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I TECHNICAL MEETING ON BIODIVERSITY SURVEYS OF NGOC SON NGO LUONG NATURE RESERVE, HOA BINH PROVINCE YEAR 1

1. Background on the project on biodiversity concern

The Ngoc Son – Ngo Luong project is a development project funded by AECID (Spanish Agency for International Cooperation and Development) and implemented by FPD Hoa Binh (Forest Protection Department) and FPSC (Foundation for Social Promotion of Culture Spain) with technical advice from FFI (Fauna and Flora International) during the formulation phase and first year of implementation. This project aims to protect the area and around Ngoc Son Ngo Luong Nature Reserve and its wildlife by supporting the protection of this new protected area through building the management plan as well as improving local livelihoods. Reviews of current knowledge of the natural resources and biodiversity of the Pu Luong - Cuc Phuong limestone range (including Pu Luong Nature Reserve, Ngoc Son – Ngo Luong Nature Reserve and Cuc Phuong National Park) indicate a lack of data for central portion of the range, mainly represented by Ngoc Son Ngo Luong Nature Reserve. This lack of data¹ constrains effective conservation management of these areas. In contrast, the South-eastern end of the range, represented mostly by Cuc Phuong National Park, is far better known with species lists of variable completeness available for most floral and faunal groups. Given the need for baseline information to inform conservation management actions, it is this area that therefore forms the initial priority for surveys to be undertaken by the project.

2. Brief information about the surveys

The project has undertaken 4 main surveys during the first year of the project with the technical support from FFI:

- Survey on Forest type and Flora (Report 1)
- Survey on vertebrate fauna of Ngoc Son-Ngo Luong Nature Reserve (Report 2)
- Survey on Land use and forest use (Report 3)
- Survey on natural water resources (Report 4)

GIS and mapping tools have been used to support the surveys.

From these surveys, a preliminary biodiversity baseline has been done. A total **455 vertebrate animal** species have been recorded in this first survey from previous information available and field data, including **93 mammal species; 253 bird species; 48 reptile species; 34 amphibian species and 27 fish species**; of which **26 species are listed in IUCN Red List of Threatened Species** (IUCN, 2006), and 56 are listed as nationally threatened species in the Red Data Book of Vietnam (Anon, 2000) and 2 endemic sub-species. 3 of those species are considered extinct species in the Nature Reserve, and 5 species are noted as provisional record, only.

In addition, **667 vascular plant species** of 373 genera in 140 families were recorded. Of which, **there are 28 threatened species listed in the Vietnam Red Data Book (2007), 7 species listed in Decree 32/2006, 10 species in IUCN Red list (2008), and 14 endemic species of Vietnam**. Particularly, in the reserve there are some large populations of *Nghiên* (*Excentrodendron tonkinense*) on limestone ranges at Tu Do and Ngoc Son communes. These

¹ Ngoc Son proposed Nature Reserve. Sourcebook of Existing and Proposed Protected Areas in Vietnam Updated 20/02/01. BirdLife International.



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populations typically presents for limestone vegetation in Vietnam, and are quite big and concentrated, compared to the neighbouring-protected areas (Cuc Phuong National Park and Pu Luong Nature Reserve). *Diospyros mun*, a critically endangered species in IUCN Red list, is also founded in the reserve. The subtype of evergreen forest on limestone accounts for the largest forested area in the reserve. Moreover, 11 endemic species of Vietnam have been found which were not recorded in Pu Luong Nature Reserve.

The key species recorded are shown in the Annexes 1 and 2.

Soft copy of the reports can be requested in advance for the meeting to know the information available.

3. Some key questions to discuss during the technical meeting

Have the fauna survey contributed to raise the knowledge of the biodiversity (wildlife) of the Ngoc Son Ngo Luong nature reserve? Why?

What are the weak points of the fauna survey?

Should the project extend the vertebrate fauna survey to other season/s or to repeat the same survey with the same sampling effort?

Should the project focus on flag species more than establish a fauna baseline list? If yes, which species?

Should the project develop other sorts of surveys in relation to the wildlife?, Which sorts of surveys?

Is there enough knowledge to make a monitoring programme or the project should complete the biodiversity baseline of the nature reserve?

Have the flora survey contributed to raise the knowledge of the biodiversity (flora) of the Ngoc Son Ngo Luong nature reserve? Why?

What are the weak points of the flora survey?

Should the project extend the sampling points or the project should focus on some habitat/order-families of flora species? What habitat/order-families species?

Should the project develop other sorts of surveys in relation to the flora/forest?, Which sorts of surveys?



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Annex 1. Flora threatened species recorded in Ngoc Son Ngo Luong Nature Reserve (Source: Survey on Forest type and Flora. Report 1)

No	Scientific name	Vietnamese name	Threaten level ranked by		
			Vietnam Red Book (2007)	Decree 32	IUCN Red List (2008)
1	<i>Drynaria fortunei</i>	Cốt toái bò	EN A1,c,d		
2	<i>Polygonatum kingianum</i>	Hoàng tinh vòng	EN A1+c,d		
3	<i>Anoetochilus calcareus</i>	Kim tuyến đá vôi	EN A1d	IA	
4	<i>Stephania cepharantha</i>	Bình vôi	EN A1a,b,c,d	IIA	
5	<i>Diospyros mun</i>	Mun	EN A1c,d, B1+2a		CR A1cd
6	<i>Excentrodendron tonkinense</i> (Syn. <i>Burretiodendron hsienmu</i>)	Nghiến	EN A1a-d+2c,d	IIA	EN A1d
7	<i>Garcinia fagraeoides</i>	Trai lý	EN A1c,d	IIA	
8	<i>Cymbidicum insigne</i>	Lan kiếm đại	EN A1d+b1+2b,c,e		
9	<i>Annamocarya sinensis</i>	Chò đái	EN B1+2c,d,e		EN B1+2cde
10	<i>Fernandoa bracteata</i>	Đỉnh vàng	EN B1+2e		
11	<i>Canarium trandenum</i>	Trâm đen	VU A1,a,c,d +2d		
12	<i>Goniothalamus vietnamensis</i>	Bồ béo đen	VU A1,a,c,d, B1+2b,e		
13	<i>Drynaria bonii</i>	Tắc kè đá	VU A1a,c,d		
14	<i>Parashorea chinensis</i>	Chò chi	VU A1a,c,d		EN A1cd, C2a, D
15	<i>Aglaia spectabilis</i>	Gội nếp	VU A1a,c,d+2d		
16	<i>Ardisia silvestris</i>	Khôi tia	VU A1a,c,d+2d		
17	<i>Protium serratum</i>	Cọ phèn	VU A1a,d+2d, B1+2a		
18	<i>Cinnamomum balansae</i>	Vù hương	VU A1c	IIA	EN A1cd, B1+2c
19	<i>Dipterocarpus retusus</i>	Chò nâu	VU A1,c,d+2c,d, B1+2b,e		VU A1cd+2cd, B1+2c
20	<i>Alangium tonkinense</i>	Thôi chanh bắc	VU A1c, B1+2a,b,c,d		
21	<i>Castanopsis hystrix</i>	Dê gai đỏ	VU A1c,d		
22	<i>Disporopsis longifolia</i>	Hoàng tinh cách	VU A1c,d		
23	<i>Michelia balansae</i>	Giỏi bà	VU A1c,d		
24	<i>Quercus platycalyx</i>	Dê cau	VU A1c,d		
25	<i>Calamus platyacanthus</i>	Song mật	VU A1c,d+2c,d		
26	<i>Stemona cochinchinensis</i>	Bách bộ nam	VU B1+2b,c		
27	<i>Meliantha suavis</i>	Rau sáng	VU B1+2e		
28	<i>Dendrobium draconis</i>	Nhất điểm hồng	VU b1+2e+3d		
29	<i>Cycas sp.</i>	Thiên tuế		IIA	
30	<i>Fibraurea tinctoria</i> Lour.	Hoàng đằng		IIA	
31	<i>Knema tonkinensis</i>	Máu chó			VU D2
32	<i>Amesiodendron chinense</i>	Trường mật			LR/nt
33	<i>Deutzianthus tonkinensis</i>	Mọ			LR/nt
34	<i>Nageia fleuryi</i>	Kim giao			NT

CR: Critically endangered; EN = Endangered (criteria A-E); VU = Vulnerable (criteria A-D);
LR = Lower risk/nt; NT= Near threatened



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Annex 2. Fauna threatened species recorded in Ngoc Son Ngo Luong Nature Reserve
(Source: Survey on vertebrate fauna of Ngoc Son-Ngo Luong Nature Reserve (Report 2))

No	Latin Name	English Name	Threaten level ranked by		
			Vietnam		Global
			Vietnam Red Book (2000)	Decree 32	IUCN Red List (2006)
1	<i>Cynopterus brachyotis</i>	Lesser Short-nosed Fruit Bat	R		
2	<i>Rhinolophus paradoxolophus</i>	Big-leafed Horseshoe Bat	R		VU
3	<i>Coelops frithi</i>	Tailless Leaf-nosed Bat	R		
4	<i>la io</i>	Great Evening Bat	R		
5	<i>Nycticebus coucang</i>	Slow Loris	V	IB	
6	<i>Nycticebus pymaeus</i>	Pygmy Loris	V	IB	VU
7	<i>Macaca assamensis</i>	Assamese Macaque	V	IIB	VU
8	<i>Macaca arctoides</i>	Bear Macaque	V	IIB	VU
9	[<i>Trachypithecus crepusculus</i>]	[Phayre's Langur]	V	IIB	
10	[<i>Trachypithecus delacouri</i>]	[Delacour's Langur]	E	IIB	CR
11	<i>Nomascus leucogenis</i> †	White-cheeked Gibbon	E	IB	EN
12	<i>Cuon alpinus</i> †	Asian Wild Dog	E		EN
13	<i>Ursus thibetanus</i>	Asiatic Black Bear	E	IB	VU
14	[<i>Ursus malayanus</i>]	[Sun Bear]	E	IB	
15	<i>Lutra lutra</i>	Common Otter	V		NT
16	<i>Aonyx cinera</i>	Small-clawed Otter	V	IB	NT
17	<i>Prionodon pardicolor</i>	Spotted Linsang	R		
18	<i>Arctictis binturong</i>	Binturong	V		
19	<i>Arctogalidia trivirgata</i>	Three-stripped Palm Civets	R		
20	<i>Chrotogale owstoni</i>	Owston's Civet	V	IIB	VU
21	[<i>Prionailurus viverrinus</i>]	[Fishing Cat]	R	IB	VU
22	<i>Catopuma temmincki</i>	Golden Cat	E	IB	VU
23	<i>Neofelis nebulosa</i>	Clouded Leopard	V	IB	VU
24	<i>Panthera pardus</i>	Leopard	E	IB	
25	<i>Panthera tigris</i> †	Tiger	E	IB	EN
26	[<i>Tragulid javanicus</i>]	[Lesser Mouse Deer]	V		
27	<i>Carpicornis sumatraensis</i>	Serow	V	IB	VU
28	<i>Manis pentadactyla</i>	Chinese Pangolin	V	IIB	
29	<i>Belomys pearsoni</i>	Hairy-footed flying squirrel	R		
30	<i>Petaurista petaurista lylei</i>	Red Giant Flying Squirrel	R	IIB	
31	<i>Hylopetes phayrei</i>	Phayrei's Flying Squirrel	R	IIB	
32	<i>Lophura nycthemera</i>	Silver Pheasant	T	IB	
33	<i>Aceros undulatus</i>	Wreathed Hornbill	T	IIB	
34	<i>Anorrhinus tickelli</i>	Brown Hornbill	T	IIB	NT
35	<i>Picus rabieri</i>	Red-collared Woodpecker	T		
36	<i>Pitta phayrei</i>	Phayre's [Eared] Pitta	R		
37	<i>Sitta frontalis</i>	Velvet-fronted	T		
38	<i>Sitta formosa</i>	Beautiful Nuthatch	T		VU
39	<i>Pica pica</i>	Black-billed Magpie	E		
40	<i>Gekko gekko</i>	Tockay	T		
41	<i>Acanthosaura lepidogaster</i>	Scale-bellied tree lizard	T		
42	<i>Physignathus cocincinus</i>	Indochinese water dragon	V		
43	<i>Varanus salvator</i>	Water monitor	V	II	
44	<i>Python molorus</i>	Burmese python	V	II	
45	<i>Elaphe moellendorffii</i>	Moellendorff's Rat Snake	T		
46	<i>Elaphe prasina</i>	Oriental whip snake	T		
47	<i>Ptyas korros</i>	Indochinese rat snake	T		
48	<i>Ptyas mucosus</i>	Common Rat snake	V	II	
49	<i>Bungarus fasciatus</i>	Banded krait	T	II	
50	<i>Naja naja</i>	Common Cobra	T	II	
51	<i>Ophophagus hannah</i>	King cobra	E	I	
52	<i>Ovophis monticola</i>	Chinese Mountain Pit Viper	R		
53	<i>Indotestudo elongata</i>	Elongated Tortoise	V	II	EN
54	<i>Bufo galeatus</i>	Gamboja toad	V		
55	<i>Paa spinosa</i>	Giant spiny frog	E		VU
56	<i>Chaparana delacouri</i>	Tonkin asian frog	E		



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Note in column

Species with square brackets [] denote provisional record only. † Extinct species in the Nature Reserve

Conservation Status:

-Conservation Status in Vietnam followed:

Red Data Book of Vietnam, Vol. 1. Animal (2000): E: Endangered; V: Vulnerable; T: Threatened; R: Rare; K: insufficiently known.

Decree 32 of Vietnam Government 2006: IB- Strictly prohibit from exploitation and use for commercial purpose; IIB- Limit from exploitation and use for commercial purpose

Global Conservation Status followed:

IUCN (2006): CR: Critical Endangered; EN: Endangered; VU: Vulnerable; NT: Near Threatened; DD: Data Deficient.