

ANNEX

BIODIVERSITY APPENDIXES

Appendix 1**Estimated Total Number of the Major Biotic Types**

GROUP	INDONESIA (species)	WORLD (Species)
Bacteria, blue-green algae	300	4,700
Fungi	12,000	47,000
Sea grasses	1,800	21,000
Moss	1,500	16,000
Ferns	1,250	13,000
Flowering plants	25,000	250,000
Insects	250,000	750,000
Molluscs	20,000	50,000
Fish	8,500	19,000
Amphibians	1,000	4,200
Reptiles	2,000	6,300
Birds	1,500	9,200
Mammals	500	4,170

* Total known species to date = 1,435,670 species but there are likely to be 5-10 million insects alone.

Source : KLH, 1989; McNeely et al., 1990.

Appendix 2

Habitat Coverage for Sumatra

Habitat	Origin. area	Rem. %	Prot. area	Prot %	Prop. area	Prop. %
	Km2		Km2		Km2	
FL	31079	59.0	3280	10.5	0	0.0
FS	36948	18.0	560	1.5	478	1.2
HF	10900	18.0	0	0.0	0	0.0
IF	1320	33.0	80	6.0	20	1.5
LR	229218	31.0	8075	3.5	10388	4.5
MF	54500	68.0	9345	17.1	1630	2.9
Mn	13529	29.0	365	2.6	870	6.4
PS	84952	50.0	aw71	3.4	2490	2.9
SER	5280	17.0	50	0.9	60	1.1
TPF	3215	60.0	500	15.5	220	6.8
Totals	470941	41.0	25266	5.3	16156	3.4

Habitat Coverage for Java and Bali

Habitat	Origin. area	Rem. %	Prot. area	Prot %	Prop. area	Prop. %
	Km2		Km2		Km2	
FL	9186	5.0	100	1.0	0	0.0
FS	830	28.0	8	0.9	57	6.8
LR	43488	3.0	603	1.3	496	1.1
MF	15618	48.0	1100	7.0	3504	22.4
Mn	753	38.0	97	12.8	93	12.3
SER	57277	3.0	530	0.9	880	1.5
Totals	127152	9.0	2438	1.9	5030	3.9

Habitat Coverage for Kalimantan

Habitat	Origin. area Km2	Rem. %	Prot. area Km2	Prot %	Prop. area Km2	Prop.%
FL	2270	63.0	0	0.0	1280	56.4
FS	38950	44.0	1210	3.1	2420	6.2
HF	80760	31.0	1100	1.4	1990	2.5
IF	2100	35.0	200	9.5	0	0.0
LR	329390	64.0	9598	2.9	46110	14.0
MF	20540	100.0	8005	39.0	2340	11.4
Mn	18010	54.0	0	0.0	1250	6.9
PS	44130	80.0	225	0.5	650	1.5
Totals	536150	59.0	20338	3.8	56040	10.4

Habitat Coverage for Nusa Tenggara (including Water + Tanimbar)

Habitat	Origin. area Km2	Rem. %	Prot. area Km2	Prot %	Prop. area Km2	Prop.%
FL	51428	23.0	250	0.4	2340	4.5
FS	40	50.0	0	0.0	10	25.0
MF	7090	49.0	500	7.0	815	11.4
Mn	260	36.0	5	1.9	25	9.6
SER	23459	16.0	810	3.4	1030	4.3
UB	1815	11.0	0	0.0	150	8.2
Totals	84092	23.0	1565	11.8	4370	5.1

Habitat Coverage for Sulawesi

Habitat	Origin. area	Rem. %	Prot. area	Prot %	Prop. area	Prop. %
	Km2		Km2		Km2	
FL	12290	41.0	70	0.5	35	0.2
FS	2576	42.0	20	0.7	10	0.3
LR	36181	55.0	1313	3.6	1450	4.0
MF	37365	86.0	1805	4.8	3500	9.3
MSF	24192	38.0	1060	4.3	2325	9.6
Mn	3343	80.0	70	2.0	70	2.0
PS	590	60.0	0	0.0	300	50.8
SER	64861	56.0	1660	2.5	2610	4.0
UB	6484	57.0	30	0.4	820	12.6
Totals	187882	59.0	6028	3.2	11120	5.9

Habitat Coverage for Maluku

Habitat	Origin. area	Rem. %	Prot. area	Prot %	Prop. area	Prop. %
	Km2		Km2		Km2	
MF	2390	100.0	40	1.6	1260	52.7
LR	48410	74.8	490	1.0	9540	19.7
LF	17540	28.3	90	0.5	1180	6.7
FS	430	55.8	0	0.0	55	12.8
PS	480	87.5	0	0.0	10	2.1
Mn	655	82.3	70	12.2	215	38.1
BV	390	39.7	10	2.5	95	24.4
Totals	70295	63.8	700	1.0	12355	17.6

Habitat Coverage for Irian Jaya

Habitat	Origin. area Km2	Rem. %	Prot. area Km2	Prot %	Prop. area Km2	Prop. %
ALp	2170	100.0	740	34.1	258	11.8
MF	68730	85.1	22772	33.1	11000	16.0
LR	209470	92.4	23973	11.4	10769	5.1
LF	12000	94.7	1836	15.3	0	0.0
FS	23280	98.2	3600	15.5	2602	11.2
PS	89100	98.2	11130	12.5	5191	5.8
Mn	14250	97.0	5080	35.4	455	3.2
Totals	419000	93.0	69131*	16.5	30275	7.2

* An additional 83,188 km have been gazetted as nature reserves and recreational parks in a general SK which covers various elements in the Forestry Development Plan.

Habitat Coverage for Indonesia

Habitat	Origin. area Km2	Rem. %	Prot. area Km2	Prot %	Prop. area Km2	Prop. %
FL	135793	39.3	5626	4.1	4835	3.6
FS	103054	46.8	5398	5.2	5632	5.5
HF	91660	28.6	1100	1.2	1990	2.2
IF	3420	34.2	280	8.2	20	0.6
LR	896157	57.5	44057	4.9	78753	8.8
MF	206233	77.1	43567	21.1	24049	11.7
PS	219252	78.8	14326	6.5	8641	3.9
SER	150877	28.3	3050	2.0	4580	3.0
TPF	3215	60.0	500	15.6	220	6.8
Mn	50800	43.9	5687	11.2	2978	5.8
UB	8299	46.9	30	0.4	970	11.7
MSF	24192	38.0	1060	4.4	2325	9.6
BV	390	39.7	10	2.5	95	24.4
ALp	2170	100.0	740	34.1	258	11.8
Totals	1895512	55.8	125431	6.6	135346	7.1

Sources : MacKinnon and Artha, 1981; MacKinnon and MacKinnon, 1986;

NB. The areas of remaining habitats are based on forest cover figures from the early 1980s. Habitat loss has continued in the last decade. These figures will be revised as part of the revision of the National Conservation Plan in Forestry 2.

Vegetation Types

PS	= Peat Swamp	FL	= Forest on Limestone
FS	= Feshwater Swamp	SER	= Semi-Evergreen Rainforest
MF	= Montane Rainforest	HF	= Heath Forest
Mn	= Mangrove Forest	UB	= Forest on Ultrabasic
MSF	= Monsoon Forest	TPF	= Tropical Pine Forest
LR	= Lowland Evergreen Rainforest	IF	= Ironwood Forest
Alp	= Alpine	Sav	= Savanna

Appendix 3

A Comparison of Biotic Richness and Endemism throughout Indonesia

Island	Resident Bird spp. Richness	% Bir Endemism	Mammal spp. Richness	% Mammal Endemism	Reptile spp. Richness	% Reptile Endemism	Relative Plant spp.	% Plant Endemism
Sumatra	465	2	194	10	217	11	820	11
Java	362	7	133	12	173	8	630	5
Borneo	420	6	201	18	254	24	900	33
Sulawesi	289	32	114	60	117	26	520	7
Lesser Sundas	242	30	41	12	77	22	150	3
Maluku	210	33	69	17	98	18	380	6
Irian	602	52	223	58	223	35	1030	55

Source : MacKinnon, 1981; National Conservation Plan, v.I.

Pattern of Species Richness and Distribution in Indonesia Swallowtails

Province	No. of Species	Endemics		Non-Endemics	No. of Species Shared with						
		No.	%		1	2	3	4	5	6	7
Sumatra	49	4	8	45	—	32	13	9	5	4	—
Kalimantan	361	0	0	361	35	—	26	12	9	5	5
Java (+ Bali)	35	2	6	33	32	26	—	13	9	4	4
Lesser Sundas	30	10	33	20	13	12	13	—	10	7	6
Sulawesi	38	11	29	27	9	9	9	10	—	19	6
Maluku	37	9	24	29	5	5	4	6	19	—	15
Irian Jaya	26	2	8	24	4	5	4	5	6	15	—
Indonesia	121*	53**	44	68*							

* Not including *Graphium stratiotes*, *Graphium procles*, *Troides andromache* or *Pezilio acheron*, all of which are endemic to Borneo but have not been recorded on the Kalimantan side of the border.

** 37 species are endemic to only one of areas 1-7; a further 16 species are endemic to Indonesia but occur in more than one of areas 1-7.

Source : Collins and Morris, 1985.

Appendix 4

Key :

- E = Endangered (animals in danger of extinction and whose survival is unlikely if the causal factors continue operating)
 V = Vulnerable (animals believed likely to move into the 'Endangered' category in the near future if the causal factors continue operating)
 R = Rare (animals with small world populations that do not fall into the two categories above)
 I = Indeterminate (animals known to fall into one of the above three categories, but where there is not enough information to say which is the most appropriate)
 K = Insufficiently known (animals that are suspected but not definitely known to belong to any of the above categories, because of lack of information)
 CT = Commercially Threatened (animals not currently threatened with extinction, but most or all of whose populations are threatened as a sustainable commercial resource, or will become so, unless their exploitation is regulated)

Note : The absence of any amphibian (frogs and toads) or many invertebrate species from the list below is more an indication of a lack of information than of a lack of candidates.

Animals	Common Name	Key
BUTTERFLIES		
Order LEPIDOPERA		
Family Papilionidae		
<i>Gnaphium stresemanni</i>		R
<i>Athropaneura lucthi</i>		R
<i>Athropaneura palu</i>		K
<i>Troides andromache</i>		I
<i>Troides prattorum</i>		I
<i>Troides dobertyi</i>	Talau Black Birdwing	V
<i>Ornithoptera tithonus</i>		K
<i>Ornithoptera rothschildi</i>	Rothschild's Birdwing	I
<i>Ornithoptera chimaera</i>	Chimaera Birdwing	I
<i>Ornithoptera paradisea</i>	Paradise Birdwing, Tailed Birdwing	I
<i>Ornithoptera meridionalis</i>		V
<i>Ornithoptera aesacus</i>		I
<i>Ornithoptera croesus</i>		V
<i>Papilio jordani</i>	Jordan's Swallowtail	R
<i>Papilio neumoegei</i>		V
Family Danaidae		
<i>Euploea albicosta</i>		R
<i>Euploea caespes</i>		R
<i>Euploea configurata</i>		R
<i>Euploea cordelia</i>		R

Animals	Common Name	Key
<i>Euploea dentiplago</i>		R
<i>Euploea eupator</i>		R
<i>Euploea gamelia</i>		R
<i>Euploea latifasciata</i>		R
<i>Euploea magou</i>		R
<i>Euploea martinii</i>		R
<i>Euploea tripunctata</i>		R
<i>Idea tambusisiana</i>	Sulawesi Tree Nymph	K
<i>Ideopsis hewitsonii</i>		R
<i>Ideopsis klassika</i>		R
<i>Ideopsis oberthurii</i>		R
<i>Parantica kirbyi</i>		K
<i>Parantica kuekenthali</i>		R
<i>Parantica marcia</i>		R
<i>Parantica menadensis</i>		R
<i>Parantica philo</i>		R
<i>Parantica pseudomelaneus</i>		R
<i>Parantica sulawettan</i>		R
<i>Parantica tityoides</i>		R
<i>Parantica toxopei</i>		R
<i>Parantica wegneri</i>		R
<i>Parantica weiskei</i>		R
<i>Protoploea apatela</i>		R
BEEES		
Order HYMENOPTERA		
Family Megachilidae		
<i>Chalicodoma pluto</i>	Wallace's Giant Bee	K
GASTROPOD MOLLUSCS		
Order ARCHAEGOSTROPODA		
Family Turbonidae		
<i>Turbo marmoratus</i>	Green Snail, Turban Snail	CT
Order MEGASTROPODA		
Family Cymatidae		
<i>Charonia tritonis</i>	Triton's Trumpet, Giant Triton	R

Continued

Animals	Common Name	Key
BIVALVE MOLLUSCS		
Order PTERIOIDA		
Family Pteriidae		
<i>Pinctada margaritifera</i>	Black-lipped Pearl Oyster, Banda Shell	CT
<i>Pinctada maxima</i>	Gold-lipped Pearl Oyster	CT
Order VENEROIDA		
Family Tridacnidae		
<i>Hippopus hippopus</i>	Horse's Hoof Clam, Bear Paw Clam, Strawberry Clam	I
<i>Hippopus porcellanus</i>	China Clam	I
<i>Tridacna crocea</i>	Crocus Clam, Saffron-coloured Giant Clam, Boring Clam	K
<i>Tridacna derasa</i>	Southern Giant Clam	V
<i>Tridacna gigas</i>	Giant Clam	V
<i>Tridacna maxima</i>	Small Giant Clam	K
<i>Tridacna squamosa</i>	Scaly Clam, Fluted Clam	I
HORSESHOE CRABS		
Order XIPHOSURA		
Family Limulidae		
<i>Carcinoscorpius rotundicauda</i>	Horseshoe Crabs	K
<i>Tachypleus gigas</i>		K
<i>Tachypleus tridentatus</i>		K
CRUSTACEANS		
Order DECAPODA		
Family Coenobitidae		
<i>Birgus latro</i>	Coconut Crab, Robber Crab	R
FISHES		
Order OSTEOGLOSSIFORMES		
Family Osteoglossidae		
<i>Scleropages formosus</i>	Arowana, Asian Bonytongue	K
Order CYPRINIFORMES		
Family Cyprinidae		
<i>Balantiocheilos melanopterus</i>	Silver Shark	I

Continued

Animals	Common Name	Key
Order BELONIFORMES		
Family Adrianichthyidae		
<i>Adrianichthys kruyti</i>		E
<i>Xenopocilus popatae</i>		E
<i>Xenopocilus sarasinorum</i>		E
REPTILES		
Order TESTUDINES		
Family Carettochelyidae		
<i>Carettochelys insculpta</i>	New Guenia Plateless Turtle, Pitted Shell Turtle, Fly R. Turtle	K
Family Cheloniidae		
<i>Caretta caretta</i>	Longgerhead Turtle	V
<i>Chelonia mydas</i>	Green Turtle	E
<i>Eretmochelys imbricata</i>	Hawksbill Turtle	E
<i>Lepidochelys olivacea</i>	Olive or Pacific Ridley	E
Family Dermochelyidae		
<i>Dermochelys coriacea</i>	Leatherback	E
Family Emydidae		
<i>Batagur baska</i>	River Terrapin, Batagur, Tuntong, Sungei	E
<i>Callagur borneoensis</i>	Painted Terrapin, Painted Batagur, Tuntong Laut	E
<i>Heosemys spinosa</i>	Spiny Turtle	K
<i>Orlitia borneensis</i>	Malaysian Giant Turtle	K
Family Testudinidae		
<i>Geochelone emys</i>	Burmese Brown Tortoise	K
<i>Geochelone forstenii</i>	Sulawesi (Celebes) Tortoise	R
<i>Indotestudo forstenii</i>	Travancore Tortoise	R
<i>Manouria emys</i>	Burmese Brown Tortoise	K
Order SAURIA		
Family Varanidae		
<i>Varanus komodoensis</i>	Komodo Dragon	R
Order SERPENTES		
Family Boidae		
<i>Python molurus</i>	Indian Python, Burmese Python	V

Continued

Animals	Common Name	Key
Family Colubridae <i>Iguanognathus weneri</i>		I
Order CROCODYLIA		
Family Crocodylidae		
<i>Crocodylus novaeguineae</i>	New Guinea Crocodile	V
<i>Crocodylus porosus</i>	Estuarine Crocodile, Saltwater Crocodile	E
<i>Crocodylus siamensis</i>	Siamese Crocodile	E
<i>Tomistoma schlegelii</i>	False Gharial	E
BIRDS (for more complete list see Collar and Andrew, 1988)*		
Order CICONIIFORMES		
Family Ardeidae		
<i>Egretta eulophotes</i>	Chinese Egret	V
Family Ciconiidae		
<i>Ciconia episcopus stormi</i>	Storm's Stork	I
<i>Mycteria cinerea</i>	Milky Stork	V
Order ANSERIFORMES		
Family Anatidae		
<i>Cairina scutulata</i>	White-winged wood Duck	V
Order FALCONIFORMES		
Family Falconidae		
<i>Falco peregrinus</i>	Peregrine Falcon	V
Order GALLIFORMES		
Family Megapodiidae		
<i>Macrocephalon maleo</i>	Maleo	V
Family Phasianidae		
<i>Lophura bulweri</i>	Bulwer's wattled Pheasant	V
<i>Pavo muticus</i>	Green Peafowl	V
<i>Pavo muticus muticus</i>	Green Peafowl	V
Order CHARADRIIFORMES		
Family Charadriidae		
<i>Venellus macropterus</i>	Javanese Wattled Lapwing	I
Family Scolopacidae		
<i>Limnodromus semipalmatus</i>	Asian Dowitcher	R

Continued

Animals	Common Name	Key
Family Laridae <i>Sterna zimmermanni</i>	Chinese Crested Tern	I
Order STRIGIFORMES Family Strigidae <i>Otus magicus beccarii</i>	Papuan Scops Owl	I
Order CORACIIFORMES Family Bucerotidae <i>Rhinoplax vigil</i>	Helmeted Hornbill	I
Order PASSERIFORMES Family Sturnidae <i>Leucopsar rothschildi</i>	Rothchild's Starling	E
Order PELECANIFORMES Family Pelecanida <i>Pelecanus philippensis</i>	Spot-billed Pelican	K
Family Fregatidae <i>Fregata andrewsi</i>	Christmas Frigatebird	V
MAMMALS		
Order MONOTREMATA Family Tachyglossidae <i>Zaglossus bruijnii</i>	Long-beaked Echidna, Longnosed Echidna	V
Order MARSUPIALIA Family Macropodidae <i>Dendrolagus dorianus notatus</i>	Doria's Tree-kangaroo	V
Family Phalangeridae <i>Phalanger rufoniger</i> <i>Phalanger vestitus</i>	Black-spotted Cuscus Cuscus, Silky Phalanger, Silky Cuscus	R R R
<i>Phalanger interpositus</i>	Stein's Cuscus	R
Family Peramelidae <i>Echymipera clara</i>	White-lipped Bandicoot	R

Continued

Animals	Common Name	Key
Order CHIROPTERA		
Family Pteropodidae		
<i>Dobsonia minor</i>	Leser Naked-backed Fruit Bat	K
<i>Dyacopterus spadiceus</i>	Dayak Fruit Bat	K
<i>Dyacopterus brooksi</i>		K
<i>Megaerops kusnotoi</i>	Javan Tail-less Fruit Bat	K
<i>Pteropus macrotis</i>	Big-eared Flying Fox	I
<i>Aproteles bulmerae</i>	Bulmer's Fluit Bat	K
Family Emballonuridae		
<i>Emballonura furax</i>	Greater Sheath-tailed Bat	K
<i>Emballonura raffrayana</i>	Raffray's Sheath-tailed Bat	K
Family Hipposideridae		
<i>Hipposideros papua</i>	Geelvinck Bay Leaf-nosed Bat	R
Family Mystacinidae		
<i>Glischropus javanus</i>	Javan Thick-thumbed Bat	K
<i>Myotis hermani</i>	Herman's Myotis	R
<i>Myotis batelsii</i>	Bartel's Myotis	K
Family Molossidae		
<i>Otomops formosus</i>	Javan Mastiff Bat	K
Order PRIMATES		
Family Tarsiidae		
<i>Tarsius bancanus borneanus</i>	Bornean Tarsier	I
<i>Tarsius pumilus</i>	Lesser Spectral Tarsier	I
Family Cercopithecidae Asia		
<i>Macaca brunnescens</i>	Muna-butung Macaque	K
<i>Macaca hecki</i>	Heck's Macaque	V
<i>Macaca maura</i>	Moor Macaque	V
<i>Macaca pagensis</i>	Mentawai Macaque, Bokkoi, Mentawai Islands Macaque	E
<i>Nasalis larvatus</i>	Proboscis Monkey, Long-nosed Monkey	V
<i>Presbytis comata</i>	Javan Leaf Monkey	E
<i>Presbytis potenziani</i>	Mentawai Leaf Monkey, Mentawai Islands Langur, Joja	E
<i>Simias concolor</i>	Pig-tailed Langur, Pagai Islands Langur, Simakubo	E

Continued

Animals	Common Name	Key
Family Pongidae		
<i>Hylobates klossi</i>	Kloss's Gibbon, Dwarf Gibbon, Bilou	E
<i>Hylobates moloch</i>	Javan Gibbon, Silvery Gibbon	E
Family Hominidae		
<i>Pongo pygmaeus</i>	Orang-utan	E
Order LAGOMORPHA		
Family Leporidae		
<i>Nesolagus netscheri</i>	Sumatran Short-eared Rabbit	T
Order CETACEA		
Family Delphinidae		
<i>Orcaella brevirostris</i>	Irrawaddy Dolphin, Snubfin Dolphin	K
Order CARNIVORA		
Family Canidae		
<i>Cuon alpinus</i>	Dhole, Asiatic Wild Dog, Red Dog	V
Family Mustelidae		
<i>Mustela lutreolina</i>	Indonesian Mountain Weasel	K
<i>Melogale orientalis</i>	Javan Ferret-badger	K
<i>Aonyx cinerea</i>	Oriental Small-clawed Otter	K
<i>Lutra perspicillata</i>	Smooth-coated Otter, Indian Smooth-coated Otter	K
<i>Lutra sumatrana</i>	Hairy-nosed Otter	K
Family Viverridae		
<i>Arctogalidia trivirgata - trilineata</i>	Javan Small-toothed Palm Civet	I
<i>Macrogalidia musschenbroeki</i>	Sulawesi Palm Civet, Celebes Giant, Palm Civet, Musang, Brown Palm Civet	R
<i>Cynogale bennettii</i>	Otter Civet	K
Family Felidae		
<i>Felis badia</i>	Bornean Bay Cat, Bornean Marbled Cat	R
<i>Felis marmorata</i>	Marbled Cat	I
<i>Felis planiceps</i>	Flat-headed Cat	I
<i>Felis temmincki</i>	Asiatic Golden Cat, Temminck's Cat	I

Continued

Animals	Common Name	Key
<i>Neofelis nebulosa</i>	Clouded Leopard	V
<i>Panthera pardus</i>	Leopard	T
<i>Panthera tigris</i>	Tiger	E
Order PROBOSCIDEA		
Family Elephantidae		
<i>Elephas maximus</i>	Indian Elephant, Asian Elephant	E
Order SIRENIA		
Family Dugongidae		
<i>Dugong dugon</i>	Dugong	V
Order PERISSODACTYLA		
Family Tapiridae		
<i>Tapirus indicus</i>	Malayan Tapir	E
Family Rhinocerotidae		
<i>Didermocerus sumatrensis</i>	Sumatran Rhinoceros	E
<i>Rhinoceros sondaicus</i>	Javan Rhinoceros	E
Order ARTIODACTYLA		
Family Suidae		
<i>Babyrousa babyrussa</i>	Babirusa	V
<i>Sus barbatus oi</i>	Western Bearded Pig	V
<i>Sus verrucosus</i>	Javan and Bawean Warty Pigs	V
Family Cervidae		
<i>Axis kuhli</i>	Kuhl's Deer	R
Family Bovidae		
<i>Bos javanicus</i>	Banteng	V
<i>Bubalus depressicornis</i>	Lowland Anoa	E
<i>Bubalus quarlesi</i>	Mountain Anoa	E
<i>Capricornis sumatraensis sumatraensis</i>	Sumatran Serow	E

* Collar and Andrew, 1988 is the interim third edition of the Red Data Books and list 126 bird species; it is more up to date than this list.

Appendix 5**Centres of Plant Diversity, Indonesia**

Locality	Flora	Protected Areas
<i>Sumatra</i>		
Gunung Leuser	Lowland + montane rainforest, limestone	*
Mt. Kerinci	Lowland, montane, alpine, swamp	*
Siberut	Lowland forest	*
<i>Kalimantan</i>		
Bukit Raya	Lowland and montane rainforest	*
Kutai	Lowland rainforest, ironwood	*
Sangkulirang	Limestone flora	Pr
Gunung Palung	Lowland dipterocarp, swamp forest, mangrove	*
Tanjung Puting	Peat swamp forest, kerangas (heath)	*
<i>Java</i>		
Gede/Pangrango	Montane flora	*
Ujung Kulon	Lowland rainforest, swamp	*
Gunung Halimun	Lowland + hill rainforest	*
<i>Sulawesi</i>		
Dumoga Bone	Lowland + montane forest, limestone	*
Lore Lindu	Lowland/montane	*
Mt. Rantemario	Plant endemism	
Morowali	Ultramaphic flora	*
Lompobatang	High endemism	
<i>Maluku</i>		
Manusela	Lowland, swamp, limestone	*
<i>Irian Jaya</i>		
Arfak	Montane flora, endemism	*
Kumbe-Merauke	Swamp forests, moist savanna	*
Mamberamo-Rouffauer	Lowland flora	*
Mt. Carstenz (Lorentz)	Alpine to low swamp	*
Cyclops Mts.	Ultramaphic flora	*

Source : IUCN, 1990; MacKinnon, 1990.

Appendix 6

Key Sites for Conservation of Biological Diversity: Wetland

Locality	Province	Interest	Protected Areas
Sumatera			
Kluet	Aceh	Swamp forest	*
Lake Toba	Sumatera Utara	Lake ecosystem	
Kerinci Lakes	Sumatera Barat, Jambi, Bengkulu, Sumatera Selatan	Lake ecosystem	*
Way Kambas	Lampung	Swamp forest	*
Sungai Sembilang	Sumatera Selatan	Mangrove	Pr
Berbak	Jambi	Swamp forest	*
Singkil Barat	Aceh	Beach forest	
Siak Kecil	Riau	Swamp forest	Pr
Bagansiapiapi	Riau	Lakes Peat swamps	
Kalimantan			
Dana Sentarum	Kalimantan Barat	Food plains	*
Gunung Palum	Kalimantan Barat	Mangrove, swamps	*
Tanjung Puting	Kalimantan Tengah	Swamp forest	*
Muara Kendawangan	Kalimantan Barat	Swamp forest	*
Hutan Kahayan	Kalimantan Tengah	Swamp forest	*
Muara Kanan	Kalimantan Timur	Peat swamps	*
Pantai Timor	Kalimantan Selatan	Mangrove	Pr
Teluk Apar/Teluk Adang	Kalimantan Timur	Mangrove	*
Muara Sebuka	Kalimantan Timur	Mangrove	*
Mahakam Lakes	Kalimantan Timur	Lake ecosystem	Pr
Jawa			
Pulau Rambut	Jawa Barat	Mangrove	*
Rawa Danau	Jawa Barat	Lake, swamp forest	*
Brantas Delta	Jawa Timur	Waterbird breeding	Pr
Segara Anakan	Jawa Tengah	Mangrove	

Continued

Locality	Province	Interest	Protected Areas
Nusa Tenggara			
Teluk Kupang	Timor Barat	Mudflats	
Lagoa Ira Lalore/P. Jako	Timor Timur		
D. Kelimutu	Flores	Lake ecosystem	
Sulawesi			
Lariang	Sulawesi Selatan	Alluvial swamps	
Malili Lake system (D. Matano, Towuti, Masapi, Wawontua)	Sulawesi Selatan	Lake ecosystem	
D. Lindu/Lore Lindu	Sulawesi Tengah	Lake ecosystem	*
Maluku			
Yamdena/Tanimbar	Maluku	Swamps, mangrove	*
Wae Apo	Maluku	Mangrove	Pr
Manusela	Maluku	Mangrove, estuarine	*
Irian Jaya			
Danau Rombebai/ Mamberamo Basin	Irian Jaya	Lake, swamps, mangrove	Pr
Bintuni Bay	Irian Jaya	Mangrove	*
Kimaam Island	Irian Jaya	Swamp forest	*
Wasur	Irian Jaya	Peat Swamp	*
Lorentz	Irian Jaya	Swamp forest	*
D. Sentani	Irian Jaya	Lake ecosystem	

Source : Silvius et al., 1986

Appendix 7

Terrestrial Conservation Areas of Top Priority

Reserve	Prov./ Islands	Status	IUCN Category	Alt. (m)	Habitats	Total area	Mgt. Plan	Donor assistance
1. Sumatra								
Barisan Selatan	BL	TN	2	0-1811	LR MF	3650	*	
Bentayan	S	SM	4	20-40	IF	193		
Berbak	J	SM	4	0-20	FS MF	1900	*	AWB
Bukit Besar	J	SM	4	150-578	LR	2000		
<i>Kembang Lubuk Niur</i>	W	SM	4	500-2726	LR MF	1000		
Kerinci Seblat	WBJS	TN	2	20-2447	FS LR MF PS	9144	*	TSSD/WB WWF
Kerumutan (Baru)	R	CA	1	c.20	LR PS	1200		
<i>Seberida</i>	R	CA	1	150-830	LR	1200		NORAID
Way Kambas	L	TN	2	0-50	FS LR Mn	1235	*	
<i>Dolok Sembilin</i>	N	CA	1	150-1604	LR	339		WWF
Gn. Leuser	A	TN	2	0-3419	FL LR MF	8080	*	WBI
Perluasan leuser	A	TN	2	100-3021	FL LR	700		
<i>Singkil Barat</i>	A	CA	1	sea level	FS Mn	650		
Taitai batti	W	SM	4	0-385	LR	965	*	
S. Sembilang	S	SM	Pr.4					
2. Java and Bali								
Gede/Pangrango	W	CA	1	609-3079	LR	150	*	WB2
Gunung Halimun	W	CA	1	500-1929	LR MF	400	*	
Ujung Kulon	W	TN	2	0-623	FS LR Mn	761	*	NZ
Baluran	E	TN	2	0-1250	MSF Mn	250	*	WB1
Bromo Tengger	E	TN	2	200-2000	LR MF	570		WB1

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Reserve	Prov./ Islands	Status	IUCN Category	Alt. (m)	Habitats	Total area	Mgt. Plan	Donor assistance
<i>Gn. Kawij/Ketud</i>	E	CA	1	300-2886	LR	500		
Meru Betiri	C	TN	2	0-1223	SER MF	500	*	
Alas Purwo	E	TN	2	0-360	SER MSF	620	*	WB1
Bali Barat	B	TN	2	0-1414	SER MSF MF SER	570	*	WB1
3. Borneo								
Gunung Palung	W	TN	2	0-1160	FS LR MF PS	300	*	USAID
Bentuang-Karimun	W	CA MF	1	300-1960	LR	6000		
Danau Sentarum	W	SM	4	100-150	FS PS	800	*	ODA
Bukit Baka	W	CA	1	400-2278	MF LR	1000		USAID
Bukit Raya	C	CA	1	100-2278	LR MF	1100		
Bukit Raya Extn.	WC	CA	1	100-1259	LR	5900		
Tanjung Puting	C	TN	2	0-100	FS HF LR Mn PS	3050	*	
Tanjung Puting Extn. C		TN	2	0-10	FS HF Mn PS	700		
S. Kayan Mentarang	E	CA	1	200-2558	LR MF	16000		WWF
<i>Ulu Kayan Mutlak</i>	E	CA	1	100-2558	LR MF	9800		
<i>Ulu Sembakung</i>	E	CA	1	130-2143	LR MF	5000		
<i>Muara Sebuku</i>	E	CA	1	0-10	FS HF LR Mn	1327		
Kutai	E	TN	2	0-398	FS IF LR	2000	*	Private sector WB2

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Reserve	Prov./ Islands	Status	IUCN Category	Alt. (m)	Habitats	Total area	Mgt. Plan	Donor assistance
Sangkuliran	E	CA	1	100-1385	FL HF LR	2000		
4. Nusa Tenggara								
Gn. Rinjani complex	L	TN	2	500-3276	MF SER	1170		WB2
Gn. Olet Sangenges	Sw	CA	1	200-1930	FL	350		
Tambora Utara	Sw	SM	4	500-2820	MF MSF SER Sav.	800		
Komodo	F	TN	2	0-735	FL Mn Sav.	340	*	
Ruteng	F	CA	1	900-2400	MF SER	300		
Gn. Manggameti	S	SM	4	500-1225	FL	400		
Gn. Mutis-Miomaffa	WT	SM	4	1200-2427	MF FL	300		
Ira/Lalore/P.Yaco	ET	SM	4	0-1000	MF FL FS	250		
5. Sulawesi								
<i>Gn. Latimojong</i>	S	HL	8	1000-3440	MF	300		
Lore Lindu	C	TN	2	200-2356	LR	2290	*	WB2
Morowali	C	CA	1	0-2600	MF FS LR MF Mn UF	2000	*	
<i>Marisa Complex</i>		CA	1	0-900	FS MF MFS Mn	940		
Rawa Aopa	SE	TN	2	100-1006	FS MFS PS UF	1500		WB,SSO
Dumoga Bone	N		2	100-1970	FL MF SER	3000	*	WB1
Gn. Tangkoko	N		1	0-1103	I.R MF SER	89	*	USAID

BIODIVERSITY ACTION PLAN FOR INDONESIA

Reserve	Prov./ Islands	Status	IUCN Category	Alt. (m)	Habitats	Total area	Mgt. Plan	Donor assistance
6. Maluku								
Gn. Arnau	W		1	0-1400	FL SER	450		
Lolabata	H	SM	4	0-1417	FL UF	1890		
Gn. Sibela MF	Ba	CA	pr.1	0-2118	LR	400		
Taliabu	Ta	CA	1	200-1654	LRF	700		
Gn. Kalapat Muda	B	SM	4	0-2745	MF	1450		
<i>Wae Bula</i>	S	CA	1	0-1074	MSF	600		
Manusela	S	TN	2	0-3027	LRF MF	1800	*	WB2
Yamdena	T	CA	1	0-240	FL MSF FS	600		
Kai Besar	K	CA	1	0-803	FL	370		
<i>P. Kobroor</i>	A	SM	4	0-70	Mn FS	1700		
7. Irian Jaya								
Gn. Lorentz		CA	1	0-4848	Alp. MF HF FS PS Mn FL UF	21500		WWF
Cyclops		CA	1	90-2160	MF LRF UF	225	*	WWF
Wasur		TN	2	0-20	MSF Sav. FS Mn	4262		WWF/DGIS
Kimaam		SM	4	50	FS Sav. Mn	7200		
Peg. Jayawijaya		CA	1	180-4640	LRF FS MF Alp.	8620		

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Reserve	Prov./ Islands	Status	IUCN Category	Alt. (m)	Habitats	Total area	Mgt. Plan	Donor assistance
Mamberamo			pr.2	0-2193	PSF FS MF LRF Mn	14425		
<i>Peg. Tamrau Utara</i>			1	0-3825	LRF FL MF	3313		
<i>Peg. Tamrau Selatan</i>			1	0-3825	LRF	2456		
<i>Peg. Arfak</i>			1	150-2800	MF UF LRF	700	*	WWF
Bintuni					Mn LRF FS FS	4500		
P. Supiori		CA	1	0-1034	LRF	408	*	
<i>Weyland</i>		CA	1	900-3892	MF LRF FL	2741		

Sumatera

A = Aceh
N = North Sumatra
W = West Sumatra
R = Riau

J = Jambi
B = Bengkulu
S = South Sumatra
L = Lampung

Java and Bali

W = West Java
C = Central Java
E = East Java
B = Bali

Kalimantan

W = West Kalimantan
C = Central Kalimantan
S = South Kalimantan
E = East Kalimantan

Sulawesi

N = North Sulawesi
C = Central Sulawesi
SE = Southeast Sulawesi
E = East Sulawesi

Nusa Tenggara

L = Lampung
L = Lombok
F = Flores
Sw = Sumbawa
S = Sumba
WT = West Timor
ET = East Timor

Maluku

H = Halmahera
B = Buru
S = Seram/Ambon
W = Wetar
T = Tanimbar
K = Kai
Ba = Bacan
A = Aru

Habitats

LR = lowland rainforest
FS = freshwater
PS = peatswamp
MSF = monsoon forest
SER = semievergreen rainforest

Mn = mangrove
MF = montane forest
UF = forest on ultrabasic
FL = forest on limestone
IF = irowood forest

HF = neath forest
Alp = Alpine
Sav = savanna grassland

Source : National Conseration Plan, FAO 1981/1982;
MacKinnon & MacKinnon, 1986;
Petocz & Raspado, 1989