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Food of *Athene noctua* in Nocturnal Conditions as Located in University of Agriculture, Faislabad

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Abstract

This study was primarily focused on determining the availability of feeding niche of the little owl in University Campus. For this purpose, observations were made consecutively on the location of important sites in University Student's Farm. This Farm is characterized by different types of tree species. Some of the important ones comprise Salmalia malabarica, Dalbergia sissoo, Cedrella toona, Terminalia arjuna and few others. The little owl mainly feeds on small insects and occasionally on very small mammals and perhaps on the small chicks. Small insects made the major portion of the diet of Athene noctua..

Introduction

Little owl is a bird belonging to the family Strigidae. Little owl is a nocturnal species and occupies a large range of habitats including semi-deserts, woodlands, steppes and farmlands. Food is the first and foremost need of any living organism (Ghafoor et al., 2020). This way, many species form the diet of little owl. The feed species include earthworms, insects, invertebrates and some small vertebrate species. There exists territorial behavior in little owl (Staggenborg et al., 2017). The quality and quantity of food greatly affect the ecological continuity of animal species and populations (Polis et al., 1997). The spatio-temporal variations in distribution of a species also depend on food. Species feeding niches are better understandable with the help of ecological requirements. Moreover, the extent to which a food source is effective depends on many physiological and ecological factors. In order to determine the foraging habitat of species and restoration of threatened species the research on food composition plays vital role (Festa-Bianchet & Apollonio, 2003).

Analysis of stomach contents, adult pellets, chick regurgitations, examination of fecal rejections, investigations of prey remains and direct observation as well as such relevant methods as serological techniques and radio-isotopes-based approaches are some methods used to study diet in birds (Chenchouni, 2014). Analysis of regurgitated pellets and also the ingested prey fragments are identified to determine the diet of bird species. This method harms the bird but is best of determination of bird feed. For diet composition study of owl this method is used (Van Nieuwenhuyse et al., 2008).

In Pakistan, spotted little owl is commonly and is widely distributed in many parts of the country. The diet of little owl consists mainly of rodents. It consumes mainly the insects and small mammals whereas birds, lizards and amphibians are occasionally eaten. Food and foraging behavior of little owl change in relation to changing food and other environmental conditions in the crop lands of Central Punjab. Owls also feed on rat and mice populations. The rat and mice are adversely affected in the regions where the little owl is the only predator

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(Sergio et al., 2007). The pellet analysis of little owl indicates that the diet of little owl contains insects but in nature the feeding behavior can vary according to habitat and geographical region. Some studies focus on the arthropod diet of little owl still other deal with the small mammal diet (Shah et al., 2004). The aim of the research was to predict the different components of the diet of little owl.

Methods

An area of about 1 acre was sampled for the present study and concisely certainty species were critically analyzed to find the little owl pellets. One of the salient aspects of owls is that, they regurgitate the food material sharply and void the undigested parts outside in the form of a pellet. Generally, the pellets of the owl can be critically monitored to find the feeding proportions of the different food materials which had been consumed by them.

Evidently, it total of 8 trees (for each of Salmalia malabarica, Dalbergia sissoo, Cedrella toona and Terminalia arjuna) were critically analyzed not only to numerically count the number of pellets but also to dissect them by cutting tools their soft material to access the food preference of the little owl.

To accomplish this, use of forceps was frequently used and the reference bony materials and the remnants of the soft tissues of insects were carefully examined under the compound lens for confirmation. The length of the study period lasted 16 weeks and was done on weekly bases. All such observations have been incorporated in the result and discussion section.

Results and Discussion

Assessment of food preference indicated by the little owl (Athene noctua) in week 1-16 at the student's Farm, The University of Agriculture, Faisalabad. 32-41 pellets were collected in each week for estimation of owl's diet. The table shows the average proportion of different contents of owl's food.

Table 1. Average Proportion of Different Contents of Owl's Food.

Weeks	Average Feeding proportions (Numbers)			
	Small	Insects	Unidentified mammals materials	Birds
1st	4.8	15.6	3	4.6
2nd	5.8	15.8	3.8	4.2
3rd	7.6	14.4	4.6	3.8
4th	5.4	14.8	4.2	5
5th	5.4	13.6	4	5
6th	5	13.8	4.6	4.6
7th	5.6	14.6	3.4	5.2
8th	4.8	11.2	3.2	4.8
9th	4.2	14.6	3.4	5
10th	5.8	13.4	3.8	4.6
11th	4.8	15.8	3.4	4
12th	6	14.2	2.2	4.6
13th	4.6	12.8	2.2	3.6

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14th	4.2	11.6	2.8	4
15th	5.2	11.2	2.2	3.4
16th	4.6	11.6	2	3.8
Average	5.2	13.7	3.3	4.4

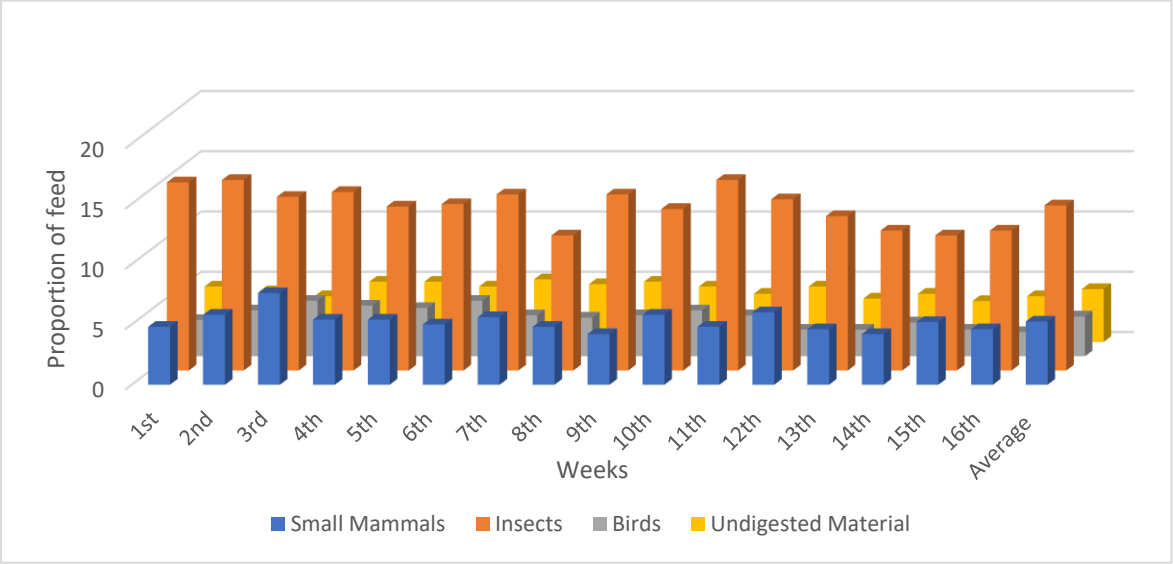

Figure 1. Feeding Proportion

Conclusion

It was seen that insects make the major portion of little owl's diet. Also, numbers of insects can be used as a limiting factor to analyze the population trend of little owl in any area. The study is useful in determining the feeding niche of Little Owl in an ecosystem and can help researchers to control the declining populations in different areas of Pakistan.

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