

Ecological information of green peafowl

Micro-habitat selection during the non-breeding season

From a total of 70 camera trap locations, 35 locations in the north-eastern part and 35 locations in the south-central part of the study area (Figure 1), 30 locations detected green peafowl during the non-breeding season. The binomial function of the generalized linear model was used to investigate the habitat variables which influenced presence/absence of green peafowl in the area. From the analysis, the best model was:

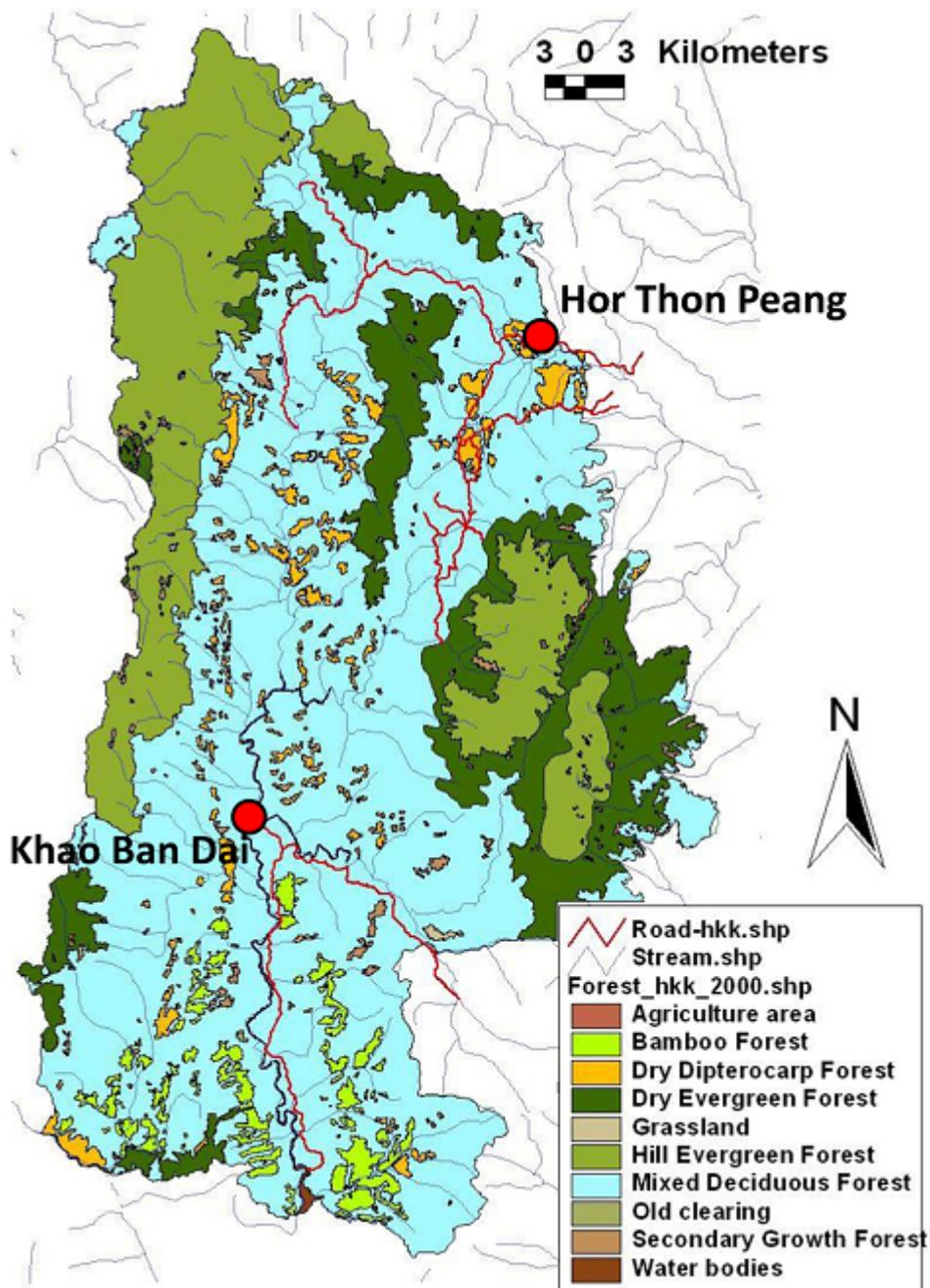


Figure 1. The map of Huai Kha Khaeng Wildlife Sanctuary, the study focused on Hor Thon Peang, (north-east corner) and Khao Ban Dai (south-central part of the sanctuary).

Glm formula (binomial) = *Presence* ~ *SmTree* + *DistRiver*

The model shows that small tree with DBH<5cm (*SmTree*) and distance to river (*DistRiver*) influenced in negative correlation with a presence of green peafowl in the area (Table 1).

Micro-habitat selection during the breeding season

From 70 camera trap locations in Hor Thon Peang (north-eastern part) and Khao Ban Dai (south-central part), 32 locations detected the green peafowl. The best model with the lowest Akaike's Information Criterion value (AIC) included small trees and distance to river. However the model shows that only distance to river (*DistRiver*) significantly influenced the presence of green peafowl in the area, whereby peafowl were more likely to be detected nearer the river than further away (Table 2).

Home range size during breeding and non-breeding season

One male green peafowl was fitted with radio collars and observed during the breeding season between January-March 2014, and the non-breeding season between April-November 2014. The preliminary results show that from 44 radio-tracking locations the home range size during breeding season was 27.2 ha, and from 68 radio-tracking locations during the non-breeding season the home range size was 214.4 ha. This individual mostly used mixed-deciduous forest surrounding the focal stream during the breeding season, while during the non-breeding season the bird increased range away from the stream (Figure 2).

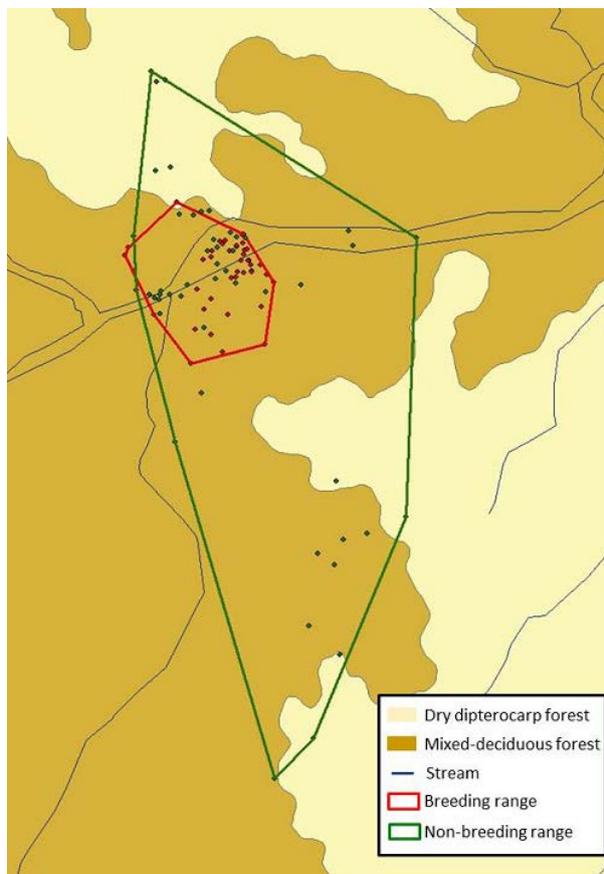


Figure 2. The home range of one male green peafowl during the breeding season between January-March 2014 (44 radio tracking locations) and non-breeding season during April-November 2014 (68 radio tracking locations).

Table 1. The best model investigates the habitat variables which influenced to presence of green peafowl during the non-breeding season.

Variable	Coefficient (β)	df	p-value	AIC
<u>Model 1</u> (family = binomial)				
Detection ~ SmTree + DistRiver				60.139
(Intercept)	2.555	1	0.0003***	
SmTree	-3.955	1	0.0009***	
DistRiver	-1.964	1	0.011*	

: = interaction between variable

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05

Table 2. The best model investigates the habitat variables which influenced to presence of green peafowl during the breeding season.

Variable	Coefficient (β)	df	p-value	AIC
<u>Model 1</u> (family = binomial)				
Detection ~SmTree + DistRiver				90.998
(Intercept)	1.0584	1	0.0232*	
SmTree	-0.58	1	0.3688	
DistRiver	-1.398	1	0.0274*	

: = interaction between variable

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05

Population estimate in Huai Kha Khaeng Wildlife Sanctuary in Thailand and south of Shan State in Myanmar

Population density in Huai Kha Khaeng Wildlife Sanctuary, Thailand

This study also focuses on monitoring status of green peafowl. In Huai Kha Khaeng Wildlife Sanctuary (HKK) west part of Thailand, from totally 24 transects, 2 transects were set in north, 4 transects in south-east part, 6 transects in south-central part, 5 transects in south part, and 7 transects in north-east part of the sanctuary (Figure 3). The density of green peafowl in south-east, center, south, and north-east part was 2.89, 1.130, 1.142, 11.343, 4.834 males/km² respectively (Table 3). The result from HKK showed a high estimated density when compare to a historical survey in 1992 (Figure 4). HKK have frequent patrolling and cover the whole sanctuary that result in an increase of green peafowl and other wildlife population.

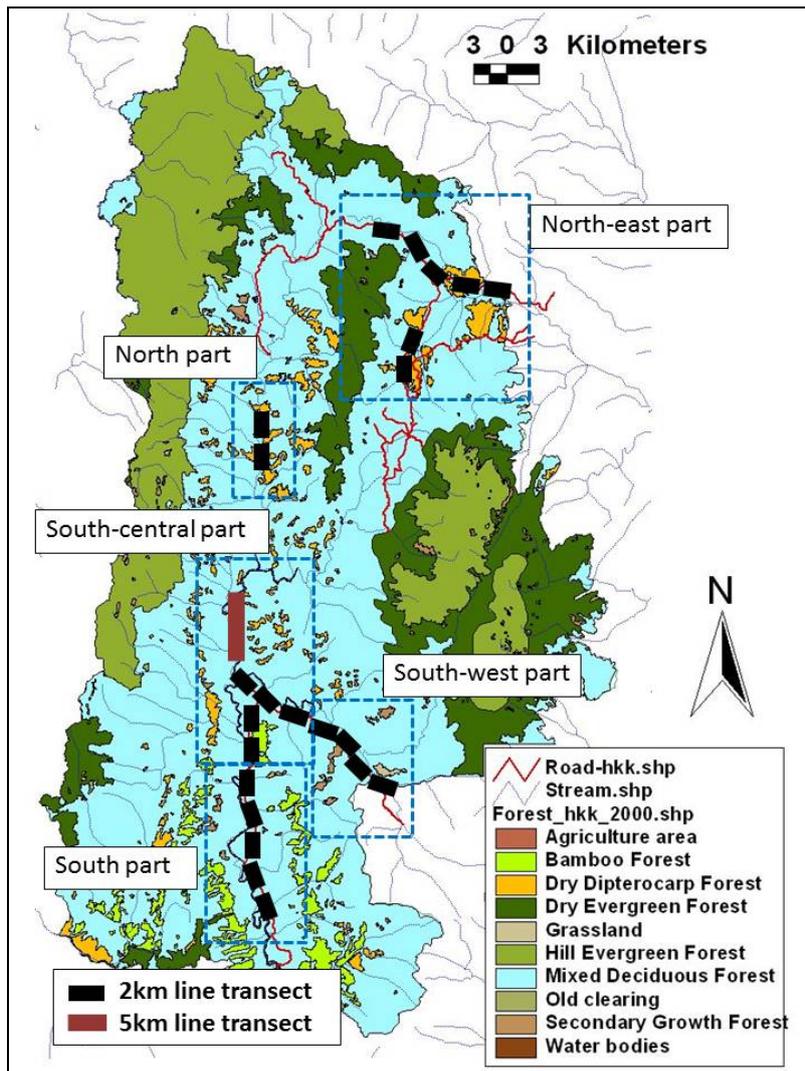


Figure 3. Totally 24 transects, 2 transects were set in north, 4 transects in south-east part, 6 transects in south-central part, 5 transects in south part, and 7 transects in north-east part of the sanctuary

Table 3. Density estimates for green peafowl in North, South-east, south-central, south, and north-east part of Huai Kha Khaeng Wildlife Sanctuary.

Sites	Number of transects	Total length (km)	Survey effort (time of observation)	Density estimates (calling birds/km ²)	95% confidence intervals	Number detected	Coefficient of variation (%)
Yang Dang (North)	2	4	10	2.89	0.426-19.654	37	15.16
Huai Mhae Dee (South-east)	4	8	40	1.13	0.359-3.554	67	37.2
Khao Ban Dai (South-central)	6	15	56	1.142	0.270-4.827	88	55.6
Huai Mod Dang (South)	5	10	30	11.343	4.287-30.008	520	36.1
Head Quarter (North-east)	7	14	70	4.834	1.671-13.983	557	45.5

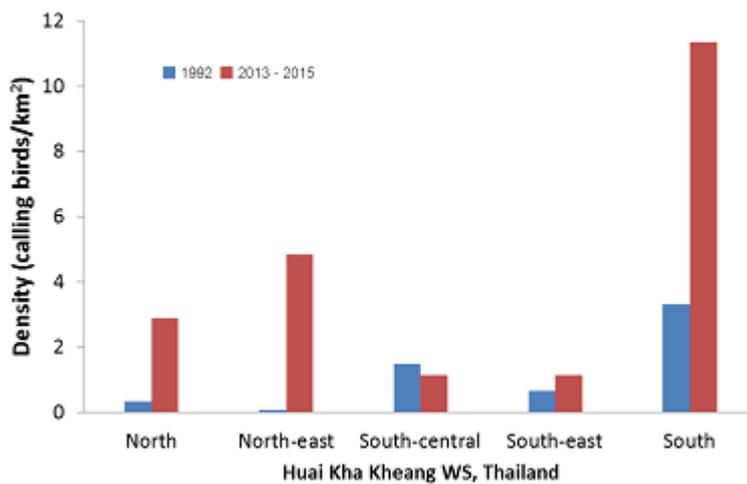


Figure 4. The green peafowl density estimate in Huai Kha Khaeng Wildlife Sanctuary, Thailand. The graph show higher density of green peafowl from a survey in 2013 - 2015 compare to historical survey in 1992.

Population density in south of Shan State, Myanmar

Survey was conducted during breeding season (22 – 24 January 2015) when the birds frequently call. We used point count to estimate a density as the topography is steep hilly, two points were set on the top of mountain with 4.8 km apart. The density of green peafowl at point 1 where the monastery is a center and surrounding by small patch of evergreen forest (Figure 5 & Table 4) was 36.607 calling birds per square kilometer, while at point 2 where surrounding by scatter small patch of coniferous and evergreen forest (Figure 6 & Table 5) was 7.258 calling birds per square kilometer (Table 6).

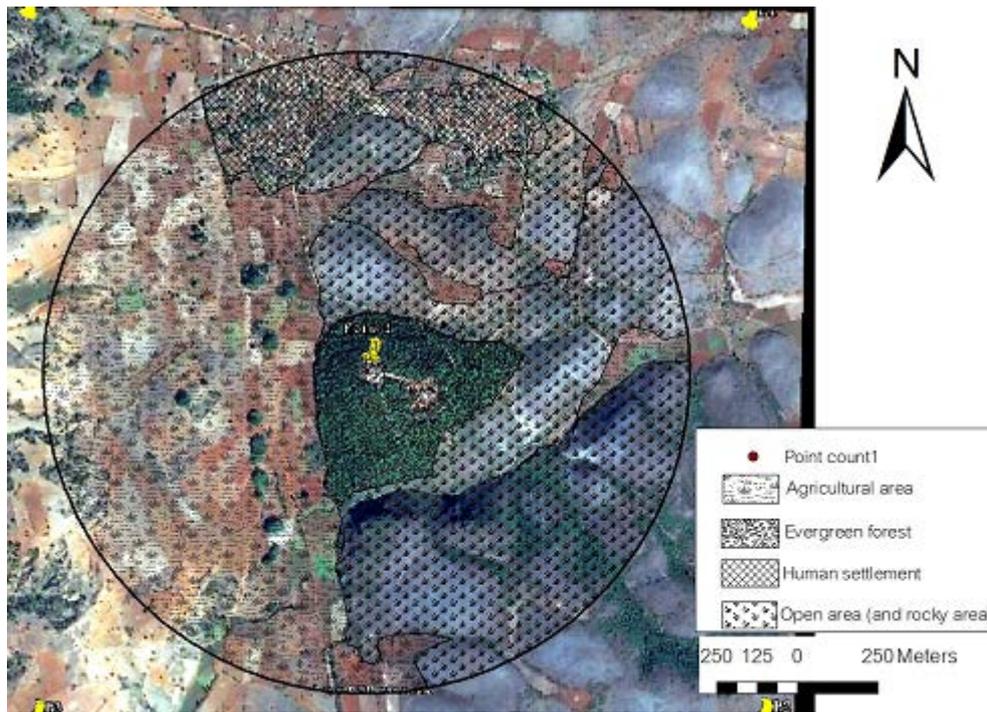


Figure 5. One km radius of survey area, point count 2 is a center.

Table 4. Habitat type proportion within 1 km radius of survey area, point count 1 is a center.

FOREST TYPE	AREA (sq. km.)	Proportion (%)
Evergreen forest	0.241	8
Human settlement	0.224	7
Agricultural area	1.413	45
Open area (and rocky area)	1.249	40
Total	3.127	100

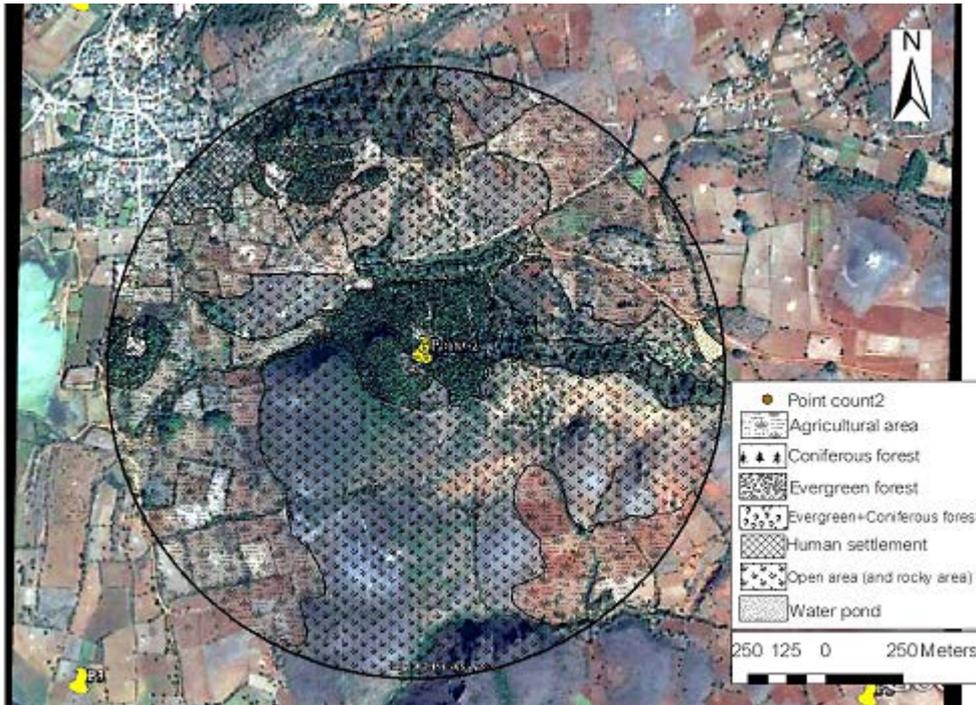


Figure 6. One km radius of survey area, point count 2 is a center.

Table 5. Habitat type proportion within 1 km radius of survey area, point count 2 is a center.

FOREST TYPE	AREA (sq. km.)	Proportion (%)
Evergreen forest	0.266	8.6
Coniferous forest	0.205	6.6
Evergreen+Coniferous forest	0.028	0.9
Open area (and rocky area)	1.447	46.6
Human settlement	0.064	2.1
Agricultural area	1.088	35
Water pond	0.007	0.2
Total	3.105	100

Table 6. Density estimates for green peafowl in south of Shan plateau, Myanmar.

Point	Survey area	Density estimates	95% confidence	Number detected
	(km ²)	(calling birds / km ²)	intervals	
1	3.14	36.607	24.999-53.605	30
2	3.14	7.258	5.865-8.981	21

Material produced and involvement of local community relation to this project

Power Point presentation

The result from this study was presented to researcher, students and public. The study was presented to; 1) The 3rd Conference of the Society for Conservation Biology-Asia Section, 19-22nd August 2014, Malaka, Peninsular Malaysia. 2) Presented to Gembloux Agro-Bio Tech, 20 October 2014, Belgium. 3) 13th Thailand Bird Fair 2014, 8-9 November 2014, Samut Prakan Province, Thailand. 4) Presented to Department of Zoology, University of Yangon, 3 February 2014, Yangon Division, Myanmar (Picture 1).



Picture 1. The result from the survey in central of Myanmar was presented to Department of Zoology, University of Yangon on 3 February 2015.

Involvement of local community

In south of Shan State, Myanmar, we have consulted with monks and local people to locate the remaining population of green peafowl in the area (Picture 2). The chairman of village and villager took part in the survey. One graduate student (Burmese) who also took part in the survey will continue ecological study on green peafowl and cooperate with local people in the area, we expect that this cooperation will be success for the next step of conservation action plan to this species in the area.



Picture 2. Consult with monks and local people to locate the remaining population of green peafowl in south of Shan State, Myanmar.

