

STUDY ON LOCAL DISTRIBUTION AND BEHAVIOR OF JAVAN GREEN PEAFOWL (*Pavo muticus muticus* Linnaeus 1758) AT MERU BETIRI NATIONAL PARK, EAST JAVA

[Kajian Terhadap Penyebaran Lokal dan Beberapa Perilaku Merak hijau Jawa
(*Pavo muticus muticus* Linnaeus, 1758) Di Taman Nasional Meru Betiri, Jawa Timur]

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ABSTRAK

Kajian terhadap penyebaran lokal dan beberapa perilaku merak hijau jawa (*Pavo muticus muticus* Linnaeus, 1758) telah dilakukan selama 3 bulan, Juni – Agustus 2001 di taman nasional Meru Betiri, Jawa Timur. Pengamatan Penyebaran lokal populasi dilakukan dengan metoda langsung dan populasi diamati dengan menggunakan metoda konsentrasi di areal penyebaran merak. Habitat merak hijau dikaji dengan pendekatan analisis vegetasi serta analisis terhadap fungsi habitat. Pengamatan beberapa perilaku dilakukan secara perjumpaan langsung. Penyebaran merak hijau jawa terkait tipe habitat. Pada taman nasional Meru Betiri merak hijau tersebar secara berkelompok di Sumpersari, Timur Gunung daerah perkebunan Sukamade pada daerah ekotone antara hutan tropis dataran rendah, areal terbuka semak belukar dan perkebunan karet serta kopi. Untuk makan merak memilih tempat terbuka areal rumput dan semak, namun untuk istirahat menyukai dibawah pohon yang rindang atau naik pohon yang cukup teduh. Merak memilih pohon untuk tidur dengan kriteria pohon yang relatif tinggi, percabangan tegak lurus batang, tajuk tidak rapat dan dekat dengan pohon ini terdapat tempat terbuka untuk mendarat.

Kata kunci : distribusi lokal, perilaku, Meru Betiri, merak hijau

INTRODUCTION

According to King *et al.* (1980) the habitat of green peafowl are open forest, secondary forest, riparian forest and forest edges. Meanwhile, Mackinnon (1990), mentioned that habitat of green peafowl is composed of open forest with shrubs and bushes. Hernowo (1995) described that in Java island, green peafowl is distributed at several habitats such as tropical low land forest, monsoon forest, savanna and teak forest. The range of green peafowl distribution in Java has become patchy and locally restricted at certain area. Nowadays, potential habitats to support these birds are forest reserves (national park, game reserve, nature reserve and forested protected area) and even teak plantation. One of the sites where the green peafowl is distributed in Java is Meru Betiri National Park.

The green peafowl is a protected bird species in Indonesia and in the newest ICBP check-list it is nominated as globally threatened (Collar and Andrew, 1988). Serious problems to Javan peafowl are population decrease caused by poaching to birds and eggs and habitat degradation due to encroachment to its habitat. At every site, where the distributions of green peafowl are close to human settlement, the birds will be threatened.

According to Hernowo (1995), data and information on ecological and behavioral of green peafowl are few and in most cases are not available. These data are very important in order to support the conservation efforts. For

successful conservation management in future, basic information like behavioral data must be collected by guided research.

Basic data related to habitat preferences, and behavior of Javan peafowl are lacking. The data are very important to support conservation effort of green peafowl population at Meru Betiri National Park. The objective of this study was to obtain data and information of green peafowl distribution at Meru Betiri National Park, including their habitat (feeding site, roosting site, shelter and nesting site), and the daily activities of the birds.

STUDY AREA

Meru Betiri National Park covered an area of about 55 845 ha. The geographical position of this national park lies on 113°36'06"E-113°37'51"E and 08°22'16"S-08°332'05"S. The topography of the area is hilly and mountainous and at some places undulating. Mountainous complex occur at the park such as Meru, Betiri, Sumbegadung, Sukamade, Permisan and Sumber pacet. The soil association which dominated the park was alluvial, brown regosol and latosol.

According to Schmidt and Ferguson rain fall type at Meru Betiri national park is grouped into two parts. The Northern and central part of the park is type B, but the other part is C. The annual precipitation ranges from 2 554 to 3

478 mm per year. The annual average temperature is around 29°C and relatively humidity about 85%.

Meru Betiri is one of the places at Java island which contain the last low land tropical rain forest influenced by monsoon climate. Five forest types can be found at the park, which are beach forest, mangrove, swampy area, riparian and low land tropical forest. The beach forest occurred at southern part of the national park. Dominant vegetation at beach forest are *Barringtonia asiatica*, *Callophyllum inophyllum*, *Hisbiscus tilliaeceus* and *Pandanus tectorius*. Mangrove forest grown at eastern part, in Teluk Rajegwesi, estuarine of Lembu river, Karang Tambak, Teluk Meru, Teluk Permisian and Sukamade beach. Vegetation of the mangrove are *Rhizophora sp*, *Avicenia marina*, *Bruguiera sp* and *Nypha fruticans*. Swampy area was dominated by vegetation such as *Mangifera sp*, *Alstonia angustifolia*, and *Gluta renghas*. Vegetation such as *Saccharum spontaneum* and *Panicetum curcureum* dominated the riparian zone of Summersari river, Sanen and Bandalit river. Low land tropical forest was dominated by *Pterospermum javanicum*, *Adenanthera microsperma*, *Bischoffia javanica* and *Artocarpus elastica*.

METHODS

Location and Time

Research was conducted at Meru Betiri national park, but focused at local distribution of the green peafowl habitat, such as at the border of PT Perkebunan Sukamade Baru with the national park, Sumber Sari grazing area, Sarongan, Mandilis Curah Nongko, Nanggalan grazing area, Pager Gunung and the area in the border of PT Perkebunan Bande Alit also at Sukamade resort. The study was carried out for three month, from June to August 2001.

Equipment and Materials

Tool used in this research are forest distribution map of Meru Betiri national park, compass, chronometer, binocular, tale camera, hagameter, metering-band, and tally sheet.

Methods

Reconnaissance to the whole area of Meru Betiri national park was carried out to determine the distribution of green peafowl before the actual green peafowl census. The censuses were carried out for 3 month (June-August 2001) using concentration method. The census started at 5.00 until 7.00 a.m. The counting of individual numbers was based on direct visual contact or the calling of green peafowl. Population of green peafowl was obtained from the total average number of bird found in each transect including the confidence limit.

$$P = X \pm t SE$$

where :

P = population (total number individual number in each transect or sample area)

X = total average number in each transect or sample area

SE = standar error

t = t student

Statistical analysis for the spatial distribution of green peafowl has follow the criteria, where

$\sigma^2 = \mu$ is *random* distribution

$\sigma^2 > \mu$ is *clumped* distribution

$\sigma^2 < \mu$ is *systematic* distribution

σ^2 can be predicted by S^2 , and μ can be predicted by \bar{x}

The green peafowl habitat was described by vegetation analyzed approach. We used quantitative value to describe the structure and composition of vegetation using the important index value (IVI) method after Curtis and Cottam (1964) as follows :

$$IVI = RF + RD + RDo$$

where:

RF= Relative Frequency

RD= Relative Density

RDo= Relative Dominance

Data collected from trees, poles and saplings were species, number, dbh (diameter at breast height) and height. Meanwhile for seedling we only described number and species. The species and number of herbs, shrubs and grasses were also recorded.

To describe roost sites, nesting site and feeding site used by green peafowl we used direct observation and we recorded species of vegetation, height, number, frequencies of use and the condition of habitat characteristics. To analyzed the function of vegetation at green peafowl habitat (feeding sites, roosting sites, covering sites and sheltering sites), we counted the percentage of habitat used with the formula as follow:

$$Fh = F/TF$$

where :

Fh = Function of green peafowl habitat feeding area, roosting sites, covering sites and sheltering sites)

F = Frequencies green peafowl using function of habitat

TF = Total Frequencies green peafowl using function of habitat

RESULTS AND DISCUSSION

Local Distribution of Green Peafowl

The green peafowl are distributed in Meru Betiri national park at the ecotone of tropical low land forest and grazing area or open area, between low land forest and plantation area such as, rubber, cacao, and coffee plantation. Another local distribution area of peafowl is in the border between tropical low land forest and teak plantation. The birds were distributed at PT Sukamade Baru, Sumber Sari

grazing area, Sarongan, Pager Gunung, Curah Malang, Nanggalan grazing area, Mandilis Curah Nongko and PT Bande Alit. Survey to former distribution of green peafowl only found the occurrence of the bird at Sukamade area, where it was found at bordered area between low land tropical forest and plantation area of Sukamade. The green peafowl is distributed at block 90, 60 and block 42 Sumber Sari resort and at Timur Gunung area. The local distribution of bird is listed at Table 1.

Table 1. The local distribution of green peafowl and their abundances at Sukamade, Meru Betiri national park

No	Habitat type	Frequencies of encounter	The population abundances	Distribution	Number of group
1	Block 90 (rubber plantation and low land forest)	9	2.7 ± 0.13	Clumped	1
2	Block 60 (rubber plantation, cacao and low land forest)	10	3 ± 0.52	Clumped	1
3	Block 42 (coffee plantation, and low land forest)	10	4.5 ± 0.35	Clumped	2
4	Sumber Sari (coffee plantation, cacao and low land forest)	10	4.7 ± 0.27	Clumped	2
5	Timur Gunung (rubber plantation, and low land forest)	10	13.3 ± 1.05	Clumped	4

The distribution of green peafowl at Sukamade are mostly clumped. Those conditions are quite normal for the green peafowl population. Total number of group is around 10 and total individual of the peafowl is 28 ± 2 birds.

Description of peafowl habitat

Habitat preference and the abundance of green peafowl are correlated with the structure and vegetation composition. The habitat of the green peafowl at Meru Betiri national park was ecotone of tropical low land forest and grazing area or open area, between low land forest and plantation area. For feeding, peafowl choose open area such as grazing and shrubs area. The bird feeds on leaf and seed of grasses such as *Shorgum nitidum*, *Eleusine indica*, *Paspalum conjugatum*, *Axonopus compressus* and shrubs such as *Amaranthus spinosus* and *Eupatorium inulifolium*. Peafowl also eat fruit of *Ficus variegata*, *Ficus glomerata* and *Artocarpus elasticus*. Important value index of vegetation in feeding area are listed at Table 2.

The green peafowl shelter under trees with luxuriant leaves and perch on medium height trees. The bird also rest under coffee and rubber vegetation on the plantation. The trees most preferred for sheltering site are *Ficus alba*,

Lagerstroemia speciosa, *Theobroma cacao*, and *Ficus pellucidapunctata*. The choice of trees as resting site was recorded in Table 3. The characteristics of sheltering trees are (1) luxuriant leaves, (2) height more than 7 meters. The bird usually sheltering at branch above 2 meters or at ground, (3) the branches of trees has a relatively upright angle to the stem, and (4) usually shelters are near to feeding site.

Green peafowl choose certain trees for roosting. Tree also functions together as roosting and sunning site. Trees most preferred for roosting and sunning sites were recorded at Table 4. The characteristics of roosting trees are (1) it is the tallest tree (more than 20 meters) or emergent tree, (2) leaves are not dense, rather open, (3) open area available near the tree, (4) branches of the trees form a relatively upright angle to the stem, (5) usually, other smaller trees are available near the roosting trees and (6) trees have a crown shape like an umbrella. The trees used as roosting site are *Ficus benyamina*, *Ficus alba*, *Ficus variegata*, *Ficus annulata*, *Ficus pellucidapunctata*, *Ficus hispida*, *Artocarpus elastica*, *Leea philippinensis*, *Pterospermum javanicum*, and *Parkia roxburghii*.

Table 2. Important value index of vegetation species as food resources for green peafowl At feeding area

No	Location	Vegetation Species	Fr (%)	Kr (%)	INP (%)
1	Block 90	Lulangan (<i>Eleusine indica</i>)	10.00	15.54	25.54
		Kacang tanah (<i>Arachis hypogea</i>)	6.67	14.69	21.53
		Padian (<i>Shorgum nitidum</i>)	13.33	7.43	20.14
		Pahitan (<i>Paspalum conjugatum</i>)	3.33	12.16	15.95
		Putihan (<i>Axonopus compressus</i>)	6.67	8.11	14.78
		Bayam duri (<i>Amaranthus spinosus</i>)	6.67	6.08	12.75
		Taguri (<i>Sida acuta</i>)	6.67	6.08	12.75
		Teki (<i>Cyperus brevifolius</i>)	6.67	4.73	11.40
		Jawen (<i>Echinochloa crusgalli</i>)	6.67	2.70	9.37
		Merdekaan (<i>Euphatorium inulifolium</i>)	6.67	2.70	9.37
		Teki (<i>Cyperus rotundus</i>)	6.67	2.70	9.37
		Kacang hijau (<i>Vigna radiata</i>)	3.33	2.70	6.03
		Merakan (<i>Apluda mutica</i>)	3.33	1.35	4.68
		2	Block 60	Lulangan (<i>Eleusine indica</i>)	12.12
Padian (<i>Shorgum nitidum</i>)	12.12			12.41	24.53
Teki (<i>Cyperus rotundus</i>)	9.09			10.35	19.44
Jawen (<i>Echinochloa crusgalli</i>)	6.06			10.35	16.41
Pahitan (<i>Paspalum conjugatum</i>)	6.06			6.90	12.96
3	Block 42	Putihan (<i>Axonopus compressus</i>)	6.06	6.21	12.27
		Minyakan (<i>Cynodon dactylon</i>)	6.06	4.14	10.20
		Merdekaan (<i>Euphatorium inulifolium</i>)	6.06	3.45	9.51
		Teki (<i>Cyperus rotundus</i>)	11.54	23.88	35.42
		Bayam duri (<i>Amaranthus spinosus</i>)	11.54	11.19	22.73
		Kacang tanah (<i>Arachis hypogea</i>)	3.85	17.16	21.01
		Lulangan (<i>Eleusine indica</i>)	11.54	8.96	20.50
		Padian (<i>Shorgum nitidum</i>)	11.54	7.46	19.00
		Pahitan (<i>Paspalum conjugatum</i>)	3.85	9.70	13.55
		Merdekaan (<i>Euphatorium inulifolium</i>)	7.69	3.73	11.42
		Lempuyangan (<i>Panicum repens</i>)	3.85	2.99	6.84
4	Sumber Sari	Minyakan (<i>Cynodon dactylon</i>)	8.00	16.30	24.30
		Pahitan (<i>Paspalum conjugatum</i>)	4.00	13.04	17.04
		Merdekaan (<i>Euphatorium inulifolium</i>)	4.00	3.26	7.26
5	Timur Gunung	Lulangan (<i>Eleusine indica</i>)	10.53	21.54	32.07
		Kacang tanah (<i>Arachis hypogea</i>)	5.26	13.08	18.34
		Putihan (<i>Axonopus compressus</i>)	7.99	10.00	17.99
		Bayam duri (<i>Amaranthus spinosus</i>)	5.26	11.54	16.80
		Teki (<i>Cyperus brevifolius</i>)	7.99	7.96	15.95
		Teki (<i>Cyperus rotundus</i>)	7.99	6.92	14.91
		Pahitan (<i>Paspalum conjugatum</i>)	5.26	3.85	9.11
		Kremah (<i>Althernanthera phyloxeroides</i>)	5.26	3.85	9.11
		Empritran (<i>Eragrotis amabilis</i>)	5.26	3.08	8.34

Table 3. List of the trees used as resting site by green peafowl

No	Location	Vegetation species	Most Preferred	Preferred	Lest preferred
1	Block 90	Bendo (<i>Artocarpus elasticus</i>)	-	√	-
		Beringin putih (<i>Ficus alba</i>)	√	-	-
		Sriwilikutil (<i>Leea philiphinensis</i>)	-	-	√
		Ketangi (<i>Lagerstroemia speciosa</i>)	√	-	-
2	Block 60	Kemiri (<i>Aleurites mollucana</i>)	-	√	-
		Ketangi (<i>Lagerstroemia speciosa</i>)	-	-	-
		Apak Panggung (<i>Ficus benyamina</i>)	-	-	√
		Coklat (<i>Theobroma cacao</i>)	√	-	-
3	Block 42	Ketangi (<i>Lagerstroemia speciosa</i>)	√	-	-
		Suren (<i>Toona sureni</i>)	-	√	-
		Apak krasak (<i>Ficus annulata</i>)	-	√	-
		Apak hampelas (<i>Ficus ampelas</i>)	-	√	-
4	Sumber Sari	Beringin putih (<i>Ficus alba</i>)	√	-	-
		Sriwilikutil (<i>Leea philiphinensis</i>)	-	-	√
		Kopi (<i>Coffea arabica</i>)	-	√	-
5	Timur Gunung	Suren (<i>Toona sureni</i>)	-	-	√
		Ketangi (<i>Lagerstroemia speciosa</i>)	-	-	√
		Apak bulu (<i>Ficus pellucidapunctata</i>)	√	-	-

Green peafowl choose certain trees for roosting. Tree also functions together as roosting and sunning site. Trees most preferred for roosting and sunning sites were recorded at Table 4. The characteristics of roosting trees are (1) it is the tallest tree (more than 20 meters) or emergent tree, (2) leaves are not dense, rather open, (3) open area available near the tree, (4) branches of the trees form a relatively upright angle to the stem, (5) usually, other smaller trees are available near the roosting trees and (6) trees have a crown shape like an umbrella. The trees used as roosting site are *Ficus benyamina*, *Ficus alba*, *Ficus variegata*, *Ficus annulata*, *Ficus pellucidapunctata*, *Ficus hispida*, *Artocarpus elastica*, *Leea philiphinensis*, *Pterospermum javanicum*, and *Parkia roxburghii*.

Description of Green Peafowl Behavior

The daily activities of green peafowl started at roosting site, early in the morning around 5.00 a.m when the bird got up and called. Afterwards, peafowl usually preens for 5 – 28 minutes and then come down flying. For landing point, peafowl use open area such as grazing area or shrubs.

Those places are related to the roosting trees. Even when roosting trees are available but there are no present open areas nearby, birds will not select the tree as roosting site.

Feeding and Drinking Activities.

After coming down from roosting site, peafowl birds will search for open area. They will walk around and look for food, jump or run around, even flying depending on the kind of food they are searching for. The feeding technique is to peck out food with their bills. For food selection, birds will search and peel out food with their bill or scratch it with their feet depending on types of food. According to Hernowo (1995), when peafowl birds feed on the ground, they will do it while walking and only stop for a moment. They will then look around and when it feels secure it will continue its activities. The green peafowl are herbivorous bird; they feed on leaf, seed of grasses and shrubs also some fruits. Although it is herbivorous, they sometimes eat insect. Table 5 shows the vegetation that was recorded as food resources by peafowl.

Table 4. Trees used as roosting and sunning site for green peafowl

No	Location	Vegetation Species	Kr (%)	Fr (%)	Dr (%)	INP (%)
1.	Block 90	Bendo (<i>Artocarpus elasticus</i>)	40.00	50.00	22.96	112.96
		Beringin putih (<i>Ficus alba</i>)	10.00	7.14	30.23	47.37
		Apak bulu (<i>Ficus pellucidapunctata</i>)	10.00	7.14	27.96	45.10
		Sriwilikutil (<i>Leea philiphinensis</i>)	20.00	14.29	10.46	44.75
2.	Block 60	Beringin putih (<i>Ficus alba</i>)	13.33	13.33	39.33	66.00
		Sriwilikutil (<i>Leea philiphinensis</i>)	20.00	20.00	7.96	47.96
		Apak panggung (<i>Ficus benyamina</i>)	6.67	6.67	28.19	41.53
3.	Block 42	Beringin putih (<i>Ficus alba</i>)	15.39	20.00	69.72	105.11
		Sriwilikutil (<i>Leea philiphinensis</i>)	23.08	20.00	5.50	48.58
		Bendo (<i>Artocarpus elasticus</i>)	7.69	13.33	2.59	23.61
		Kluncing (<i>Spondias cytheresonnerae</i>)	7.69	6.67	2.37	16.73
4.	Sumber Sari	Beringin putih (<i>Ficus alba</i>)	11.77	11.11	54.66	77.54
		Apak krasak (<i>Ficus annulata</i>)	11.77	11.11	25.59	28.47
		Bayur (<i>Pterospermum javanicum</i>)	11.77	11.11	3.48	26.36
5.	Timur Gunung	Bendo (<i>Ficus elasticus</i>)	20.00	22.22	21.42	63.64
		Beringin putih (<i>Ficus alba</i>)	13.33	11.11	26.92	51.36
		Apak bulu (<i>Ficus pellucidapunctata</i>)	6.67	5.56	24.17	36.40
		Gondang (<i>Ficus variegata</i>)	15.39	14.29	36.22	65.90
		Kedawung (<i>Parkia roxburghii</i>)	15.39	14.29	11.39	41.07

Table 5. List of vegetation species and part of vegetation eaten by green peafowl

No	Vegetation Species	Life Form	Part of Vegetation eaten by peafowl
1	Padian (<i>Shorgum nitidum</i>)	Grass	Leaf, Seed
2	Lulangan (<i>Eleusine indica</i>)	Grass	Leaf, Seed
3	Pahitan (<i>Paspalum conjugatum</i>)	Grass	Leaf, Seed
4	Kacang tanah (<i>Arachis hypogea</i>)	Plant	Peanuts, Flower
5	Kacang kedelai (<i>Glicine max</i>)	Plant	Seed
6	Kacang hijau (<i>Vigna radiata</i>)	Plant	Seed
7	Bayam duri (<i>Amaranthus spinosus</i>)	Shrubs	Seed
8	Wedusan (<i>Ageratum conyzoides</i>)	Shrubs	Leaf
9	Merdekaan (<i>Eupatorium inulifolium</i>)	Shrubs	Flower
10	Minyakan (<i>Cyonodon dactylon</i>)	Grass	Leaf, Seed
11	Iles-iles (<i>Tacca leontopoloides</i>)	Shrubs	Seed
12	Empritran (<i>Eragrotis amabilis</i>)	Grass	Leaf
13	Teki (<i>Cyperus rotundus</i>)	Grass	Seed
14	Teki (<i>Cyperus brevifolius</i>)	Grass	Seed
15	Jawen (<i>Echinochloa erusgalli</i>)	Grass	Leaf, Seed
16	Merakan (<i>Apluda mutica</i>)	Grass	Leaf, Seed
17	Taguri (<i>Sida acuta</i>)	Shrubs	Leaf, Seed
18	Kremah (<i>Althernanthera phyloxeroides</i>)	Shrubs	Leaf
19	Kolonjono (<i>Brachiaria mutica</i>)	Grass	Leaf, Seed
20	Putihian (<i>Axonopus compresus</i>)	Grass	Leaf, Seed

The peafowl began to feed early in the morning around 5.30 a.m. The start of the activity depends on sunrise and weather. Time for feeding is from 5.30 to 9.00 a.m. When the day became hot, the peafowl will rest and shelter. Afterwards peafowl will resume feeding again around 2.30 p.m. until 5.30 p.m.

The green peafowl came to drink at Sukamade river. They visited water in the morning or evening, but sometimes irregular at any time of the day. When peafowl drink, the body position is upright on their feet, the neck is curved down and the bill implanted into water. Then they suck water, after that the head comes up with the neck shaped like an S. They continued the activity with same way until they get enough water. While the bird drank sometimes they stop for a moment to check the surrounding. When they felt secure, they will continue the activities.

Resting and Sheltering Activities.

Green peafowl usually shelter under trees with luxuriant leaves or they will perch on medium height trees. At the observing area, around 9.30 a.m. when the day became hot, birds will shelter and rest. Meanwhile, during the resting or sheltering activities, they also do other activities like preening, pecking at the ground or doing small feeding without moving from the resting area. Some times, while they are still under sheltering, they will also do small feeding by getting food from the ground.

Roosting Activities.

Peafowl will select certain trees for roosting as its last activities before sleep. They will choose emergent tree for roosting where open area present not far from the tree. When they find the roosting site, they will fly directly to the branches. Sometimes birds will fly first to small trees that surrounded the roosting trees before flying to the chosen trees for sleeping. Usually, these activities will start at 5.30 p.m. After they found the branches for sleeping, later on they will call for about ten minute before sleep.

CONCLUSION

The green peafowl is distributed as clumped at Sukamade resort, Meru Betri national park. The bird prefers ecotone of tropical low land forest and grazing area or open area, between low land forest and plantation area such as, rubber, cacao, and coffee plantation, or bordered between tropical low land forest and teak plantation.

For feeding area, the green peafowl prefers open area, where grasses and shrubs grow or at plantation area. The green peafowl usually shelter under trees with luxuriant leaves or they will perch on medium height trees. Sheltering site is not far from feeding site.

The bird will select certain trees for roosting. Usually, roosting trees is the emergent tree, and not far from open area. The criteria for roosting trees is that is must be tall, leaves are not so dense and the branches a relatively upright angle to the stem.

Feeding activities is done by pecking out food with their bills while walking. When peafowl drink, the body position is upright on their feet, the neck is curved down and the bill implanted into water. Then they suck water, after that the head comes up with the neck shaped like an S.

After the birds found roosting site, they will fly directly to the branches or the birds will fly first to small trees surrounding the roosting trees before flying to the sleeping tree.

REFERENCES

- Collar, N.J. & P. Andrew 1998. Birds to watch. ICBP tech. Publication 8. Cambridge. U K.
- Curtis J.T. & G. Cottam 1964. Plant ecology workbook. Burgerss Publishing Co. Minneapolis.
- Del Hoyo, Elliot & Sargatal. 1994. Handbook of the birds of the world. Volume 2. New World Vulture To Guineafowl. Birdlife International Lynx Editions. Barcelona.
- Delacour, J. 1977. The Pheasant of the world (2nd Edition) Spurr Publication. Saiga Publisng Co Ltd Surr GU 26 GTD. England
- Hoogerwerf, A. 1970. Ujung Kulon : the land of the last javan rhinoceros. E.J. Brill Leiden. Netherland.
- Hernowo, J. B. 1995. Ecology and behaviour of the green peafowl (*Pavo muticus* Linnaeus 1766) In the Baluran National Park. East Java, Indonesia. Master Thesis . Faculty of Forestry Science, Georg August University Gottingen. Germany.
- 1997. Population study of Javan Green Peafowl (*Pavo muticus muticus* Linnaeus 1758) With Three Different Methods In Baluran National Park, East Java. Media Konservasi, Vol V. No. 2 September 1997 : 61 – 66.
- 1999. Habitat and local distribution of javan green peafowl (*Pavo muticus muticus* Linnaeus 1758) in Baluran National Park, East Java. Media Konservasi Vol VI. No. 1 Agustus 1999 : 15 – 22.
- Johnsgard, P. A. 1986. The pheasants of the world. Oxford University Press. London
- King B, F. & Warren B. 1981. Endangered birds of the world. The ICBP Red Data Book. Published by The

- Smithsonian Institute Press in Cooperation with International Council for Birds Preservation. Washington DC.
- Kuroda, N. 1936. Birds of island of java. Vol 2. Non - Passeres. Tokyo.
- Mackinnon, J. 1988. A field guide to the birds of Java and Bali. Gajah Mada Press. Yogyakarta.
- Mulyana. 1988. Studi habitat merak hijau (*Pavo muticus* Linnaeus 1766) di Resort Bekol, Taman Nasional Baluran, Jawa Timur. Skripsi Jurusan Konservasi Sumberdaya Hutan Fakultas Kehutanan IPB. Bogor. Tidak dipublikasikan.
- Supratman, A. 1998. Kajian pola penyebaran dan karakteristik habitat merak hijau (*Pavo muticus* Linnaeus 1766) pada musim tidak berbiak di Resort Rowobendo Taman Nasional Alas Purwo, Jawa Timur. Skripsi Jurusan Konservasi Sumberdaya Hutan Fakultas Kehutanan IPB. Bogor. Tidak dipublikasikan.
- Van Balen, B., D.M. Prawiradilaga, M. Indrawan, A. Marakarmah, I.W.A. Dirgayusa & M.A. Isa. Notes on the distribution and status of green peafowl on java. World Pheasant Association - Worldwide Fund for Nature, Indonesia Programme. Bogor.
- Winarto, R. 1993. Beberapa aspek ekologi merak hijau (*Pavo muticus* Linnaeus 1766) pada musim berbiak di Taman Nasional Baluran, Jawa Timur. Skripsi Jurusan Konservasi Sumberdaya Hutan Fakultas Kehutanan IPB. Bogor. Tidak dipublikasikan.