International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

An Investigation on the Population and Habitat Status of Indian Blue Peafowl (*PAVO CRISATUS*) at Kumabakonam Area, Tamil Nadu, India

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Abstract: ***The total number of peafowls was 1723. In the research regions, there were 513 cocks, 928 fowls, and 282 chicks (sex ratio: 1:1.85). Numerous habitats, including paddy fields, cotton plantations, sugar cane plantations, banana plantations, flower gardens, mango trees, bamboo vegetation, and grass on land, were found to have peafowl abundance. Paddy 964 had the maximum abundance, while Flower Garden 66 had the lowest abundance. In the meantime, there are 73 cotton plant habitats, 103 banana plantations, 102 sugarcane plantations, 99 mango trees, 96 bamboo vegetation, and 83 grassy areas. The research was conducted between July 2024 and June 2025. Peafowl abundance was examined over a 12-month period at several locations within and surrounding a chosen area in Kumbakonam. The number of Indian peafowl sightings per kilometre of walking in the study area was used to express the sightings. Sugar cane, banana plantations, flower gardens, mango trees, bamboo vegetation, paddy fields, and grass on land. There were 1723 Indian peafowl sightings in the study region overall. The habitat of the paddy fields was thought to have the largest number of observations. The flower garden had the fewest sightings. The number of Indian peafowl sightings in the other environments was moderate. The highest season abundance was Summer and the lowest season abundance was Monsoon. The highest sightings of peafowl were observed in the month of March 2025 (N=197). The lowest sightings of peafowl were found in the month of Jan 2025(N=65) and the other months were showed moderate.***

Keywords: Indian Blue Peafowl, Habitat, sightings, Kumbakonam

1. Introduction

South Asia is home to the Indian peafowl, Pavo cristatus Linnaeus 1758. The peafowl's range in India is uneven, spanning from the northern Himalayas to the southern Indian peninsula. Peafowls, jungle fowls, pheasants, partridges, turkeys, grouse, chickens, quails, and other bird species are among the more than 250 species that make up the Phasianidae family of the order Galliformes (Johnsgard, 1986).

The species name cristatus means crest, and the genus Pavo is derived from the Latin word pawe, which means peacock (Sclater, 1860). The omnivorous Indian peafowl consumes seeds, fruit, insects, reptiles, amphibians, and small mammals (Panda et al. 2016; Johnsingh *et al*. 1976).

The ecology, eating patterns, breeding biology, etc. of the Pavo cristatus species should be thoroughly investigated. Numerous researchers specifically highlight the necessity of quantitative, precise, and thorough maps of species abundance and distribution. Planning conservation priorities won't be feasible in many dispersed locations without such a database.

Therefore, there is a great emphasis on this species, and it is crucial to conduct thorough research on the population and habitats in the dispersed regions of southern India. Poaching for its flesh, feathers, and usage in traditional remedies is a danger. Another serious risk is accidental poisoning. Hoyo et al. (1994), Chakkaravarthy (2002), Ramesh (2009), and Alexander (1983). Poaching for its flesh, feathers, and usage in traditional remedies is a danger. Another serious risk is accidental poisoning. (Alexander 1983), (Chakkaravarthy 2002), (del Hoyo et al. 1994), and (Ramesh 2009).

The Indian Peafowl Pavo cristatus, also known as the peafowl, is the national bird of India and is included in both Appendix I of the CITES treaty and Schedule I of the Indian Wild Life (Protection) Act, 1972. It is gregarious and omnivorous, and it can be found in human settlements, various plantations, and open and deciduous forests. (Grimmett and colleagues, 2011) (Ali and Ripley, 1980).

The Indian Peafowl is designated as a least concern (LC) by the International Union for Conservation (IUCN) and is considered a protected species under the Indian Wildlife Protection Act (1972). Bird Life International says so. "Pavo cristatus" by Bird Life International (2012). The 2012 edition of the IUCN Red List of Threatened Species.

The species of Pavo cristatus will be investigated. despite the fact that this species faces numerous dangers to its existence in many of the nation's dispersed regions. Native to South Asia, the Indian Peafowl has been introduced and is now semi-feral in many other regions of the world. The Indian

Peafowl belongs to the Phasianidae Family, Order Galliformes, and Genus Pavo. (Sand Ripley, Ali, 1980)

A questionnaire survey by (Choudhary and Sathyakumar 2007) is the only comprehensive study on Indian Peafowl population indices to date. Problems with pesticides and poaching. Except for a few isolated locations, like university or institutional campuses, it is likely that peafowl populations will not exist in some highly developed, densely inhabited urban and industrial areas (Choudhary & Sathyakumar, 2007).

It's interesting to note that because of the COVID-19 lockout, there is less human involvement, which results in less noise and air pollution, which benefits the avifauna. In order to understand the decreased human disturbance of birds, the current study evaluates the effect of lockdown on the population and distribution of Indian peafowl. The most important component of our ecosystems are birds, and the Indian Peafowl serves as a bioindicator of climate change (Nameer 2020).

The Indian peafowl can be found in semi-arid, dry, and damp deciduous areas, as well as close to water sources and agricultural fields. In some regions of its former range, the Indian peafowl has become locally extinct due to habitat loss and degradation, human population pressure, illegal poaching, intensive agricultural practices, pesticide use, retaliatory killing, collecting eggs for human consumption, and killing for medical reasons, among other threats to the bird's current population (Anwar *et al*. 2015).

Most people agree that birds are the best bio-indicators of ecosystem health and ecosystem quality (Gill, 1994). They serve as instruments for environmental impact assessments and conservation. Galliformes species are helpful markers of environmental quality, and management objectives need an evaluation of their state (Fuller and Garson, 2000).

In natural conditions, clutch typically consists of 4 to 9 eggs, and the incubation period lasts 28 to 30 days (Anon, 2002). When pressed by a predator or fleeing to their evening roost, peafowl take flight. The scientific community has long been fascinated by and divided over the male's complex train and display, which is a visual cue aimed at females (Harikrishnan *et al*., 2010).

They are estimated to number over 100,000 by conservatives. McGowan and Madge (2002). However, illegal hunting for meat is still going on, however some regions of India have seen a decrease in this practice (Ramesh and McGowan, 2009).

Both as free-ranging ornamental birds and in captivity, peafowl breed easily. Around the world, zoos, parks, bird-fanciers, and dealers keep breeding populations that don't require the addition of wild birds. Wild birds are reported to be threatened by accidental poisoning from eating seeds treated with pesticides and by poaching peacocks for their flesh and plumes (Alexander, 1983).

The bulk of the Galliformes, one of the world's most endangered bird families, have scant data. An essential part of conservation efforts and efficient wildlife management is tracking the population condition of wild animals. According to Williams *et al*. (2002), it offers data on the condition of the wildlife population and can assist in assessing successful conservation efforts, enabling adaptive management.

1) To evaluate the total abundance of peafowl in the research region was the first of the work's goals.
2) To calculate the number of peafowls in the various habitats within the research regions.
3) To determine how the abundance of peafowl in the study area varies by season.

2. Material and Methods

Survey based on line transects were laid in different villages, habitat types and using a motor vehicle was used in the early morning (6 am to 9 am) and late evening (3 pm to 6 pm) to study the abundance and distribution of the Peafowl in the study area. A total of 30 km of transects were laid in Thirty villages. The transect was covered five times in every month for all 30 Villages. We followed the classification by (Johnsgard, 1986).

The study on the abundance, density and distribution of Indian Peafowl was carried out from July 2024 to June 2025 (12 months). The Indian Blue peafowl was obtained in different areas and microhabitats.

The study was carried out from July 2024 to June 2025. The study area which covering the various microhabitats such paddy crop, cotton plant, bamboo, flower gardens, sugar cane field, banana plant, mango tree. The present study was focused on the estimation of population for Indian blue peafowl in the selected areas.

The habitat used by Indian peafowl was categorized as Agri field which has barren land along with agricultural area on each sighting of the Peafowl variables such as Adult Male (Peacock), Adult Female (Peahens), and Chicks were recorded along with the group size, vegetation and terrain type was recorded. For each peafowl species, detection time, group size, sex, sighting angle and the sighting distance from the transect line were recorded.

We used a Distance Sampling line transect method to estimate population of the Indian Peafowl (Anderson et al. 1979; Burnham et al. 1980 and Buckland *et al*.1993).

The estimate of Indian blue peafowl was carried out along the transects and foot paths in the available habitats such cultivated crop lands and natural habitat areas. On each sighting of the Peafowl the variables such as the total number of individuals (Peacocks, Pea hens and Chicks), group size, and vegetation type were recorded. The Indian peafowl roosting sites and trees was also surveyed and recorded.

3. Result

Overall Peafowl Abundance

The present study was focused to find out the peafowl abundance from 30 villages and various habitats in Kumbakonam. The monthly fluctuation in the peafowl abundance from the study area was recorded.

A total of 1723 peafowl were recorded. It contains 513 cocks, 928 fowls and 282 chicks were obtained (sex ratio (1:1.85) in the study areas (Table 1). The abundance of Peafowl were estimated and expressed in Encounter Rate (n/km walked).

Month-wise Abundance of Peafowl

The Peafowl abundance estimated in different months during the study period (July 2024 to June 2025). The highest sightings of peafowl were observed in the month of March 2025 (N=197). The lowest sightings of peafowl were found in the month of Jan 2025(N=65) and the other months were showed moderate (Table 1).

Habitat-wise Peafowl Abundance

The peafowl abundance were recorded in different habitats such as Paddy, Cotton plant, Sugarcane, Banana plantation, Flower garden, Mango tree, Bamboo vegetation, Grass inland. The highest abundance was noticed in Paddy (964) and the lowest abundance was recorded in Flower garden (66).

Meanwhile, Cotton plant habitat (73), Banana plantation (163), and Sugarcane (102), Mango tree(99), Bamboo vegetation(96), Grass in land (83).

Season-wise

The study was carryout from July 2024 to June 2025. A total of 12 months were studied seasons for peafowl abundance in different area in around selected area in kumbakonam.

The season variation were noticed for peafowl abundance. The Pre-Monsoon season of peafowl was population of (400), The Monsoon season of peafowl was population of (362), The Winter season of peafowl was population of (397), The Summer season of peafowl was population of (436). The highest season abundance was Summer and the lowest season abundance was Monsoon.

4. Discussion

The present study was focused to find out the peafowl abundance from various habitats in the study area. The monthly fluctuation in the peafowl abundance from the study area was recorded and showed its abundance in all the months. The highest rate of abundance was observed in the season of Summer. The lowest abundance was obtained in the Monsoon month. The population of peafowl from various spots was studied and the abundance showed in all the habitats. The abundance was high in the Paddy field habitats in the study area. The abundance was low in the Sugarcane habitats in the study area. The distribution of Indian Peafowl was obtained in all the habitats in the study area. This study also revealed that the populations of Indian Peafowls were found higher number in particular habitat when compared to others and it showed the mostly in the open areas of forests in the study area. The more abundance of Indian Peafowls in scrub jungle may be due to the availability of sufficient food plants, insects, roosting tress and good ground cover for breeding and protection purposes. Peafowl prefers mostly scrub jungle when compared to southern sub-tropical hill forests and may be the reason for the ground litters and fruiting plants plays significant role (Rameshkumar, *et al*., 2017) The abundance of Indian Peafowls in scrub jungle may be due to the availability of sufficient food plants, insects, roosting tress and good ground cover for breeding and protection (Sathyanarayana, *et al*.,1993) According to Subramanian et al the Grey ungle fowl prefers mostly scrub jungle when compared to southern sub-tropical hill forests and further stressed that the ground litters and fruiting plants plays significant role for Grey junglefowl (Subrmanian, *et al*., 2008).

Table 1: Overall Peafowl Abundance in the Study Area during the Study period from July 2024 -June 2025 (No. of sightings)

Month	Season	Male	Female	Chick	Total
Jul-24	Pre-Monsoon	35	75	36	146
Aug-24	Pre-Monsoon	25	70	31	126
Sep-24	Pre-Monsoon	33	83	38	154
Oct-24	Monsoon	37	80	30	147
Nov-24	Monsoon	36	48	31	115
Dec-24	Monsoon	48	47	20	115
Jan-25	Winter	17	41	7	65
Feb-25	Winter	69	98	9	176
Mar-25	Winter	75	114	8	197
Apr-25	Summer	53	90	17	160
May-25	Summer	38	95	17	150
Jun-25	Summer	47	87	38	172
	TOTAL	513	928	282	1723

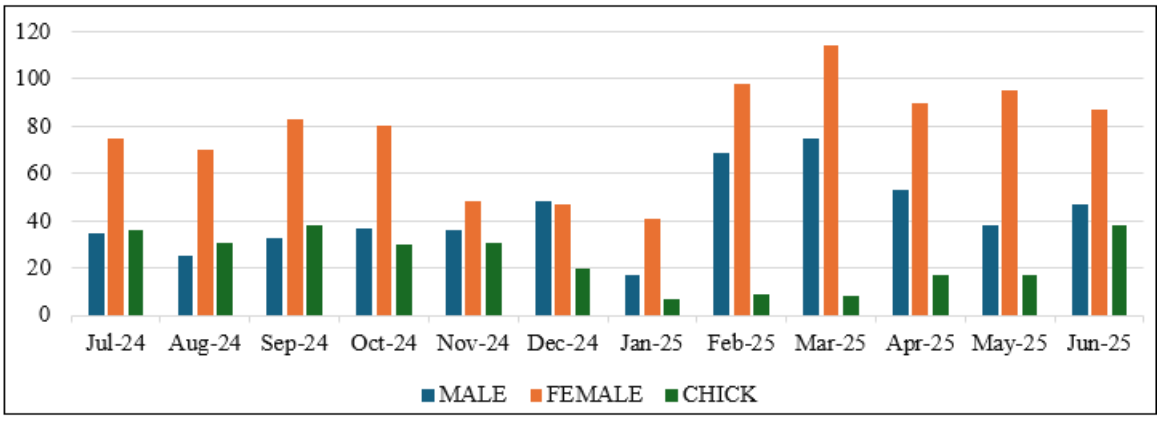

Figure 1: Overall Peafowl Abundance in the Study Area from July 2024-June 2025 (No. of sightings)

Table 2: Peafowl Abundance in different habitats during the study period (No. of sightings)

S. No	Habitat	Male	Female	Chick	Total
1	Paddy	300	530	158	988
2	Cotton Plant	19	48	16	83
3	Sugarcane	33	54	15	102
4	Banana Tree	49	95	24	168
5	Flower Garden	20	39	20	79
6	Mango Tree	31	51	18	100
7	Bamboo	31	51	17	99
8	Grass in Land	30	60	14	104
		513	928	282	1723

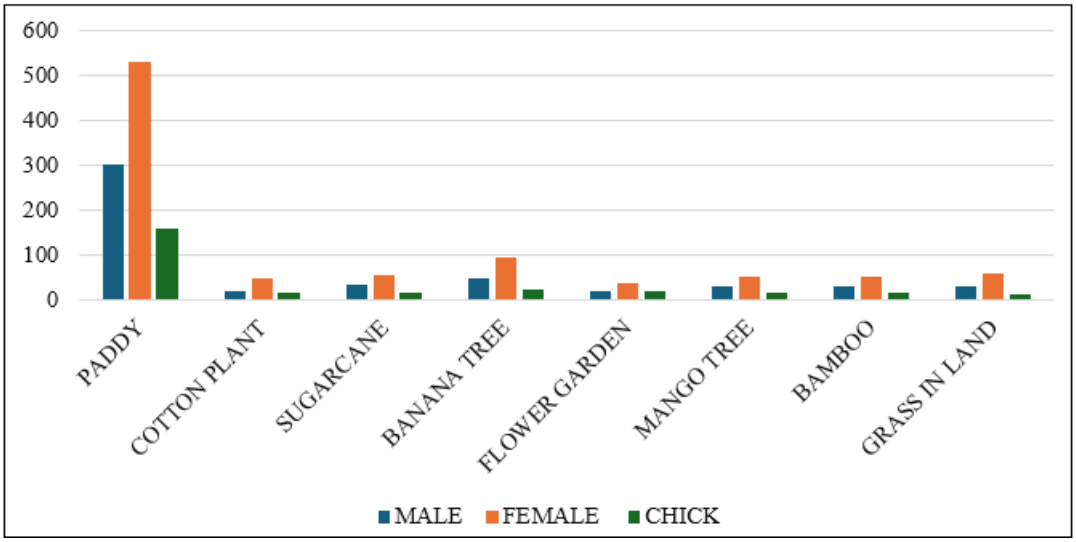

Figure 2: Peafowl Abundance in different habitats during the study period (No. of sightings)

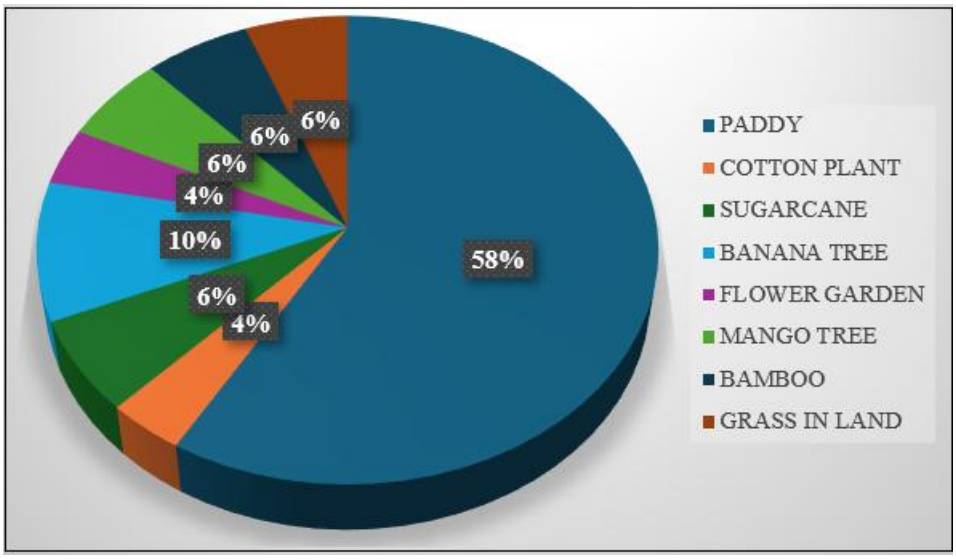

Figure 3: Abundance of Peafowl in different Habitats (%)

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