

Foster parenthood of hornbills in Thailand



MAHIDOL
UNIVERSITY
Wisdom of the Land

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Why hornbills are so special?

Hornbills are very large in size (60-150 cm)

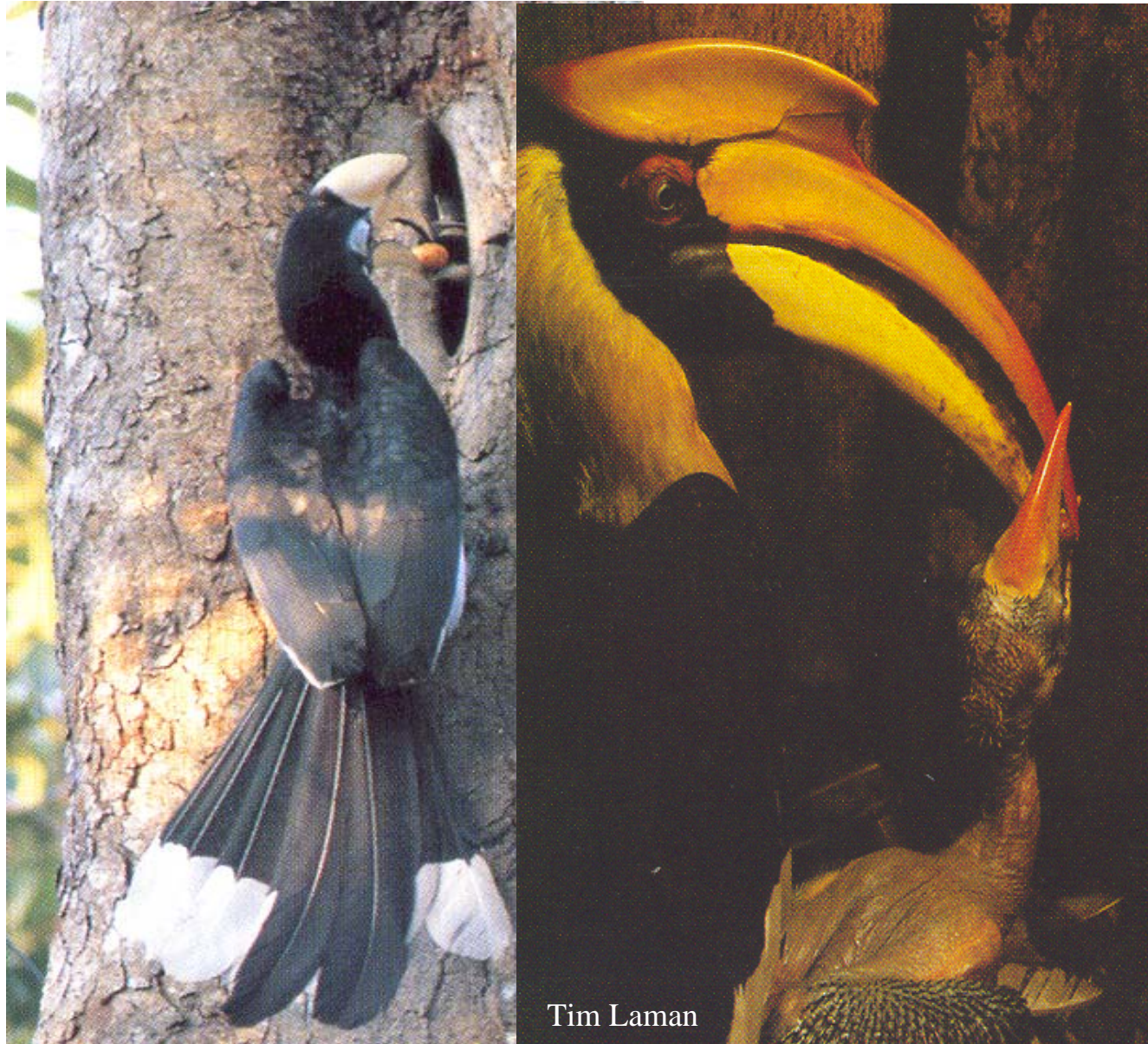


Great Hornbill (*Buceros bicornis*)

They are monogamous that pair for life and famous for their faithfulness to their mates



Females imprison in a cavity



Tim Laman

Feeding



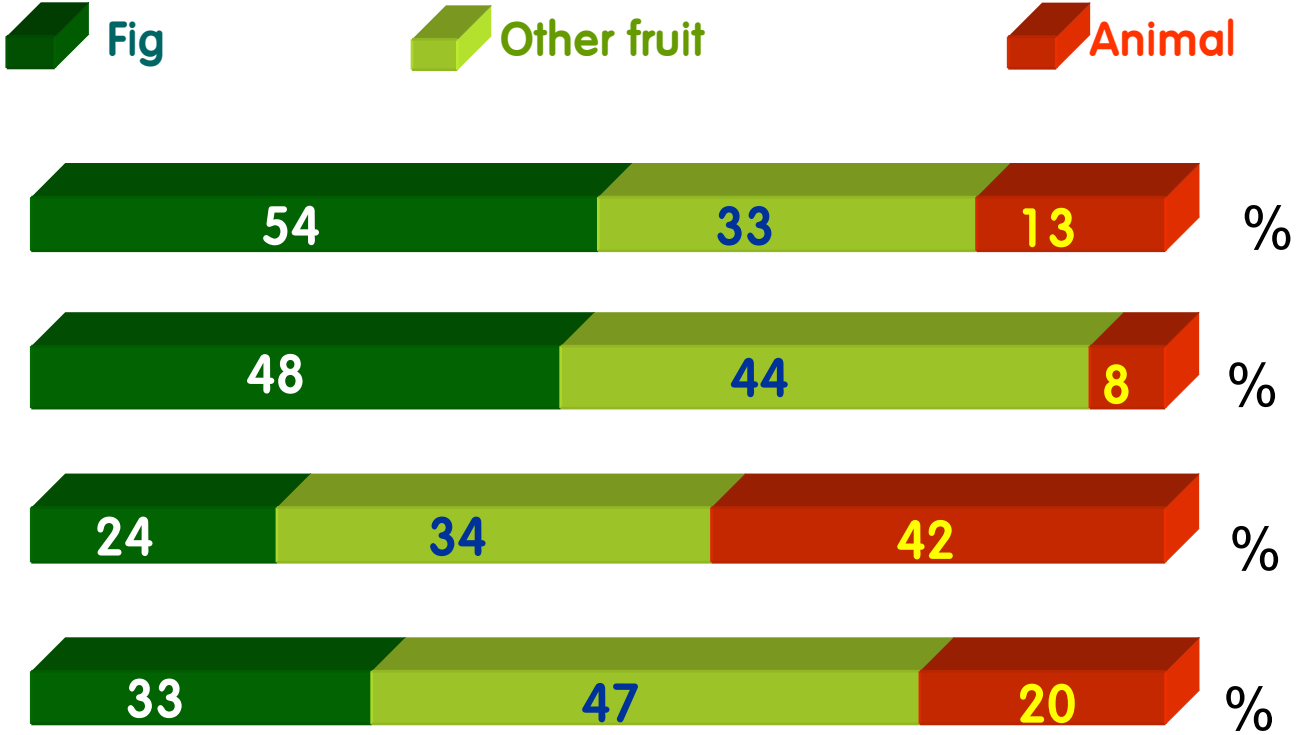
Hornbills are omnivorous birds



Animal



70+ spp.



Fledging of Great Hornbill chick



Roosting flock

Natural enemies

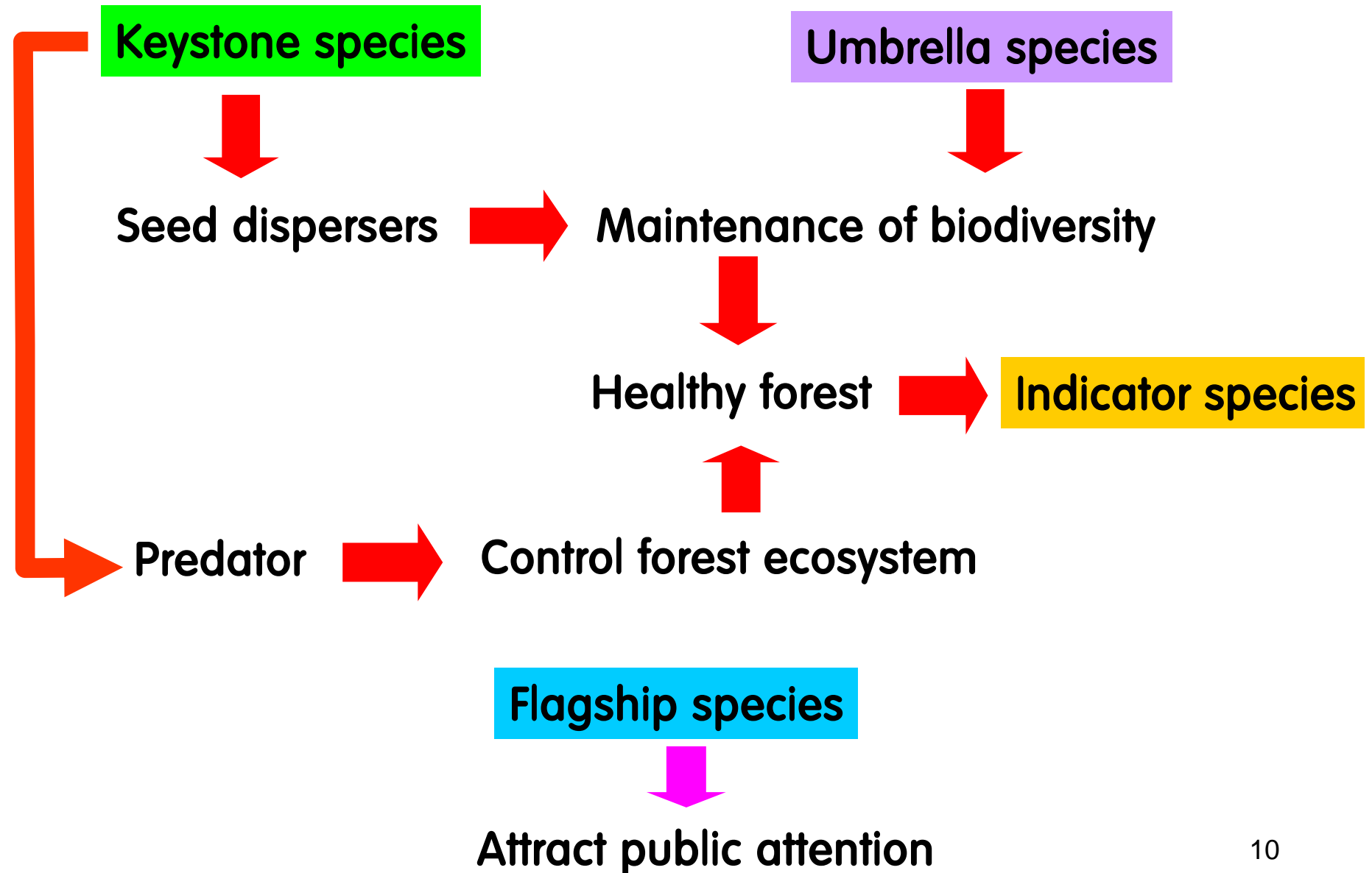


Yellow-throated marten

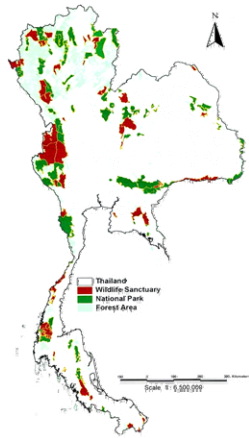


Binturong

IMPORTANT ROLES OF HORNBILLS



How many hornbill species are found in Thailand?



Great Hornbill
Buceros bicornis
(150 cm)



Rufous-necked Hornbill
Aceros nipalensis
(110 cm)



Oriental Pied Hornbill
Anthracoceros albirostris
(65-70 cm)



Black Hornbill
Anthracoceros malayanus
(80cm)

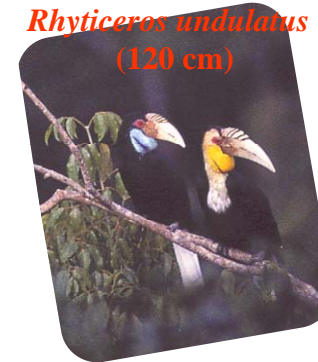


Wrinkled Hornbill
Rhyticeros corrugatus
(80 cm)

Tickell's Brown Hornbill
Anorrhinus tickelli
(75 cm)



Wreathed Hornbill
Rhyticeros undulatus
(120 cm)



Helmeted Hornbill
Rhinoplax vigil
(127 cm)



Plain-pouched Hornbill
Rhyticeros subruficolis
(80 cm)



Bushy-crested Hornbil
Anorrhinus galeritus
(89 cm)



Rhinoceros Hornbill
Buceros rhinoceros
(125 cm)



Brown Hornbill
Anorrhinus austeni
(75 cm)



White-crowned Hornbill
Berenicornis comatus
(90 cm)

CONSERVATION OF HORNBILLS



Principle considerations are:

- Threat
- Limiting factor
- Implementation



Budo-Sungai Padi National Park (340 km²)



Tropical Rainforest

Threats to hornbills in Southern Thailand

1. Poaching



2. Illegal logging



3. Encroachment



Loss of suitable cavity → limiting factor

- Natural cause



Budo Sungai-Padi NP (1996-2008)

- Nest tree loss = 27%, n = 168



GOALS OF THE PROJECT

- 1. Education and awareness**
- 2. Sustainable hornbill population**

PHASE I: Immediate approaches

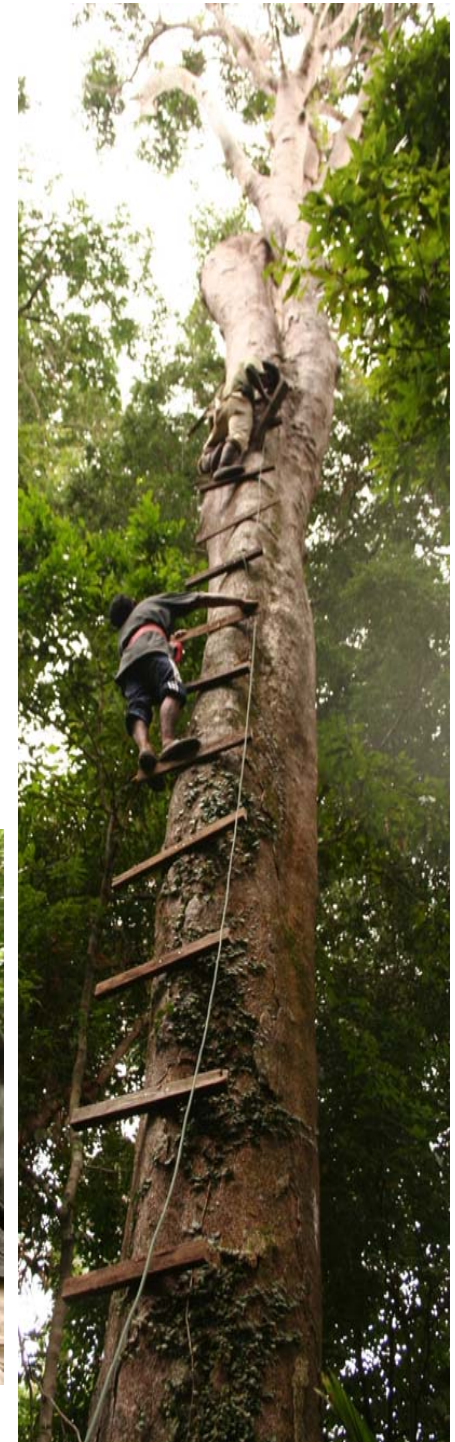
GOAL: To increase hornbill population



1. Convincing poachers



2. Training ex-poachers to be research assistants



3. Recruit fund: Hornbill Family Adoption Program (Win-win program)


Goal: To ensure survival of hornbills at Budo

Year	Thai	Foreigner	Total of nest adopted
1998	54	17	71
1999	71	32	103
2000	77	42	119
2001	73	31	104
2002	75	46	121
2003	101	47	148
2004	83	100	183
2005	93	113	206
2006	105	114	219
2007	93	81	174
2008	77	97	174
Total	902	720	1,622

Annual report prepared for adopter

Hornbill Family Adoption Program 2007

"Padaryuki Family"



HORNBILL FAMILY ADOPTION PROGRAM 2007

ADOPTEE INFORMATION

ADOPTEE NAME: Padaryuki Family

ADOPTEE ADDRESS: 11, May Street, 20, June 2007

ADOPTEE CONTACT: Department of Wildlife and Forest, 11, Highway 1, June 2007

ADOPTEE PHONE: 011-2345678

ADOPTEE EMAIL: padaryuki@family.com

ADOPTEE PHOTO: [Small photo of a person]

ADOPTEE SIGNATURE: [Signature]

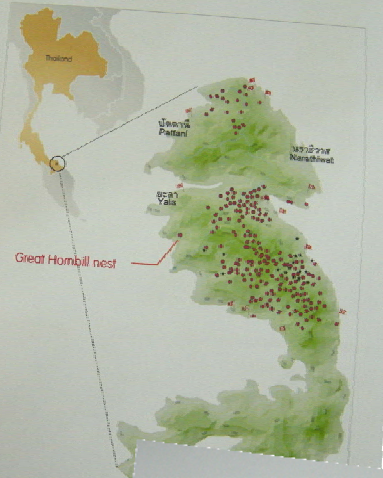
Hornbill NEST LOCATION

Nest location: Bado Mountain (a part of Bado Sungai-Padi National Park), Ranau District, Yala Province, Thailand


Villages have participated in the program

1. Da-ngo
2. Kayee
3. Taketa
4. Yankong
5. Poda
6. Pacho
7. Baganee
8. Kuyi
9. Yerngpa
10. Tanode
11. Taphi
12. Lakra
13. Jolu Kapor

● Hornbill nest tree
★ Artificial nest



Hornbill NEST TREE



Name of responsible villager/group: Mr. Hasong (a) & Mr. Arduemun Karaya (b) Jakoa Group 1998

Nest found in year: 1998

Species of nest tree: *Syzygium* sp.

DBH of nest tree: 111 cm

Height of nest tree: 41 m

Coordinate (UTM): X: 0783691 Y: 0719398

Altitude above sea level: 430 m

Slope at nest tree: 15%

Diameter of nest height: 73 cm

Height of nest above ground: 29 m

Size of nest entrance (W x L): 22 x 18

Direction of nest entrance: 100° (E)




DBH = Diameter at Breast Height

FOOD delivered at the nest by male & female Great Hornbills during the nesting cycle

FRUIT	Average feeding frequency/day	Average number/day	Average weight/day (g)	ANIMAL	Average feeding frequency/day	Average number/day
 Ficus sp. (size $\varnothing < 1\text{ cm}>$)	0.3	14.7	10.3	 Scorpion	0.1	0.2
 Ficus sp. (size $\varnothing 1-2\text{ cm}>$)	3.3	56.1	661.8	 Insect	0.2	0.4
 Ficus sp. (size $\varnothing > 2\text{ cm}>$)	2.9	22.0	134.4	 Millipede	0.1	0.9
 Celastrus sp.	2.4	2.4	35.3	 Flying Lizard	0.1	0.1
 Ficus sp.	0.4	2.1	19.8	 Centipede	0.1	0.1
 Crotalaria sp.	0.3	2.6	54	 Snake	0.1	0.2

Run ecotourism

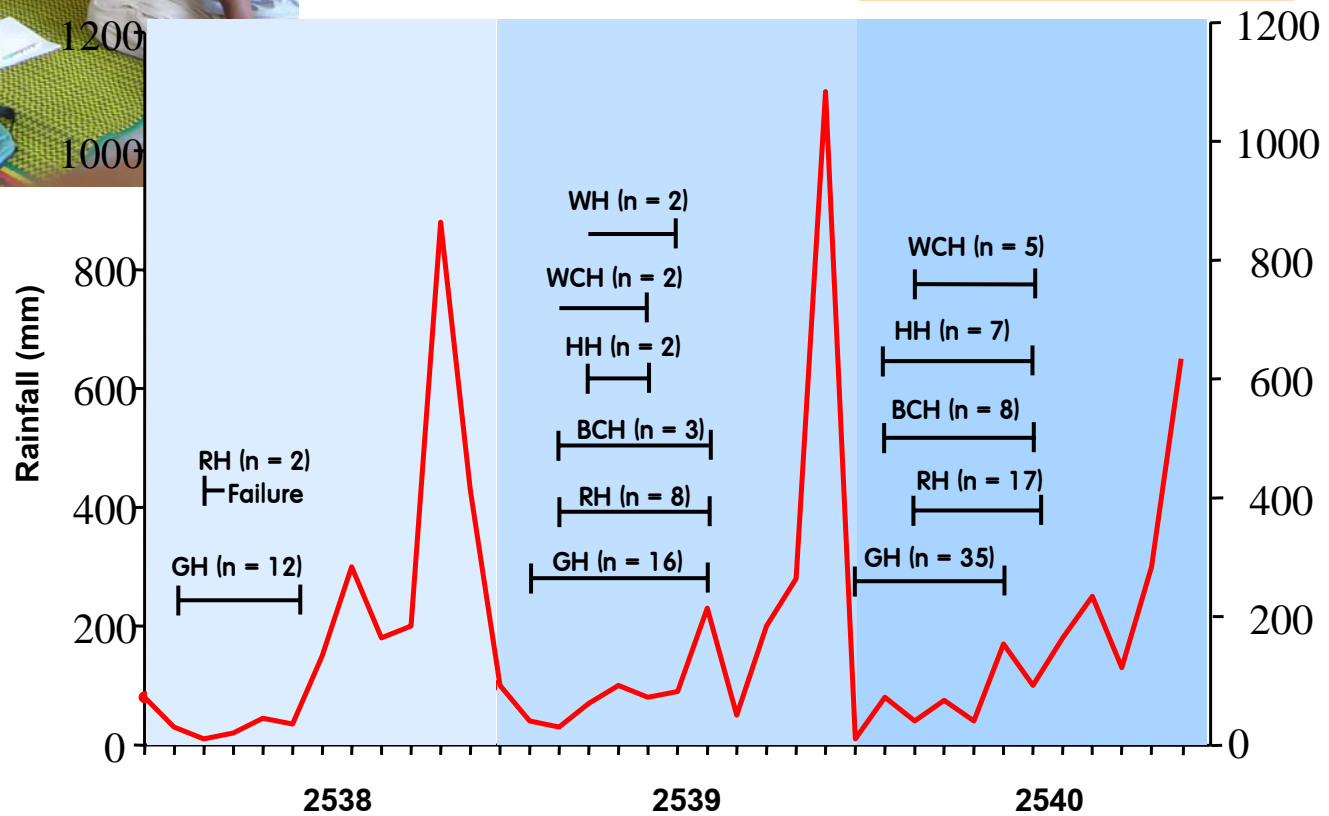


Merits gained • Obtain information

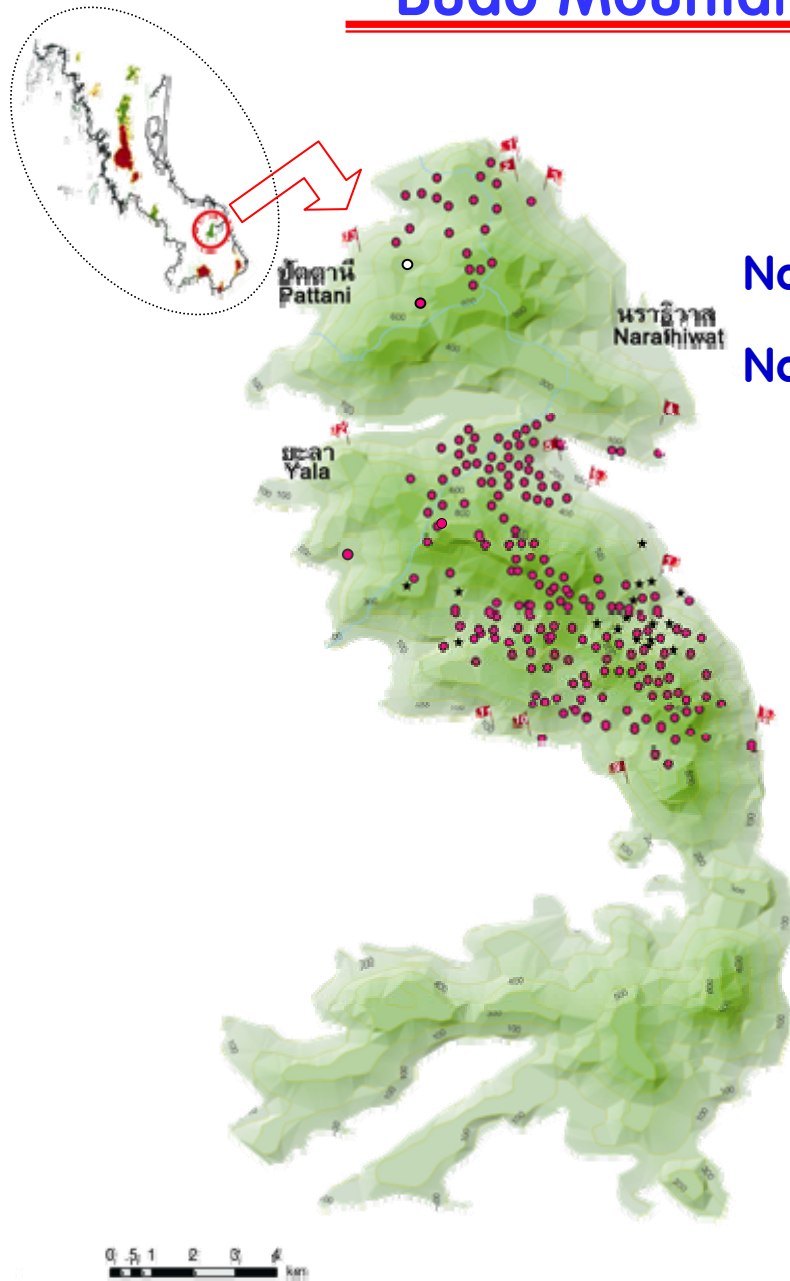


Breeding season

BSNP: Mar-Jul



Budo Mountain (190 km²)



(1994-2008)

No. of known hornbill nest tree: 168 trees

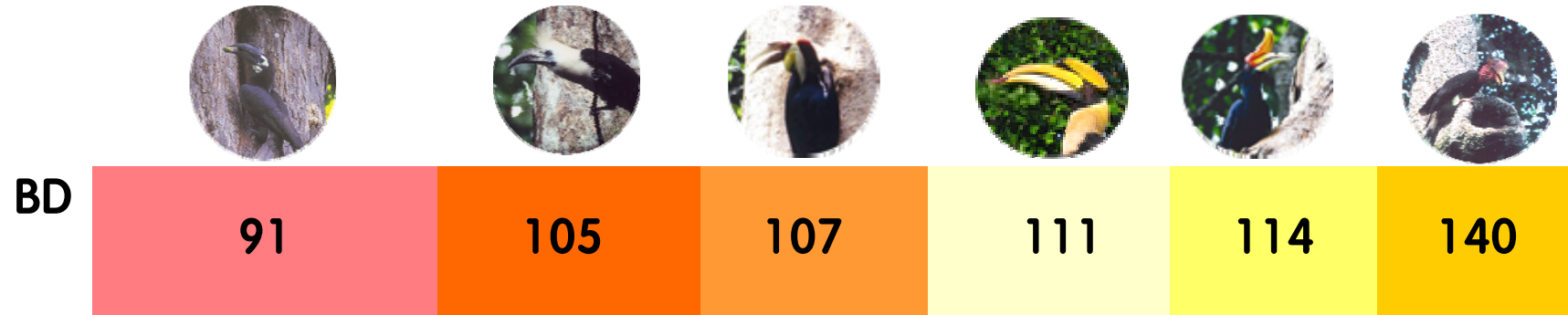
No. of suitable: uncertain

Breeding status of six hornbill species in Budo-Sungai Padi NP

Year	No. nest observed	No. enter	No. success	No. unsuccess	No data
1994	32	14	14	0	-
1995	32	16	8	8	-
1996	32	28	23	5	-
1997*	53	55	25	1	29
1998*	65	43	20	9	14
1999*	80	42	23	17	2
2000	84	35	19	12	5
2001	93	32	21	7	4
2002	105	50	45	3	2
2003	110	36	29	6	1
2004**	116	59	50	4	-
2005**	120	54	46	6	-
2006**	124	37	30	7	-
2007**	127	37	28	9	-
2008**	130	29	21	6	2
Total	1,303	567	402	100	59

*Military operation ** Unrest situation

Breeding cycle (days)



Chick production

	No. hornbill Species studied	No. years	No. chick produced	% success
BD (1994-2008)	6	14	438*	70

No. nest cavity-years = 1,303

* Included chicks hatched in artificial nests



- Attitude changed



• Transfer of knowledge



• Reaction of the villagers toward poaching, Illegal logging, encroachment



Phase II: Long term approaches

- GOAL: 1. Education & awareness**
- 2. Sustainable hornbill population**

Land donation for BUDO Hornbill Conservation & Education Center
(28 Apr 2003)



Budo Hornbill Conservation & Education Centre



. Educate schoolchildren & schoolteachers



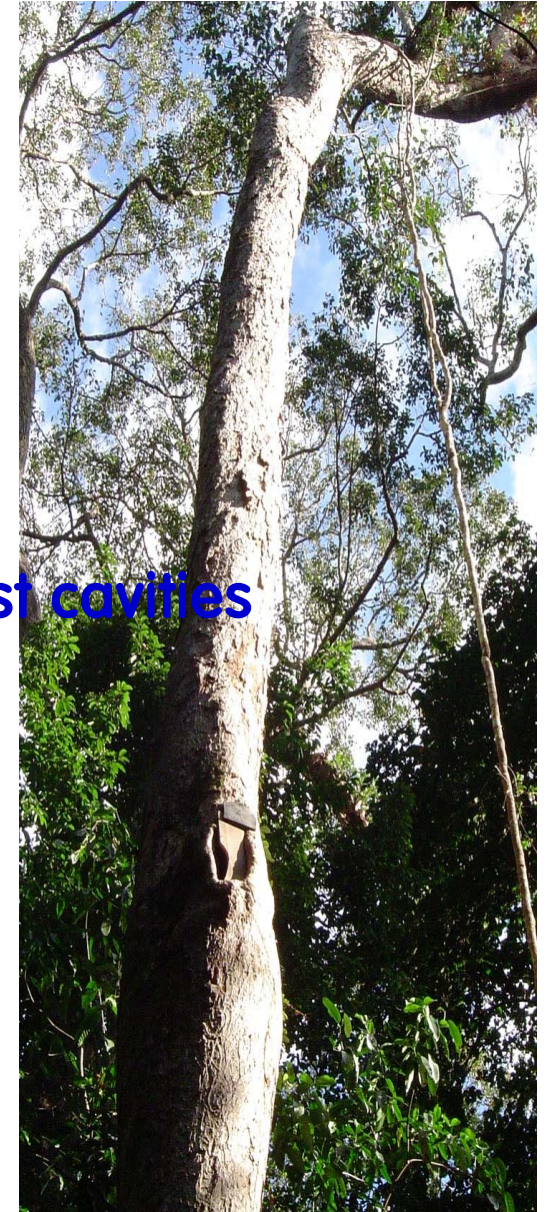




• **Management activities participated by villagers**



Improve/repair existing nest cavities

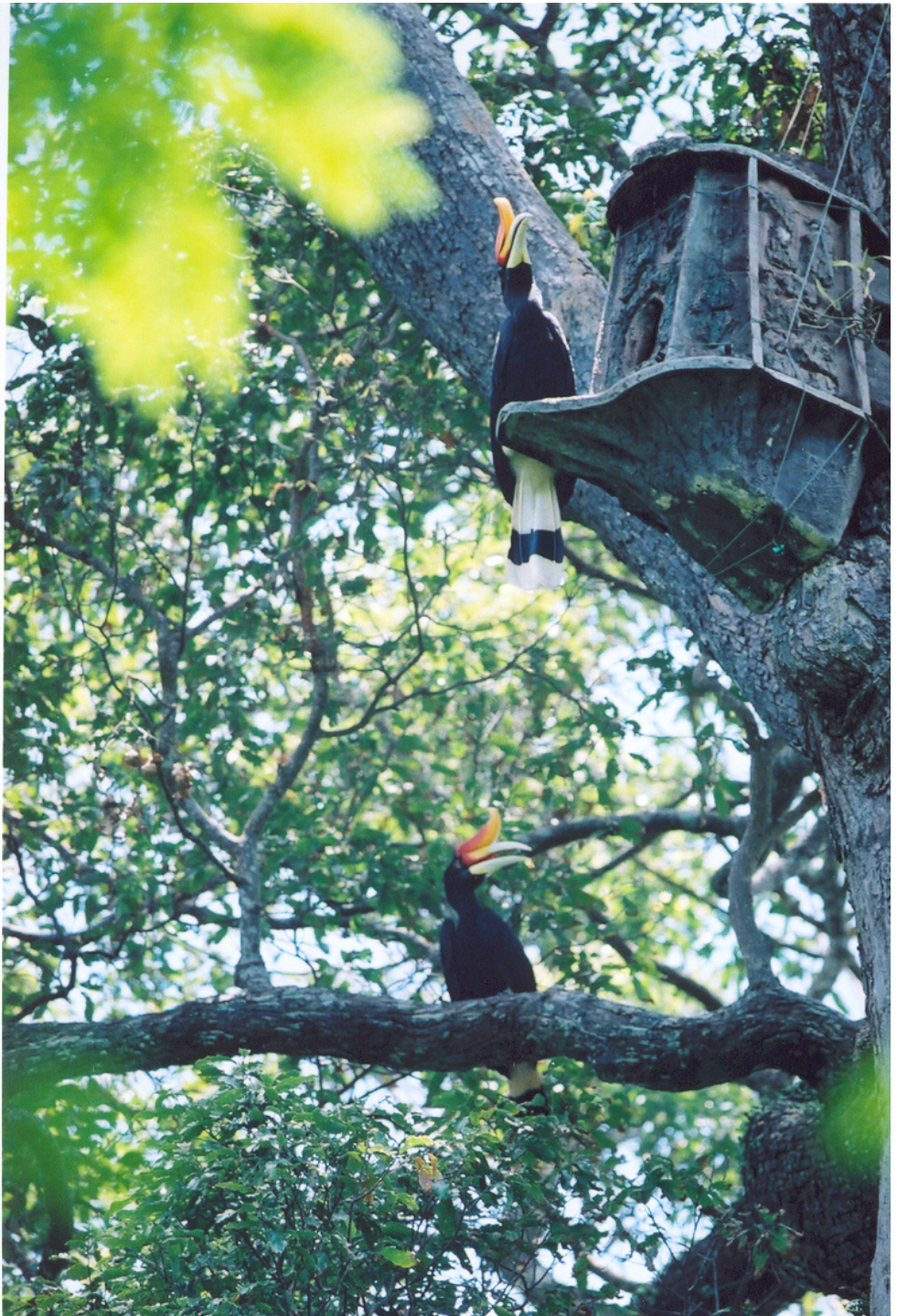


Modify natural cavities

Install artificial nests



Artificial nests used by hornbills



Publicity through various mass media

- TV programs (Thai, Fox station, NHK, etc.)
- Radio
- Magazines
- Newspapers



Conclusions:

To achieve the goals, we need to have the following

- Knowledge and expertise
- Determination
- Sincerity
- Compassion and respect
- Ethics

Popularity of the programme

Recently/ presently approached by other communities for advice

- **Government sectors**

- Environmental Committee of the Senate
- Khao Pra-Taew Non-hunting Area

- **Private sectors (Resorts)** → Krabi, Samed island

- **Local communities**
 - Chang island, Trad Province
 - Kirilom Village, Prachuabkirikhan Prov.
 - Sai Kueng Self Settlement, Surat Thani Prov.
 - I-Guenoh Village, Narathiwat Prov.

Thanks all sponsors

Supports from government/ NGOs/ private sectors → funding

   <p>Mahidol University Government Research Fund</p> 	 <p>รักษาน้ำใจ หอม มูลนิธิหอมน้ำใจ</p>  <p>มูลนิธิหอมน้ำใจ มูลนิธิหอมน้ำใจ</p> <p>มูลนิธิเทียม โชควัฒนา</p>  <p>มูลนิธิสืบภาคเกษตร</p>  <p>มูลนิธิสยามกัมมาจล THE SIAM COMMERCIAL FOUNDATION</p> <p>ชมรมเพื่อนอินทนนท์</p> <p>Hornbill nest adopters</p>	   <p>DTAC makes it easy</p>       <p>ธนาคารไทยพาณิชย์ SIAM COMMERCIAL BANK</p>    
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Supports from zoos & private sectors



etc.



Help conserve hornbills
for next generation

Thanks