

Recent Geographical Distribution Pattern of Indian peafowl (*Pavo cristatus*) and Associated Problems in Galle and Matara Districts

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Abstract

Indian Peafowl (*Pavo cristatus*) is an attractive bird. Though it is better adapted and thus has been common in Dry Zone areas, they are now seen in some areas where they were not used to. This new distribution has created numerous problems. Objective of this study was to understand the recent geographical distribution pattern of Indian peafowl in Galle and Matara Districts and, associated problems. Information was collected from 175 key stakeholders in 35 Divisional Secretariat Divisions (DS) in Galle and Matara Districts, using a pre-tested- structured type questionnaire. Peafowl was seen in Matara District for significantly ($p < 0.05$) a longer period (9.5 years) than in Galle District (5.3 years). Except the respondents in Dikwella and Devinuwara DS in Matara District; others considered peafowl an alien bird in their areas. It was found that during last decade peafowl has migrated from dry areas through low country intermediate zone such as Dikwella and Devinuwara to wet zone areas of both hilly (Mulatiyana, Pasgoda, Pitabeddara and Kotapola terrains and) and low plane (Weligama, Matara, Thihagoda and Welipitiya) areas of both Galle and Matara District. The presence of peafowl in the South-Western areas was reported to be more recent (less than 5 years). Peafowl was reported to cause both qualitative and quantitative damages mainly to rice cultivation, followed by vegetables such as bitter guard, radish, cucumber, luffa, tomato, green chili, leafy vegetables and tea. Respondents pointed out that Indian peafowl causes a number of other nuisances such as transmission of parasites, damage to buildings and vehicles and sound pollutions. It was concluded that Peafowls have spread from dry zone, through intermediate zone to wet zone of Southern and South-Western parts of Sri Lanka during the last decade. Prompt actions are needed to avoid the possible emergence of peafowl-human conflict in future.

Keywords: Damages, Dry zone Distribution, Indian peafowl distribution, Wet zone

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Introduction

The Indian Peafowl (*Pavo cristatus*) is one of the eight species of game birds (Order: Galliformes) belonging to the family Phasianidae found in Sri Lanka. The male peafowl is one of the most colourful and easily recognized birds in Sri Lanka with his bright blue, green, and grey display. However, both sexes have distinct fan-shaped crest (Santiapillai and Wijeyamohan, 2015). Indian peafowl is widely distributed throughout the South Asia, thus been listed as Least Concern (IUCN, 2015).

In Sri Lanka, Peafowl is mainly found in the low-country dry zone (Santiapillai and Wijeyamohan, 2015; Kotagama and Rathnaweera, 2010). According to Henry (1998), the species was commonest in the wilder coastal districts of the north-west, east and south-east; further, he noted some scattered colonies around larger tanks in the dry zone. Santiapillai and Wijeyamohan (2015) reported 13.8/km² of peafowl population density in the less disturbed forest areas in the North-Western Sri Lanka. However, a much lower density (1.14/km²) has been reported in the Ruhuna National Park (Santiapillai and Dissanayake, 1992). Although previous records indicated that peafowls are distributed within low country dry zone of Sri

Lanka, at present Indian peafowl is becoming common in the wet zone of Southern province.

Despite its attractiveness, peafowl has now become a nuisance due to many reasons. Peafowls have a very loud high-pitched call; they roost on roofs where they cause damage and, for some reason are fond of cars and enjoy standing on them. They also attack their reflection in cars and cause damage by scratching and pecking them and peafowl often dig up flowerbeds and cause damage to gardens while foraging for food (Cunningham et al., 2016).

Although there is a possibility of risk to public health from zoonotic diseases, the extent to which these diseases are present in peafowls in Sri Lanka, is not known. Indian peafowls are omnivorous (Johnsingh 1976) thus, this feeding habit lead to economic losses to the farmers through the crop damage (Rajeshkumar and Balasubramanian 2011). Indian peafowl is respected by many people due to cultural reasons (Ali and Ripley 1980). Therefore, these birds are well secured and protected.

Increase of peafowl population and expansion of their distribution range to other areas has created many problems (Cunningham et al.,

2016). In order to develop strategies to minimize the problems created due to above new expansion, a sound understanding about their present status of occurrence, damages and social views is of importance. This study investigated the current geographical distribution pattern of Indian peafowl in Galle and Matara Districts and, associated problems.

Materials and Methods

A pre-tested questionnaire was used for data collection from 175 purposively selected sample comprising farmers and local level agricultural officers. The study was conducted in 35 Divisional Secretariate areas of Galle and Matara Districts. Questionnaires were filled through

(Harikrishnan et al., 2010). Dikwella and Devinuwara area are adjacent to dry zone and belong to IL2 and IL3 Agro-ecological zones. Therefore, their presence in those areas suggests that peafowl, though better adapted to dry areas, has now encroached to intermediate zone for some time. All other divisional secretariats studied are belong to WL2 and WL4 agro-ecological zones. Interestingly, distribution of peafowl across different divisional secretariats suggests that they have now encroached to wetter areas of the Galle and Matara District as well (Figure 01). They have encroached to wet zone areas such as Hakmana, Kamburupitiya, Mulatiyana, Pitabedara, Akuressa and Athuraliya divisional secretariats prior to 10-15 years.

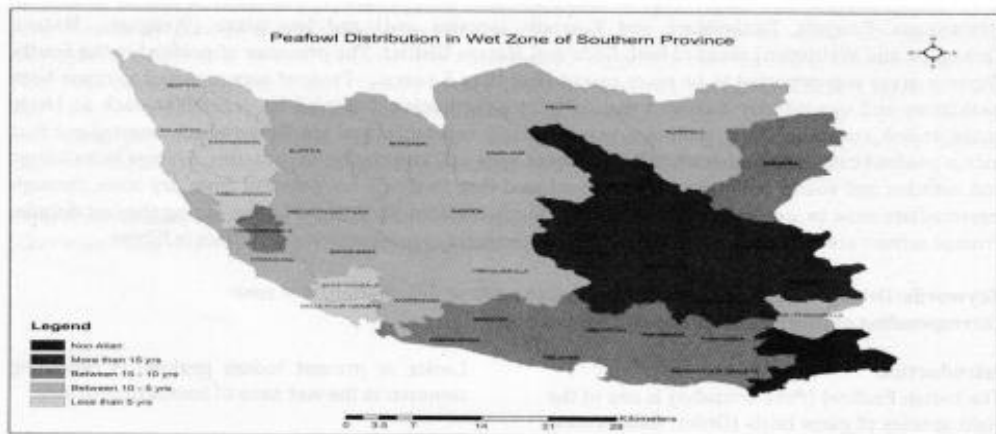


Figure 1: Peafowl Distribution in Galle and Matara Districts

field visits and formal and informal interviews. Information related to the distribution and behaviour pattern of Indian peafowl, crop damages, other problems created by peafowl and prevailing control methods were also collected using field visits, formal and informal discussions supported by a questionnaire comprising both semi-structured and open-ended questions. Data were analysed using MinitabVer17. Distribution of peafowl in wet zone of southern province map preparation was done using surveyRS-10.1 version software. As a basic map used topography map published by survey department of Sri Lanka.

Results and Discussion

Two-sample t test showed that Peafowl was seen in Matara District for a significantly longer period (9.5years) than in Galle District (5.3 years). Except the respondents in Dikwella and Devinuwara DS in Matara District, others considered peafowl an alien bird to their areas. Peafowl is better adapted to warmer regions

Interestingly, Pitabeddara, Akuressa and Mulatiyana are hilly areas with high rainfall. However, its expansion to rainy, coastal and urban areas such as Matara, Weligama and Welipitiya was slower than to wetter hilly areas. Penetration to South-Western areas such as Ambalangoda, Kurundugaha, Balapitiya and Bentota areas also reported recently. Peafowl prefers dry areas due to its severe innate behavioural need for dust bathing (Ramesh and McGowan, 2009). Though rainy, home gardens, human settlements in semi feral conditions may provide them with dust bathing opportunities. Presence of Peafowl in more urban and highly populated Divisional secretariats such as Bope-Poddala and Galle Kadawath Sathara can be identified as pockets of recent presence, surrounded by areas to which peafowl migrated relatively earlier. Yorzinski and Hermann (2016) showed that peafowl roosting selection and behaviour were not affected in noisy urban

environments. Therefore, presence of peafowl and their number even in wet zone urban areas can be expected to increase in future.

Lack of food and habitat availability due to recent development projects in dry zone areas such as Hambantota is probably the main reasons for the migration of Indian peafowl from dry zone to wet zone of Southern Province. *Canis aureus naria* (Golden jackal), dogs and human are the major predators of the Peafowl. Due to urbanization *C. aureus naria* population has been decreased in these areas. People in southern province do not hunt Peafowl for meat or any purpose due to cultural belief. Therefore, unchecked growth of peafowl population in dry zone coupled with food and habitat reduction might have forced peafowl to encroach much wetter and more populated areas as well.

Encroachment of peafowl to intermediate and wet zones where they had not been normally present has created numerous social problems. In natural habitats, peafowl was more active from 1600 to 1900 hrs with a peak between 1700- 1800 hrs (Santiapillai and Wijeyamohan, 2015). In contrast, in this study, a vast majority (94%) of the respondents experienced the peafowl activity both in morning and evening while another 5% said that the activity was high during morning. A vast majority of respondents complained that peafowl roam both in human vicinities and cultivated areas. Displaying was said to be more prominent during morning and evening and seen both in human vicinities and

cultivated areas.

Peafowl has been identified as a major threat for all cultivated crops in this areas (Table 1). Like other pheasant, Peafowl adopted to life of walking and foraging on the ground as they search for the seeds, plants, insect and reptiles for its diet. Considering the wide array of damages on crops, Santiapillai and Wijeyamohan, (2015) considered peafowl a pest. In this study also, Peafowl was reported to damage many crops, including rice cultivation, followed by vegetables, leafy vegetables and legumes. Major crops damaged by peafowl and the type and stage of damages are, as observed by the respondents are given in Table 01. Damage to rice cultivations reported to be both qualitative and quantitative and happen throughout the entire growing period. Other crop were also damaged by peafowls in different stages of the plant (Table 01). Damages on crop such as bitter guard, radish, cucumber, luffa and tomato were reported to occur at seedling stage only. Meanwhile, green chilli, leafy vegetables and tea mature stages were also damaged. Traditionally, local productions in small land plots popularly known as *Koratu* fulfil a substantial proportion of local vegetable, leafy vegetable and chilli requirement. Such small production units are common in divisional secretariats such as Kamburupitiya, Thihagoda, Welipitiya, Hakmana, Malimbada and Akuressa area. According to the respondents' view, local production of above crops has severely been

Table 01: Types of crops and damages caused by peafowl in Matara and Galle Districts

| Crop | Stage of damage | Damage type for harvest |
|------------------|---|---|
| Rice | All stages of plant | Direct qualitative, Indirect quantitative |
| Green Chili | Seedling stage, Flowering stage, Mature stage | Direct qualitative, Indirect qualitative |
| Bitter guard | Seedling stage | Indirect quantitative, Indirect qualitative |
| Radish | Seedling stage | Direct qualitative |
| Cucumber | Seedling stage | Direct quantitative, Indirect quantitative |
| Maize | Seedling stage | Indirect qualitative |
| Sweet potato | Seedling stage | Indirect quantitative |
| Leafy Vegetables | Seedling stage, Flowering stage, Mature stage | Direct quantitative, Direct qualitative |
| Luffa | Seedling stage | Indirect quantitative, Indirect qualitative |
| Tomato | Seedling stage | Indirect quantitative |
| Tea | Seedling stage, Mature stage | Indirect quantitative, Direct qualitative |
| Cinnamon | Seedling stage | Indirect quantitative |

affected by peafowl. As discussed earlier, peafowl has now encroached to much wetter areas such as Pitabeddara, Mulatiyama, Pasgoda, Kotapola and Pasgoda. Peafowl was reported to cause damages to both seedling and mature stages of the tea plantations. As the small tea state holders of the above areas contribute a substantial proportion to national tea production, further increase in peafowl population would be a serious problem for the tea cultivation and the livelihoods of the many who engage in tea cultivation.

In addition to crop damage, respondents pointed out that Indian peafowl causes a number of other nuisances as well. Most touching problem was that they harbour and carry the parasites which are harmful to human and pet animals. These parasites spread in the whole area which peafowl are roaming and cause different infections to the people. Indian peafowl causes economic losses by damaging buildings and vehicles. The usual call note is a very loud, and penetrating and can be heard miles away (Santiapillai and Wijeyamohan, 2015). Almost all respondents complained about the annoying voice peafowl make. Most of widely used method of controlling damage was the fencing using different materials, covering with nets, freighting of birds using scaring noises.

It was concluded that the distribution of Peafowls has expanded from dry zone, through intermediate zone to wet zone of Southern and South-Western parts of Sri Lanka during last decade. Peafowl apart from damaging properties has become a serious problem for many crops such as rice, vegetables and leafy vegetables. Given the complexity of the human-elephant conflict that arisen due to the same reason, attention should be paid to avoid the possible emergence of peafowl-human conflict in future.

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