	2	0
Ebenaceae	Diospyros	<i>macrophylla</i>	dicot tree	6	0	0	0	3	0	0	0
Ebenaceae	Diospyros	<i>sp.1</i>	dicot tree	0	2	0	0	0	1	0	0
Elaeocarpaceae	Elaeocarpus	<i>roslii</i>	dicot tree	0	0	0	1	0	0	0	1
Elaeocarpaceae	Elaeocarpus	<i>stipularis</i>	dicot tree	1	0	0	0	1	0	0	0
Erythroxylaceae	Erythroxylum	<i>cuneatum</i>	dicot tree	1	0	0	0	1	0	0	0
Euphorbiaceae	Antidesma	<i>montanum</i>	dicot tree	3	4	0	0	2	4	0	0
Euphorbiaceae	Antidesma	<i>neurocarpum</i>	dicot tree	0	3	0	0	0	1	0	0
Euphorbiaceae	Aporosa	<i>dioica</i>	dicot tree	0	0	2	4	0	0	2	3
Euphorbiaceae	Aporosa	<i>nitida</i>	dicot tree	1	1	2	0	1	1	2	0
Euphorbiaceae	Baccaurea	<i>macrocarpa</i>	dicot tree	0	2	0	0	0	1	0	0

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Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Euphorbiaceae	Baccaurea	sumatrana	dicot tree	2	2	0	1	2	2	0	1
Euphorbiaceae	Baccaurea	tetrandra	dicot tree	0	0	0	2	0	0	0	1
Euphorbiaceae	Chaetocarpus	castanocarpus	dicot tree	3	0	3	0	3	0	3	0
Euphorbiaceae	Cleistanthus	erycibifolius	dicot tree	4	0	10	2	4	0	8	2
Euphorbiaceae	Cleistanthus	myrianthus	dicot tree	3	0	0	0	3	0	0	0
Euphorbiaceae	Croton	argyratus	dicot tree	5	0	0	0	3	0	0	0
Euphorbiaceae	Croton	caudatus	dicot tree	1	0	0	2	1	0	0	2
Euphorbiaceae	Drypetes	kikir	dicot tree	0	0	1	0	0	0	1	0
Euphorbiaceae	Drypetes	longifolia	dicot tree	1	1	0	0	1	1	0	0
Euphorbiaceae	Galearia	fulva	dicot tree	3	0	0	0	2	0	0	0
Euphorbiaceae	Glochidion	arborescens	dicot tree	2	25	2	0	2	4	2	0
Euphorbiaceae	Glochidion	calospermum	dicot tree	0	7	0	0	0	3	0	0
Euphorbiaceae	Koilodepas	brevipes	dicot tree	7	10	15	6	6	3	6	4
Euphorbiaceae	Macaranga	bancana	dicot tree	0	0	0	1	0	0	0	1
Euphorbiaceae	Macaranga	beccariana	dicot tree	1	0	0	0	1	0	0	0
Euphorbiaceae	Macaranga	cf. repando-dentata	dicot tree	0	1	0	0	0	1	0	0
Euphorbiaceae	Macaranga	conifera	dicot tree	0	0	0	1	0	0	0	1
Euphorbiaceae	Macaranga	gigantea	dicot tree	0	12	0	3	0	4	0	2
Euphorbiaceae	Macaranga	hypoleuca	dicot tree	0	24	3	5	0	4	3	1
Euphorbiaceae	Macaranga	lowii	dicot tree	0	0	1	2	0	0	1	1
Euphorbiaceae	Mallotus	muticus	dicot tree	4	1	0	4	2	1	0	3
Euphorbiaceae	Mallotus	penangensis	dicot tree	0	0	0	2	0	0	0	2
Euphorbiaceae	Moultonianthus	leembruggianus	dicot tree	0	0	1	0	0	0	1	0
Euphorbiaceae	Neoscortechinia	kingii	dicot tree	1	0	3	0	1	0	2	0
Euphorbiaceae	Pimelodendron	griffithianum	dicot tree	2	0	0	0	2	0	0	0
Fagaceae	Castanopsis	fulva	dicot tree	0	0	1	0	0	0	1	0
Fagaceae	Lithocarpus	coopertus	dicot tree	0	0	3	3	0	0	3	2
Flacourtiaceae	Hydnocarpus	polypetala	dicot tree	1	0	0	1	1	0	0	1
Guttiferae	Calophyllum	gracilipes	dicot tree	0	0	4	2	0	0	3	2
Guttiferae	Calophyllum	sp.	dicot tree	0	1	0	0	0	1	0	0
Guttiferae	Calophyllum	wallichianum	dicot tree	1	0	4	1	1	0	3	1
Guttiferae	Garcinia	celebica	dicot tree	0	0	0	3	0	0	0	3
Guttiferae	Kayea	borneensis	dicot tree	3	1	0	1	3	1	0	1
Guttiferae	Mesua	conoidea	dicot tree	1	1	0	0	1	1	0	0
Hypericaceae	Cratoxylum	sumatranum	dicot tree	3	0	2	0	2	0	2	0
Icacinaeae	Stemonurus	scorpioides	dicot tree	5	0	0	0	4	0	0	0
Lauraceae	Actinodaphne	diadenum	dicot tree	0	2	0	0	0	1	0	0
Lauraceae	Alseodaphne	elmeri	dicot tree	2	0	6	3	1	0	5	2
Lauraceae	Cinnamomum	cuspidatum	dicot tree	0	0	1	0	0	0	1	0
Lauraceae	Cryptocarya	crassinervia	dicot tree	0	1	0	0	0	1	0	0
Lauraceae	Endiandra	kingiana	dicot tree	0	1	0	1	0	1	0	1

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Lauraceae	Eusideroxylon	zwageri	dicot tree	0	1	0	0	0	1	0	0
Lauraceae	Litsea	angulata	dicot tree	0	0	0	1	0	0	0	1
Lauraceae	Litsea	firma	dicot tree	0	0	4	0	0	0	3	0
Lauraceae	Litsea	oppositifolia	dicot tree	0	0	0	1	0	0	0	1
Lauraceae	Phoebe	grandis	dicot tree	0	1	1	0	0	1	1	0
Lecythidaceae	Barringtonia	macrostachya	dicot tree	0	0	2	3	0	0	2	3
Loganiaceae	Fagraea	racemosa	dicot tree	2	2	0	0	1	1	0	0
Magnoliaceae	Magnolia	candollii	dicot tree	3	0	0	0	2	0	0	0
Malvaceae	Durio	dulcis	dicot tree	0	0	0	1	0	0	0	1
Malvaceae	Durio	graveolens	dicot tree	1	0	0	0	1	0	0	0
Malvaceae	Durio	griffithii	dicot tree	0	0	1	0	0	0	1	0
Malvaceae	Durio	oxleyanus	dicot tree	1	0	0	0	1	0	0	0
Malvaceae	Nessia	cynandra	dicot tree	1	0	0	0	1	0	0	0
Melastomataceae	Melastoma	malabathricum	dicot tree	0	1	3	27	0	1	1	3
Melastomataceae	Memecylon	borneensis	dicot tree	6	0	3	1	4	0	2	1
Melastomataceae	Memecylon	oleaefolium	dicot tree	0	0	0	1	0	0	0	1
Melastomataceae	Pternandra	azurea	dicot tree	1	0	2	1	1	0	2	1
Melastomataceae	Pternandra	rostrata	dicot tree	0	1	2	1	0	1	2	1
Meliaceae	Aglaia	pachyphylla	dicot tree	1	0	0	0	1	0	0	0
Meliaceae	Aglaia	sp.1	dicot tree	3	0	1	0	3	0	1	0
Meliaceae	Aglaia	tomentosa	dicot tree	3	0	1	0	3	0	1	0
Meliaceae	Chisocheton	sp.	dicot tree	0	1	1	0	0	1	1	0
Meliaceae	Dysoxylum	alliaceum	dicot tree	0	2	0	0	0	1	0	0
Meliaceae	Dysoxylum	cauliflorum	dicot tree	0	1	0	0	0	1	0	0
Moraceae	Artocarpus	elasticus	dicot tree	0	1	0	0	0	1	0	0
Moraceae	Artocarpus	integer	dicot tree	0	1	0	0	0	1	0	0
Moraceae	Artocarpus	lanceifolius	dicot tree	0	0	1	0	0	0	1	0
Moraceae	Ficus	obscura	dicot tree	0	2	0	0	0	2	0	0
Myristicaceae	Horsfieldia	cornosa	dicot tree	0	0	0	1	0	0	0	1
Myristicaceae	Horsfieldia	polyspherula	dicot tree	0	3	2	1	0	3	2	1
Myristicaceae	Knema	elmeri	dicot tree	1	0	0	2	1	0	0	2
Myristicaceae	Knema	furfuracea	dicot tree	0	1	1	0	0	1	1	0
Myristicaceae	Knema	laurina	dicot tree	7	3	1	2	6	3	1	2
Myristicaceae	Myristica	iners	dicot tree	0	3	0	0	0	1	0	0
Myristicaceae	Myristica	villosa	dicot tree	2	0	0	0	2	0	0	0
Myrsinaceae	Ardisia	korthalsiana	dicot tree	0	1	1	1	0	1	1	1
Myrsinaceae	Ardisia	sp.1	dicot tree	0	2	0	0	0	1	0	0
Myrtaceae	Syzygium	caudatilimba	dicot tree	1	2	0	0	1	1	0	0
Myrtaceae	Syzygium	sp.2	dicot tree	0	1	0	0	0	1	0	0
Myrtaceae	Syzygium	sp.3	dicot tree	3	0	0	0	1	0	0	0
Myrtaceae	Syzygium	sp.4	dicot tree	2	1	1	0	1	1	1	0
Myrtaceae	Syzygium	tawahense	dicot tree	5	7	9	11	3	4	6	7

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Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Ochnaceae	<i>Gomphia</i>	serrata	dicot tree	2	0	1	0	2	0	1	0
Oleaceae	<i>Ochanostachys</i>	amentacea	dicot tree	0	2	0	0	0	2	0	0
Oleaceae	<i>Chionanthus</i>	sp.1	dicot tree	8	6	3	1	5	3	2	1
Oleaceae	<i>Chionanthus</i>	sp.2	dicot tree	2	0	0	0	1	0	0	0
Oxalidaceae	<i>Sarcotheca</i>	diversifolia	dicot tree	0	1	3	0	0	1	3	0
Oxalidaceae	<i>Sarcotheca</i>	rubrinervis	dicot tree	0	1	1	0	0	1	1	0
Papilionaceae	<i>Fordia</i>	splendidissima	dicot tree	11	5	6	7	5	4	5	5
Polygalaceae	<i>Xanthophyllum</i>	affine	dicot tree	6	0	1	3	5	0	1	2
Polygalaceae	<i>Xanthophyllum</i>	griffithii	dicot tree	0	0	2	0	0	0	2	0
Polygalaceae	<i>Xanthophyllum</i>	obscurum	dicot tree	3	0	2	5	2	0	2	4
Rhizophoraceae	<i>Anisophyllea</i>	corneri	dicot tree	0	2	0	1	0	2	0	1
Rubiaceae	<i>Anthocephalus</i>	chinensis	dicot tree	0	3	0	0	0	2	0	0
Rubiaceae	<i>Hypobathrum</i>	sp.	dicot tree	4	4	1	2	4	4	1	1
Rubiaceae	<i>Ixora</i>	fucosa	dicot shrub	1	2	11	5	1	2	6	3
Rubiaceae	<i>Nauclea</i>	subdita	dicot tree	0	0	1	0	0	0	1	0
Rubiaceae	<i>Neonauclea</i>	gigantea	dicot tree	0	0	0	1	0	0	0	1
Rubiaceae	<i>Tarenna</i>	rostrata	dicot tree	0	0	0	2	0	0	0	1
Rubiaceae	<i>Timonius</i>	flavescens	dicot tree	0	0	2	2	0	0	2	2
Rubiaceae	<i>Uncaria</i>	borneensis	dicot liana	0	0	0	2	0	0	0	1
Rubiaceae	<i>Uncaria</i>	calophylla	dicot liana	0	0	0	3	0	0	0	1
Rubiaceae	<i>Uncaria</i>	cordata	dicot liana	0	6	0	0	0	1	0	0
Rubiaceae	<i>Urophyllum</i>	arborescens	dicot tree	2	2	0	1	2	2	0	1
Sapindaceae	<i>Dimocarpus</i>	longan	dicot tree	1	1	0	0	1	1	0	0
Sapindaceae	<i>Guioa</i>	sp.	dicot tree	1	0	0	0	1	0	0	0
Sapindaceae	<i>Lepisanthes</i>	amoena	dicot tree	0	1	0	1	0	1	0	1
Sapindaceae	<i>Mischocarpus</i>	pentapetalus	dicot tree	1	0	0	0	1	0	0	0
Sapindaceae	<i>Nephelium</i>	laurinum	dicot tree	0	0	0	1	0	0	0	1
Sapindaceae	<i>Xerospermum</i>	noronhianum	dicot tree	1	0	0	0	1	0	0	0
Sapotaceae	<i>Madhuca</i>	kingiana	dicot tree	1	0	2	0	1	0	2	0
Sapotaceae	<i>Madhuca</i>	malaccensis	dicot tree	5	0	22	11	4	0	7	5
Sapotaceae	<i>Madhuca</i>	sericea	dicot tree	0	0	2	1	0	0	2	1
Sapotaceae	<i>Palaquium</i>	calophyllum	dicot tree	1	3	0	0	1	3	0	0
Sapotaceae	<i>Palaquium</i>	stenophyllum	dicot tree	4	3	0	3	4	2	0	2
Scrophulariaceae	<i>Brookea</i>	sp.	dicot tree	0	1	0	1	0	1	0	1
Simaroubaceae	<i>Allanthospermum</i>	borneensis	dicot tree	0	0	0	1	0	0	0	1
Simaroubaceae	<i>Eurycoma</i>	longifolia	dicot tree	0	0	1	0	0	0	1	0
Sterculiaceae	<i>Heritiera</i>	symplicifolia	dicot tree	1	0	0	0	1	0	0	0
Sterculiaceae	<i>Scaphium</i>	macropodium	dicot tree	1	0	1	4	1	0	1	3
Symplocaceae	<i>Symplocos</i>	crassipes	dicot tree	0	0	0	1	0	0	0	1

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Theaceae	Tetramerista	<i>glabra</i>	dicot tree	1	0	0	0	1	0	0	0
Thymelaeaceae	Aquilaria	<i>malaccensis</i>	dicot tree	0	1	0	0	0	1	0	0
Thymelaeaceae	Gonystylus	<i>macrophyllus</i>	dicot tree	1	0	2	1	1	0	2	1
Tiliaceae	Microcos	<i>crassifolia</i>	dicot tree	0	3	1	0	0	2	1	0
Tiliaceae	Pentace	<i>adenophora</i>	dicot tree	0	3	0	0	0	3	0	0
Ulmaceae	Gironniera	<i>nervosa</i>	dicot tree	1	3	3	7	1	3	3	5
Verbenaceae	Teijsmanniodendron	<i>pteropodium</i>	dicot tree	5	0	1	5	5	0	1	3
Vitaceae	<i>Leea</i>	<i>aculeata</i>	dicot shrub	1	1	0	0	1	1	0	0
Zingiberaceae	<i>Costus</i>	<i>speciosus</i>	Monocot herb	0	2	0	0	0	1	0	0

Appendix 3

List of all seedlings species recorded in the 2 × 2 m subplot. After each family, genus and species name respectively plant type, observed number of stems (N) and number of subplots having at least on stem exceeding young trees of up to 1.5 m in height of this species (S) per forest disturbance type (0 = primary forest, 1 = secondary forest, 1 year after logged, 2 = 5 years after logged, 3 = 10 years after logged).

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Actinidiaceae	Saurauia	sp.1	dicot tree	0	1	0	0	0	1	0	0
Anacardiaceae	Bouea	oppositifolia	dicot tree	3	1	0	0	1	1	0	0
Anacardiaceae	Buchanania	sessifolia	dicot tree	0	1	0	0	0	1	0	0
Anacardiaceae	Drimycarpus	luridus	dicot tree	0	1	0	1	0	1	0	1
Anacardiaceae	Gluta	renghas	dicot tree	0	0	7	9	0	0	4	2
Anacardiaceae	Koordersiodendron	pinnatum	dicot tree	0	3	0	2	0	3	0	1
Anacardiaceae	Mangifera	torquendra	dicot tree	3	0	0	0	2	0	0	0
Anacardiaceae	Semecarpus	glaucous	dicot tree	0	1	0	0	0	1	0	0
Annonaceae	Anaxagorea	javanica	dicot tree	4	0	1	0	4	0	1	0
Annonaceae	Desmos	cochinchinensis	dicot liana	0	2	1	0	0	1	1	0
Annonaceae	Mezzettia	parviflora	dicot tree	0	0	1	2	0	0	1	1
Annonaceae	Mitrephora	korthalsiana	dicot tree	0	0	0	1	0	0	0	1
Annonaceae	Polyalthia	cauliflora	dicot tree	0	0	1	0	0	0	1	0
Annonaceae	Popowia	hirta	dicot tree	1	0	0	0	1	0	0	0
Annonaceae	Uvaria	elmeri	dicot liana	7	0	0	0	3	0	0	0
Annonaceae	Xylopia	ferruginea	dicot tree	8	0	0	0	2	0	0	0
Apocynaceae	Alstonia	iwahigensis	dicot tree	0	1	1	3	0	1	1	1
Apocynaceae	Willughbeia	angustifolia	dicot liana	0	0	2	0	0	0	1	0
Araceae	Photos	sp.	monocot liana	1	0	0	0	1	0	0	0
Araceae	Syngonium	macrophyllum	monocot herb	1	0	0	0	1	0	0	0
Bignoniaceae	Radermachera	pinnata	dicot tree	2	0	0	0	1	0	0	0
Blechnaceae	Stenochlaena	palustris	fern liana	0	0	9	2	0	0	1	2
Burseraceae	Canarium	denticulatum	dicot tree	2	0	1	2	1	0	1	2
Burseraceae	Dacryodes	rostrata	dicot tree	5	1	3	1	3	1	2	1
Burseraceae	Dacryodes	rugosa	dicot tree	0	0	4	1	0	0	2	1
Caesalpiniaceae	Bauhinia	diptera	dicot liana	1	7	0	0	1	2	0	0
Caesalpiniaceae	Cynometra	elmeri	dicot tree	1	0	0	0	1	0	0	0
Caesalpiniaceae	Dialium	indum	dicot tree	0	0	0	4	0	0	0	3
Caesalpiniaceae	Koompassia	malaccensis	dicot tree	0	0	2	0	0	0	1	0
Caesalpiniaceae	Saraca	declinata	dicot tree	1	0	0	0	1	0	0	0
Caesalpiniaceae	Sindora	leiocarpa	dicot tree	0	0	1	0	0	0	1	0
Caesalpiniaceae	Sindora	velutina	dicot tree	1	0	1	0	1	0	1	0

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Celastraceae	Lophopetalum	<i>javanicum</i>	dicot tree	0	0	1	12	0	0	1	1
Celastraceae	Salacia	<i>macrophylla</i>	dicot liana	0	0	1	0	0	0	1	0
Chrysobalanaceae	Atuna	<i>racemosa</i>	dicot tree	3	1	1	0	1	1	1	0
Chrysobalanaceae	Parinari	<i>canaroides</i>	dicot tree	0	0	1	0	0	0	1	0
Combretaceae	Combretum	<i>nigricans</i>	dicot liana	0	11	1	2	0	2	1	1
Connaraceae	Agelaea	<i>borneensis</i>	dicot liana	1	1	1	0	1	1	1	0
Connaraceae	Cnestis	<i>platantha</i>	dicot liana	2	0	3	0	2	0	3	0
Connaraceae	Connarus	<i>semidecandrus</i>	dicot liana	3	1	5	3	2	1	3	1
Convolvulaceae	Erycibe	<i>sp.</i>	dicot liana	1	0	0	0	1	0	0	0
Convolvulaceae	Merremia	<i>mammosa</i>	dicot liana	0	2	0	0	0	1	0	0
Crypteroniaceae	Crypteronia	<i>griffithii</i>	dicot tree	1	3	0	0	1	1	0	0
Cophioglossaceae	Helminthostachys	<i>zeylanica</i>	fern tree	0	3	0	0	0	3	0	0
Cyperaceae	Mapania	<i>latifolia</i>	monocot grass	1	5	0	0	1	2	0	0
Cyperaceae	Scleria	<i>terrestris</i>	monocot grass	2	3	0	0	1	2	0	0
Dilleniaceae	Dillenia	<i>suffruticosa</i>	dicot tree	0	1	0	0	0	1	0	0
Dilleniaceae	Tetracera	<i>akara</i>	dicot liana	5	0	0	1	2	0	0	1
Dioscoreaceae	Dioscorea	<i>pyrofolia</i>	monocot liana	0	1	0	0	0	1	0	0
Dipterocarpaceae	Cotylelobium	<i>melanoxyllum</i>	dicot tree	0	0	3	3	0	0	2	1
Dipterocarpaceae	Dipterocarpus	<i>acutangulus</i>	dicot tree	8	0	1	0	2	0	1	0
Dipterocarpaceae	Dipterocarpus	<i>confertus</i>	dicot tree	0	0	0	2	0	0	0	1
Dipterocarpaceae	Dipterocarpus	<i>crinitus</i>	dicot tree	1	0	3	4	1	0	2	2
Dipterocarpaceae	Dipterocarpus	<i>palembanicus</i>	dicot tree	0	0	0	2	0	0	0	2
Dipterocarpaceae	Dipterocarpus	<i>stellatus</i>	dicot tree	0	0	0	2	0	0	0	1
Dipterocarpaceae	Dryobalanops	<i>beccarii</i>	dicot tree	0	1	0	0	0	1	0	0
Dipterocarpaceae	Hopea	<i>cernua</i>	dicot tree	0	0	16	9	0	0	1	4
Dipterocarpaceae	Hopea	<i>semicuneata</i>	dicot tree	68	0	0	0	6	0	0	0
Dipterocarpaceae	Parashorea	<i>malaanonan</i>	dicot tree	0	1	0	0	0	1	0	0
Dipterocarpaceae	Shorea	<i>agamii</i>	dicot tree	0	0	0	1	0	0	0	1
Dipterocarpaceae	Shorea	<i>atrinerfosa</i>	dicot tree	0	0	0	8	0	0	0	3
Dipterocarpaceae	Shorea	<i>beccariana</i>	dicot tree	0	0	7	1	0	0	1	1
Dipterocarpaceae	Shorea	<i>collaris</i>	dicot tree	0	0	1	0	0	0	1	0
Dipterocarpaceae	Shorea	<i>exelliptica</i>	dicot tree	0	0	0	4	0	0	0	1
Dipterocarpaceae	Shorea	<i>guiso</i>	dicot tree	0	3	0	0	0	1	0	0
Dipterocarpaceae	Shorea	<i>laevis</i>	dicot tree	0	0	1	0	0	0	1	0
Dipterocarpaceae	Shorea	<i>leprosula</i>	dicot tree	4	12	0	0	2	1	0	0
Dipterocarpaceae	Shorea	<i>macrophylla</i>	dicot tree	0	0	0	1	0	0	0	1
Dipterocarpaceae	Shorea	<i>macroptera</i>	dicot tree	0	0	0	12	0	0	0	3
Dipterocarpaceae	Shorea	<i>maxwelliana</i>	dicot tree	0	0	0	3	0	0	0	1
Dipterocarpaceae	Shorea	<i>parvifolia</i>	dicot tree	0	17	3	2	0	6	2	2
Dipterocarpaceae	Shorea	<i>patoiensis</i>	dicot tree	7	0	0	3	1	0	0	1
Dipterocarpaceae	Shorea	<i>pauciflora</i>	dicot tree	0	0	1	0	0	0	1	0
Dipterocarpaceae	Shorea	<i>smithiana</i>	dicot tree	0	0	0	3	0	0	0	2
Dipterocarpaceae	Vatica	<i>nitens</i>	dicot tree	1	0	13	3	1	0	3	2
Dipterocarpaceae	Vatica	<i>oblongifolia</i>	dicot tree	3	0	1	1	3	0	1	1

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Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Dipterocarpaceae	Vatica	umbonata	dicot tree	0	0	0	1	0	0	0	1
Dryopteridaceae	Nephrolepis	bisserata	fern herb	0	13	1	25	0	6	1	1
Ebenaceae	Diospyros	borneensis	dicot tree	2	4	0	0	1	3	0	0
Ebenaceae	Diospyros	buxifolia	dicot tree	0	1	2	3	0	1	2	2
Ebenaceae	Diospyros	curranii	dicot tree	1	0	2	0	1	0	1	0
Ebenaceae	Diospyros	densa	dicot tree	0	0	1	0	0	0	1	0
Ebenaceae	Diospyros	macrophylla	dicot tree	14	0	0	0	2	0	0	0
Ebenaceae	Diospyros	sp.1	dicot tree	1	0	0	1	1	0	0	1
Elaeocarpaceae	Elaeocarpus	stipularis	dicot tree	0	0	0	1	0	0	0	1
Euphorbiaceae	Antidesma	montanum	dicot tree	0	0	0	1	0	0	0	1
Euphorbiaceae	Antidesma	neurocarpum	dicot tree	0	1	0	0	0	1	0	0
Euphorbiaceae	Aporosa	dioica	dicot tree	0	0	1	1	0	0	1	1
Euphorbiaceae	Aporosa	nitida	dicot tree	0	1	0	0	0	1	0	0
Euphorbiaceae	Baccaurea	sumatrana	dicot tree	0	1	2	0	0	1	1	0
Euphorbiaceae	Baccaurea	tetrandra	dicot tree	0	0	0	1	0	0	0	1
Euphorbiaceae	Chaetocarpus	castanocarpus	dicot tree	0	0	1	2	0	0	1	2
Euphorbiaceae	Cleistanthus	erycibifolius	dicot tree	4	0	3	1	2	0	2	1
Euphorbiaceae	Cleistanthus	myrianthus	dicot tree	1	0	0	0	1	0	0	0
Euphorbiaceae	Croton	argyratus	dicot tree	21	0	0	0	8	0	0	0
Euphorbiaceae	Croton	caudatus	dicot tree	1	0	0	0	1	0	0	0
Euphorbiaceae	Drypetes	ikir	dicot tree	0	0	2	2	0	0	2	1
Euphorbiaceae	Glochidion	arborescens	dicot tree	1	2	1	1	1	1	1	1
Euphorbiaceae	Koilocarpus	brevipes	dicot tree	12	11	17	4	6	4	7	3
Euphorbiaceae	Macaranga	gigantea	dicot tree	0	3	1	0	0	2	1	0
Euphorbiaceae	Macaranga	hypoleuca	dicot tree	0	17	1	1	0	5	1	1
Euphorbiaceae	Mallotus	muticus	dicot tree	3	4	0	0	3	2	0	0
Euphorbiaceae	Moultonianthus	leembruggianus	dicot tree	0	0	5	0	0	0	2	0
Euphorbiaceae	Neoscortechinia	kingii	dicot tree	0	0	6	1	0	0	3	1
Euphorbiaceae	Paracroton	pendulus	dicot tree	1	2	0	0	1	2	0	0
Euphorbiaceae	Pimelodendron	griffithianum	dicot tree	3	0	0	2	2	0	0	2
Fagaceae	Castanopsis	fulva	dicot tree	0	0	2	0	0	0	1	0
Fagaceae	Lithocarpus	coopertus	dicot tree	0	2	0	1	0	2	0	1
Graminae	Imperata	cylindrica	monocot grass	0	0	0	2	0	0	0	1
Guttiferae	Calophyllum	gracilipes	dicot tree	0	0	11	6	0	0	7	4
Guttiferae	Garcinia	celebica	dicot tree	0	0	1	4	0	0	1	2
Guttiferae	Garcinia	sp.1	dicot tree	0	1	0	0	0	1	0	0
Guttiferae	Kayea	borneensis	dicot tree	1	0	0	0	1	0	0	0
Guttiferae	Mesua	conoidea	dicot tree	0	0	0	1	0	0	0	1
Icacinaeae	Stemonurus	scorpioides	dicot tree	0	0	0	1	0	0	0	1
Lauraceae	Alseodaphne	elmeri	dicot tree	0	2	2		0	2	2	0
Lauraceae	Cryptocarya	crassinervia	dicot tree	0	1	0		0	1	0	1
Lauraceae	Endiandra	kingiana	dicot tree	0	2	0		0	2	0	1

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Lauraceae	Eusideroxylon	zwageri	dicot tree	0	3	0	0	0	1	0	0
Lauraceae	Litsea	oppositifolia	dicot tree	0	2	0	0	0	2	0	0
Lauraceae	Phoebe	grandis	dicot tree	0	2	0	4	0	1	0	2
Loganiaceae	Fagraea	racemosa	dicot tree	0	2	1	0	0	2	1	0
Loganiaceae	Strychnos	axillaris	dicot liana	4	5	6	3	2	2	3	2
Lycopodiaceae	Lycopodium	cernuum	fern herb	0	0	0	2	0	0	0	1
Marantaceae	Stachyprhynium	borneensis	monocot herb	0	0	0	1	0	0	0	1
Melastomataceae	Clidemia	hirta	dicot liana	0	7	1	1	0	2	1	1
Melastomataceae	Diplectria	divaricata	dicot liana	0	2	1	0	0	2	1	0
Melastomataceae	Dissochaeta	sp.1	dicot liana	0	6	0	0	0	1	0	0
Melastomataceae	Melastoma	malabathricum	dicot tree	0	1	2	35	0	1	2	2
Melastomataceae	Memecylon	borneensis	dicot tree	1	0	1	0	1	0	1	0
Melastomataceae	Memecylon	edule	dicot tree	2	0	1	0	1	0	1	0
Melastomataceae	Pternandra	azurea	dicot tree	4	0	0	0	2	0	0	0
Melastomataceae	Pternandra	galeata	dicot tree	1	0	0	0	1	0	0	0
Melastomataceae	Pternandra	rostrata	dicot tree	3	8	3	3	2	2	1	1
Meliaceae	Aglaia	sp.1	dicot tree	2	0	0	0	1	0	0	0
Meliaceae	Aglaia	tomentosa	dicot tree	0	1	0	0	0	1	0	0
Menispermaceae	Fibraurea	tinctorea	dicot liana	1	0	2	0	1	0	2	0
Mimosaceae	Parkia	speciosa	dicot tree	8	0	0	0	2	0	0	0
Moraceae	Artocarpus	elasticus	dicot tree	2	0	2	2	2	0	1	1
Moraceae	Artocarpus	lanceifolius	dicot tree	1	0	0	0	1	0	0	0
Moraceae	Ficus	obscura	dicot tree	0	4	0	1	0	2	0	1
Moraceae	Parartocarpus	bracteatus	dicot tree	1	0	0	0	1	0	0	0
Myristicaceae	Horsfieldia	borneensis	dicot tree	0	0	1	0	0	0	1	0
Myristicaceae	Horsfieldia	polyspherula	dicot tree	1	2	3	0	1	2	3	0
Myristicaceae	Knema	iners	dicot tree	0	0	1	0	0	0	1	0
Myristicaceae	Knema	laurina	dicot tree	0	1	0	6	0	1	0	4
Myristicaceae	Myristica	iners	dicot tree	0	7	0	0	0	1	0	0
Myristicaceae	Myristica	villosa	dicot tree	0	0	0	1	0	0	0	1
Myrsinaceae	Ardisia	korthalsiana	dicot tree	0	2	0	1	0	2	0	1
Myrsinaceae	Ardisia	sp.	dicot tree	1	0	3	0	1	0	2	0
Myrsinaceae	Ardisia	sp.1	dicot tree	0	1	0	0	0	1	0	0
Myrsinaceae	Ardisia	sp.2	dicot tree	0	0	0	1	0	0	0	1
Myrsinaceae	Embelia	javanica	dicot liana	0	2	2	0	0	1	1	0
Myrsinaceae	Maesa	macrothyrsa	dicot liana	0	0	1	0	0	0	1	0
Myrtaceae	Syzygium	caudatilimba	dicot tree	3	0	0	0	1	0	0	0
Myrtaceae	Syzygium	sp.4	dicot tree	0	0	2	2	0	0	1	1
Myrtaceae	Syzygium	tawahense	dicot tree	3	0	20	7	2	0	8	4
Ochnaceae	Gomphia	serrata	dicot tree	1	0	1	1	1	0	1	1
Oleaceae	Chionanthus	sp.1	dicot tree	9	1	0	15	5	1	0	4
Oleaceae	Chionanthus	sp.2	dicot tree	2	0	0	0	1	0	0	0

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Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Palmae	<i>Calamus</i>	sp.	palm rotan	1	0	0	0	1	0	0	0
Palmae	<i>Daemonorops</i>	sabut	palm rotan	8	3	1	1	5	3	1	1
Palmae	<i>Korthalsia</i>	furtadoana	palm rotan	3	1	1	1	2	1	1	1
Palmae	<i>Oncosperma</i>	horidum	palm tree	2	1	0	0	1	1	0	0
Papilionaceae	<i>Fordia</i>	splendidissima	dicot tree	5	4	22	17	3	2	9	8
Piperaceae	<i>Piper</i>	sp.	dicot liana	0	0	0	2	0	0	0	1
Polygalaceae	<i>Xanthophyllum</i>	affine	dicot tree	5	0	0	0	3	0	0	0
Polygalaceae	<i>Xanthophyllum</i>	ellipticum	dicot tree	1	2	0	0	1	1	0	0
Polygalaceae	<i>Xanthophyllum</i>	obscurum	dicot tree	2	0	1	0	1	0	1	0
Polygalaceae	<i>Xanthophyllum</i>	sp.1	dicot tree	0	1	0	0	0	1	0	0
Polypodiaceae	<i>Drynaria</i>	sparsisora	fern epiphyt	0	0	0	1	0	0	0	1
Rhamnaceae	<i>Ventilago</i>	sp.	dicot liana	0	0	1	0	0	0	1	0
Rhamnaceae	<i>Ziziphus</i>	borneense	dicot liana	0	0	1	0	0	0	1	0
Rubiaceae	<i>Anthocephalus</i>	chinensis	dicot tree	0	1	0	0	0	1	0	0
Rubiaceae	<i>Diplospora</i>	malaccensis	dicot tree	2	0	0	0	1	0	0	0
Rubiaceae	<i>Gardenia</i>	tubifera	dicot tree	2	0	0	0	1	0	0	0
Rubiaceae	<i>Hypobathrum</i>	sp.1	dicot tree	0	2	0	0	0	2	0	0
Rubiaceae	<i>Ixora</i>	fucosa	dicot shrub	1	3	2	4	1	1	1	4
Rubiaceae	<i>Ixora</i>	lobii	dicot shrub	0	1	0	0	0	1	0	0
Rubiaceae	<i>Nauclea</i>	subdita	dicot tree	0	1	0	0	0	1	0	0
Rubiaceae	<i>Pleiocarpidia</i>	polyneura	dicot tree	2	5	0	0	2	3	0	0
Rubiaceae	<i>Psychotria</i>	sp.1	dicot shrub	0	3	0	0	0	2	0	0
Rubiaceae	<i>Tarenna</i>	rostrata	dicot tree	0	3	0	0	0	1	0	0
Rubiaceae	<i>Timonius</i>	flavescens	dicot tree	0	0	0	1	0	0	0	1
Rubiaceae	<i>Uncaria</i>	cordata	dicot liana	0	3	0	0	0	2	0	0
Rubiaceae	<i>Urophyllum</i>	arborescens	dicot tree	0	0	0	3	0	0	0	2
Sabiaceae	<i>Meliosma</i>	sumatrana	dicot tree	0	2	0	0	0	1	0	0
Sapindaceae	<i>Dimocarpus</i>	longan	dicot tree	1	2	0	0	1	2	0	0
Sapindaceae	<i>Guioa</i>	sp.	dicot tree	1	0	0	0	1	0	0	0
Sapotaceae	<i>Madhuca</i>	kingiana	dicot tree	1	0	0	0	1	0	0	0
Sapotaceae	<i>Madhuca</i>	malaccensis	dicot tree	2	4	24	15	2	1	6	5
Sapotaceae	<i>Madhuca</i>	sericea	dicot tree	0	0	1	0	0	0	1	0
Sapotaceae	<i>Palaquium</i>	calophyllum	dicot tree	0	5	4	0	0	2	3	0
Sapotaceae	<i>Palaquium</i>	stenophyllum	dicot tree	3	0	0	0	2	0	0	0
Sapotaceae	<i>Payena</i>	acuminata	dicot tree	0	7	0	0	0	1	0	0
Schizaeaceae	<i>Lygodium</i>	circinatum	fern vine	1	9	13	13	1	2	2	2
Schizaeaceae	<i>Lygodium</i>	microphyllum	fern vine	0	0	0	2	0	0	0	1
Selaginellaceae	<i>Selaginella</i>	caulescens	fern herb	0	12	0	0	0	5	0	0
Simaroubaceae	<i>Allanthospermum</i>	borneensis	dicot tree	0	0	0	2	0	0	0	1
Simaroubaceae	<i>Irvingia</i>	malayana	dicot tree	0	1	0	0	0	1	0	0
Sterculiaceae	<i>Heritiera</i>	elata	dicot tree	2	0	0	0	2	0	0	0
Sterculiaceae	<i>Scaphium</i>	macropodium	dicot tree	0	0	1	7	0	0	1	2
Symplocaceae	<i>Symplocos</i>	crassipes	dicot tree	7	3	0	0	5	2	0	0

Family	Genus	Species	Plant type	N0	N1	N2	N3	S0	S1	S2	S3
Thymelaeaceae	<i>Aquilaria</i>	<i>malaccensis</i>	dicot tree	0	1	0	0	0	1	0	0
Thymelaeaceae	<i>Gonystylus</i>	<i>macrophyllus</i>	dicot tree	1	0	2	3	1	0	2	3
Tiliaceae	<i>Grewia</i>	<i>fibrocarpa</i>	dicot tree	0	1	0	1	0	1	0	1
Tiliaceae	<i>Microcos</i>	<i>crassifolia</i>	dicot tree	2	1	0	0	1	1	0	0
Tiliaceae	<i>Pentace</i>	<i>adenophora</i>	dicot tree	0	4	0	0	0	2	0	0
Tiliaceae	<i>Pentace</i>	<i>polyantha</i>	dicot tree	0	0	0	9	0	0	0	1
Ulmaceae	<i>Gironniera</i>	<i>nervosa</i>	dicot tree	1	1	3	1	1	1	2	1
Verbenaceae	<i>Teijsmanniodendron</i>	<i>pteropodium</i>	dicot tree	4	0	0	1	3	0	0	1
Verbenaceae	<i>Vitex</i>	<i>vestita</i>	dicot tree	0	1	1	0	0	1	1	0
Vitaceae	<i>Cissus</i>	<i>angustata</i>	dicot liana	0	1	0	0	0	1	0	0
Zingiberaceae	<i>Alpinia</i>	<i>galanga</i>	monocot herb	0	3	9	0	0	2	2	0
Zingiberaceae	<i>Etlingera</i>	<i>borneensis</i>	monocot herb	0	2	0	1	0	1	0	1
Zingiberaceae	<i>Globba</i>	<i>brachyanthera</i>	monocot herb	0	0	1	0	0	0	1	0

Appendix 4

List of abundance all birds species observed in total 5 point counts with 8 point count visits in all sites. After each scientific name, vernacular name, foraging layer (T = terrestrial; U = understorey; A = arboreal) and diet (N = nectarivore ; F = frugivore ; FI = frugivore / insectivore ; FC = frugivore / carnivore ; I = insectivore ; IC = insectivore / carnivore) and diet per forest disturbance type (0 = primary forest1 in Berau, 1 = secondary forest, 1 year after logged, 2 = 5 years after logged, 3 = 10 years after logged, 4 = primary forest2 in Sungai Wain, 5 = disturbed forest in Pusrehut).

Names		Foraging	Diet	N0	N4	N1	N2	N3	N5
Scientific name	Common name	layer							
<i>Abroscopus superciliaris</i>	Yellow-bellied warbler	U	I	0	0	4	0	2	0
<i>Aceros corrugatus</i>	Wrinkled hornbill	A	FC	1	0	0	3	0	2
<i>Actenoides concretus</i>	Chestnut-collared kingfisher	T	I	1	0	1	0	0	0
<i>Aegithina viridissima</i>	Green lora	A	I	0	0	1	0	0	0
<i>Alcedo meninting</i>	Blue-eared kingfisher	U	IC	0	0	0	1	1	1
<i>Alcippe brunneicauda</i>	Brown fulvetta	A	FI	2	0	8	3	14	0
<i>Anorrhinus galeritus</i>	Bushy-crested hornbill	A	FC	0	3	2	0	0	0
<i>Anthraccoceros Malay Pnus</i>	Asian black hornbill	A	FC	4	8	5	3	1	5
<i>Anthreptes simplex</i>	Plain Sunbird	U	I	0	0	0	2	0	0
<i>Aplonis panayensis</i>	Asian glossy starling	U	FI	0	7	0	0	0	3
<i>Arachnothera chrysogenys</i>	Yellow-eared spiderhunter	A	N	0	0	0	1	0	0
<i>Arachnothera flavigaster</i>	Spectacled spiderhunter	A	FI	4	1	0	1	1	0
<i>Arachnothera longirostra</i>	Little Spiderhunter	U	N	29	11	23	15	10	12
<i>Arachnothera modesta</i>	Grey-breasted spiderhunter	U	N	1	0	0	1	0	0
<i>Arachnothera robusta</i>	Long-billed spiderhunter	A	N	1	0	0	0	0	2
<i>Argusianus argus</i>	Great Argus	T	FI	0	1	0	0	1	0
<i>Blythipicus rubiginosus</i>	Maroon woodpecker	U	I	0	0	0	0	4	1
<i>Buceros rhinoceros</i>	Rhinoceros hornbill	A	FC	3	1	7	4	4	6
<i>Buceros vigil</i>	Helmeted Hornbill	A	FC	6	0	0	0	0	2
<i>Cacomantis merulinus</i>	Plaintive cuckoo	A	I	0	0	2	4	1	0
<i>Cacomantis sonneratii</i>	Banded bay cuckoo	A	I	7	1	3	0	2	2
<i>Calorhampus fuliginosus</i>	Brown Barbet	A	I	0	18	0	0	0	3
<i>Calyptomena viridis</i>	Green broadbill	A	F	5	0	8	9	3	0
<i>Caprimulgus macrurus</i>	Large-tailed nightjar	T	I	0	0	0	0	0	5
<i>Carpococcyx radiatus</i>	Bornean Ground-Cuckoo	A	FI	0	1	0	0	0	0
<i>Celeus brachyurus</i>	Rufous woodpecker	U	I	2	0	5	2	0	0
<i>Centropus bengalensis</i>	Lesser Coucal	U	I	0	0	0	0	0	2
<i>Centropus rectunguis</i>	Short-toed coucal	U	IC	1	0	0	0	0	0
<i>Centropus sinensis</i>	Greater Coucal	T	IC	3	0	2	0	1	1

Names		Foraging	Diet	N0	N4	N1	N2	N3	N5
Scientific name	Common name	layer							
<i>Ceyx erithaca</i>	Black-Backed Kingfisher	U	I	0	1	0	0	0	1
<i>Ceyx erithacus</i>	Oriental dwarf kingfisher	T	I	0	4	0	0	0	6
<i>Ceyx rufidorsa rufidorsa</i>	Rufous-backed kingfisher	U	I	1	0	1	2	2	0
<i>Chalcoparia singalensis</i>	Ruby-cheeked sunbird	A	FI	0	0	0	1	0	0
<i>Chloropsis cyanopogon</i>	Lesser green leafbird	A	F	2	0	0	0	0	0
<i>Chloropsis sonnerati</i>	Greater green leafbird	U	F	0	8	7	0	2	6
<i>Chrysococcyx minutillus</i>	Little bronze cuckoo	A	I	0	0	1	0	0	0
<i>Chrysococcyx xanthorhynchus</i>	Violet cuckoo	U	I	1	0	3	0	0	0
<i>Copsychus malabaricus</i>	White-rumped shama	U	I	1	0	1	0	6	2
<i>Coracina fimbriata</i>	Lesser cuckoo-shrike	A	FI	3	0	10	0	8	0
<i>Corvus enca</i>	Slender-billed crow	A	IC	0	0	0	0	3	1
<i>Criniger bres</i>	Grey-cheeked bulbul	U	FI	3	7	5	0	2	3
<i>Criniger finschii</i>	Finsch's Bulbul	U	F	0	1	0	0	0	1
<i>Criniger phaeocephalus</i>	Yellow-bellied bulbul	U	FI	5	10	8	1	3	3
<i>Cuculus micropterus</i>	Indian cuckoo	A	I	9	0	10	6	3	0
<i>Culicicapa ceylonensis</i>	Grey-headed canary flycatcher	U	I	0	1	0	1	0	0
<i>Curniculus lugubris</i>	Square-tailed drongo-cuckoo	A	I	1	0	1	0	5	0
<i>Cyornis superbus</i>	Bornean Blue Flycatcher	A	I	0	1	0	0	0	0
<i>Cyornis turcosus</i>	Malaysian blue flycatcher	U	I	1	0	0	0	0	0
<i>Cyornis unicolor</i>	Pale blue flycatcher	A	I	0	0	1	0	0	0
<i>Dendrocopus canicapillus</i>	Grey-Capped Woodpecker	A	FI	0	0	0	0	0	0
<i>Dicaeum concolor</i>	Plain Flowerpecker	A	N	0	2	0	0	0	1
<i>Dicaeum everetti</i>	Brown-Backed Flowerpecker	A	N	0	0	0	0	0	1
<i>Dicaeum trigonostigma</i>	Orange-bellied flowerpecker	U	F	4	8	11	2	0	20
<i>Dicrurus aeneus</i>	Bronzed drongo	A	I	17	0	2	7	7	0
<i>Dicrurus paradiseus</i>	Greater racquet-tailed drongo	A	I	7	9	5	11	18	9
<i>Dinopium rafflesii</i>	Olive-backed woodpecker	U	I	0	0	1	0	1	0
<i>Dryocopus javensis</i>	White-bellied woodpecker	A	FI	0	0	2	1	0	3
<i>Enicurus leschenaulti</i>	White-crowned forktail	A	I	1	7	2	0	2	0
<i>Eurostopodus macrotis</i>	Great eared nightjar	T	I	0	0	0	0	0	1
<i>Eurostopodus temmickii</i>	Malaysian Eared Nightjar	T	I	0	0	0	0	0	1
<i>Eurostopodus temminckii</i>	Malaysian Eared Nightjar	A	I	0	0	0	0	0	2
<i>Eurylaimus javanicus</i>	Banded broadbill	A	I	0	3	2	0	3	2
<i>Eurylaimus ochromalus</i>	Black-and-Yellow Broadbill	A	I	23	18	22	17	27	15
<i>Gracula religiosa</i>	Hill Myna	A	FI	4	41	20	14	5	4
<i>Harpactes diardii</i>	Diard's trogon	A	FI	1	3	1	0	2	0
<i>Harpactes duvaucelii</i>	Scarlet-rumped trogon	U	I	6	2	0	1	3	1
<i>Harpactes kasumba</i>	Red-naped trogon	A	I	1	0	2	1	0	0
<i>Harpactes orophaeus</i>	Cinnamon-rumped trogon	A	FI	0	2	0	1	0	0
<i>Hierococcyx vagans</i>	Moustached Hawk-cuckoo	U	I	1	0	0	0	0	0
<i>Hirundo tahitica</i>	Pacific Swallow	A	I	0	2	0	0	0	0

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Names		Foraging	Diet	N0	N4	N1	N2	N3	N5
Scientific name	Common name	layer							
<i>Hypogramma hypogrammicum</i>	Purple-naped sunbird	U	N	8	4	5	9	5	4
<i>Hypothymis azurea</i>	Black-naped monarch	A	I	5	3	10	8	7	2
<i>Iole olivacea</i>	Buff-vented bulbul	U	FI	8	0	3	5	2	4
<i>Irena puella</i>	Asian fairy-bluebird	A	F	18	2	9	1	8	0
<i>Ixos malaccensis</i>	Streaked bulbul	A	FI	3	0	0	6	5	0
<i>Lacedo pulchella</i>	Banded kingfisher	U	I	0	0	0	1	2	0
<i>Lonchura fuscans</i>	Dusky munia	U	F	0	0	0	2	1	2
<i>Loriculus galgulus</i>	Blue-crowned hanging parrot	A	N	4	3	7	6	5	9
<i>Macronous bornensis bornensis</i>	Bold-striped tit-babbler	U	I	2	2	2	2	5	0
<i>Macronous ptilosus</i>	Fluffy-backed tit-babbler	U	I	0	8	1	3	8	21
<i>Malacopteron affine</i>	Sooty-capped babbler	U	I	0	4	0	0	4	0
<i>Malacopteron magnum</i>	Rufous-crowned babbler	A	I	11	2	6	18	21	0
<i>Malacopteron cinereum</i>	Scaly-crowned babbler	U	I	3	0	8	4	1	0
<i>Megalaima australis</i>	Blue-eared barbet	A	FI	8	5	15	11	12	17
<i>Megalaima chrysopogon</i>	Golden-whiskered barbet	A	FI	8	0	0	3	16	0
<i>Megalaima eximia</i>	Bornean barbet	U	F	0	24	0	0	0	18
<i>Megalaima henricii</i>	Yellow-crowned barbet	A	F	7	0	3	9	11	8
<i>Megalaima mystacophanos</i>	Red-throated barbet	A	FI	24	0	1	0	2	0
<i>Megalaima rafflesii</i>	Red-crowned barbet	A	FI	4	33	13	6	0	5
<i>Meiglyptes tristis</i>	Buff-rumped woodpecker	A	I	1	3	1	1	0	0
<i>Meiglyptes tukki</i>	Buff-necked woodpecker	U	I	1	0	0	0	0	4
<i>Merops viridis</i>	Blue-Throated Bee-eater	A	I	0	13	0	0	0	10
<i>Mulleripicus pulverulentus</i>	Great slaty woodpecker	A	I	0	0	3	1	0	0
<i>Nectarinia jugularis</i>	Eastern crimson sunbird	U	N	0	0	0	1	1	0
<i>Nectarinia sperata</i>	Purple-throated Sunbird	U	N	0	0	0	0	0	2
<i>Ninox sculata</i>	Boobook	A	FC	0	1	0	0	0	0
<i>Nyctornis amictus</i>	Red-bearded bee-eater	A	I	1	0	0	0	0	0
<i>Oriolus xanthonotus</i>	Dark-throated oriole	A	FI	0	0	1	0	0	0
<i>Orthotomus atrogularis</i>	Dark-necked tailorbird	U	I	0	4	4	3	3	9
<i>Orthotomus ruficeps</i>	Red-headed tailorbird	U	I	2	10	4	6	4	15
<i>Orthotomus sericeus</i>	Rufous-tailed tailorbird	U	I	0	0	4	2	3	4
<i>Pamathorhinus montanus</i>	Chestnut-backed scimitar babbler	T	F	0	3	0	0	0	0
<i>Pellorenium capistratum</i>	Black-capped babbler	T	I	1	6	2	1	1	3
<i>Pericrocotus flammeus</i>	Scarlet minivet	A	I	0	0	2	0	0	3
<i>Pericrocotus igneus</i>	Itierym Inivet	T	I	0	0	0	0	0	1
<i>Phaenicophaenus curvirostris</i>	Chestnut-breasted malkoha	U	IC	0	0	2	0	0	3
<i>Phaenicophaeus chlorophaeus</i>	Raffles's malkoha	A	I	0	0	2	0	2	0
<i>Phaenicophaeus curvirostris</i>	Chestnut -Breastedmalkoh	A	I	0	1	0	0	0	0
<i>Philentoma pyrrhopterum</i>	Rufous-winged philentoma	U	I	0	0	3	0	0	0

Names		Foraging	Diet	N0	N4	N1	N2	N3	N5
Scientific name	Common name	layer							
<i>Picumnus innominatus</i>	Speckled piculet	A	I	0	1	0	0	0	0
<i>Picus miniaceus</i>	Banded woodpecker	A	I	1	4	0	0	0	0
<i>Picus puniceus</i>	Crimson-winged woodpecker	A	I	0	0	0	1	0	1
<i>Pitta arquata</i>	Blue-Banded Pitta	T	I	0	2	0	0	0	2
<i>Pitta baudii</i>	Blue-headed pitta	T	I	8	0	0	0	1	1
<i>Pitta granatina</i>	Garnet Pitta	T	I	17	2	5	11	6	3
<i>Pitta sordida muelleri</i>	Hooded pitta	U	I	1	0	0	0	0	0
<i>Platylophus galeritus</i>	Crested jay	U	I	4	4	1	1	1	0
<i>Platysmurus atterimus</i>	Bornean black magpie	A	I	2	16	2	6	9	0
<i>Polyplectron schleiermacheri</i>	Bornean Peacock-Pheasant	T	F	0	2	0	0	0	2
<i>Pomatorhinus mantanus</i>	Chestnut-backed scimitar babbler	A	I	1	4	1	0	0	1
<i>Prinophilus thoracicus</i>	Scarlet-breasted flowerpecker	A	FI	1	0	0	0	0	0
<i>Prinophilus xanthopygius</i>	Yellow-rumped flowerpecker	A	N	2	1	4	2	0	0
<i>Prinophilus maculatus</i>	Yellow-breasted flowerpecker	U	N	3	2	1	4	3	3
<i>Prinophilus percussus</i>	Crimson-Breasted flowerpecker	A	F	0	0	0	0	0	2
<i>Psittacula longicauda</i>	Long-tailed parakeet	A	F	0	0	1	0	0	0
<i>Ptilocichla leucogrammica</i>	Bornean wren-babbler	T	I	1	0	0	1	1	0
<i>Pycnonotus atriceps atriceps</i>	Black-headed bulbul	A	FI	14	30	6	8	3	13
<i>Pycnonotus brunneus</i>	Red-eyed bulbul	U	FI	41	34	33	25	41	28
<i>Pycnonotus cyaniventris</i>	Grey-bellied bulbul	U	FI	2	0	1	0	0	0
<i>Pycnonotus erythrophthalmos</i>	Spectacled bulbul	A	FI	0	0	0	0	2	0
<i>Pycnonotus eutilotus</i>	Puff-backed bulbul	U	FI	0	0	0	0	2	1
<i>Pycnonotus goaviei</i>	Yellow-vented bulbul	U	FI	1	2	2	1	0	14
<i>Pycnonotus plumosus</i>	Olive-winged bulbul	U	FI	2	0	0	0	0	0
<i>Pycnonotus simplex</i>	Cream-vented bulbul	A	FI	13	4	7	17	9	5
<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	U	FI	1	0	0	0	0	0
		U	I	0	1	1	2	8	0
<i>Rhinomyias umbratilis</i>	Grey-chested jungle flycatcher								
<i>Rhipidura javanica</i>	Pied fantail	U	I	0	0	1	1	0	0
<i>Rhipidura perlata</i>	Spotted Fantail	A	I	0	0	0	0	2	0
<i>Rhyticeros undulatus</i>	Wreathed hornbill	A	FC	0	1	0	0	1	1
<i>Sitta frontalis</i>	Velvet-fronted nuthatch	U	I	0	0	1	0	0	0
<i>Stachyris erythroptera</i>	Chestnut-winged babbler	U	I	20	5	15	13	23	3
<i>Stachyris maculata</i>	Chestnut-rumped babbler	U	I	16	18	13	13	20	9
<i>Stachyris nigricollis</i>	Black-throated babbler	A	I	6	8	0	2	5	0
<i>Tephrodoris gularis</i>	Large Wood Shrike	A	I	2	0	1	1	0	0
<i>Terpsiphone paradisi</i>	Asian-paradise flycatcher	U	I	11	4	8	2	2	0
<i>Treron cappelei</i>	Large green pigeon	A	F	0	1	0	0	1	0
<i>Treron curvirostris</i>	Thick-billed green pigeon	A	F	6	0	5	1	3	0
<i>Treron olax</i>	Little green pigeon	A	F	9	1	7	1	0	0
<i>Trichastoma bicolor</i>	Ferruginous babbler	U	I	1	3	0	2	5	0
<i>Trichastoma malaccense</i>	Short-tailed babbler	T	I	7	30	9	16	8	14

The Impact of Sustainable Forest Management on Plant and Bird Diversity

Names		Foraging layer	Diet	N0	N4	N1	N2	N3	N5
Scientific name	Common name								
<i>Trichastoma rostratum</i>	White-chested babbler	T	I	0	1	0	0	1	3
<i>Trichastoma sepiarium</i>	Horsfield's babbler	T	I	4	1	1	0	0	0
<i>Trichixos pyrropygus</i>	Rufous-tailed shama	A	I	17	5	14	3	5	1
<i>Tricholestes criniger</i>	Hairy-backed bulbul	U	FI	24	0	10	5	4	1

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Curriculum vitae



Arbainsyah was born in Samboja, East Kalimantan, Indonesia, on 7th May 1975 and spent his formative years in Samboja, where he attended SMA Harapan senior high school. After he finished in 1993 he worked in PT Tunggal Yudi Plywood Sawmill and in 1994 he worked in the International MOF-Tropenbos Kalimantan Project at the Forest Research Station on Biodiversity group (Botany) at Wanariset Samboja (WAN) Herbarium, where he was responsible for data entry (BRAHMS), routine herbarium management, plant identification, and Ecological plot establishment. In 1996 he entered the Tridharma University at the Faculty of Biology, in Balikpapan, East Kalimantan.

In 2005 he continued his study for a Master of Science at Leiden University in the Faculty of Biology, under the program Biodiversity and Natural Products, with a fellowship from the GIBBON Foundation. His MSc project was supervised by Dr. F. Adema and Dr. P.J.A. Kessler. His minor subject was about 'A Revision of Asia-Pacific Fabaceae (Leguminosae-Papilionaceae) the genus *Ormocarpum*', and his major subject covered 'A pictorial field guide to fruits and seeds as major animal food resources of East Kalimantan, Indonesia'. In 2012 he received a fellowship grant from the LOUWES fund for his PhD at the Institute of Environmental Sciences (CML: Centrum voor Milieuwetenschappen Leiden), at the Department of Conservation Biology, University of Leiden, The Netherlands. He undertook a research project on 'The impact of Sustainable Forest Management on plant and bird diversity in East Kalimantan, Indonesia' under the supervision of Prof. G.R. de Snoo, Prof. H.H. de Iongh, Dr. C.J.M. Musters (University of Leiden) and Prof. W. Kustiawan (Universitas Mulawarman).

During 1997 to 2012 he acted as a consultant for several projects as an assistant trainer for plant identification in the Forest Research Institute Samarinda, Berau Forest Management Project, PT. Maruwai Coal and CIFOR. In order to improve his skills he visited Leiden University (Nederland) several times during 1979-2002 to be trained for Database Management of the Herbarium and Tropical plant identification, Ethnobotanical Knowledge Systems. He also followed an International course on Economic Botany, a Course on Web Taxonomy and Biodiversity Information Processing ETI BioInformatica, a Course using R in

Data Analysis, and Taxonomy of Sulawesi plant families in Sam Ratulangi University, Manado, North Sulawesi, Indonesia. In 2003 he worked at the Borneo Orangutan Survival (BOS) Foundation as a Tropical Botanist and Ecologist. In 2007 he attended the Flora Malesiana VII Symposium in Leiden University as a presenter. In 2008 he worked with the Eco Integrated Indonesia (EII) Foundation as a Tropical Botanist and Ecologist. In 2010 he attended the Flora Malesiana VIII Symposium in Singapore Botanic Garden, in Singapore, as a presenter. He is currently 'Chairman of the Yayasan Merdeka Pratama'.

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