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Incidences of bird's population from different fields of Tandojam, Sindh, Pakistan

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Abstract

Birds are considered as most diverse group in nature at the present their incidences have been reported from Tandojam during the year 2015. It was noticed that population of birds species occurring in wheat field was maximum in Malir farm i.e (24.09%) followed by (22.72%) in S.A.U permissive. As for as, vegetable Form is concerned the birds total population were significantly highest i.e (28.57%) in Sindh Agriculture University followed by (19.04%) in Haji M.S Baloch, while least percentage of birds has been reported from L.A farm. Similarly, birds population in fruit field was reported maximum (31.55%) followed by (24.33%) Malir farm and S.A.U respectively, while, the population of birds in sunflowers field was significantly highest (41.24%) in S.A.U, farm followed by (32.20%) in Malir farm. The population of birds in sugar-cane field indicate that maximum population i.e (27.77%) in Haji M.S Baloch followed by (25%) in SAU Horticulture and very least percentage was recorded in Malir farm i-e (11.11%). Opposing to this, population of birds in sugarcane is concerned it was greater such as (26.66%) followed by (23.33%) in L.A farm and S.A.U, Horticulture respectively. It was notice that maximum No. of birds were prevalent in fruit form then other surveyed fields.

Keywords: Birds, incidence, population, vegetable, fruits, horticulture

Introduction

Birds are considered as most diverse group in nature due to its bright coloration, divergent songs and mating calls to their partners. Beside this, they contribute a lot in our life by showing displays and enjoyment. They are very observable, rather general, and offer easy way to monitor them diversity plumage and behaviour activity. They are known as famous group who pursue in wild life watching and monitoring. This fact is also reflects nature mapping's data base beside this, majority of wild life reports given by volunteers stated that birds watching is the quickest growing recreational pursuit in the united states including other countries. Bird's play significant role to control the pest population they aerial acrobats are consumed thousands of insects in their life, many of which were considered pests of rice, sugarcane, wheat, maize, fruits, vegetable etc. in these fields mostly grasshoppers, locusts, mosquitoes, beetles, and moths are in abundance in numbers. Birds also feed on their larvae and nymphs, birds hold huge quantities of adults and larvae including all immature stages which are believe to be having higher protein percentage that is necessary for the growth of birds. Many insect pests destroyed the valued cash crops. Previously many co-workers i.e [2-6, 8-10, 12, 14-24, 26-30] Avian plays very important link with in the maintenance of ecosystem particular food chain and webs exist. Review of literature showed gender differences by appearance in birds is usually not possible when we doing study in field even in lab. Mostly bird's species are in dimorphic in nature. During this study impact of birds on various insect population from different agriculture field i-e Wheat, Cotton, Vegetables, and Fruits were carried out. Most of the insect's functionally dominant folivorous herbivores in grassland system. Present study has been carried out for the first time.

Material and Methods

For the collection and identification of resident and migratory birds methodology and identification keys provided by Ali and Ripley [1] and Roberts [25] were followed.

Birds sampling sites

Birds samples were collected from different Agriculture fields that include wheat field, vegetable field, fruit field, sunflower field, occurring in Haji MS Baloch, SAU Horticulture,

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S.A.U, L.A Farm, Malir Farm were visited time to time during the year 2015. Alive birds were kept in small iron cages of (12 inches height and 12.8 inches in diameter) and large wooden cages of (108 inches length, 36 inches width and height) while small cage were kept under laboratory conditions. Collected birds were migratory as well as resident. The collection of birds samples were made during February to November 2015 the some birds were purchased from local market.

Identification of Birds

Birds are in dimorphic in nature. They show visible differences between male and female. In most cases, male birds sport brighter, bolder colours as a way to attract mates during the breeding season. Female are usually duller, with less distinctive markings that make it easier for them to blend in to the surroundings while they mind a nest or protect young birds. The differences between male and female birds are most apparent during the spring, when brighter colours attract mates more effectively. Genetically the sex difference in bird's female is heterogametic sex and the homogametic sex is the male (ZZ). After identifying the birds stock of birds transferred to the designate cages for further analysed. Different body parts of birds were measured with scales and dividers.

Results

Localities survey

(Table 1) this table showed the population of birds species occurring in wheat field with maximum population reported from Malir Farm i.e 24.09% followed by 22.72% in S.A.U permissive. As for as vegetable form is concerned the birds total population was significantly highest i.e 28.57% Sindh Agriculture University followed by 19.04% in Haji M.S Baloch, while least percentage of birds has been observed in L.A farm (Table 2). Similarly, bird's population in fruit form was reported maximum 31.55% in followed by 24.33% from Malir farm and S.A.U respectively while, the population of birds in sunflowers field (Table 4) was significantly highest 41.24% in S.A.U, farm followed by 32.20% in Malir while least percentage i.e 6.21% was observed in L.A farm (Table 3). (Table 5) showing population of birds in sugarcane field indicate that maximum 27.77% in Haji M.S Baloch form followed by 25% in SAU Horticulture and very least percentage was recorded from Malir farm. Contrary to this, population of birds in sugarcane field was 26.66% followed by 23.33% in L.A farm and S.A.U respectively. It seems from (Table 7) different field of Tandojam such as vegetable i.e Cabbage, Carrot, Spinach, Tomato, Leady finger, Turnip, Green bean, Green Chilli, Apple ground and Cluster Bean were significantly effected by 10 important birds species i.e. Common Myna, House Sparrow. Crow, Pigeon, Woodpecker, Jungle Babbler, Yellow throated Sparrow, Jungle Sparrow, Common Babbler and Grey Wagtail.

Avian predation

During the field survey it was noticed that avian predation was important factor effecting the significant No. of insect species in the field. Experimental studies demonstrate a negative impact from birds include a depression of many Lepidopteran species from forest. Some understory vegetation with greater No. of grasshoppers species were eaten by birds and grasshoppers are often the functionally dominant due to folivorous herbivores in grass land system.

During field surveys it was observed that avian predators have important effect on insects population resulted in increased densities, increased species diversity. It was also noted that avian predators significantly decreasing insects population in field i.e. wheat, sugar cane, rice, vegetable, and fruits. It was necessary to demonstrate similar result in grass lands. It was also noted that insectivorous birds were more dominant in grassland compared to forest habitats.

Discussion

During present study we have reported Crow, Common Myna, Pigeon, Sparrow, Parrot, Woodpecker, Jungle Babbler, and Grey Wagtail in the varieties of plantation. I have observed that Indian Wren Warbler and Jungle Babbler were of special significance as they were feeding directly on insect's population. It was thoroughly observed that these species could have higher threaded from the prevailing risk of pesticides similar observation was also reported by [7, 11, 13] reported 32 bird's species including 31 Passeriformes and 01 Coraciiformes from the cropland of Multan of them 23 were resident while the remaining was migrant. During present survey we have recorded 10 species among them 07 were resident i.e common Myna, Woodpecker, Crow, Parrot, Jungle Babbler, House sparrow and Pigeon. While three migrant birds species i.e Yellow throated Sparrow, Grey Wagtail and Rosy Poster were found more frequently than the other. Outcome of this study support to implement conservational tactics to increase the bird's populations in the vegetables, fruit field, sunflower field, wheat field, and sugarcane field so that they could function as biological control agent of insect pests, an essential component of (IPM) strategies [24] reported that insects' population significantly decrease in forest system. It was necessary to demonstrate similar results in grasslands. Insecticides birds found more in grassland compare to any other habitat so the present study recommends that it is very good planning to control different type of insects through their predatory behaviour. Beside this, during present study it was observed that predation on insect by birds at MS Baloch and Sindh Agriculture horticulture site is greater compare to Latif farm and Malir farm to sites. Present study suggests that it might be availability of food plants therefore, birds were dements.

Population of birds in various fields of Tandojam during the year 2015

Table 1: Wheat field

| S. No. | Site | Total Sampling (n=220) | Total Percentage |
|--------|------------------|------------------------|------------------|
| 1. | Haji MS Baloch | 35 | 15.90% |
| 2. | SAU Horticulture | 40 | 18.18% |
| 3. | S.A.U | 50 | 22.72% |
| 4. | L.A Farm | 42 | 19.09% |
| 5. | Malir farm | 53 | 24.09% |

Table 2: Vegetables field

| S. No. | Site | Total Sampling(n=210) | Total Percentage |
|--------|------------------|-----------------------|------------------|
| 1. | Haji MS Baloch | 40 | 19.04% |
| 2. | SAU Horticulture | 45 | 16.66% |
| 3. | S.A.U | 60 | 28.57% |
| 4. | L.A Farm | 30 | 14.28% |
| 5. | Malir farm | 35 | 16.66% |

Table 3: Fruits field

| S. No. | Sites | Total Sampling(n=263) | Total Percentage |
|--------|------------------|-----------------------|------------------|
| 1. | Haji MS Baloch | 46 | 17.49% |
| 2. | SAU Horticulture | 37 | 14.06% |
| 3. | S.A.U | 64 | 24.33% |
| 4. | L.A Farm | 33 | 12.54% |
| 5. | Malir farm | 83 | 31.55% |

Table 4: Sunflower field

| S. No. | Site | Total Sampling(n=177) | Total Percentage |
|--------|------------------|-----------------------|------------------|
| 1. | Haji MS Baloch | 13 | 7.34% |
| 2. | SAU Horticulture | 23 | 12.99% |
| 3. | S.A.U | 73 | 41.24% |
| 4. | L.A Farm | 11 | 6.21% |
| 5. | Malir farm | 57 | 32.20% |

Table 5: Sugarcane field

| S. No. | Sites | Total Sampling (n=180) | Total Percentage |
|--------|------------------|------------------------|------------------|
| 1. | Haji MS Baloch | 50 | 27.77% |
| 2. | SAU Horticulture | 45 | 25% |
| 3. | S.A.U | 40 | 22.22% |
| 4. | L.A Farm | 25 | 13.88% |
| 5. | Malir farm | 20 | 11.11% |

Table 6: Association of birds species in different vegetables grown in Tandojam during the year 2015

| S. No. | Vegetables name | Scientific name | Birds |
|--------|-----------------|--------------------------------------|-------------------------|
| 1. | Cabbage | <i>Brassica oleraceavar capitata</i> | House Sparrow |
| 2. | Carrot | <i>Daucus carota subsativates</i> | Common Myna |
| 3. | Spinach | <i>Spinacia Oleracea</i> | Jungle Babbler |
| 4. | Tomato | <i>Solanum lycopersicum</i> | Jungle Sparrow |
| 5. | Lady finger | <i>Abelmoschus Esculentus</i> | Indian wren warbler |
| 6. | Turnip | <i>Brassica rapa subsp. rapa</i> | Grey wagtail |
| 7. | Green bean | <i>Phaseolus vulgaris</i> | Crow |
| 8. | Green chilli | <i>Capsicum annum</i> | Rosy poster |
| 9. | Apple ground | <i>Praecitrullus fistulosus</i> | Yellow throated sparrow |
| 10. | Cluster Bean | <i>Parkia speciosa</i> | Parrot |

Table 7: Showing the presence of birds species in different vegetables occurring in Tandojam during the year 2015

| Birds | Carrot | Cabbage | Tomato | Turnip | Lady finger | Green Bean | Green Chilli | Apple ground | Cluster Bean |
|-------------------------|--------|---------|--------|--------|-------------|------------|--------------|--------------|--------------|
| Common Myna | + | + | + | + | + | + | + | - | + |
| House Sparrow | + | + | + | + | + | - | + | + | + |
| Crow | - | + | + | - | - | + | - | - | + |
| Pigeon | - | - | - | + | - | - | + | - | - |
| Woodpecker | - | - | - | + | - | + | - | + | + |
| Jungle Babbler | + | - | + | - | + | + | + | + | + |
| Yellow Throated Sparrow | + | + | - | + | + | - | + | - | + |
| Jungle Sparrow | + | - | + | - | + | + | + | + | + |
| Common Babbler | + | + | - | + | - | + | - | + | + |
| Grey Wagtail | + | - | + | - | - | - | - | - | - |

References

- Ali S, Ripley D. Hand book of birds of India and Pakistan. Oxford university press. 1983, 1-89.
- Askenmo C, Bromssen A, Von Ekman J, Jansson C. Impact of some Wintering birds on spider abundance in spruce.-Oikos. 1977; 28:90-94.
- Balcomb R. Secondary poisoning of Red -Shoulder Hawks with carbofuran. J Wildl. Manage. 1983; 47:1129-1132.
- Beg MA, Quresh JI. Birds of the university campus (Faisalabad) and their Economic significance. Pakistan j agric. Sci., 1981; 17:7-12.
- Dyer MI. Rangeland avian faunas: their composition, energetics, and role in the ecosystem. - In: Smith, D. R. (Ed.). Proc. Management of forest and range habitats for Non-game birds USDA Forest Service General Technical Report, WO-I 1975, 146-182.
- Goldstein MI, Woodbidge B, Zaccagninii ME, Canavelli SB, Lanusse A. An assessment of mortality of sawainson's hawks on wintering grounds in argentina. J Raptor. Res. 1996; 30:106-107.
- Hasnain T. Pesticide-use and its impact on crop ecologies: issues and options. Working paper series No.42. Sustainable Development policy institute (SDPI).Islamabad. Pakist. N. 1999.
- Henny CJ, Blus LJ, Kolbe EJ, Fitzner RE. Organophosphate insecticide (famphur) topically applied to cattle kill's magpies and hawks. J Wildl. Manage. 1985; 49:648-658.
- Holmes RT, Schultz JC, Nothnagle P. Bird predation on forest insects: an exclosure experiment. Science. 1979; 206:462-463:
- Howell AH. Floride bird life. Coward-McCann; New York, New York, 1932.
- Hussain I, Afzal M. Insectivorous birds and their significance in a cotton wheat based agroecosystem of Punjab Pakistan Pakistan J Zool. 2005; 37:133-143.
- Hussain MA, Bhalla HR. Some birds of Lyallpur and their food. J Bombay. Nat. Hist. Soc. 1937; 39:831-842.
- Jabbar A, Masud ZA, Parveen Z, Ali M. Pesticide residues in cropland soil and shallow groundwater in Punjab, Pakistan. Bull. enviro. contam. Toxicol. 1993;

- 51:268-273.
14. Joern A. Experimental study of avian predation on co existing grasshoppers populations (Orthopteran: Acrididae) in a sand hills grassland. *Oikos*. 1986; 46:243-249.
 15. Kajak A, Andrzejewska L, Wojcik Z. The role of spiders in the decrease of damage caused by acridoidea on meadows- experimental investigations. *Ekol. Polska*. 1968; 16:1-10.
 16. Khan AR, Qauyoom MA, Khan M. Insectivorous behaviour of some Faisalabad birds. *Pakistan Ent.* 1980; 2:21-26.
 17. Luhl R, Watzek G. *Angew. Ornithol.* 1974; 4:95.
 18. McEwen CL, Kiittle CE, Richmond L. Wild life effects from grasshopper insecticides sprayed on short grass range. *J Range Mang.* 1972; 25(3):188-194.
 19. Odum EP, Connell CE, Daavenport LP. Population energy flow of three primary consumer components of old field ecosystem. *Ecology*. 1972; 43:88-96.
 20. Otvos IS. The effect of insectivorous bird activities in forest ecosystems: an evaluation.-In: Dickson JG, Connors RN, Fleet RR, Jackson JA, Kroll JC. *The role of insectivorous birds in forest ecosystem*. Academic. Press. Ny. 1979, 341-347.
 21. Paton DC. *Emu* 80, 213 the importace of Manna, honeydew and lerp in the diet of honey eaters, 1980.
 22. Quayoom MA, Khan RA, Khan MH. Studies on the entomophagous activity of some Faisalabad birds. *Pakistan Ent.* 1982; 4:43-46.
 23. Rees NE. Arthropod and nematode parasites, parasitism, and predators of Acrididae in America north of Mexico. *USDA Tech. Bull.* 1973, 1460.
 24. Risser PG, Birney EC, Blocker HD, May SW, Parton WJ, Wiens JA. *The true prairie ecosystem*. Hutchinson Ross. Stroudsbyrg. PA, 1981.
 25. Roberts TJ. *The birds of Pakistan Passeriformes*. Oxford University press, Elite publications. Limited. Karachi. Pakistan. 1992; 1-34(2):617.
 26. Smith GJ. Pesticide use and toxicity in relation to wildlife: organophosphorus and carbamate compounds. *Fish wildl. Serv. Resour. Publ.* 170.USDI. Washington DC U.S.A, 1987.
 27. Tinbergen L. The natural control of insect in pine woods. I. Factors influencing the intensity of predation by song birds. *Archives Neerlandaises de Zoologie*. 1960; 13:265-343.
 28. Van Hook RI Jr. Energy and nutrient dynamics of spider and orthopteran population in a grassland ecosystem. *Ecol. Monogr.* 1971; 41:1-26.
 29. Watts JG, Huddleston EW, Owens JC. *Rangeland entomology*. Annual Review of Entomology. 1982; 27:283-311.
 30. Wiens J. An approach to the study of ecological relationships among grassland birds.-*Ornithol. Mongor.* 8. American Ornithologists union, 1969.