

A Good Growth in the Number of Our National Bird-Peacock in the Shekhawati Region of Rajasthan, India

Paper Submission: 10/10/2020, Date of Acceptance: 20/10/2020, Date of Publication: 21/10/2020



Sunita Singh

Assistant Professor,
Dept. of Zoology,
Government Science College,
Sikar Rajasthan, India



Digvijay Singh Shekhawat,

Associate Professor,
Dept. of Zoology,
Government M L B College,
Nokha, Bikaner, Rajasthan, India



Subhash Gora

Assistant Professor,
Dept. of Botany,
Government Science College,
Sikar, Rajasthan, India

Abstract

The peacock is one of the most recognized and beautiful bird in the world. It is a common endemic breeding resident of India, Sri Lanka and Nepal. It is found in dry, semi-arid, forest, agricultural areas and near the human habitat. In 1963 India declared the Mayura (Sanskrit for Peacock or blue peafowl) as the National bird of India. It is a common and the most recognizable bird species in the avian community of Shekhawati region as well as Rajasthan state. Over Rajasthan, Haryana and the peripheries of Delhi was once a rich peacock belt, but in the last few decades, the species had declined as compared to past. A major cause of the declining population of the peacock was poaching. This study is a secondary data analysis of the peacock population in Shekhawati region of Rajasthan. Data set of 11 years from the year of 2010 to 2020, used in this study was obtained from the Forest department of Rajasthan. The results of the analysis of data are that numbers of Peacock have increased and this study also highlights a good growth in Peacock's population in the study area. The population of peacocks is increasing due to protection by the Forest department and growing awareness in public on poaching of birds being a non-bailable offence. Since 2011, except the years 2012 and 2014, the peacock population has been increased continuously and from the year of 2015 to 2020, increase is above 05 per cent every year in this region. Thanks to increased awareness and strengthening of legislative action, their population has reached satisfactory levels in recent years. We can apply these protectionary measures to improve numbers of threatened species of our state as well as our country and can maintain a healthy ecosystem.

Keywords: Peacock, Population, National Bird, Growth & Shekhawati Region of Rajasthan.

Introduction

The peacock (*Pavo cristatus*) is a common name of blue peafowl or Indian peafowl. In common, English uses; however, "peacock" is used to mean either gender of peafowl. It belongs to the family Phasianidae and order Galliformes. Male Indian Peafowl has characteristic colourful tail feathers or metallic blue-green train that makes the male peafowl one of the largest flying bird as well as the most beautiful, magnificent and an intriguing bird in the world (Plate-1). It is also called as the beauty king of birds. Our national bird is locally known as Mor (in Hindi), Mayura (in Sanskrit) and Moriyo (in Shekhawati). It is distributed throughout the Indian union, locally up to 1800 m in the Himalayas; Sri Lanka; Bangladesh but replaced in Myanmar by the species *P. muticus* with a pointed crest (Ali S, 2002 & Sabesh R, 2010). The preferred habitats of this feathered friend are scrub- jungles and forest fringes, dry deciduous and semiarid regions, agricultural fields, along streams and near human settlements (Kushwaha S & Kumar A, 2016).

**Plate-1: Images of Male *Pavo cristatus*****Plate-2: Images of Female *Pavo cristatus***

Peacock is a terrestrial, colourful & swan sized bird. Both the males and females have a fan-shaped feathered set, known as the crest, on the top of their head. The Indian peacock has a mixture of dull grey, brown, and green in her plumage. Females are brown, grey, and cream-coloured (Plate-2). Chicks are usually a light yellow to brown colour. Their necks and breasts are a bright blue, golden feathers line their sides and backs. The males have long trains about 1 to 1.3 meters in length and trains are an iridescent arrangement of multiple colours featuring ocelli (Sharma, 1997). According to the observations of Chopra and Kumar in 2012, peafowl roost in their habitats during their inactive period (i.e., noon and in late evening hours) on dominant tree species. The breeding season in southern India is April to May and June in northern India. Peacocks are communal rooster and polygamous (Gadgil et al, 1975). They have a lek like mating system, where males defend small and clumped territories in their breeding season (Loyau et al., 2007).

In 1960 an International council of bird examination had been held a conference in Tokyo, Japan and in that conference, a proposal had been passed that every nation has to declare a national bird. In reference of that proposal, in last week of January 1963 (Panchami of 11th Hindi month 'Magh'), India declared the 'Mayura' (Male Indian Peafowl) as the national Bird of India, an appropriate choice as this gentle bird symbolizes the characters of India as a peaceful, yet strong (Takher, 1963; Mukherjee, 1979; Jakhar, 2008 & Sabesh R, 2010). According to the renowned ornithologist, Late Dr Salim Ali, the peafowl was recommended to the Government as National Bird on account of its widespread distribution in the country and also because of its longstanding association with the life and culture of the Indian people. It is rightly the National Bird of India. The peacock symbolizes glory, grace, joy, splendour, love and pride (Kushwaha S & Kumar A, 2016).

Over Rajasthan, Haryana and the peripheries of Delhi was once a rich peacock belt, but in last few decades, its population was under threat due to habitat destruction, contamination of its food sources by pesticides, predators (commonly dogs) and poaching. Adult peacocks living near human

habitations are sometimes hunted by domestic dogs (Sabesh R, 2010 & Gurjar et al., 2013). Chicks are somewhat more prone to predation than adult birds. In great demand of peacocks for their feathers and flesh, the peacock in thousands were being mercilessly hunted down all over Rajasthan as well as throughout India (Majumdar, 2006). Poaching was the most vital cause of plummeting peacock population across the desert state. Shekhawati belt of Rajasthan was earning notoriety for poaching of the peacock (Jaju B, 2011). Peacocks live in near human habitat and roost on same trees or places at night, so it is easily being approached by poachers. Almost 10 peacocks were being poached every day in some parts of the state (Kadyan, 2011). It is protected throughout the country, especially under the Schedule-1 of the Indian Wildlife Protection Act, 1972 and its subsequent amendment and Appendix-1 of CITES (Dodia, 2011).

Nevertheless, the population of the bird is decreasing in India. It has also been reported that there is no reliable estimate of the population of peafowl available in India (Choudhury and Sathyakumar, 2007). Ornithologists believe that the population of peacocks is more than 100,000. WWF and other environmental groups estimate that the population has gone down by almost 50 per cent when compared to the population at the time of independence. However, it is difficult to determine how many peacocks have been lost over the years because of the non-availability of data as a nationwide census of the bird has not been done (Sabesh R, 2010). Though global population trends have not been quantified there is evidence of population decline (Del Hoyo et al., 1994; Fuller et al, 2004). A census of Indian peafowl population throughout its distribution range is essential to assess the present population status of our National Bird (Immam E, 2005).

Pheasants are important indicator species since their presence or absence in an area is a good indicator of the healthiness of the bio network (Delacour J, 1977; Kushwaha S & Kumar A, 2016). The peacock is an omnivorous bird and feeds on insects, plants, seeds, small mammals, reptiles and flowers. (Jakhar, 2008). It is a top consumer in an ecosystem pyramid. The role of peacocks in the food chain & food web of the ecosystem is crucial. They are important biological pest controlling agent, by

feeding insects & controlling weeds. So a healthy ecosystem its stable population is required.

Aim of the Study

The main objective of this paper is to draw the attention of researchers, students, naturalists, conservationists and common people about an improvement in numbers of our national bird which was facing a great decline in the population in the study area, throughout the state and the whole country. It would be an example for saving our threatened avian species, because of, this analytical study of peacock population in the Shekhawati region was done for setting an example that a growth is possible in declined avian number.

Material and Methods

Shekhawati region is a large area in the North-eastern part of Rajasthan state situated entirely within the triangle formed by Delhi-Bikaner-Jaipur. Shekhawati is a blanket name to describe the region comprising three districts of Sikar, Jhunjhunu and a small part of Churu, the mural rich area. From the administrative and geographical point of view, Shekhawati is limited to Jhunjhunu and Sikar districts only (Figure-1&2). Its area is 13,784 km² (Singh et al, 2016 & Singh S, 2017). It is a semiarid zone, with a mean annual rainfall of around 450 to 600 mm and temperature of this region ranges in between 0° (in winter) to about 40° (in summer)(Singh S et al, 2015). The Shekhawati region of Rajasthan is endowed with diverse topographic features and a wide range of habitats. In this region, croplands, grasslands, gardens, ponds and parks are the paradise for its aerial population. Here the Indian peafowl is a common species. The Shekhawati region has optimum availability of food, nest and roost sites for this beautiful bird.



Figure-1: Location map of Study area (Rajasthan)



Figure-2: Location map of Study area (Shekhawati region)

Introductory information of the national bird was gathered by personal field visits throughout the study area and pictures of this bird were obtained using photography by DSLR camera (Canon, Power Shot SX40HS). Common aspects about occurrence and behavior of this bird were collected by the interaction with people of the study area.

This is an analytical study. Secondary data analysis of the peacock population in Shekhawati region of Rajasthan was done in this research work. Data set of 11 years from the year of 2010 to 2020, used in this study, was obtained from District offices of Forest department of Rajasthan state. A waterhole census of wildlife in all the forest areas is carried out by the Forest Department of Rajasthan. This census is an annually scheduled exercise which is conducted every year by the Department of Forest, Government of Rajasthan. It is a 24-hour exercise and is an annual affair wherein forest staffers, nature enthusiasts and organizations participate by observing and counting wildlife species that visit each waterhole.

Results and Discussions

The last eleven years (from 2010 to 2020) data of numbers of the national bird were obtained from the two district offices of Forest department because the study area entirely covers these two districts. All obtained data about the population of peacocks are depicted in the table:1 and figures:3&4. On analyzing these table and figures, it was found that in the year of 2010 at Jhunjhunu District peacocks were abundantly found but after passing 11 years still, 1046 peacocks are less than starting numbers. From the starting year, continuously five years till 2015, the peacock population declined. Maximum decrease was recorded in the year of 2012 with 28.46%. After the year 2015, positive growth in numbers was recorded in every year till 2020 and the maximum increase was 17.87% in 2016. Jhunjhunu district makes a big part of the peacock population of study area because it provides favorable habitats to this bird.

Peacock Population of the Study Area From The Year Of 2010 to 2020									
Year	Sikar	Growth in numbers	Growth in %	Jhunjhunu	Growth in numbers	Growth in %	Shekhwati Region (Sikar+ Jhunjhunu)	Growth in numbers	Growth in %
2010	995	-	-	6155	-	-	7150	-	-
2011	1975	980	98.49	5759	-396	-6.43	7734	584	8.17
2012	2014	39	1.97	4120	-1639	-28.46	6134	-1600	-20.69
2013	2330	316	15.69	3812	-308	-7.48	6142	8	0.13
2014	2437	107	4.59	3653	-159	-4.17	6090	-52	-0.85
2015	2633	196	8.04	3643	-10	-0.27	6276	186	3.05
2016	2822	189	7.18	4294	651	17.87	7116	840	13.38
2017	3168	346	12.26	4373	79	1.84	7541	425	5.97
2018	3390	222	7.01	4619	246	5.63	8009	468	6.21
2019	3646	256	7.55	4851	232	5.02	8497	488	6.09
2020	4010	364	9.98	5109	258	5.32	9119	622	7.32

Table- 1: Peacock population of the Study area

On analyzing these results of Sikar district, it was found that in the starting year, the population was too much less than Jhunjhunu district and it was made just 13.91% part of a total population of Shekhawati region.

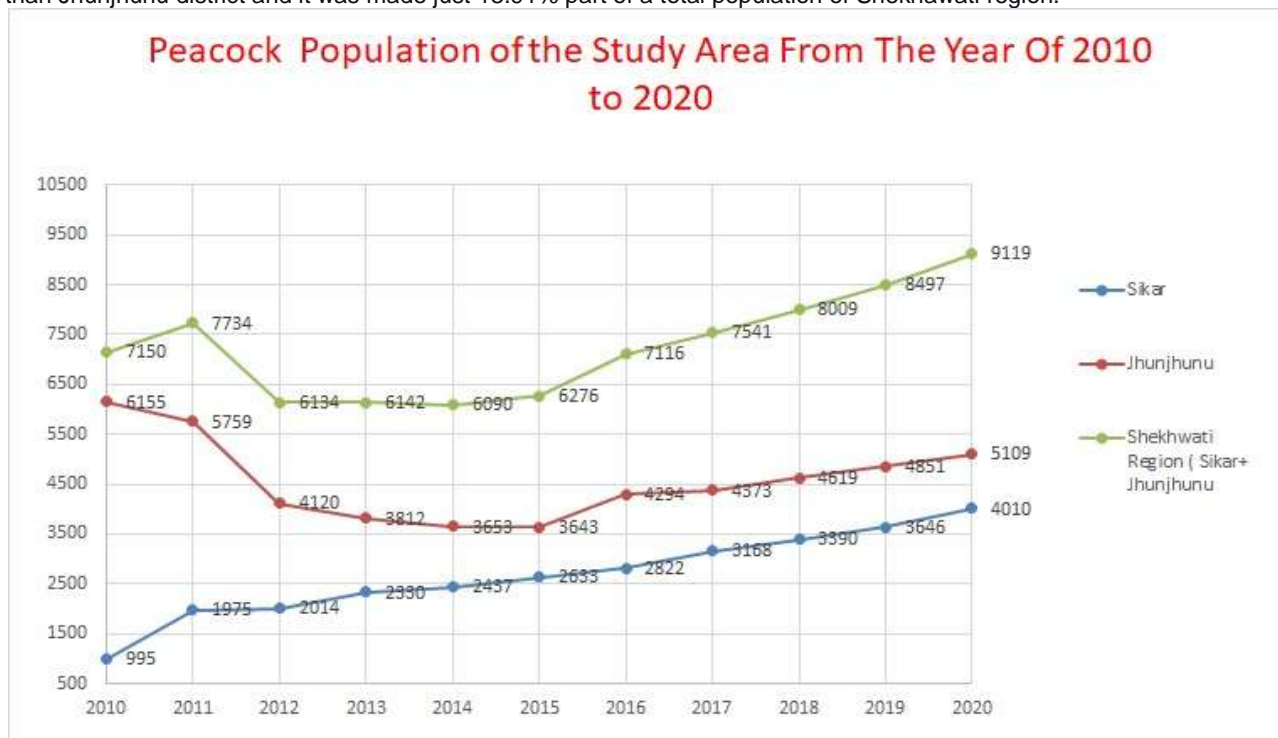


Figure-3: Showing the peacock population of study area

But one important thing was also observed that the peacock population was continuously increased in this district from starting year to 2020. A drastic increase or maximum positive growth was recorded in the year 2011 with 98.49%. The minimum increase was recorded in the year 2012 with 01.97%

and after that above 5% increase was found till the end of the study. There was not found a single decrease in this district's population and now participation in peacock population of entire study region of this district is 43.97% with the increase of 30.06% of starting participation.

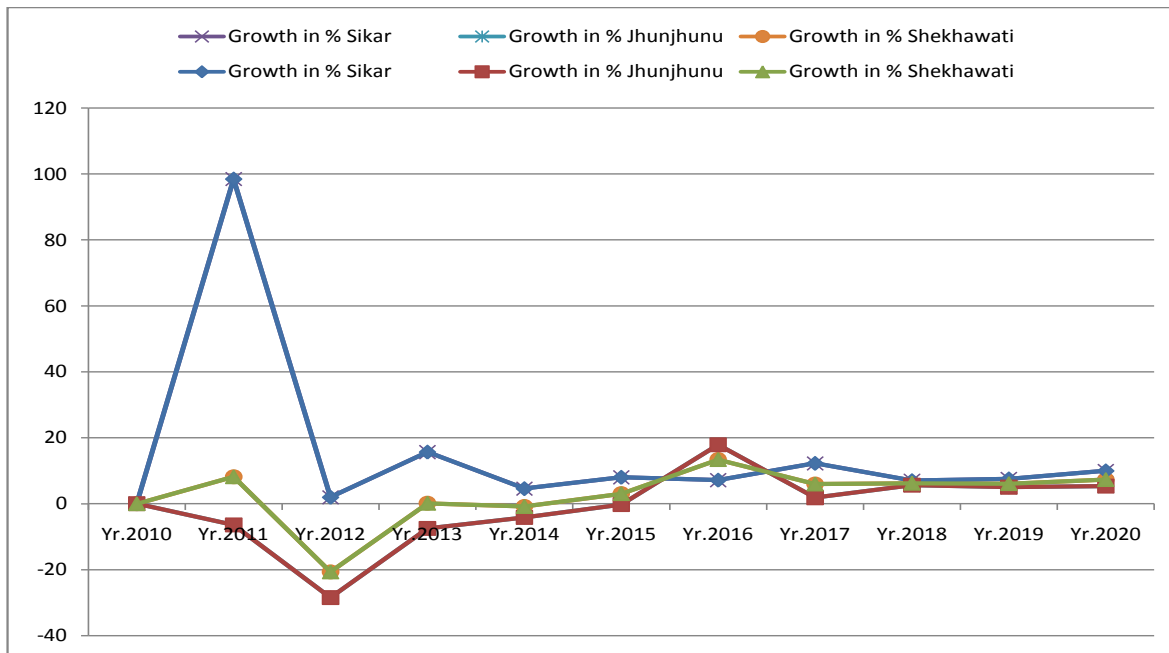


Figure-4: Showing the % of Growth in Peacock population of study area

A good thing was found, on analyzing the data of the whole region, that there was recorded positive growth in every year except only two decreases. Of which one decrease is just 0.85% (in year 2014) but another is significant with 20.69% in the year of 2012. Poaching is the main cause behind the decline of this bird population as our law allows the collection of shredded feathers by this bird, which is utilized as artifacts and various decorative items, because it is difficult to judge whether bird shredded them or they are pulled forcefully.

Good growth in numbers of the national bird was observed after the year of 2015, which was a turning point of increase in numbers of a declining population of Jhunjhunu district. The overall result is that in this region, starting off this decade peacock population has a declining status, which was very much improved and now the status of the population is going to gain a stable status.

There is overall decline of 79% of Indian avian species as reported by CMS COP 13, but peacock population shows a dramatic increase due to its protection both legally and locally. State of India's Bird Report 2020 is a conclusive report which state that peacock population increased dramatically as compared to other bird species. Report state that of total 867 bird species, nearly 80% are on decline, except Peacock, Ashy Prinia, Rosy Starling and Glossy Ibis. Increase in peacock population is due to a combination of factors including conservation efforts at local level and high penalties under Schedule I of the wildlife Act. It is the only reason due to which peacock expanded its population to Kerala, where it was previously absent.

The main causal factor behind the dwindling population of this bird is poaching for both flesh and feathers, habitat loss and contamination of their food to kill them. The same has been experienced in Jhunjhunu district where poaching by Bawariya (An

Indigineous local tribe of Rajasthan) has been a big problem for decline of this bird population. Local tribe such as Kangar, Mongiya and Bheel of Rajasthan are fond of white meat of this bird due to a unfounded belief that this meat make them more energetic and powerful. Additionally, the Narikurava gipsy tribe of Tamil Nadu hunts them for their oil, which is considered to be an aphrodisiac in many medical preparations. Peafowl ashes mixed with honey is used to cure asthma by the Rabari community of north, west and central India. Katewa & Galav, 2006; Mahawar & Jaroli, 2007; Vyas *et al.*, 2009 and Bagde & Jain, 2013 emphasized various disease and their treatment at different places of India. According to them feathers are major parts of the body which get infected and hence responsible for the decrease of peacock population in Southern part of India.

Habitation is also important part which defines roosting behavior of peacock. As stated by Kalaiselvan K & Ramesh M (2014) primary and secondary branches are the most preferred branches for roosting by peafowl. That's why they became easy target for the locals. Most important factor for peafowl survival is its feeding behavior of being omnivorous, due to which it can feed upon everything starting from grain to standing green crop and small insect, reptiles, and mammals. Vyas, 1994 studied nesting behavior of peacock and stated that small area in building and even disused nest platforms of white ramped vultures are used for nesting.

According to people of this region, the proper availability of food items at Chugga-Ghar (Image of plate-2) played an important role in the increase of peacock population in this region. These are man-made artificial feeding grounds for birds, which are situated mostly near temples, parks and public places like old historical buildings etc. The food items in form of cereal grains or seeds viz. pearl millet, maize, rice, wheat, barley or sorghum etc. are regularly provided

by common people for birds in these feeding grounds. The chugga-ghar in the study region are permanent feeding grounds for all granivores feathered friends of this region and are used by birds in every season throughout the year (Singh S, 2017).

Population of peacocks is increasing due to protection by the forest department of both Sikar and Jhunjhunu district, and growing awareness in local public on poaching of birds being a non-bailable offence. Since 2015 peacock population has been increasing above 05 percent every year in the Shekhawati region.

As peacock is wide-spread in Indian subcontinent, so few conservation strategies are to be cared off for the protection of our National Bird and all the threatened avian species. Mapping its habitat and distribution of peafowl throughout the country are the primary factor to be cared on regular basis. Another factor is to take care of is the temporal analysis of change in peacock habitat. And last but not least Identification of various "high risk areas" for its protection and potential sites for their conservation both locally and at National level as well.

Conclusion

The basic conclusion of this study is that the Shekhawati region of Rajasthan is regaining the richness status of peacock population as the past. It is good for bird watchers as well as common people who get great enjoyment in watching a peacock dancing in the monsoon. It is also a very good condition for establishing homeostasis in the ecosystem of this region. This article may be useful that the results of this study can be used in people awareness programmes for saving other threatened avian species.

Acknowledgement

We are very thankful to all staff members of Forest Departments at both studied districts (Jhunjhunu and Sikar) and additionally, we wish to acknowledge the help provided by Mr M C Dhaka (Ex Range Officer, Forest Department, Jhunjhunu, Rajasthan). Without their support, this study would not have taken the shape as present article.

References

1. Ali S (2002). *The book of Indian birds*. *Bomb. Nat. Hist. Soc., Oxford uni. Press*, Revised by J. C. Daniel 13th edi. :121.
2. Bagde N & Jain S (2013). *An ethnozoological studies and medicinal values of vertebrate origin in the adjoining areas of Pench National Park of Chhindwara District of Madhya Pradesh, India*. *International Journal of Life Sciences*, 1(4): 278-283.
3. Chopra G & Kumar T (2012). *Study of roosting sites of Blue Peafowl, Pavo Cristatus Linnaeus, 1758 In District Kurukshetra, Haryana (India)*. *Journal of Biological and Chemical Research*, 29(2): 273-282.
4. CMS COP 13 (15-22 February 2020). *The Thirteenth Session of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals AT Gandhinagar, Gujrat, India; A bird Report of India: "Migratory species connect the planet and*

together we welcome them home"; https://www.cms.int/en/cop13

5. Choudhury B C & Sathyakumar S (2008). *Current status of the Indian Peafowl*. 11th *Birding Fair: Mansagar dedicated to peacock*: 8.
6. Del Hoyo J, Elliott A & Sargatal J (1994). *Handbook of the birds of the World*, Lynx Editions, Barcelona, (2).
7. Delacour J (1977). *Pheasants of the World*. *Spur Publication and WPA*: 395.
8. Dodia P P (2011). *Roost Tree selection by the common Indian Peafowl (Pavo cristatus) at Bhavnagar District, Gujarat (India)*. *Life sciences Leaflets*, 11: 346-354.
9. Fuller R A and Garson P J (2004). *Pheasants. Status survey and conservation action plan 2000-2004*. *WPA/Birdlife/ SSC Pheasant Specialist Group, IUCN, Gland, Switzerland and Cambridge, UK and the World Pheasant Association, Reading, UK*.
10. Gadgil M & Ali S (1975). *Communal roosting habits of Indian birds*. *Journal Bombay Natural History Society*, 72(3): 716-727.
11. Gurjar R L, Pratap S R & Mishra A (2013). *Density of the Indian Peafowl Pavo cristatus in Satpura Tiger Reserve, India*. *PODOCES*, 8(1).
12. Imam E (2005). *Population status and conservation of Indian Peafowl Pavo cristatus in Aligarh, Northern India*. pp. 191-193. In: Fuller, R.A. and S.J. Browne (eds). *Galliformes 2004. Proceedings of the 3rd International Galliformes Symposium*. *World Pheasant Association, Fordingbridge, United Kingdom*.
13. Jaju B (2011). *"Bazar ki mar jhelta mor" Rajasthan patrika article*.
14. Jakhar S (2008). *"The study of Peacock (Pavo cristatus) in its natural habitat in Salasar, Churu (Rajasthan)"; an M. Phil Dissertation, submitted to University of Bikaner, Bikaner, Rajasthan; 57-60*
15. Kadyan N (2011). *Master trainer of the Animal Welfare Board of India & Representative of the International Organization for animal protection in India*.
16. Kalaiselvan K & Ramesh N (2014). *Population status and distribution pattern of Indian Blue Peafowl (Pavo cristatus L.) in Thuraiyur area of Trichy District, Tamilnadu, Southern India*. *International Research Journal of Natural and Applied Sciences*, 1(7): 178-191
17. Katewa S S & Galav P K (2006). *Additions to the traditional folk herbal medicines from Shekhawati region of Rajasthan Indian*. *Journal of Traditional Knowledge*, 5(4): 494-500.
18. Kushwaha S & Kumar A (2016). *A review on Indian peafowl (Pavo cristatus) Linnaeus, 1758*. *J Wildl Res*, 4(4), 42-59.
19. Loyau A, Jalme M S & Sorci G (2007). *Non-defendable resources affect peafowl lek organization: a male removal experiment*. *Behavioural Processes*, 7: 64-70.

20. Mahawar M M & Jaroli D P (2007). Traditional knowledge on zootherapeutic uses by the Saharia tribe of Rajasthan, India. *Journal of Ethnobiology and Ethnomedicine*, 3: 25 doi:10.1186/1746-4269-3-25.
21. Majumdar S (2006). Peafowl Feather Trade- Preliminary Observation in Delhi. *Zoo's Print XXI*, (12): 8-10.
22. Mukherjee A K (1979). *Peacock our national bird*, Govt of India, Press, New Delhi.
23. Sabesh R (2010). *The Peacock - Our national bird*. *Eco News*, 16(2): 5-7.
24. Sathyanarana M C (2005). Impact on the Indian Peafowl (*Pavo cristatus*) on agricultural Ecosystems, *Envis Bulletin, wildlife and protected areas*, 175-176.
25. Sharma I K (1974). "Ecological studies of the plumes of the Peacock (*Pavo cristatus*)". *The Condor*, 76(3): 344- 346. doi:10.2307/1366352. JSTOR 1366352.
26. Singh S, Shekhawat D S & Acharya P C (2015). Reproductive Ethology of Rose--Ringed Parakeet (*Psittacula krameri*) in the Shekhawati Region of Rajasthan. *Remarking II*, V.
27. Singh S, Shekhawat D S & Acharya P C (2015). Parakeet (*Psittacula krameri*) damage to ber (*Ziziphus mauritiana*, Rhamnaceae) in an orchard of Jhunjhunu (Raj.) *Asian Resonance* 4 (IV), 42-45
28. Singh S, Shekhawat D S & Acharya P C (2016). Parakeet diversity in the Shekhawati region of Rajasthan, India *Ijapsa* 2 (07), 22-27
29. Singh S (2017). Study of distribution ecology and ethology of Rose-ringed parakeet *Psittacula krameri* in the Shekhawati region of Rajasthan India.
30. Thaker J P (1963). *Peacock: the national bird of India*. *Journal of the Oriental Institute, Baroda*.
31. Vyas N, Mahawar M M & Jaroli D P (2009). Traditional medicines derived from domestic animals used by Rebari Community of Rajasthan, India. *Our Nature*, 7: 129-138.
32. Vyas R (1994). "Unusual breeding site of Indian Peafowl". *Newsletter for Birdwatchers*, 34(6): 139.