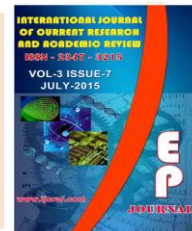




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### Niche Shifting of Genus *Corvus* in West Bengal, India

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#### KEYWORDS

*Corvus splendens*;  
*Corvus macrorhynchos*;  
Niche Shifting;  
Santiniketan,  
Chingrighata

#### A B S T R A C T

*Corvus* sp. is belongs to order Passeriformes and family Corvidae. Now a days they are facing very unfavourable conditions due to lack of food. Objective of this work is to find out the way how *Corvus* sp. is combating against such a challenge? An extensive study of *Corvus* was carried out over one year in two different parts of West Bengal. Although *Corvus* were saprophytic in nature but, now a days they trying to shift their niche in multidimensional ways to address the challenge of limiting food supply in semi-urban and urban areas.

#### Introduction

Crow is one of the dominant birds in Urban and suburban areas of West Bengal. They belong to order Passeriformes and family Corvidae (Patra *et al.*, 2014). They are of two types, one is House crow (*Corvus splendens*), found in all the nooks and crannies of the Indian subcontinent. Associated with folklore, it is overall a richly glossed back with lighter grey- brown neck and breast. The thickness of the bill and the depth of colour in plumage vary from region to region throughout its range. Another is Large billed crow (*Corvus macrorhynchos*). This big crow species has a relatively long bill with a slightly curved, thick upper mandible, making it look bulky. Jet black in colour, it has a salty grey tinge from the nape to the neck, shoulders and lower body. It has a loud and harsh kaa- kaa- kaa call.

Basically they are saprophytic in nature i.e., they depend on dead and decaying organisms. Although these two species belong to same genus but dominance in habitat is slightly different (Fig-2). Large billed crows are mainly found in suburban areas whereas House crows are mainly found in urban area. The bill size is different in these two crow species due to food habit.

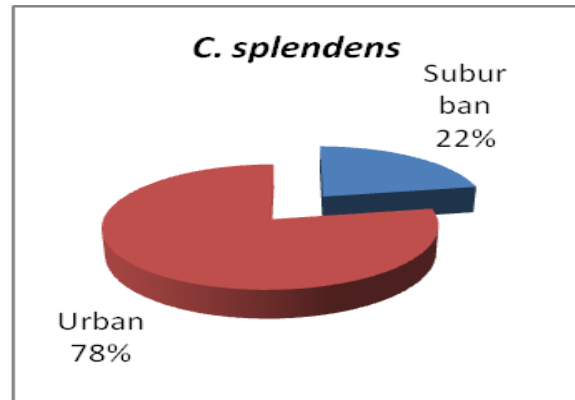
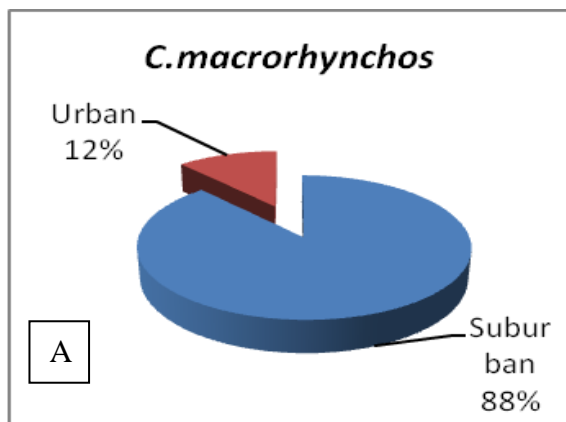
Now a days they are facing very unfavourable conditions due to lack of food. The main objective of this work is to find out the way how *Corvus* sp. combating against such condition? Though they show saprophytic mode of nutrition from time immemorial but now a days they trying to shift their niche in multidimensional ways for better survival in the ecosystem.

## Materials and Methods

An extensive study of *Corvus* was carried out from December 2014 to February 2015 at regular interval of twenty days in Shantiniketan (Latitude 23° 41' 0" N and Longitude 87° 41' 0" E) , Chingrighata at Kolkata (37.25' 19.1",N 12 05'06" W) and its adjoining area (Fig- 1).

The observations on *Corvus* was done with the help of 10 - 12 × 50 Nikon binocular and photography was done with the Cannon SX50 HS and EOS 7D cameras with 150 - 500 mm Sigma lens. Main observations were done during early morning and afternoon when the birds were busy in collecting their food. Most of the times they were trying to collect their food in urban and semi-urban areas and sometimes they were actually competing with Black Kites which is a clear sign of trophic niche overlap. But after repeated failures they try to fight another species like pied starlings and sunbirds for food. Identification of birds was done using field guides book of Selim Ali [2,3,4,5] . Picture of study area was taken by using website Google earth and graphs were prepared by using the Microsoft Excel.

**Figure.1** Showing the location Santiniketan and Chingrighata of West Bengal in India



**Figure 2** A) Showing density of *Corvus macrorhynchos* and B) showing density of *Corvus splendens* in urban and sub urban study areas.

## Result and Discussion

In this long study *Corvus macrorhynchos* were trying to fight with each other and other species like black kite, common moyna, and lesser cormorant for their food. Most of the time they failed to compete with each other and other species. Ultimately recorded number of time they were trying to catch fishes from pond of Chingrighata at Kolkata but unfortunately they were unsuccessful because of incompatible bill shape and lateral disposition of eyes. Bill shape is not favoring them to capture the fish from upper surface of the pond.

*Corvus macrorhynchos* and *Corvus splendens* both were competing each other and another avian species mainly honey collectors during autumn. Some of them are fighting and compete with other birds for collection of nectar (Fig-3). Specially *Corvus splendens* are outcompeted and behave like domestic animals by collecting food materials from daily uses of human being. Few of them prepare their nests around human habitat which is an easy source of food.



**Figure.3** Showing collections of nectar of *Corvus* from flowers.



**Figure.4** Crows busy in fishing

Though crows are known as weepers of environment, i.e., they eat dead and decaying organisms as well as clean the environment but due to lack sufficient food outside the covered garbage cans of towns and cities their life is jeopardized. As a result the numbers of crows in towns and urban areas are ever decreasing. So, desperately they are probably readjusting their niche. Now a days they are not only saprophytic in nature but they can collect nectar, capture fish (though clumsily). In the coming centuries of human monoculture, may be these birds will be silently moving

towards a new urban morphotype befitting with their new trophic niche.

### Conclusion

For successful and prolonged existence in nature organisms adjust different dimensions of their niche although having the same habitat. *Corvus* spp. are probably trying to shift their niches in multidimensional ways.

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