



Short Communication

Feeding Ecology of House Crow (*Corvus splendens*) in Open Agricultural fields in Jammu (J&K), India

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Abstract

The present paper documents the various aspects of the feeding ecology of House Crow which is a common resident bird of Jammu region. It was observed to be an omnivorous feeder and exploited a wide variety of food resources without any predilection in the study area. Observations on various food resources exploited by House Crow in open agricultural fields were made as well as feeding association with various other birds were also recorded during the study period.

Keywords: House Crow (*Corvus splendens*), diet, open agricultural fields, pesticides.

Introduction

Feeding ecology of a bird constitutes the basic ecology of that species and the way in which they exploit their resources. This is often of immense help to understand how they utilize their environment and to identify the characters of the environment which are indispensable for their survival. The House Crow, belonging to the Corvidae family, is considered to be one of the most intelligent and adaptable birds that exhibit sophisticated social behavior and are common in and near areas inhabited by peoples. House Crow is very well adapted in the urban areas where ample food resources and suitable nesting and roosting sites are available^{1,2}. The presence of food resources available to and exploited by birds in defining the trophic structure of the community is also well emphasized³. Although very dependent on man's rubbish, scraps, offal, garbage and sewage, it consumes anything edible; insects, termites, grains, nectar, fruits, carrion, groundnut, kitchen scraps, road kills and small animals including lizards, fish land crabs, fiddler crabs, locusts⁴. Several workers^{5,6,7,8} studied the feeding of House Crow and recorded it to feed on dead sewer rat, offal, carrion, kitchen scraps and refuse, locusts, termites. Thus, the present study is an attempt to chalk out the various food resources on which the House Crow feeds.

Material and Methods

Study area: To study the feeding ecology in House Crow (*Corvus splendens*) the area selected was open agricultural fields which were further categorized into sub stations (figure 1).

Stn-1: R.S. Pura: It is situated between 32°36'51.52" N latitudes and 74°38'58.15" E longitudes. The main source of water at this station is Ranbir Canal. Most of the area is surrounded by lush green fields of Wheat (*Triticum aestivum*)

and Rice (*Oryza sativa*). Dominant vegetation included trees like *Eucalyptus*, *Melia*, *Acacia*, *Eugenia jambolana* (Jamun), *Morus alba*. The area was observed to be least disturbed by transportation, thus providing a good habitat for birds.

Stn-2: Gho Manhasa: It is positioned at a latitude of 32°43'39.59"N and a longitude of 74°45'41.36" E with an elevation of 311 meters from mean sea level. It is at a distance of 10.9 km from the Jammu city in Marh tehsil. At this station, the main source of water is Gho Manhasa Stream which is itself an off-shoot of the river Chenab.

Methodology: In order to record the feeding ecology of House Crow (*Corvus splendens*), periodic surveys were carried out in the area under inquisition by adopting systematic field procedures and techniques. All surveys were conducted early in the morning and late in the evening. Besides this, some irregular visits were also made during different hours of the days. To identify the food resources, direct observations were made but in case where food item was not visible through naked eyes, binoculars were used without disturbing the bird.

Tools used: i. Digital Camera (Sony) DSC-HX 100V with 16.2 Mega Pixels and Optical Zoon 30x. ii. Canon EOS 600D with 18.0 Mega Pixels and Optical Zoom 70x30. iii. Digital Camera (Sony) DSC H-55. iv. Binoculars Olympus 10x50 DPS I, Field 6.5°.

Results and Discussion

The distribution of birds in a particular area depends upon various factors such as food, roosting and nesting sites. But, most important among these is the quality and quantity of food. House Crow (*Corvus splendens*) is an opportunistic feeder and much of its success is due to its omnivorous feeding habits and it was found to feed individually or in a group of 2-20 or more.

Large portion of its diet consisted of insects, mollusks, leftover cooked food and carrion. Besides, it was also detected to feed on dead decaying animals thereby playing the role of a scavenger and thus cleaning the environment. Moreover, it was also found to show mutual behaviour with cattle by riding on their backs and providing them relief by feeding on ticks and mites present on their body. Live prey was also seen captured by

House crows. Table 1 shows the list of probable food items eaten by House Crow. Plant matter consumed by the species reflects regional flora of the area in study. Besides, plant and animal matter it was also found to feed on other synthetic or natural matter such as Human excreta, soap, leftover pieces of chips etc. At feeding grounds, it was noted to share the site with the birds enlisted in table 2.

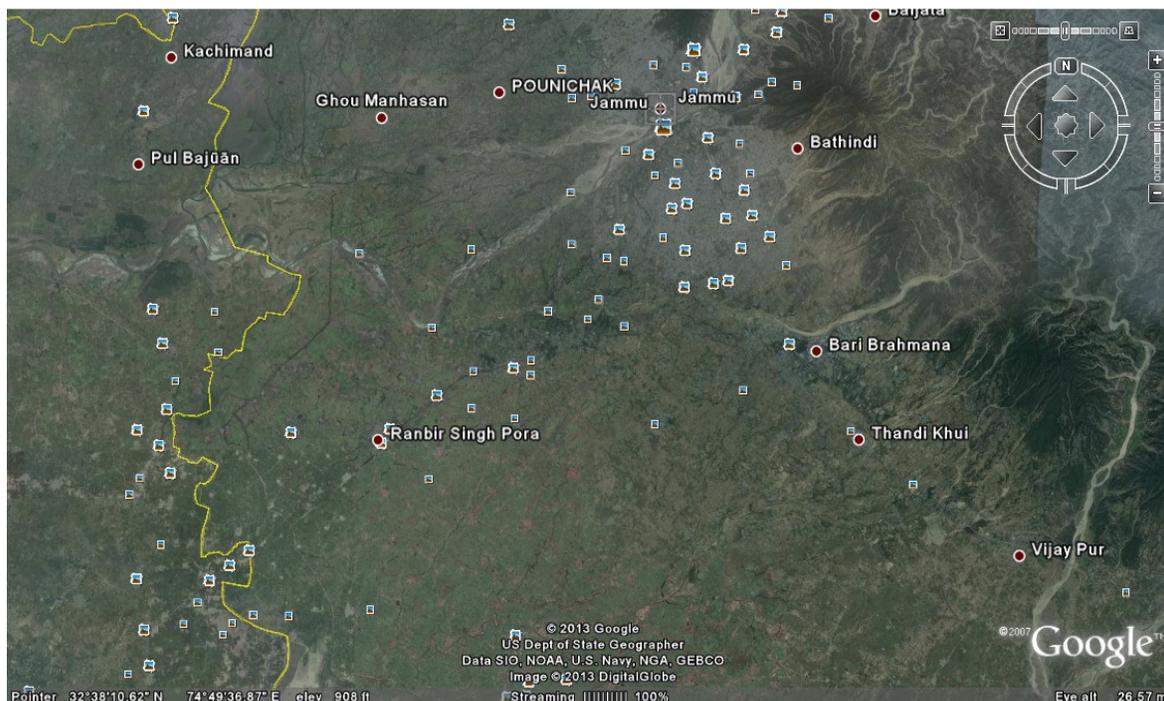


Figure-1
 Whole map of study area

Table-1
 List of food items taken by House Crow (*Corvus splendens*).

S.No	Plant matter	Animal matter	Other Food items (synthetic & natural)
1.	Grains of wheat and rice	Wasp	Cloth washing Soap
2.	Bajra	Soil insects	Paper soap
3.	Pulses from drains	Earthworm	Uncooked Rice
4.	Fruit of mulberry tree	Small mollusks	Leftover cooked Rice
5.	Phalse	Small fishes	Small pieces from packet of left over chips
6.	Seeds from pods of <i>Albizia lebbek</i>	Small insects in taken out water hyacinth	Cow dung
7.	Berries of peepal	Mites present on body of cattles	Human excreta
		Eggs of Birds	Garbage and kitchen refuse
		Chicks of birds	Leftover food from houses
		Dead squirrel	Leftover aata
		Dead rat	Eatables from garbage
		Dead mongoose	Parshad
		Dead decaying dog	
		Dead decaying animals	
		Chicks of hens	
		Bones of animals	
		Feathers	

Table-2
List of the birds sharing same feeding site with House Crow
(*Corvus splendens*)

S.No	Name of the bird	Order
1.	Jungle Crow(<i>Corvus macrorhynchos</i>)	Passeriformes
2.	Common Myna(<i>Acridotheres tristis</i>)	Passeriformes
3.	Bank Myna(<i>Acridotheres ginginianus</i>)	Passeriformes
4.	Pied Myna(<i>Sturlus contra contra</i>)	Passeriformes
5.	House Sparrow(<i>Passer domesticus</i>)	Passeriformes
6.	Rook(<i>Corvus frugilegus</i>)	Passeriformes
7.	Black Drongo(<i>Dicrurus adsimilis</i>)	Passeriformes
8.	Rose Ringed Parakeet(<i>Psittacula krameri</i>)	Psittaciformes
9.	Blue Rock Pigeon(<i>Columbia livia</i>)	Columbiformes
10.	Indian Ring Dove(<i>Streptopelia decaocta</i>)	Columbiformes
11.	Indian Roller (<i>Coracias benghalensis</i>)	Coraciiformes
12.	Red Wattled Lapwing(<i>Vanellus indicus</i>)	Charadriiformes
13.	Cattle Egrets(<i>Bubulcus ibis</i>)	Cicconiformes
14.	Little Egret(<i>Egretta garzetta</i>)	Cicconiformes
15.	Indian Pond Heron(<i>Ardeola grayii</i>)	Cicconiformes
16.	Pariah Kite(<i>Milvus migrans</i>)	Gruiformes

As a herbivore, House Crow eats seeds, grains, groundnuts, fruits and berries and sucks sap from the trees like Erythrina, Salmalia, Butea, Sesbania, Spathodea⁴. The data is supplemented with a broad range of other feeding strategies including predation on small vertebrates and invertebrates, both terrestrial and marine, domestic fowl and young livestock^{9, 10}. It out-competes many species for food and nesting sites and directly feeds on chicks and eggs of other bird species¹¹. It would attempt to steal food from even the largest eagles like *Haliaeetus leucoryhus* and *Aquila rapax* thereby depicting the process of food-robbing⁴.

It was also found that House Crow exploited rice fields because with the flooding of rice fields, greater number of prey items in the fields become available, thereby, providing ephemeral food availability of diverse prey items. During this time, they share their feeding sites of paddy fields with Cattle Egrets and Mynas exclusively. Crows were noted to feed without any competition as the prey was found to be temporarily abundant.

With frequent use of pesticides and insecticides in open agricultural fields, a colossal decrease in insect population (as a food) was evident for Crows, so they were found to move near human habitation to feed on the all round the year available. So, House Crows were observed to prefer urban areas because of the easy availability of food resources. The population of House Crow seemed to be regulated by the abundance and availability of food resources in the area. It was also studied that as the season changed, there was a change in the food quantity and quality, thus, influencing the fluctuations in the population of House Crow.

Conclusion

During the study period, it was found that House Crow prefers both plant and animal matter without any predilection. To conclude, it can be inferred that the data, though preliminary can be of immense aid in designing the mitigating strategies for the management of these birds. It can be used to analyze the high acclimatization of the bird in the urban areas as urban areas are found to cater their feeding needs in all the seasons.

References

1. Ali S. and Ripley S.D., Hand book of the Birds of India and Pakistan, Oxford University Press (1983)
2. Whistler H., Handbook of Indian Birds. Cosmo Publications, New Delhi (1986)
3. Karr J.R., Robinson S.K., Blake J.G. and Berregard R.O., The bird communities of four neotropical forest, (A. Gentry, Ed.). Yale university press, new haven, C.T. 237-269 (1990)
4. Roberts T.J., The Birds of Pakistan, Vol.II, Oxford University Press (1992)
5. Inskipp C. and Inskipp T., A Guide to the Birds of Nepal, Croom Helm London (1985)
6. Ali S., The Birds of Sikkim, Oxford University Press, 414 (1989)
7. Richard, The Collins Birds, ATLAS (1993)
8. Thirumurthy S. and Annamalai R., Birds as pest controllers and depredators, Newsletter for Bird watcher, 34(2), (1994)
9. Goodwin D., Crows of the world. Cornell University Press (1976)
10. Ryall C., Predation and harassment of native bird species by the Indian House Crow *Corvus splendens*, in Mombasa, Kenya, Scopas, 16, 1-8 (1992b)
11. Bijlsma R.G. and Meininger P.L., Behaviour of House Crow *Corvus splendens*, and additional notes on its distribution, Le Gerfaut, 74, 3-13 (1984)