



Habitat Use and Breeding Ecology of Indian Black Eagle (*Ictinaetus malayensis*) in northern Taiwan

Wen-Horn LIN



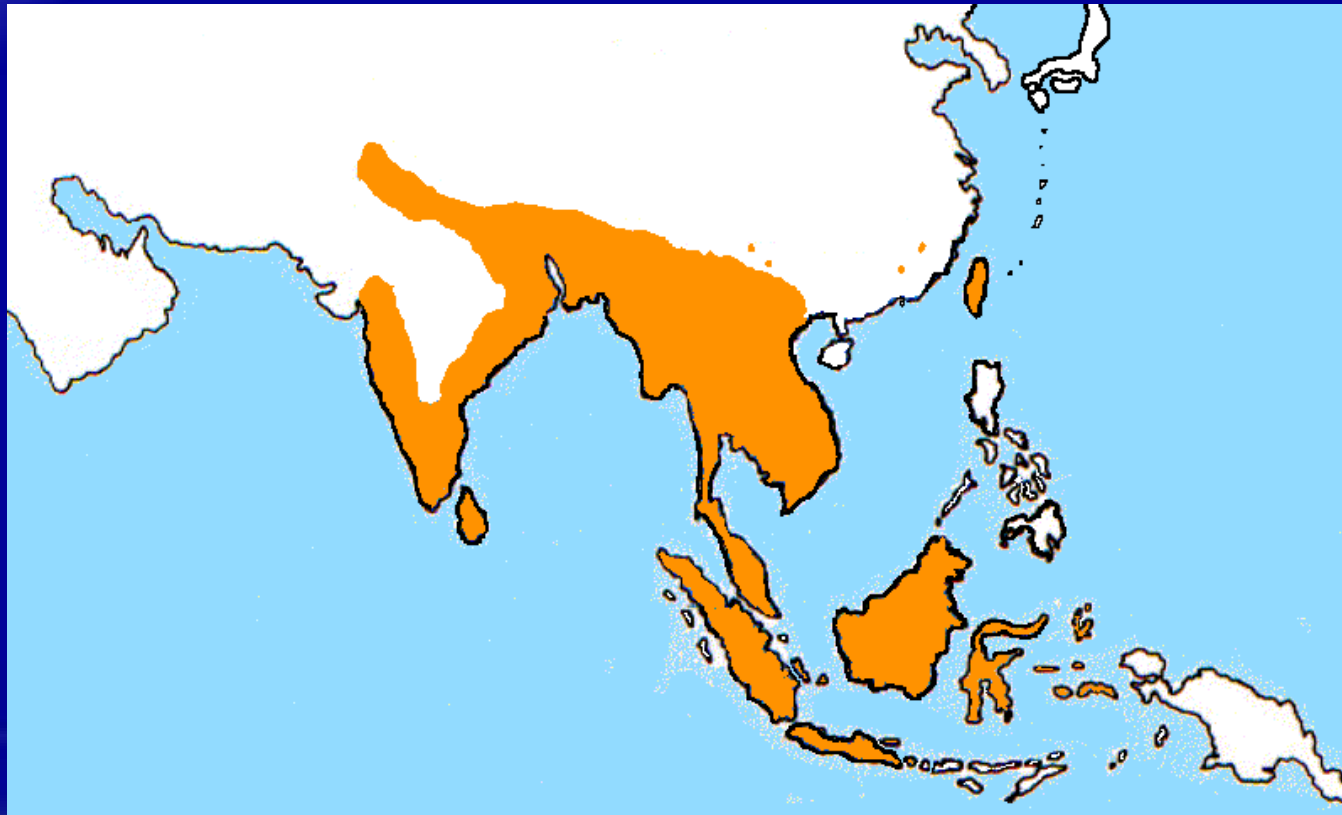
Raptor Research Group of Taiwan







Global Distribution of Indian Black Eagle



Known Distribution in Taiwan (before 1990)

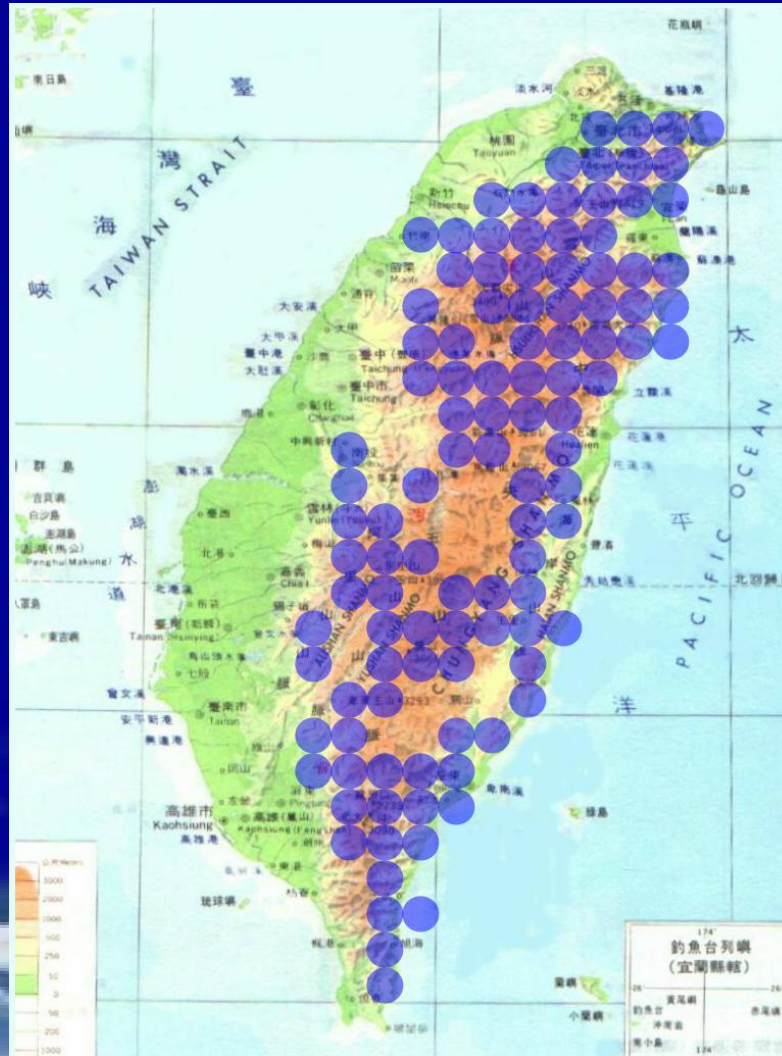
9 grids,
coverage: 3.7%






Distribution in Taiwan (1990~2005)

110 grids,
coverage: 45%

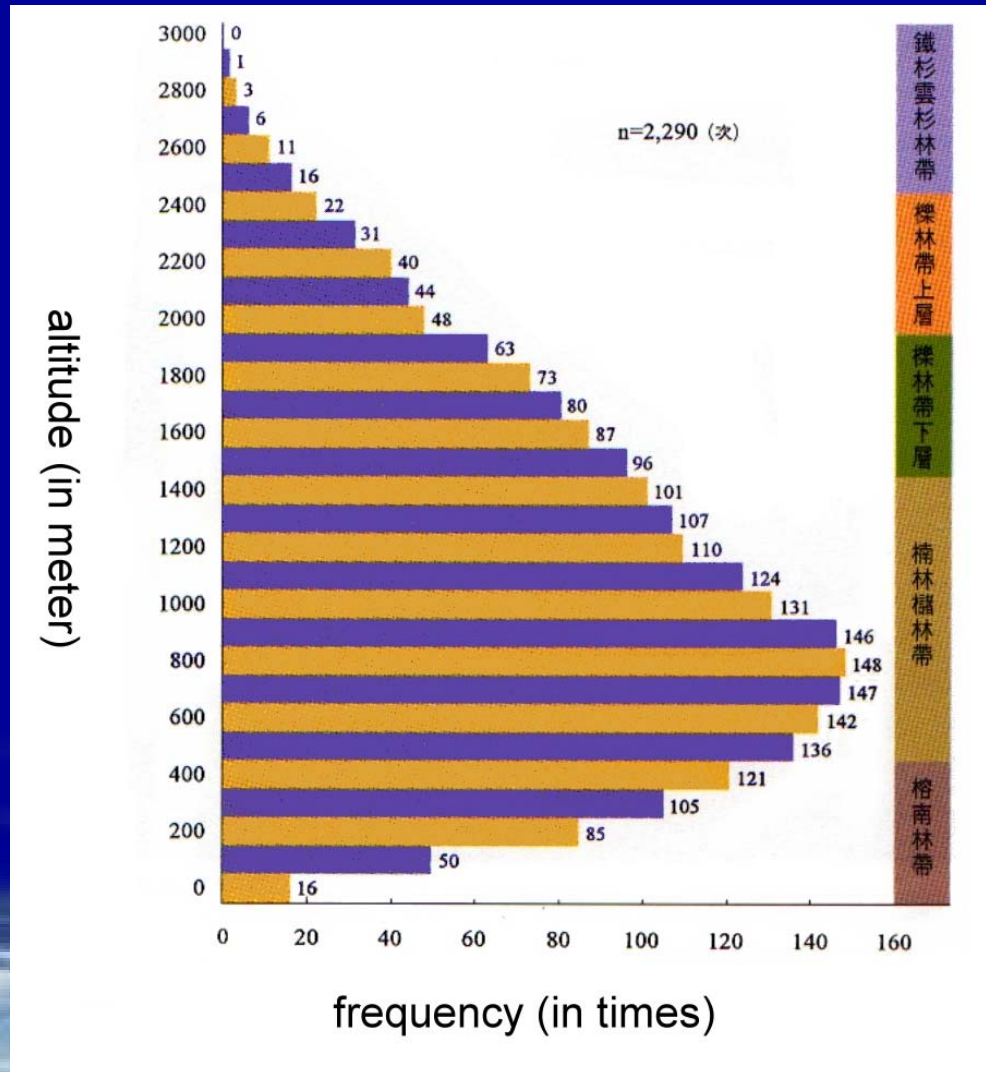




Terrain Types of IBE's Recorded Sites

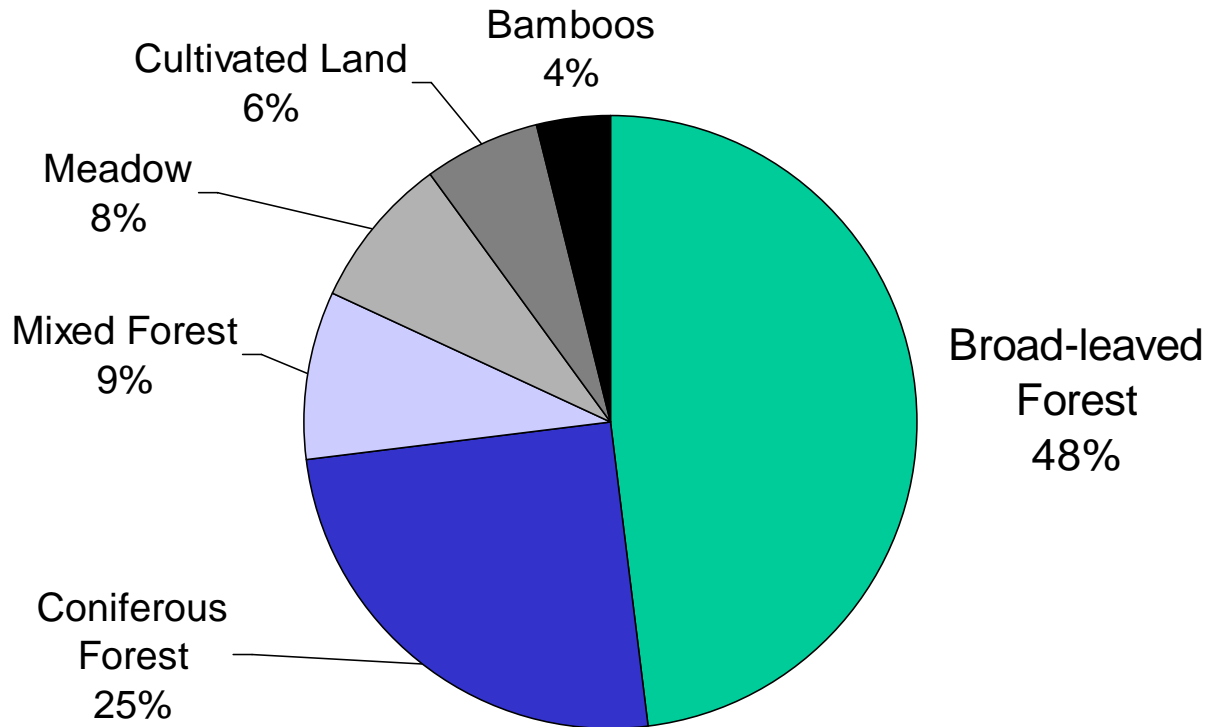
- 97% records occur in major mountain ranges
 - Only 3% records occurred in isolated hills
 - No records in plains, wetlands, seashore or off-shore isles
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Vertical Distribution of IBE in Taiwan





Vegetation Types Proportion in IBE's Ranges in Taiwan






Human impact on IBE's Habitat

- Obviously, large area of natural montane forest is the optimal habitat for IBE in Taiwan.
- However, high density of human population and activities intruded into many of IBE's habitats.
- What is the impact to IBE?





Three Sample Sites of IBE Habitats with Different Degree of Human Disturbance

- A. Fu-Shan: protected natural forest, very low human disturbance
 - B. Ping-Lin: natural forest mixed with cultivated land (tea farms), medium human disturbance
 - C. Shuang-Gong: low hills of cultivated land and villages, high human disturbance
- 



Habitat Use of IBE in these 3 Sites

Site	Use Period	Breeding	Protected	Habitat Trend	Overall Grade
A	Year-round	Yes	Yes	persistently good	Good
B	Year-round	Yes	Partial	could get worse	Medium
C	Winter (Oct~Mar)	No	No	persistently poor	Poor



Breeding Habitat & Ecology

- On 2004 March, we found an IBE nest at Fu-Shan, northeastern Taiwan.

some measurements:

Dimension	90 x 90 cm
Thickness	40 cm
shape	round platform
height	13.9 m (to tree bottom), 20 m (to ground)
support branch	3 (thickness: 10, 10, 6 cm)
coverage atop	5 %
nest tree species	<i>Machilus zuihoensis</i> + <i>Pseudodrynaria coronans</i>
nest tree height	16.1 m (healthy)
slope	48°



Breeding Ecology Study: Nest Monitoring by Radio-transmitted CCD system

- The wet and misty weather in this season made our observation difficult.
- We decided to use the “radio-transmitted CCD camera system” to monitor the nest.
- From May 14 to June 12, we successfully recorded more than 120 hours of DV tapes.

[Pictures](#)

[Video1](#)





Breeding Ecology: the Food Items

Food Items obtained by CCD+Telescope

Species	Records
Spinous Country Rat	10
Hairy-footed Flying Squirrel	5
Red-bellied Tree Squirrel	2
Giant Flying Squirrel	2
White-faced Flying Squirrel	1
Lizard	3
Snake	2
Bird	2



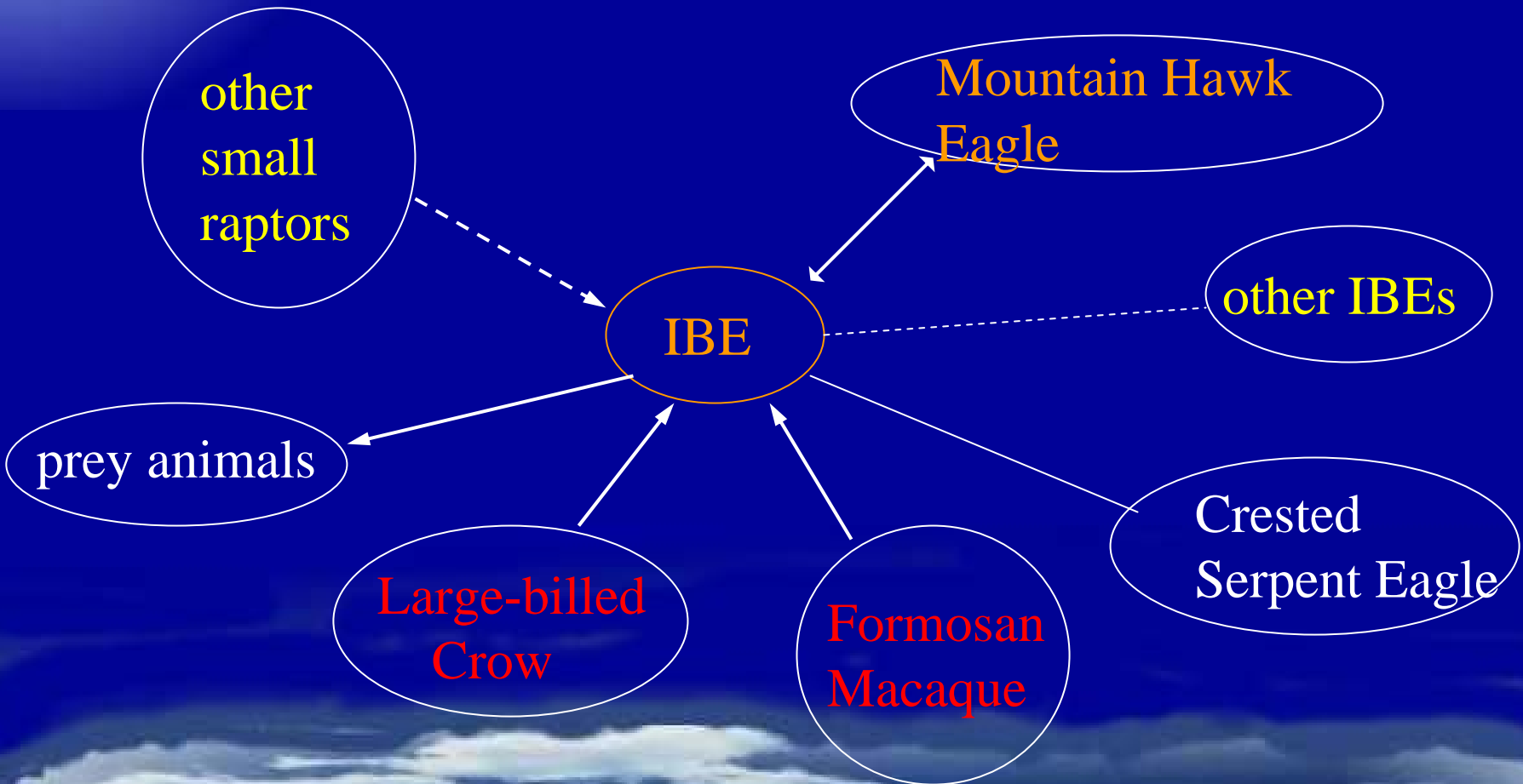
Breeding Ecology: the Food Items

Food Items Obtained by Pellet Analysis (n=38)

Species	Records
<u>Spinous Country Rat</u>	22
Hairy-footed Flying Squirrel	15
Bird Egg	8
Bird	6
Insect	4
Botany leaves, twigs, seeds	9



Inter-Species Interactions among Sympatric Species



→ means threat or attack



New Discovery in 2005

- In a new study site of northern Taiwan, a pair of IBEs successfully raised two eaglets. This is a new discovery to IBE in Taiwan.







The ARRCN Collaborative Project Indian Black Eagle Project

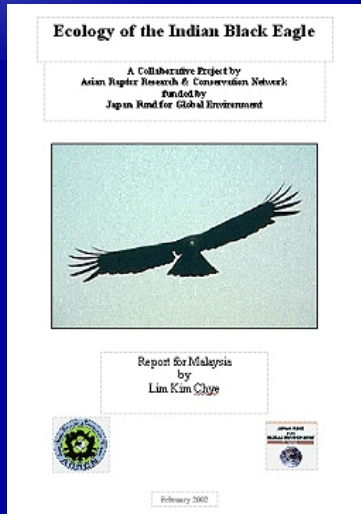
- To accumulate IBE's ecological data in order to promote its conservation
- Started from 2001
- Collaborated among researchers from India, Indonesia, Malaysia, and Taiwan



The ARRCN Collaborative Project: Indian Black Eagle Project



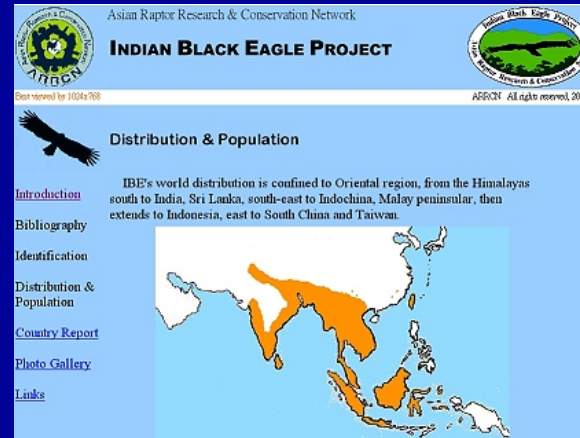
What we have done:



Report of Malaysia
(by Mr. Lim Kim Chye)



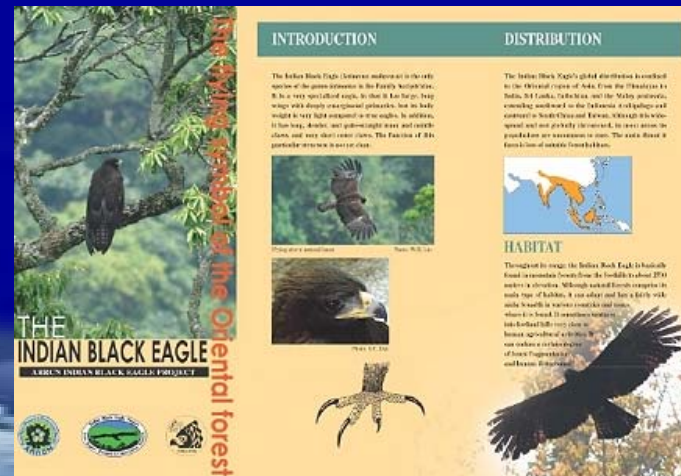
Report of India
(by Dr. Ashok)



Web
(by RRG T)



Breeding Report
(by Mr. Adam et al.)



Leaflet (by RRG T)



Thank you for your listening